

VM Storage Profiles- Getting started

Depending on the size of your VMware environment, you may have detailed steps to deploy virtual machines. These steps should include gathering requirements for the virtual machines disks, and selecting the right datastore to meet the requirements.

Profile-Driven Storage, accessed from VM Storage Profiles on the Home page in vCenter, can help decrease the administration to deploy a virtual machine and ensure it is deployed to the correct datastore.

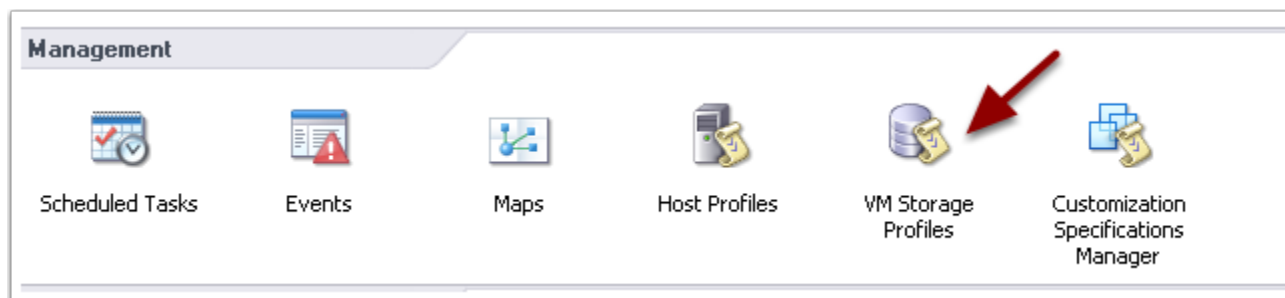
A bit more detail on VM Storage Profiles -

Storage Profiles allow you to assign information about your storage array, or characteristics, such as the RAID type and performance level. You can create profiles with any information that is meaningful to you and your environment.

There are two kinds of Storage Profiles, User Defined and Array Aware (VASA). If your storage vendor supports the latest vStorage API's, it can provide the characteristics of the back end storage, such as RAID level and if the storage is replicated. If your array does not support these API's you can create the User-Defined Storage Profiles with information about your array, or create tier levels such as gold, silver and bronze.

Here's how to get started-

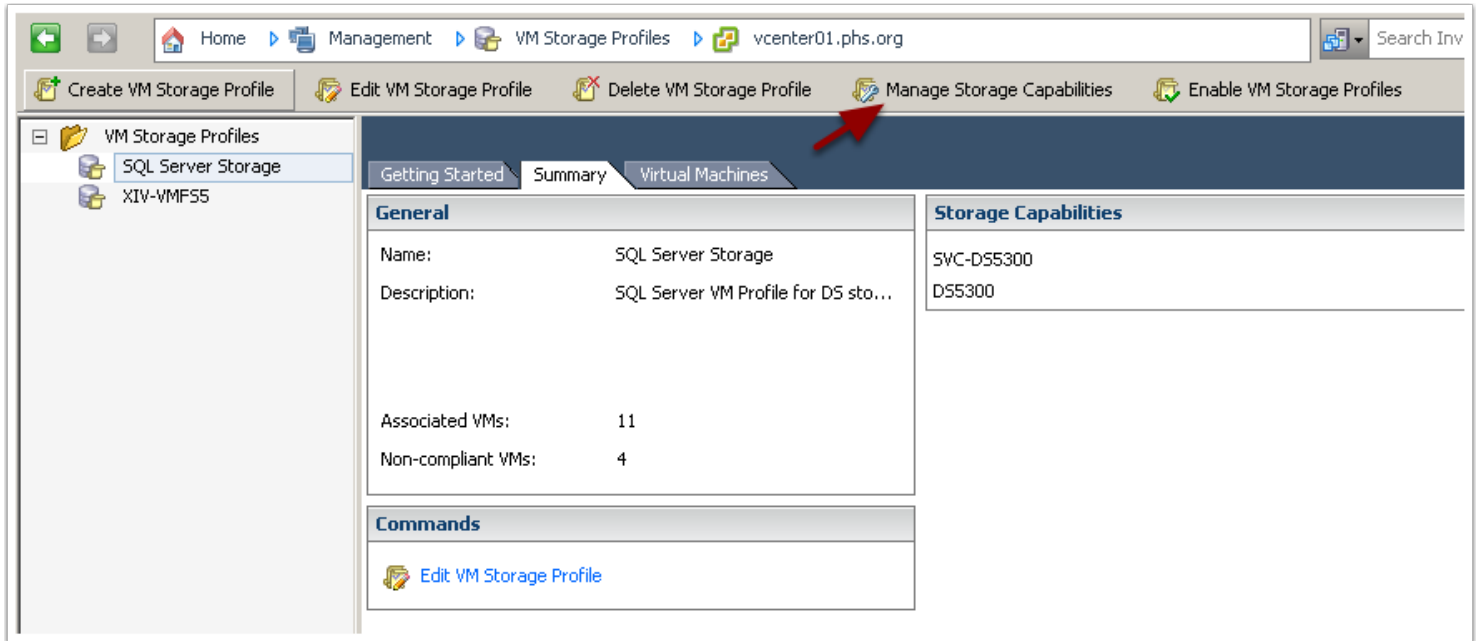
From the Home page of your vSphere client, select VM Storage Profiles-



Configuring vSphere 5 Profile-Driven Storage-

Step 2

You first want to create a Storage Capability, select Manage Storage Capabilities-

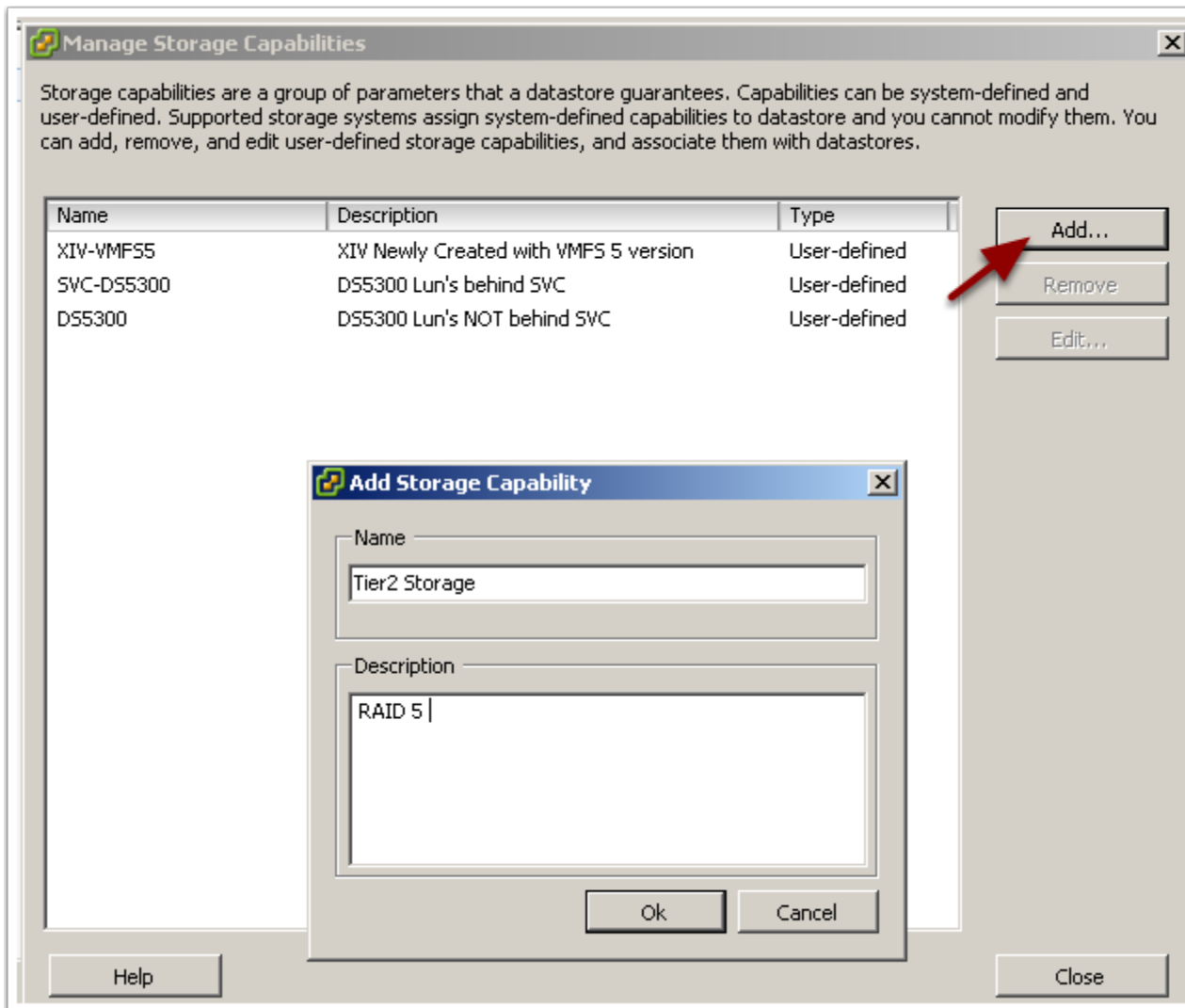


The screenshot shows the vSphere 5.5 vCenter console interface. The breadcrumb navigation at the top reads: Home > Management > VM Storage Profiles > vcenter01.phs.org. The main toolbar contains several actions: 'Create VM Storage Profile', 'Edit VM Storage Profile', 'Delete VM Storage Profile', 'Manage Storage Capabilities' (highlighted with a red arrow), and 'Enable VM Storage Profiles'. On the left, the 'VM Storage Profiles' tree shows 'SQL Server Storage' and 'XIV-VMF55'. The main content area displays the 'Summary' tab for the 'SQL Server Storage' profile. The 'General' section shows: Name: SQL Server Storage, Description: SQL Server VM Profile for D5 sto..., Associated VMs: 11, and Non-compliant VMs: 4. The 'Storage Capabilities' section lists 'SVC-D55300' and 'D55300'. A 'Commands' section at the bottom contains an 'Edit VM Storage Profile' link.

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Step 3

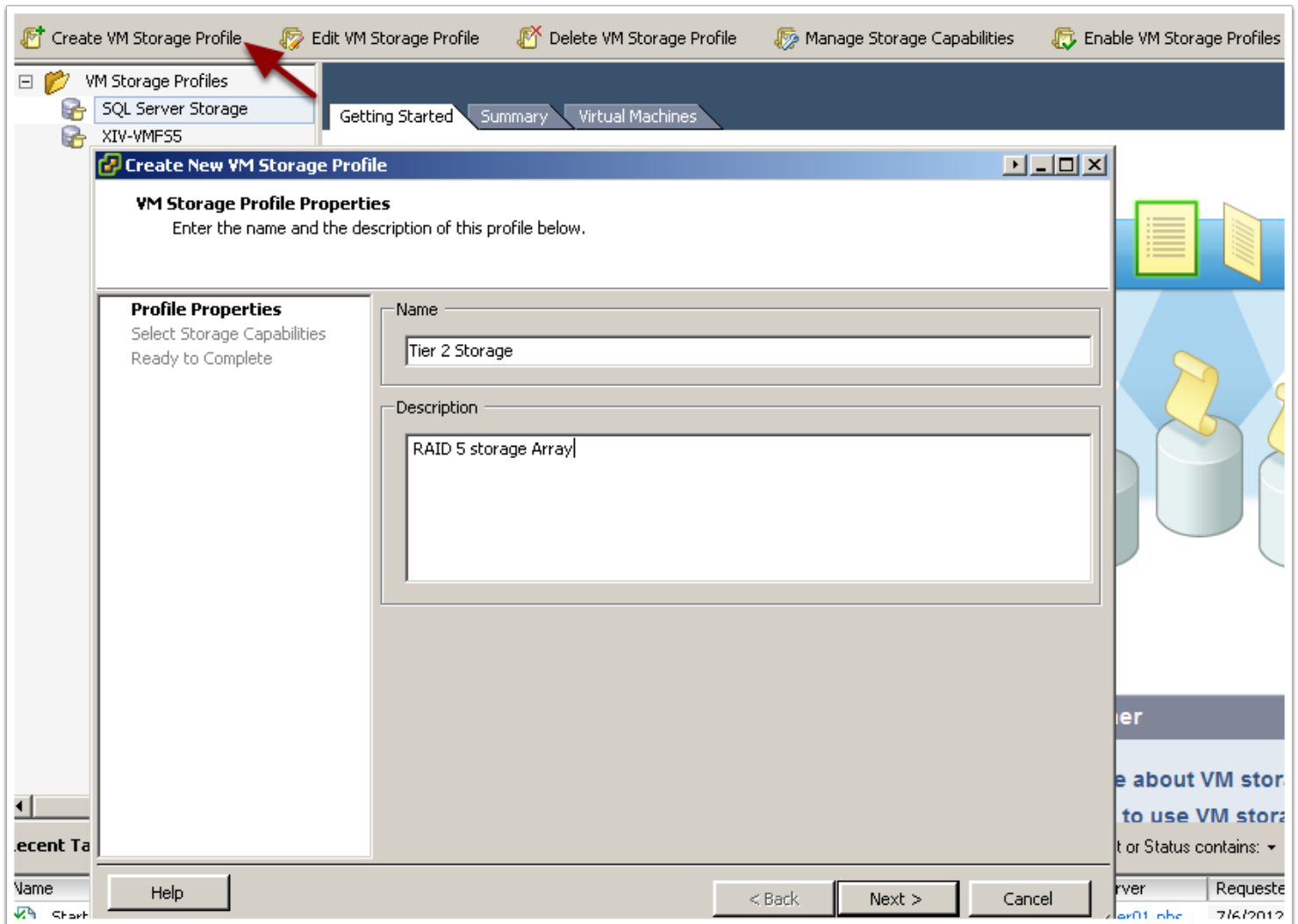
In the Manage Storage Capabilities screen, select Add. This is where you create a User Defined Storage Capability. You can create a descriptive name and add details for your Storage Capability. You can also modify your existing Storage Capabilities from this screen. Click OK and Close when you are finished.



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Step 4

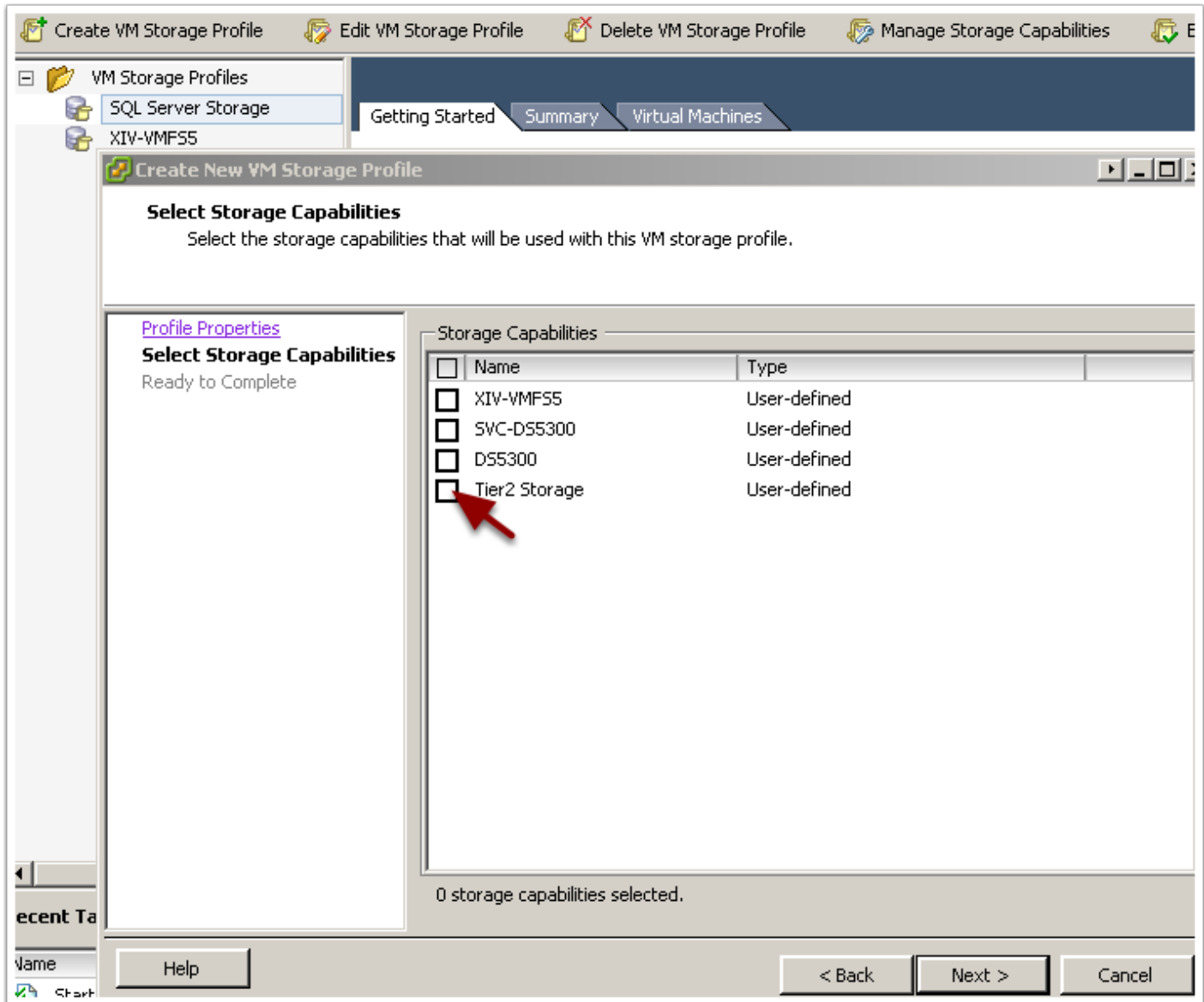
Now that you have your Storage Capability created, you can create a VM Storage Profile. In VM Storage Profiles select Create VM Storage Profile. Give your new storage profile a name and description and click next.



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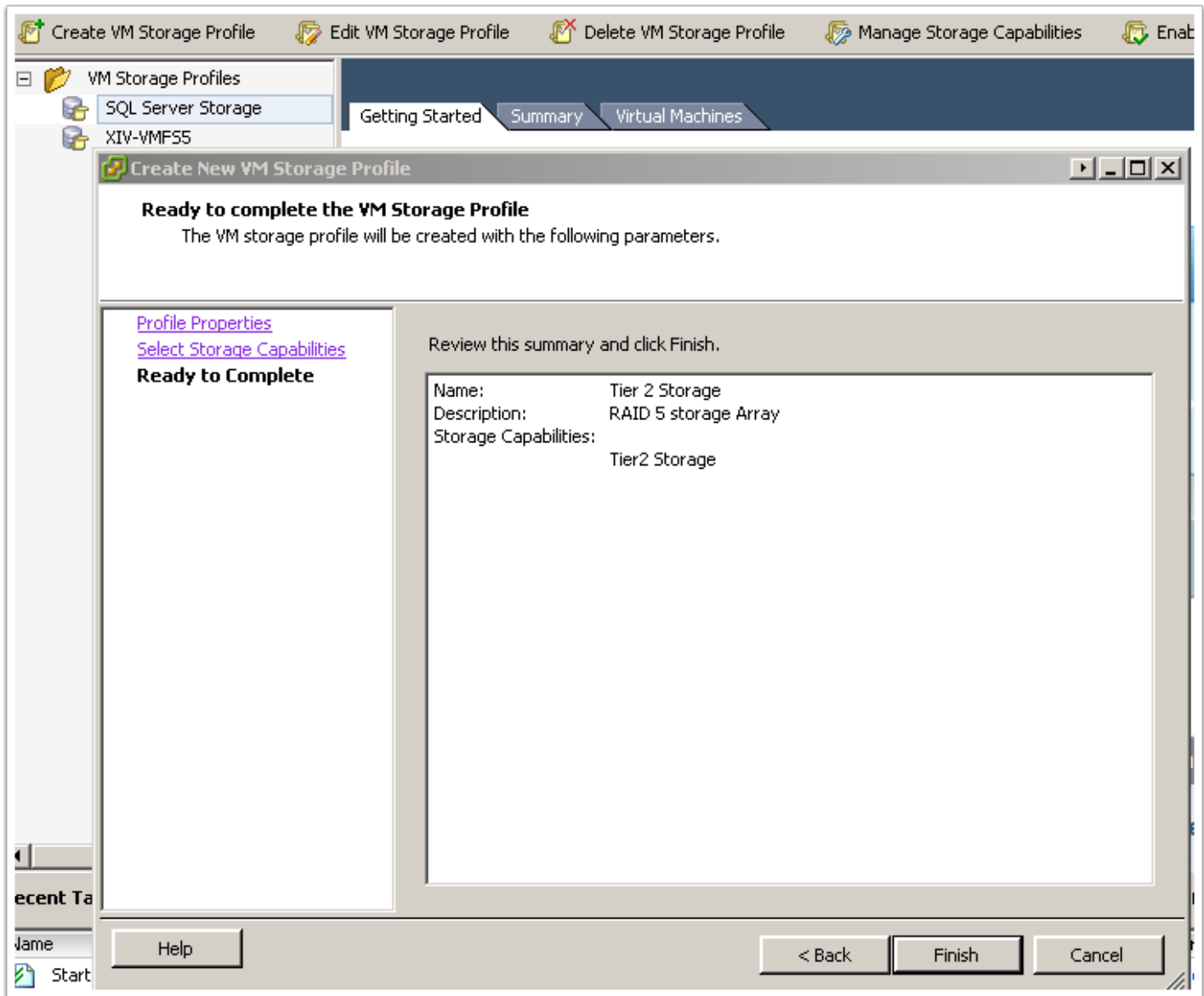
Step 5

The next screen will display the Storage Capabilities that you created in step 3. Select the storage capability that you want to associate with this storage profile and click next.



Step 6

Review the summary page and click finish to complete.



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Step 7

The next step is to apply your VM Storage Profile to your clusters. Click on Enable VM Storage Profiles, and then select the cluster, or clusters that you want to apply it to. Select the Enable option. Notice you can disable a Storage Profile on a cluster as well.

The screenshot shows the 'Enable VM Storage Profiles' dialog box in vSphere 5. The dialog has a title bar with several icons and the text 'Enable VM Storage Profiles'. Below the title bar, there is a brief instruction: 'Enable or disable VM storage profiles for a host or a cluster. To enable the feature for a host, the host must have a license that includes VM storage profiles. To enable the feature for a cluster, all hosts in the cluster must have a license that includes VM storage profiles.'

The main area of the dialog is divided into two sections: 'Hosts and Clusters:' and 'Hosts in cluster:'. The 'Hosts and Clusters:' section contains a table with the following data:

| Name | Datacenter | Licensing Status | VM Storage Profile Status | Notes |
|------------------|------------|----------------------|---------------------------|-------|
| AppCluster01 | PAC | All hosts Licensed | Enabled | |
| MGMT01 | PAC | All hosts Licensed | Disabled | |
| AppCluster02 | PAC | All hosts Licensed | Enabled | |
| AppCluster03 | PAC | All hosts Licensed | Enabled | |
| CipProdCluster01 | PAC | All hosts Licensed | Unknown | |
| AppCluster04 | PAC | All hosts Licensed | Enabled | |
| ER10Cluster01 | PCO | All hosts Unlicensed | Unknown | |
| ER10Cluster02 | PCO | All hosts Unlicensed | Unknown | |
| Tier3AppCluster1 | PCO | All hosts Licensed | Unknown | |
| Tier2AppCluster2 | PCO | All hosts Licensed | Unknown | |
| Tier2AppCluster1 | PCO | All hosts Licensed | Unknown | |

The 'Hosts in cluster:' section contains a table with the following data:

| Name | Licensing Status |
|---------------------|------------------|
| pacesx11-10.phs.org | Licensed |
| pacesx12-9.phs.org | Licensed |
| pacesx12-10.phs.org | Licensed |
| pacesx11-9.phs.org | Licensed |

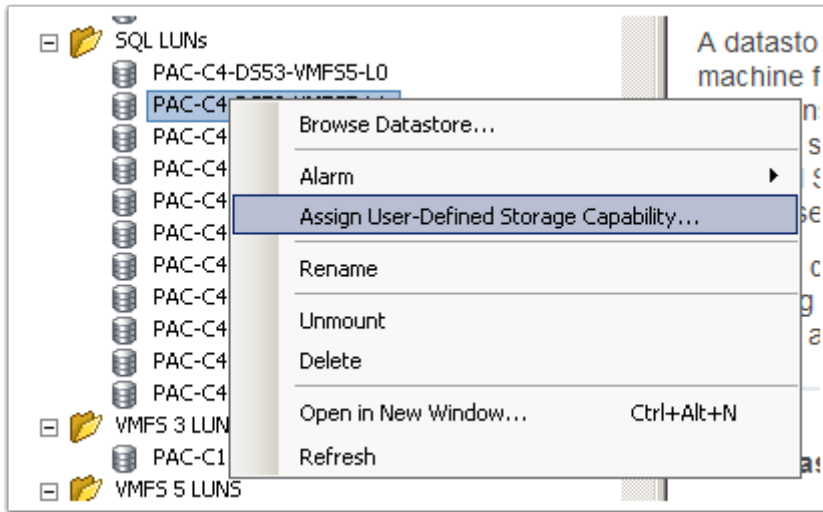
At the bottom of the dialog, there are three buttons: 'Help', 'Refresh', and 'Close'. A red arrow points to the 'Enable' button in the top right corner of the dialog.

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Step 8

You can create and assign a User-Defined Storage Capability from the datastores inventory as well.

Right click on the datastore and select Assign User-Defined Storage Capability.

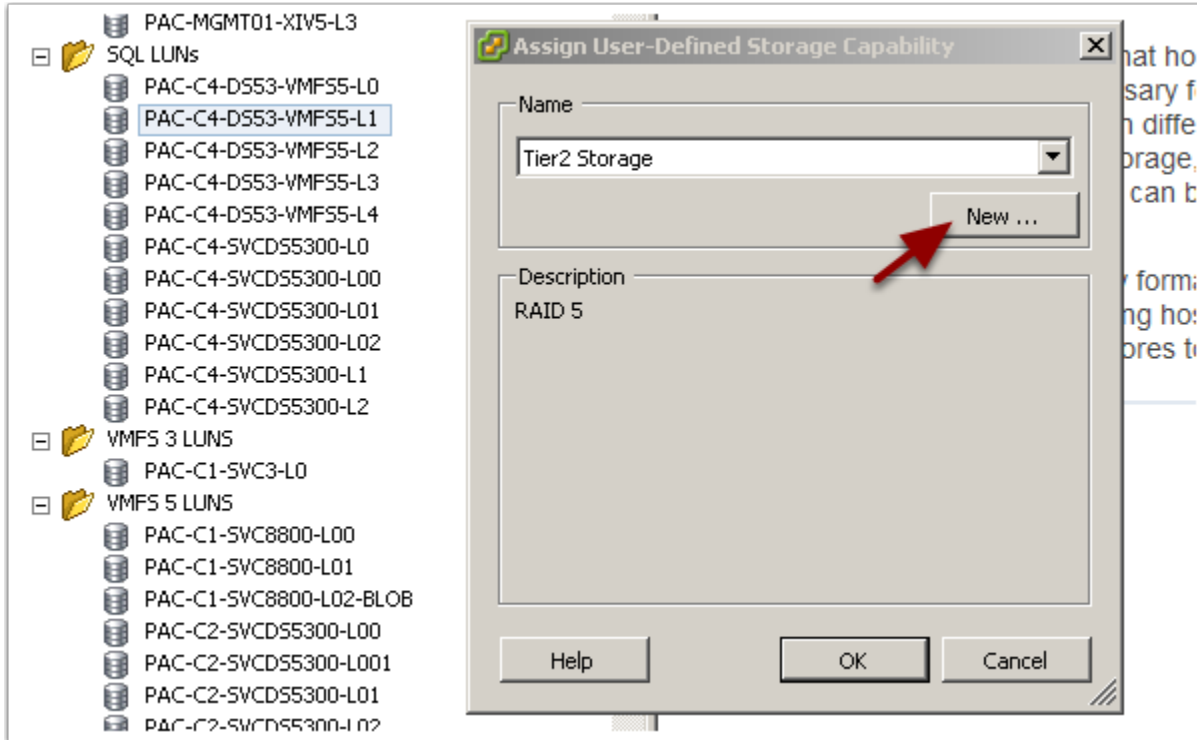


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Step 9

The User-Defined Storage Capability box will then allow you to select one of the Storage Capabilities you have created or create a new one by selecting New...

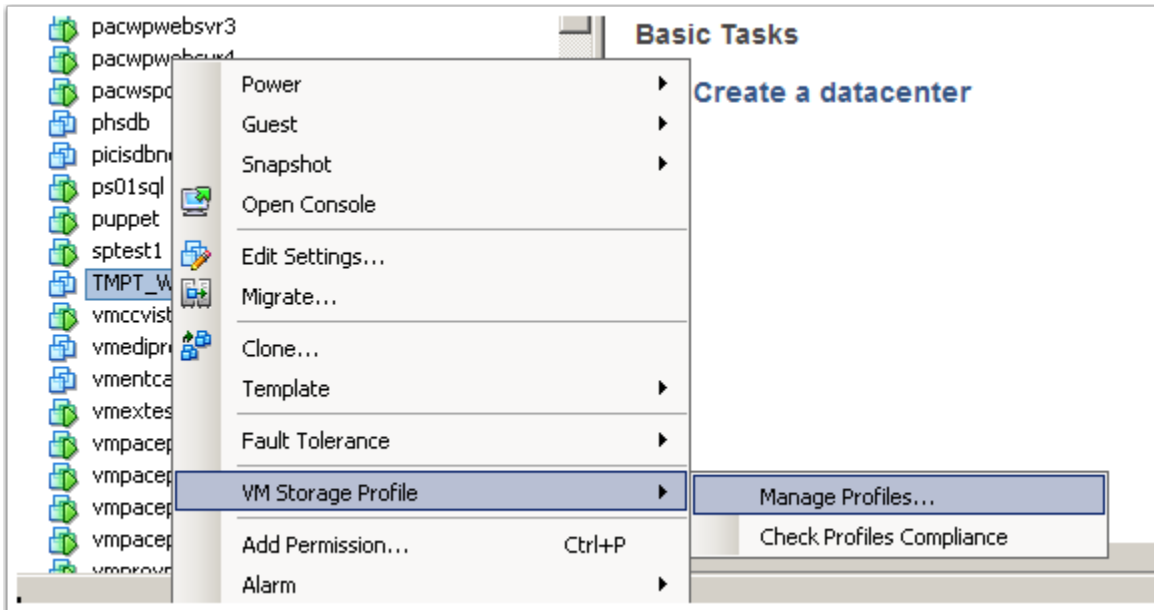
Selecting New will bring up the dialog box that is shown in step 3.



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Step 10

Finally we can to the reason we are doing all this, apply the Storage Profile to our VM. In your inventory, select the VM you want to apply the Storage profile to, right click and select VM Storage Profile - Mange Profiles

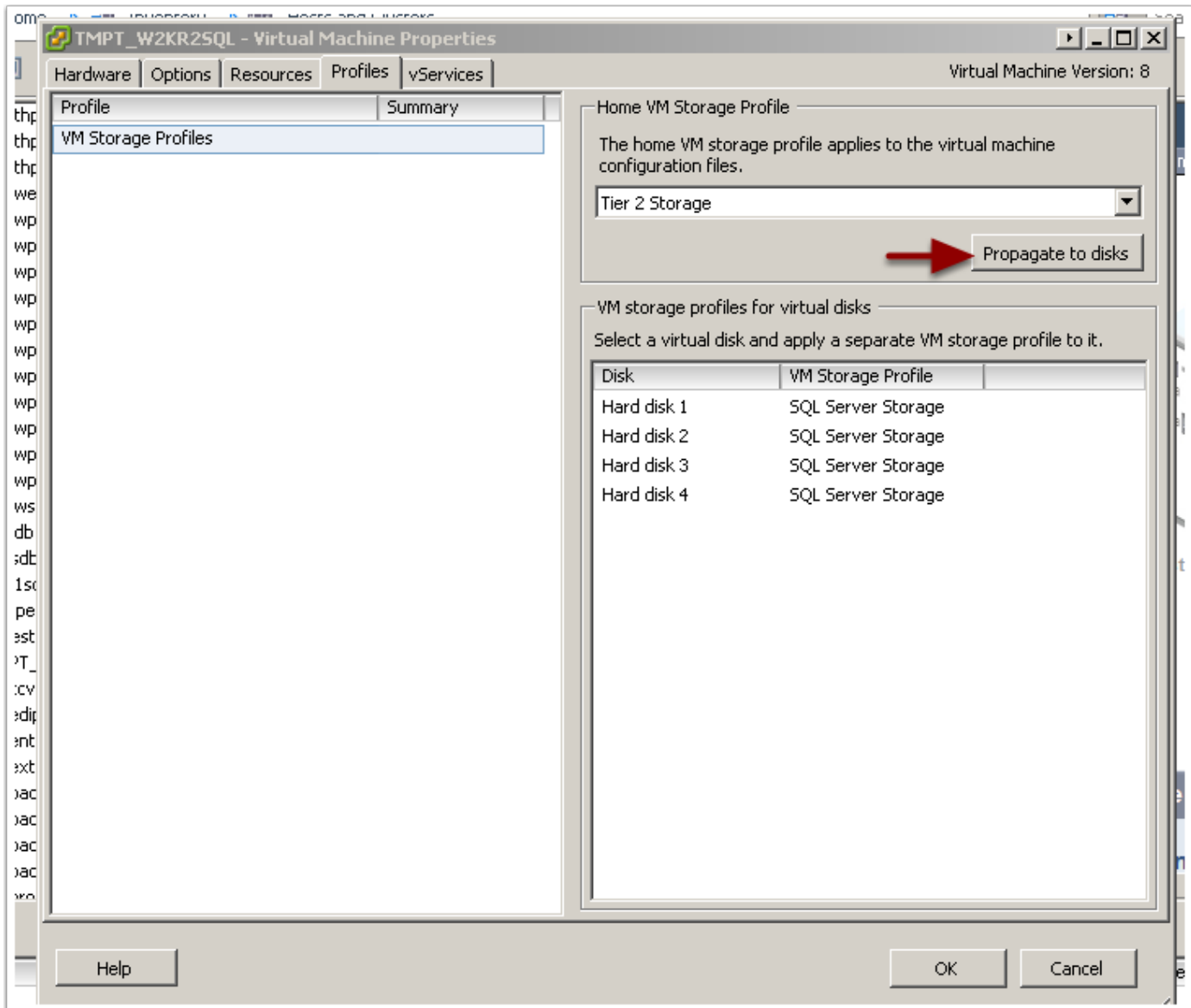


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Step 10

From the Home VM Storage Profile dialog box, select the profile you want to apply to the virtual machine and then click Propagate to disks.

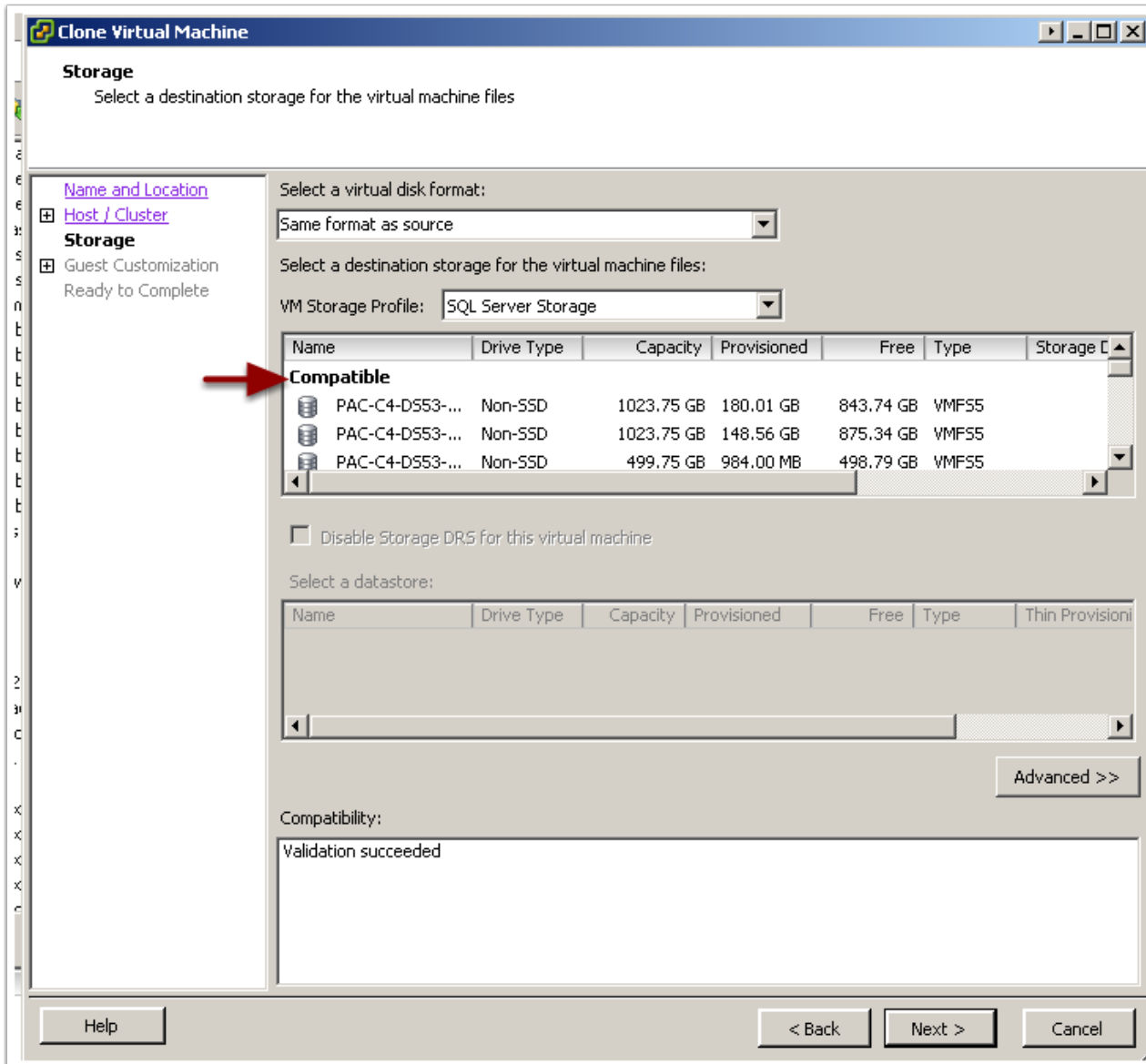
If you have multiple disks on the virtual machine you can set a different storage profile on each hard disk.



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Step 11

So now when you clone a virtual machine that has the storage profile attached, you are presented with the list of datastores that are Compatible to your profile.



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Step 12

You can check to see if a virtual machine is compliant with the assigned Storage Profile. select the summary tab of the virtual machine and check the VM Storage Profiles is displayed on the lower right.

The screenshot shows the vSphere VM Summary page for a virtual machine named 'misc04sql'. The 'Summary' tab is selected. The page is divided into several sections:

- General:** Guest OS: Microsoft Windows Server 2008 R2 (64-bit); VM Version: 8; CPU: 1 vCPU; Memory: 2048 MB; Memory Overhead: 37.74 MB; VMware Tools: Running (Current); IP Addresses: (empty); DNS Name: misc04sql; EVC Mode: N/A; State: Powered On; Host: pacesx15-8.phs.org; Active Tasks: (empty); vSphere HA Protection: Protected.
- Resources:** Consumed Host CPU: 29 MHz; Consumed Host Memory: 2080.00 MB; Active Guest Memory: 40.00 MB; Provisioned Storage: 42.05 GB; Not-shared Storage: 42.05 GB; Used Storage: 42.05 GB. A 'Refresh Storage Usage' link is present.
- Storage:** A table showing storage usage for 'AppCluster4-XIV5' with a status of 'Normal'.
- Network:** A table showing network configuration for 'dvPG-152' with a type of 'Distributed port group' and a status of 'OK'.
- Commands:** A list of actions: Shut Down Guest, Suspend, Restart Guest, Edit Settings, and Open Console. A red arrow points to this section.
- VM Storage Profiles:** VM Storage Profiles: SQL Server Storage; Profiles Compliance: Noncompliant (7/9/2012 3:33:54 PM). A 'Refresh' link is present.

Hopefully your Storage Profiles will help reduce some misconfigurations when deploying virtual machines, and save time moving them to the correct datastores!