VMware ESXi 5.5 – 6.5 Host Configuration

Rapid EqualLogic Configuration Series
Implementation Guide

September 2017

Revisions

Date	Status
April 2012	Initial release
September 2012	Updates for VMware® ESXi™ 5.1 and MEM 1.1.1
October 2012	Correction in section 2: “Enable flow control on iSCSI NICs”
December 2012	Added info for connecting to iSCSI volumes
April 2013	Added info for setting Software Initiator LoginTimeout parameter
December 2013	Added info for ESXi 5.5, MEM 1.2, and Dell™ PS Series firmware version 7
July 2015	Added info for ESXi 6.0, MEM 1.3, and Dell PS Series firmware version 7.1.x Removed info for ESXi 4.x and 5.0
September 2017	Added info for ESXi 6.5 and Dell PS Series firmware version 9.x Removed info for ESXi 5.1

Document conventions

Format	Description	Example
Bold	User input: menus, tabs, buttons	In the **Console** tab, select **Troubleshooting** and click **OK**.
[**Keystroke**]	Keystroke	Verify the results and press [**Enter**].
[**Key1**]+[**Key2**]	Combination keystroke	Press [**Alt**]+[**F1**] to open the local console.
`Screen text`	Console or command-line text	Type the command: `setup.pl`
`Italic screen text`	Placeholder or variable	Type: `server=`*`host IP address`*

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1 Prerequisites

This document is one part of a complete installation guide series from the Rapid EqualLogic Configuration Portal. Please make sure that you have the complete set for your configuration before proceeding.

Before proceeding:

- Ensure that ESXi 5.5, 6.0, or 6.5 is installed on the host server.
- Update the ESXi 5.5, 6.0, or 6.5 host by applying all VMware patches. The recommended method is to patch the ESXi host using VMware vCenter® Update Manager.
- Ensure that the latest PS Series array firmware is installed. To download PS Series firmware and instructions, visit https://eqlsupport.dell.com (login required).
- Review Best Practices for Implementing VMware vSphere in a Dell PS Series Storage Environment to ensure proper configuration for your environment.

The information in this document was confirmed using ESXi 6.5 Update 1 (build 5969303) installed on the host and PS Series firmware version 9.1.2.

2 Enable flow control on iSCSI NICs

The following procedure requires physical or remote SSH access to the server. Refer to VMware KB article 101790 for more information on using the ESXi console in Tech Support Mode.

1. At the ESXi console, type: `esxcli nic pauseParams list`
2. The available NICs, support for pause parameters, and each NICs RX and TX pause parameter setting are among the information displayed.
3. Determine which vnmics are assigned to adapters used for SAN connectivity, and confirm both Pasue RX and Pause TX are set to true.
4. If RX and TX are shown as **true**, proceed to section 3, as no further action is needed.
   If one or both are showing **false**, execute the following steps:

   a. At the ESXi console, type: `vi /etc/rc.local.d/local.sh`
   b. Type the letter `o` (lowercase) to append a new line to the file.
   c. Type: `ethtool --pause vmnic# tx on rx on` (substitute the # that corresponds to the NICs connected to the SAN identified in the steps above) and press [**Enter**].

   Repeat this for each NIC that is connected to the SAN before proceeding to the next step.

5. Press [**Esc**] and type the following:
   `:wq`
6. Press [**Enter**] to save the file.
7. Restart the system to apply the changes.

For more information, refer to VMware KB article 1013413.

3 Configure additional security access for ESXi 6.0

1. To enable SSH access to the ESXi host using the vSphere Web Client, select **Host > Manage** in the **Navigator** pane, then select **TSM-SSH** in the **Services** tab, and click **Start**.

Note: SSH can also be enabled via the ESXi console: **Troubleshooing Options > Enable SSH**.

Note: The VMware vSphere® Command Line Interface (version-specific for the environment) must be installed on the management server.

2. Connect to the ESXi host using an SSH utilty.
   a. Type the command:
      `openssl x509 -sha1 -in /etc/vmware/ssl/rui.crt -noout –fingerprint`
   b. Copy the output immediately following `SHA1 Fingerprint=`
   c. Exit the SSH session/utility.
3. From the vSphere CLI command prompt, change to the directory:
   C:\Program Files (x86)\VMware\VMware vSphere CLI\Perl\apps\general
4. Type the command:

```
credstore_admin.pl add –server ESXi host IP address --thumbprint output
copied from item 2b above
```

For more information, refer to VMware KB article 2108416.

4 Install and configure the Multipathing Extension Module

Note: The Multipathing Extension Module (MEM) requires VMware vSphere licensing of:
Version 5.x - Enterprise or Enterprise
Version 6.x - Standard or higher

1. To place the ESXi host in Maintenance Mode, right-click the ESXi host from vSphere Web client and select **Enter Maintenance** mode.

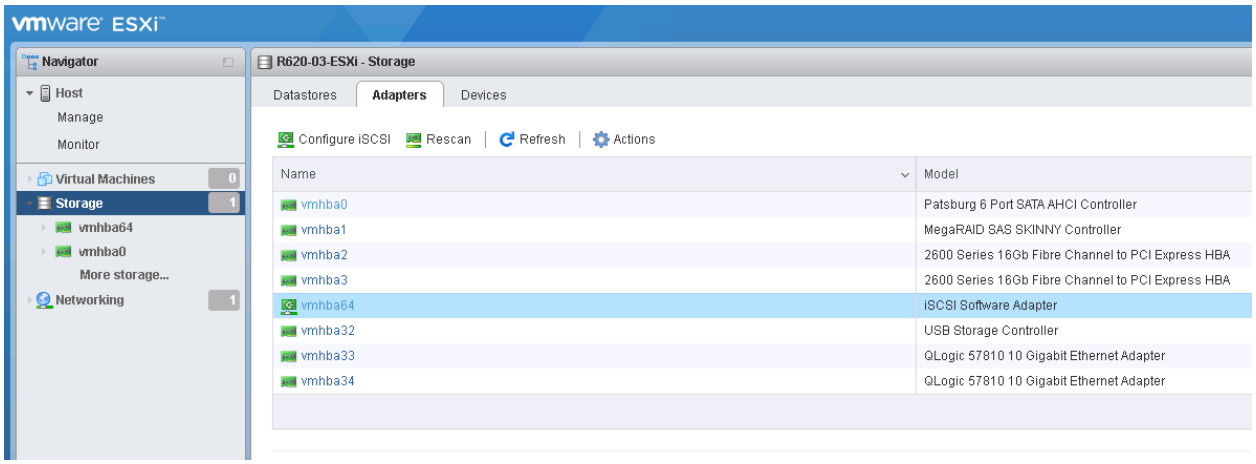
Note: The appropriate VMware vSphere CLI (vCLI 5.5, 6.0, or 6.5) environment must be installed on the management server.

2. From the vCLI command prompt, change to the directory where the Multipathing Extension Module (MEM) was unzipped.
3. Type the following command:
   `setup.pl --install  --server=`*`ESXi host IP address`* `--bundle=`*`bundle file name (bundle file name`* refers to the zip file, such as `dell-eql-mem-esx6-1.5.0.437336.zip`).
4. When prompted, log in as root with the correct password. The installation process may take several minutes.
5. When setup is complete, it displays: `Clean install was successful`.
6. Reboot the ESXi host.
   After the ESXi host has rebooted, type the following command in the vSphere CLI command prompt:
   `setup.pl --configure  --server=`*`ESXi host IP address`*
7. Enter the username and password when prompted.
8. Provide the following answers to the configuration wizard questions:
   a. For the switch type, press [**Enter**] to select **vSwitch** (the default).
   b. For the vSwitch name, press [**Enter**] to accept the default value.
   c. To identify the NICs, enter the vmnic name that will handle the iSCSI traffic, separated by a space. For example: `vmnic4 vmnic5`
9. Enter the IP addresses for each vmnic.
10. Enter the netmask.
11. Enter the MTU size of 9000.
12. Select the default prefix by pressing [**Enter**].
13. Enter the VLanID to be used for the iSCSI Portgroup (default is 0).
14. Select the default for the [SW] SW iSCSI or HW iSCSI request by pressing [**Enter**].
15. If prompted, answer **yes** to enable the iSCSI initiator.
16. Enter the PS group IP address.
17. Press [**Enter**] to deactivate CHAP.
18. Answer **yes** to apply Dell EqualLogic Best Practice settings.
19. Answer **yes** to proceed with the configuration.
20. Upon completion of configuration, remove the ESXi host from Maintenance Mode by right-clicking the ESXi host from vSphere Web client and selecting **Exit Maintenance** mode.

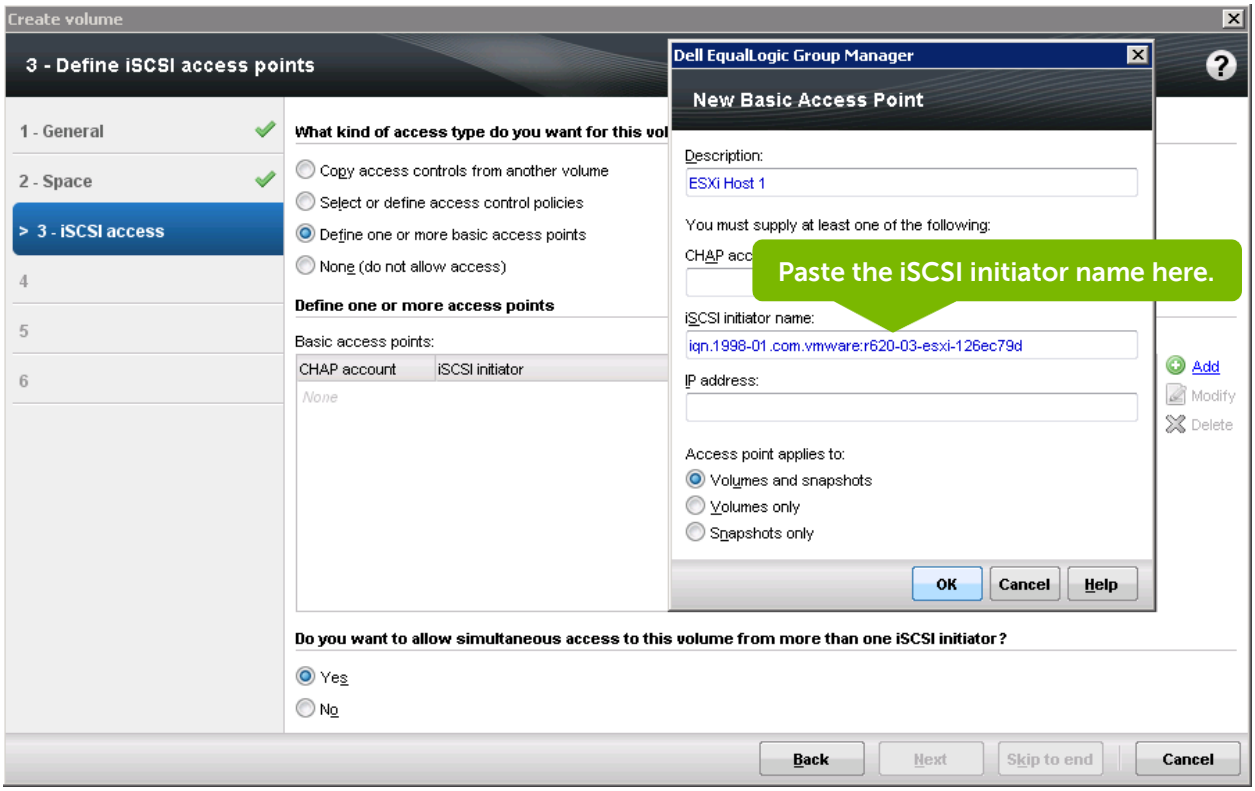
Note: Additional information on the installation of MEM, including installation using VMware vSphere Update Manager, can be found in Configuring and Installing the PS Series Multipathing Extension Module for VMware vSphere and PS Series SANs.

5 Connecting to volumes

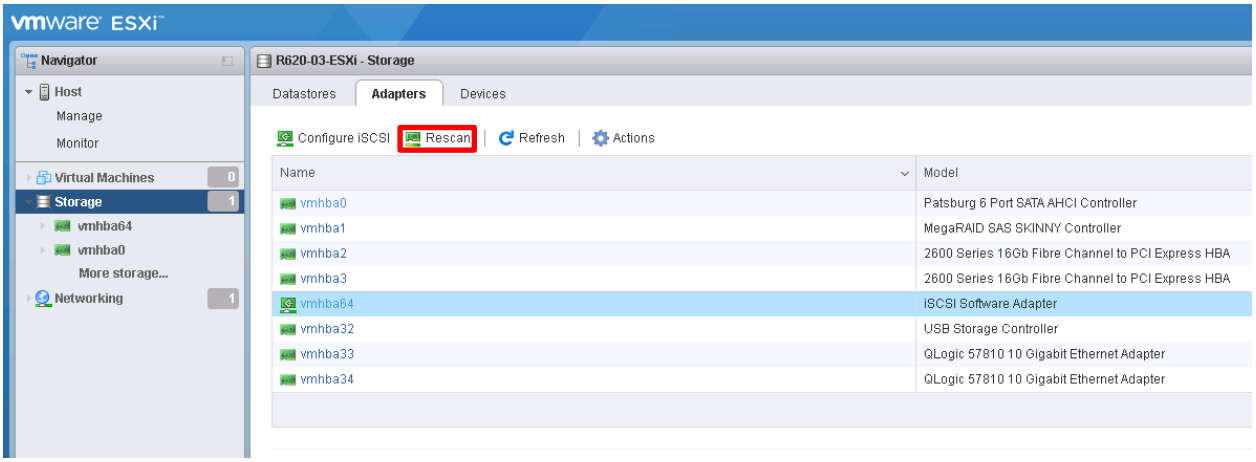
1. From the vSphere ESXi Embedded Host client, in the **Navigator** area, select **Storage > Adapters > iSCSI Software Adapter**, and click **Configure iSCSI** at the top of the Adpaters area**.**
2. Copy the iSCSI initiator name found in the **Name & alias** field and proceed to the next step.



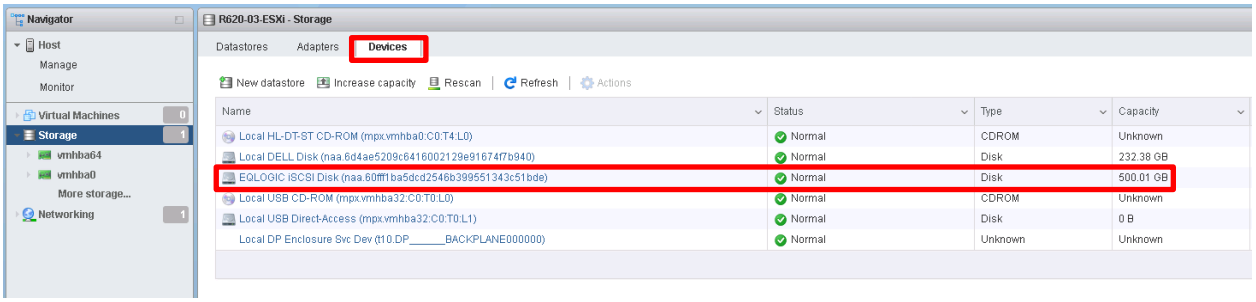
The next screenshot illustrates how to use the iSCSI initiator name to limit iSCSI access at the EqualLogic Group Manager. The use of CHAP to limit iSCSI access, as described in [Best Practices for Implementing VMware vSphere in a Dell PS Series Storage Environment](#) is the best practice, and can be required in larger environments.



3. Select the access type that allows to **Define one or more basic access points**.
4. Click **Yes** to allow simultaneous access to this volume from more than one iSCSI initiator.
5. Click **Add**, and in the **New Basic Access Point** window, specify the type of access you plan to use (CHAP, initiator name, or IP address).
6. In the vSphere ESXi Embedded Host client, select **Storage > Adapters > iSCSI Software Adapter**, and click **Rescan** at the top of the Adpaters area

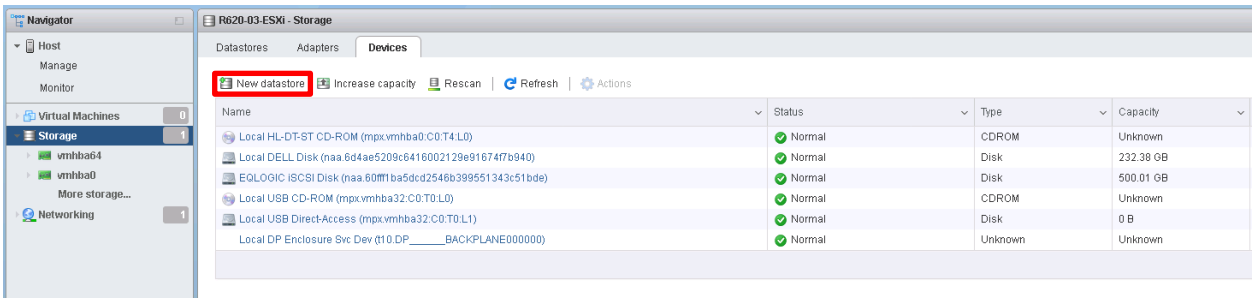


7. Change from the **Adapters** tab to the **Devices** tab and confirm the new EQLOGIC iSCSI Disk device with the correct size is displayed.

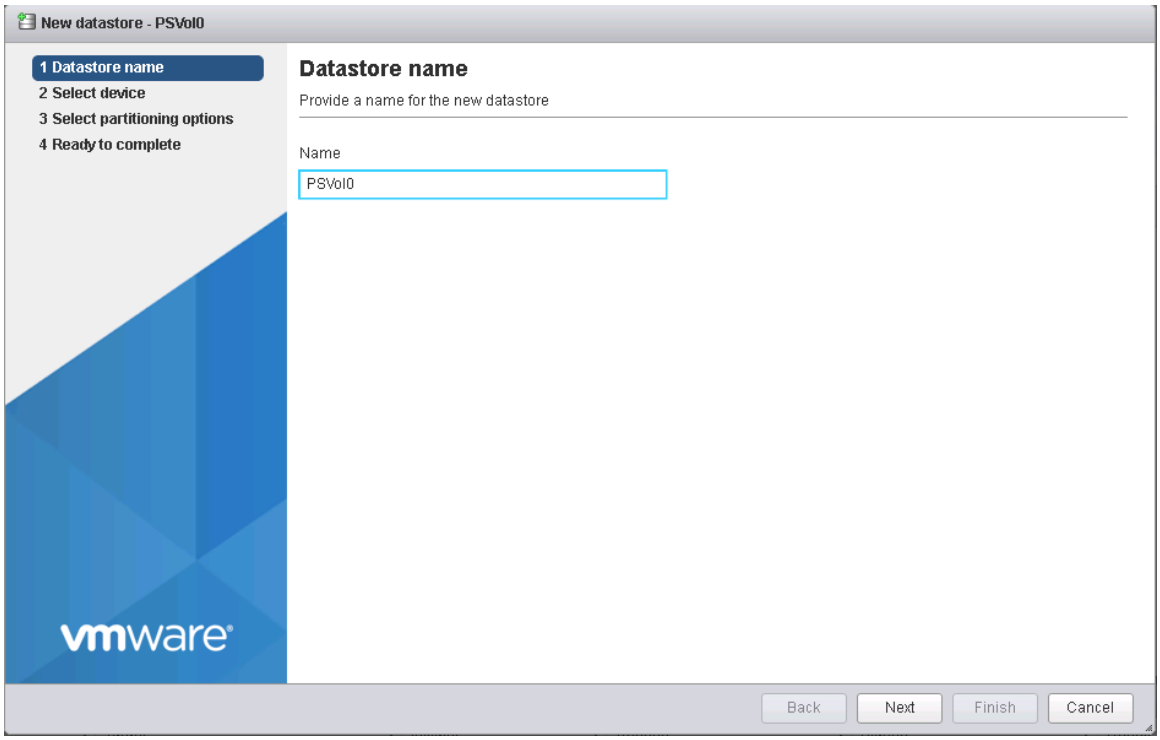


6 Creating a datastore

1. From the vSphere ESXi Embedded Host client, on the **Storage > Devices** tab, click **New datastore**.

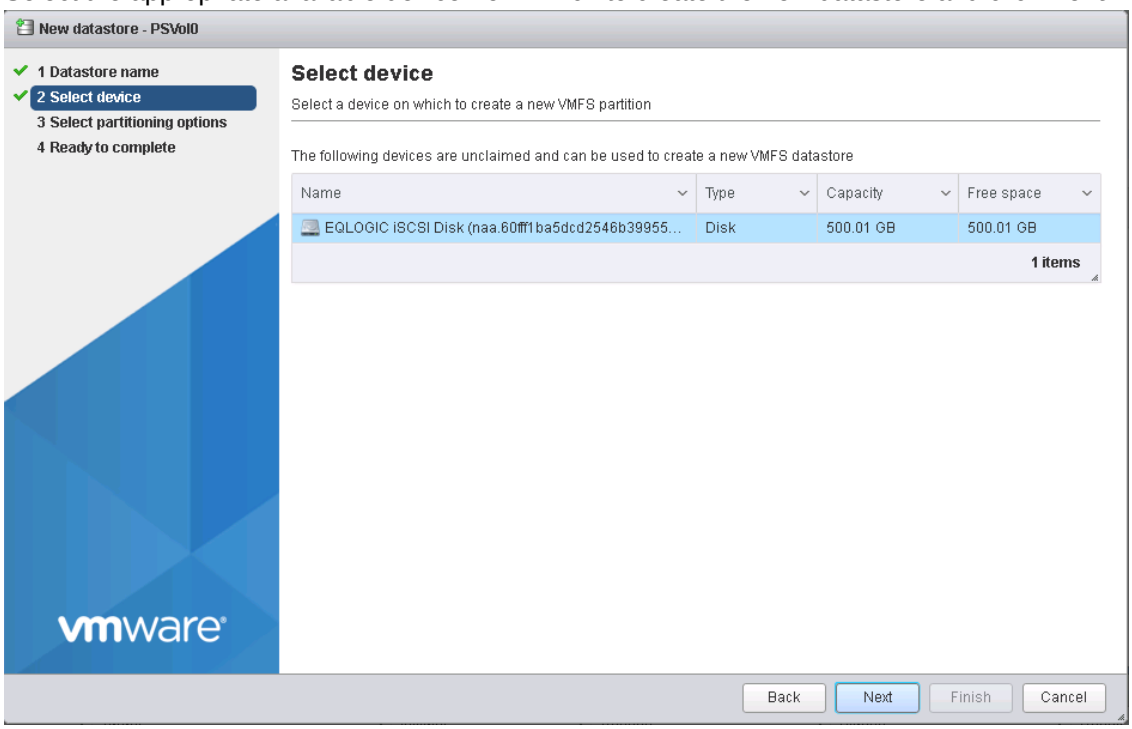


2. In the **New datastore** wizard, provide a name for the new datastore and click **Next**.



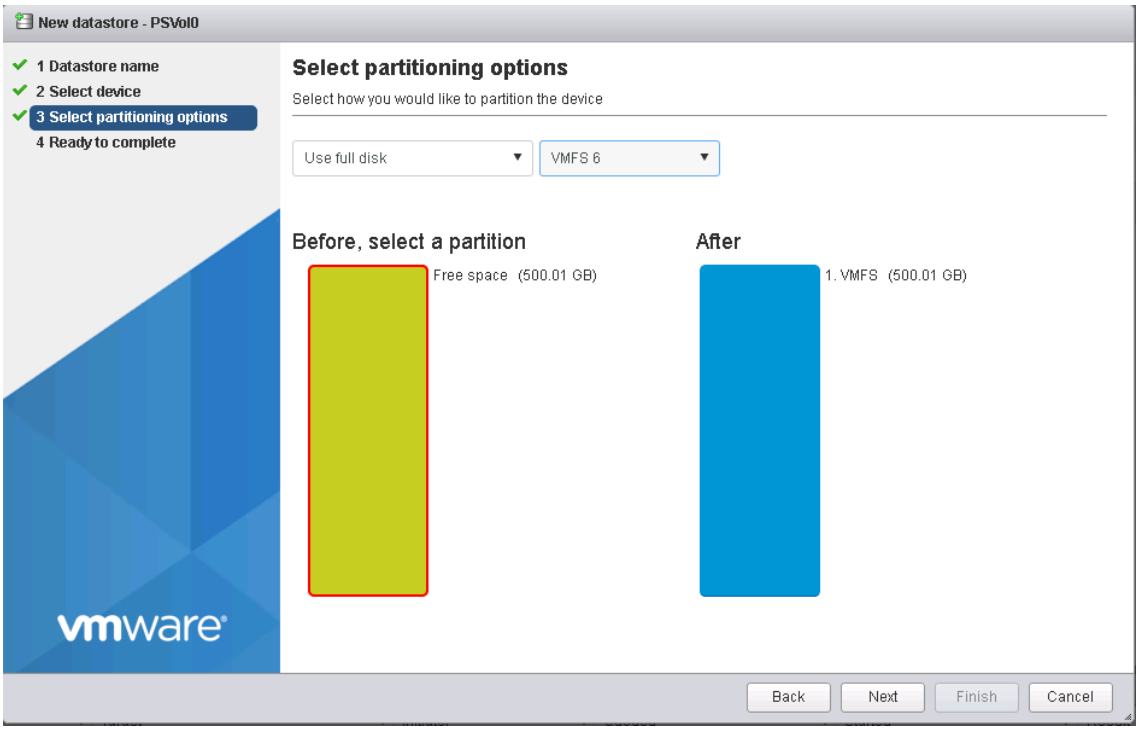
Note: Dell EMC recommends using the PS Series storage volume alias as the name for the datastore within vSphere to aid in effective management and troubleshooting.

3. Select the appropriate available device from which to create the new datastore and click **Next**.

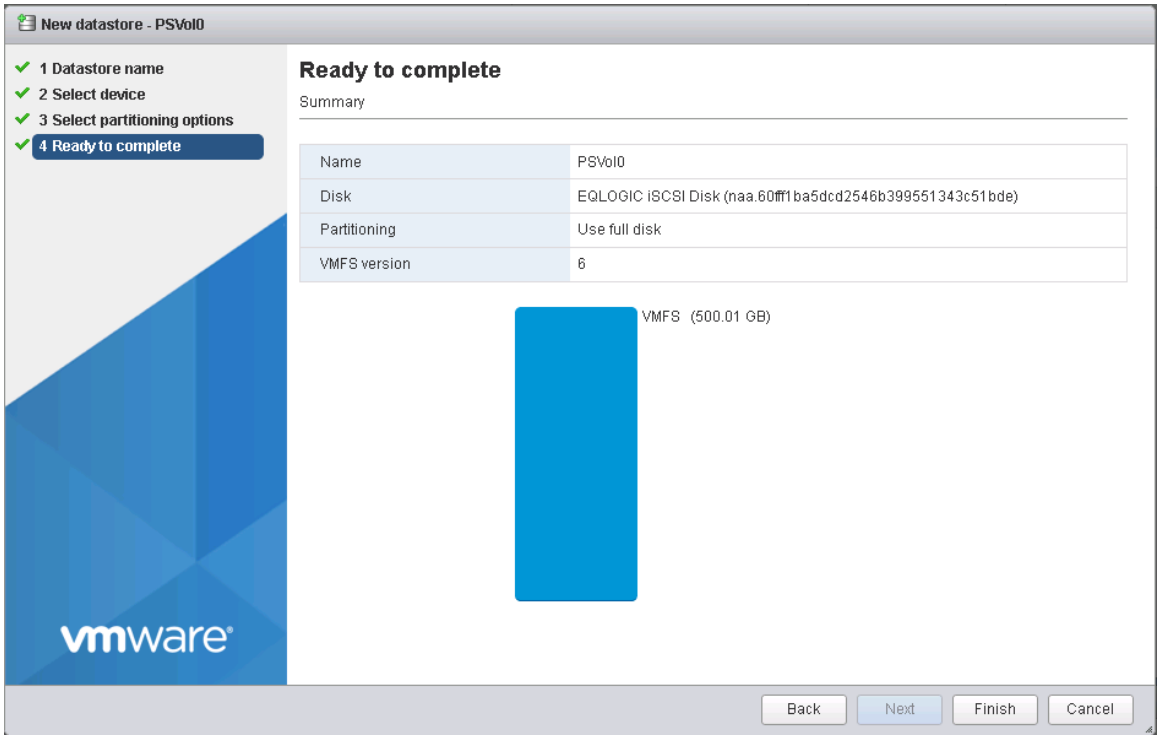
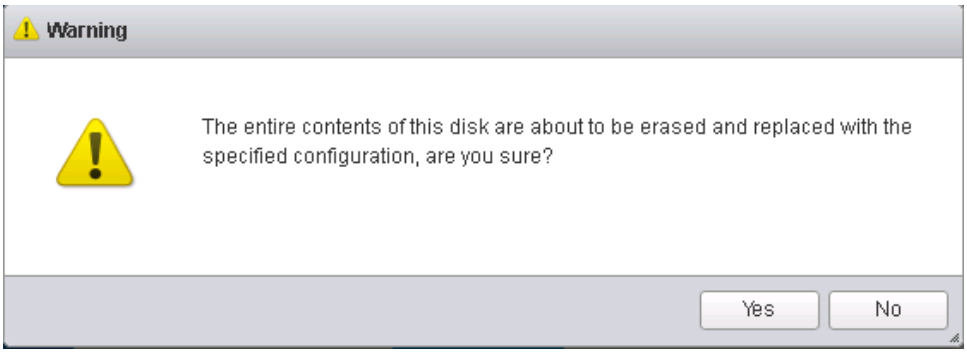


Note: Step 4 is skipped in ESXi 6.0 because VMFS-5 is the only option.

4. Select the partitioning layout and file system version from the drop-down lists and click **Next**.



5. Confirm the summary information and click **Finish** to complete the New Datastore wizard.



6. Click **Yes** to confirm the warning message.