DATACORE

DataCore VASA Provider

Version 2.01

Release Notes and Installation Guide

Change Summary

Version/Change Summary	Date
Initial release Version 2.01	5/20/2020

Copyright

Copyright © 1998-2020 DataCore Software. All rights reserved. DataCore, the DataCore logo, and SANsymphony are trademarks or registered trademarks of DataCore Software Corporation. Other DataCore product or service names or logos referenced herein are trademarks of DataCore Software Corporation.

This product may be covered by one or more of the following patents: U.S. Pat. 9,519,431; U.S. Pat. 9,411,518; U.S. Pat. 9,344,235; U.S. Pat. 9,087,013; U.S. Pat. 8,886,857; U.S. Pat. 8,874,746; U.S. Pat. 8,862,813; U.S. Pat. 8,706,935; U.S. Pat. 8,417,905; U.S. Pat. 8,195,770; U.S. Pat. 8,010,756; U.S. Pat. 7,752,386; U.S. Pat. 7,707,272; U.S. Pat. 7,627,643; U.S. Pat. 7,568,037; U.S. Pat. 7,222,176; U.S. Pat. 7,177,912; U.S. Pat. 6,799,258; and U.S. Pat. 6,606,651; other patents pending.

DataCore Software Corporation

1901 West Cypress Road

Suite 200

Fort Lauderdale, FL 33309

Phone: 954-377-6000

Fax: 954.938.7953

E-mail: info@datacore.com

Windows, Windows Server® and Windows PowerShell are registered trademarks or trademarks of Microsoft Corporation in the United States and/or other countries. The Microsoft product name used herein is for identification purposes only. VMware, VMware vSphere, and VMware vCenter are registered trademarks or trademarks of VMware, Inc. in the United States and/or other jurisdictions. We disclaim any and all rights to those marks. All other products, services and company names mentioned herein may be trademarks of their respective owners.

Table of Contents

Overview

The VASA Provider installation scenarios in Smart Deployment Wizard allow installing a first VASA Provider node, or add a node to a highly available VASA Provider configuration. The wizard installs the VASA Provider on a specified local or remote machine, registers SANsymphony with the provider, and registers the VASA Provider with the vCenter.

The Smart Deployment Wizard can only install VASA Provider on a machine where SANsymphony is installed.

For additional information, see "Getting Started with VASA Provider" section in the [SANsymphony online help](#).

What's New

Support for unattended installs were added. See [Installing VASA Provider in Unattended Mode](#) for details.

This version also contains a group of fixes for previously reported issues. Refer to the [Fixes](#) section for a detailed list.

Configuration Notes

Download Package

Included in the self-extracting, executable download package (SANsymphonyWizard.exe) are:

- The Smart Deployment Wizard (automatically launches after the download package is extracted to the specified folder)

- The SANsymphony.exe executable file (software installation package)

- The DataCore.Vasa.Provider.PackageInstaller.exe executable file (software installation package)

- VASA Provider Release Notes and Installation Guide

- DataCore VASA Provider Release Notes and Installation Guide (this document)

System Requirements

VMware vCenter

- VMware vCenter for Windows or vCenter Server Appliance 6.5 or higher, compatible with the ESXi edition

ESX Host

- ESXi 6.5 U2 or higher

VASA Provider

- A machine with VASA Provider PSP9 or higher. The provider can only be installed on a machine where VASA Provider is installed. No reboot is required.

- 200 MB of free space on system drive

- If you run the Smart Deployment Wizard on a machine different from where you want to install the provider, remote WMI should be enabled.

Installation and Configuration Notes

- The VASA Provider should only be installed using the Smart Deployment Wizard. Manual installation is not supported. The wizard installs the provider and registers it with the vCenter.

- ESX hosts, vCenter Server, DataCore Servers, and the VASA Provider must be addressable by fully qualified domain names (FQDN), not by IP address, and must be resolved by the same DNS.

- The vCenter Server must allow firewall access to the port used by the VASA Provider.

- When creating virtual volume (VVOL) virtual machines (VMs), select the **Thin Provisioning** option.

Installing VASA Provider

Changes to the System

1. The wizard creates the user dcsvasa with the local administrator privileges on all machines in the server group, and registers this user in SANsymphony with the Full Privileges and Vvol Managers roles. If the user already exists, the wizard will change its password to the one specified in the wizard.

2. The VASA Provider installer creates the service dcsvasa, and runs the service under the user dcsvasa.

3. The VASA Provider installer creates a firewall exception rule for TCP port 8443 for all profiles. This port is used for synchronization between VASA Provider nodes, and communication between vCenter/ESX and VASA Provider.
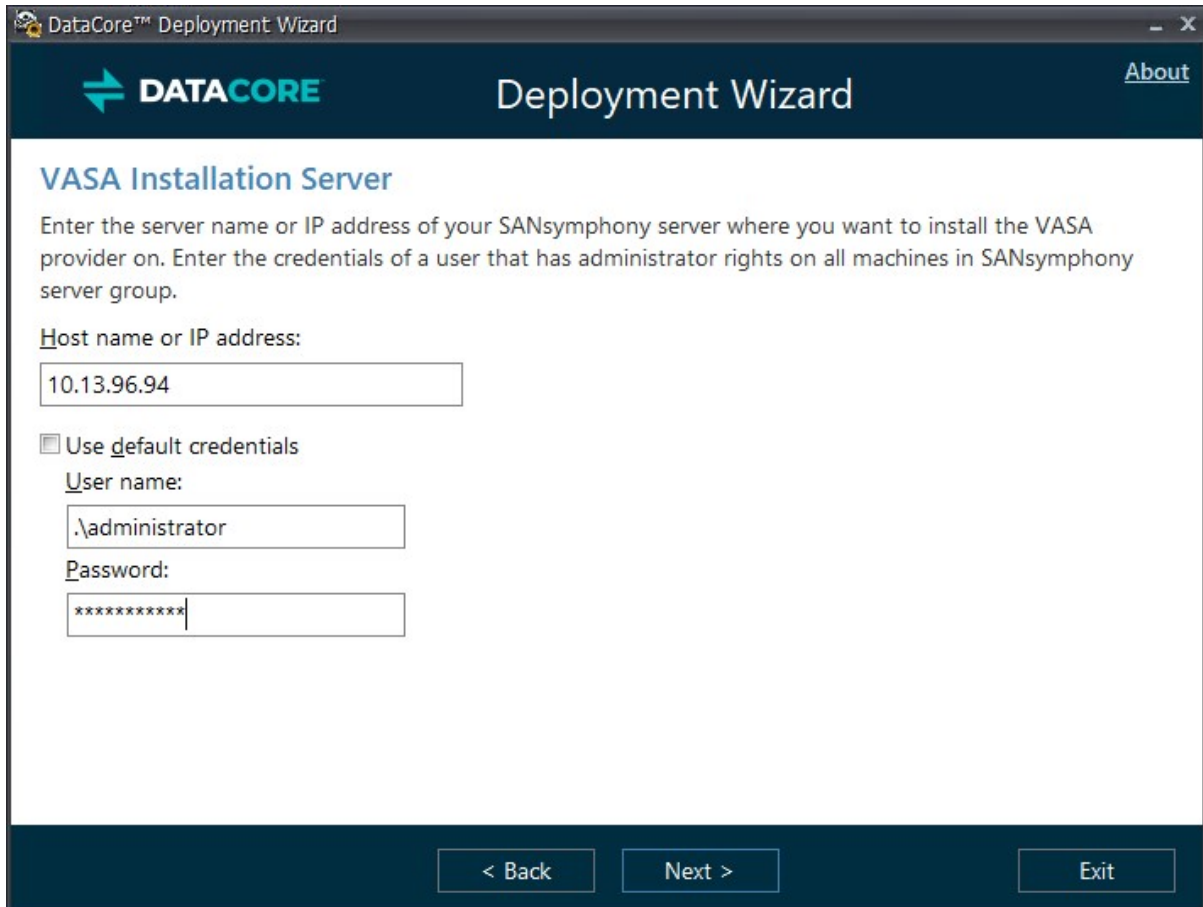
Prerequisites

These prerequisites should be met on the machine where VASA Provider is installed.

1. Windows 2012 R2 or higher

2. SANsymphony PSP9 or higher

3. 200 MB of free space on the system drive

4. For remote installation, remote WMI should be allowed

5. .NET 4.6.1 should be installed
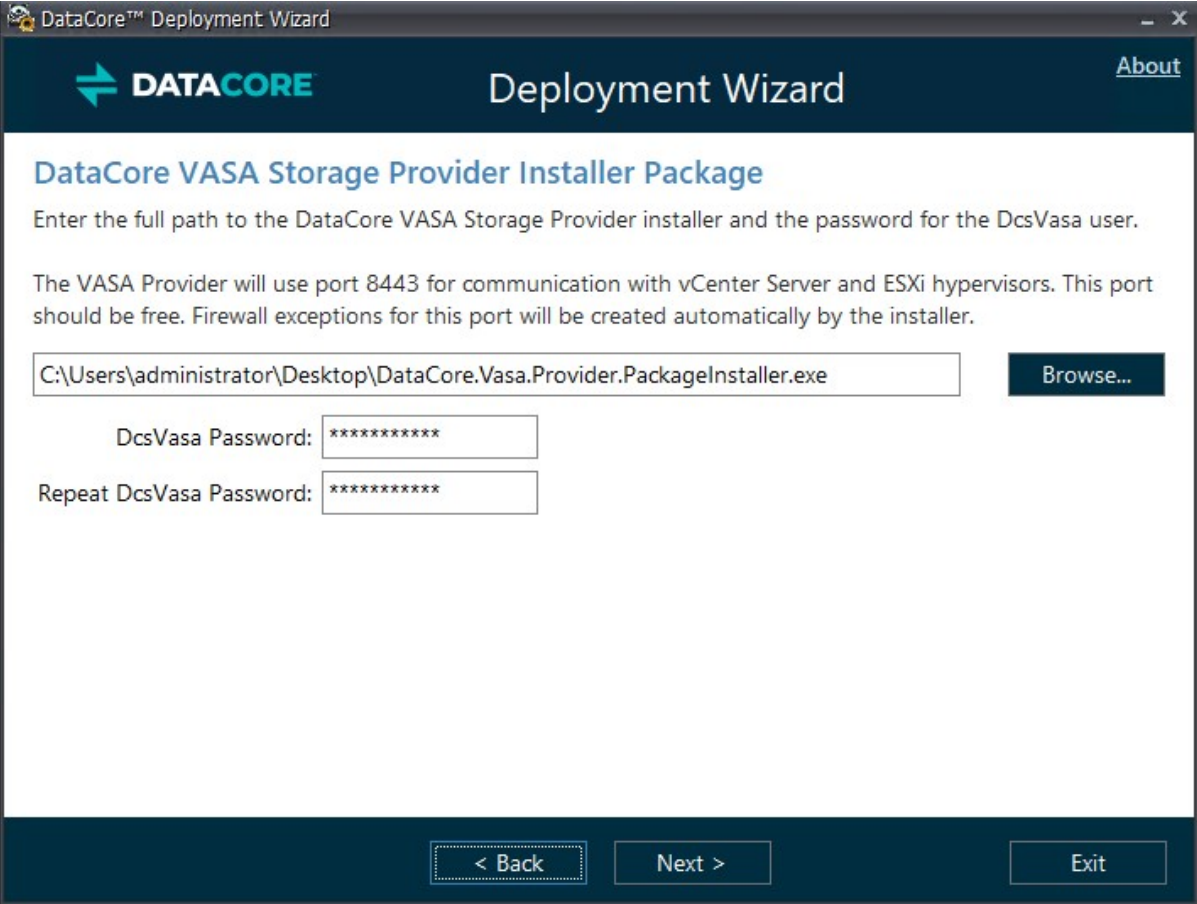
6. Port 8443 should be free

First Node

1. Launch the wizard, select **Application and Server Tools -> VASA Storage Provider for VMware vSphere -> Install VASA Storage Provider**. Accept the license agreement.

2. Enter the name or IP address of the server where the VASA Provider will be installed, and the user name and password to be used for the installation. The user should exist and have the local administrator privileges on all machines in the server group, and should be registered in SANsymphony with the Full Privileges role.

3. Provide the path to the VASA Provider installation package, and the password for the user dcsvasa that the wizard will create on all machines in the server group.

4. Provide the name or IP address and the credentials of the vCenter to register the VASA Provider with.

5. Review the settings and run the installation.

Additional Node

1. Launch the wizard, select **Application and Server Tools -> VASA Storage Provider for VMware vSphere -> Install an additional VASA Storage Provider**. Accept the license agreement.

2. Enter the name or IP address of the server where the additional VASA Provider will be installed, and the user name and password to be used for the installation. The user should exist and have the local administrator privileges on all machines in the server group, and should be registered in SANsymphony with the Full Privileges role. The user should be different from dcsvasa.
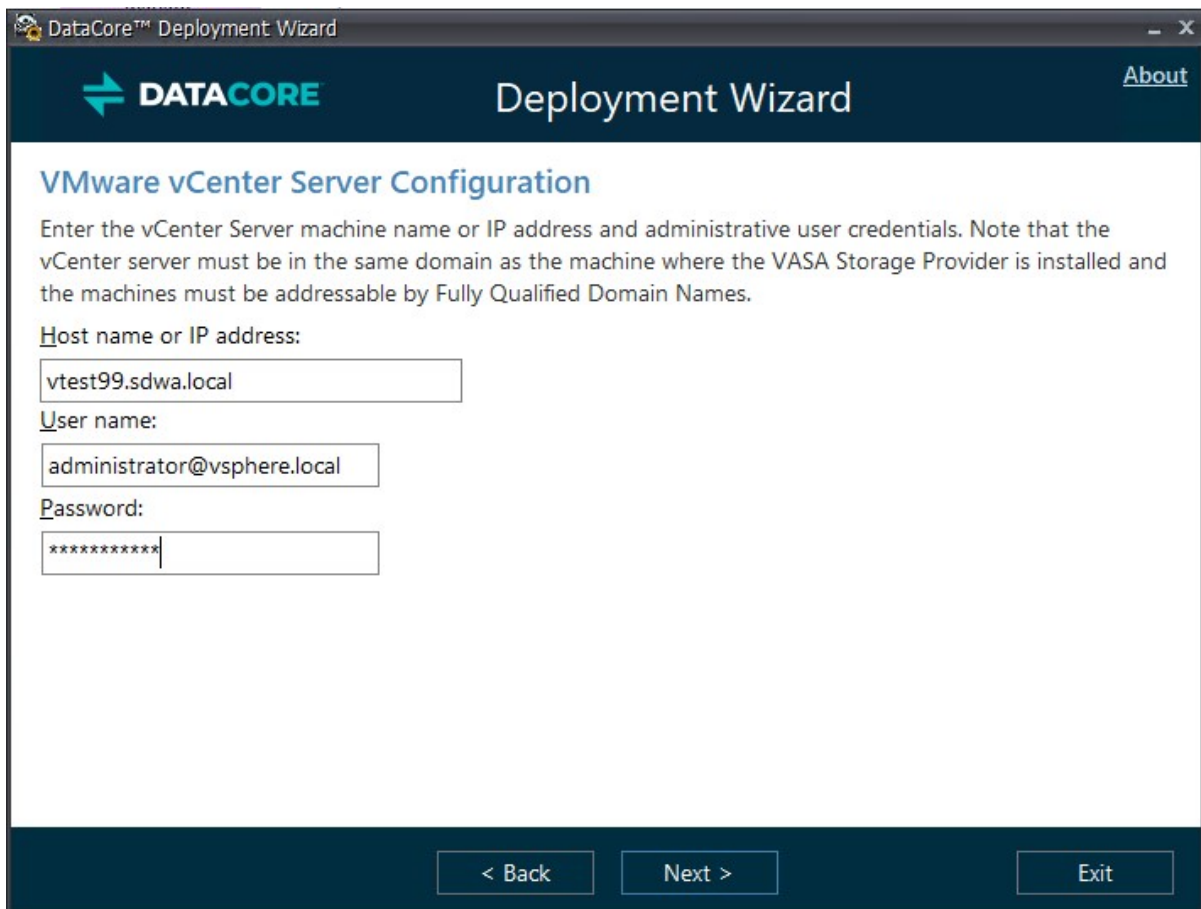
   The wizard will validate that another instance of VASA Provider is already installed on any server in the server group. This server is named "partner server" below.

3. Provide the path to the VASA Provider installation package, and the password for the user dcsvasa.

   The wizard will validate that the password matches the password of the dcsvasa user on the partner server, the dcsvasa service is running on it, and that the provider synchronization endpoint on port 8443 is replying.

4. Provide the name or IP address and the credentials of the vCenter to register the VASA Provider with.

5. Review the settings and run the installation.

Installing VASA Provider in Unattended Mode

First Node

Command line format:

```
SmartDeploymentWizard.exe vasaprovider -s server.domain.local -c server_user server_
password -p DcsVasaPassword -i "C:\DataCore.Vasa.Provider.PackageInstaller.exe" -v
vcenter.domain.local -l vc_user vc_password
```

Parameters:

-s, --server	Required. VASA Provider installation server host name or IP address.
-c, --credential	VASA Provider installation server credential.
-p, --password	Required. DcsVasa password.
-i, --installer	DataCore VASA Provider installer package path.
-v, --vcenter	Required. VMware vCenter server host name or IP address.
-l, --vccredential	Required. VMware vCenter server credential.

An example where only the required parameters are specified:

```
SmartDeploymentWizard.exe vasaprovider -s server.domain.local -p DcsVasaPassword -v
vcenter.domain.local -l vc_user vc_password
```

If the unattended installation fails, it can resumed from the failed step by running this command:

```
SmartDeploymentWizard.exe -r "configuration.sdw" -unattended
```

Additional Node

Command line format:

```
SmartDeploymentWizard.exe vasaprovideradd -s hvsan2.domain.local -c server_user server_
password -p DcsVasaPassword -i "C:\DataCore.Vasa.Provider.PackageInstaller.exe" -v
vcenter.domain.local -l vc_user vc_password
```

-s, --server	Required. VASA Provider installation server host name or IP address.
-c, --credential	VASA Provider installation server credential.
-p, --password	Required. DcsVasa password.
-i, --installer	DataCore VASA Provider installer package path.
-v, --vcenter	Required. VMware vCenter server host name or IP address.
-l, --vccredential	Required. VMware vCenter server credential.

An example where only the required parameters are specified:

```
SmartDeploymentWizard.exe vasaprovideradd -s hvsan2.domain.local -p DcsVasaPassword -v
vcenter.domain.local -l vc_user vc_password
```

If the unattended installation fails, it can resumed from the failed step by running this command:

```
SmartDeploymentWizard.exe -r "configuration.sdw" –unattended
```

Upgrading the VASA Provider from 2.0 to 2.01

Upgrades must be run from the command line using the VASA Provider installer file, DataCore.Vasa.Provider.PackageInstaller.exe. The Smart Deployment Wizard does not support upgrading the VASA Provider.

> **Note:** Upgrades from VASA Provider 1.0 to version 2.x are not supported.

1. Place the latest version of the VASA Provider installer on your VASA Provider node. Open the folder with the installer and run this command:

   `DataCore.Vasa.Provider.PackageInstaller.exe PASSWORD="<password>" PORT="{8443|8444}"`

   - PASSWORD: Enter the password of the dcsvasa user that was specified during the installation of the VASA Provider. The installer does not validate that the new password matches the previous password. If you specify a different password, the upgrade will run, but the DataCore VASA Provider will not be able to synchronize with the other nodes until you run the upgrade on all the nodes with the new password. To change the password for dcsvasa user, see Changing the dcsvasa User Password.

   - PORT: If the VASA Provider 2.0 was installed with the Smart Deployment Wizard, use 8443. If the VASA Provider 2.0 was installed as part of the DataCore vSphere Deployment Wizard or as part of the HCI-Flex Appliance, use 8444. If you are not sure how the provider was installed, you can look up the port value on the **Storage providers** tab of the vSphere console in the URL field. For example, if it looks like the following, it was installed with the Smart Deployment Wizard: https://vasanode1.datacoresoftware.com:8443/DcsVasa/version.xml.

2. Re-register the DataCore VASA Provider with the vCenter.

    a. Go to the **Storage providers** tab in the vSphere console and select the provider that you upgraded. Copy and save the **Provider name** and **URL** values.

    b. Remove the DataCore VASA Provider by selecting **Remove** in the provider list.

    c. Select **Add** to re-register the provider. Use the previously saved values for provider name and URL. In the **User name** field, enter "dcsvasa" and in the **Password** field, enter the password used during the upgrade. Leave the **Use storage provider certificate** check box empty.

3. Check that the VASA Provider status in vCenter is online, and that the VASA Provider datastores are healthy. If there are more nodes in this VASA Provider group, repeat step 1 for the next node.

Changing the dcsvasa User Password

Follow this procedure if you need to change the password of the dcsavasa user.

1. On the machine where the VASA Provider is installed, change the password of local user dcsvasa as usual. Then open the service dcsvasa, go to **Properties -> Log On**, and change the password there. Restart the service.

2. Check that the VASA Provider status in vCenter is "online", and that the VASA Provider datastores are healthy. If there are more nodes in this VASA Provider group, repeat step 1 for the next node.

Recovering the VASA Provider

If the upgrade from 2.0 to 2.0.1 fails (for example, if the specified password does not meet the Windows complexity requirements), the VASA Provider cannot fully roll back to its previous state and will not function. Follow this procedure to recover the VASA Provider.

1. From the command line, run the following command:

   ```
   do netsh http show sslcert
   ```

   and save Certificate Hash and Application ID for the entry 0.0.0.0:8443, for example

   Certificate Hash : 5627ff5c3adec0be79c8e202cbb7df8e8967f6c1

   Application ID : {42fbbaa9-0fc3-4606-9136-415e21ec20de}

2. Delete the certificate binding by running this command:

   ```
   netsh http delete sslcert ipport=0.0.0.0:8443
   ```

3. Install VASA provider 2.0.1.

   ```
   DataCore.Vasa.Provider.PackageInstaller.exe PASSWORD="$Password"
   ```

4. Stop the dcsvasa service.

5. Copy database backup files from:

   'C:\ProgramData\DataCore\VASA Storage Provider\Backup' to
   'C:\ProgramData\DataCore\VASA Storage Provider\'.

   Rename them to DcsVasa.mdf and DcsVasa_log.ldf.

6. Assign "Full control" permissions for user dcsvasa to files DcsVasa.mdf and DcsVasa_log.ldf.

7. Delete the certificate binding by running this command:

   ```
   netsh http delete sslcert ipport=0.0.0.0:8443
   ```

8. Add the binding for the certificate that you saved in step 2.

   ```
   netsh http add sslcert ipport=0.0.0.0:8443
   certhash=5627ff5c3adec0be79c8e202cbb7df8e8967f6c1 appid={42fbbaa9-0fc3-4606-9136-
   415e21ec20de
   ```

9. Start the dcsvasa service.

Fixes

Version 2.01

Problem: Changing the storage policy of a VVOL-based virtual machine in vCenter fails with error "A specified parameter was not correct spec.DeviceChange.device".

Cause: The VASA Provider does not return the VMW_VvolNamespace parameter for the QueryVirtualVolumeMetadata method.

Resolution: The QueryVirtualVolumeMetadata method now returns the VMW_VvolNamespace parameter.

Problem: Expanding the HDD of a VVOL-based virtual machine in vCenter fails with the error "A specified parameter was not correct spec.DeviceChange.device".

Cause: The VASA Provider does not return the VMW_VvolNamespace parameter for the QueryVirtualVolumeMetadata method.

Resolution: Method QueryVirtualVolumeMetadata is fixed to return parameter VMW_VvolNamespace.

Problem: When one of the SDS nodes on a VVOL-based virtual machine is in 'Stopped virtualization' state, it cannot be powered on.

Cause: When powering on a virtual machine, the VASA Provider waits until the VVOLs of the virtual machine are online. When one of the SDS nodes is stopped, the volumes never become online and the VASA Provider fails with a timeout.

Resolution: If any SDS node is stopped, the VVOLs will be forced online.

Problem: The storage vMotion of a VVOL-based virtual machine fails when one of the VASA Providers from a highly available VASA Provider group is offline.

Cause: When the active VASA Provider tries to synchronize with the offline partner, it takes too long until it discards the attempt, and vCenter fails with a timeout.

Resolution: The synchronization attempt will be discarded after a default of 4 seconds. This timeout value is configurable via parameter syncProxyOpenTimeout in the DcsVasa.exe.config file.

Known Issues

VASA Provider Registration

After registering the VASA Provider via the DataCore Deployment Wizard, it may take some time before the Storage System is displayed in the vCenter->Manage-> Storage Providers panel. Until the storage is brought online by a vCenter rescan, a message stating that No Storage System is displayed. Alternatively, stop and restart the DataCore VASA Storage Provider Service to manually initiate a rescan, or manually unregister and re-register the Storage Provider to correct this.

If a VASA Provider is manually unregistered from vCenter and then re-registered, it cannot be automatically unregistered from vCenter when the VASA Provider is subsequently uninstalled.

Creating a Virtual Machine from a Template Library

When creating a virtual machine (VM) from the Template Library, VMware ignores the DataCore storage mapping settings (Format: Thin Provisioning; Policy: VVOL No Requirements), and attempts to create the VVOL with the thick provisioning setting, resulting in an error. Instead, create the VM manually or from a template.

Snapshot

- The names of snapshots created in vCenter are not reflected in the SANsymphony management console.

- DataCore does not support vCenter snapshots with dual storage policy virtual machines.

Virtual Machine Names

Do not configure virtual machine names with 32 symbols ending with 10 digits, as this causes virtual machines to fail.

Virtual Machine Storage Policies

Migration or cloning of virtual machines with storage policies of different types (Mirror Policies, Dual Policies, Single Policies) is not supported.

Migrating Virtual Machines from VMFS to VVOL

VMs on a VMFS datastore that contain VMware snapshots may fail migration to a VVOL. Remove any VMware snapshots before proceeding with this procedure.

Migrating VMs on a mirrored VMFS datastore to a mirrored VVOL may sometimes fail with a message stating "The operation is not allowed in the current state." Retry the operation. If the failure persists, see the resolution section of the following VMware Knowledge Base article for possible solutions. http://kb.vmware.com/selfservice/microsites/search.do?language=en_US&cmd=displayKC&externalId=2046356

Migrating Storage or Hosts

If the migration of storage fails, pass-through disks may remain in the SANsymphony configuration. Call DataCore Customer Service for assistance in removing these disks. If a timeout failure occurs when migrating storage or hosts, retry the operation. Important Note: Before migrating storage because of a pool failure, modify the Host Preferred Server setting from "Preferred All" to "Auto Select" in the DataCore Management Console.

Storage Containers

- Once a storage container or VVOLs have been created from a SANsymphony disk pool, the pool can no longer be renamed.

- Once a storage container has been created from a virtual disk template, the virtual disk template can no longer be changed.

Getting Support

Register for DataCore support here:
https://www.datacore.com/support/support-registration.aspx

After registering, you'll have access to the DataCore Knowledge Base and be able to open support tickets at: https://datacore.custhelp.com/app/home