# Application Note

**December 2013**

# Installing and Configuring SnapSAN VASA Provider

## Summary

This Application Note describes how to install and configure the SnapSAN VASA Provider with a fibre or iSCSI attached SAN Array. This makes use of the VMware vCenter server and vSphere Client in an ESXi 5.1 environment.

# Introduction

The vStorage APIs for Storage Awareness (VASA) is a set of application program interfaces that enables VMware vSphere vCenter to recognize the capabilities of the SnapSAN storage arrays. Such capabilities, including RAIDs and native thin provisioning are made visible within vCenter.

The visibility makes it easier for virtualization and storage administrators can make decisions about how data stores should be maintained. For example, determining which SnapSAN logical disk should host a particular virtual machine.

The Overland SnapSAN VASA provider software gets installed on the same system that hosts the SnapSAN Manager Server.

# Required Information, Tools, and Files

Before you begin these procedures, the following information, tools, and files are required.

## Prerequisites

Prior to performing these procedures, ensure that you have the following:

- Overland Storage SnapSAN S3000/S5000 Disk Array must be installed and configured. You can get additional technical support from our website at http://support.overlandstorage.com, or by contacting Overland Storage using the information found on the Contact Us page on our web site.
- Verify that the following are installed on the Server:
  - Java Runtime Environment (JRE)
  - SnapSAN Manager Server Web Management Interface
  - VMware vCenter Server.
- The VASA Provider is installed on the SnapSAN Manager Server (iSMS). In order for VASA to configure with VMware vCenter, it needs to be registered with the SnapSAN Manager Server.
- This document assumes that vCenter Server is already installed and running, and that the reader has a general understanding and familiarity with the VMware ESXi environment. Any and all additional information can be attained through the VMware Knowledge Center.
- Execute `java` and `keytool` from a DOS shell in a directory other than where the JRE is installed. If there is a problem, see JRE Configuration for keytool.

## JRE Configuration for keytool

When executing java and keytool, if the following message is shown it means the path configuration is not correctly set for JRE:

```
C:\keytool
'keytool' is not recognized as an internal or external command, operable program
or batch file.
```

In this case, the Windows path in Environment Variables needs to be modified:

1. Navigate to **Start > Control Panel**. Double-click the **System** feature (or right-click **System** and select **Open**).
2. From the **Advanced** tab, click **Environment Variables**.
3. Select **Path** or **PATH** from the **System Variables** section, and click **Edit**.

4. Verify that the **Variable Name** is either **Path** or **PATH**.

5. In the **Variable Value** field at the end of the existing variable value, you need to append to it a semicolon (;), followed by the location of the directory where JRE is installed, and "\bin".

   For example, if the location of the directory where JRE is installed is `C:\Program Files (x86)\Java\jre6`, then append "`;C:\Program Files (x86)\Java\jre7\bin`" the end of the existing variable value.

   NOTE: Do not edit the existing Variable Value, just add a semicolon followed by the location of the directory where JRE is installed and "\bin" to the end of it.

6. Click **OK** to confirm the addition.

7. Verify if the **path configuration** is correctly set for JRE.

8. Open a new **DOS command prompt** and execute `java` and `keytool` commands.
   If the error previously documented does not appear, the path is then correctly configured:

   ```
   C:\java
   Usage: java [-options] class [args...]
   :
   C:\keytool
   keytool usage
   :
   ```

## Versions

The test environment used for illustration in this document uses the following versions:

- Java JRE version 7 update 40
- SnapSAN Manager Server version 8.2.060
- SnapSAN S5000 software version 082R.007
- SnapSAN S5000 firmware version U22R.007
- SnapSAN VASA Provider version 1.1.001
- VMware ESXi, 5.1, 799733
- VMware vCenter Server, 5.1, 799733
- VMware vSphere Web Client 5.1.0, Build 786111

# VASA Provider Installation

1. Login to the Windows system as an **Administrator** account.

2. From the VASA provider installation package, double-click the installation **setup file** to start the installation.

3. When the Installation Wizard launches, click **Next**.

4. Accept the **license** agreement, and click **Next**.

5. Browse the **path** for installation, and click **Next**.

6. Provide the **Port Numbers** (1, 2, 3, and 4) you want to use for the plug-in, and click **Next**.

7. Provide the **credentials** and click on **Next**.

   NOTE: You can save the User Name and Password configured here, as you may need them to register the VASA provider with vCenter Server.

8. Click **Finish**.

# VASA Provider Configuration

After installing the VASA Provider, the next steps are to configure the SnapSAN Array. Perform the following tasks:

- Register the Disk Array.
- Restart the VASA Provider.
- Restart the SnapSAN Manager.

## Register the disk array

Register the disk array that is managed by the VASA Provider.

NOTE: It is strongly recommended to use the floating IP address for the disk registration. If no floating IP address is set, specify the IP address of either CONT0 or CONT1.

1. To **register** the disk array, run the following command:

   ```
   <VASA_Provider_installation_directory>\bin> SetProviderConf -a <IPaddress>
   ```

   For example, if the **VASA Provider installation directory** is *C:\Program Files (x86)\Overland\iSM VASA Provider*, then the command to run for disk array registration would be:

   ```
   C:\Program Files (x86)\Overland\iSM VASA Provider\bin>SetProviderConf -a
   <IPaddress>
   ```

   A message indicating successful disk array registration appears.

2. To check the registered disk array, you can see a list of registered IP addresses by executing the command **SetProviderConf** with the **–l** option for the confirmation.

   For example:

   ```
   C:\Program Files (x86)\OVERLAND\iSM VASA Provider\bin>SetProviderConf -l
   [DISKARRAY]
   <IPaddress>
   ```

3. To **delete** a registered disk array, execute the command `SetProviderConf` with the `-d` option and then specify the IP address of the disk array you want to delete, for the argument. Specifying the option `-d` deletes a registered IP address.

   For example:

   ```
   C:\Program Files (x86)\OVERLAND\iSM VASA Provider\bin>SetProviderConf -d
   <IPaddress>
   ```

   A message indicating successful delete action appears.

## Restart the SnapSAN Manager

1. Navigate to **Start > Control Panel**.

2. Navigate to the **Administrative Tools > Services** window.

3. Right-click the service labeled **SnapSAN Manager**, and select **Restart**.

## Restart the VASA Provider

1. Navigate to the **Start > Control Panel** window.

2. Navigate to the **Administrative Tools > Services** window.

3. Right-click the service labeled **Overland Storage VASA Provider 32-bit iSM_VASA_Provider** and select **Restart**.
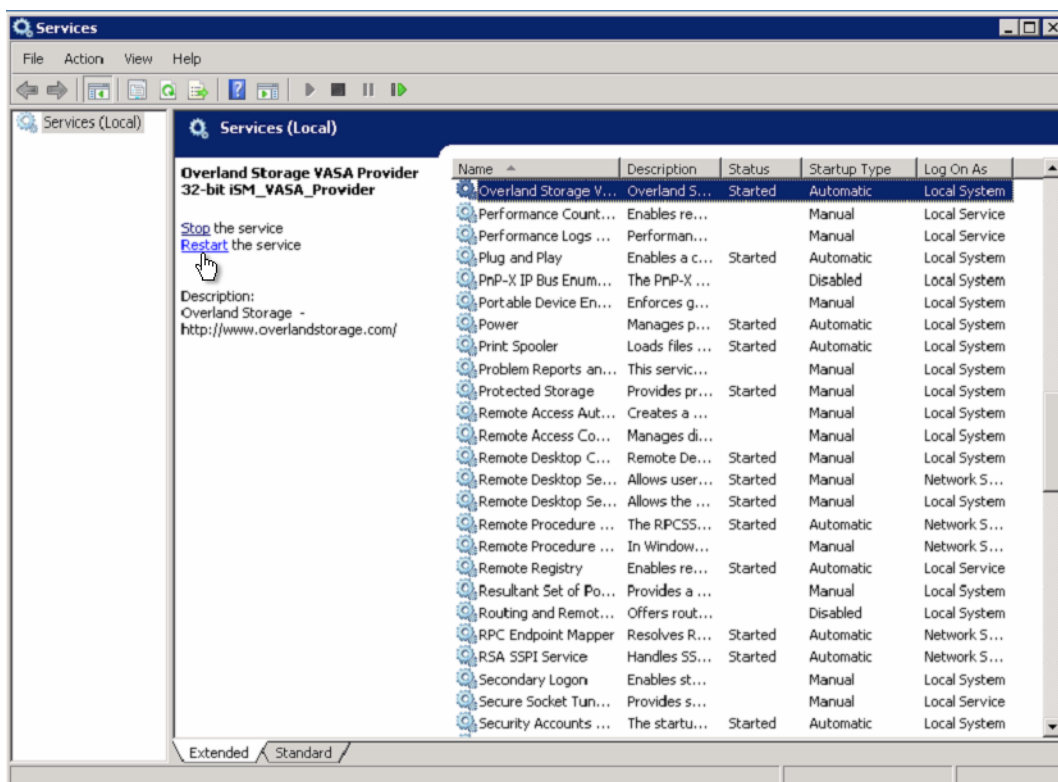
# Registering the VASA Provider with the vCenter Server

## Prepare the Vendor Provider Certificate

In order to register the VASA Provider with VMware vCenter Server, a certificate is required. Use these steps to copy the certificate file.

1. You need the vendor provider certificate which is a file labeled **ismvasa.cer** which needs to be copied to the system where VMware vSphere Client is activated.
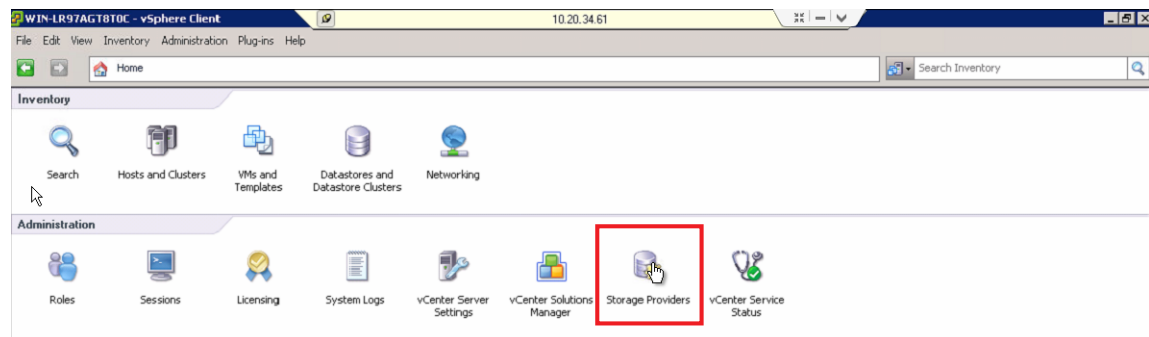
   NOTE: This file cannot be reissued.

2. The vendor provider certificate is saved in the directory:

   `<VASA_Provider_installation_directory>\conf\`
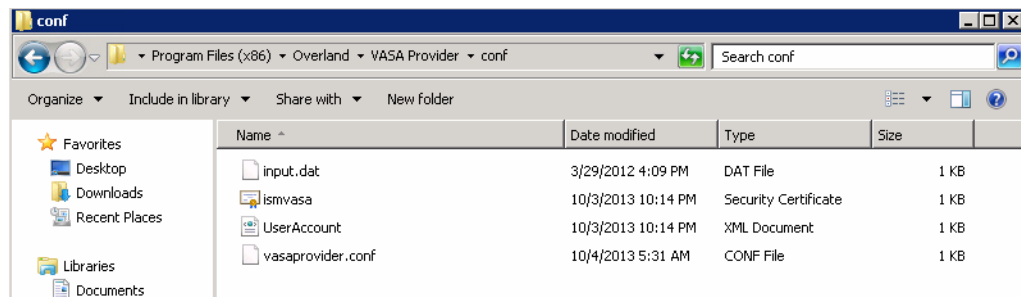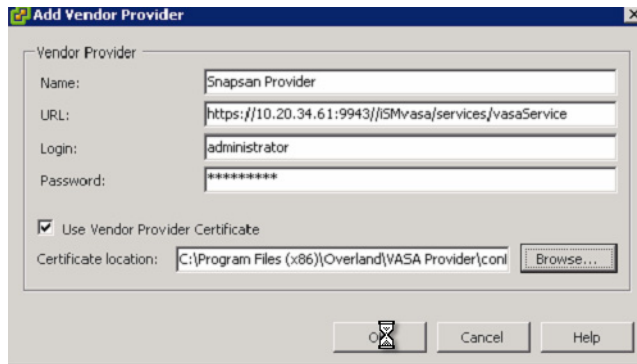


## Register VASA Provider with vCenter Server

1. Start the **VMware vSphere Client,** and connect to the **vCenter Server**.

2. At the **Home and Administration** section, double-click **Storage Providers**.



3. Click the **Add** link option.
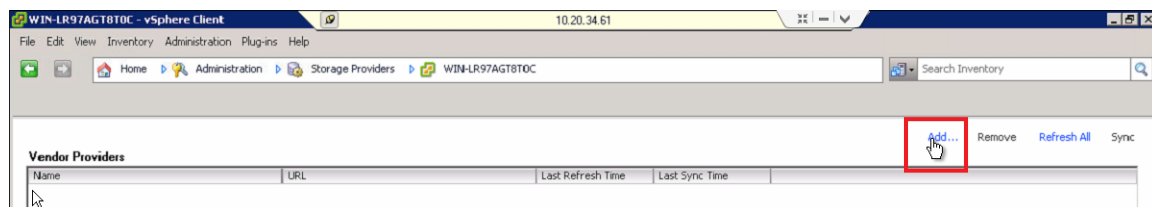
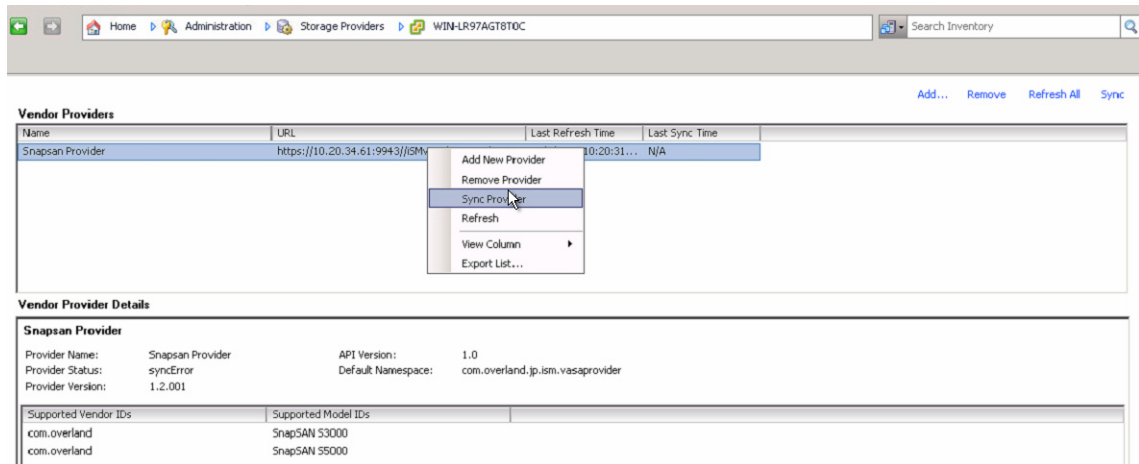4. Provide the following Vendor Provider **information**:



- **Name**
- **URL** in the following format:

  https://<IP address of where the server VASA Provider is installed>:<Number configured for 4th Port while installing>/iSMvasa/services/vasaService

  For example, if the server's IP address is 10.20.34.61 and the 4th port number is 9943, then the URL will be:

  ```
  https://10.20.34.61:9943/iSMvasa/services/vasaService
  ```

- **Login** and **Password**. These are the credentials you used during the installation of VASA.
- Check the **Use Vendor Provider Certificate** box.
- Browse to the **Certificate location** where you copied the vender provider certificate file (**ismvasa.cer**) from the previous steps.

5. Click **OK**.

6. The registered entry is shown in the Storage Provider window. Right-click it and select the option **Sync Provider**.

The following shows a registered VASA Provider in VMware vCenter Server.



# Verifying Storage Information

1. Start the **VMware vSphere Client,** and connect to the **vCenter Server**.

2. Navigate to the **Home > Management > VM storage profiles** and click **Manager Storage Capabilities**.

   Depending upon the features implemented, the storage capabilities that a storage vendor guarantees are displayed.
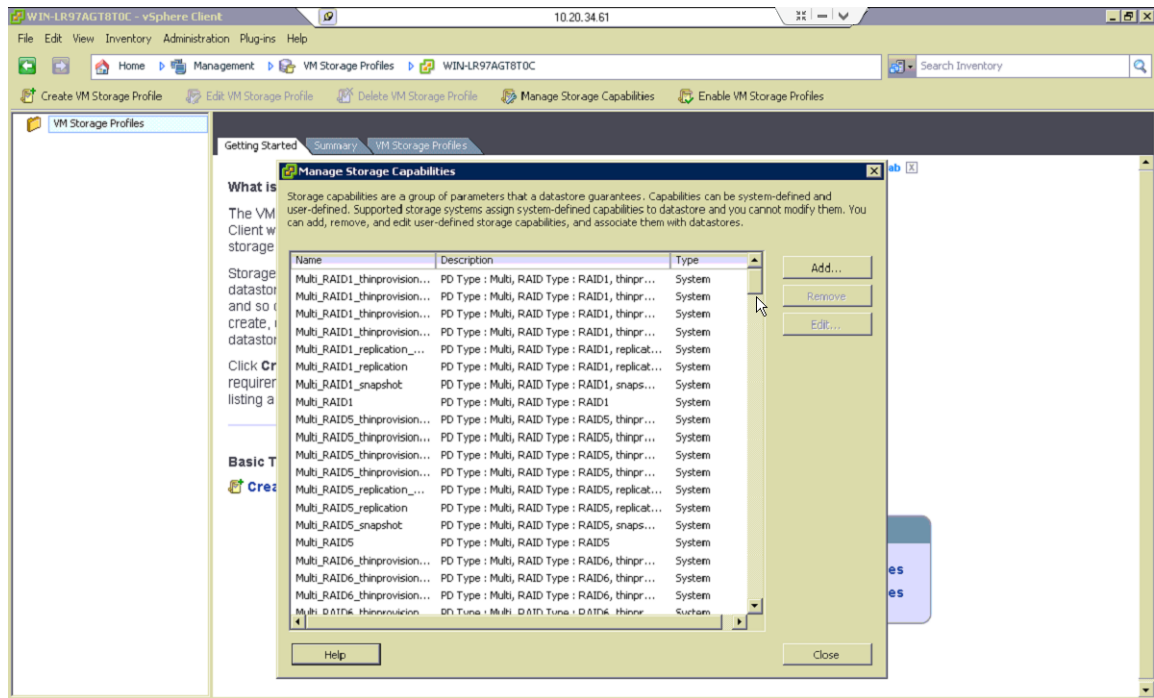


3. Navigate to the path **Home > Inventory > Datastores and datastore clusters**.

4. Select the datastore assigned from Overland Storage. Click the **Summary** tab and check for the **system storage capability** in the **Storage Capability** section.

   In the following image it shows **SAS_RAID1**.
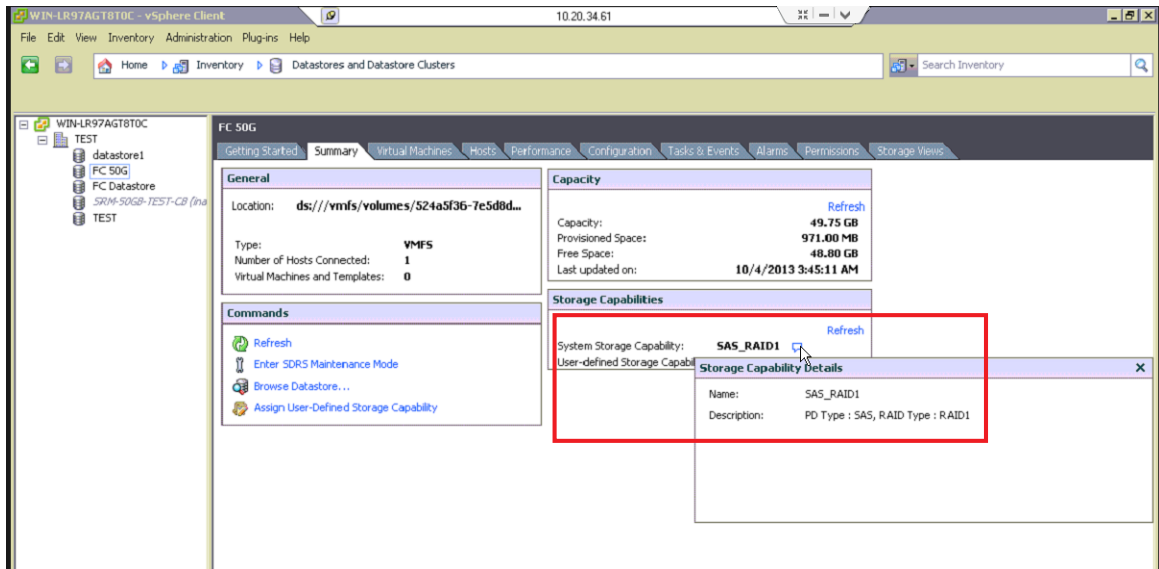
5. Navigate to the path **Home** > **Inventory** > **Hosts and clusters** and select host from the left pane.

6. Click the **Configuration** tab from the right pane and select the datastore from the **Datastores** list.

   The datastore details are displayed.
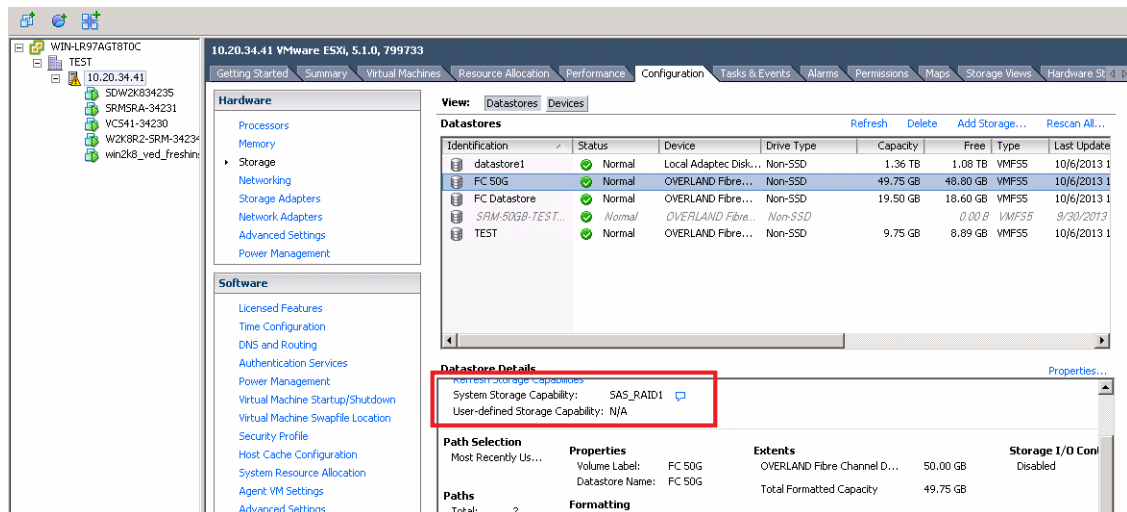


# Uninstalling the VASA Provider

1. Verify that **vCenter Server** is running.

2. Navigate to the **Start > Setting > Control Panel** window.

3. Double-click the **Add or Remove Programs** feature, and the select the program **Overland Storage VASA Provider**.

4. Click **Uninstall**.

5. To start the uninstall process, click **Yes**.

6. Once uninstall completes, click **Finish**.

## Troubleshooting

To avoid any errors when installing or uninstalling the VASA provider, it is imperative that the vCenter Server services are started and have not stopped.