StarWind iSCSI SAN Software: ESX Storage Migration

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Guide

Introduction

This technical paper describes how to provide Virtual Machine migration from existing storage to the StarWind Datastore.

This process requires a customized network infrastructure, where DNS service is running, as well as a computer with the already installed vCenter.

Configuring StarWind Server

This section describes StarWind configuration in details. Before you start, please ensure that the StarWind software is installed on the host that provides storage services to VMware ESX Server.

Storage Information

Image File device

The **Image File** device creates a virtual iSCSI disk using the space of a physical hard disk on the machine where it is created. The resulting iSCSI storage will have the same structure as a physical hard disk.

When the **Image File** device is mounted (using an iSCSI Initiator), it appears as standard hard disk to the computer on which it is mounted. All standard disk operations such as formatting using a custom file system, copying data to/from it and installation of applications, etc. are fully supported.
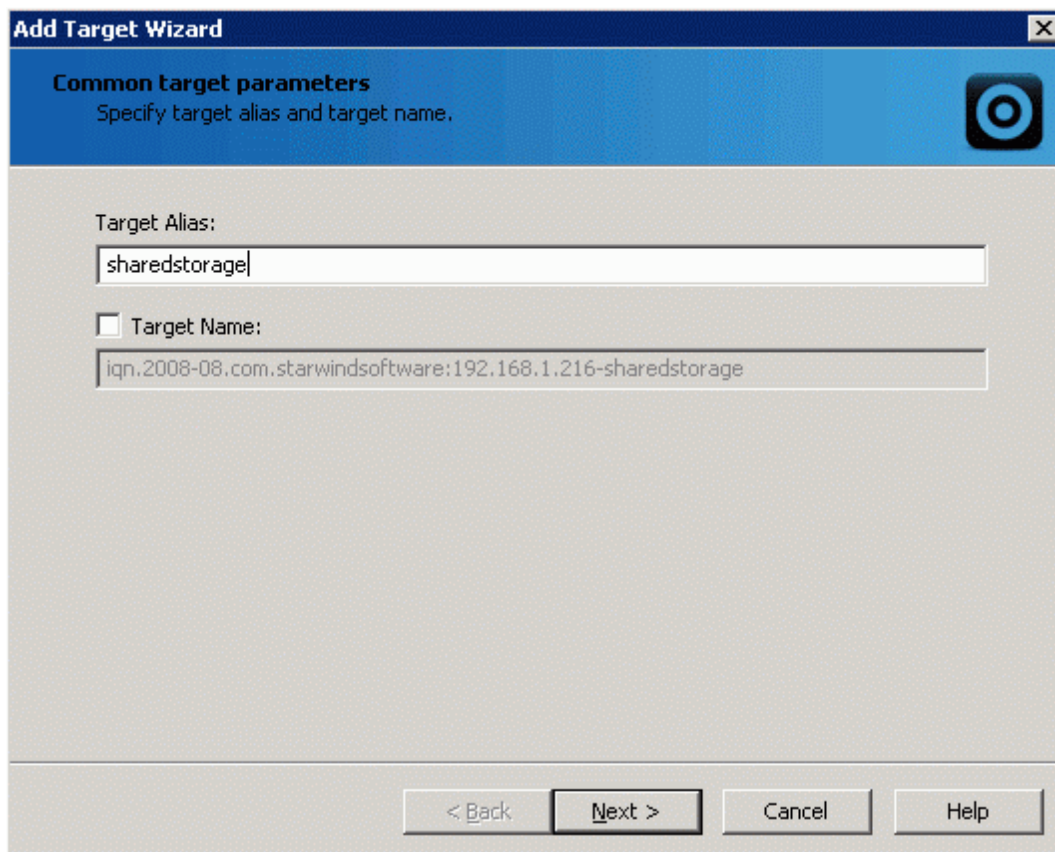
There are some limitations for the **Image File** device usage:

As a virtual hard disk uses the space of your physical hard disk, the available volume is limited by the free space on that hard drive. If the size of an image file is close to the remaining free space of the hard disk on which it is stored, you will not be able to store additional files on that disk.

You cannot change the volume of the image file while it is online and users are connected to it. However, you can extend the volume.

Preparing Storage

1. Launch the StarWind console by clicking **Start -> All Programs -> StarWind Software -> StarWind -> StarWind**. Whenever the **StarWind Console** is running, its icon appears in the system tray.

2. Access the **StarWind Console** by either double-clicking the icon using the left mouse button or single-click with the right mouse button and selecting the **Start Management** menu item from the pop-up menu.

3. From the **Connections** tree select the server you want to provision the iSCSI target device on.

4. Click the **Connect** button to continue. You will be prompted to enter the login and password. Use the default login and password - **"root"** and "**starwind"** respectively. You can always change them later.

5. Click the **Add Target** button to continue.

6. In the **Add Target Wizard** that appears, specify a unique target name. By this name the device will be declared to the iSCSI initiators connecting to StarWind over an IP network.
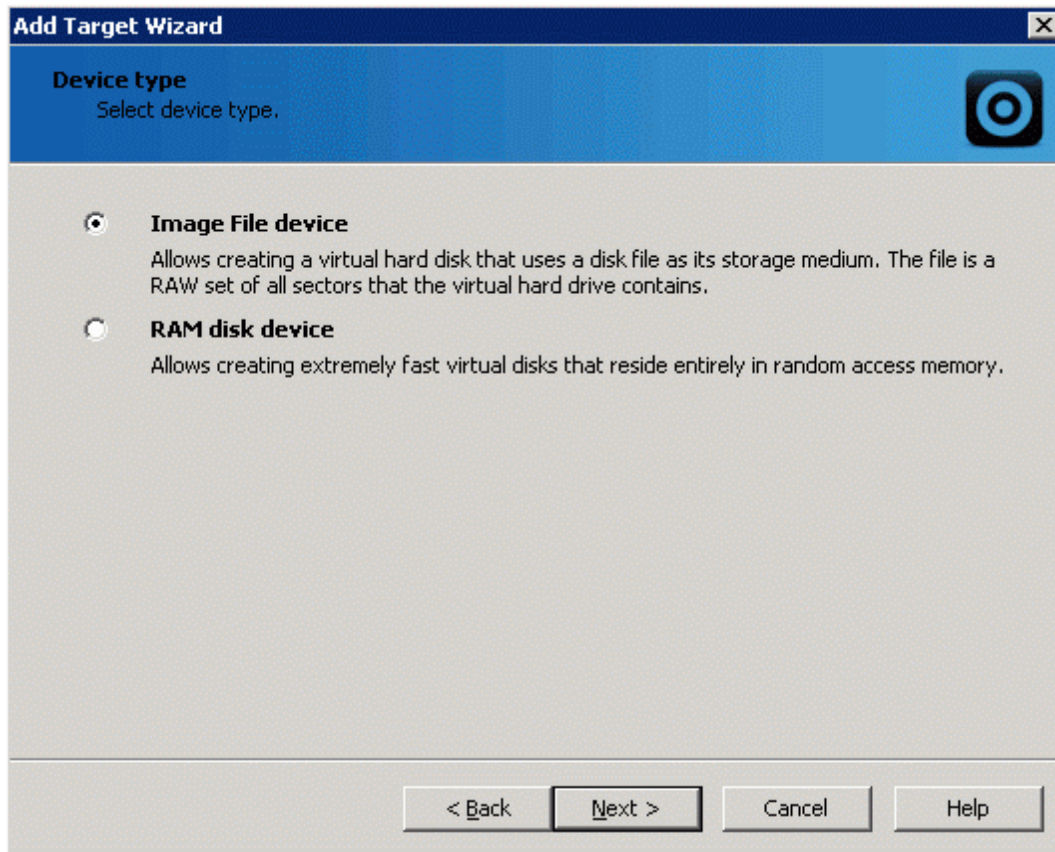
7. Click the **Next** button to continue.
8. Under Device Type, click the **Basic Virtual option** button.
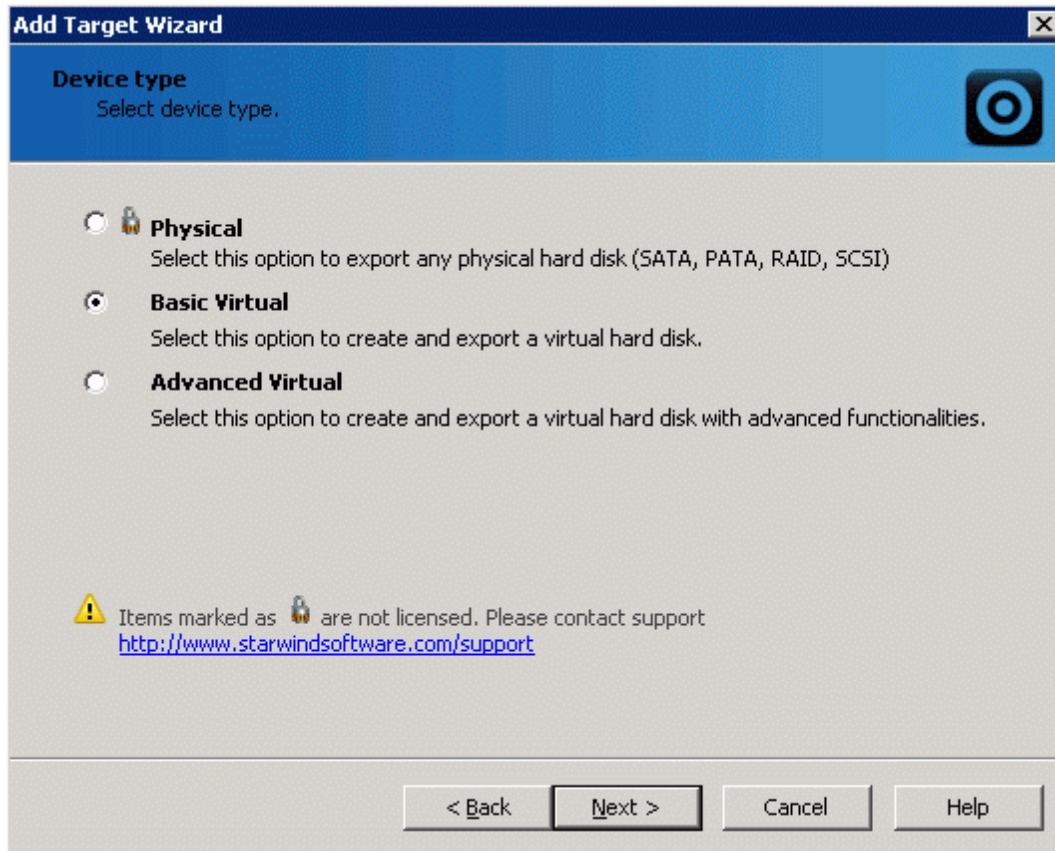
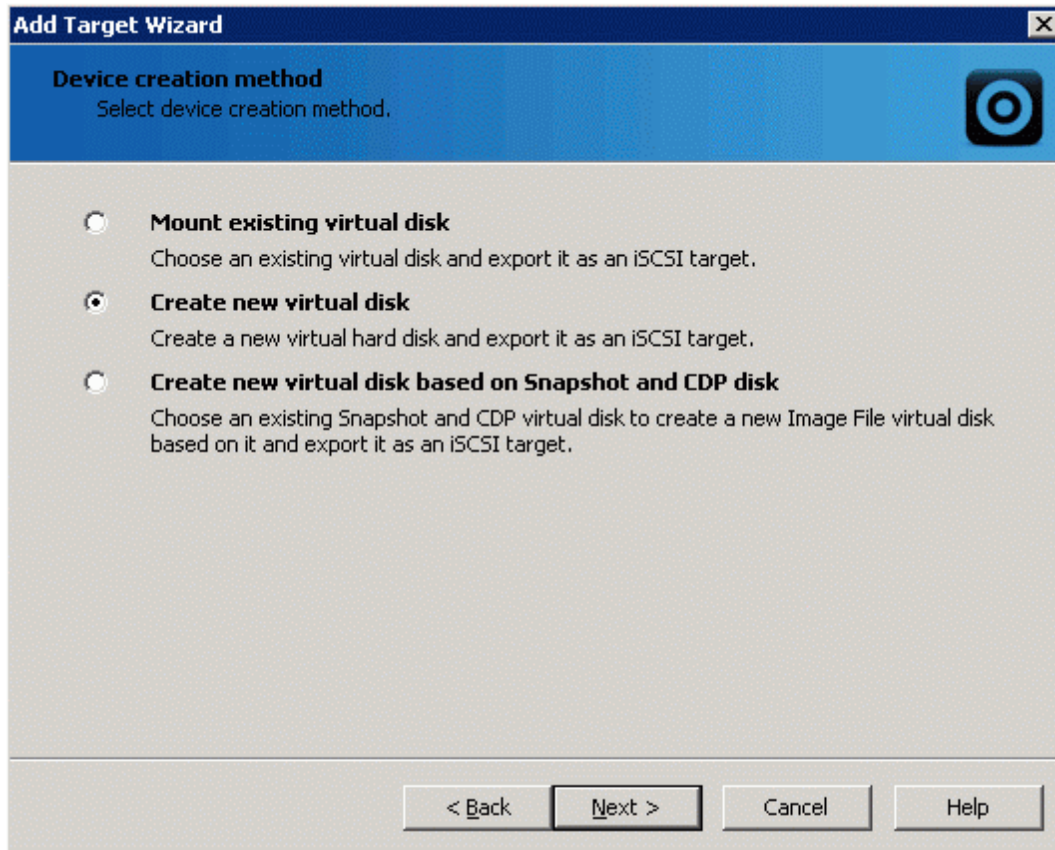9. Click the **Next** button to continue.

10. Click **Image File device**.

11. Click the **Next** button to continue.

12. Use one of the options: **Create new virtual disk** creates a new hard disk image, while **Mount existing virtual disk** mounts an existing image that you created before.
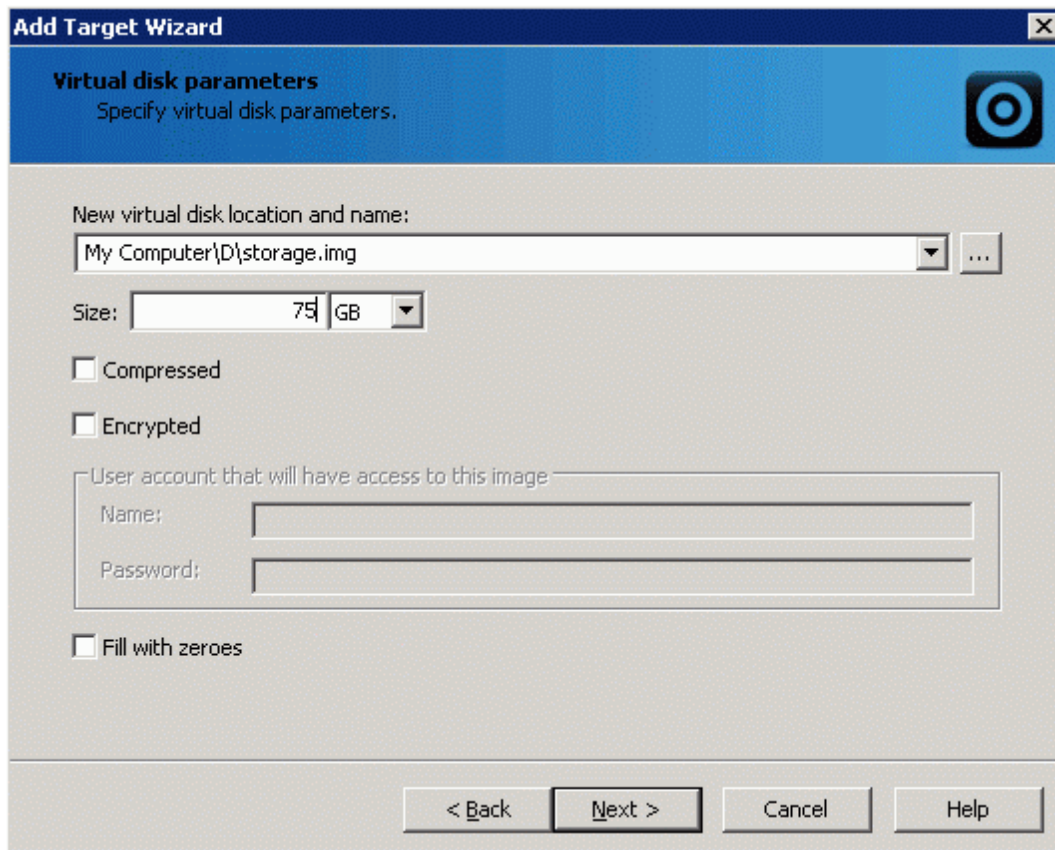

13. Click the **Next** button to continue.

14. If you decided to create a new virtual disk, specify its location and name.

15. Define the virtual disk size in megabytes.

Refer to the StarWind Online Help for details regarding additional parameters (**Fill with zeroes, Compressed** and **Encrypted**).
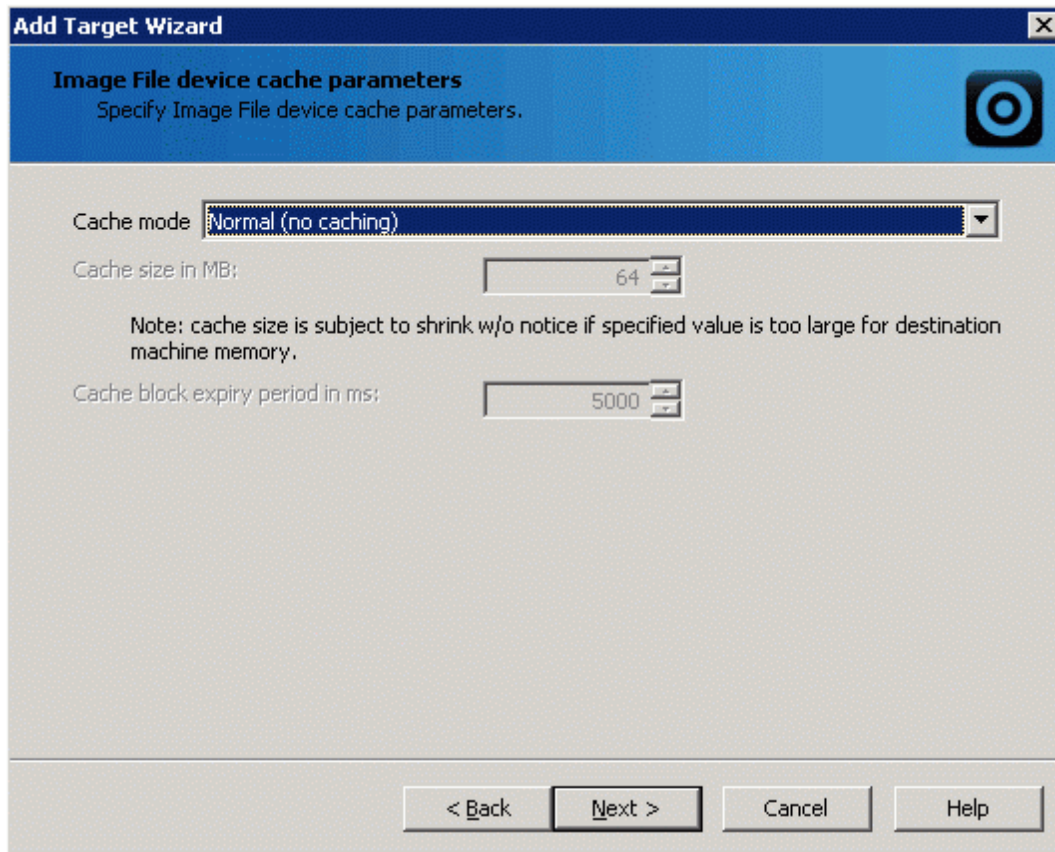

16. Click the **Next** button to continue.

17. Specify **Image File device parameters**. Refer to the StarWind Online Help for details regarding the following parameters: **Asynchronous mode, Allow multiple connections (clustering), Read-only mode,** and **Specify advanced options**).

Add Target Wizard

Image File device parameters
Specify Image File device parameters.

Select the virtual disk you want to make accessible via iSCSI:

My Computer\D\storage.img

☑ Asynchronous mode

☐ Allow multiple concurrent iSCSI connections (clustering)

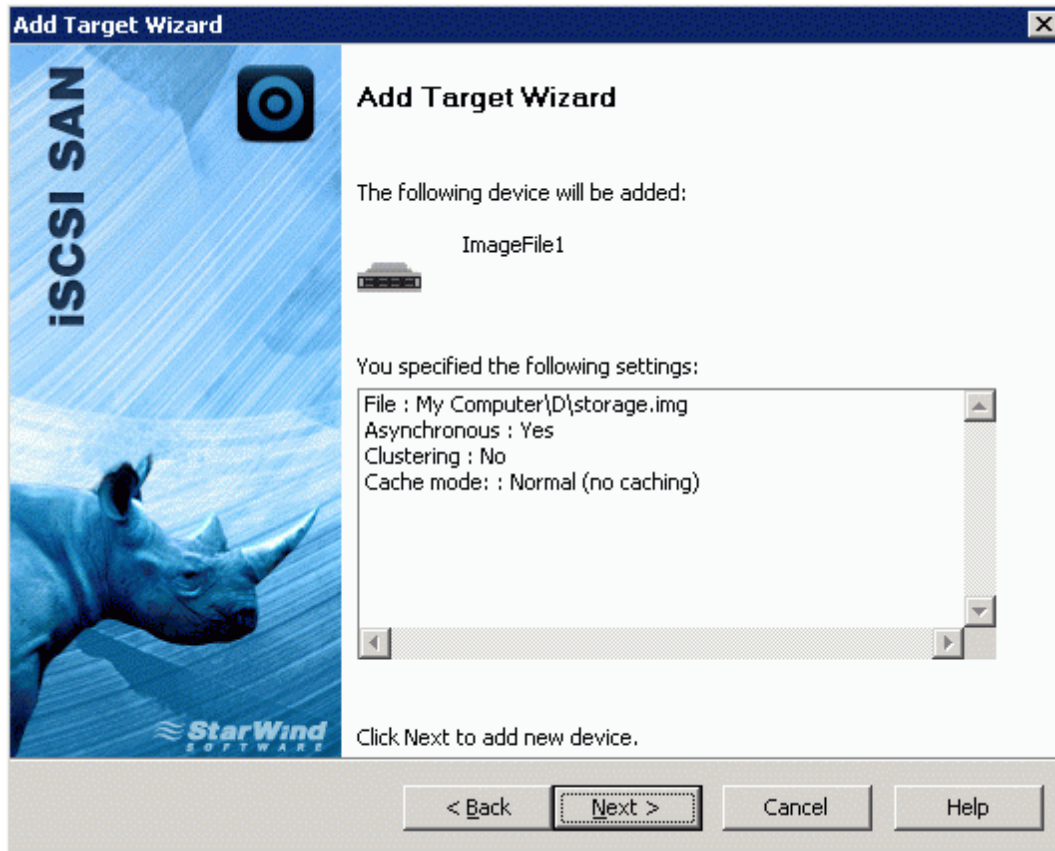☐ Header size in bytes: 0

< Back | Next > | Cancel | Help
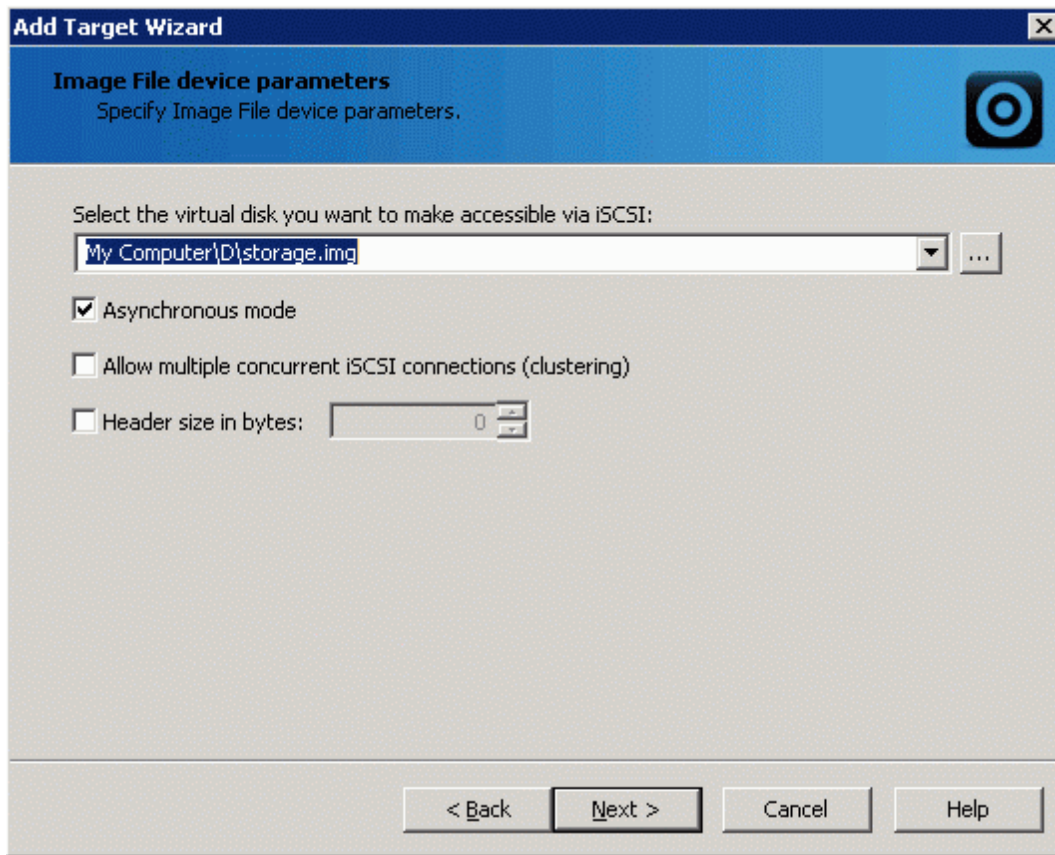
18. Click the **Next** button to continue.

19. From the **Cache mode** list choose the necessary option.

20. Click the **Next** button to continue.

21. Make sure you have specified correct device parameters. Click the **Back** button should any changes be required.

22. Click the **Next** button to continue.

A summary of the created device is displayed on the last wizard page.
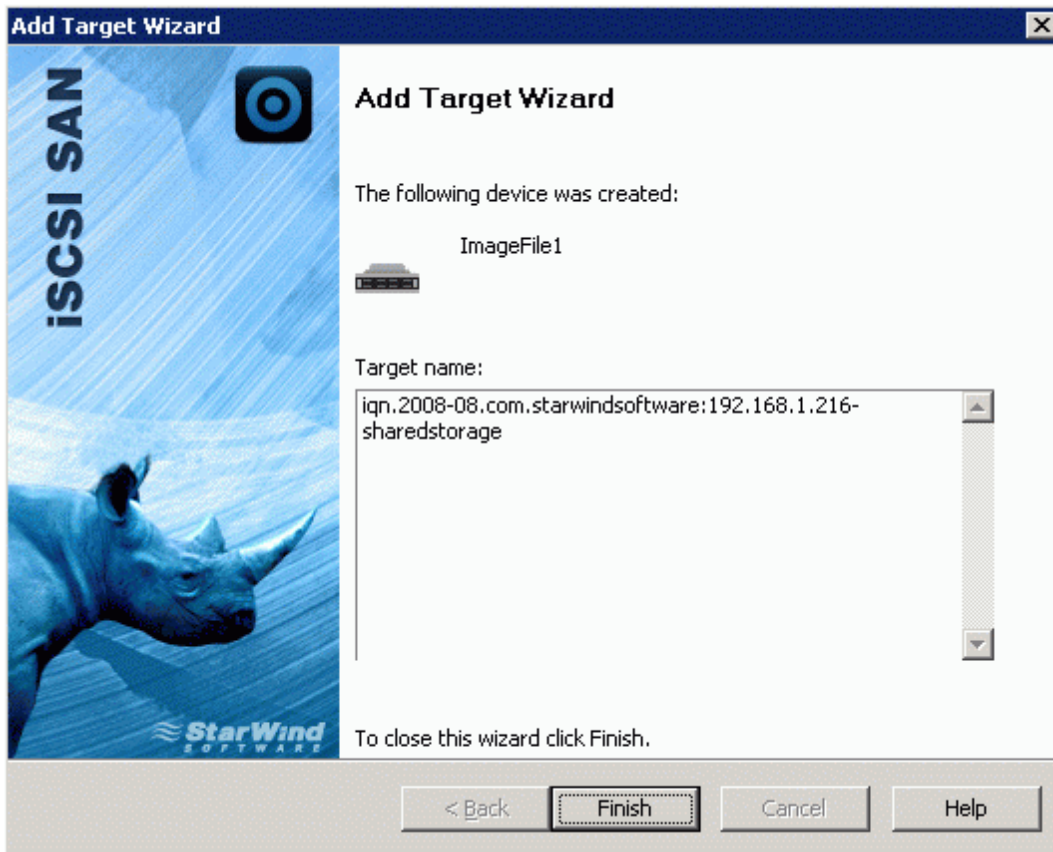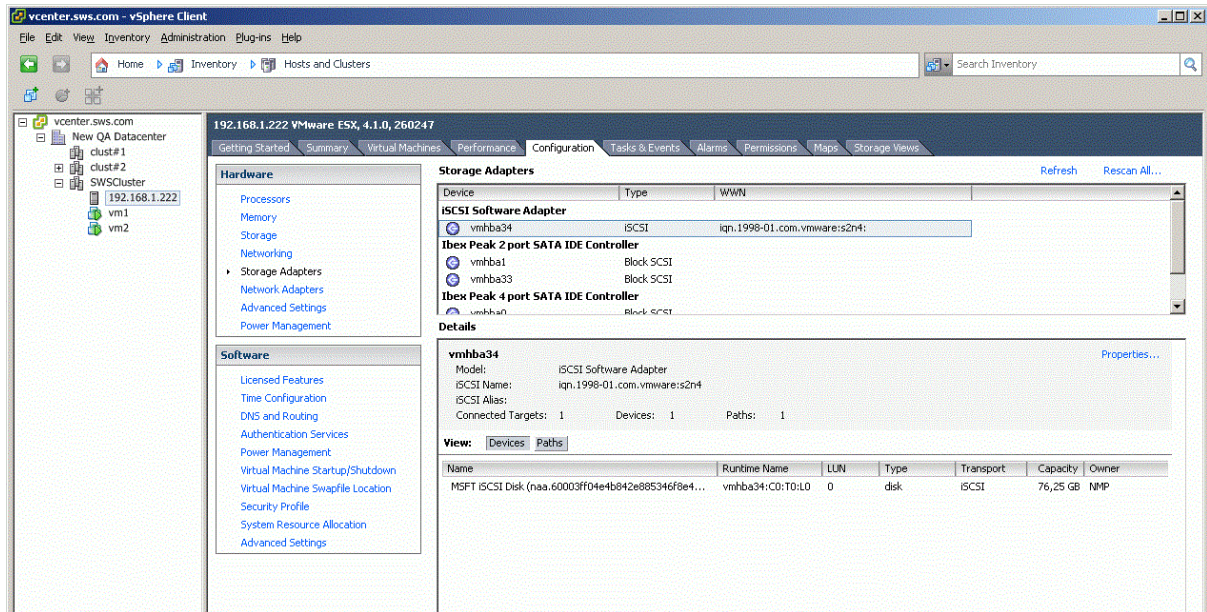

23. Click the **Finish** button to close the wizard.

Configuring ESX Server

This section gives the detailed description of the ESX configuration.
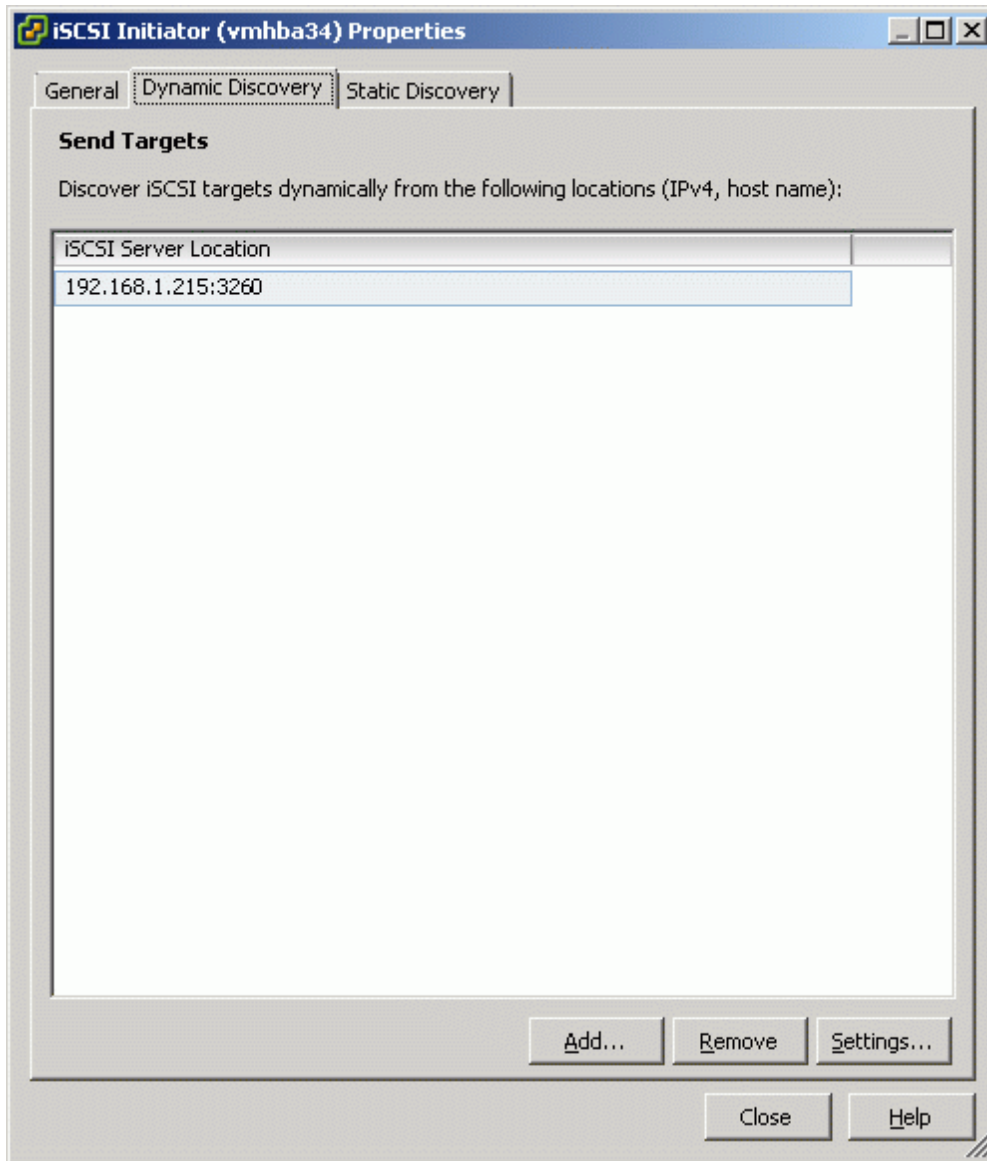
Configuring the iSCSI Software Initiator

1. Click the **Configuration** tab.

2. In the **Hardware** section, click **Storage Adapters.** The list of available storage adapters appears. Select **iSCSI Software Adapter**.

3. In the **Details** section below, click **Properties**. **iSCSI Initiator Properties** dialog appears.
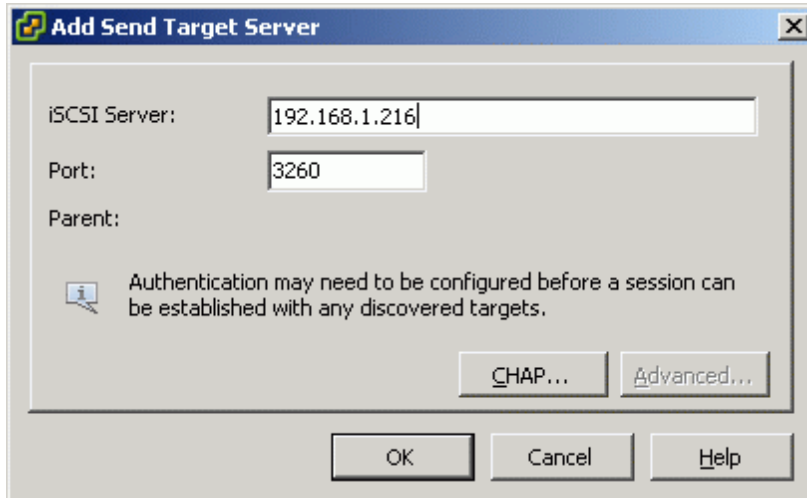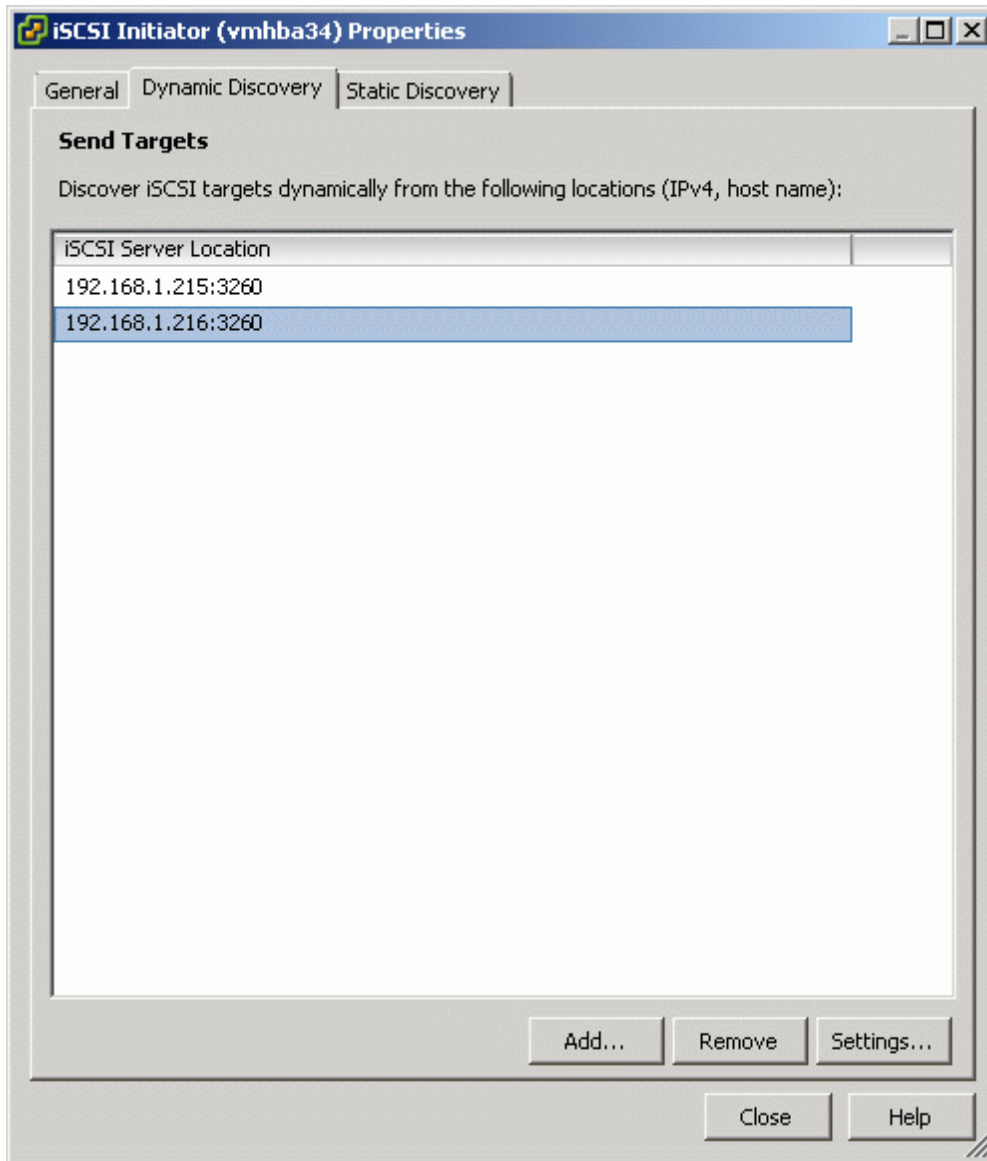
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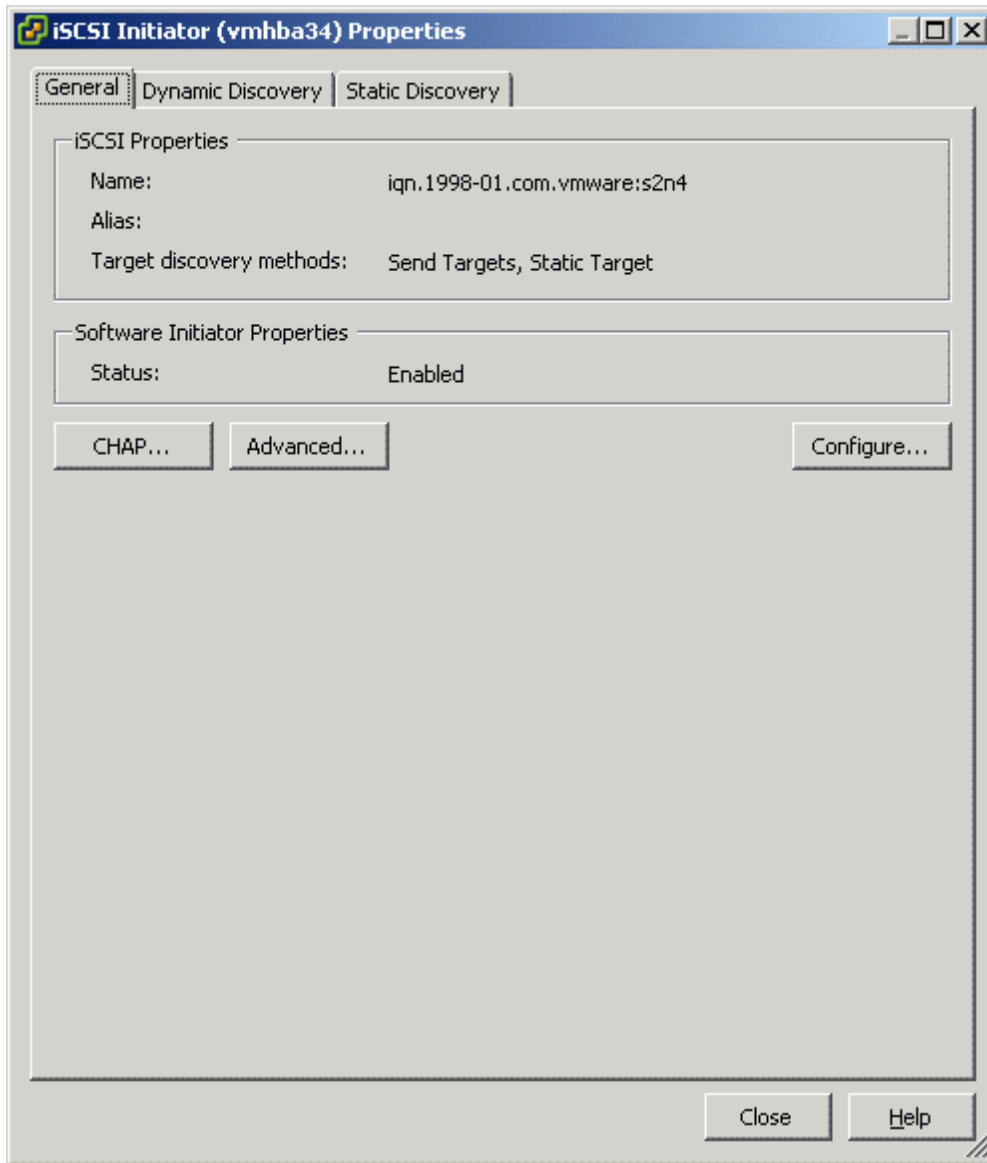
4. Click the **Dynamic Discovery** tab.

5. Click the **Add…** button.

6. In the **Add Send Targets Server** dialog, specify the IP address of the StarWind iSCSI target server.
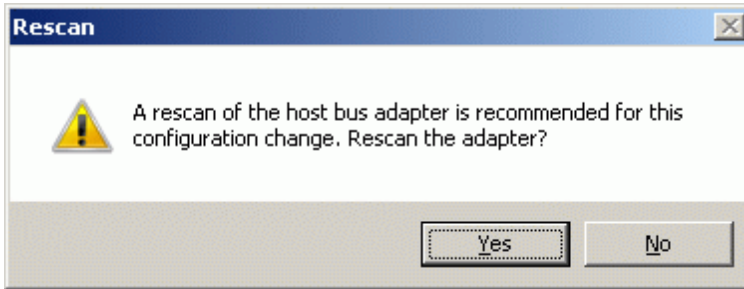

7. Click **OK**. You will be returned to the **iSCSI Initiator** properties dialog.
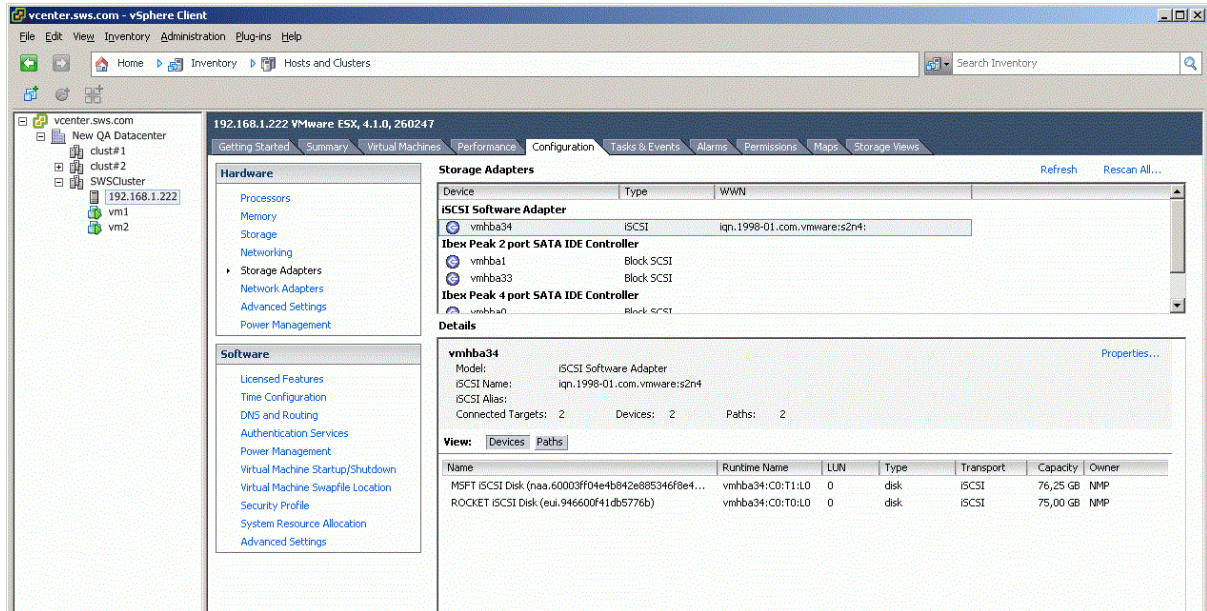
8. Click the **Close** button.

vSphere client will prompt you to rescan the host bus adapter for New Storage Devices and New VMFS volumes.
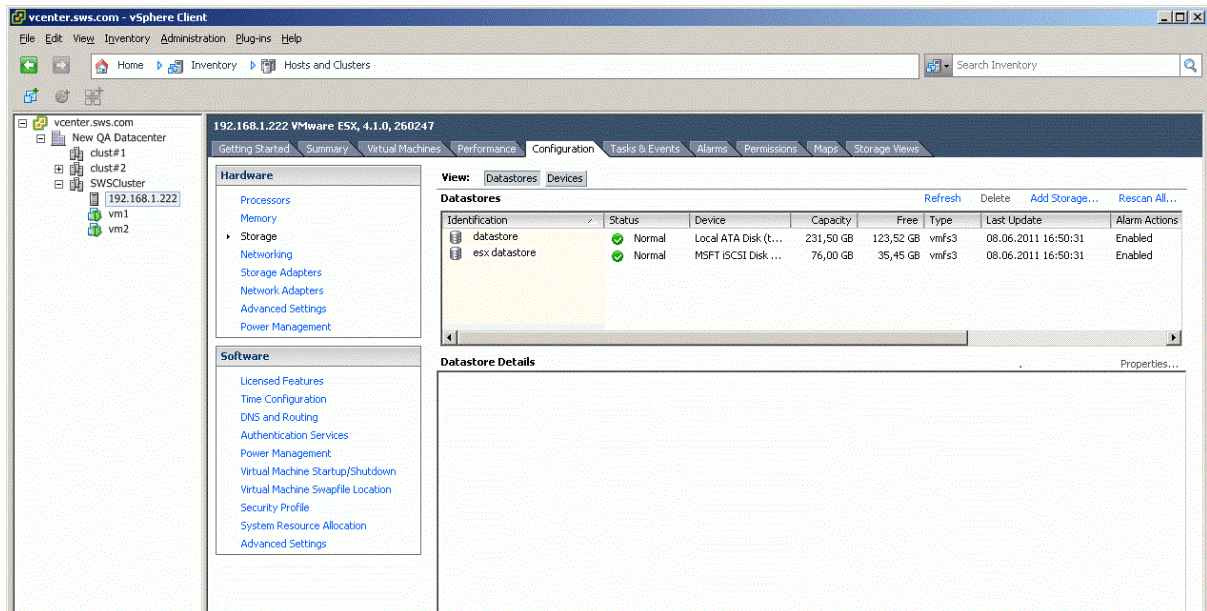

9. Click **Yes** to rescan the host bus adapter.

After the iSCSI software initiator has been successfully configured, the **vSphere Client** window should look like the sample picture below.
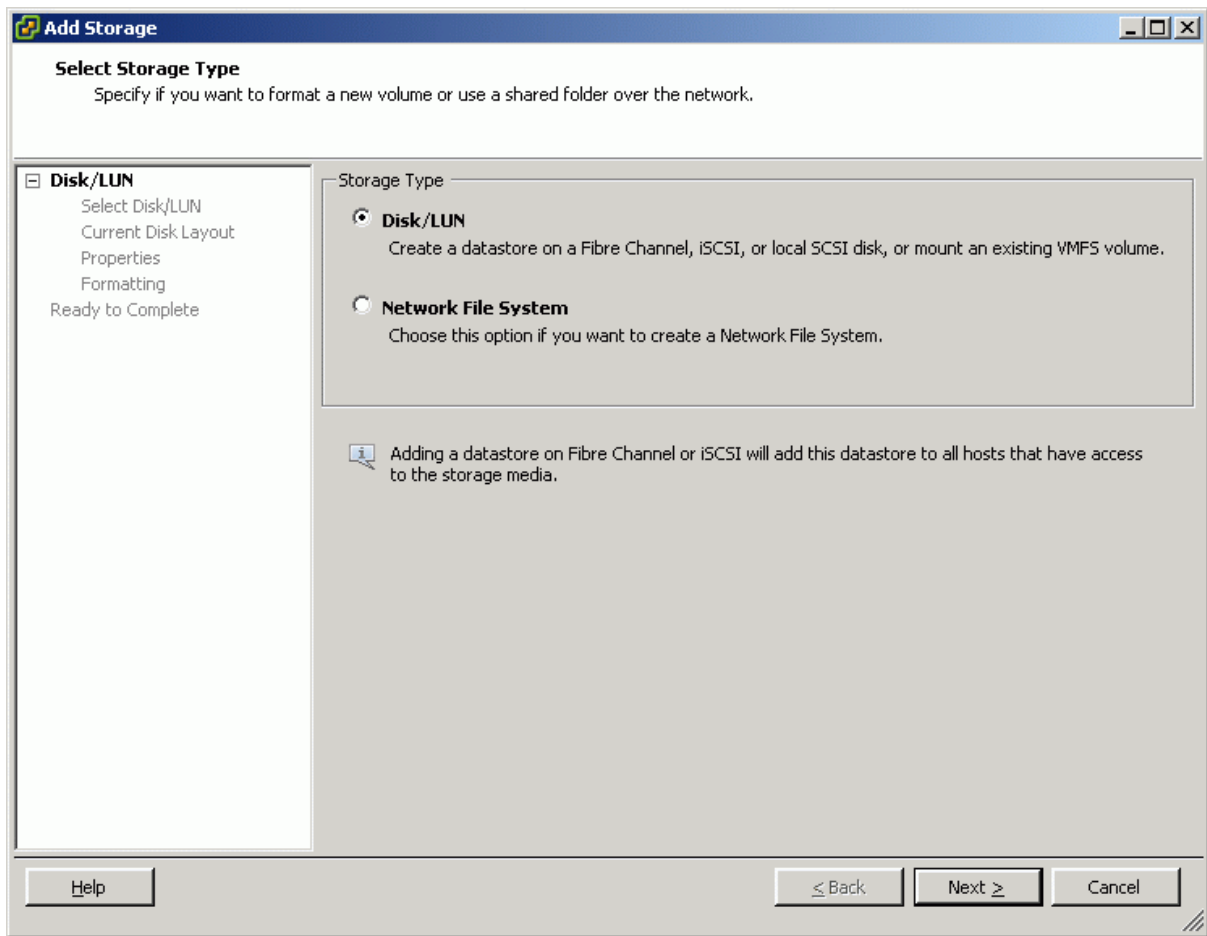
Setting Up the Datastore

1. Switch to the **Configuration** tab.

2. In the **Hardware** section, click **Storage**.

3. Click the **Add Storage…** link on the right. **Add Storage** dialog appears.
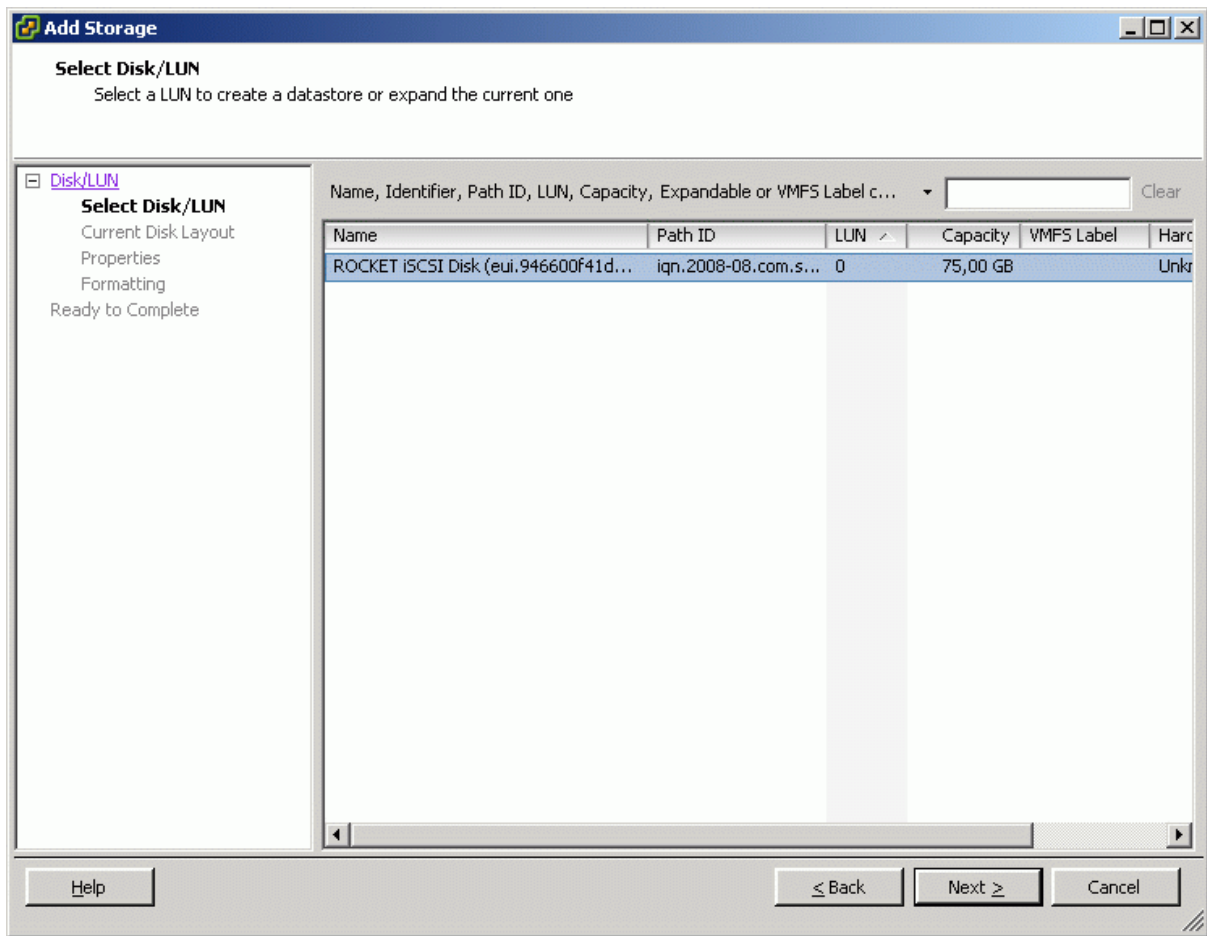
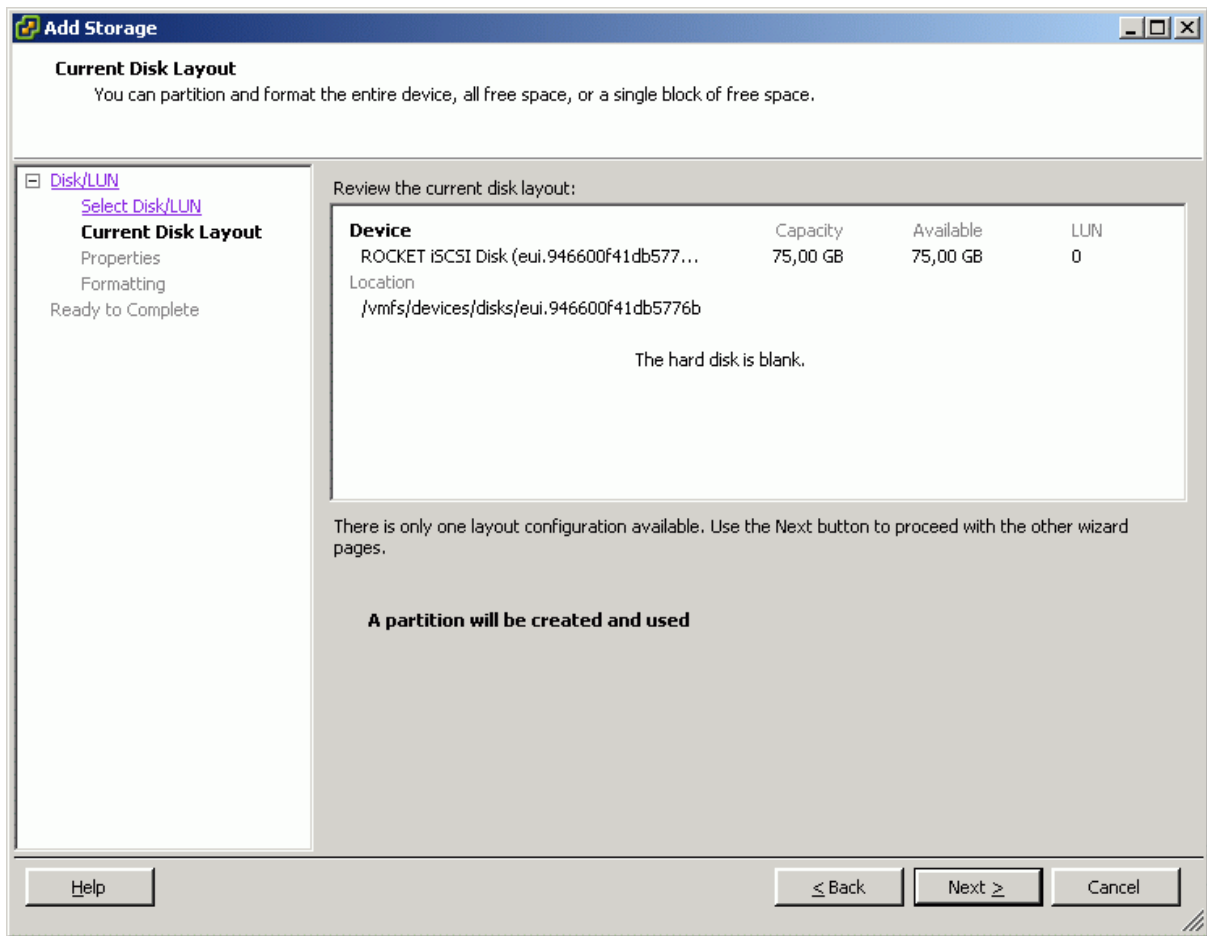4. In the **Storage Type** section, click the **Disk/LUN** storage type.

5. Click the **Next** button to continue.
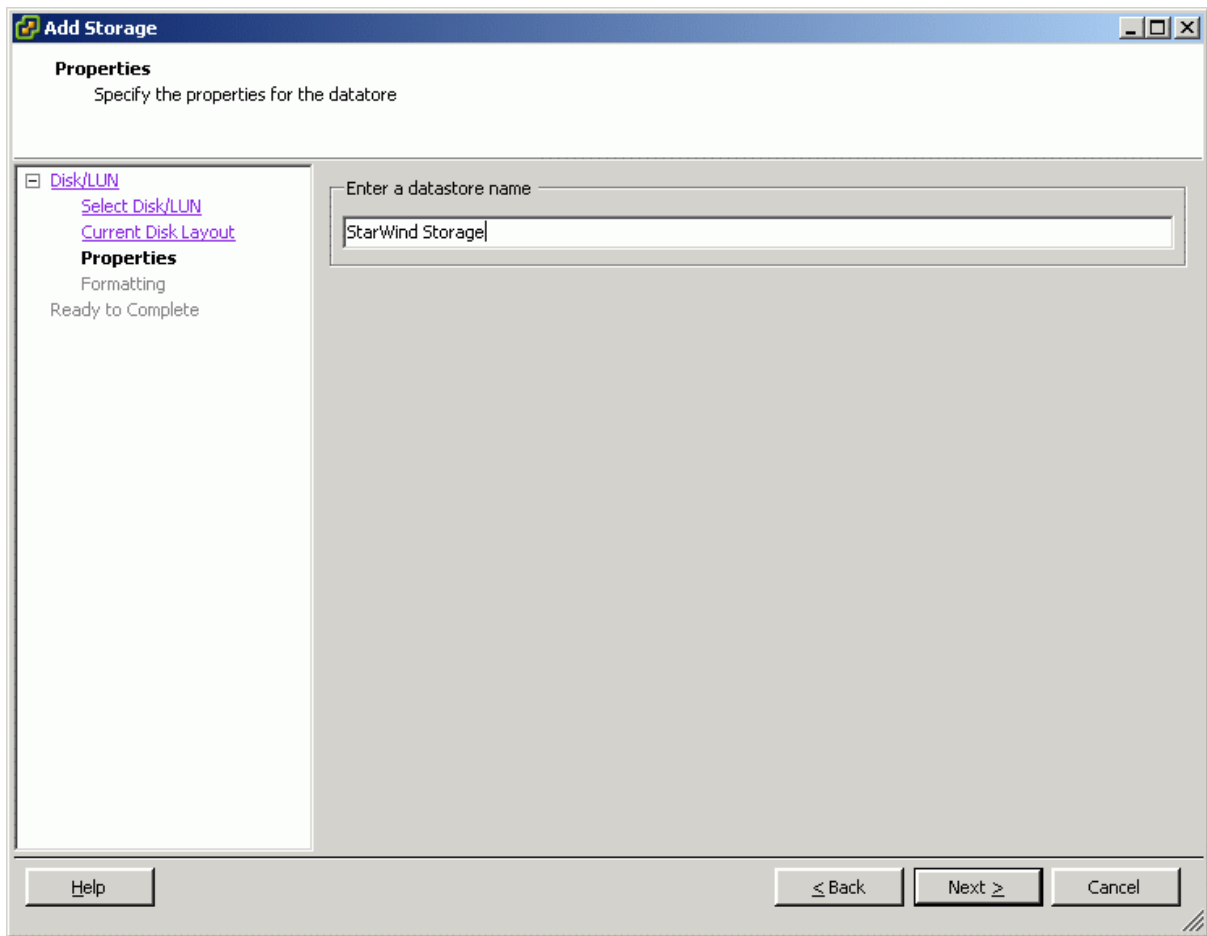
6. Select the device in the section to the right.

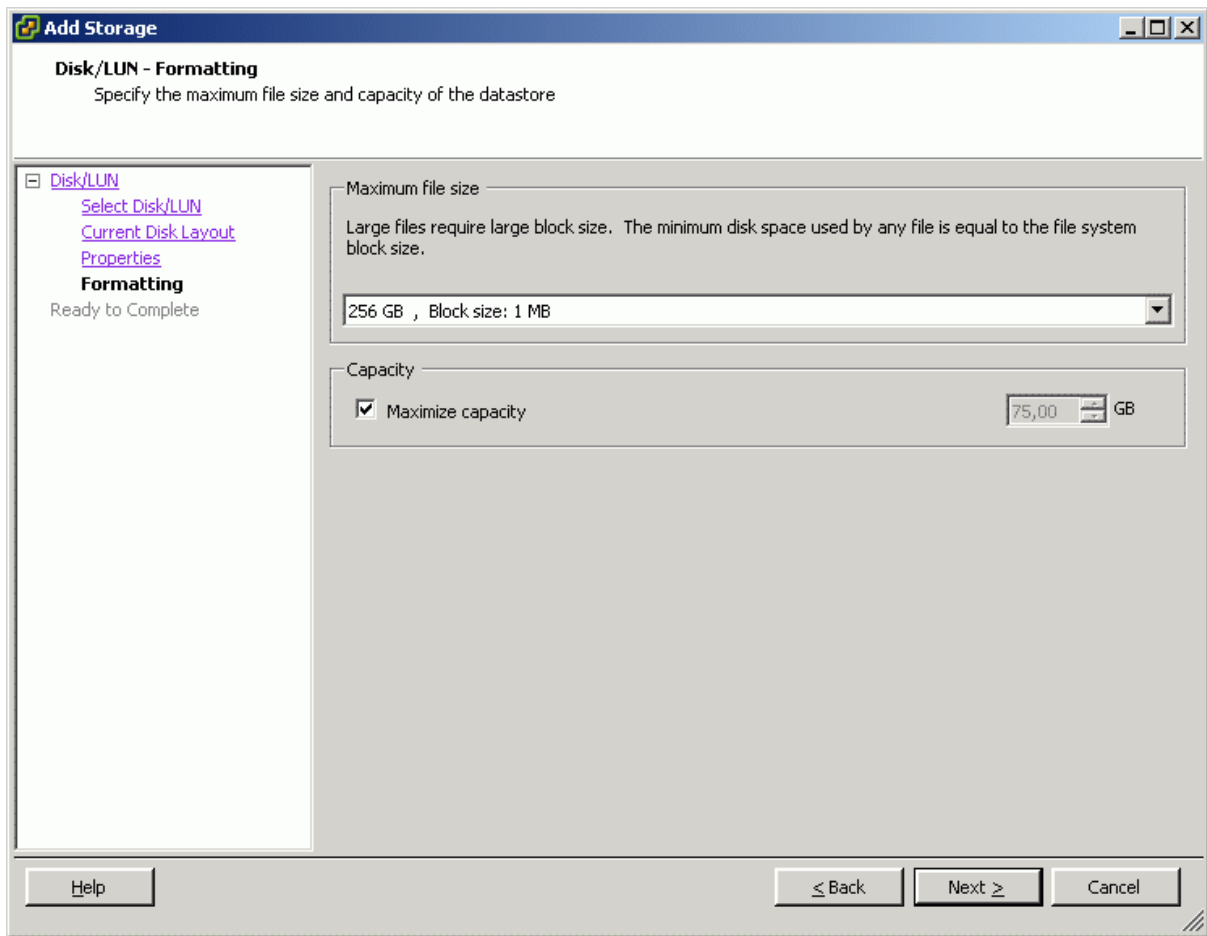7. Click **Next** to continue.

8. Review the current disk layout.

9. Click the **Next** button to continue.

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10. Specify the datastore name in the corresponding text field.
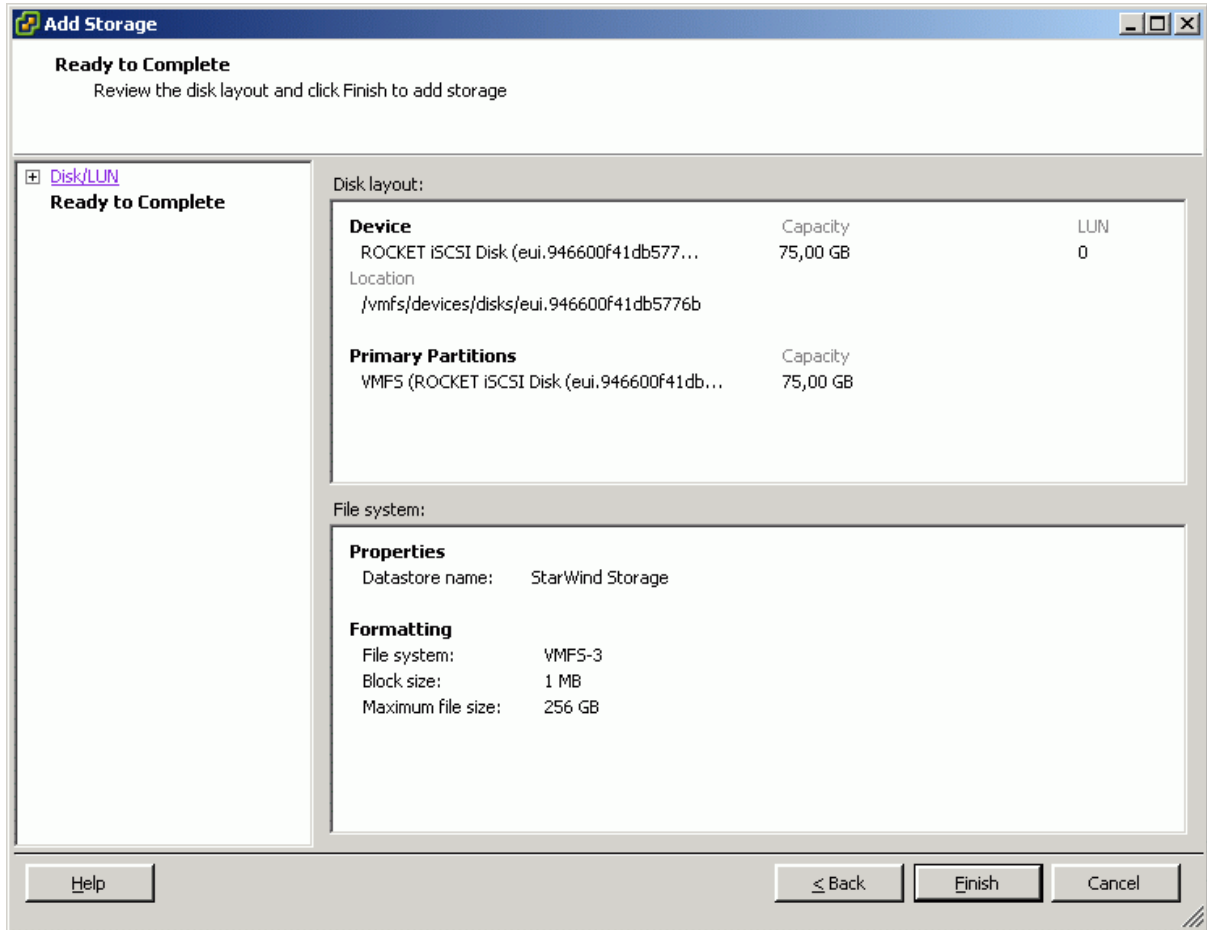

11. Click the **Next** button to continue.
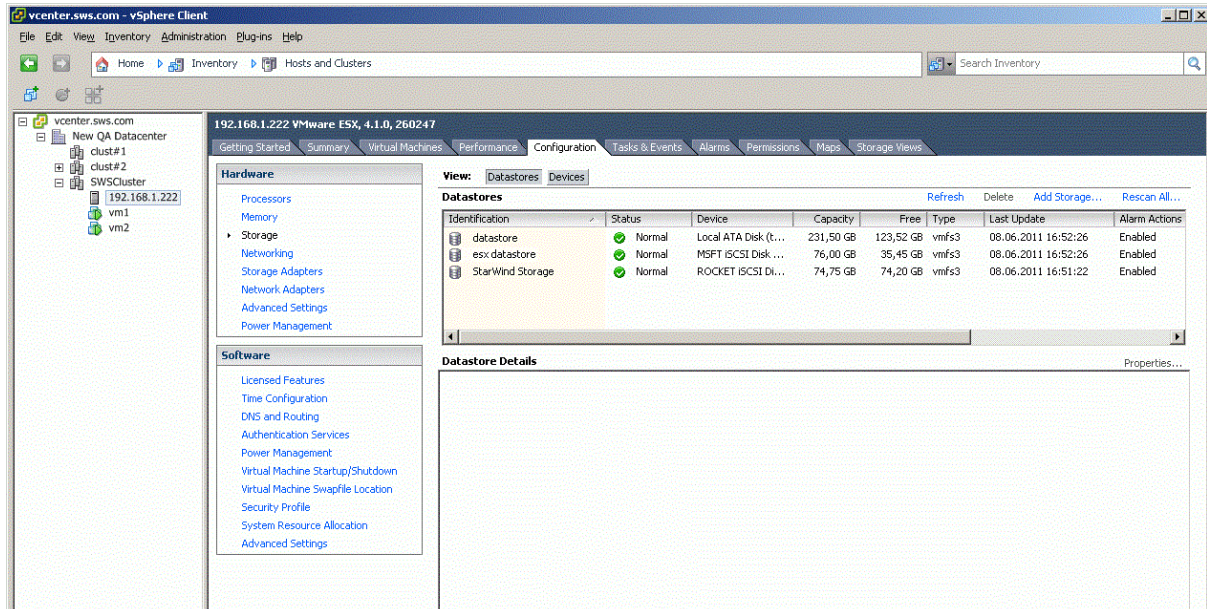
12. Specify the **Disk/LUN formatting** options.

13. Click the **Next** button to continue.

14. Make sure that the device parameters are correct. Click **Back** should any changes be required.
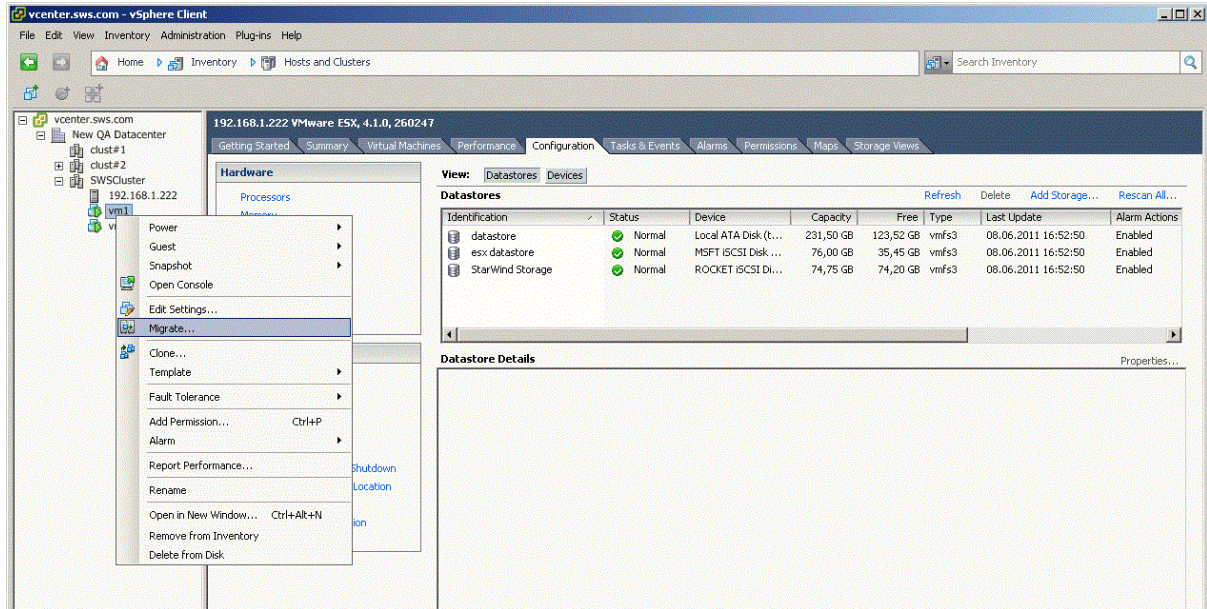

15. Click the **Finish** button to close the wizard.

After the datastore has been setup, the **vSphere Client** window should look like the sample picture below.
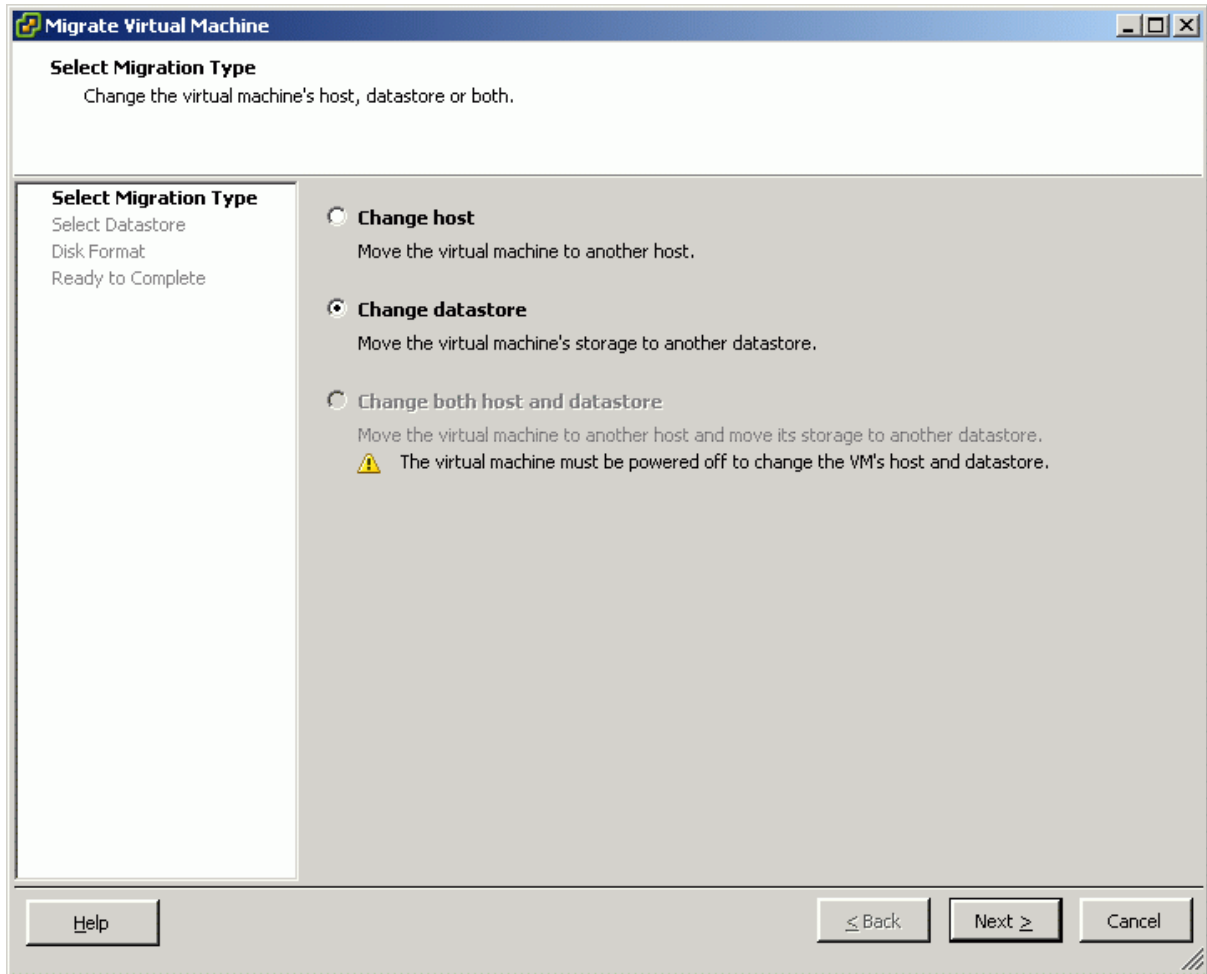
Migrating Virtual Machine from MS iSCSI target Datastore to the StarWind Datastore

1. To migrate virtual machine, right-click on it and click "**Migrate...**".

2. In the **Migrate Virtual Machine** wizard that appears, click **Select Migration Type**.
3. Click the **Change datastore** option button to move the desired virtual machine storage to StarWind Datastore.
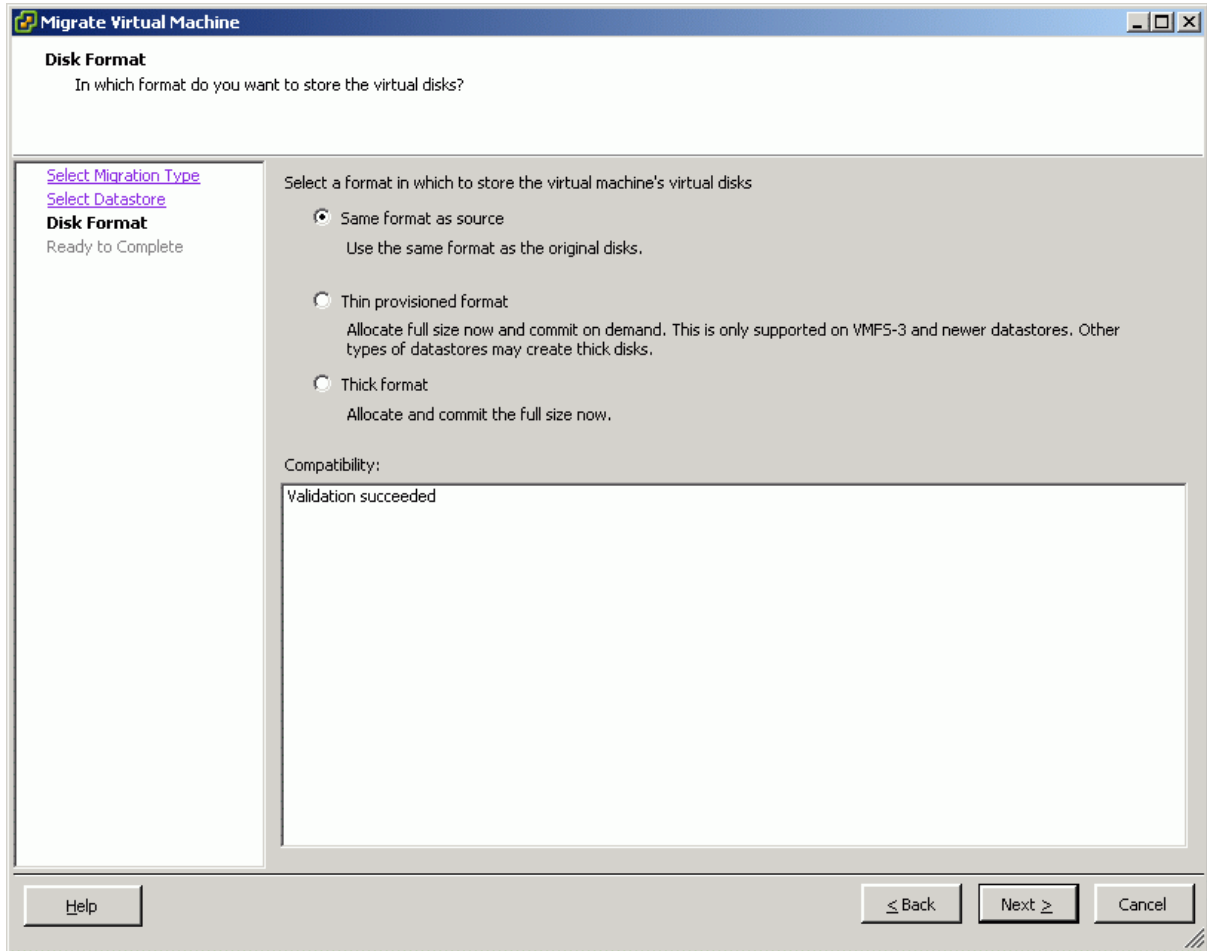

4. Click the **Next** button to continue.

5. In the **Select Datastore** section, click **StarWind Storage** to define it as the destination datastore for this virtual machine migration. If it is possible to migrate, the message "Validation succeeded" will appear in the **Compatibility** section.
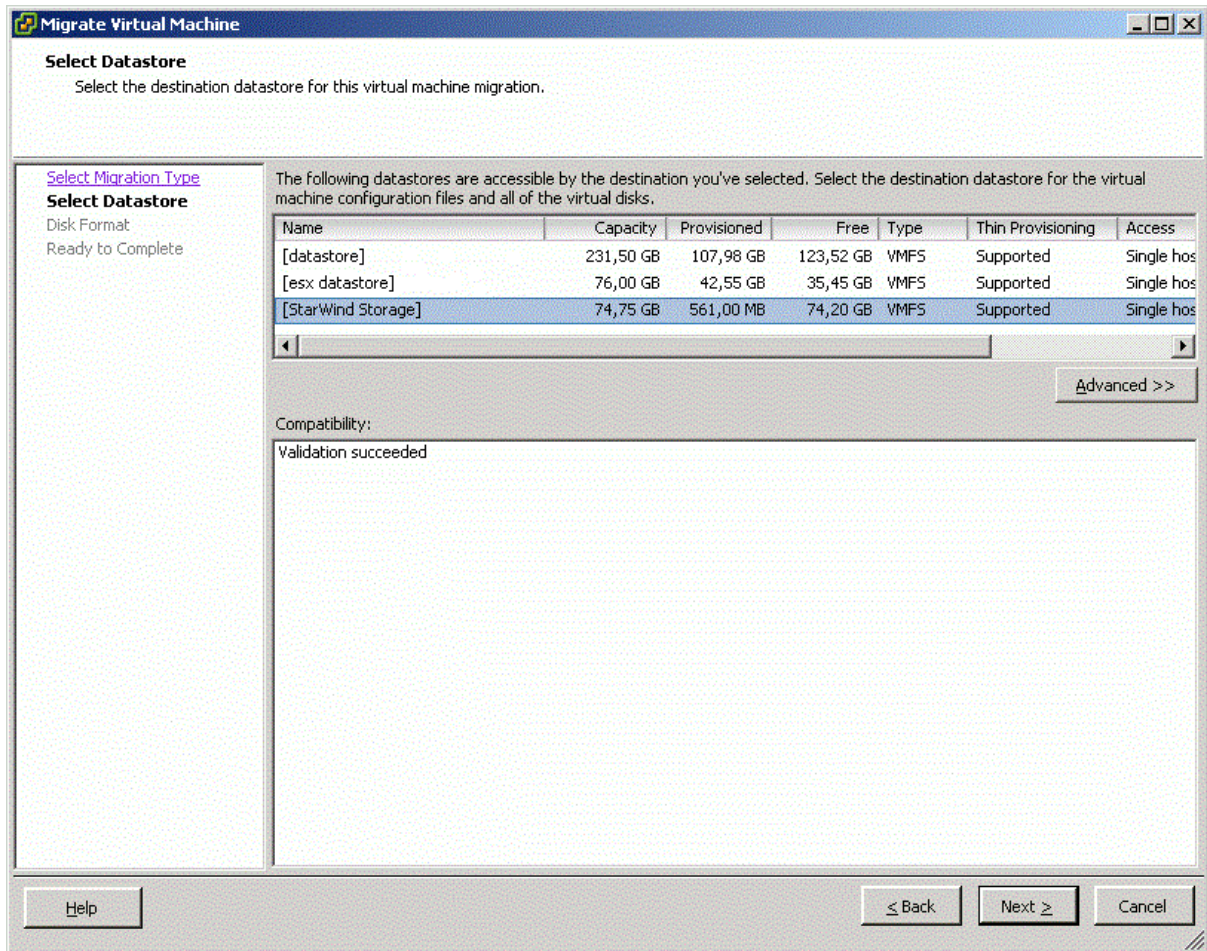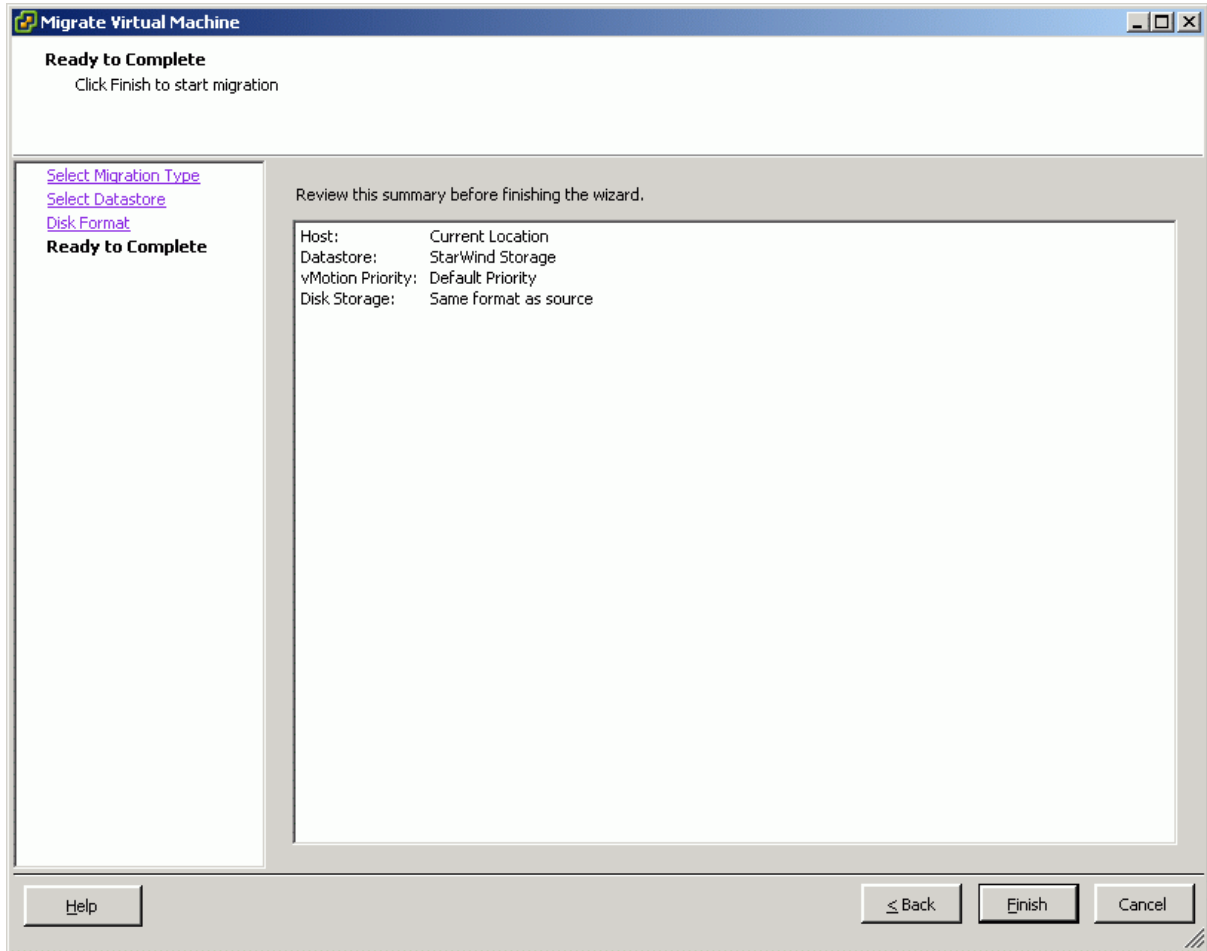

6. Click the **Next** button to continue.

7. In the **Disk Format** section, click one of the option buttons to define the format in which the virtual machine's virtual disks will be stored.
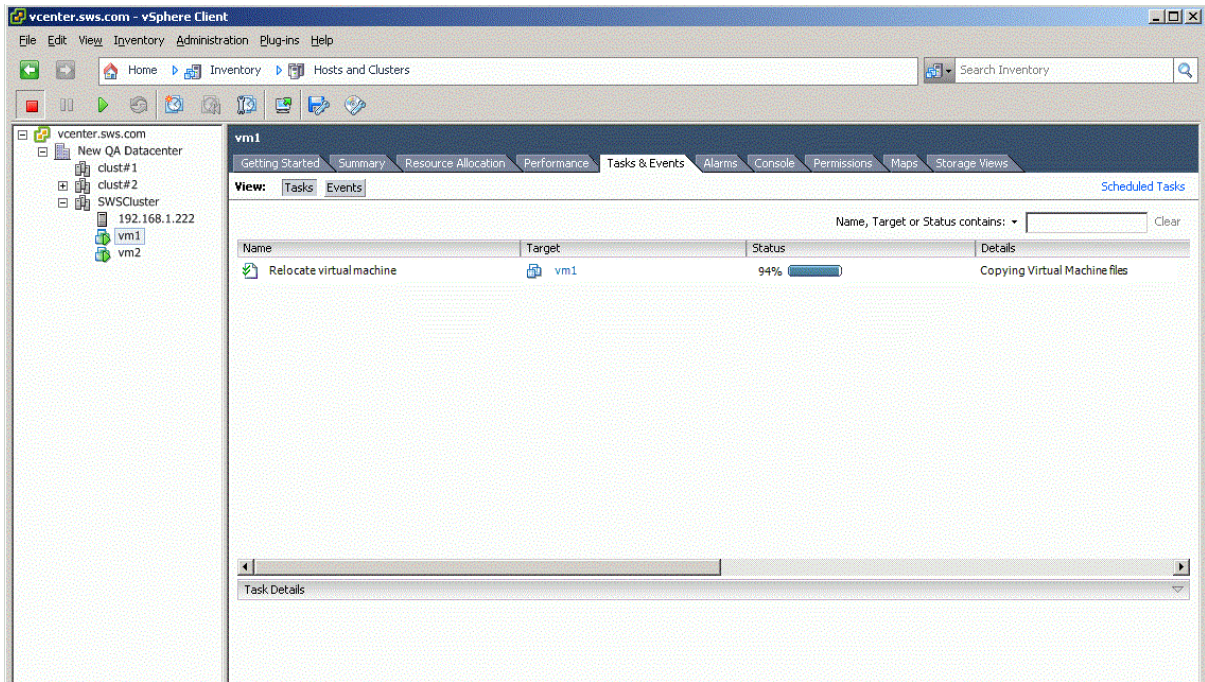

8. Click the **Next** button to continue.

9. Review the summary before finishing the wizard. Click the **Back** button should any changes be required
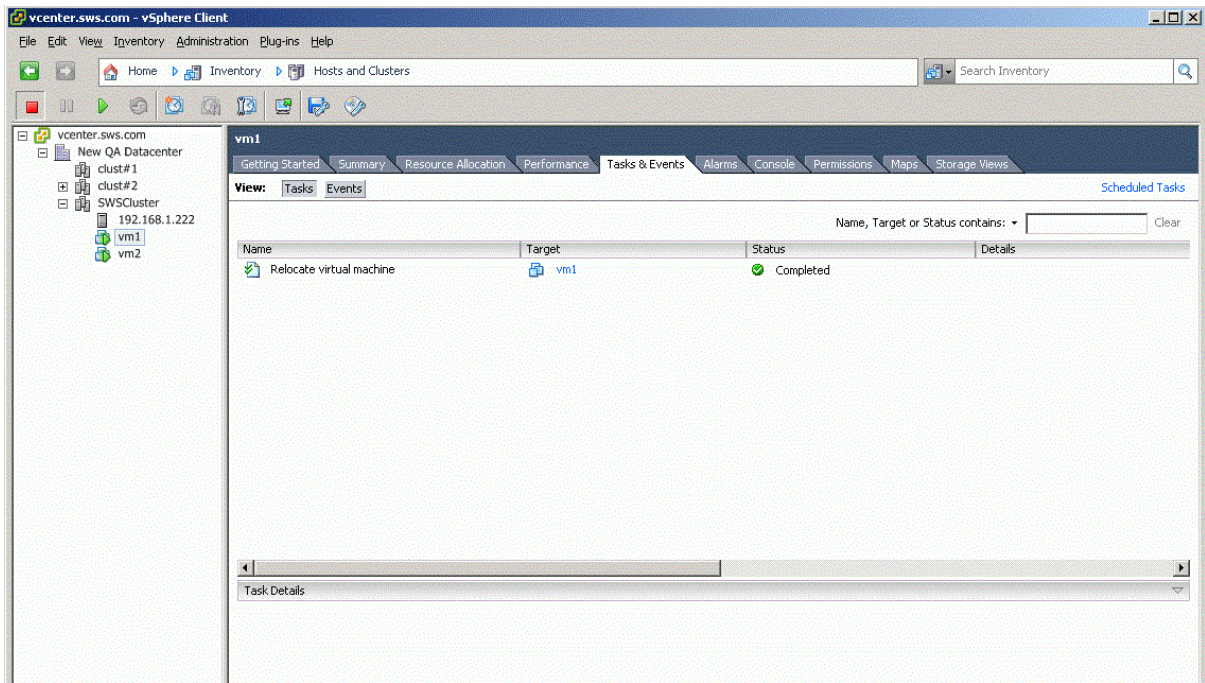

10. Click the **Finish** button to close wizard and to start migration.

11. Switch to the **Task & Events** tab to monitor the migration process.

The status **Completed** shows that the migration has been successful.

12. To make sure that the migration has been successfully completed, open the **Virtual Machine Properties** dialog. To do so, choose the **virtual machine** you need, **right-click** on it, click **Edit settings**, and choose **Hard disk 1**. If migration has been successful, the **Virtual Machine Properties** window should look like the sample picture below.
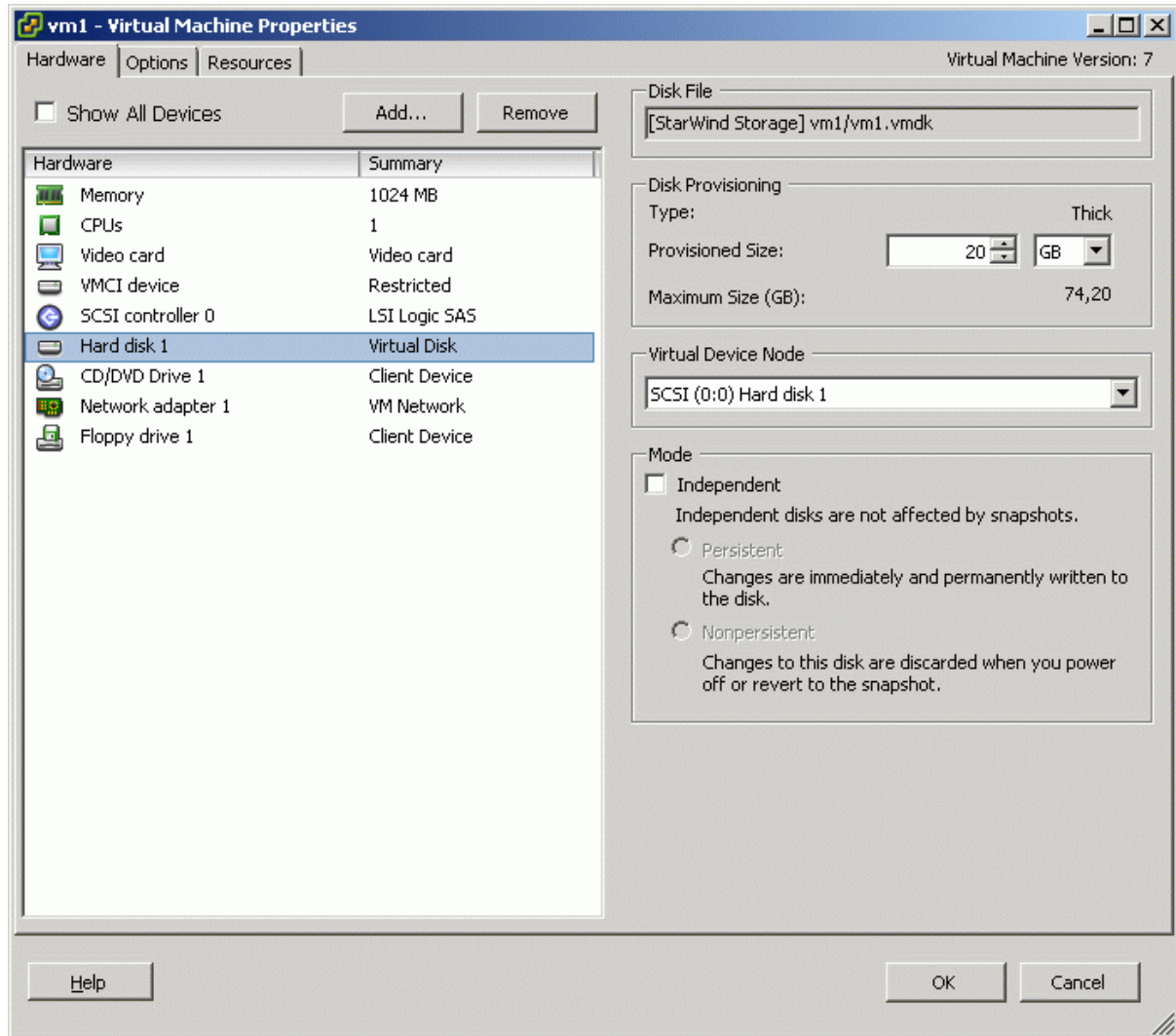
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