

# **StarWind iSCSI SAN Software: Using StarWind with MS Cluster on Windows Server 2008**

[www.starwindsoftware.com](http://www.starwindsoftware.com)

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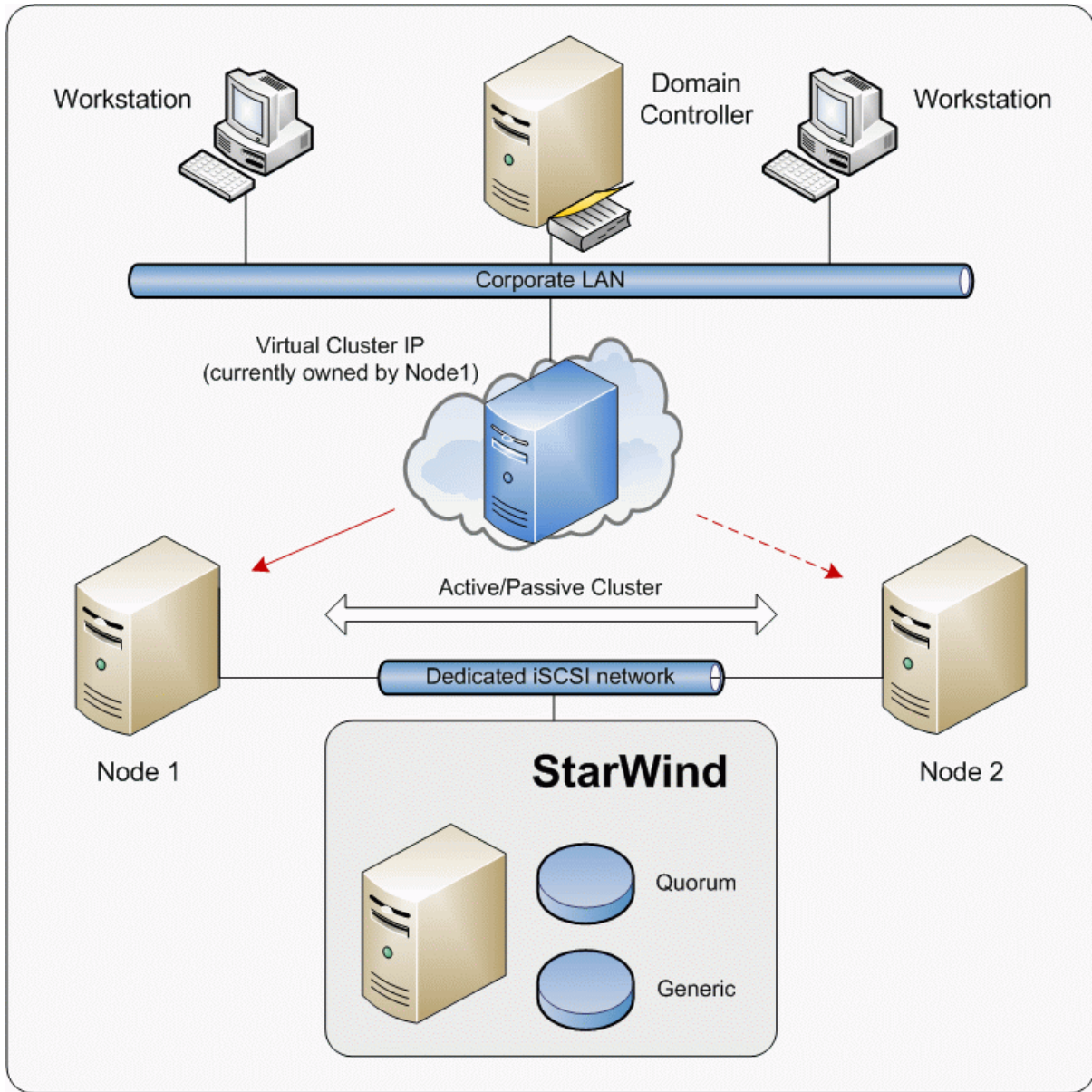
## Guide

### Introduction

Software clustering technology enables you to make several servers to work as a unit. Various cluster configurations can be implemented. One of the most frequently used configurations is the failover cluster. This configuration assumes that if one of the cluster nodes fails, the reserved node automatically brings online, serving the applications. With that the workflow remains uninterrupted and secured.

Failover cluster configuration includes two (or more) server nodes that share an external storage. Based on the iSCSI technology, **StarWind Software Inc.** **StarWind** enables to create an external storage in Windows environment without implementation of expensive FC or external SCSI solutions. With **StarWind** you can create a shared disk array on a host running Microsoft Windows.

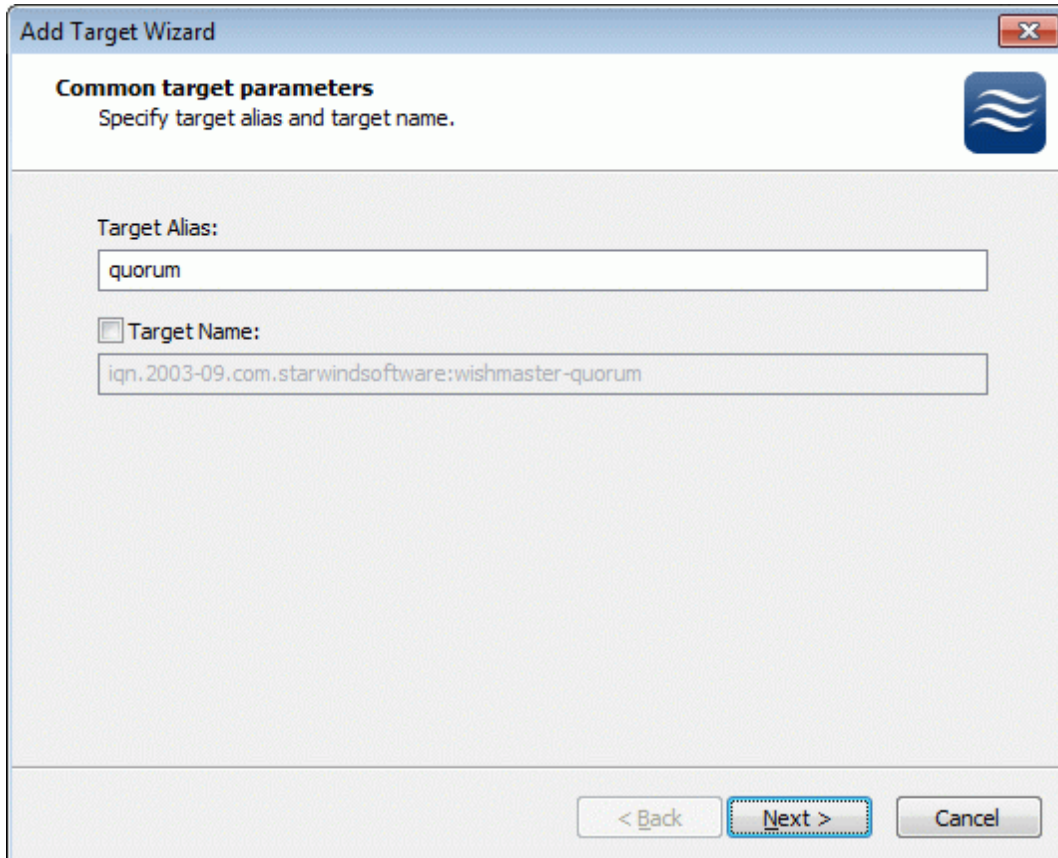
This document gives you detailed step-by-step instructions on **StarWind** configuring for failover clusters.



## Configuring StarWind Server

### Preparing Quorum Volume

Launch the **StarWind Management Console** selecting **Start -> All Programs -> StarWind Software -> StarWind -> StarWind**. After the console is launched its icon appears in the system tray. Double click the icon with the left mouse button or single click it with the right and select **Start Management** pop-up menu item. From the **StarWind Servers** tree please select the computer you wish to connect to. Press the right mouse button over the desired host (computer) and select the **Connect** menu item. You will be prompted to enter the login and password. Default ones are: root, starwind. You can always change them later. After you have successfully connected to the **StarWind Service**, please click the right mouse button over the desired host (computer) and select **Add Target** pop-up menu item. In the wizard that appears, select a target name. The name must be a unique name by which the device will be declared to the iSCSI initiators connecting to **StarWind** over an IP network.

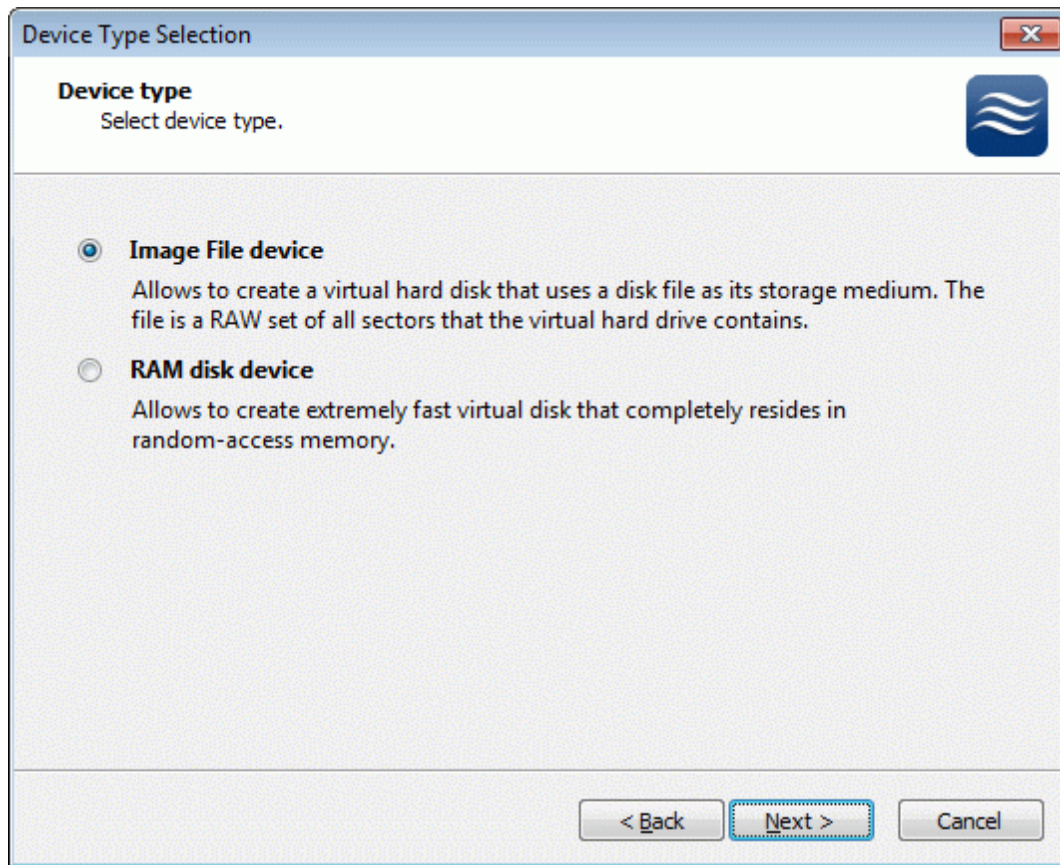


The image shows a screenshot of the "Add Target Wizard" dialog box. The title bar says "Add Target Wizard" with a close button (X) on the right. The main area has a header "Common target parameters" with a sub-instruction "Specify target alias and target name." and a StarWind logo on the right. Below this, there are two input fields. The first is labeled "Target Alias:" and contains the text "quorum". The second is preceded by a checkbox labeled "Target Name:" and contains the text "iqn.2003-09.com.starwindsoftware:wishmaster-quorum". At the bottom of the dialog, there are three buttons: "< Back", "Next >" (which is highlighted with a blue border), and "Cancel".

Press the **Next** button to continue.

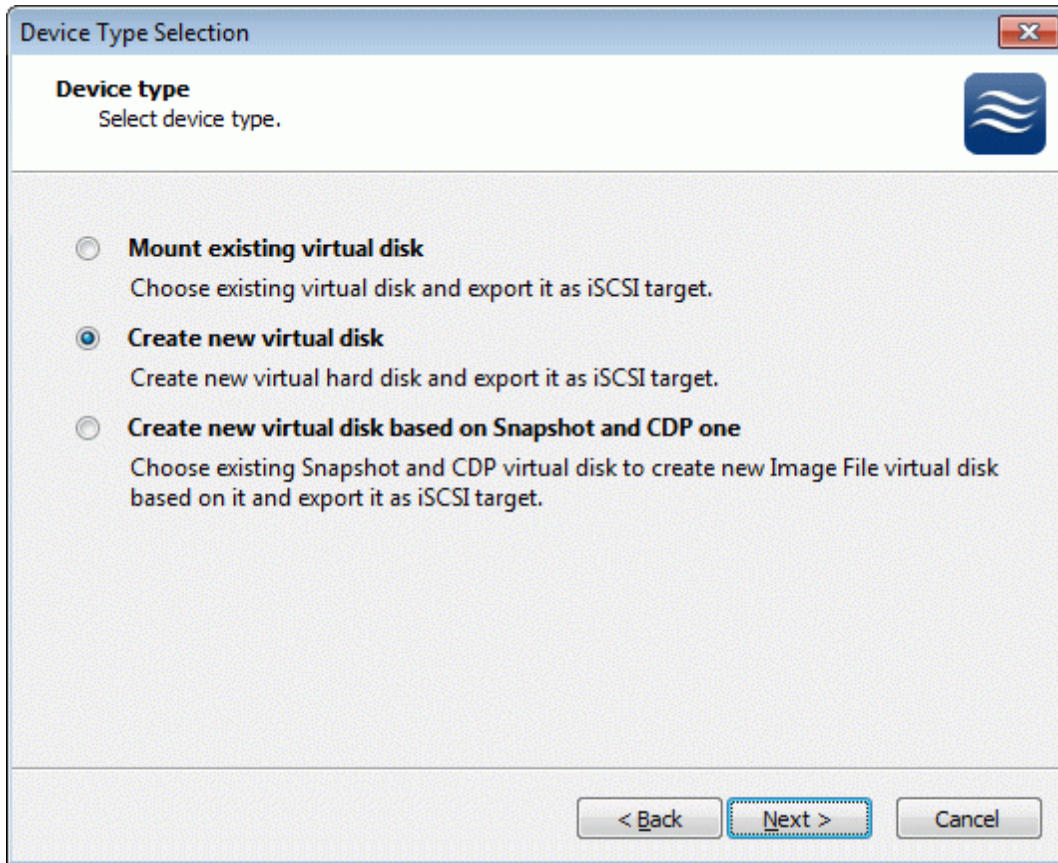


Select **Image File device**.



Press the **Next** button to continue.

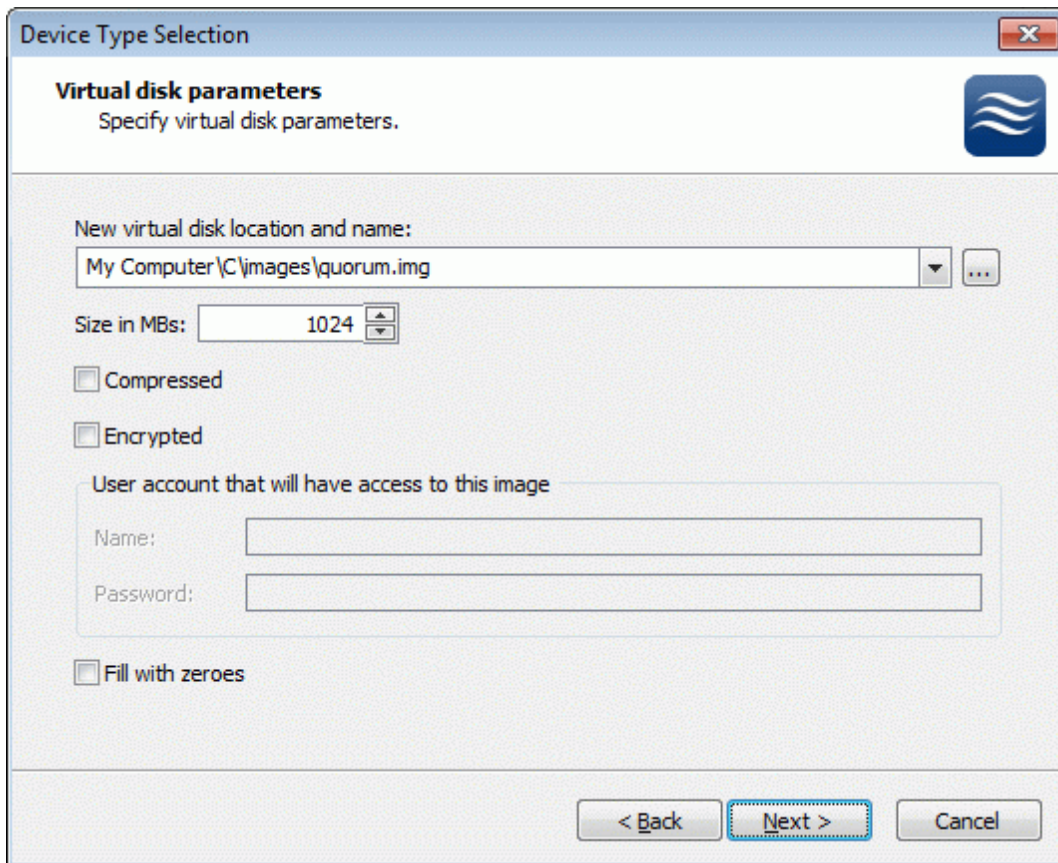
Select **Create new virtual disk** to create a new virtual hard disk or **Mount existing virtual disk** to mount an existing virtual disk that you've prepared before.



Press the **Next** button to continue.



If you have decided to create a new virtual disk please specify the location and the name of the virtual disk you wish to be created. Also you have to provide the virtual disk size in megabytes. Check any additional parameters of the virtual disk you wish to create. Please refer to the online help for details regarding those additional parameters (**Compressed** and **Encrypted**).



Device Type Selection

**Virtual disk parameters**  
Specify virtual disk parameters.

New virtual disk location and name:  
My Computer\C:\images\quorum.img

Size in MBs: 1024

☐ Compressed

☐ Encrypted

User account that will have access to this image

Name:

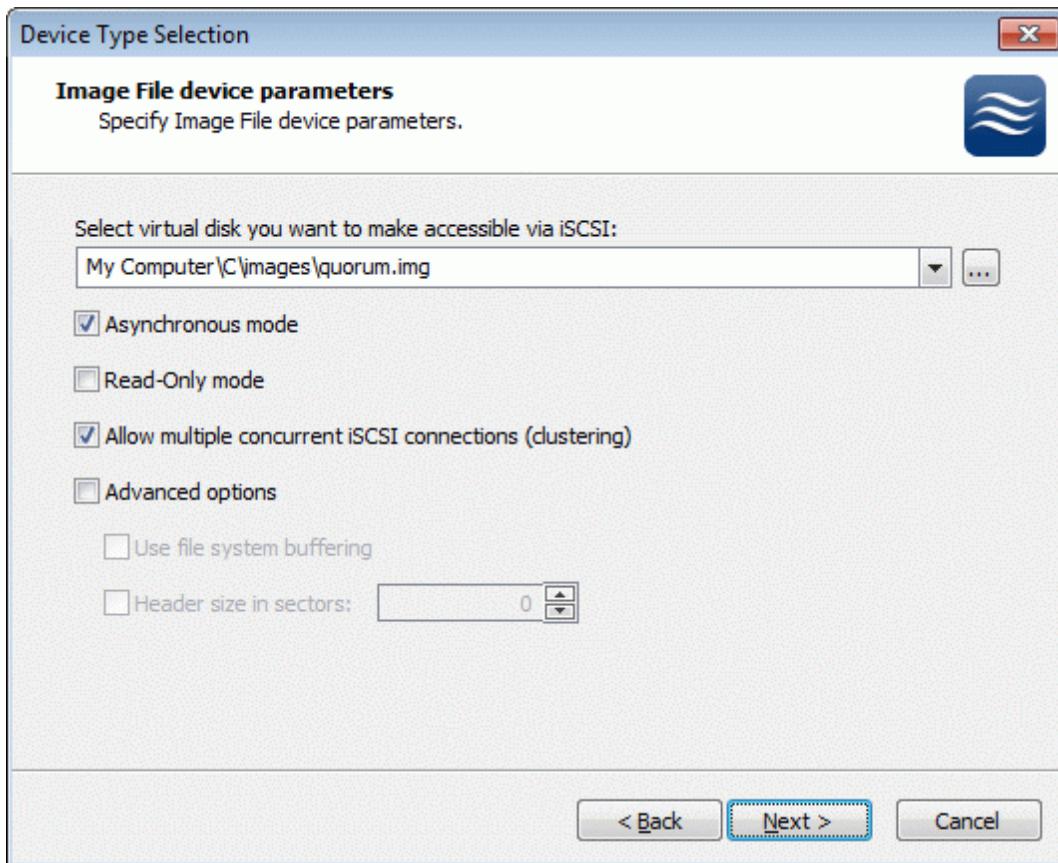
Password:

☐ Fill with zeroes

< Back   Next >   Cancel

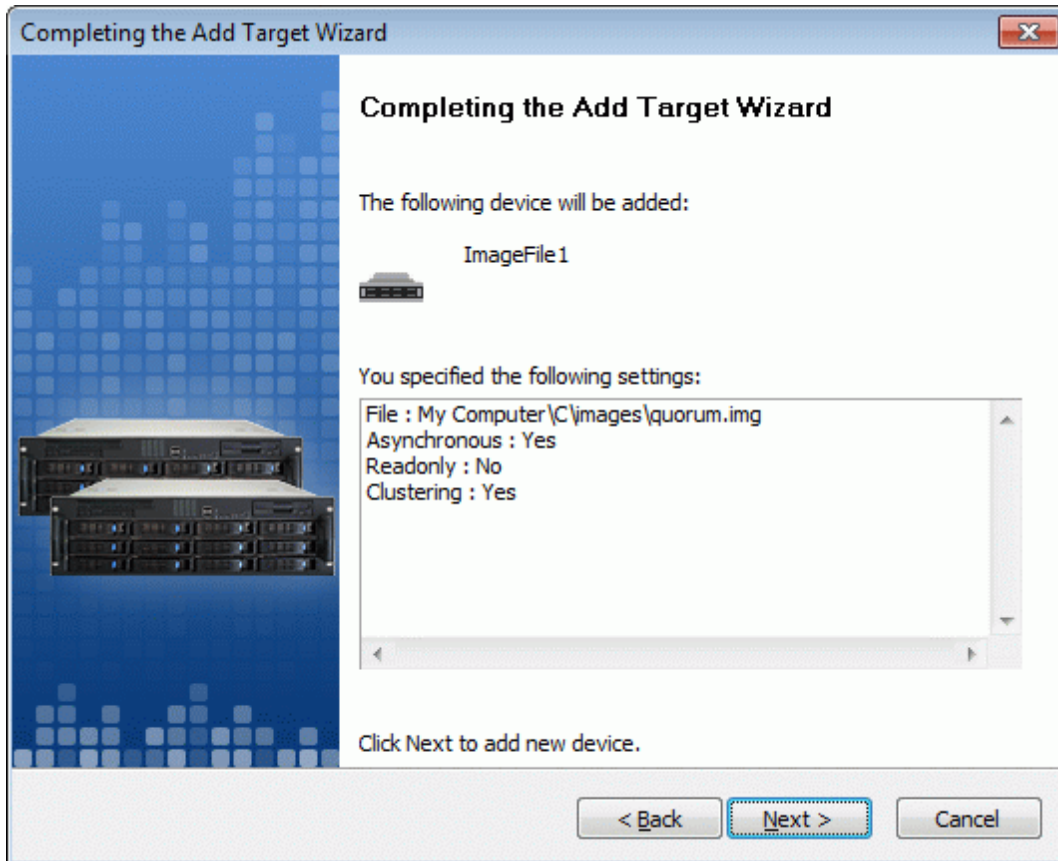
Press the **Next** button to continue.

Image File device has some extra parameters. Check **Allow multiple concurrent iSCSI connections (clustering)** checkbox. Please refer to the online help for details regarding those additional parameters (**Asynchronous mode**, **Allow multiple connections (clustering)**, **Read-only mode** and **Specify advanced options**).



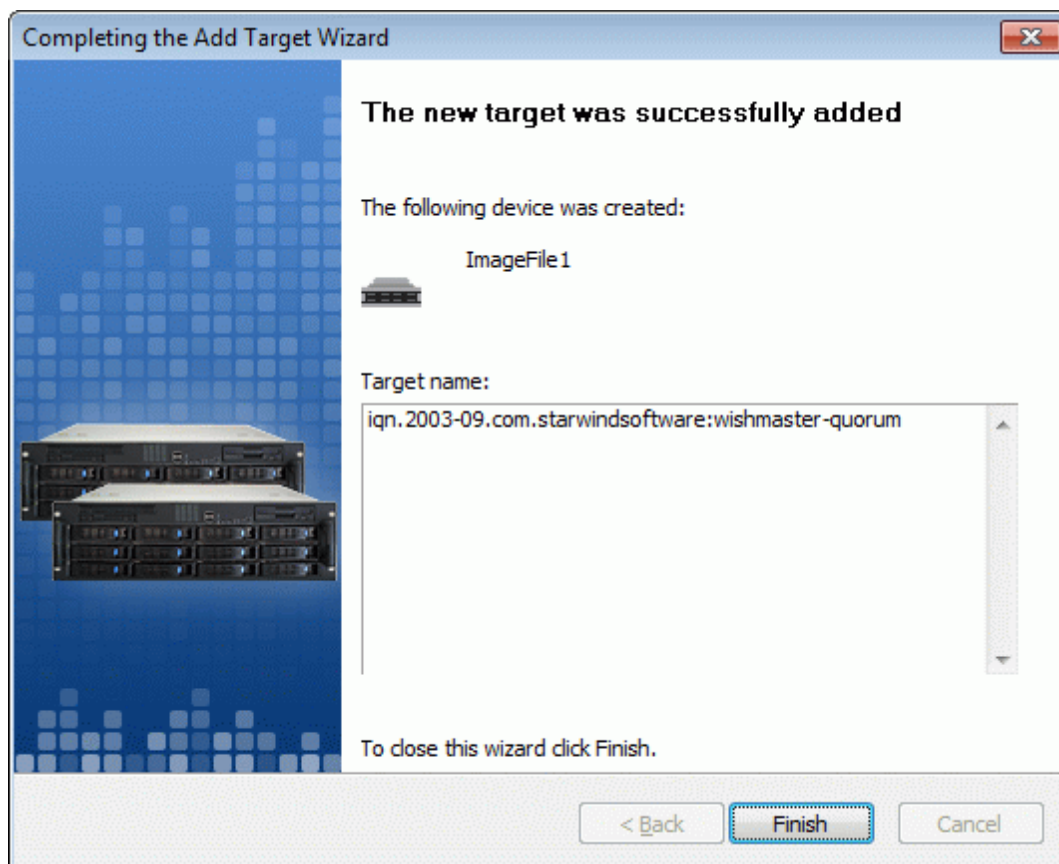
Press the **Next** button to continue.

Check the device parameters are correct. Press the **Back** button should any changes be required.



Press the **Next** button to continue.

A summary of the created device is displayed on the last wizard page (see image below).

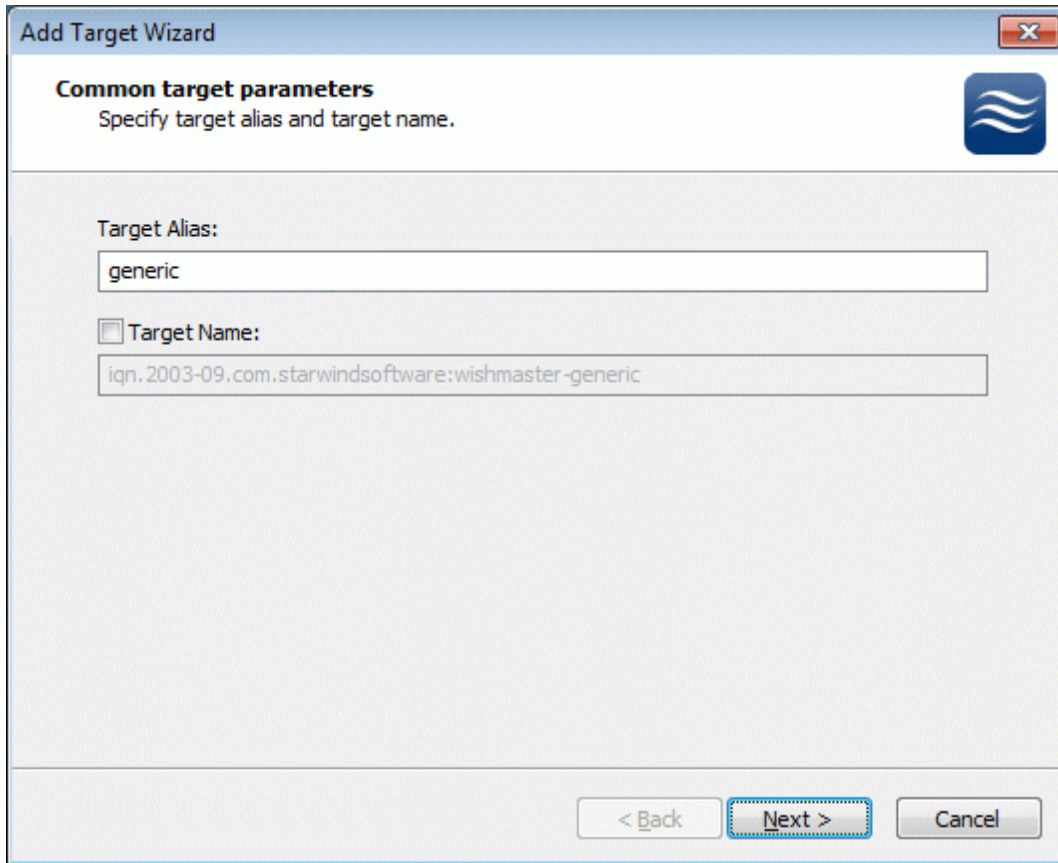


Press the **Finish** button to close the wizard.

## Preparing Generic Volume

Click the right mouse button over the host and select **Add Target** pop-up menu item.

In the wizard that appears, select a target name. The name must be a unique name by which the device will be declared to the iSCSI initiators connecting to **StarWind** over an IP network.

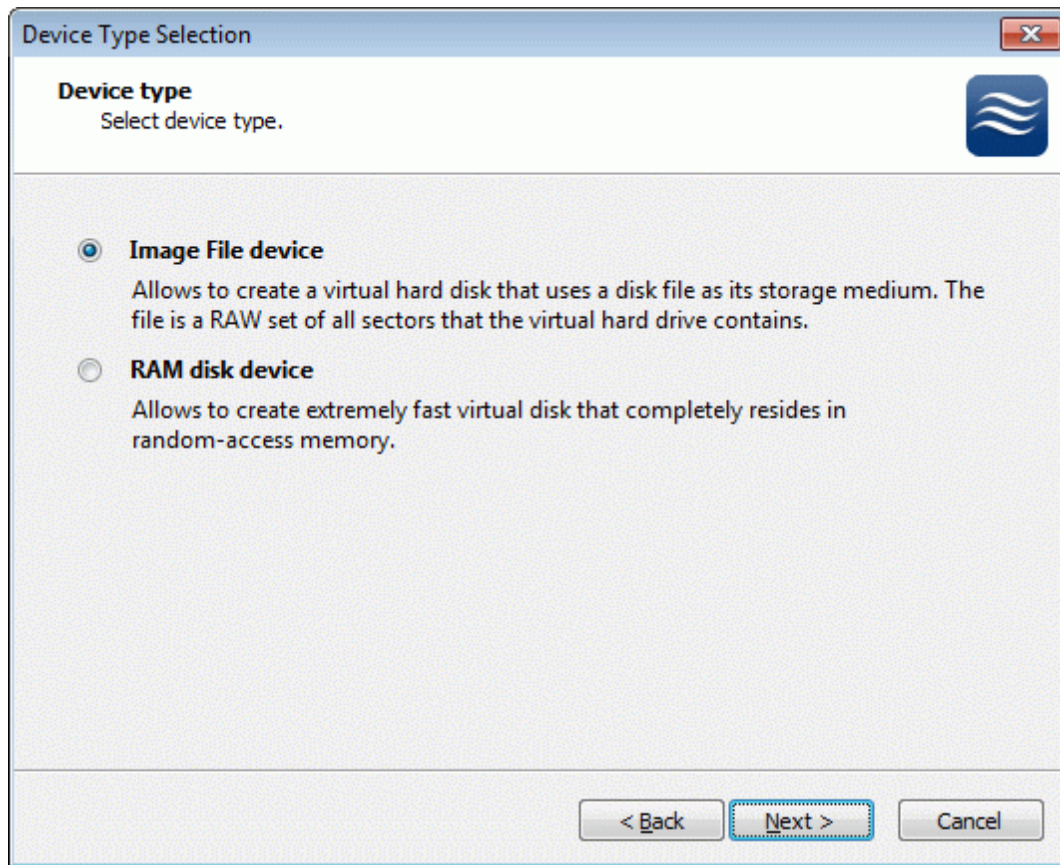


The image shows a Windows-style dialog box titled "Add Target Wizard". It has a standard Windows title bar with a close button (X) in the top right corner. The main content area is titled "Common target parameters" and includes the instruction "Specify target alias and target name." Below this, there are two input fields. The first is labeled "Target Alias:" and contains the text "generic". The second is labeled "Target Name:" and contains the text "iqn.2003-09.com.starwindsoftware:wishmaster-generic". At the bottom of the dialog, there are three buttons: "< Back", "Next >", and "Cancel". The "Next >" button is highlighted with a blue border, indicating it is the recommended action.

Press the **Next** button to continue.



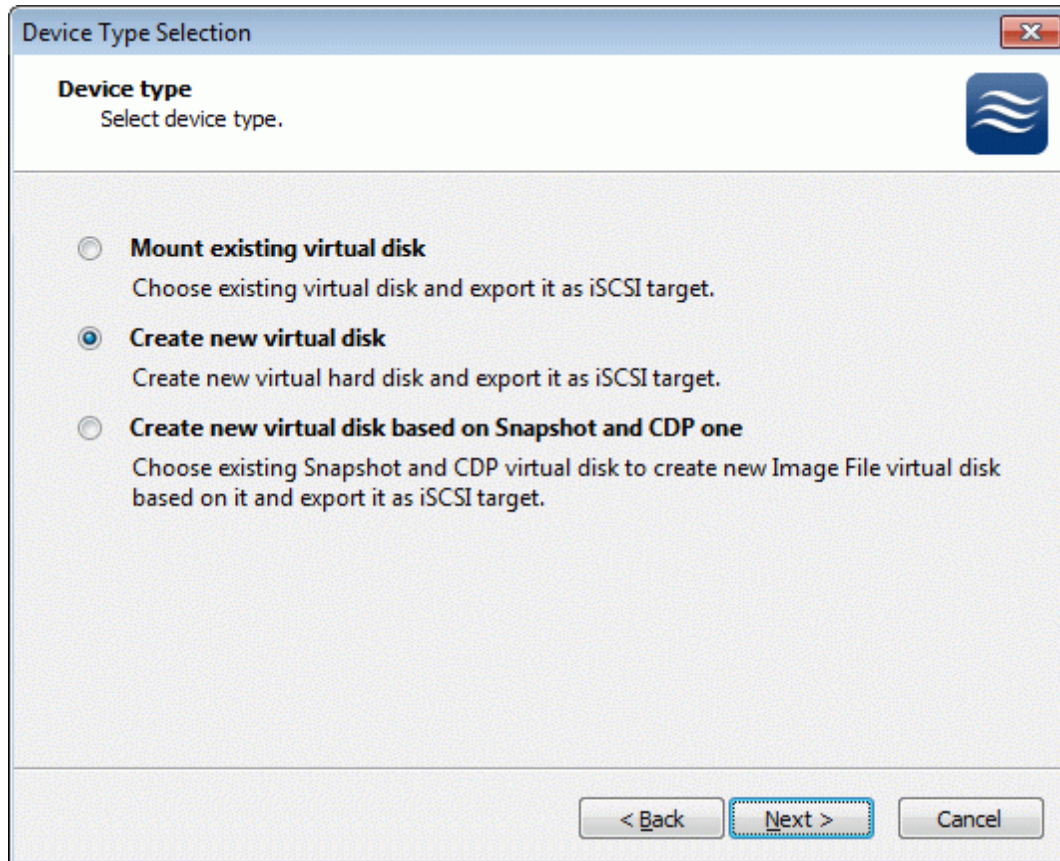
Select **Image File device**.



Press the **Next** button to continue.

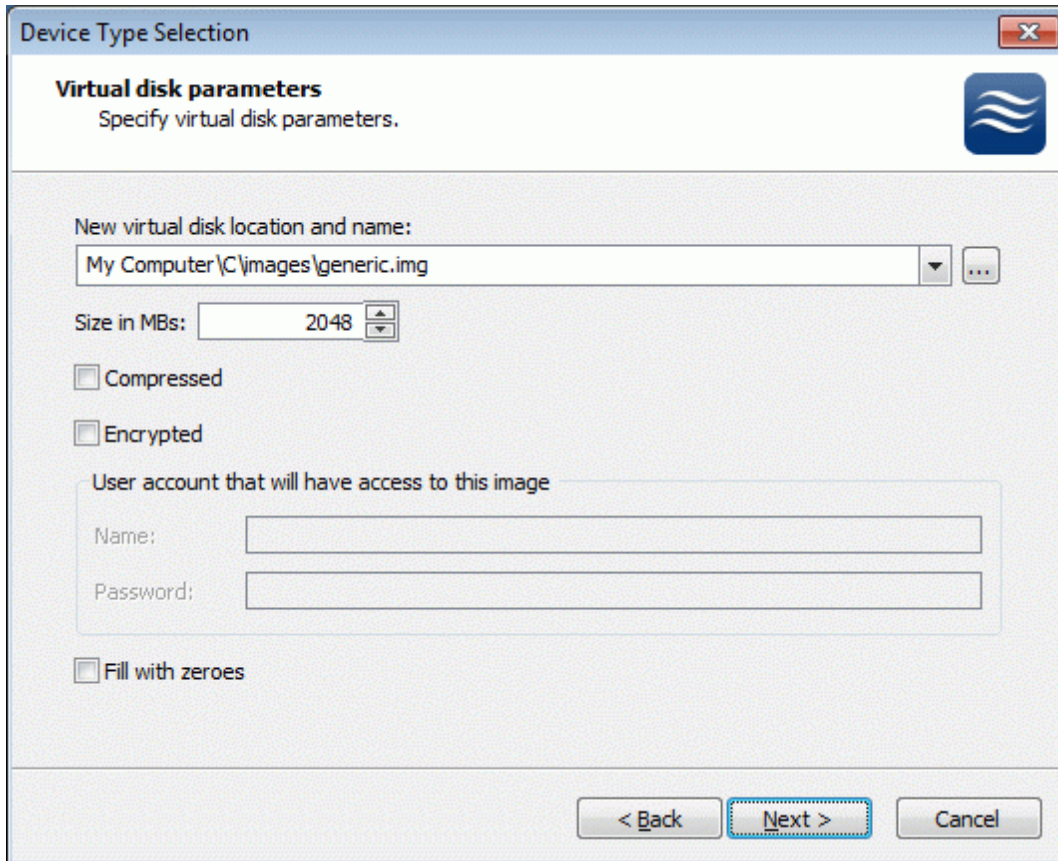


Select **Create new virtual disk** to create a new virtual hard disk or **Mount existing virtual disk** to mount an existing virtual disk that you've prepared before.



Press the **Next** button to continue.

If you have decided to create a new virtual disk please specify the location and the name of the virtual disk you wish to be created. Also you have to provide the virtual disk size in megabytes. Check any additional parameters of the virtual disk you wish to create. Please refer to the online help for details regarding those additional parameters (**Compressed** and **Encrypted**).



**Device Type Selection**

**Virtual disk parameters**  
Specify virtual disk parameters.

New virtual disk location and name:  
My Computer\C:\images\generic.img

Size in MBs: 2048

☐ Compressed

☐ Encrypted

User account that will have access to this image

Name:

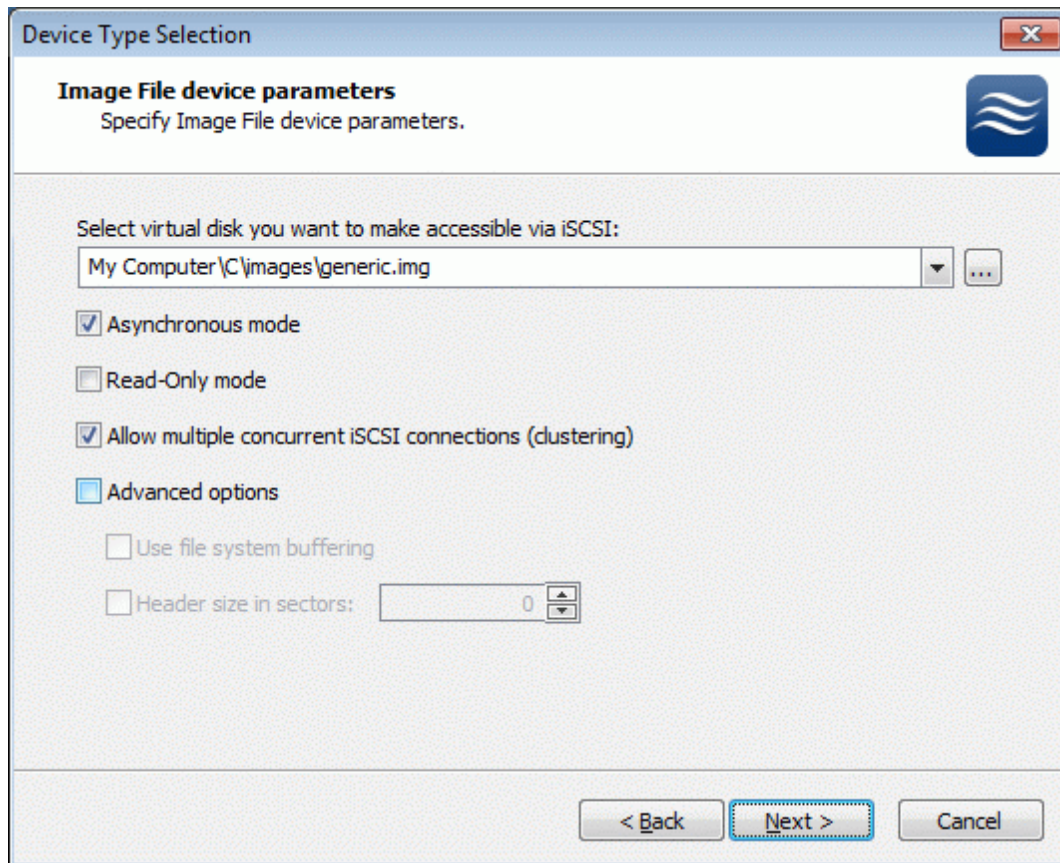
Password:

☐ Fill with zeroes

< Back   **Next >**   Cancel

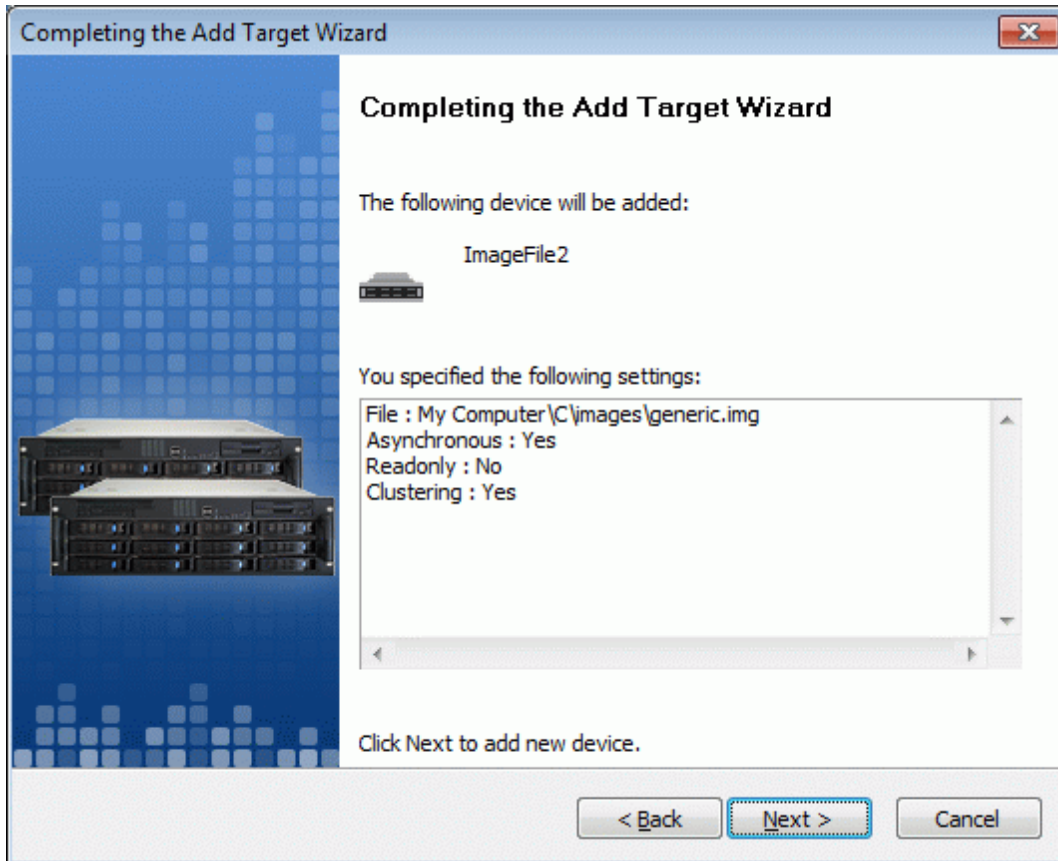
Press the **Next** button to continue.

Image File device has some extra parameters. Check **Allow multiple concurrent iSCSI connections (clustering)** checkbox. Please refer to the online help for details regarding those additional parameters (**Asynchronous mode**, **Allow multiple connections (clustering)**, **Read-only mode** and **Specify advanced options**).



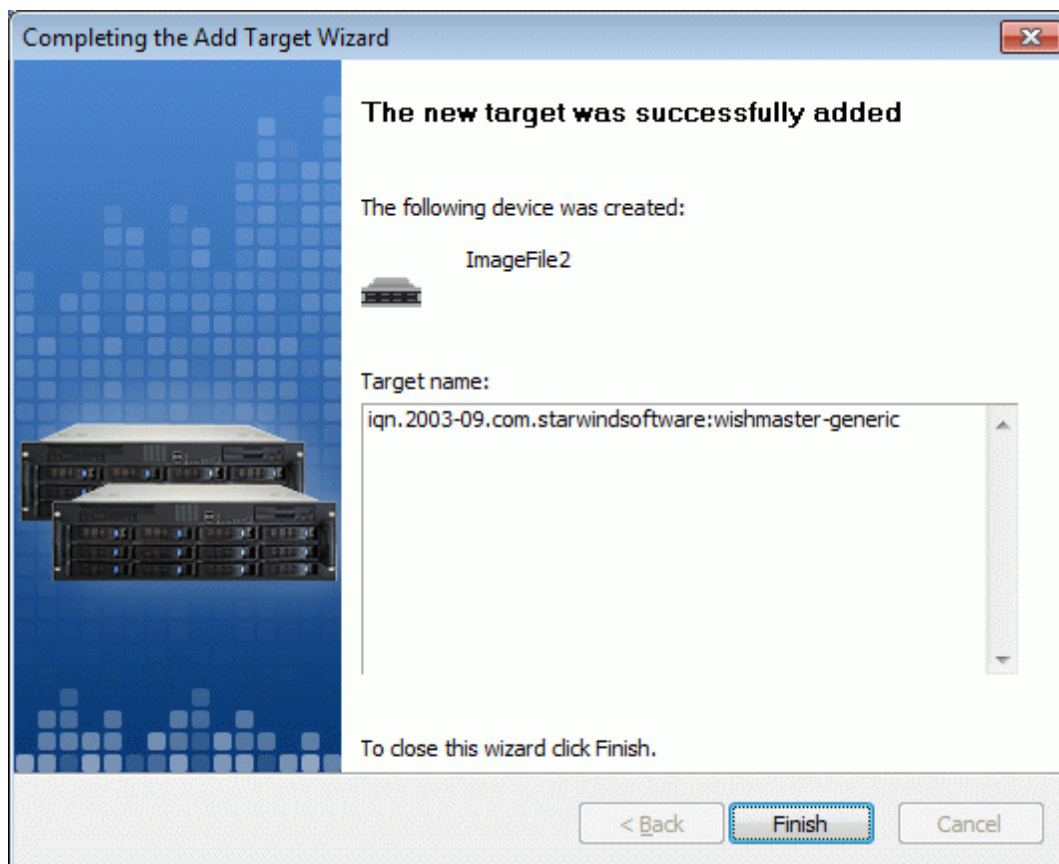
Press the **Next** button to continue.

Check the device parameters are correct. Press the **Back** button should any changes be required.



Press the **Next** button to continue.

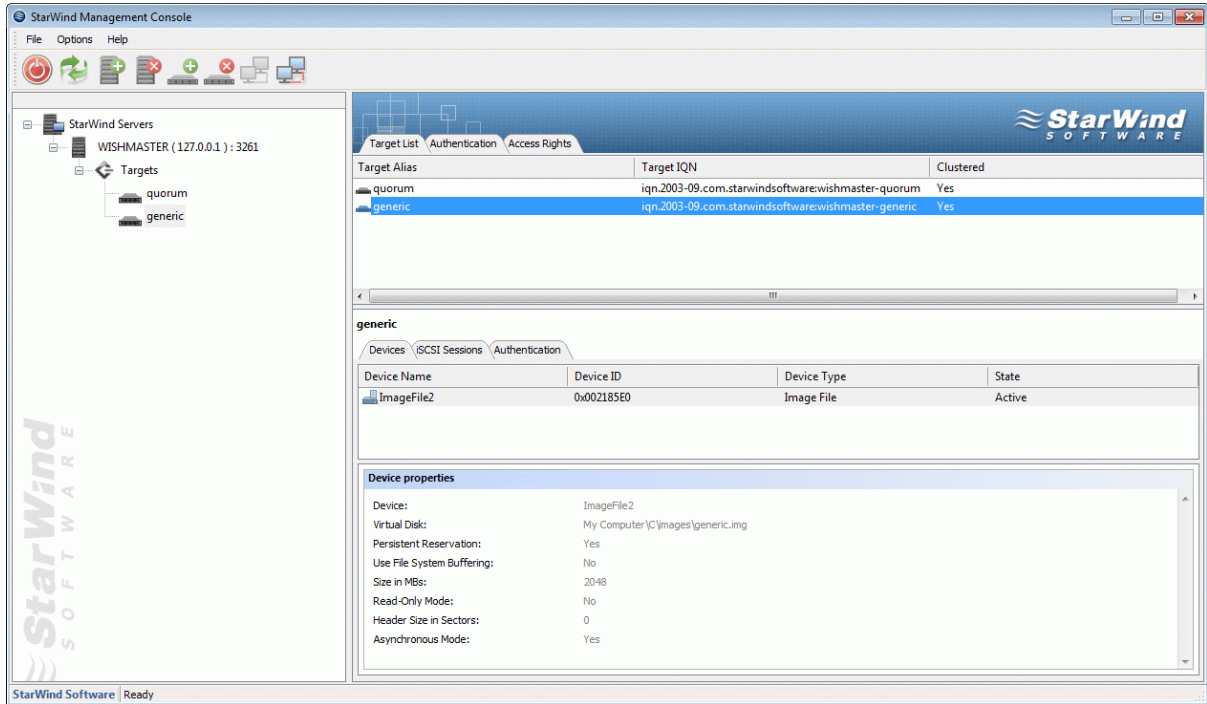
A summary of the created device is displayed on the last wizard page (see image below).



Press the **Finish** button to close the wizard.



If successful, the **StarWind Console** should look like the sample image provided below.



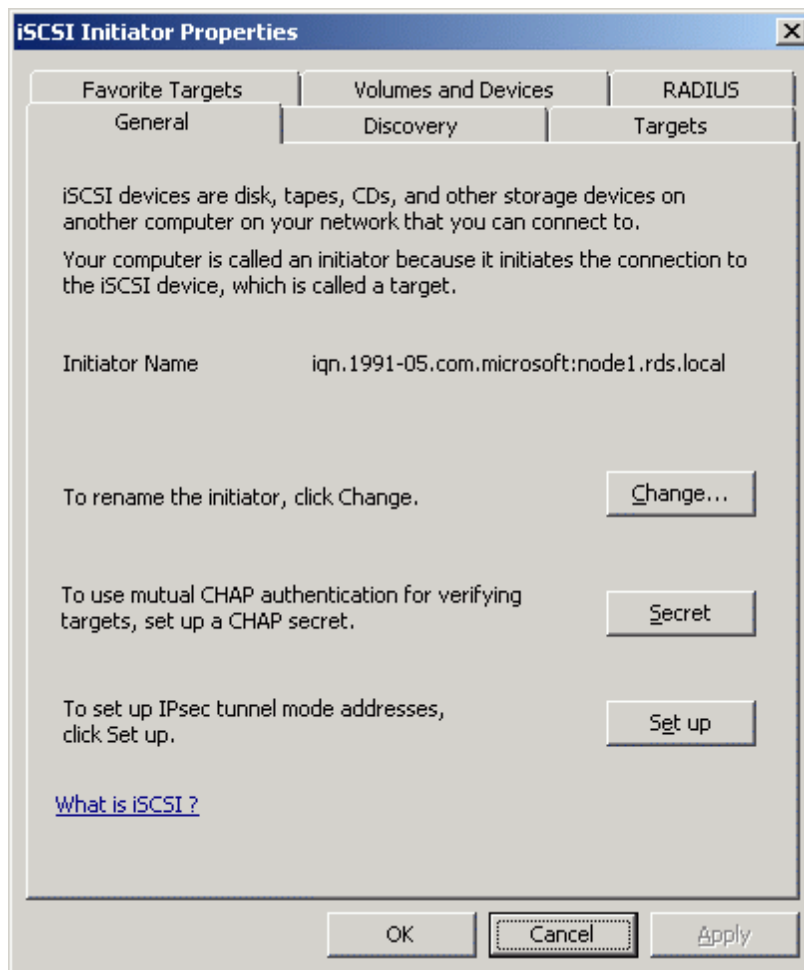


## Preparing Cluster Nodes

### Node 1

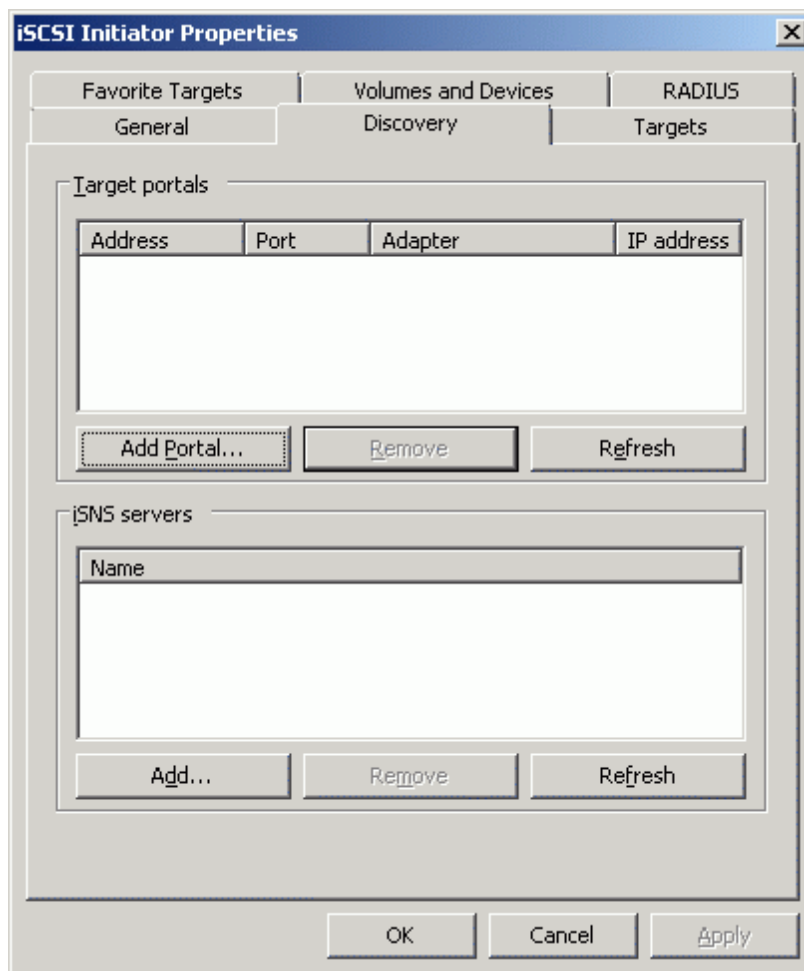
#### Configuring iSCSI initiator

Launch the Microsoft iSCSI Software Initiator application **Administrative Tools**  
-> **iSCSI Initiator**



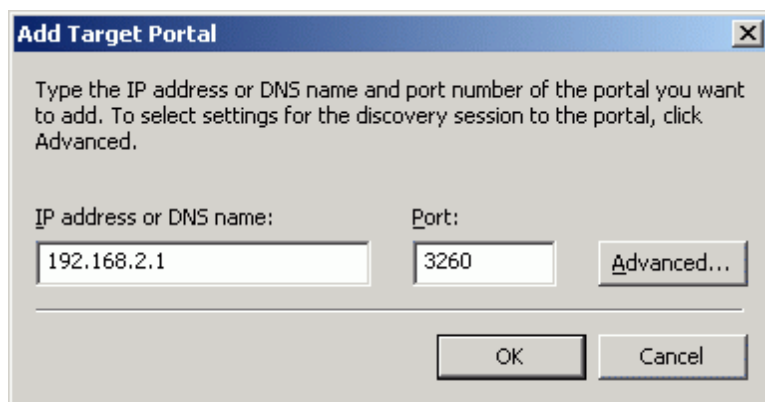
Select the **Discovery** Tab.

In the **Target Portals** group, click the **Add Portal...** button.



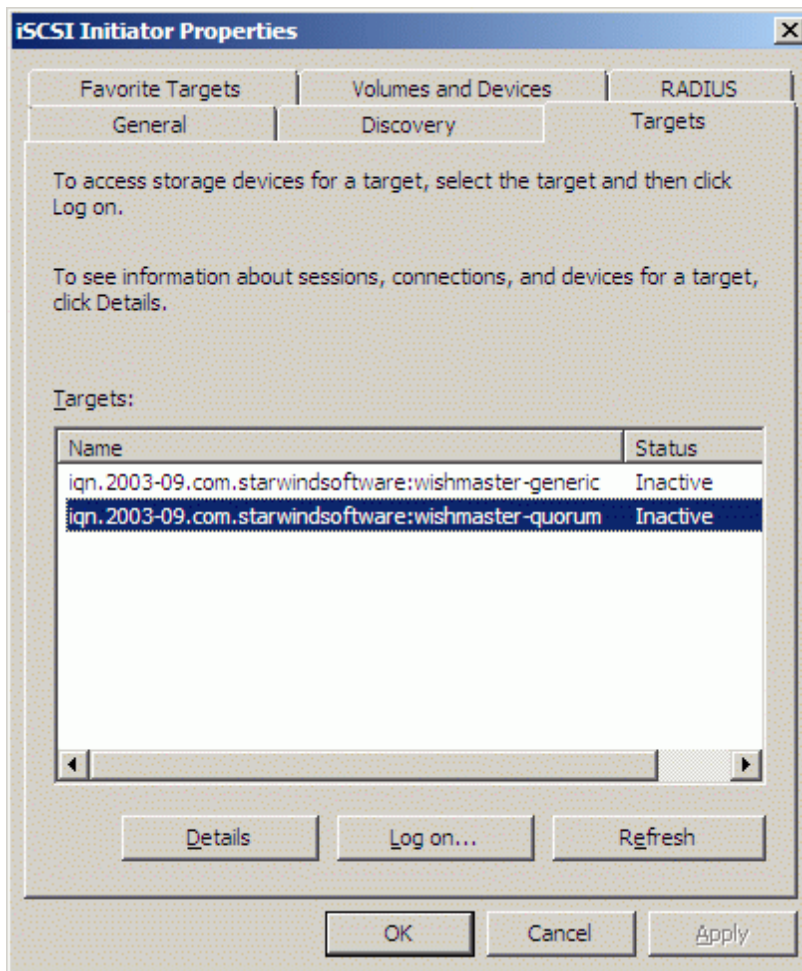
Press the **Add Portal...** button.

In the **Add Target Portal** dialog enter **IP address or DNS name** of the **StarWind** target server.



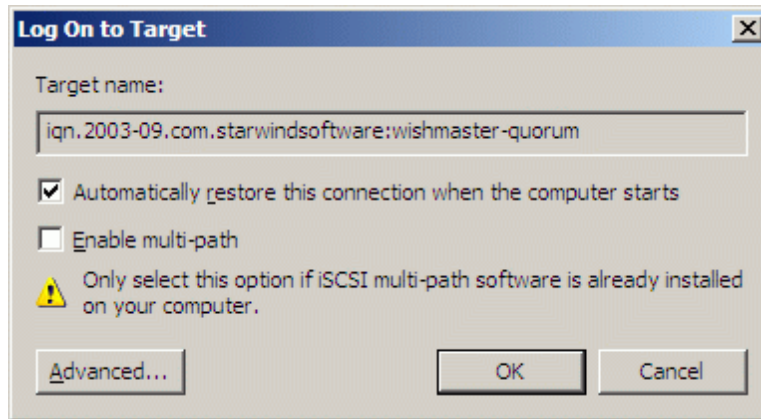
Press the **OK** button to continue.

Click on the **Targets** tab. Select the IQN of the target just added.

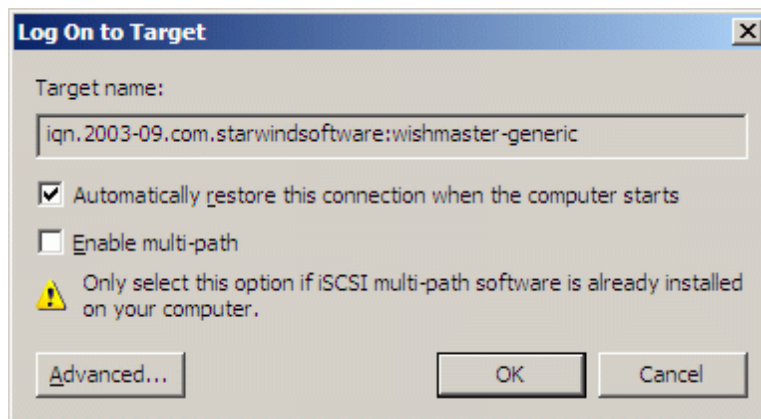


Press the **Log On...** button.

The **Log On to Target** dialog now appears. In this dialog click on the checkbox **Automatically restore this connection when the system boots** to make this connection persistent.

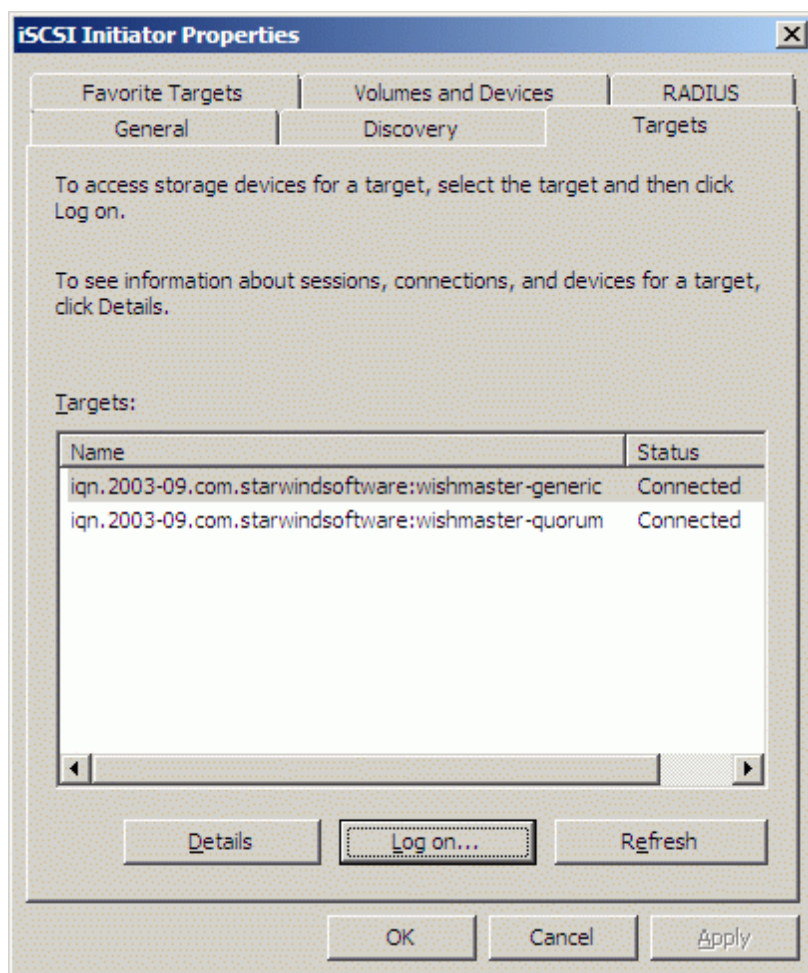


Press the **OK** button to continue.



Press the **OK** button to continue.

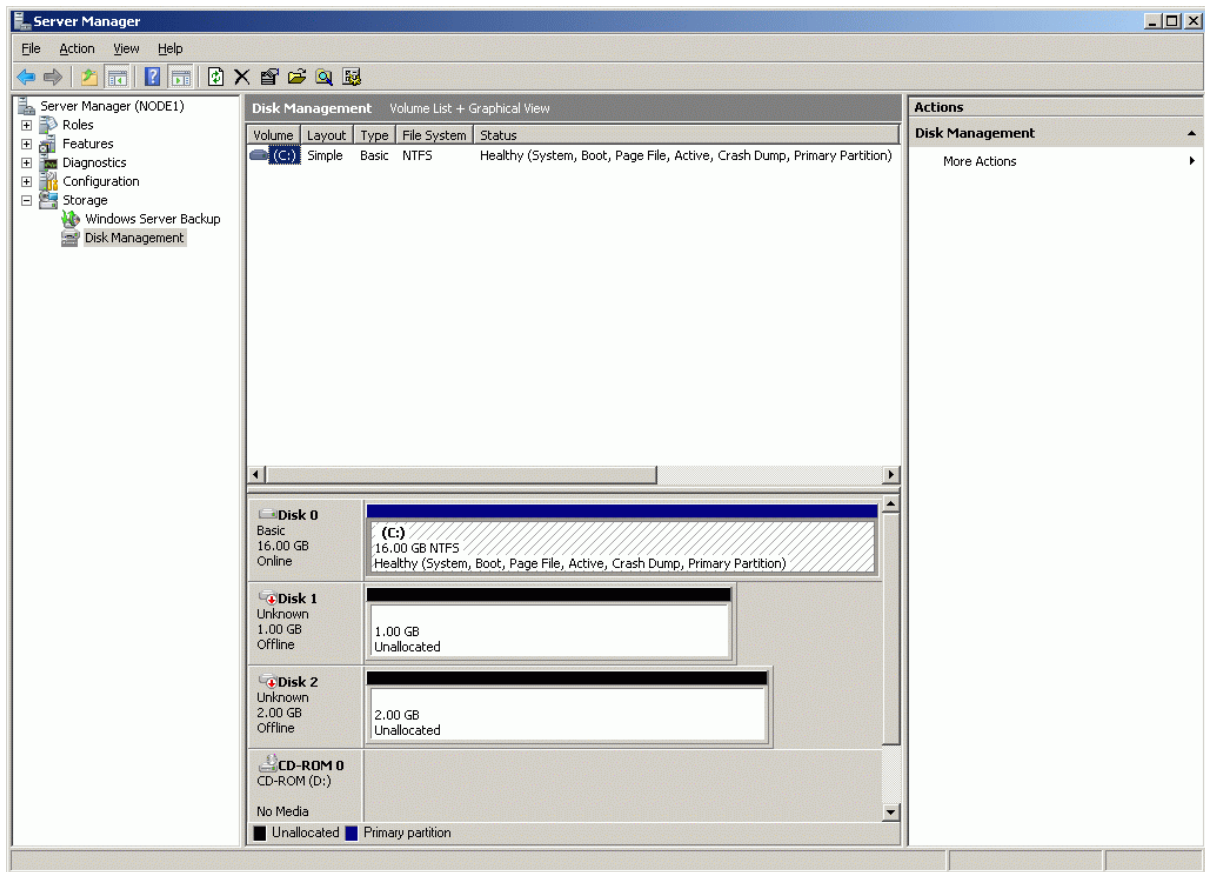
If successful, the initiator is now logged on to **StarWind**.





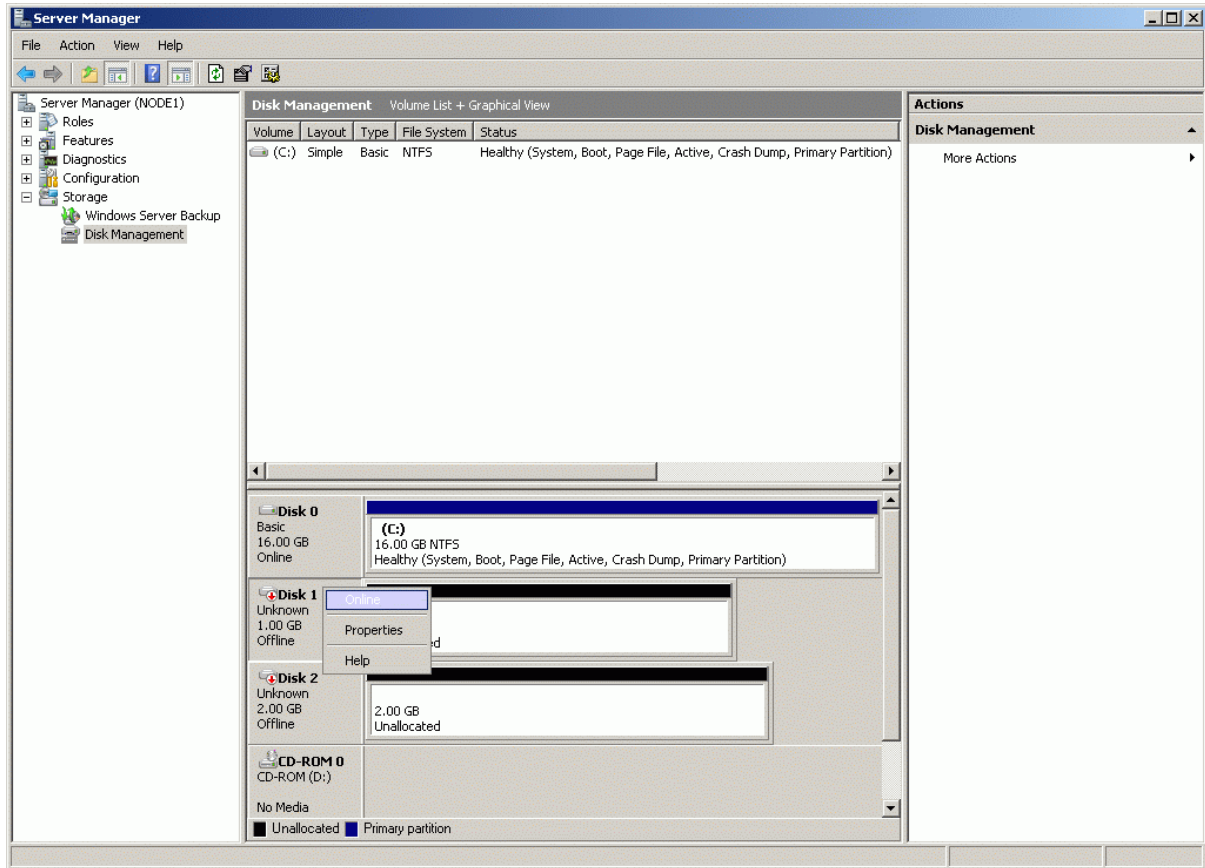
## Initializing, formatting and creating partitions

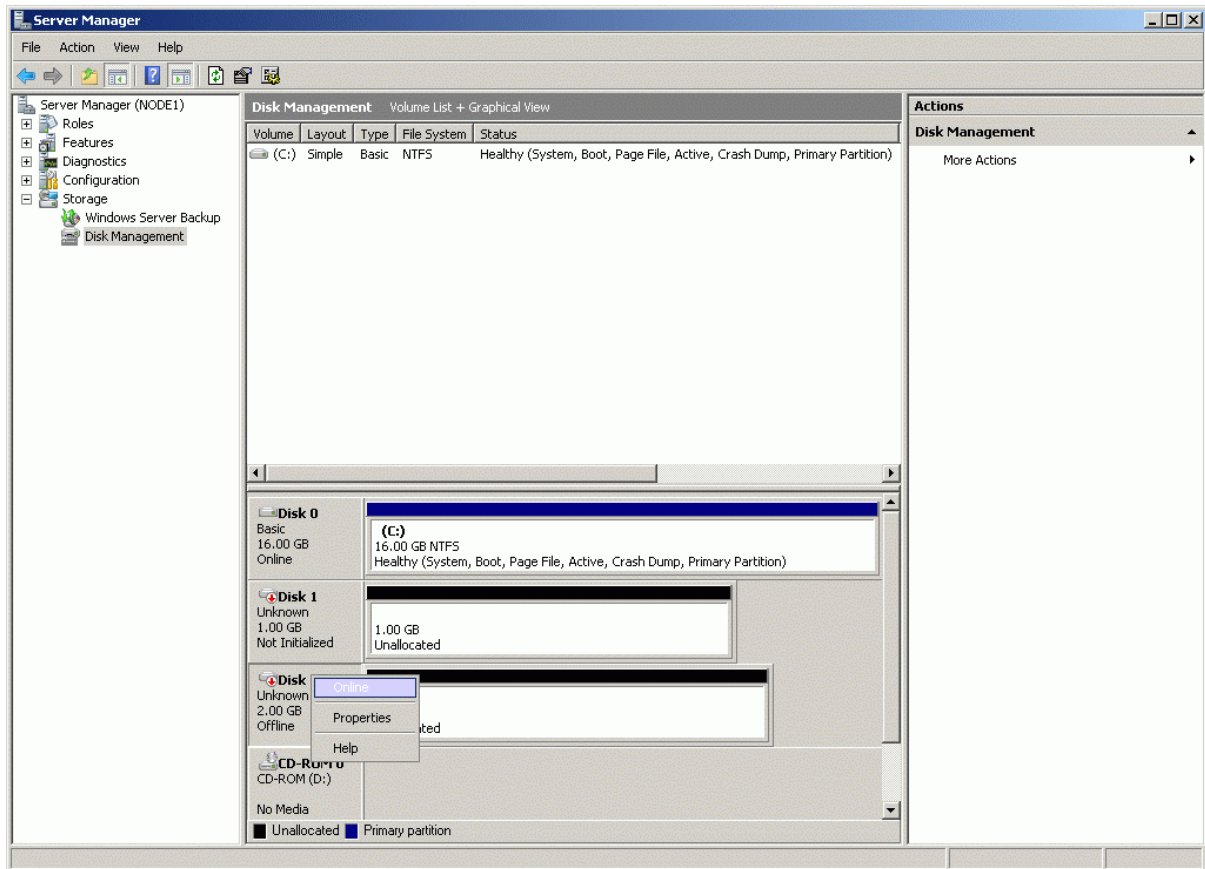
When the **StarWind** Disks are connected, they show up on the initiator machine as new disk devices. Before these devices can be used as cluster disks, they have to be initialized and formatted. Launch the **Computer Management** console.



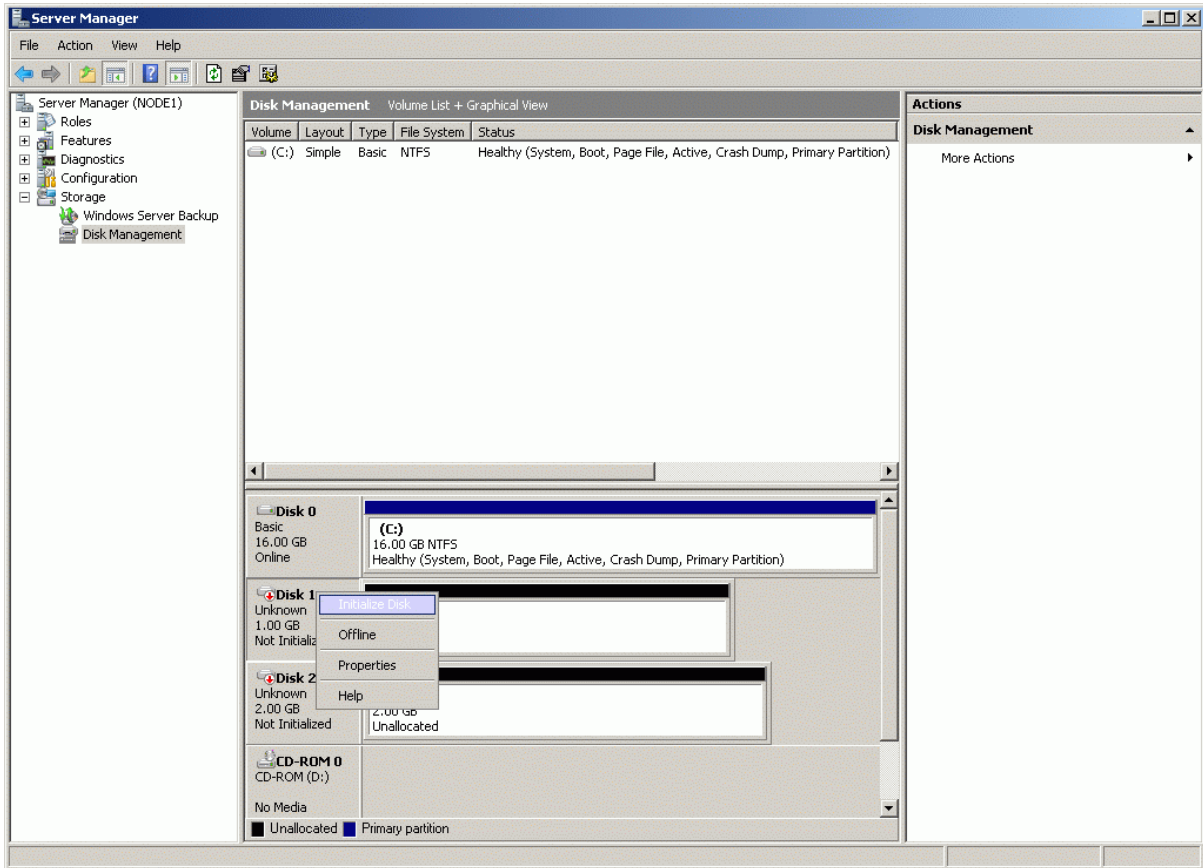
Select **Disk Management**.

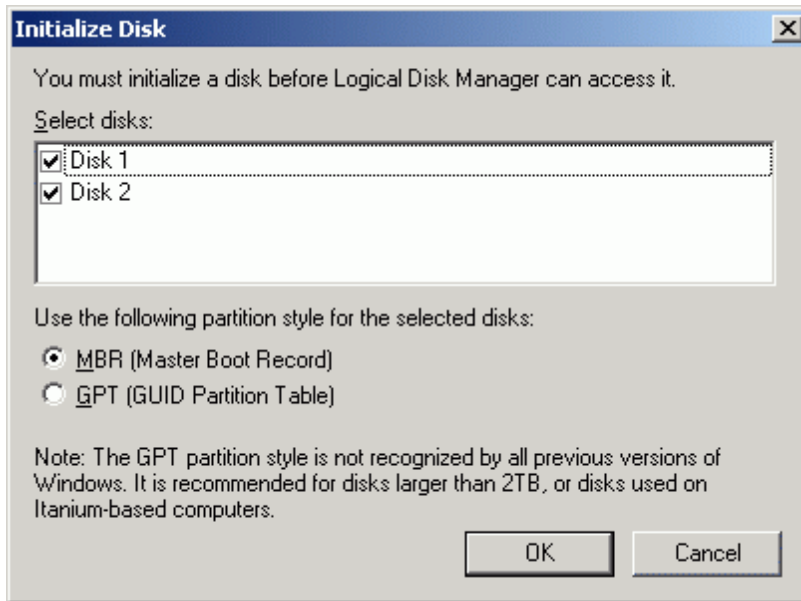
Bring disks online. Press the right mouse button over the disk and select **Online**.





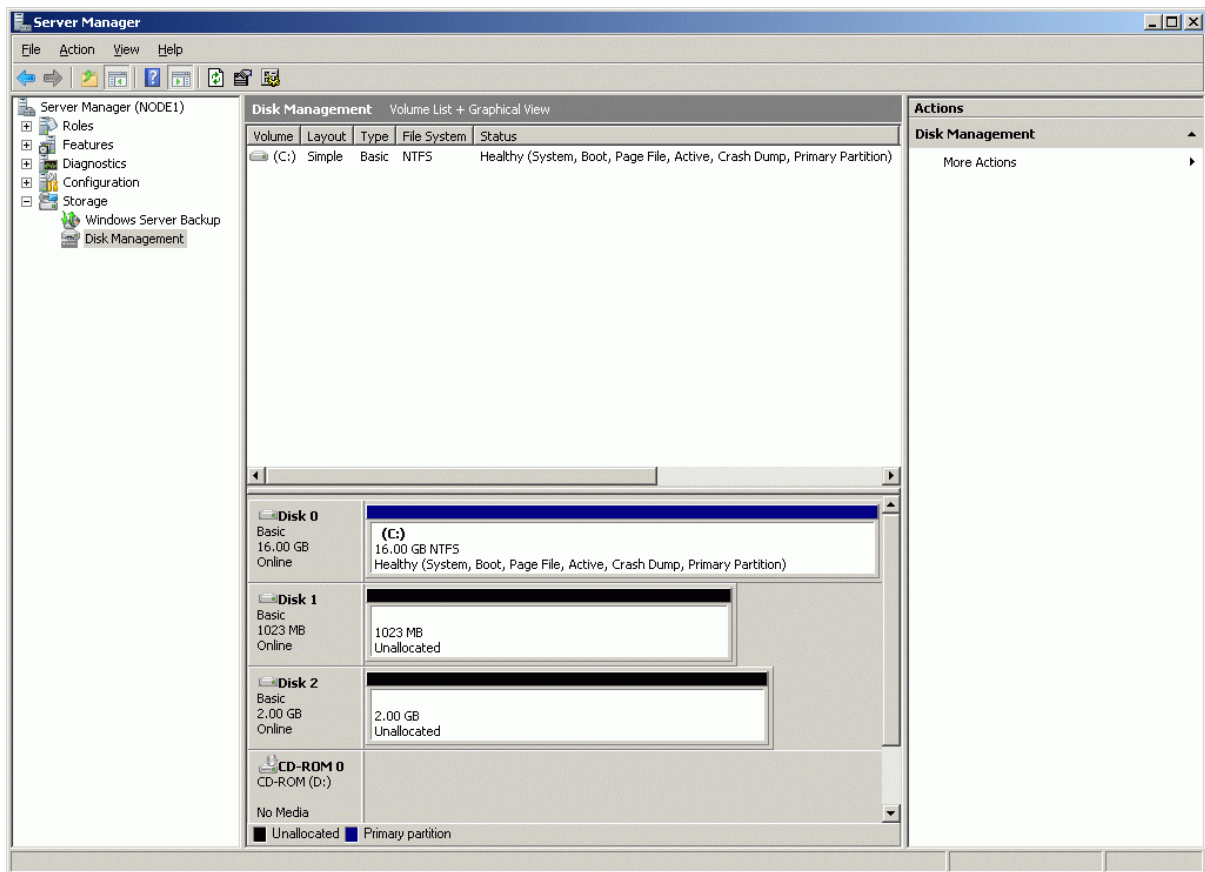
Initialize the Disks. Press the right mouse button over the Disk and select **Initialize Disk**. Follow the wizard to initialize the new disks.





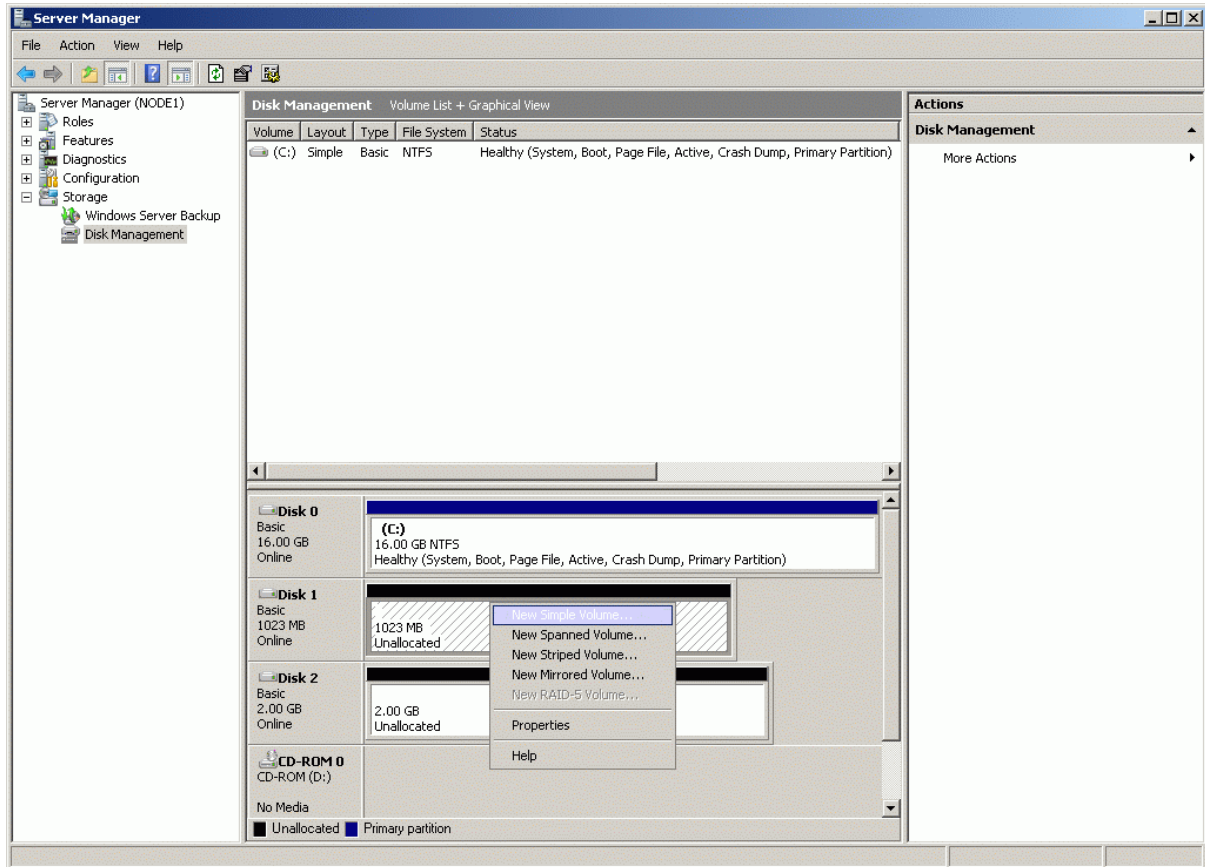
Press the **OK** button to continue.

Both disks have now been initialized.

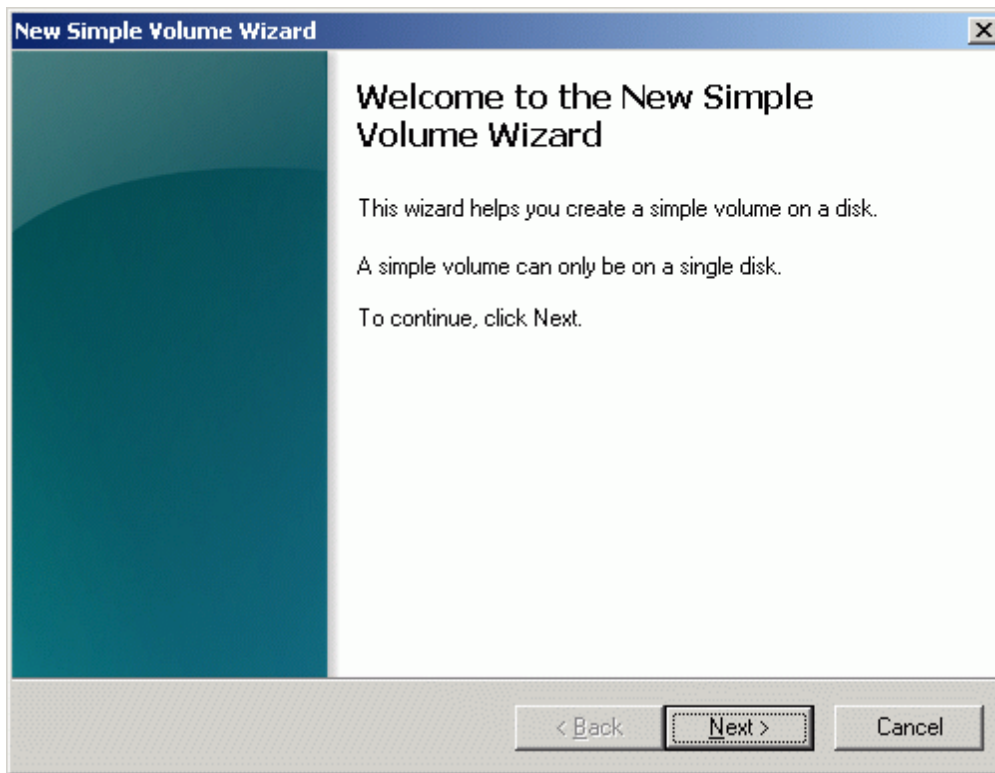




Right-click over the unallocated space and select **New Simple Volume**. Follow the instructions in the wizard to create an NTFS partition for use as the quorum disk.

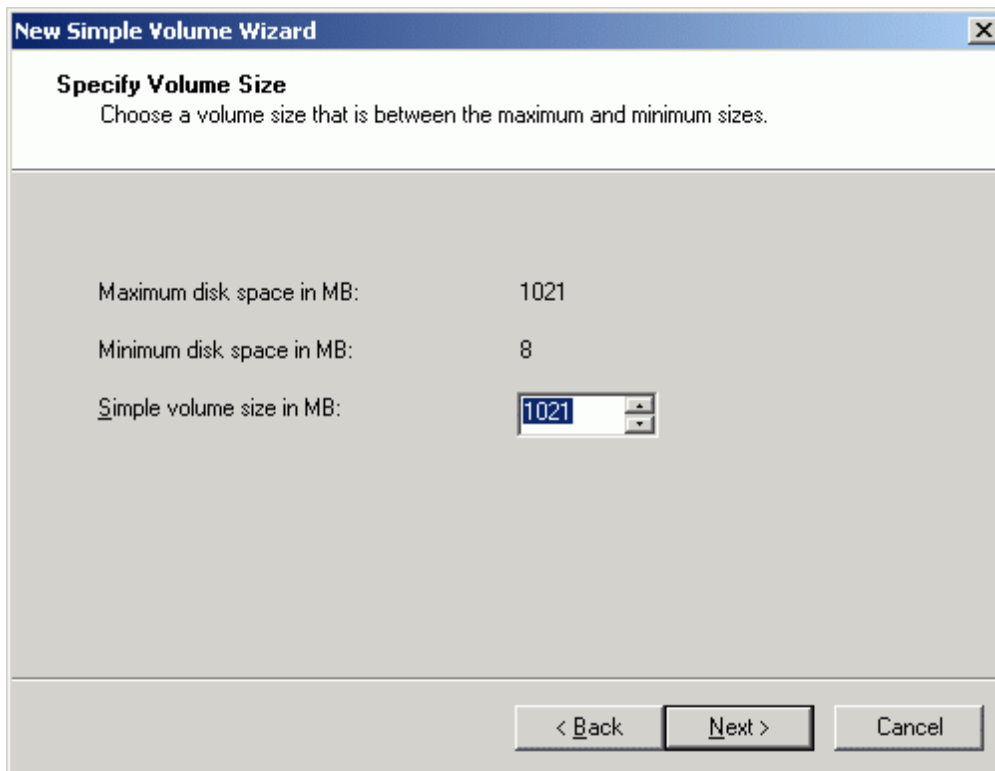


**New Simple Volume Wizard** appears.



Press the **Next** button to continue.

Specify new volume size in megabytes.



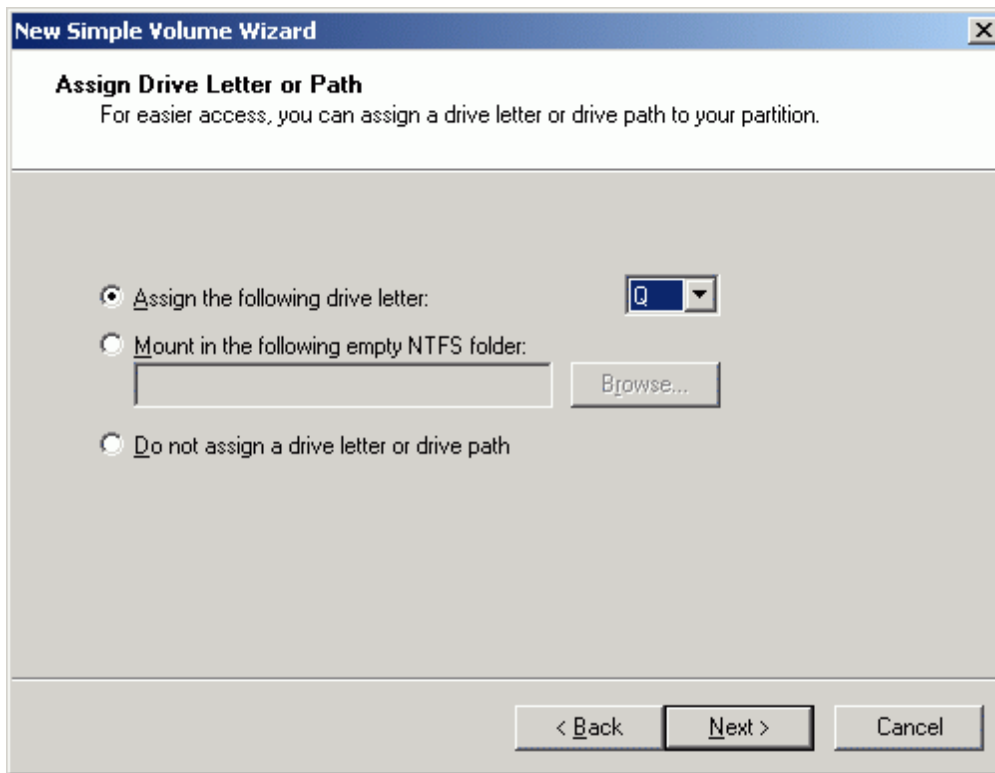
The image shows a Windows-style dialog box titled "New Simple Volume Wizard". The title bar is blue with a close button (X) on the right. The main area has a white background with the heading "Specify Volume Size" and a sub-instruction: "Choose a volume size that is between the maximum and minimum sizes." Below this, there are three rows of text: "Maximum disk space in MB:" followed by the value "1021", "Minimum disk space in MB:" followed by the value "8", and "Simple volume size in MB:" followed by a text input field containing "1021". The input field has a blue border and a small spinner control to its right. At the bottom of the dialog, there are three buttons: "< Back", "Next >", and "Cancel". The "Next >" button is highlighted with a black border.

Maximum disk space in MB:	1021
Minimum disk space in MB:	8
Simple volume size in MB:	<input type="text" value="1021"/>

< Back    Next >    Cancel

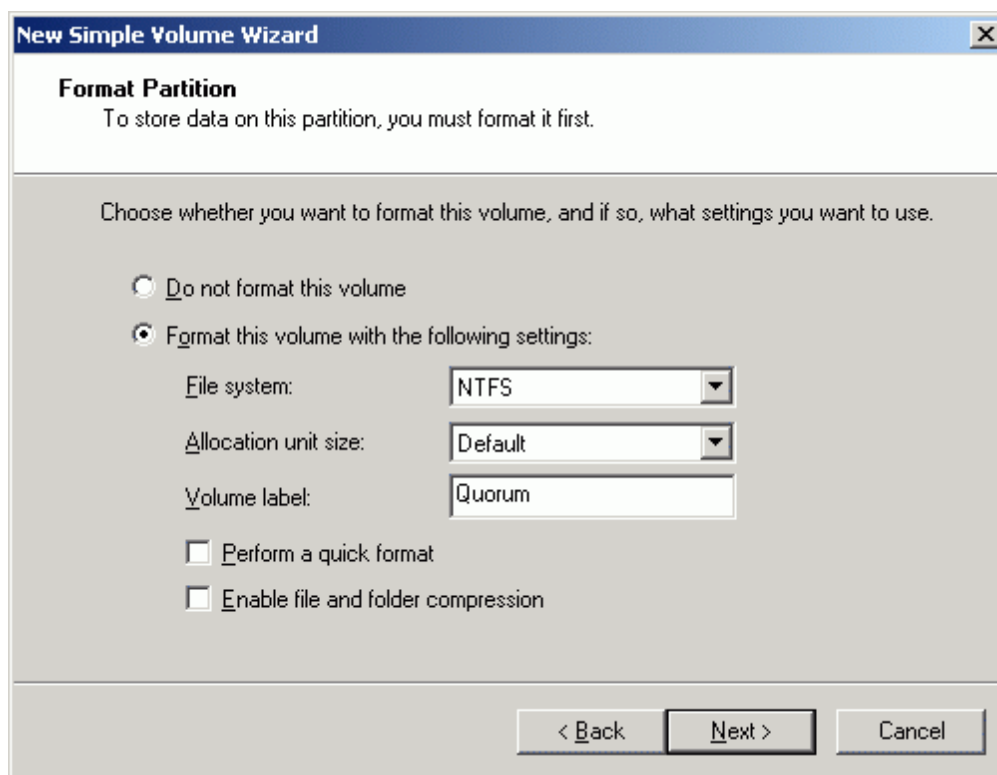
Press the **Next** button to continue.

Choose the **Drive Letter** to assign.



Press the **Next** button to continue.

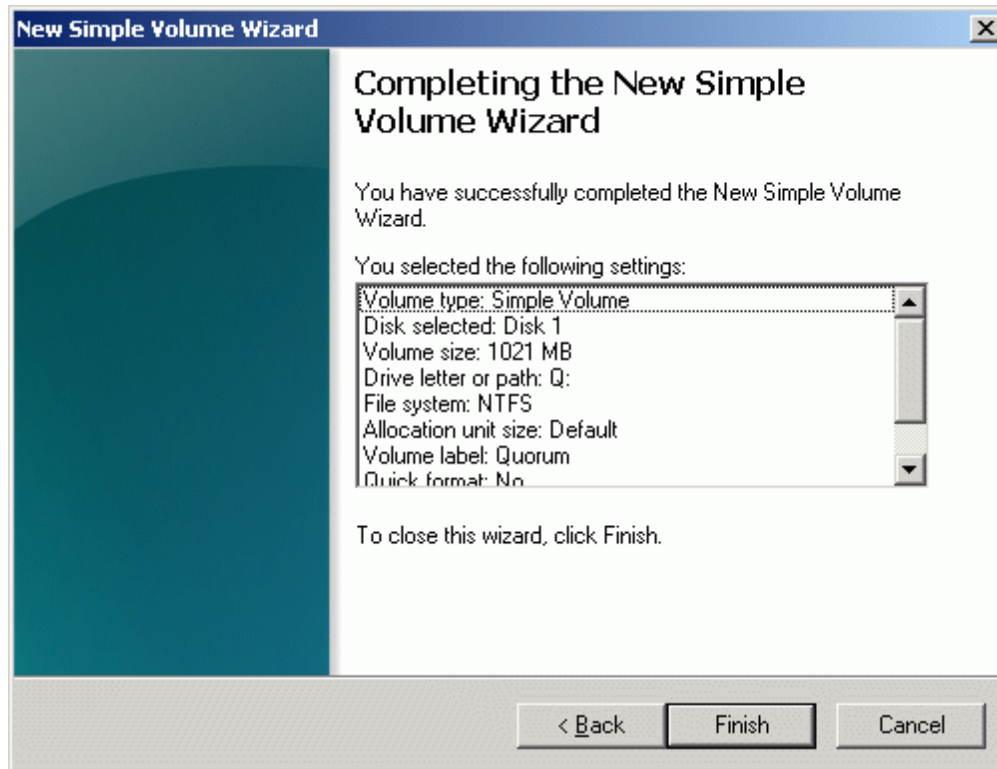
Specify format options. Provide the **Volume Label**.



The image shows a Windows-style dialog box titled "New Simple Volume Wizard". The main heading is "Format Partition", followed by the instruction "To store data on this partition, you must format it first." Below this, a text prompt says "Choose whether you want to format this volume, and if so, what settings you want to use." There are two radio button options: "Do not format this volume" (unselected) and "Format this volume with the following settings:" (selected). Under the selected option, there are three settings: "File system:" set to "NTFS", "Allocation unit size:" set to "Default", and "Volume label:" set to "Quorum". At the bottom, there are two unchecked checkboxes: "Perform a quick format" and "Enable file and folder compression". At the very bottom of the dialog are three buttons: "< Back", "Next >", and "Cancel".

Press the **Next** button to continue.

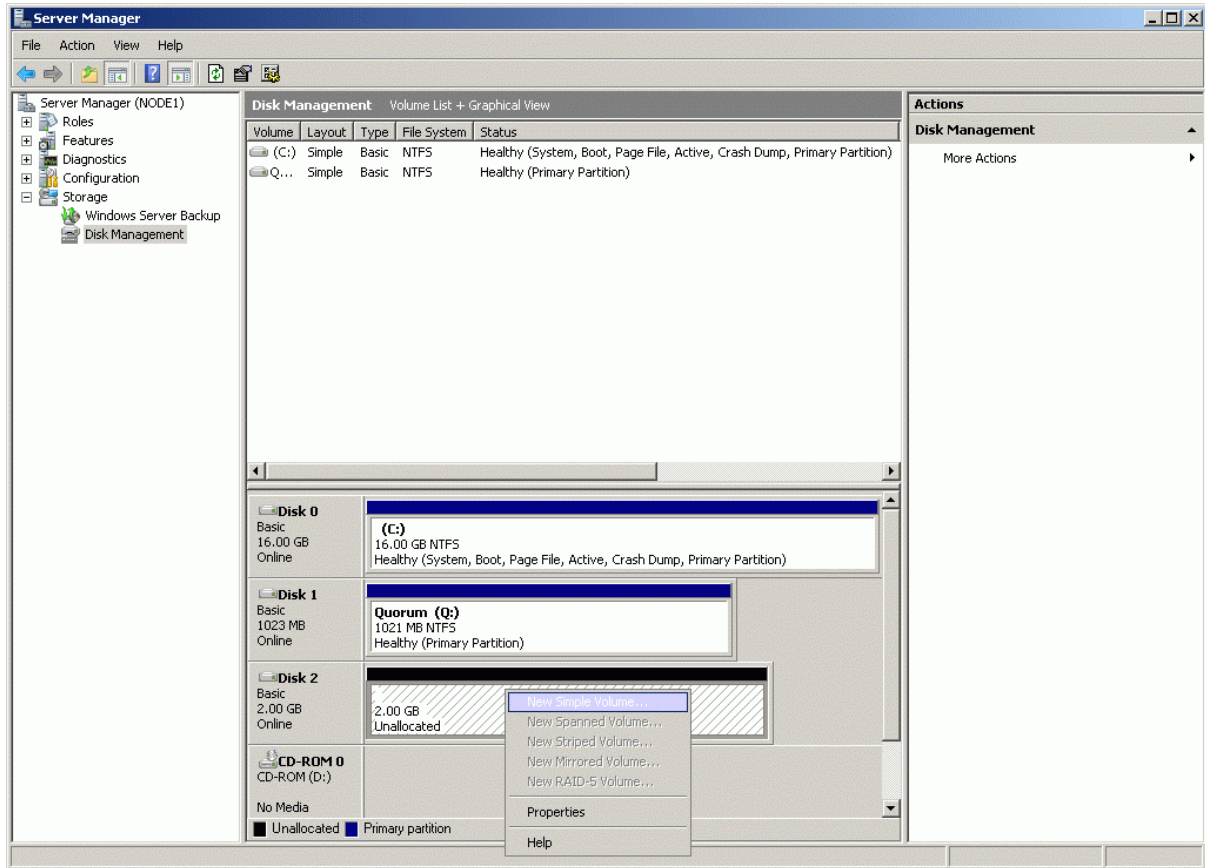
Check the settings are correct. Press the **Back** button should any changes be required.



Press the **Finish** button to close the wizard.

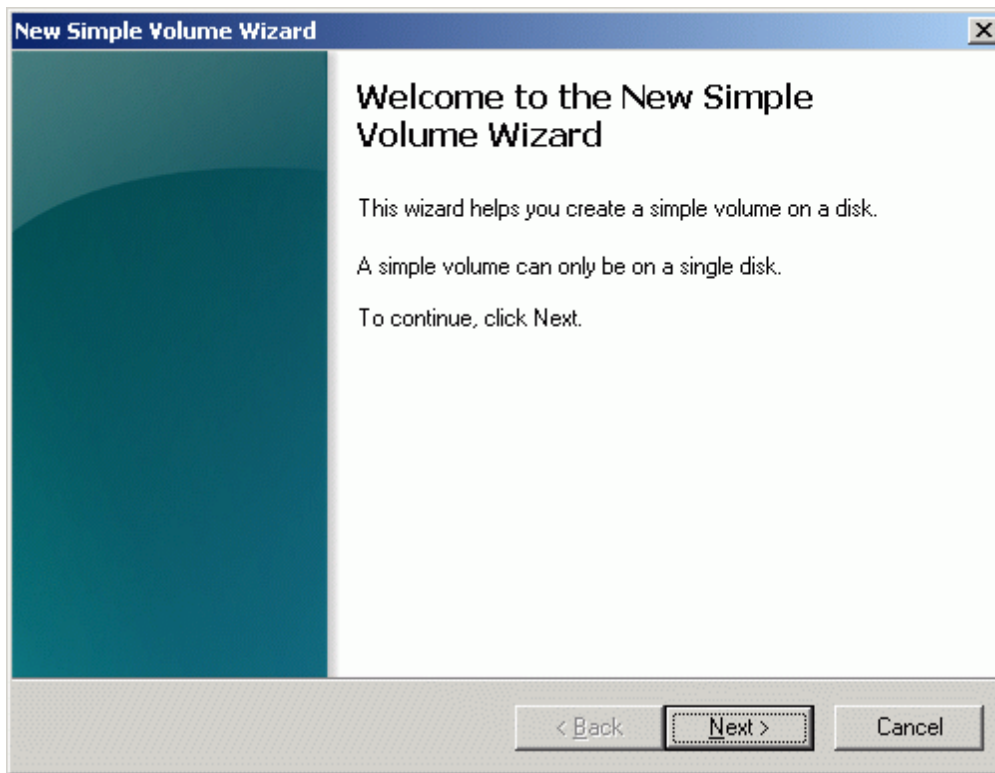


If successful, a new volume will be created as shown in the example image below. Repeat the same steps to create the second volume.



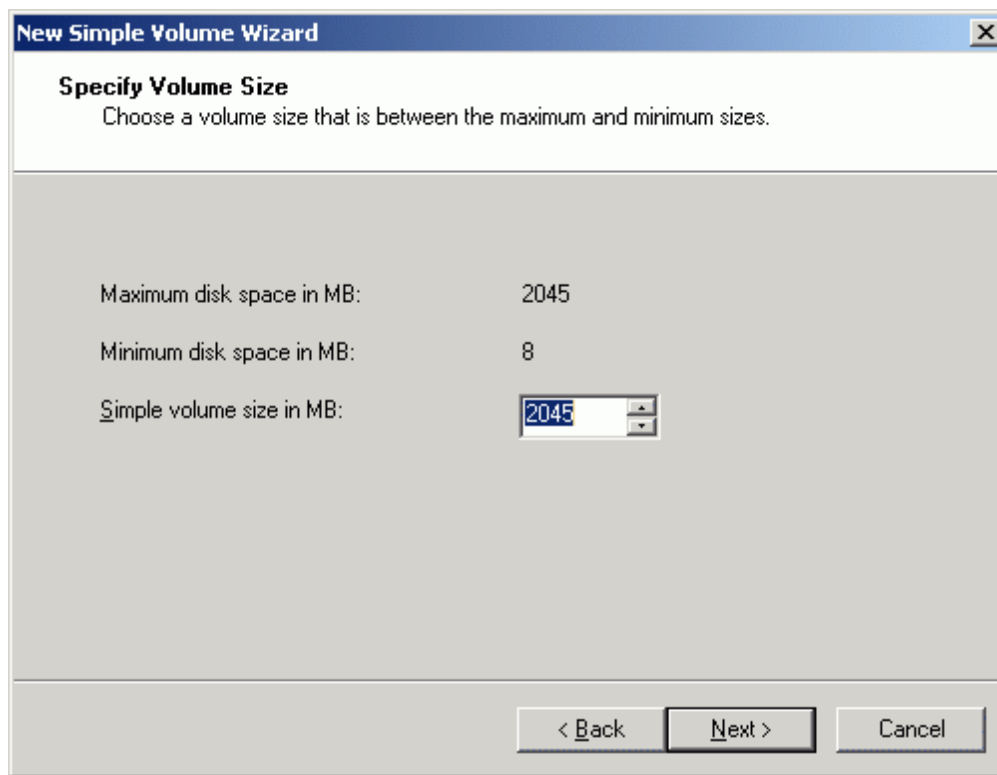
Right-click over the unallocated space and select **New Simple Volume**. Follow the instructions in the wizard to create an NTFS partition for use as the generic disk.

**New Partition Wizard** appears.



Press the **Next** button to continue.

Specify new volume size in megabytes.



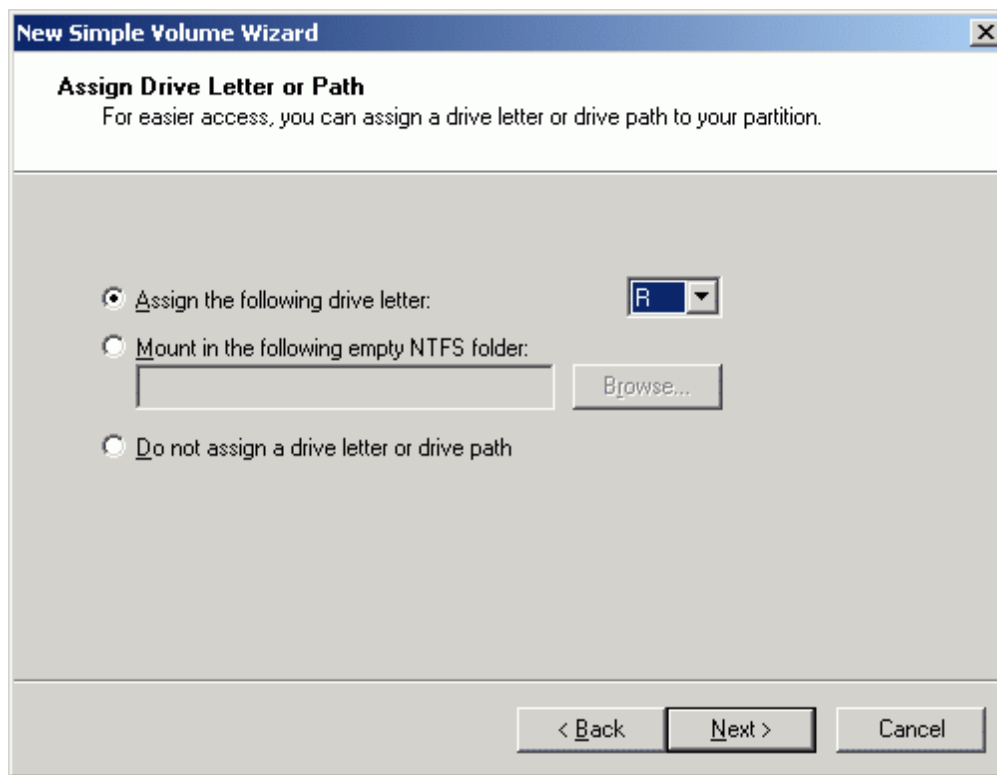
The image shows a Windows-style dialog box titled "New Simple Volume Wizard". The title bar is blue with a close button (X) on the right. The main area has a white background with the text "Specify Volume Size" and a subtitle "Choose a volume size that is between the maximum and minimum sizes." Below this, there are three rows of text: "Maximum disk space in MB:" followed by the value "2045", "Minimum disk space in MB:" followed by the value "8", and "Simple volume size in MB:" followed by a text box containing "2045" and a spinner control. At the bottom of the dialog, there are three buttons: "< Back", "Next >", and "Cancel".

Maximum disk space in MB:	2045
Minimum disk space in MB:	8
Simple volume size in MB:	<input type="text" value="2045"/>

< Back    Next >    Cancel

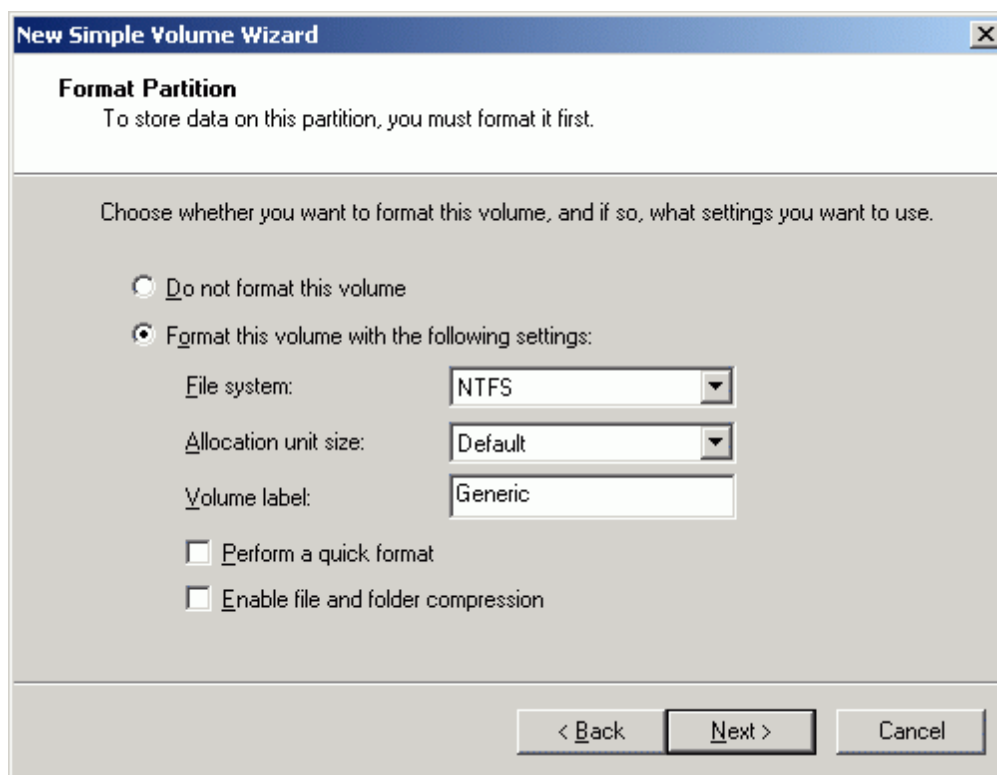
Press the **Next** button to continue.

Choose the **Drive Letter** to assign.



Press the **Next** button to continue.

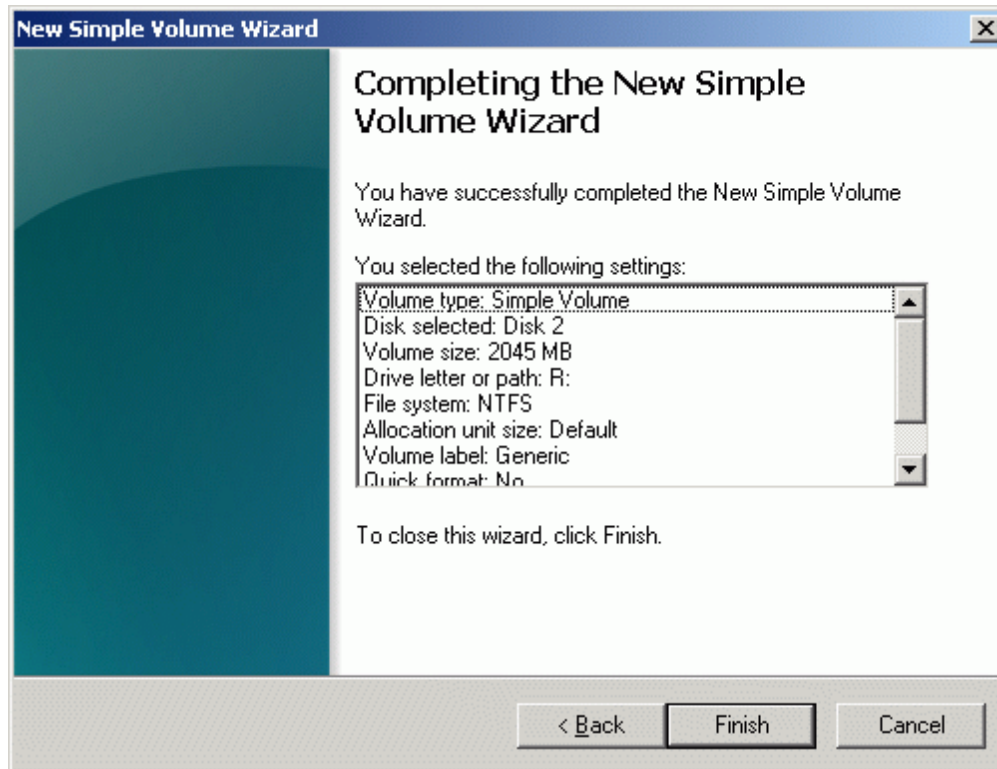
Specify format options. Provide the **Volume Label**.



The image shows a Windows-style dialog box titled "New Simple Volume Wizard". The main heading is "Format Partition", followed by the instruction "To store data on this partition, you must format it first." Below this, a text prompt says "Choose whether you want to format this volume, and if so, what settings you want to use." There are two radio button options: "Do not format this volume" (unselected) and "Format this volume with the following settings:" (selected). Under the selected option, there are three settings: "File system:" set to "NTFS", "Allocation unit size:" set to "Default", and "Volume label:" set to "Generic". At the bottom of these settings are two unchecked checkboxes: "Perform a quick format" and "Enable file and folder compression". At the very bottom of the dialog are three buttons: "< Back", "Next >", and "Cancel".

Press the **Next** button to continue.

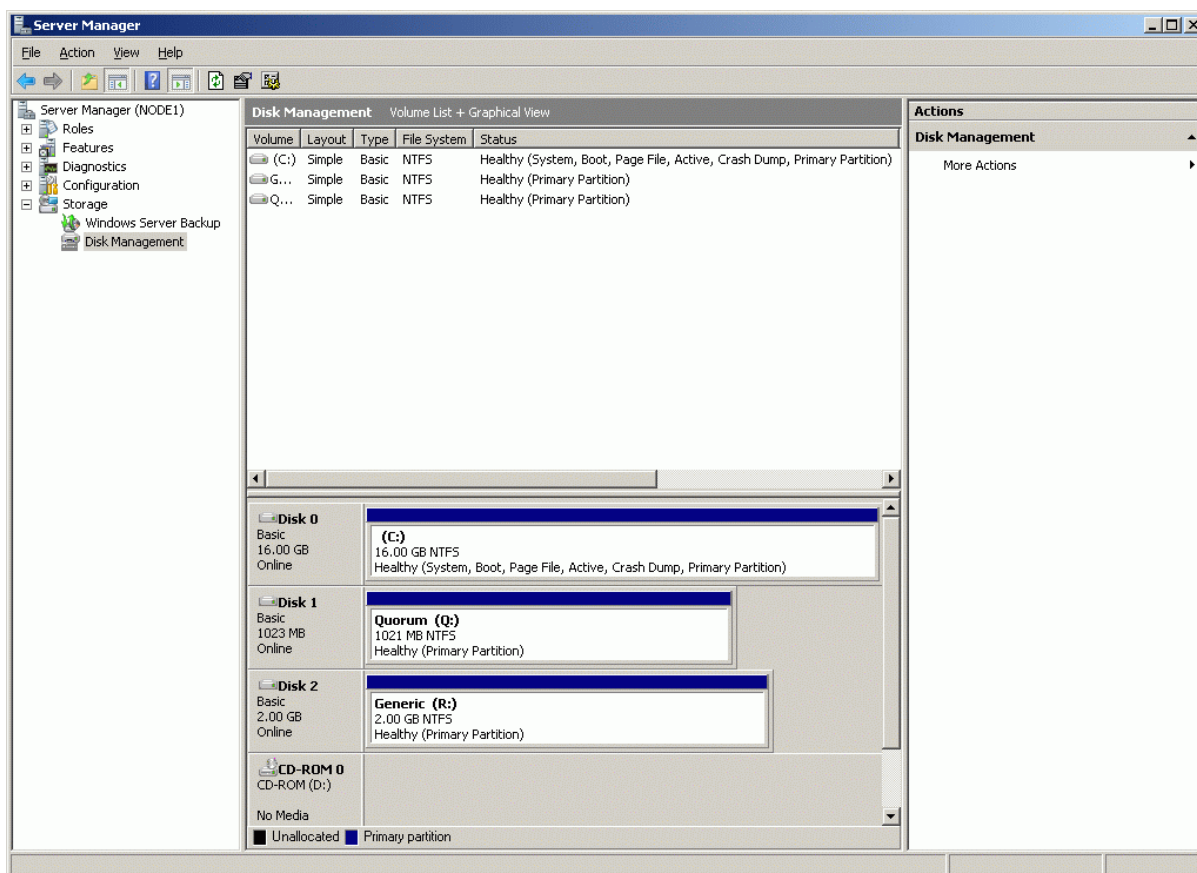
Check the settings are correct. Press the **Back** button should any changes be required.



Press the **Finish** button to close the wizard.

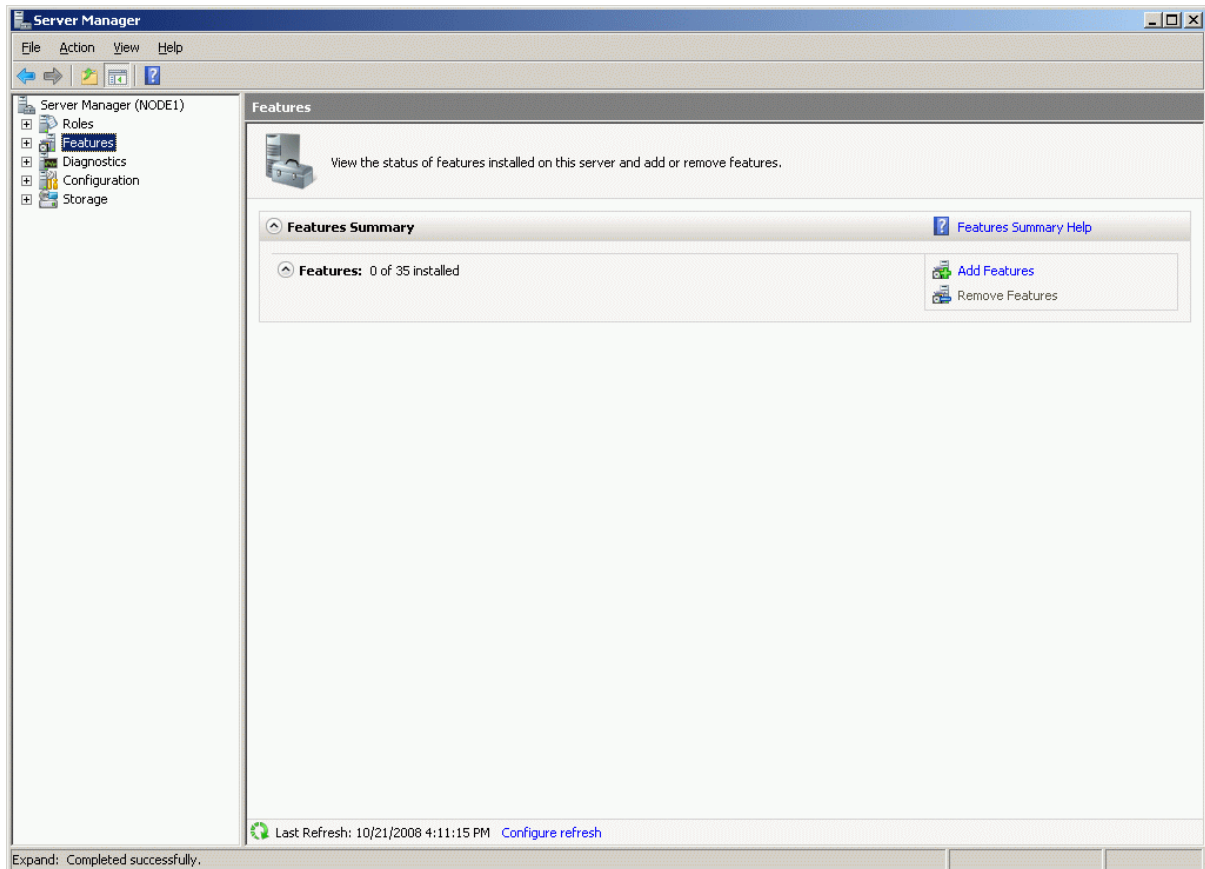


If successful, both of the disks are now formatted as shown in the example image below.



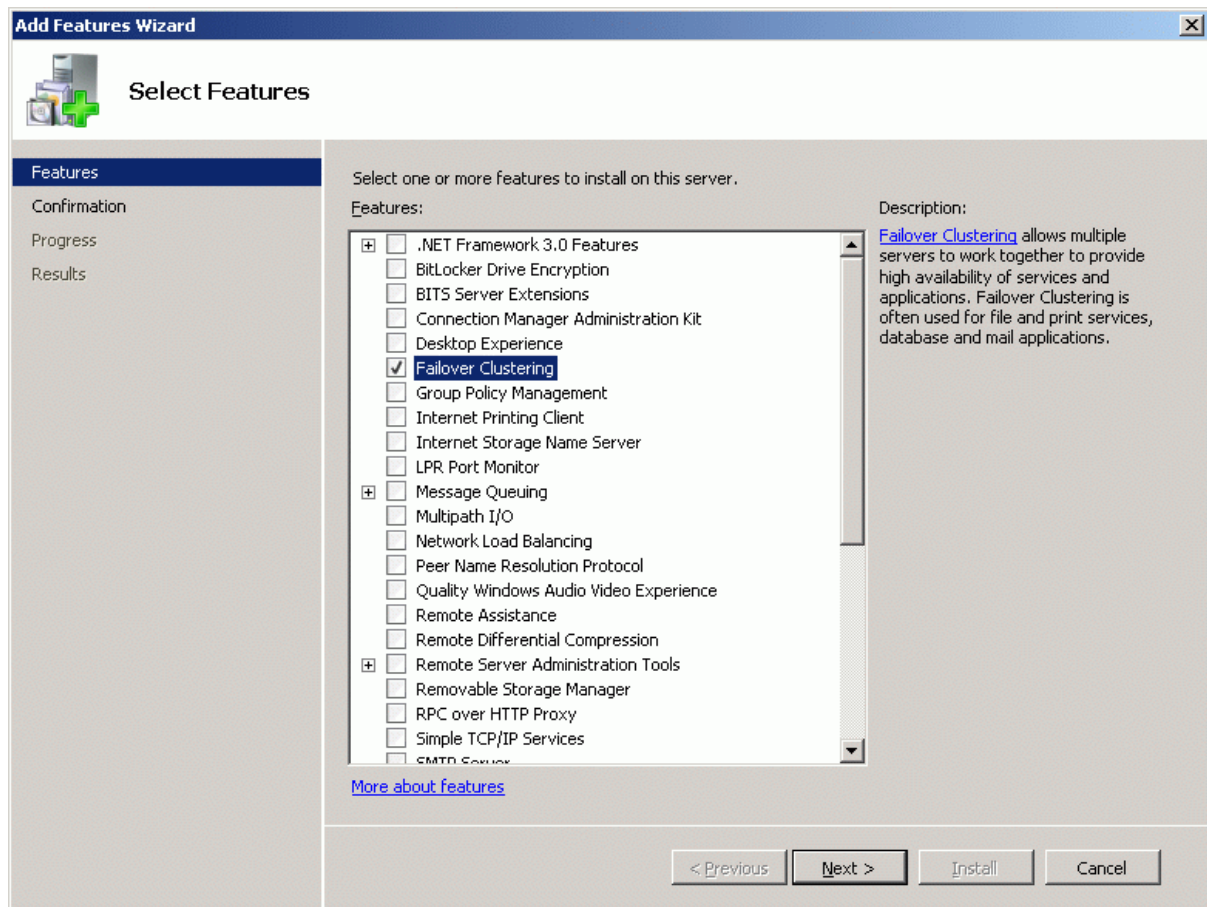
## Installing Failover Clustering Feature

Launch the **Computer Management** console. Select **Features** node from the list.



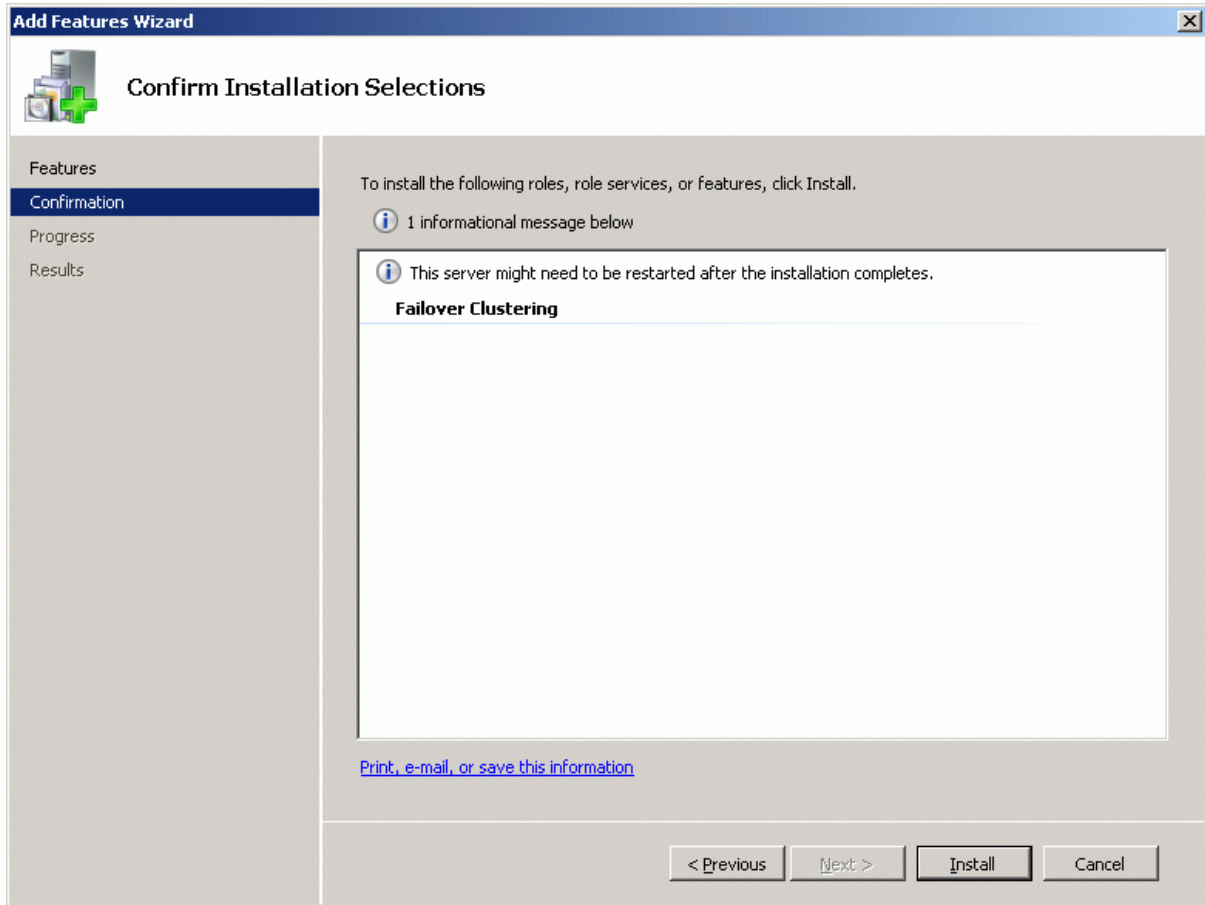
Click the **Add Features** to continue.

**Add Features Wizard** appears. Check the **Failover Clustering** feature.



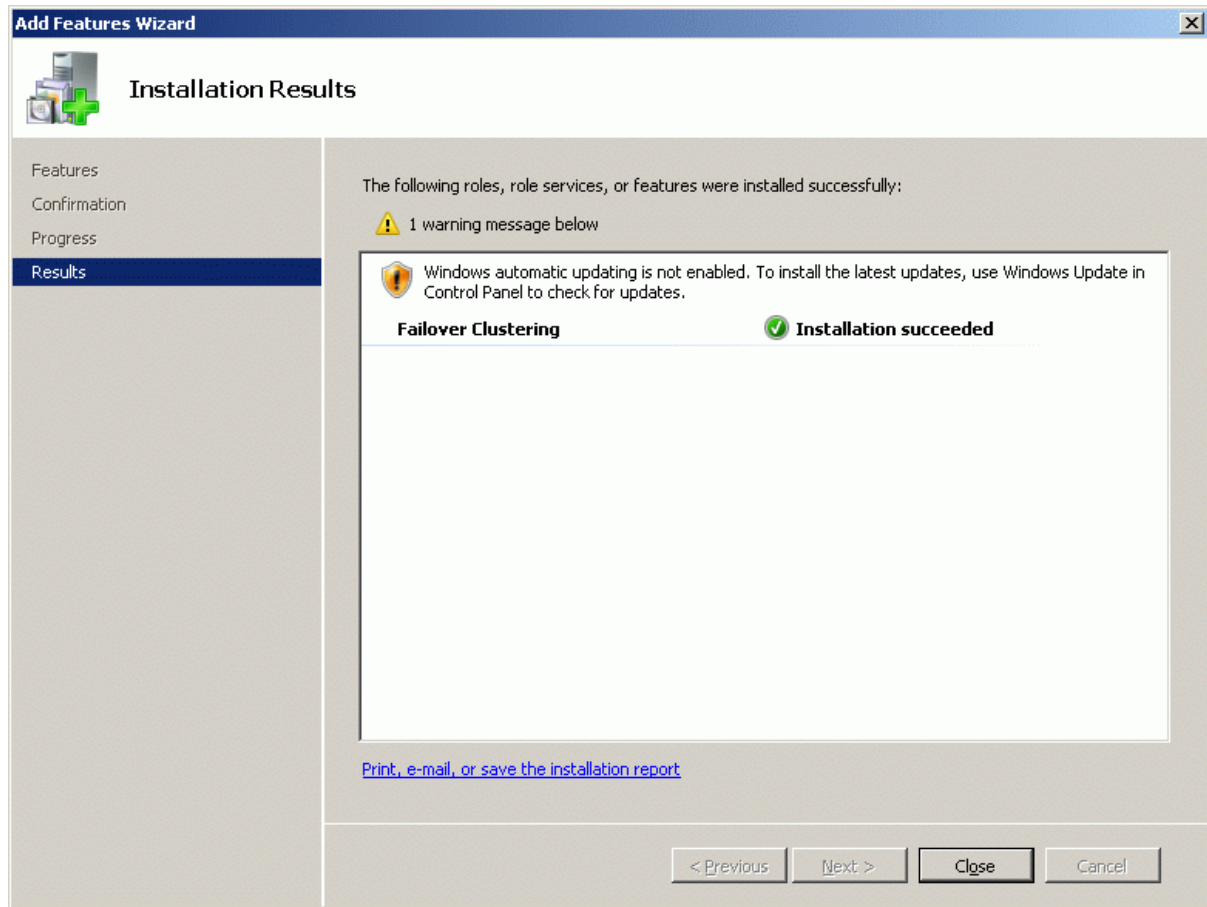
Press the **Next** button to continue.

Check that the parameters are correct. Press the **Previous** button should any changes be required.



Complete the installation of the Failover Clustering Feature by pressing the **Install** button.

If the feature is successfully installed, the wizard should look similar to the example image below.



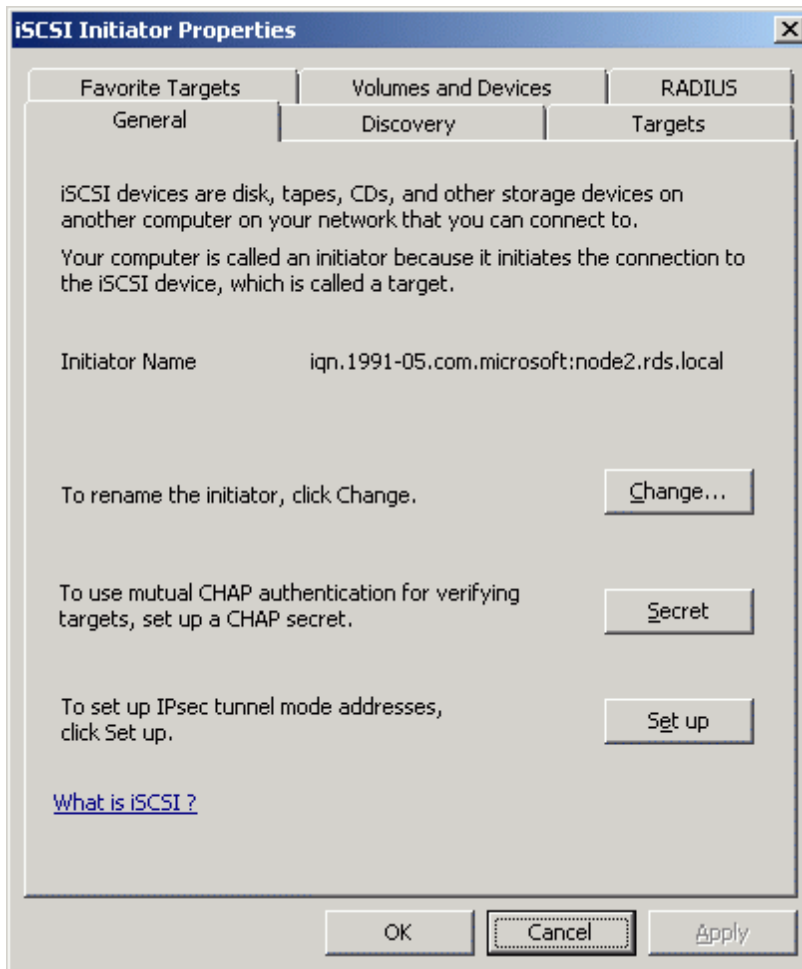
Press the **Close** button.

Shut down the server.

## Node 2

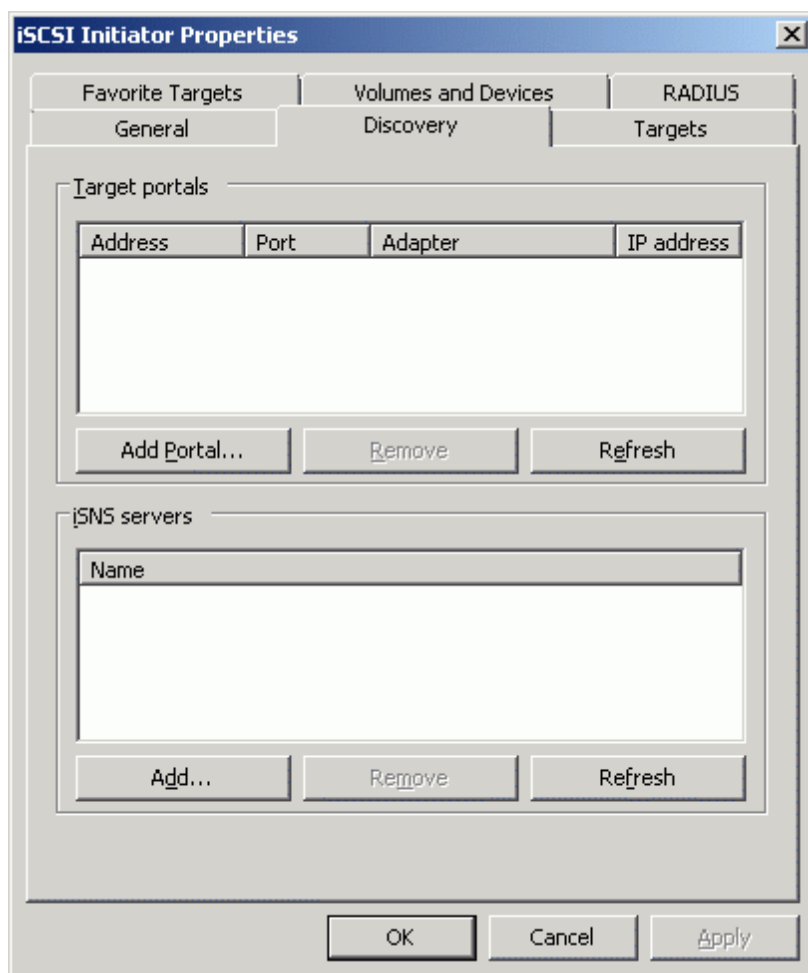
### Configuring iSCSI initiator

Launch the Microsoft iSCSI Software Initiator application **Administrative Tools**  
-> **iSCSI Initiator**



Select the **Discovery** Tab.

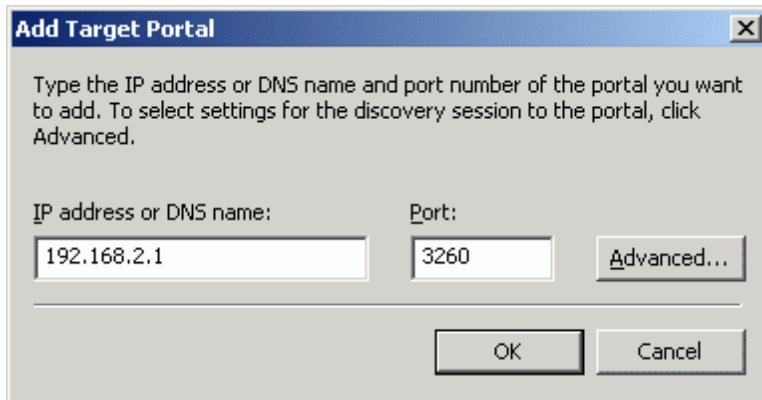
In the **Target Portals** group, click the **Add Portal...** button.



Press the **Add Portal...** button.

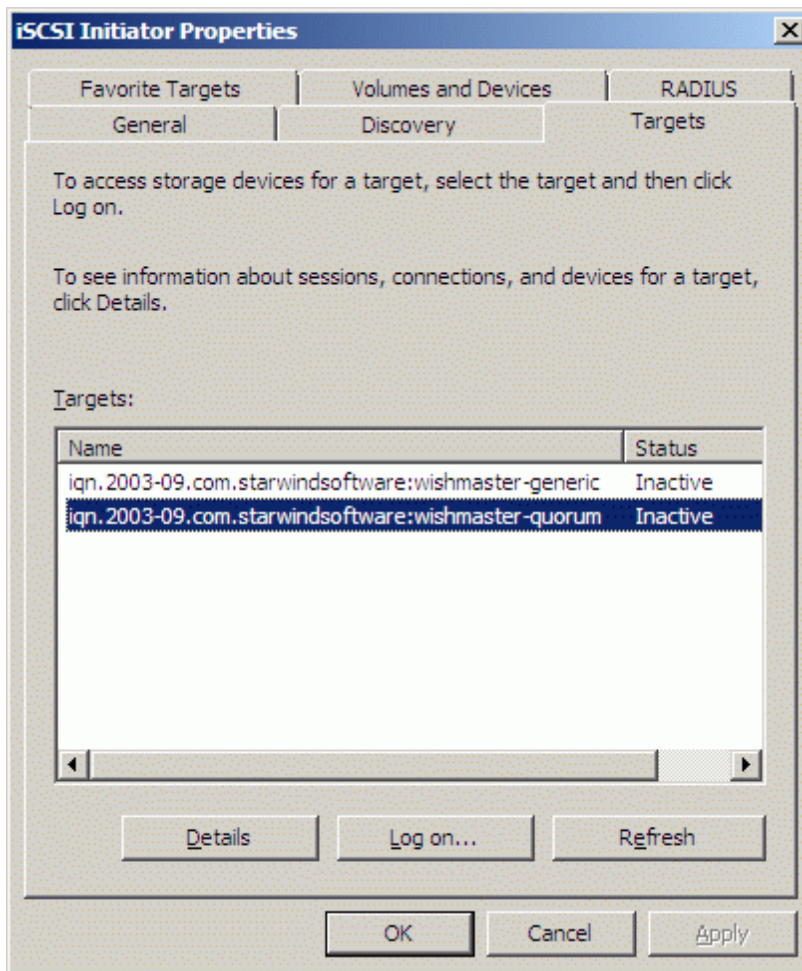


In the **Add Target Portal** dialog enter **IP address** or **DNS name** of the **StarWind** target server.



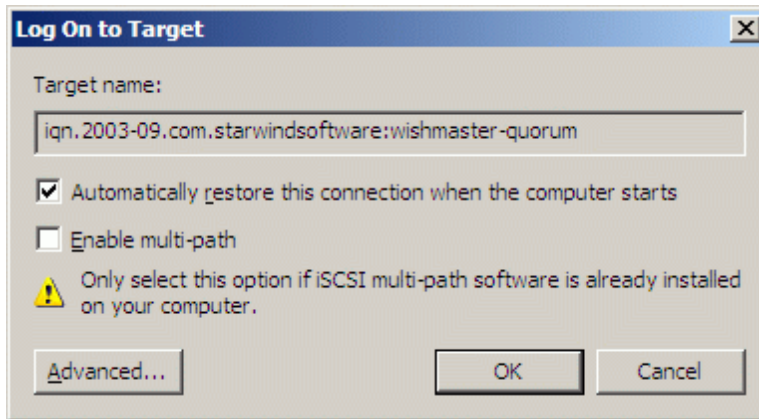
Press the **OK** button to continue.

Click on the **Targets** tab. Select the IQN of the target just added.

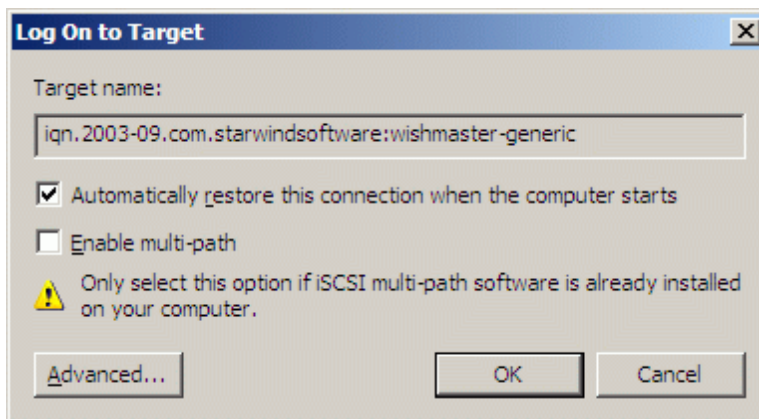


Press the **Log On...** button.

The **Log On to Target** dialog now appears. In this dialog click on the checkbox **Automatically restore this connection when the system boots** to make this connection persistent.

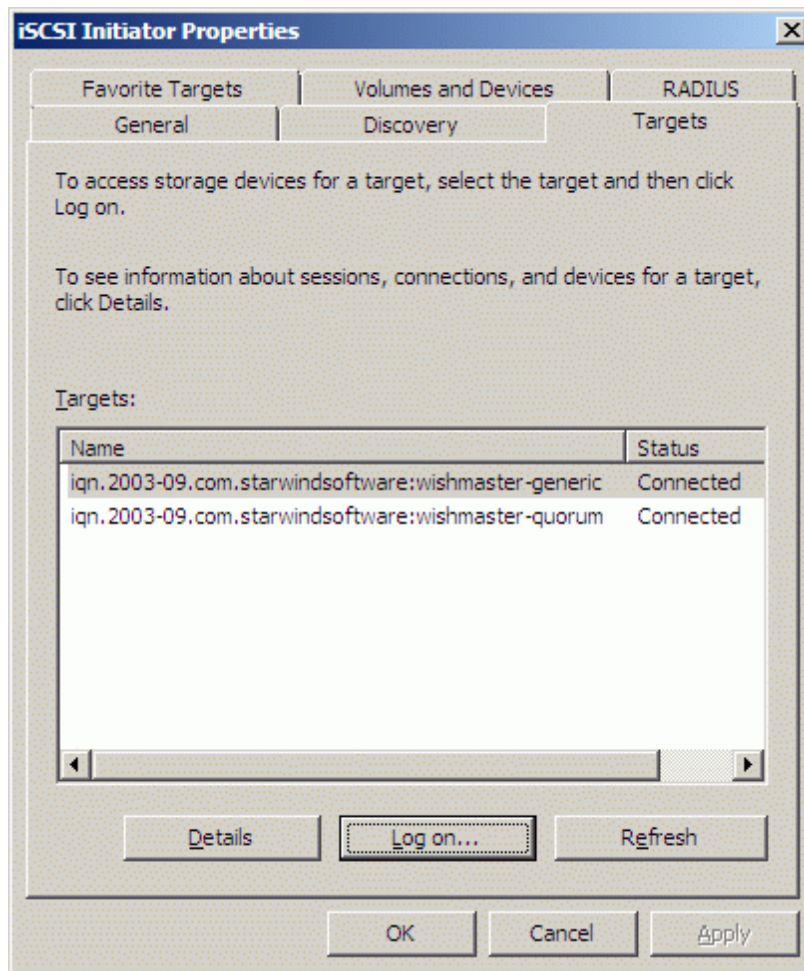


Press the **OK** button to continue.



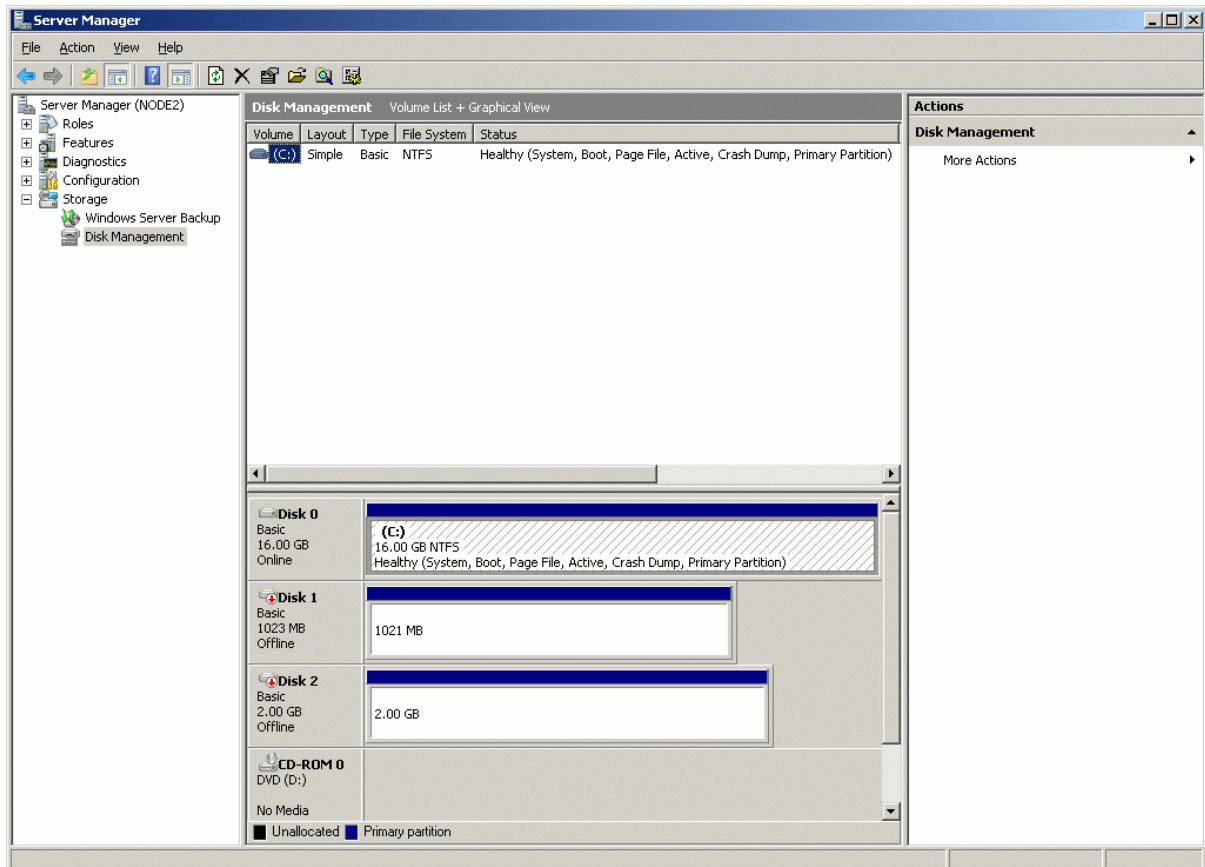
Press the **OK** button to continue.

If successful, the initiator is now logged on to **StarWind**.



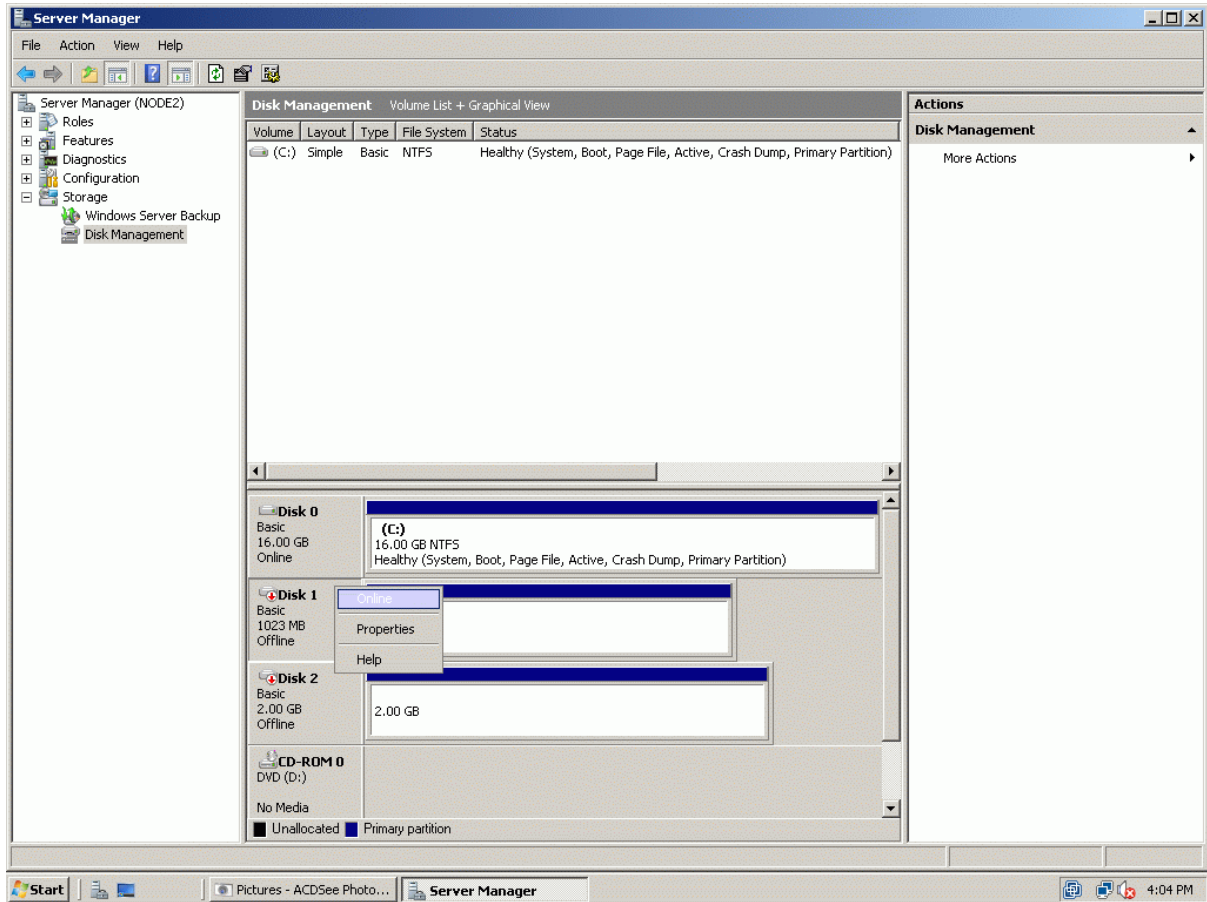
## Assigning drive letters

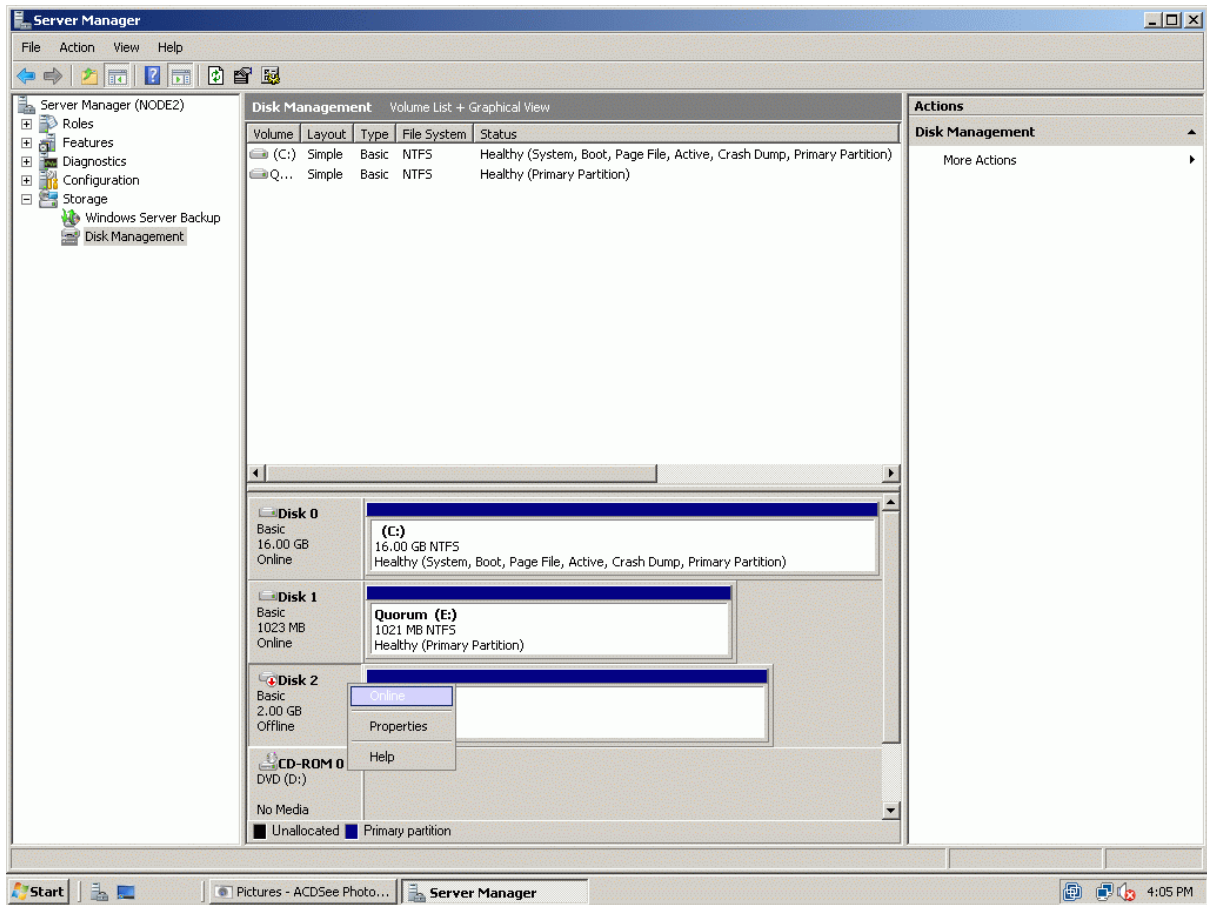
When the StarWind Disks are connected, they show up on the initiator machine as new disk devices. Before these devices can be used as cluster disks, they have to be mounted. Launch the **Computer Management** console.



Select **Disk Management**.

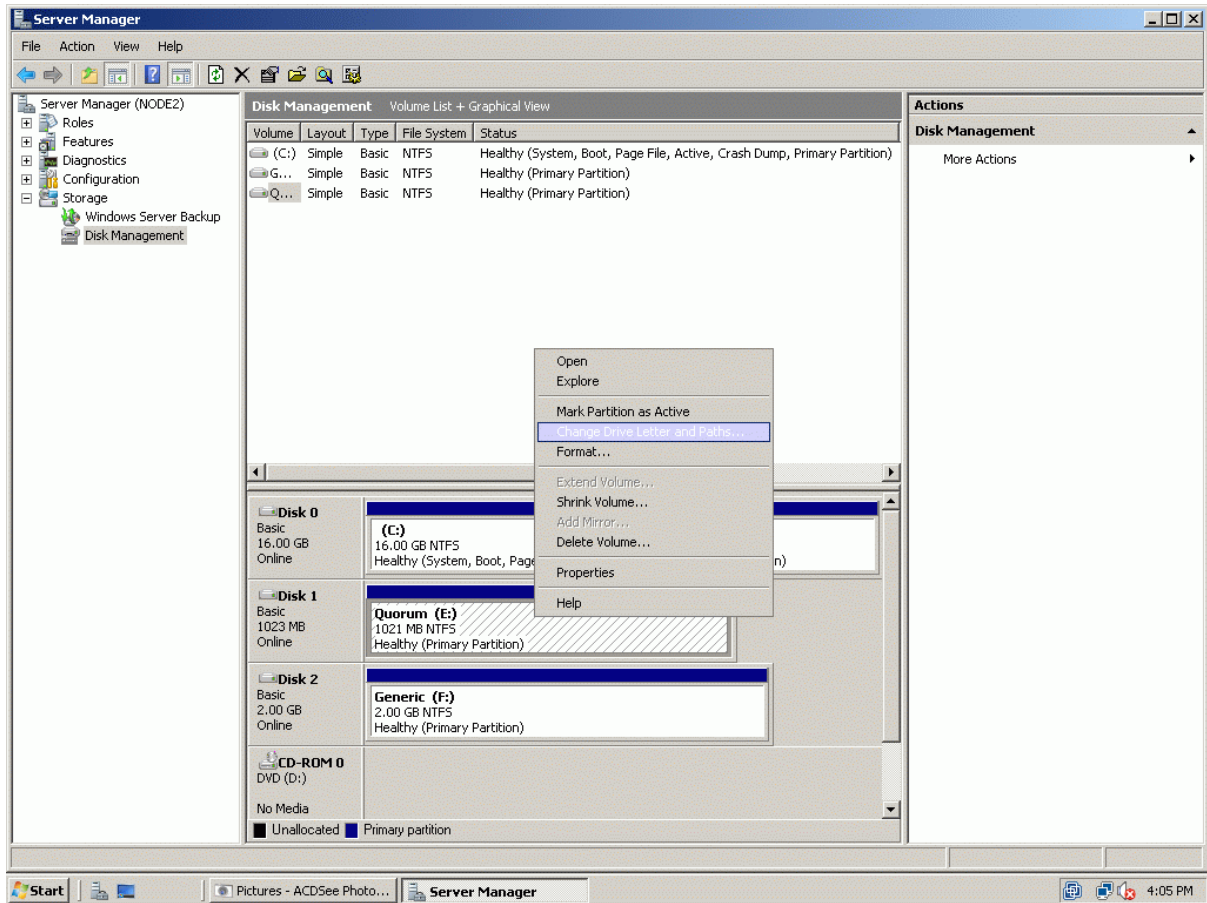
Bring disks online. Press the right mouse button over the disk and select **Online**.





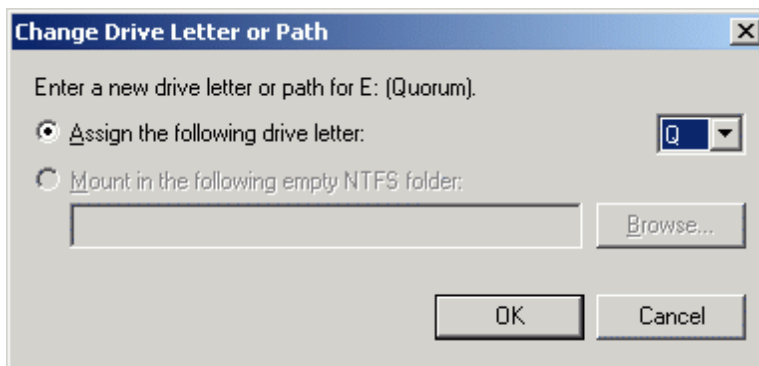
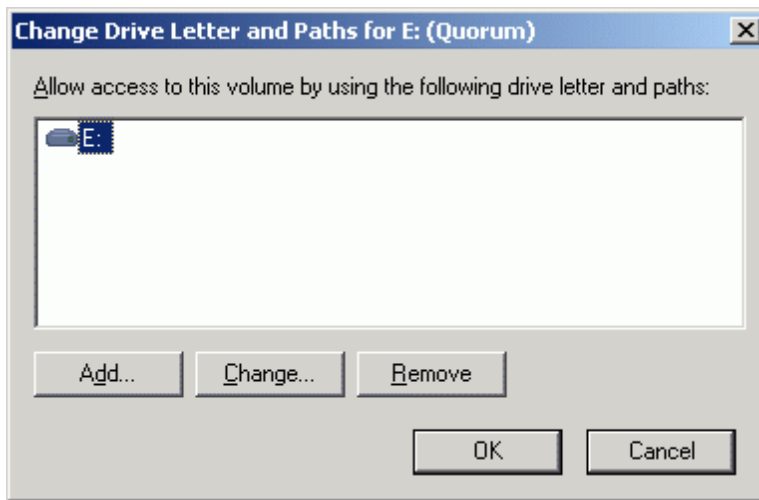


The picture below shows that Windows has automatically assigned Drive Letters to the mounted volumes. As these are local drive letters they may not be the same as we have assigned to these volumes on the first node. However, as all volumes of a cluster must be assigned the same drive letters, any differences must be manually changed. Press the right mouse button over the Quorum volume.

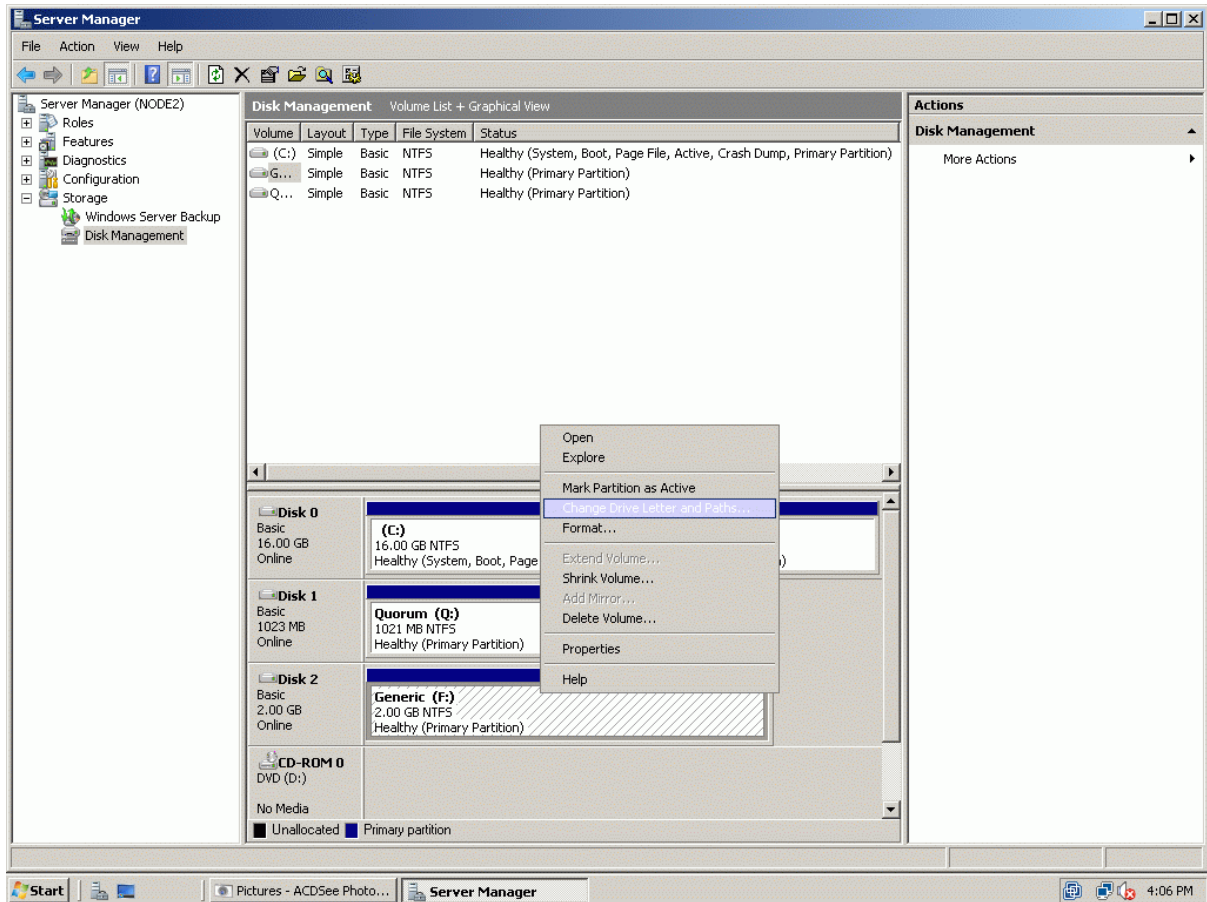


Select **Change Drive Letter and Paths...**

Change the Drive Letter for the Quorum to Q.

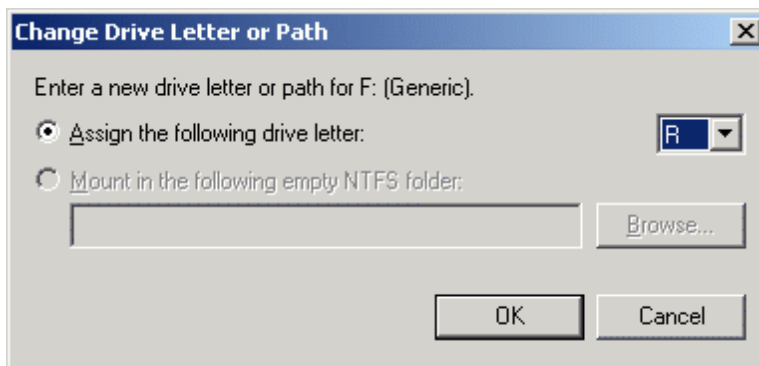
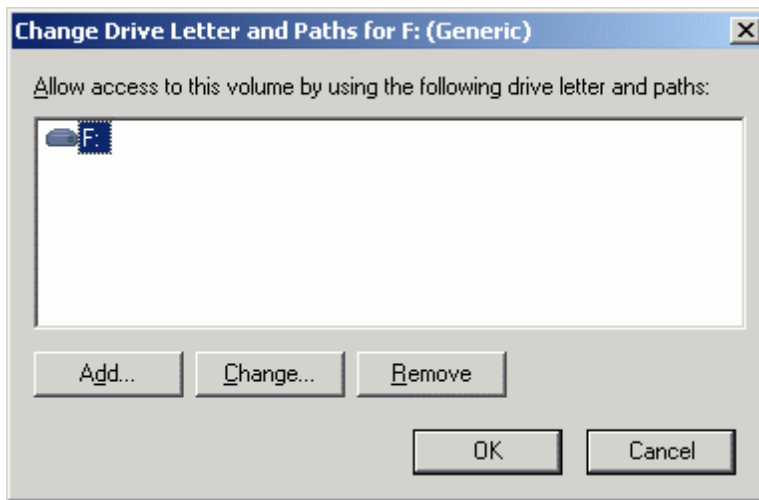


Press the right mouse button over the Generic volume.

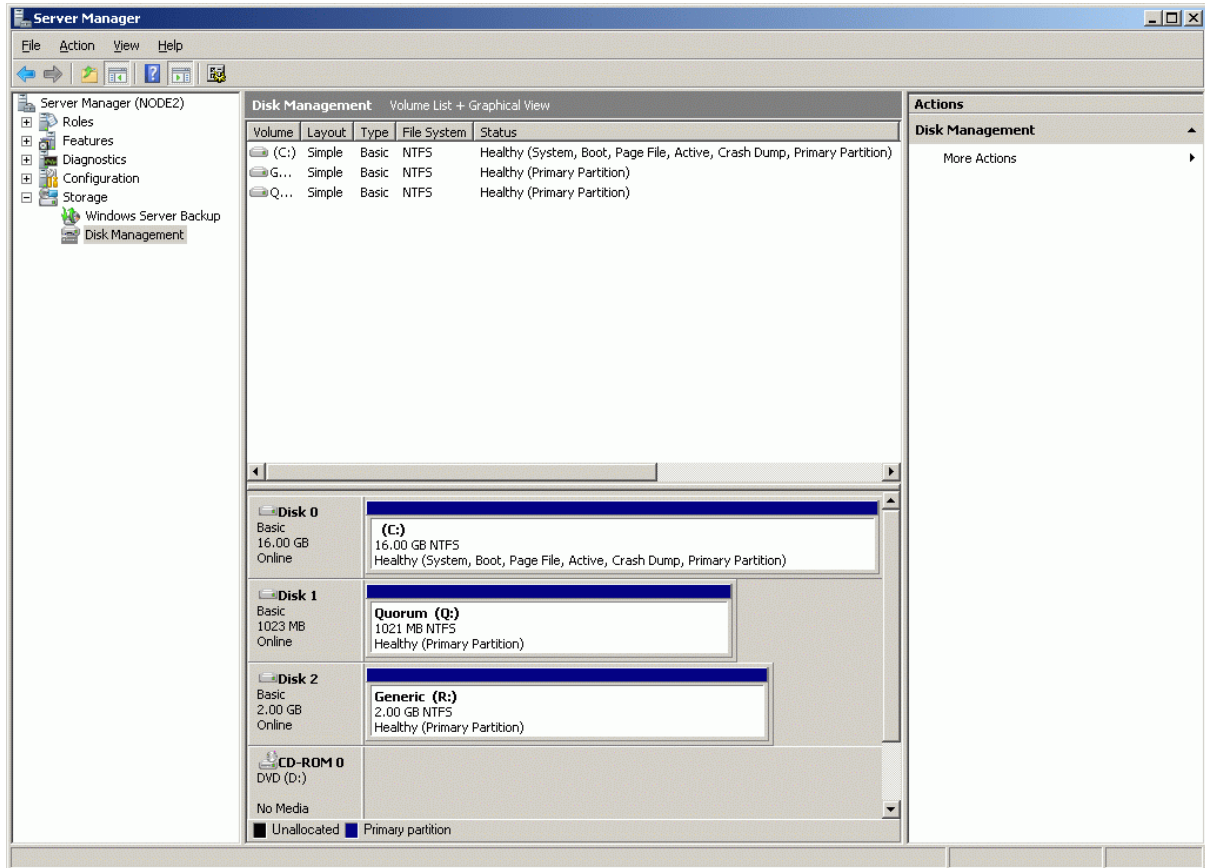


Select **Change Drive Letter and Paths...**

Change the Drive Letter for the Generic to R.

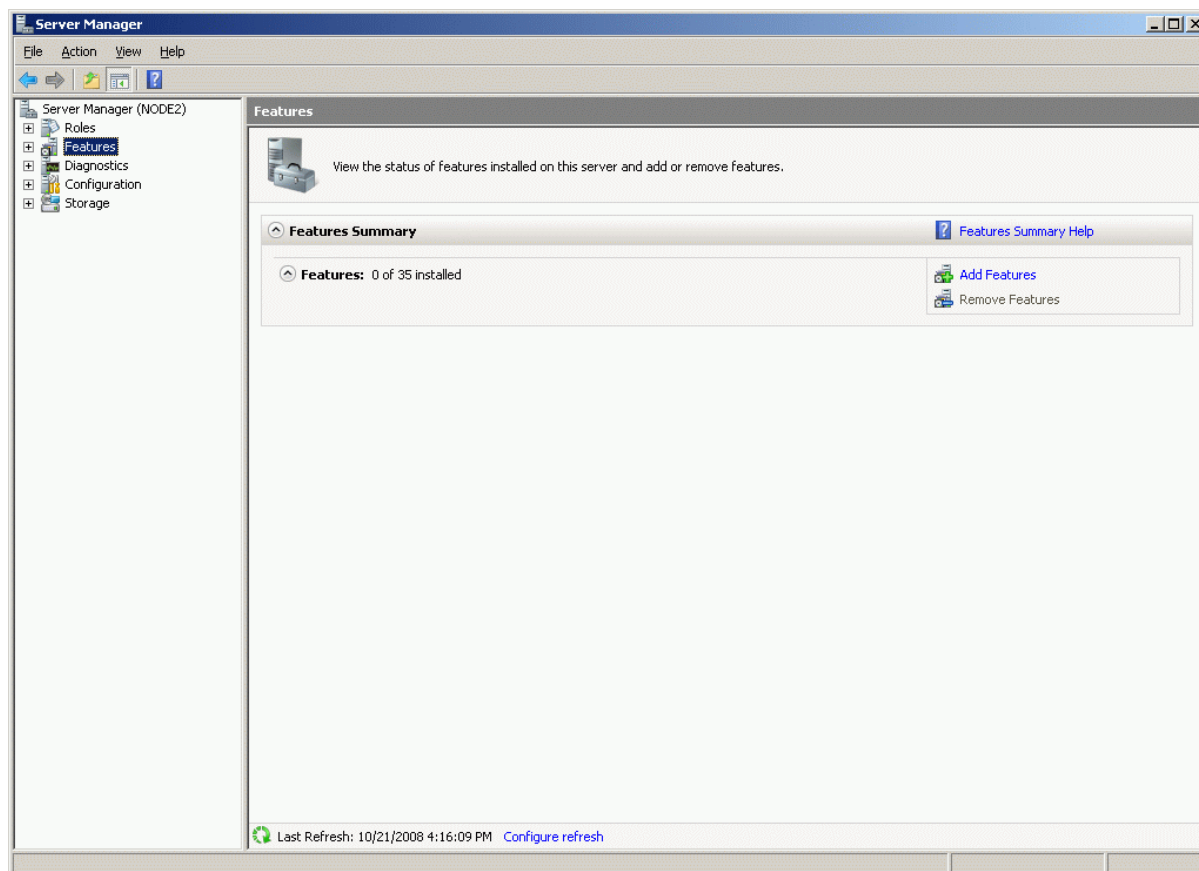


If successful, the **Computer Management** console should look like the sample image provided below.



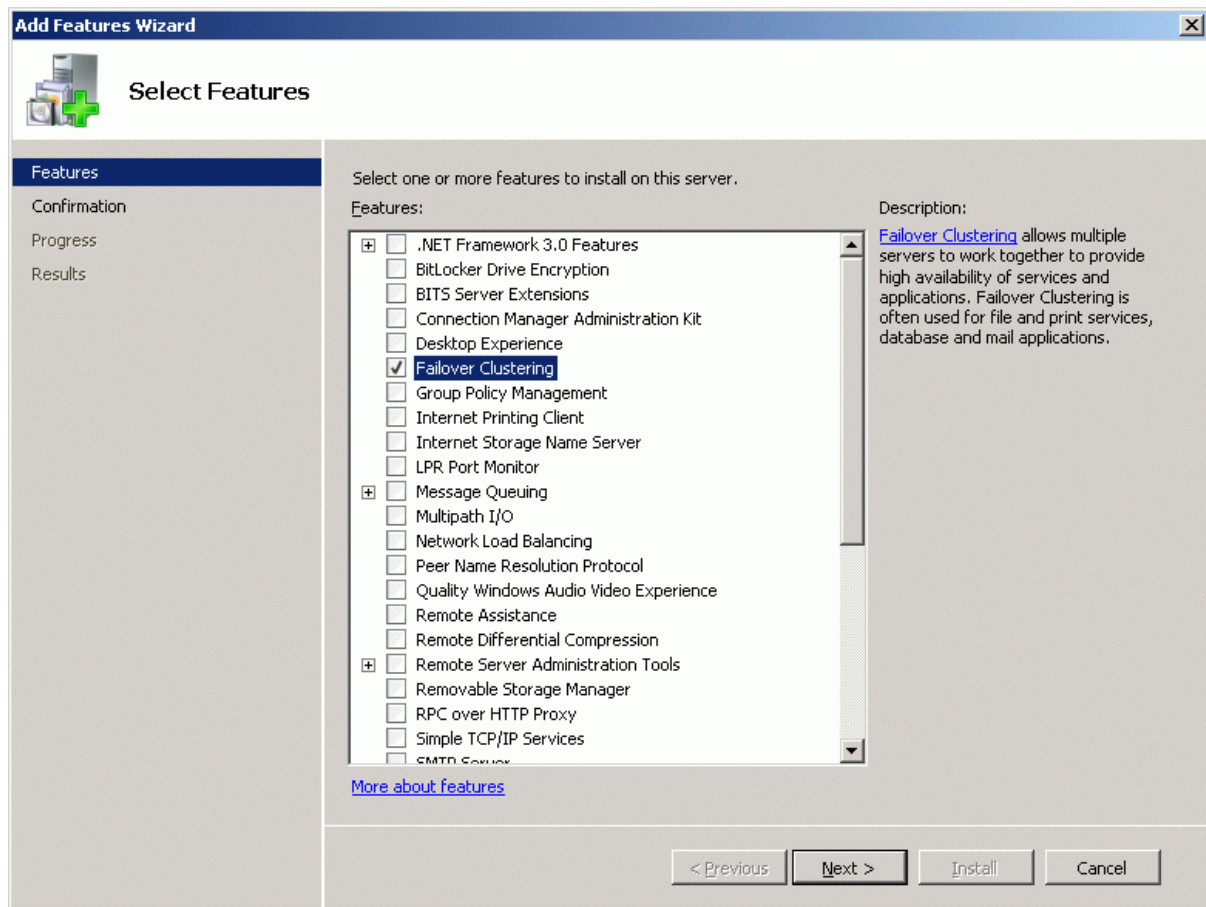
## Installing Failover Clustering Feature

Launch the **Computer Management** console. Select **Features** node from the list.



Click the **Add Features** to continue.

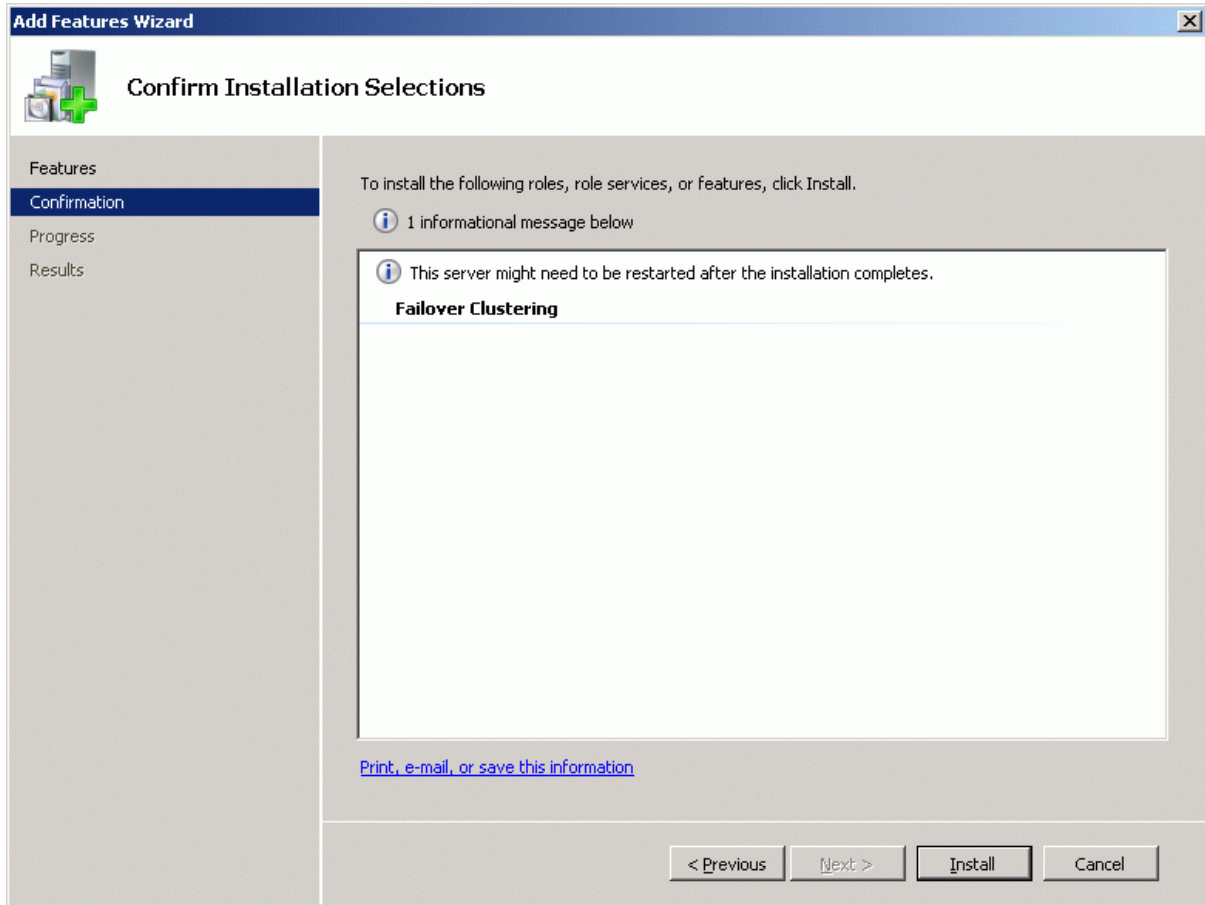
**Add Features Wizard** appears. Check the **Failover Clustering** feature.



Press the **Next** button to continue.

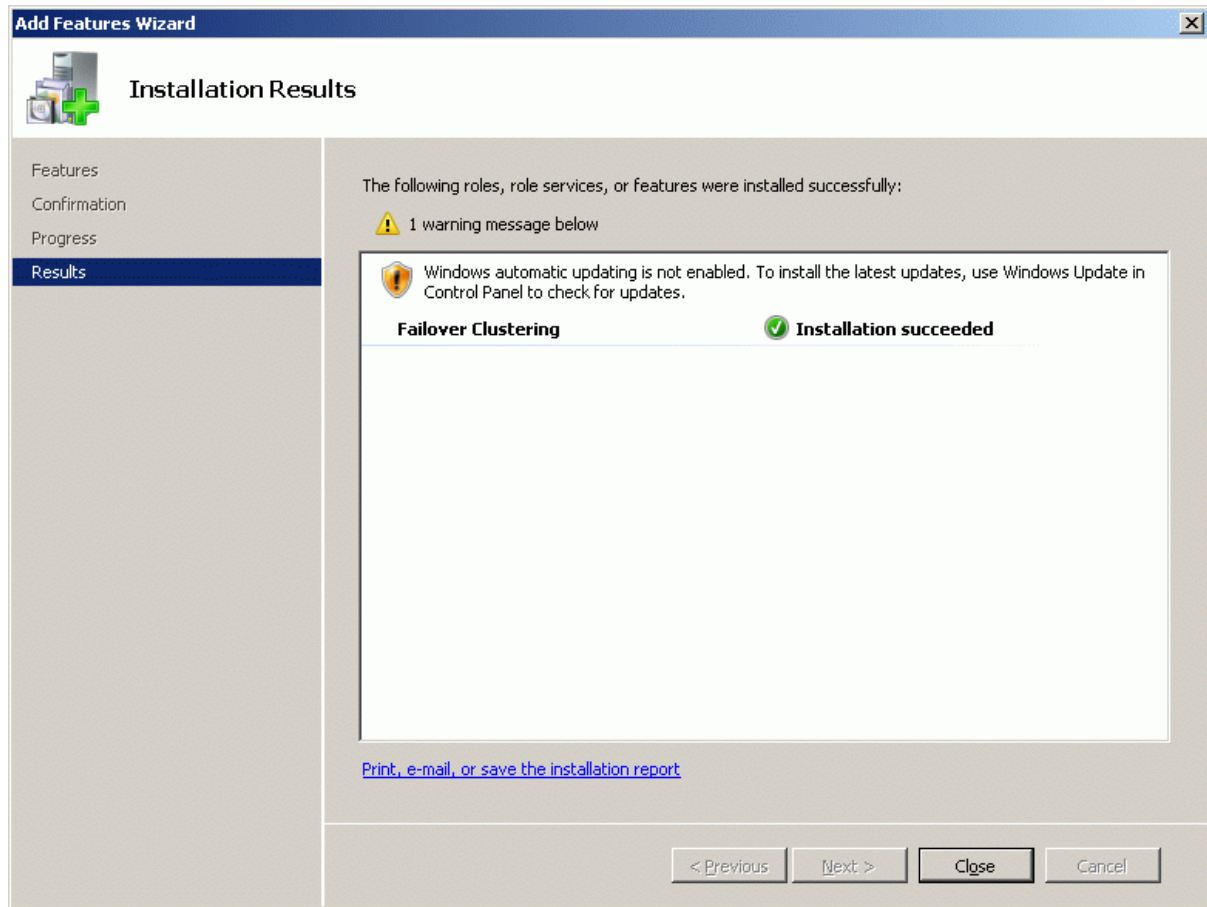


Check that the parameters are correct. Press the **Previous** button should any changes be required.



Complete the installation of the Failover Clustering Feature by pressing the **Install** button.

If the feature is successfully installed, the wizard should look similar to the example image below.



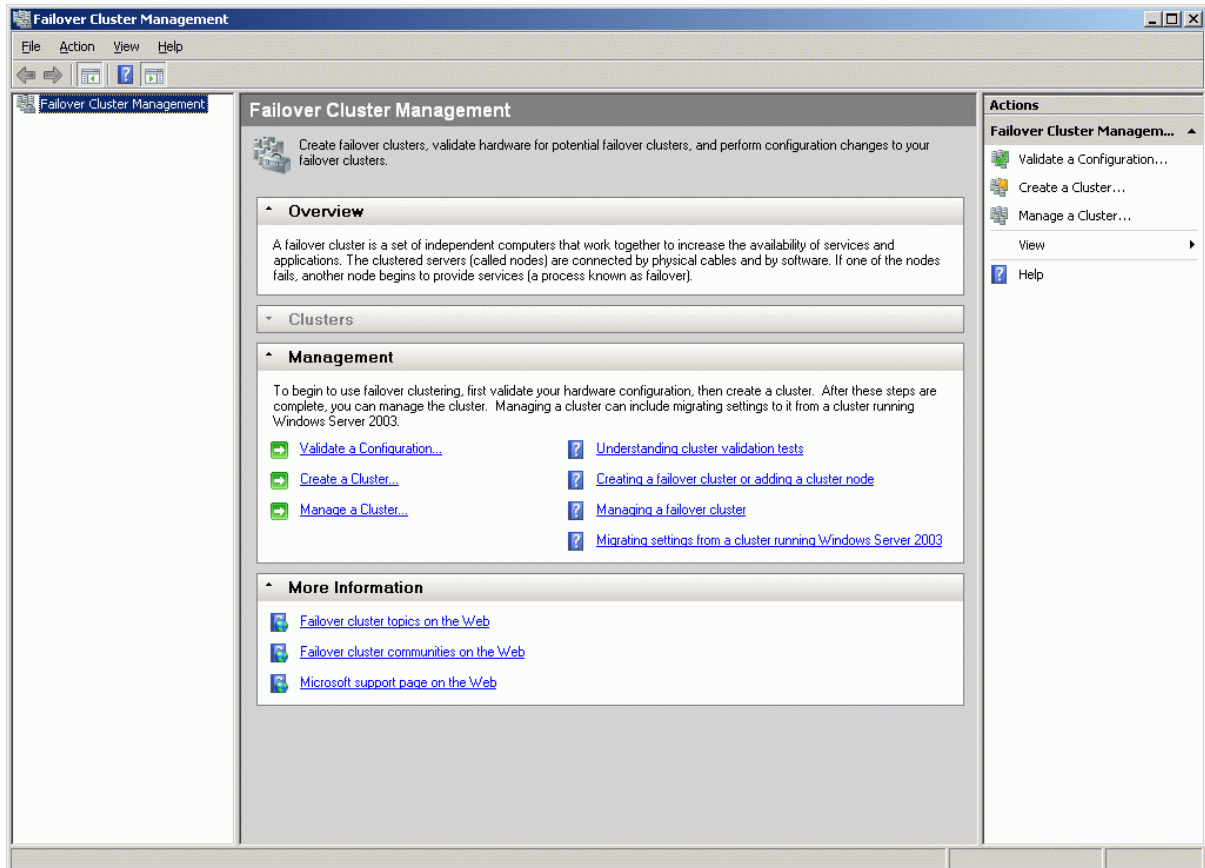
Press the **Close** button.

Shut down the server.

## Configuring Microsoft Cluster Service

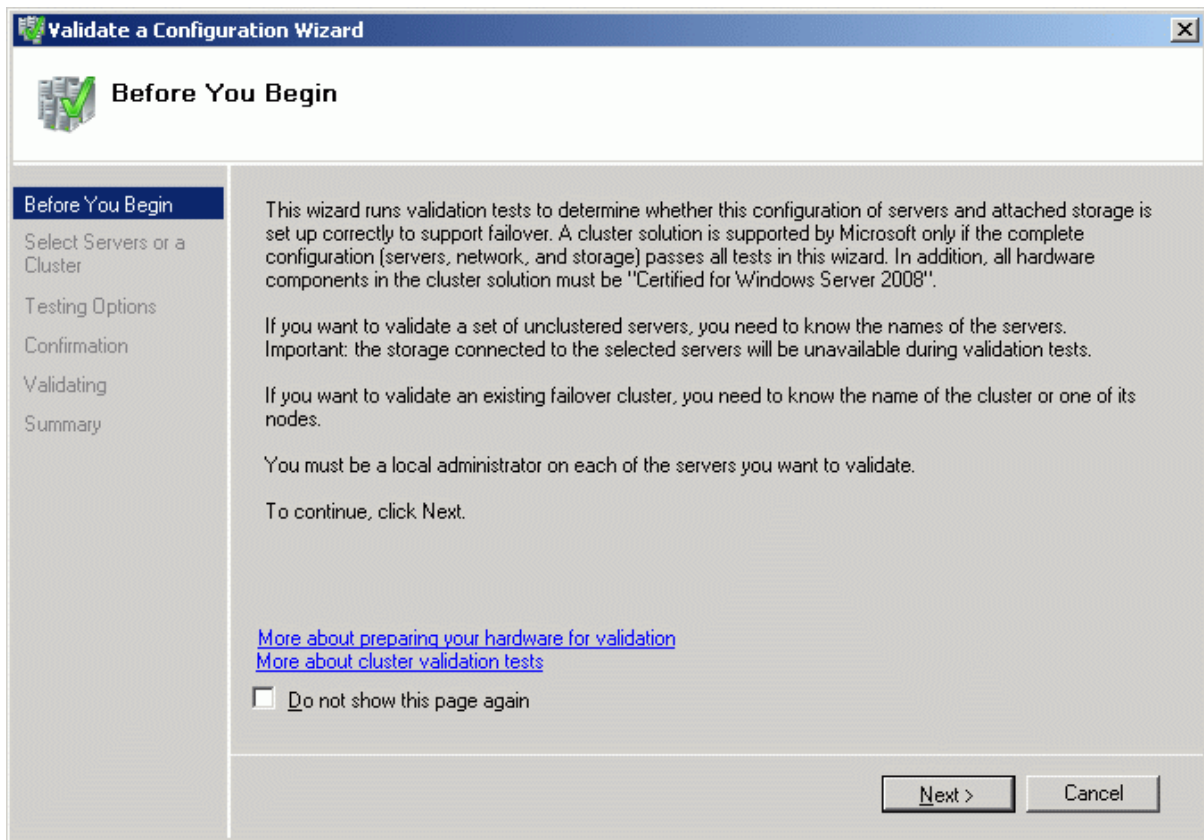
### Validate a Configuration

Start both **Cluster Node 1 Server** and **Cluster Node 2 Server**. Launch the **Failover Cluster Management** console selecting **Administrative Tools->Failover Cluster Management**.



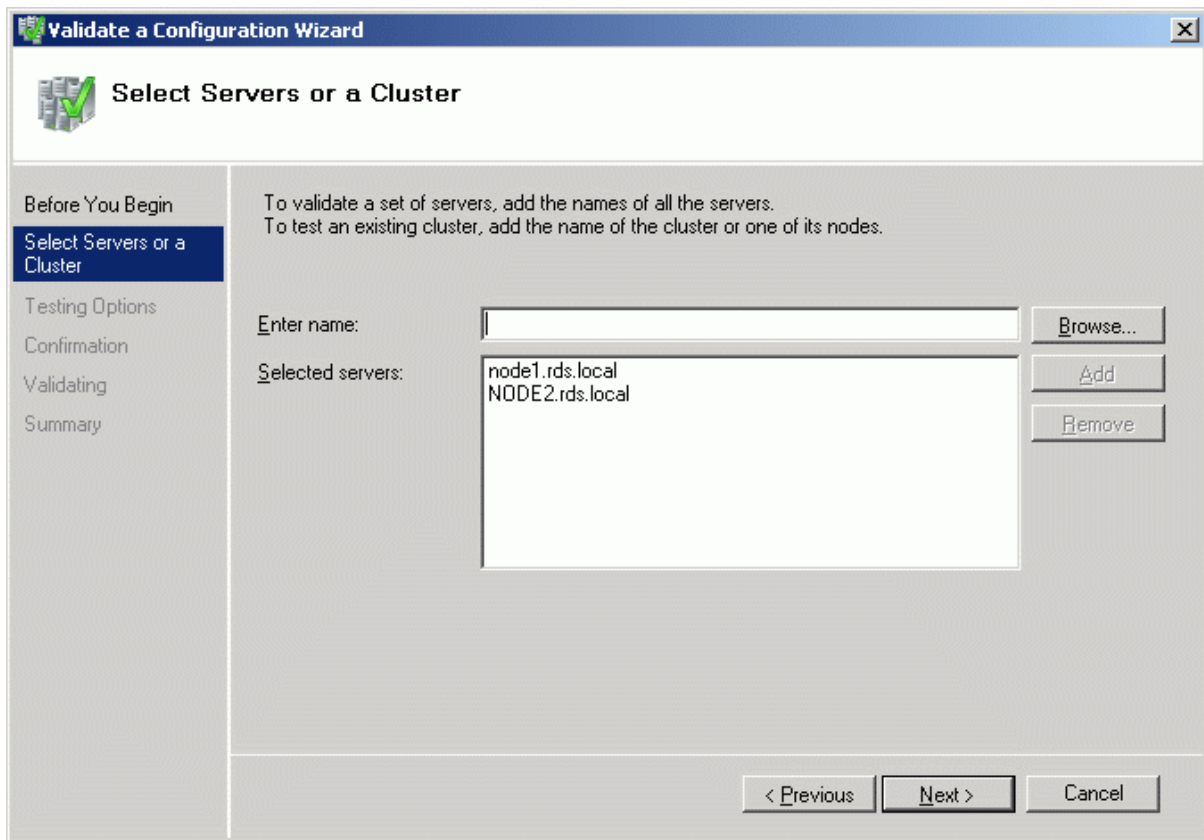
After the management console is launched please click **Validate a Configuration...** item to ensure that the configuration is suitable for failover clustering.

**Validate a Configuration Wizard** appears.



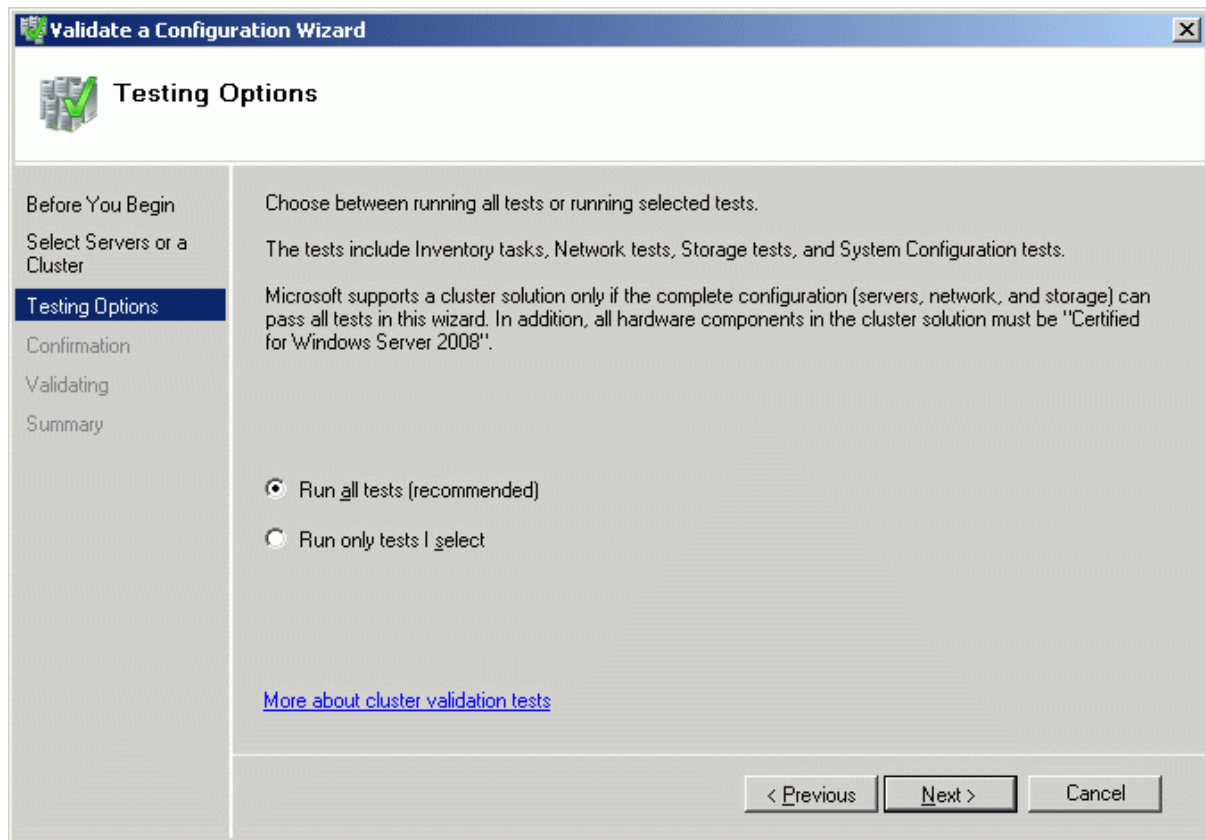
Press the **Next** button to continue.

Add the names of servers you wish to use as cluster nodes.



Press the **Next** button to continue.

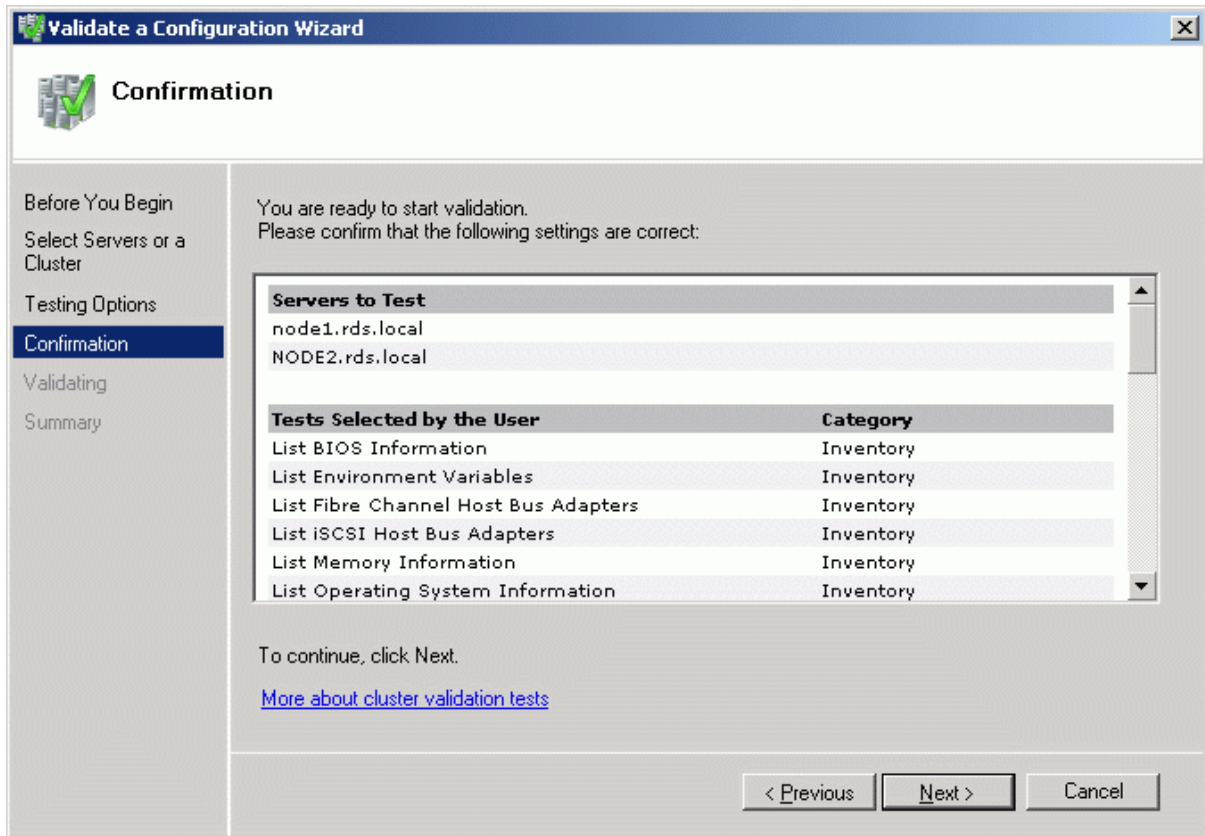
Select **Run all tests (recommended)** for testing the complete configuration.



Press the **Next** button to continue.



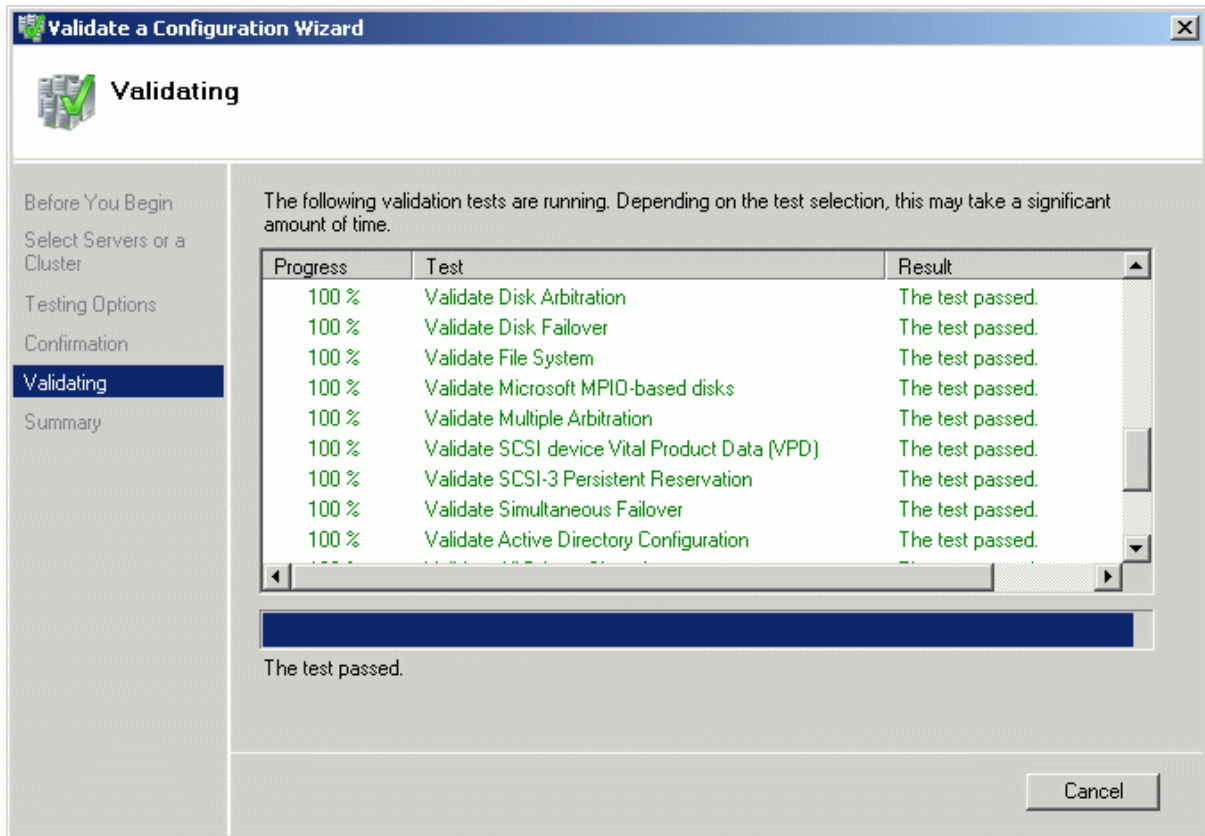
Check the parameters are correct. Press the **Previous** button should any changes be required.



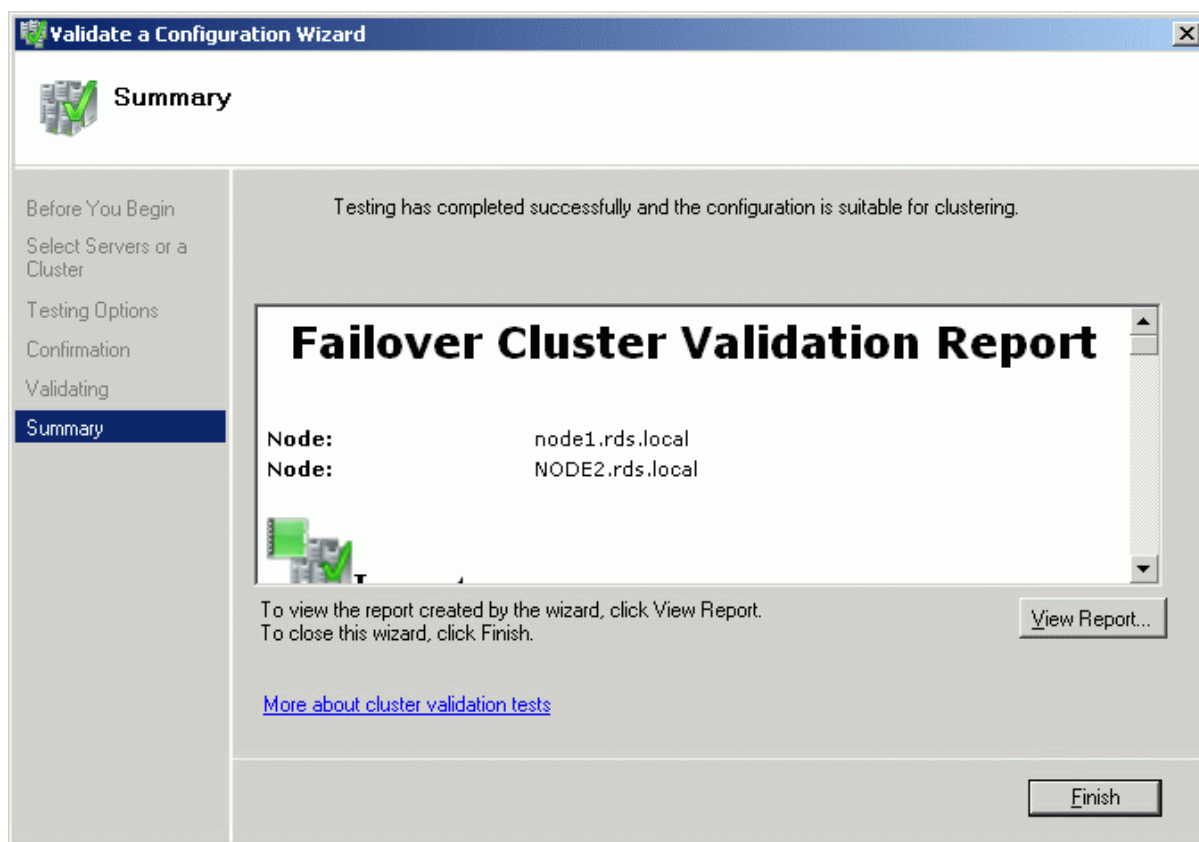
Press the **Next** button to continue.



If all of the tests are successful, the wizard should look similar to the example image below.



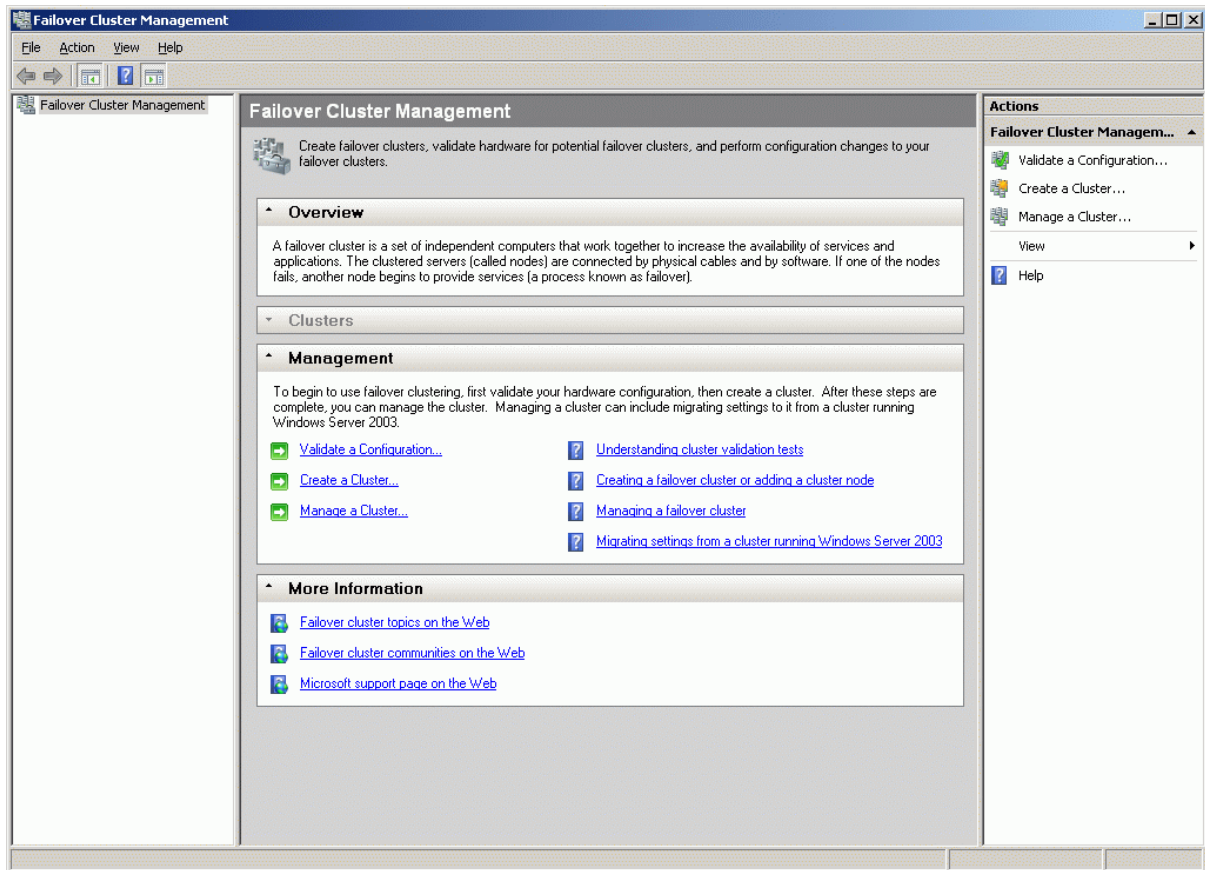
If successful, the wizard should look like the example picture provided below.



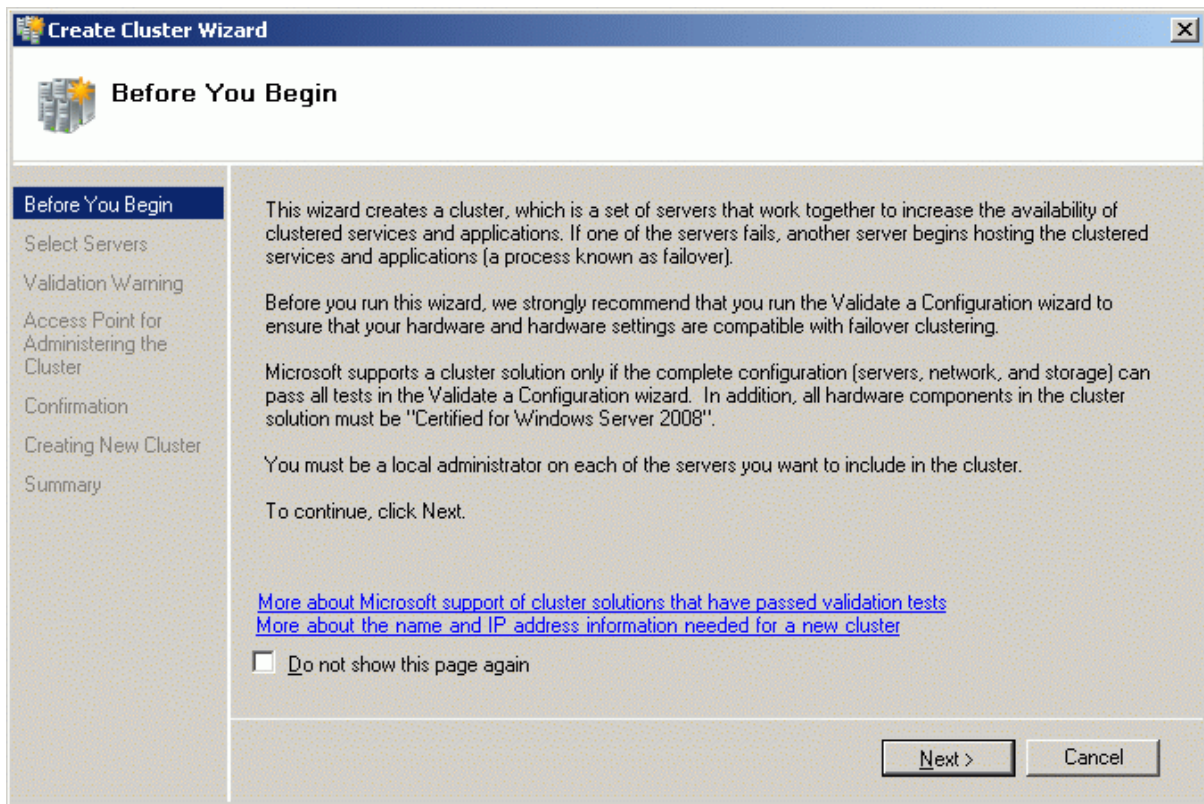
Press the **Finish** button.

## Create a Cluster

It is now time to create the cluster. Click **Create a Cluster** item from the Actions panel shown on the right.

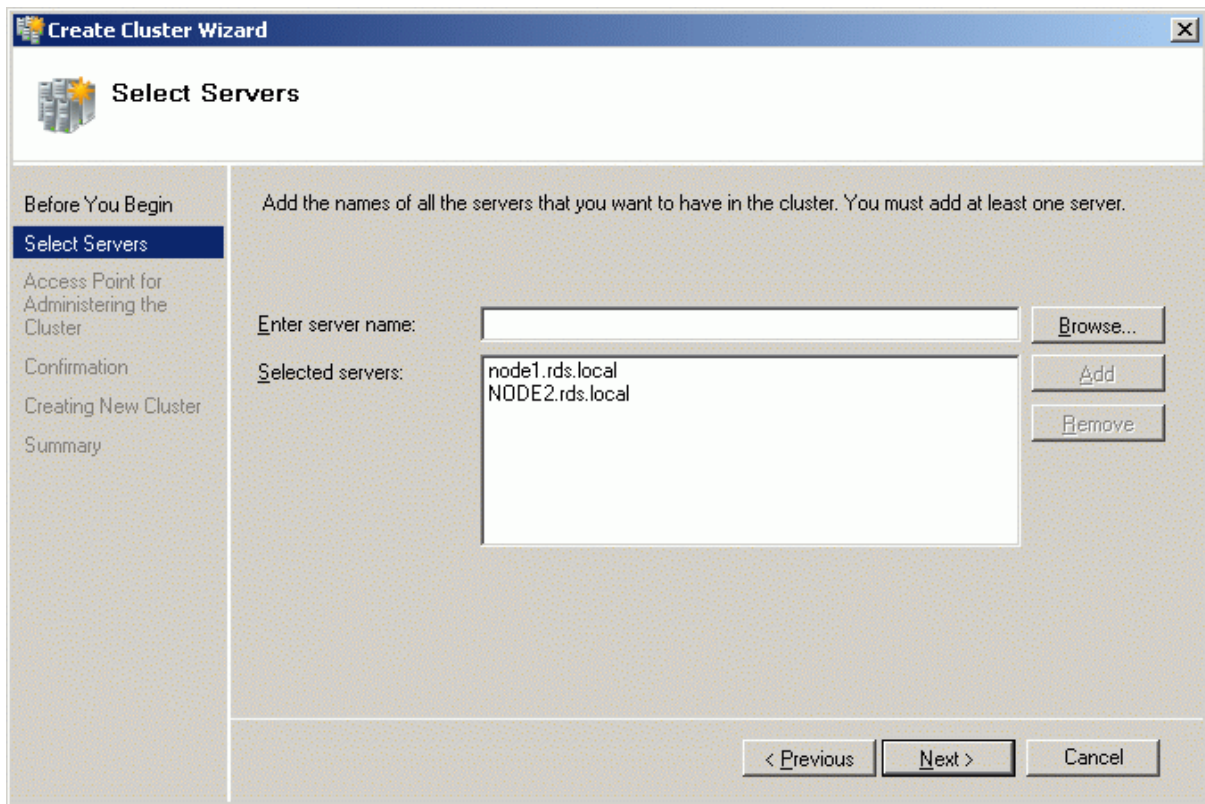


Create a Cluster Wizard appears.



Press the **Next** button to continue.

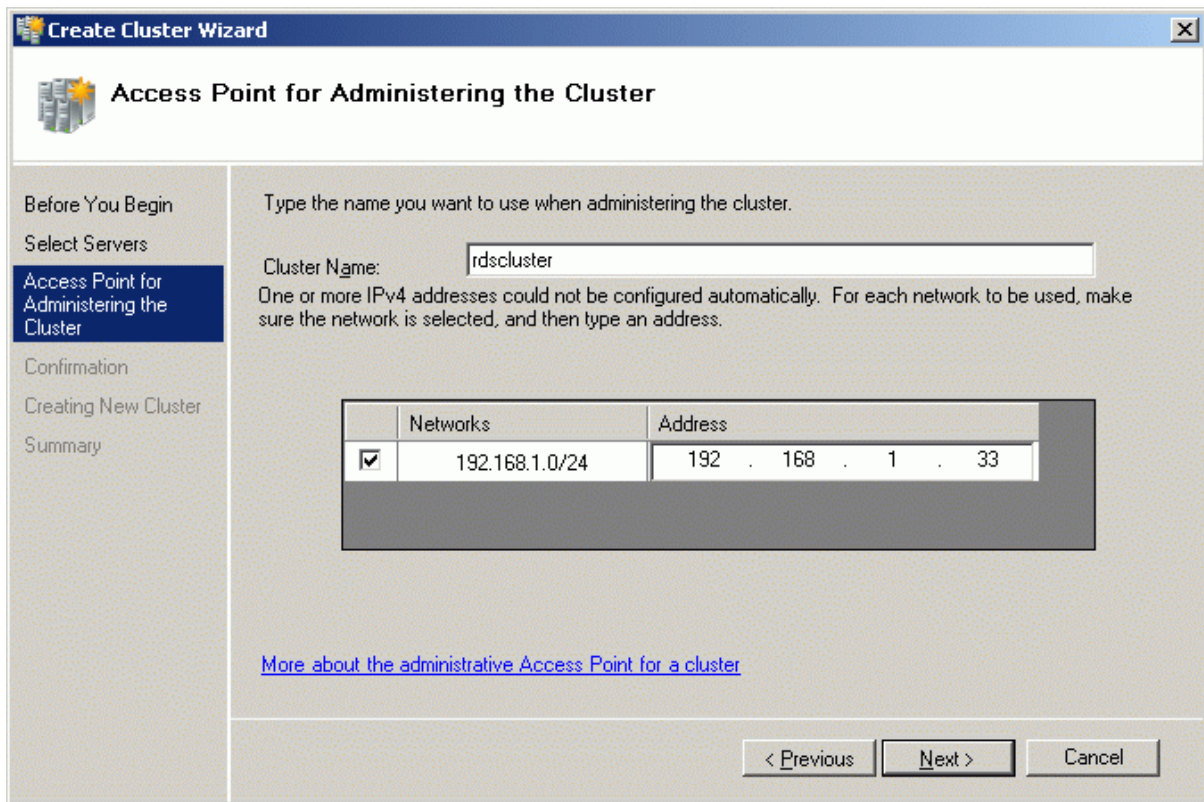
Add the names of servers you wish to use as cluster nodes.



Press the **Next** button to continue.



Specify Cluster Name and Cluster IP address.



The screenshot shows the 'Create Cluster Wizard' window, specifically the 'Access Point for Administering the Cluster' step. The left sidebar contains a list of steps: 'Before You Begin', 'Select Servers', 'Access Point for Administering the Cluster' (which is highlighted), 'Confirmation', 'Creating New Cluster', and 'Summary'. The main area of the wizard has a title bar with a close button and a subtitle 'Access Point for Administering the Cluster'. Below the subtitle, there is a text prompt: 'Type the name you want to use when administering the cluster.' followed by a text input field containing 'rdscluster'. Below this, there is a note: 'One or more IPv4 addresses could not be configured automatically. For each network to be used, make sure the network is selected, and then type an address.' Below the note is a table with two columns: 'Networks' and 'Address'. The table has one row with a checked checkbox in the first column, the network '192.168.1.0/24' in the second column, and the IP address '192 . 168 . 1 . 33' in the third column. Below the table is a blue hyperlink: 'More about the administrative Access Point for a cluster'. At the bottom right of the wizard, there are three buttons: '< Previous', 'Next >', and 'Cancel'.

Before You Begin  
Select Servers  
Access Point for Administering the Cluster  
Confirmation  
Creating New Cluster  
Summary

Type the name you want to use when administering the cluster.

Cluster Name:

One or more IPv4 addresses could not be configured automatically. For each network to be used, make sure the network is selected, and then type an address.

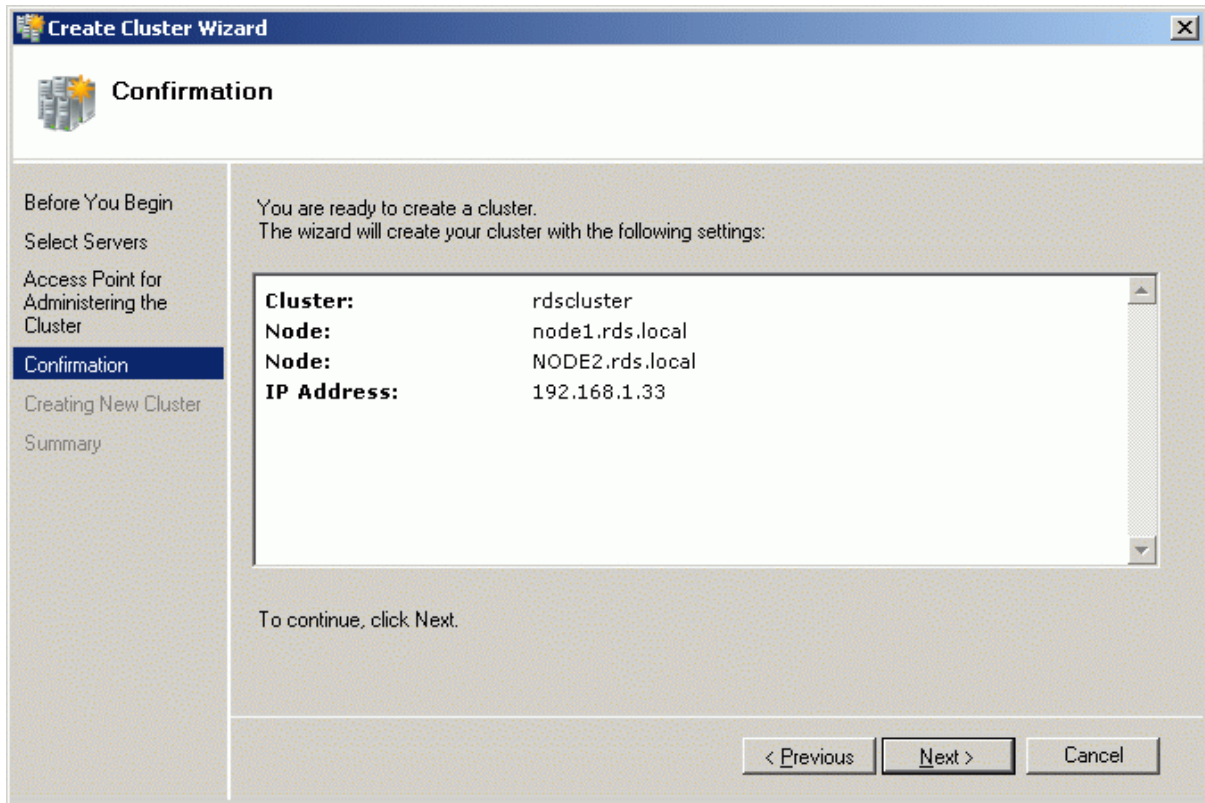
	Networks	Address
<input checked="" type="checkbox"/>	192.168.1.0/24	192 . 168 . 1 . 33

[More about the administrative Access Point for a cluster](#)

< Previous   Next >   Cancel

Press the **Next** button to continue.

Check the parameters are correct. Press the **Previous** button should any changes be required.



Press the **Next** button to continue.



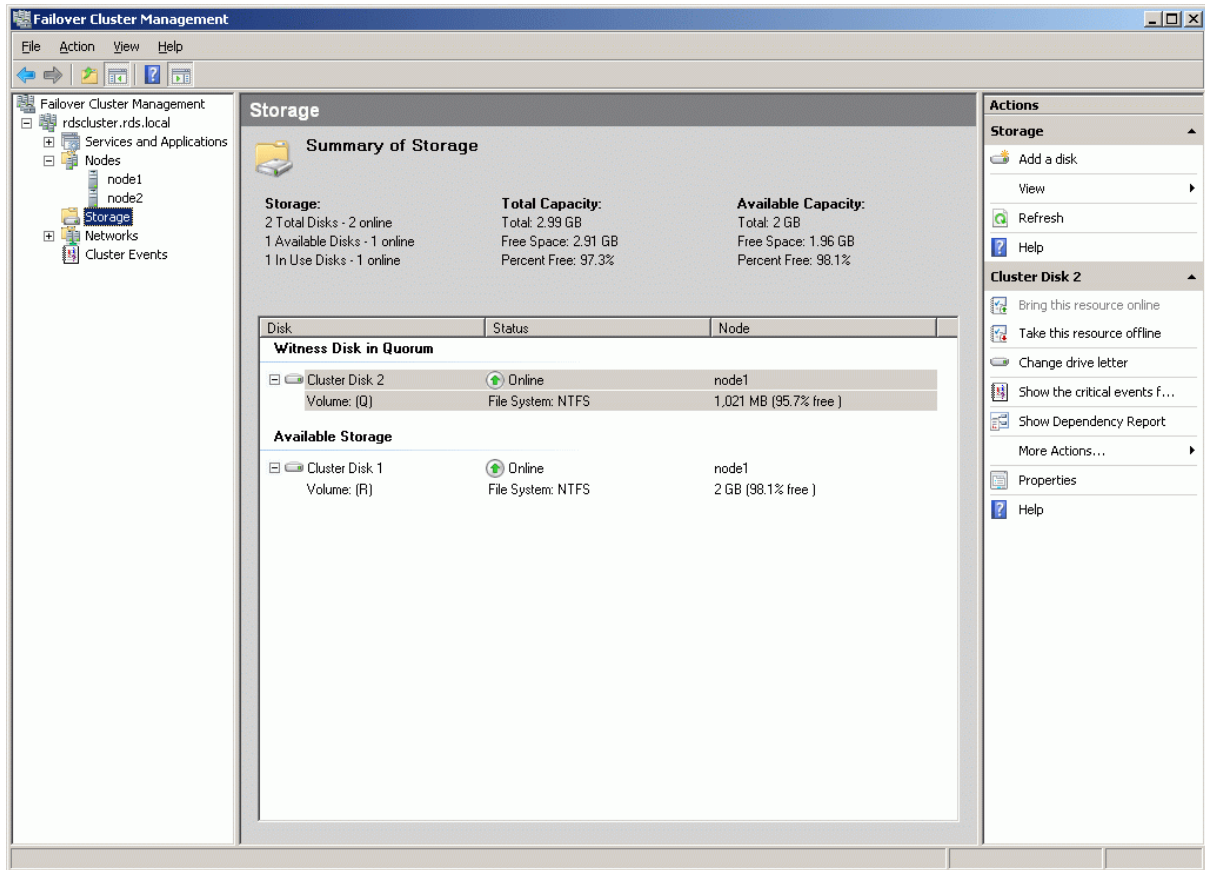
If successful, the wizard should look like the example picture provided below.



Press the **Finish** button.

Now that the creation of the cluster is complete it will be shown in the panel on the left.

Expand the cluster by clicking on the '+' symbol next to the cluster, then click on **Storage**. The **Failover Cluster Management** console should look like the example picture provided below. Both cluster disk resources will be shown as online.

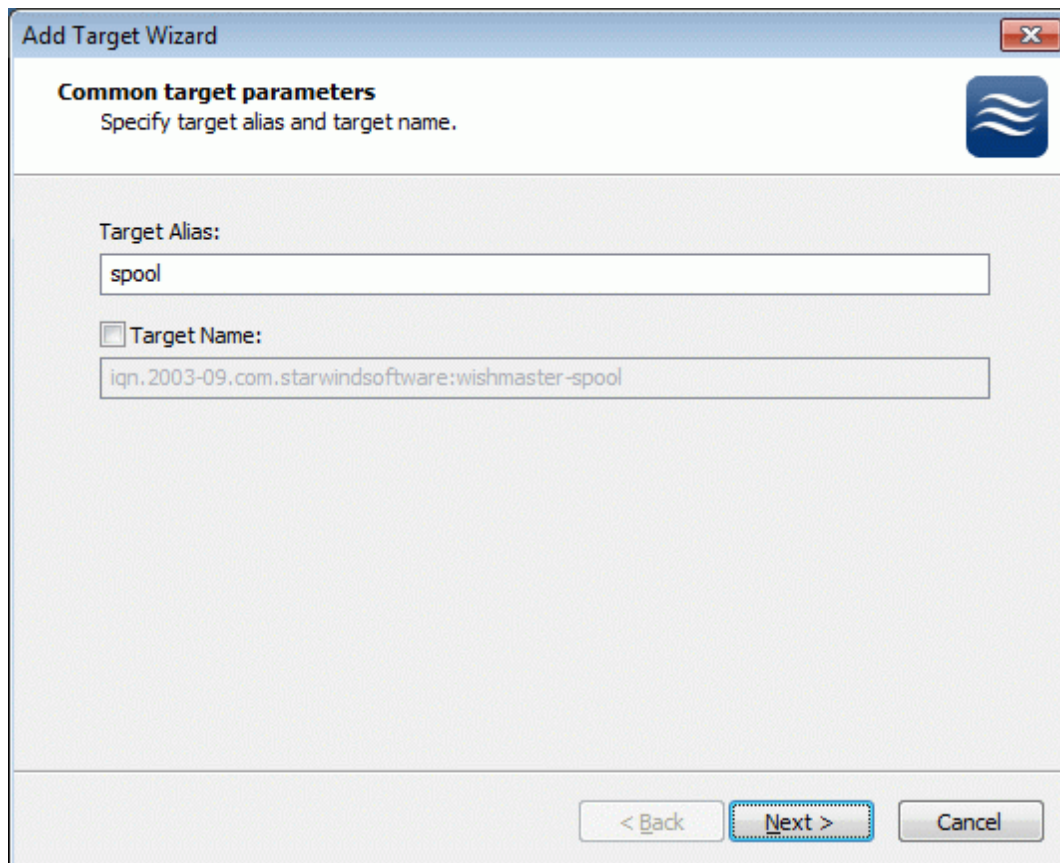


## Adding New Shared Disk Resource

### StarWind Target

Click the right mouse button over the host and select **Add Target** pop-up menu item.

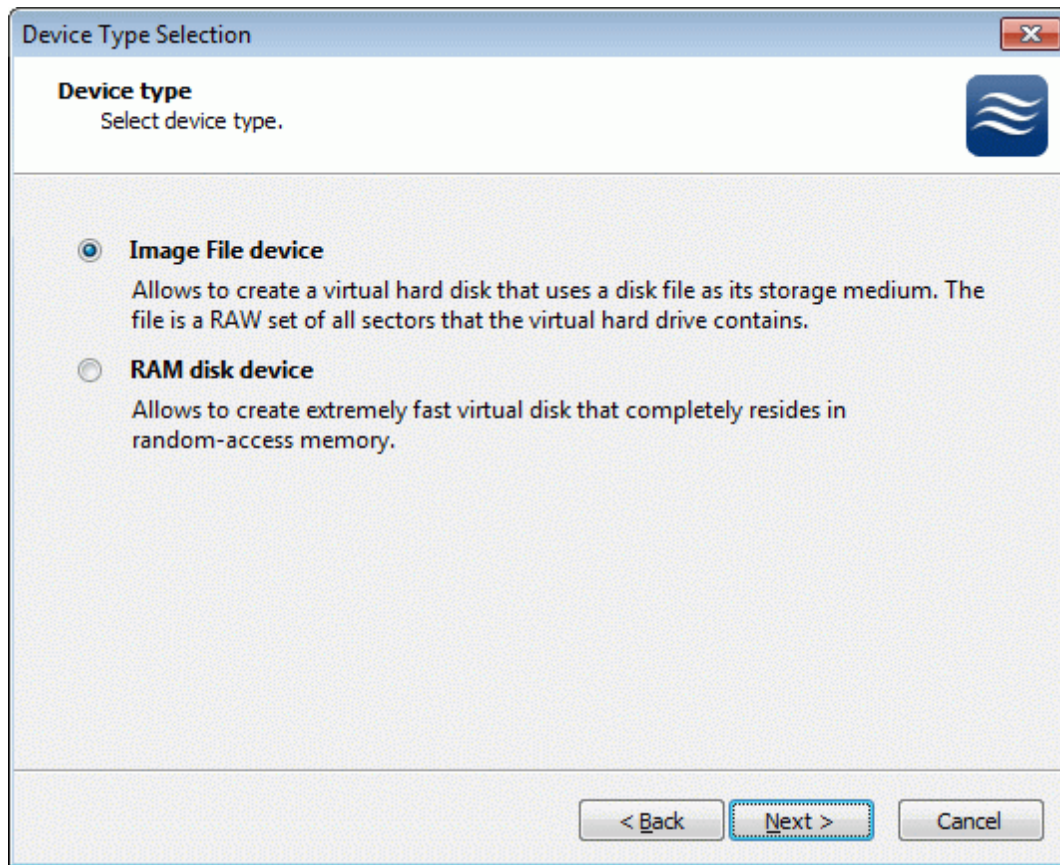
In the wizard that appears, select a target name. The name must be a unique name by which the device will be declared to the iSCSI initiators connecting to **StarWind** over an IP network.



The image shows a Windows-style dialog box titled "Add Target Wizard". It has a standard Windows title bar with a close button (X) in the top right corner. The main content area is titled "Common target parameters" and includes the instruction "Specify target alias and target name." To the right of this text is a StarWind logo. Below the instruction, there are two input fields. The first is labeled "Target Alias:" and contains the text "spool". The second is preceded by a checkbox and labeled "Target Name:", and contains the text "iqn.2003-09.com.starwindsoftware:wishmaster-spool". At the bottom of the dialog, there are three buttons: "< Back", "Next >" (which is highlighted with a blue dashed border), and "Cancel".

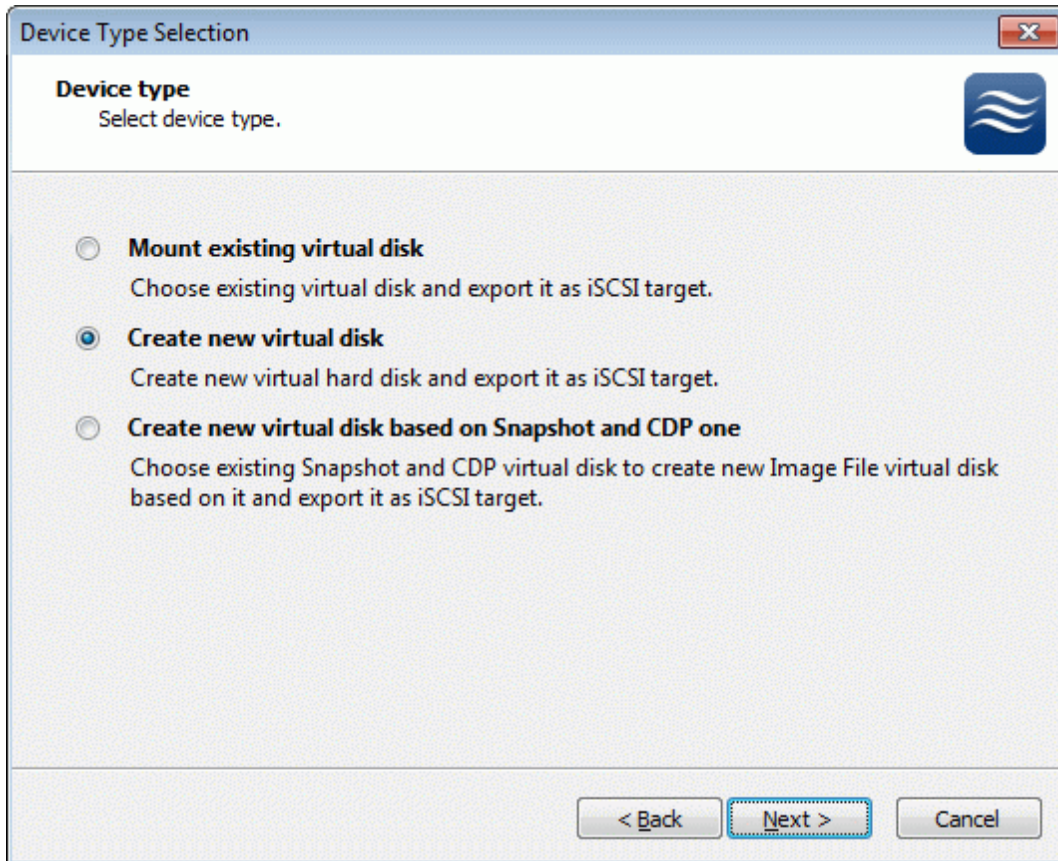
Press the **Next** button to continue.

Select **Image File device**.



Press the **Next** button to continue.

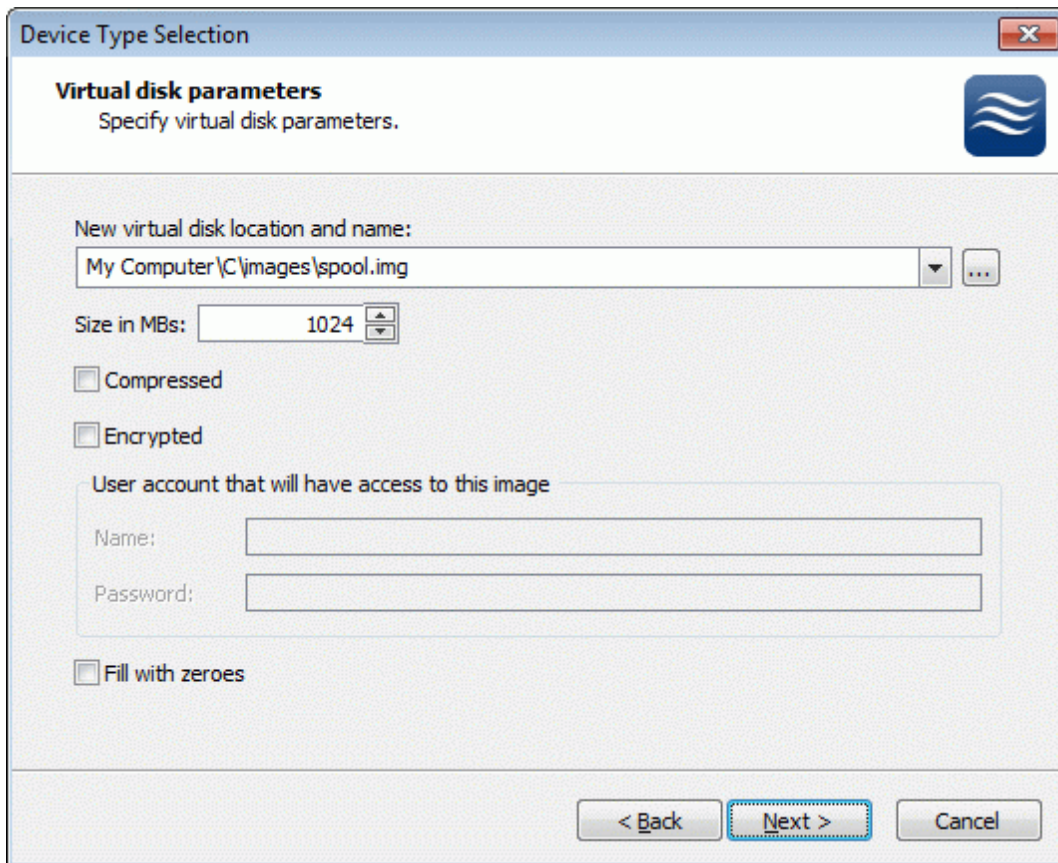
Select **Create new virtual disk** to create a new virtual hard disk or **Mount existing virtual disk** to mount an existing virtual disk that you've prepared before.



Press the **Next** button to continue.



If you have decided to create a new virtual disk please specify the location and the name of the virtual disk you wish to be created. Also you have to provide the virtual disk size in megabytes. Check any additional parameters of the virtual disk you wish to create. Please refer to the online help for details regarding those additional parameters (**Compressed** and **Encrypted**).



**Device Type Selection**

**Virtual disk parameters**  
Specify virtual disk parameters.

New virtual disk location and name:  
My Computer\C:\images\spool.img

Size in MBs: 1024

☐ Compressed

☐ Encrypted

User account that will have access to this image

Name:

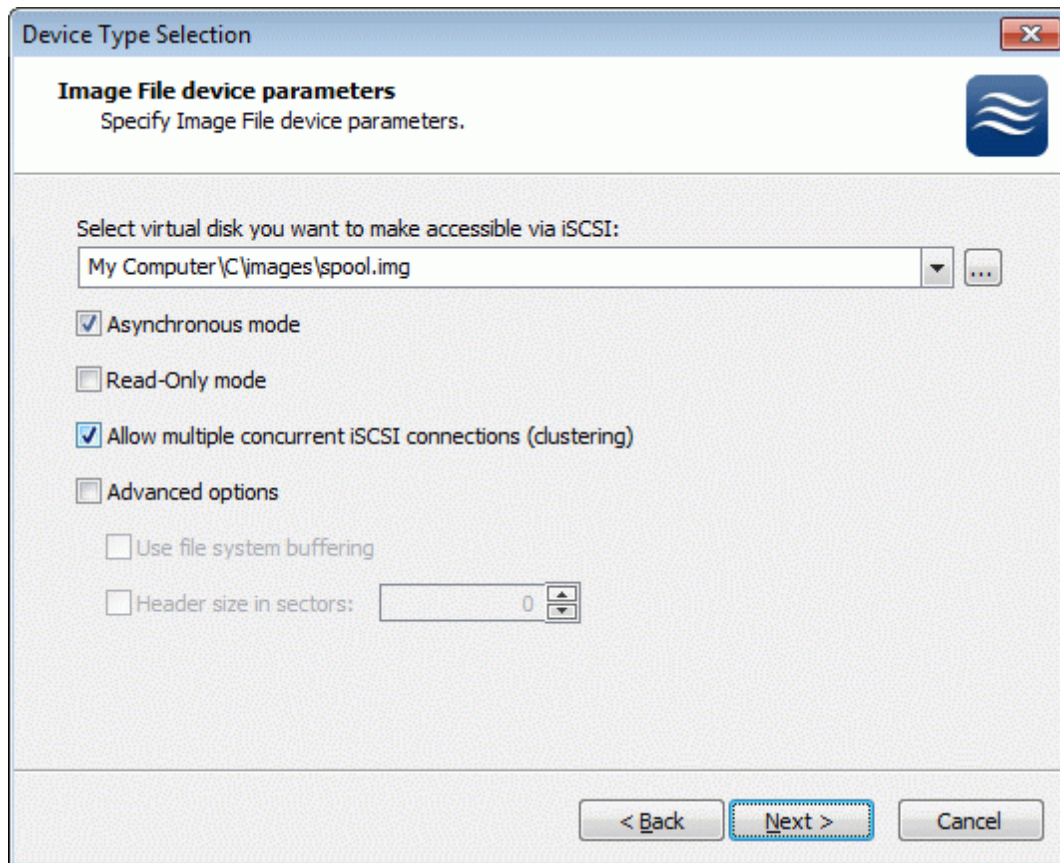
Password:

☐ Fill with zeroes

< Back   **Next >**   Cancel

Press the **Next** button to continue.

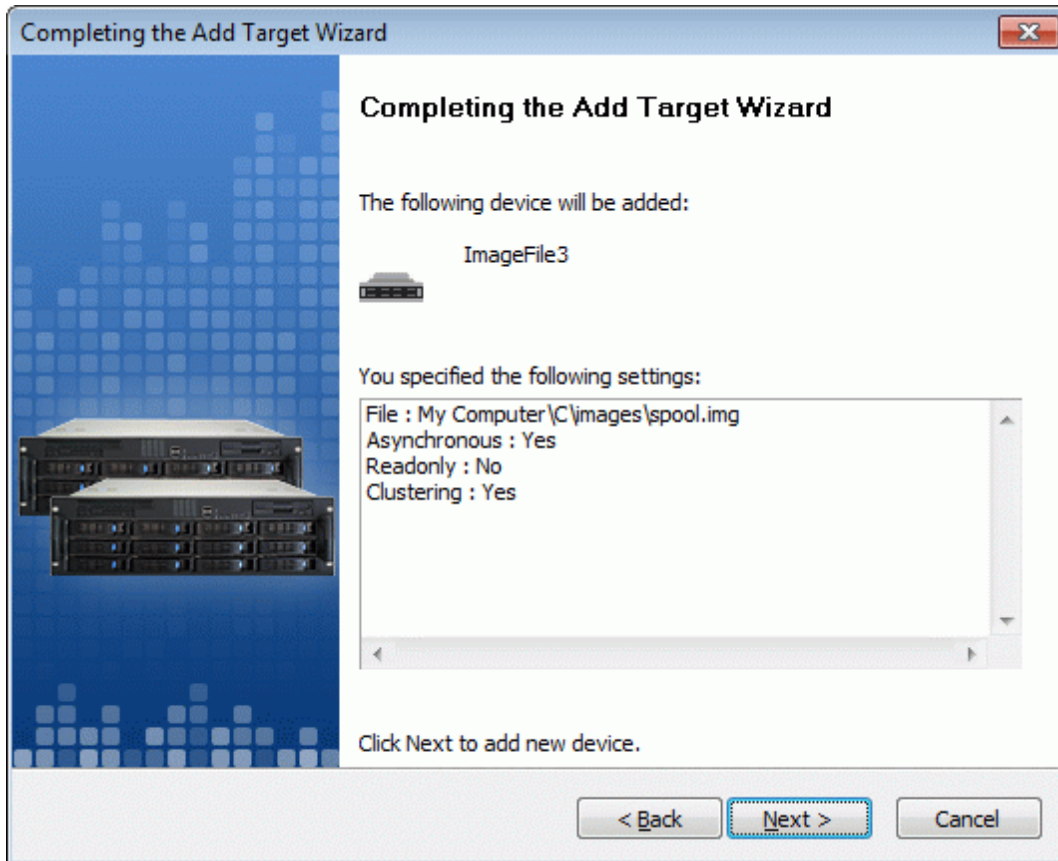
Image File device has some extra parameters. Check **Allow multiple concurrent iSCSI connections (clustering)** checkbox. Please refer to the online help for details regarding those additional parameters (**Asynchronous mode**, **Allow multiple connections (clustering)**, **Read-only mode** and **Specify advanced options**).



Press the **Next** button to continue.

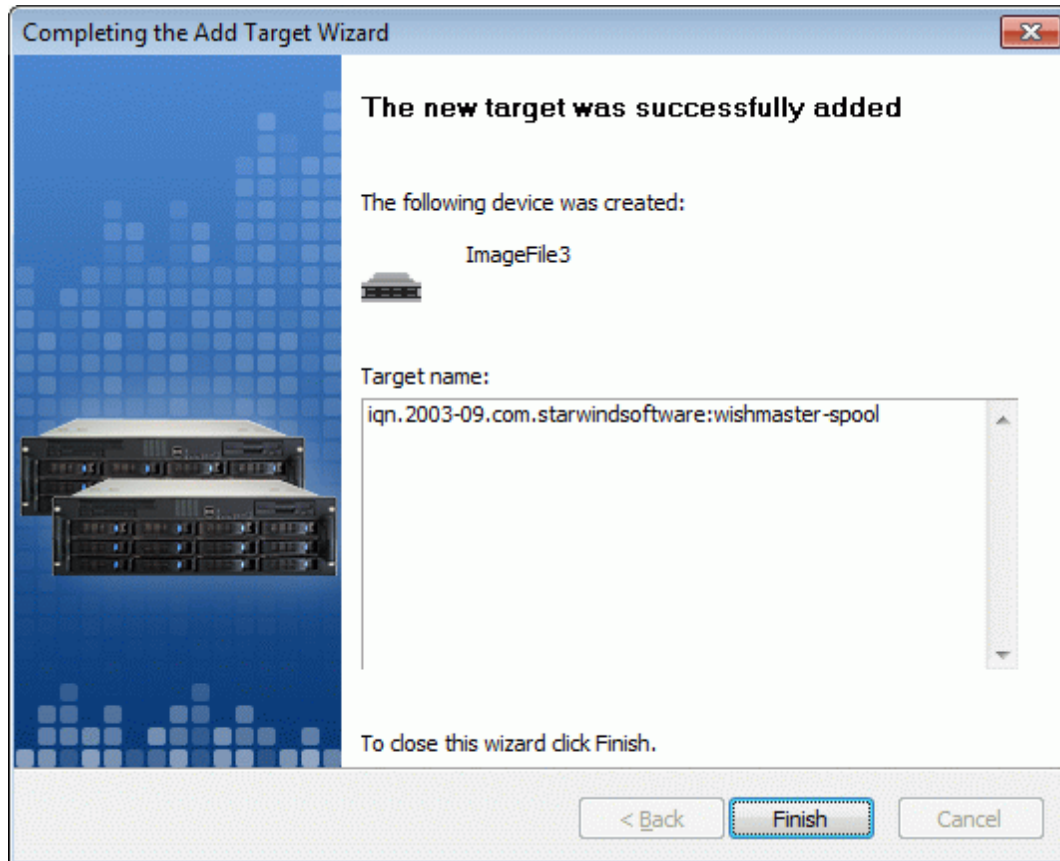


Check the device parameters are correct. Press the **Back** button should any changes be required.



Press the **Next** button to continue.

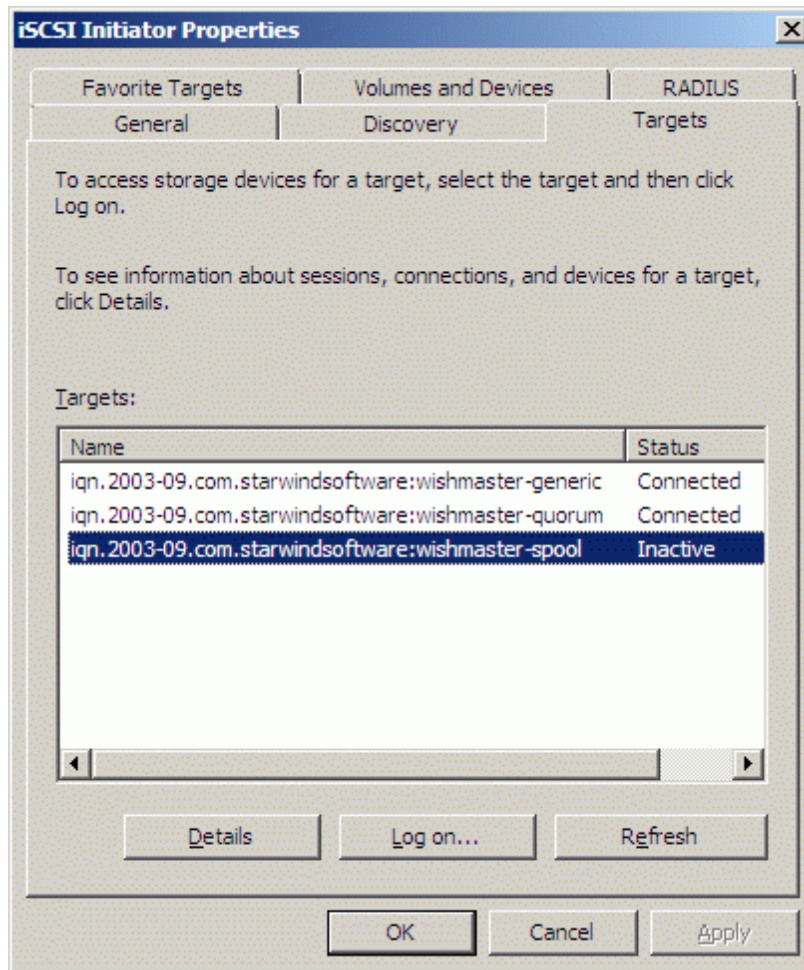
A summary of the created device is displayed on the last wizard page (see image below).



Press the **Finish** button to close the wizard.

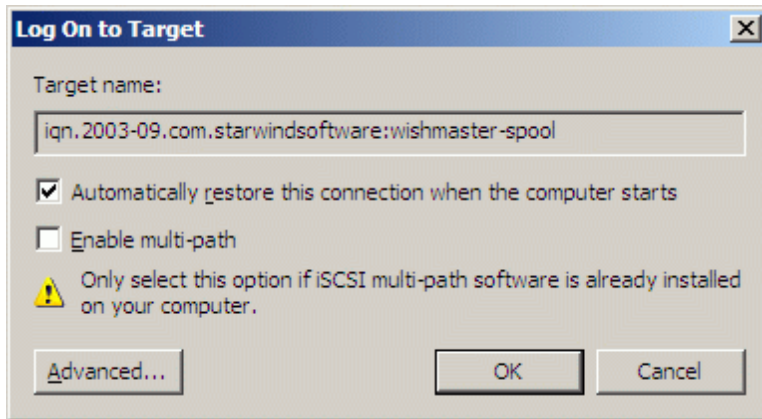
## Node 1

Launch the Microsoft iSCSI Software Initiator application **Administrative Tools** -> **iSCSI Initiator**. Click on the **Targets** tab. Select the IQN of the target just added.



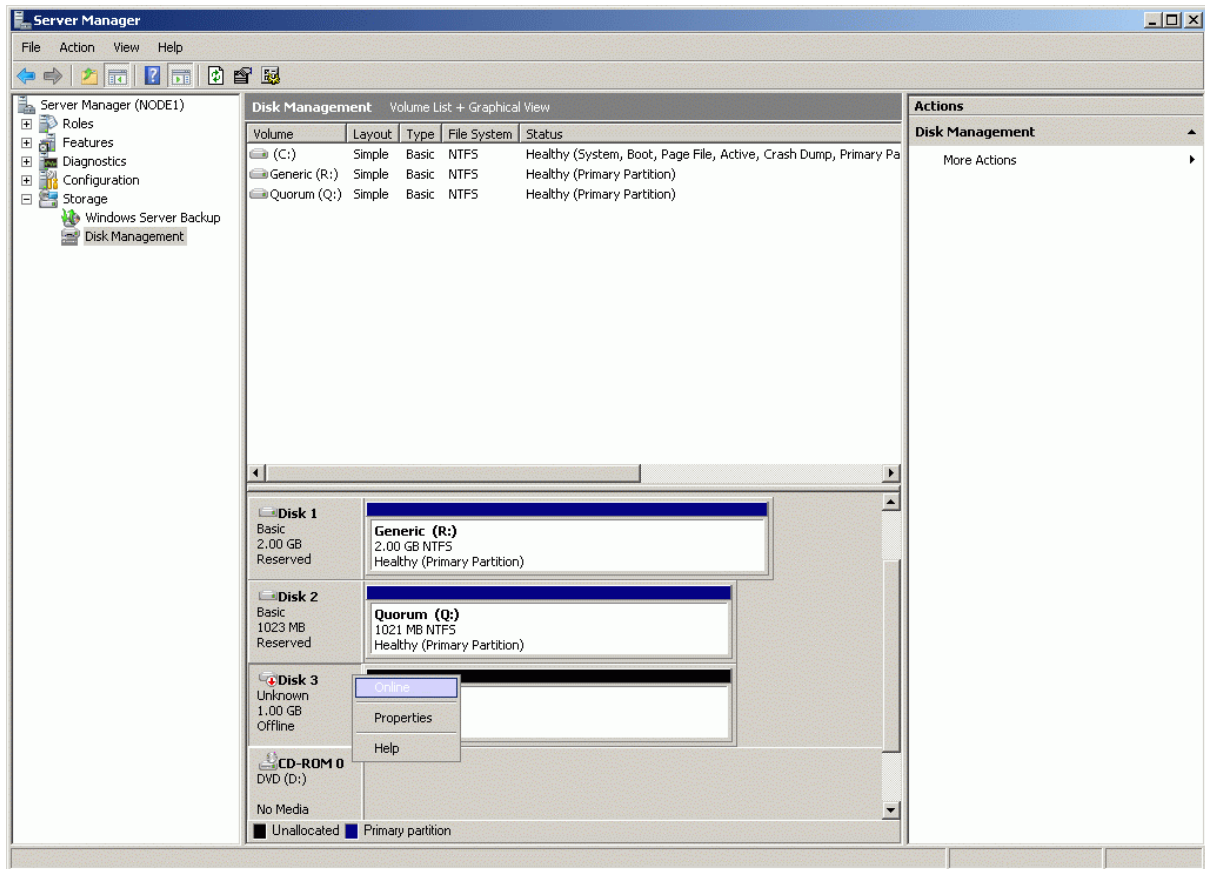
Press the **Log On...** button.

The **Log On to Target** dialog now appears. In this dialog click on the checkbox **Automatically restore this connection when the system boots** to make this connection persistent.



Press the **OK** button to continue.

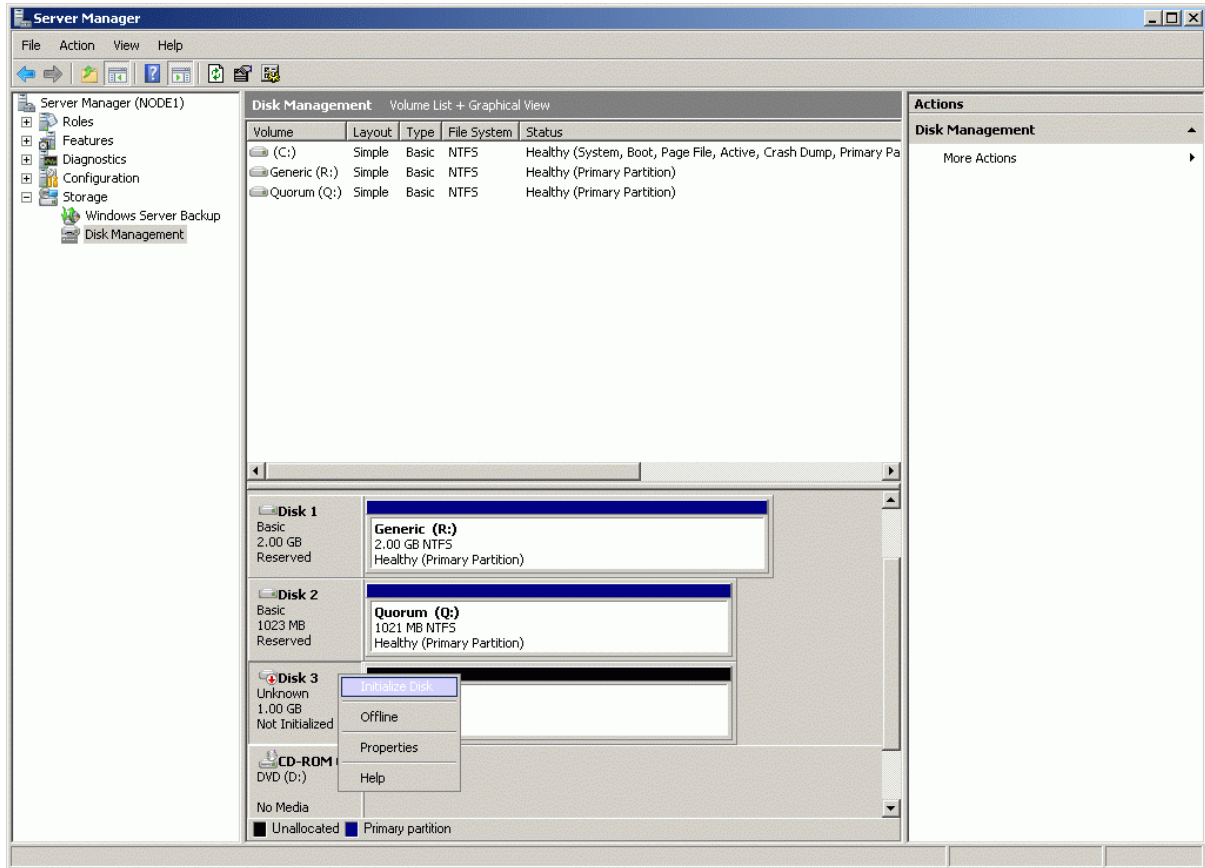
When the **StarWind** Disks are connected, they show up on the initiator machine as new disk devices. Before these devices can be used as cluster disks, they have to be initialized and formatted. Launch the **Computer Management** console. Select **Disk Management**.

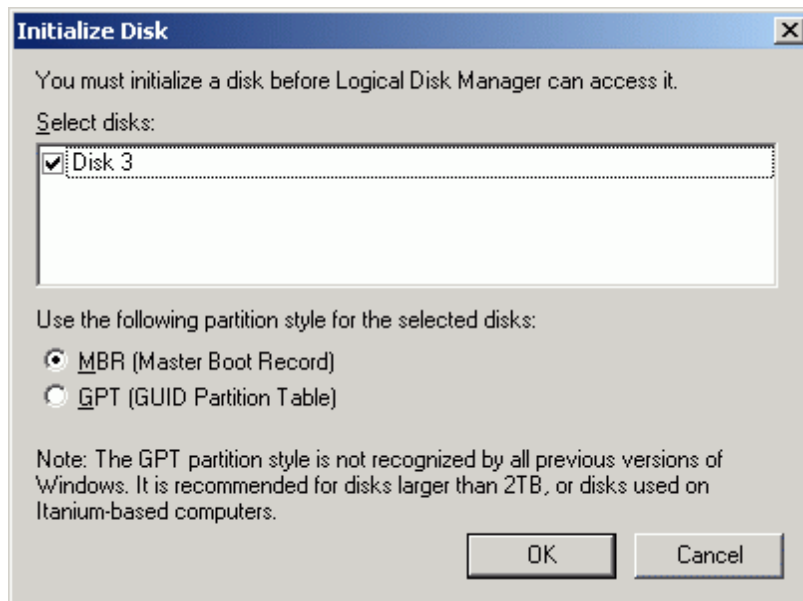


Bring disk online. Press the right mouse button over the disk and select **Online**

.

Initialize the Disk. Press the right mouse button over the Disk and select **Initialize Disk**. Follow the wizard to initialize the new disk.

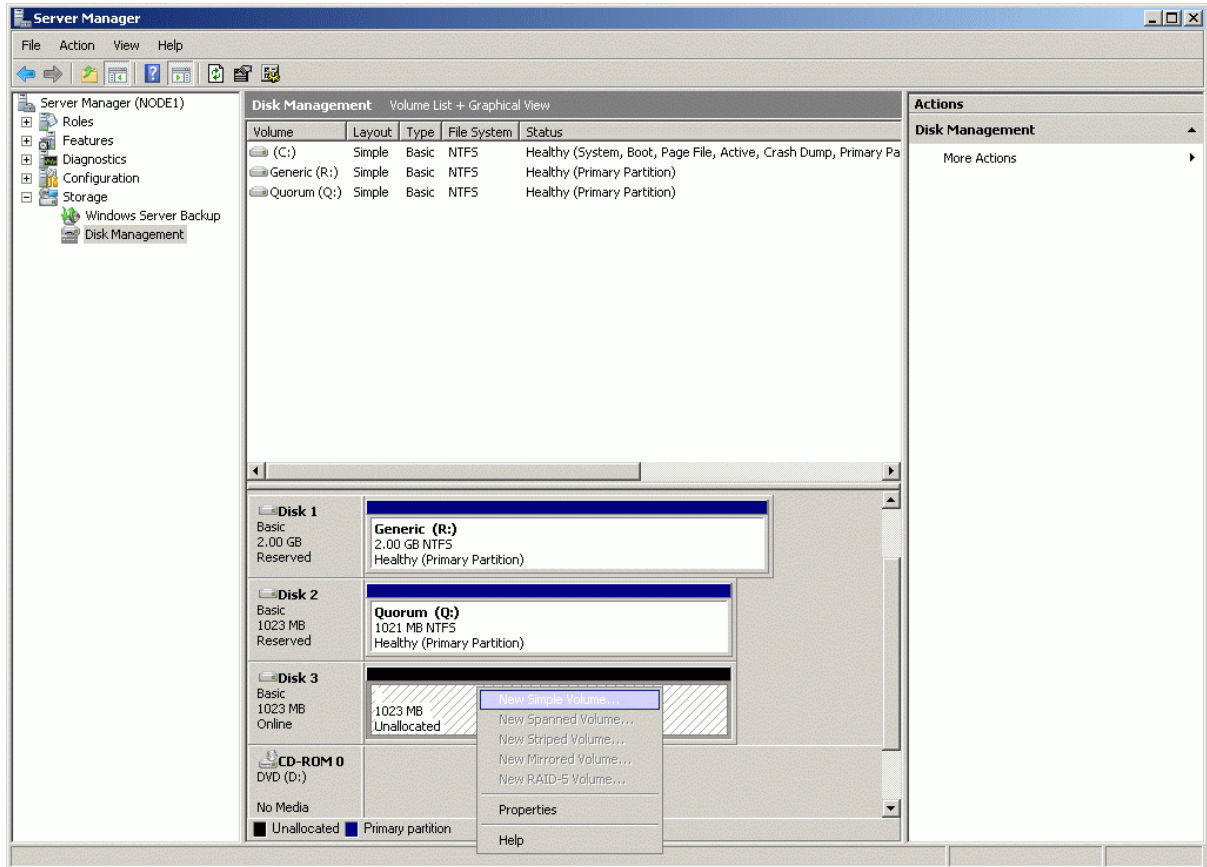




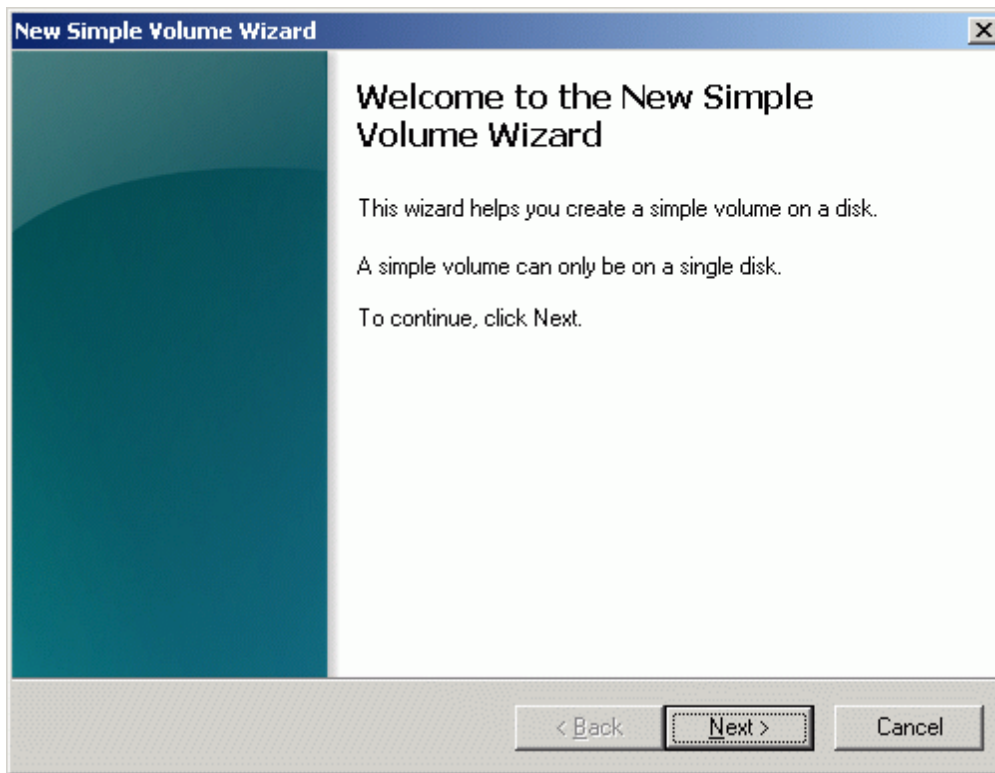
Press the **OK** button to continue.



The disk has now been initialized. Right-click over the unallocated space and select **New Simple Volume**. Follow the instructions in the wizard to create an NTFS partition for use as the spool disk.

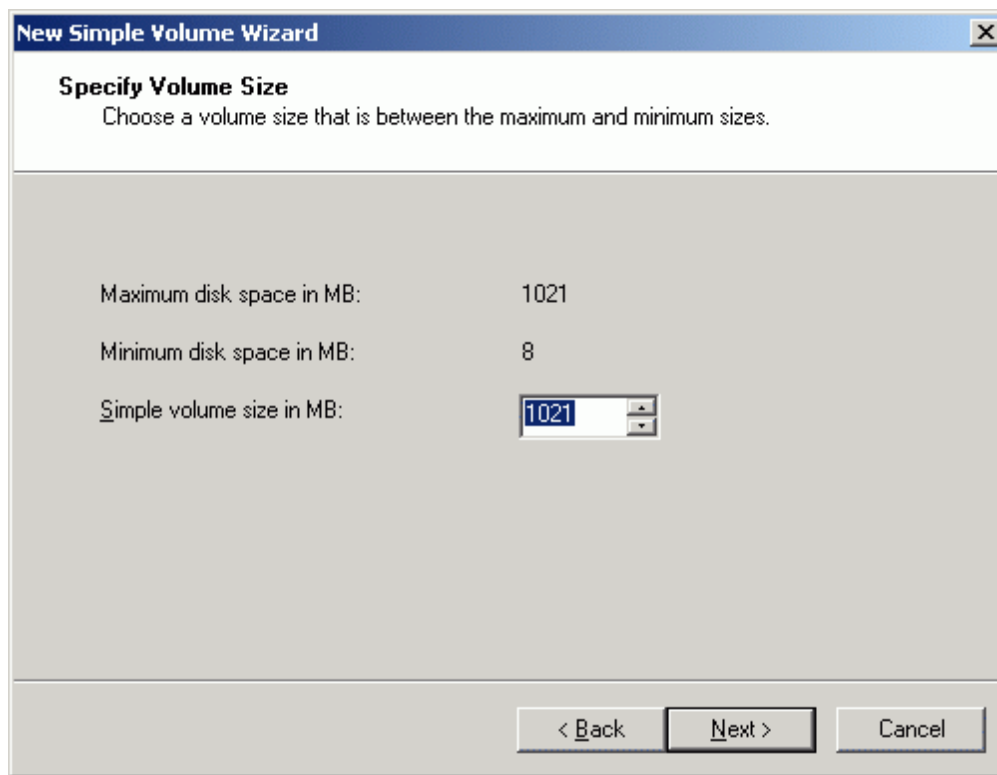


**New Simple Volume Wizard** appears.



Press the **Next** button to continue.

Specify new volume size in megabytes.



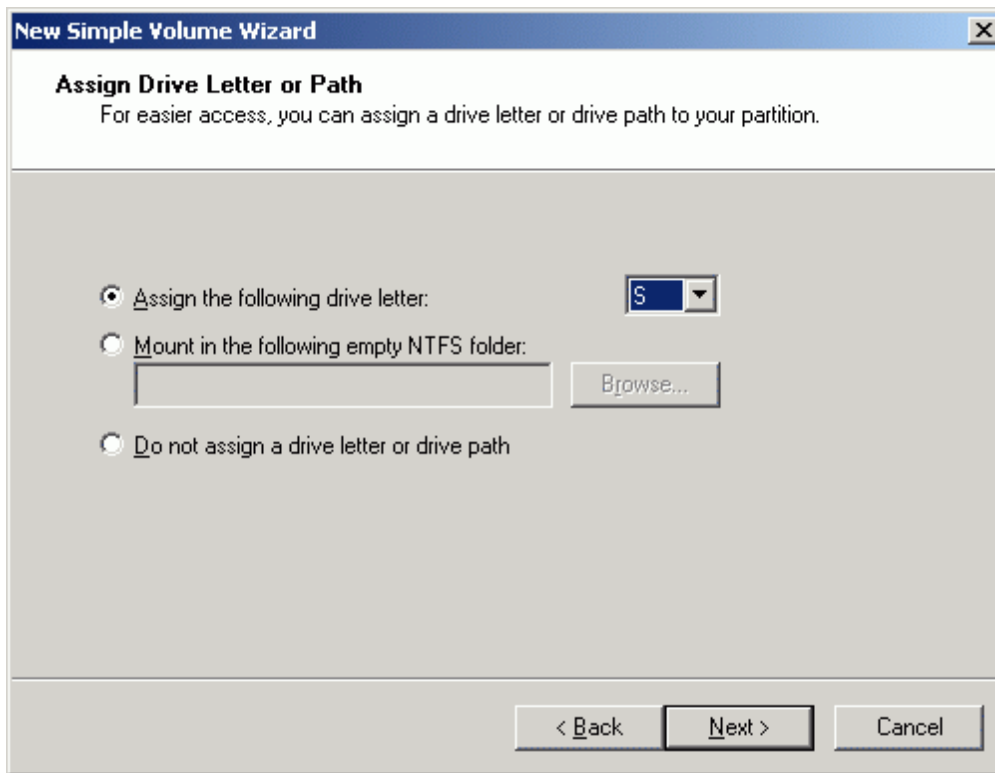
The image shows a Windows-style dialog box titled "New Simple Volume Wizard". The main heading is "Specify Volume Size", followed by the instruction "Choose a volume size that is between the maximum and minimum sizes." Below this, there are three rows of information: "Maximum disk space in MB:" with the value "1021", "Minimum disk space in MB:" with the value "8", and "Simple volume size in MB:" with a text input field containing "1021" and a spinner control to its right. At the bottom of the dialog, there are three buttons: "< Back", "Next >", and "Cancel".

Maximum disk space in MB:	1021
Minimum disk space in MB:	8
Simple volume size in MB:	1021

< Back   Next >   Cancel

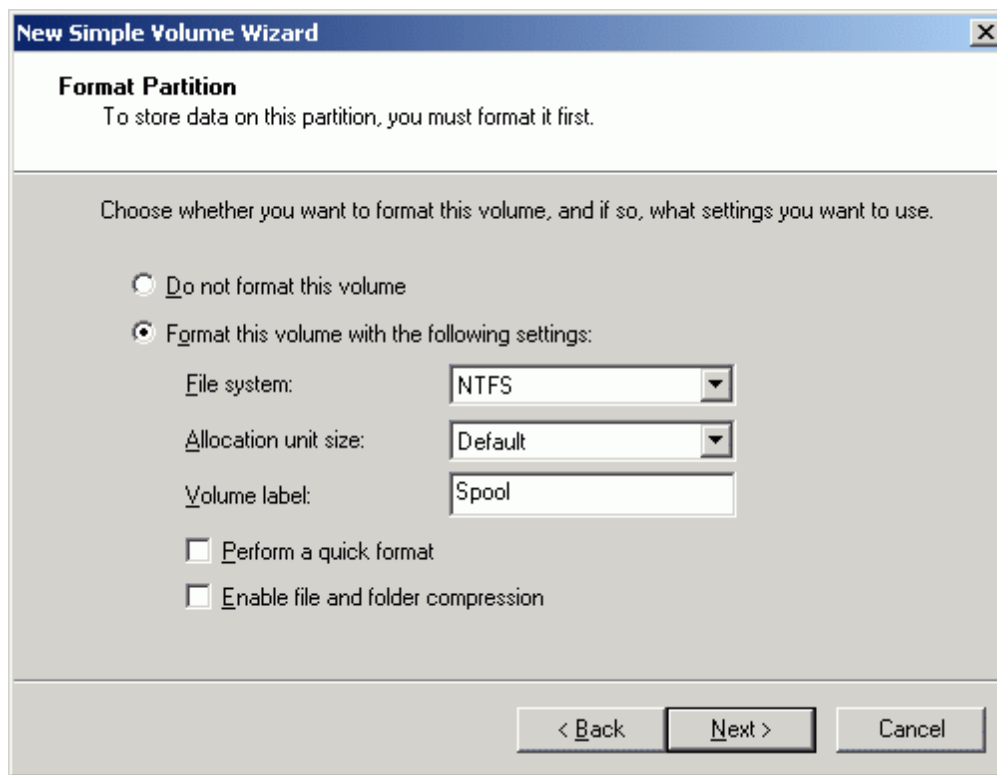
Press the **Next** button to continue.

Choose the **Drive Letter** to assign.



Press the **Next** button to continue.

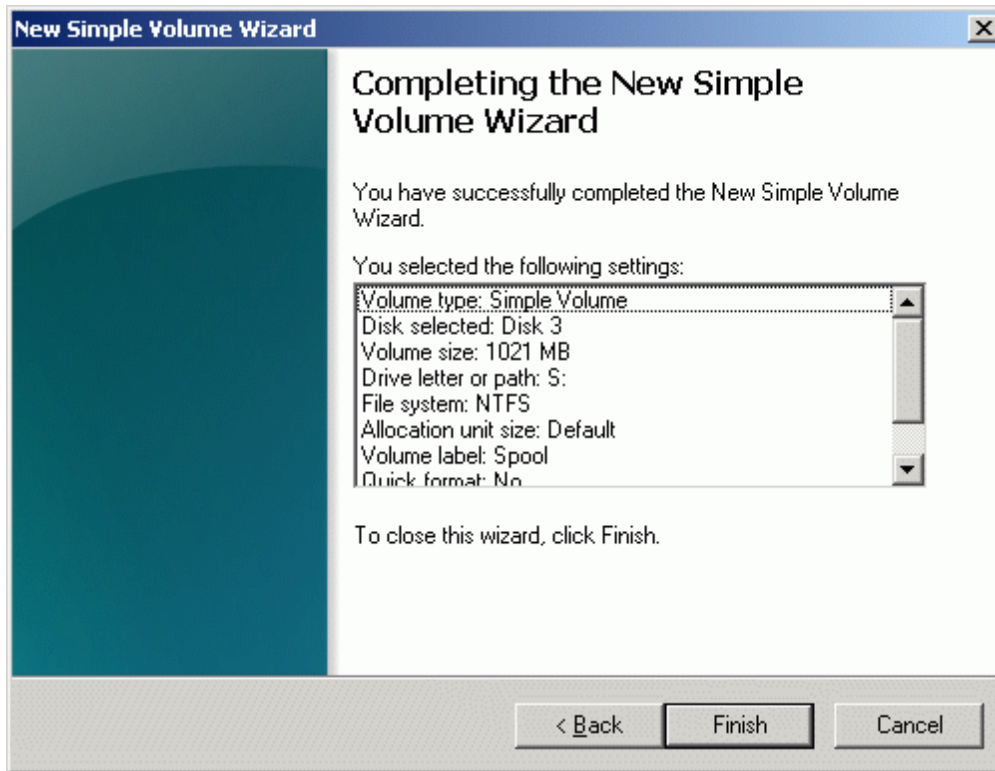
Specify format options. Provide the **Volume Label**.



The image shows a Windows-style dialog box titled "New Simple Volume Wizard". The main heading is "Format Partition", followed by the instruction "To store data on this partition, you must format it first." Below this, a text prompt says "Choose whether you want to format this volume, and if so, what settings you want to use." There are two radio button options: "Do not format this volume" (which is unselected) and "Format this volume with the following settings:" (which is selected). Under the selected option, there are three settings: "File system:" set to "NTFS", "Allocation unit size:" set to "Default", and "Volume label:" set to "Spool". At the bottom, there are two unchecked checkboxes: "Perform a quick format" and "Enable file and folder compression". At the very bottom of the dialog are three buttons: "< Back", "Next >", and "Cancel".

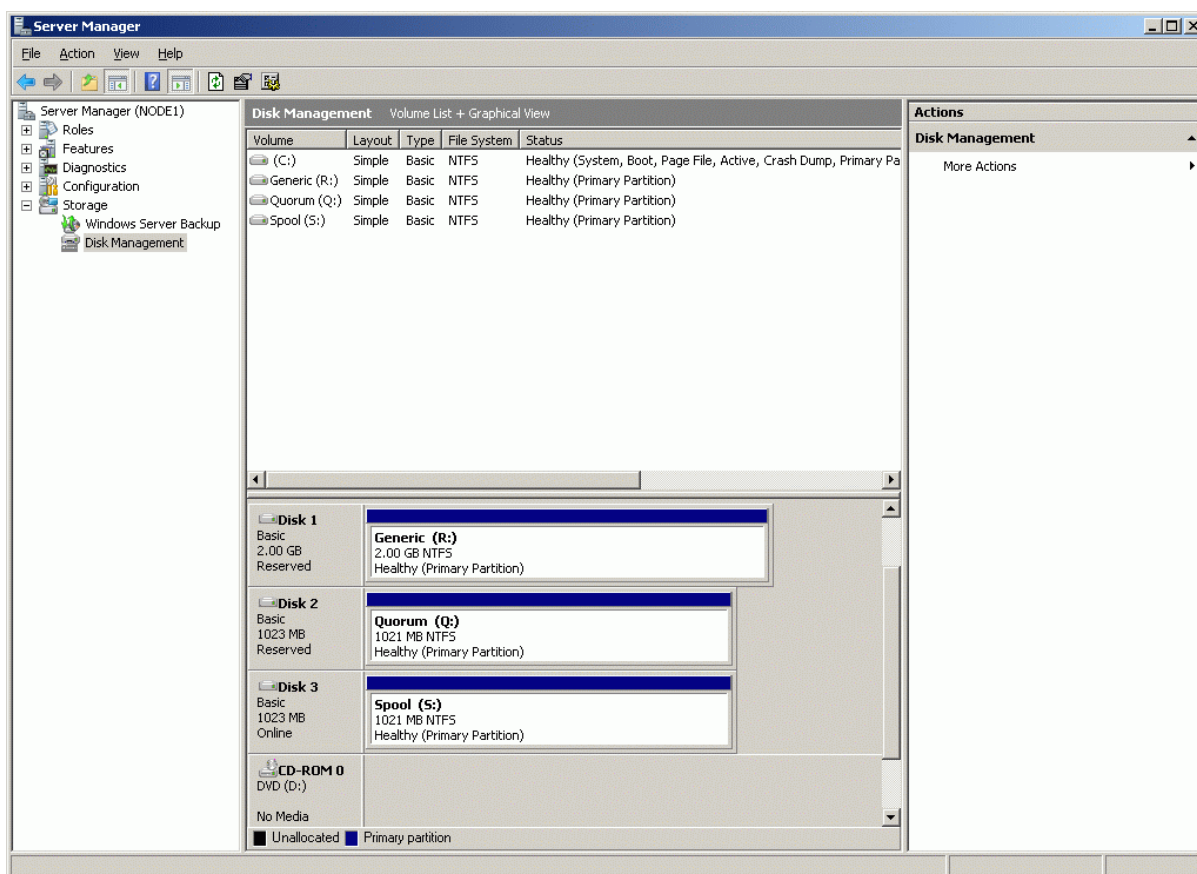
Press the **Next** button to continue.

Check the settings are correct. Press the **Back** button should any changes be required.



Press the **Finish** button to close the wizard.

If successful, the disk is now formatted as shown in the example image below.

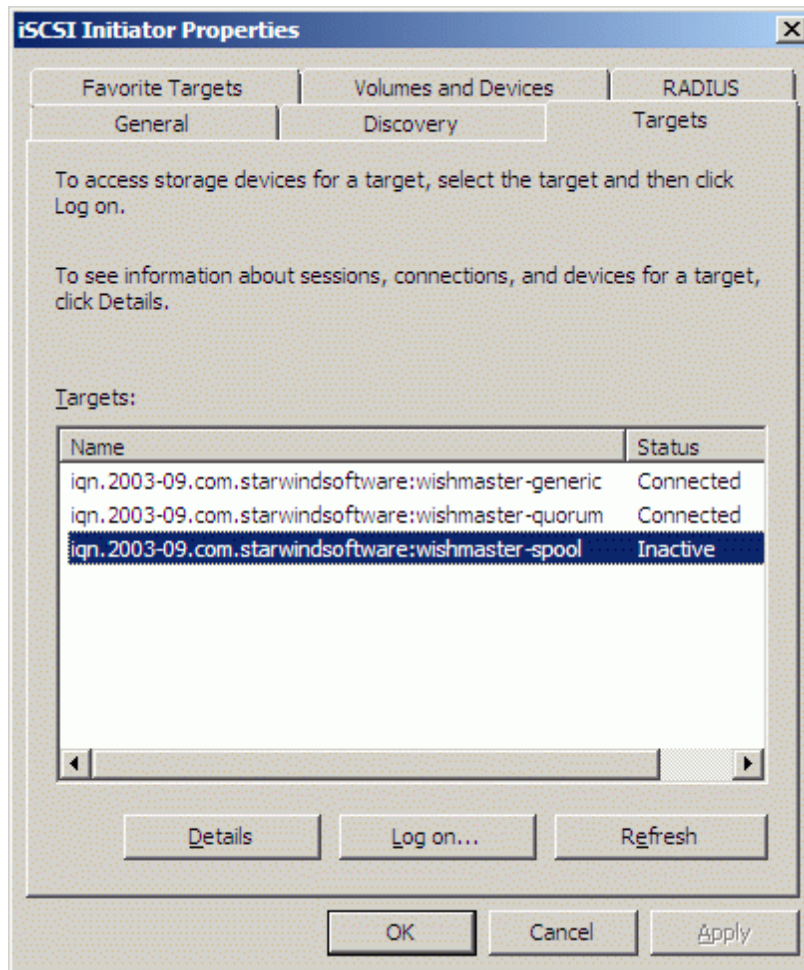


Shut down the node.



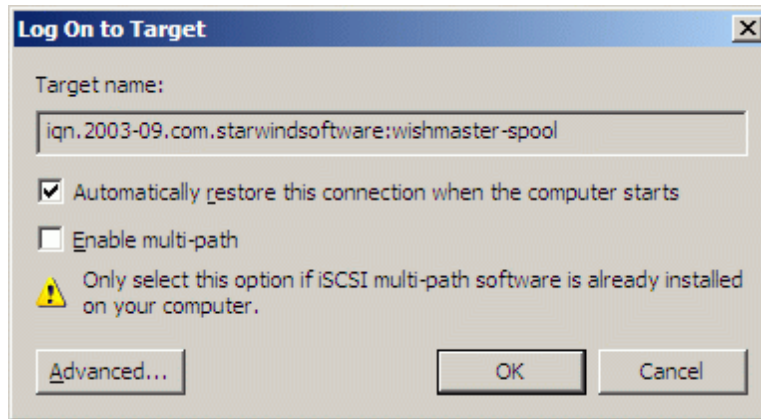
## Node 2

Launch the Microsoft iSCSI Software Initiator application **Administrative Tools** -> **iSCSI Initiator**. Click on the **Targets** tab. Select the IQN of the target just added.



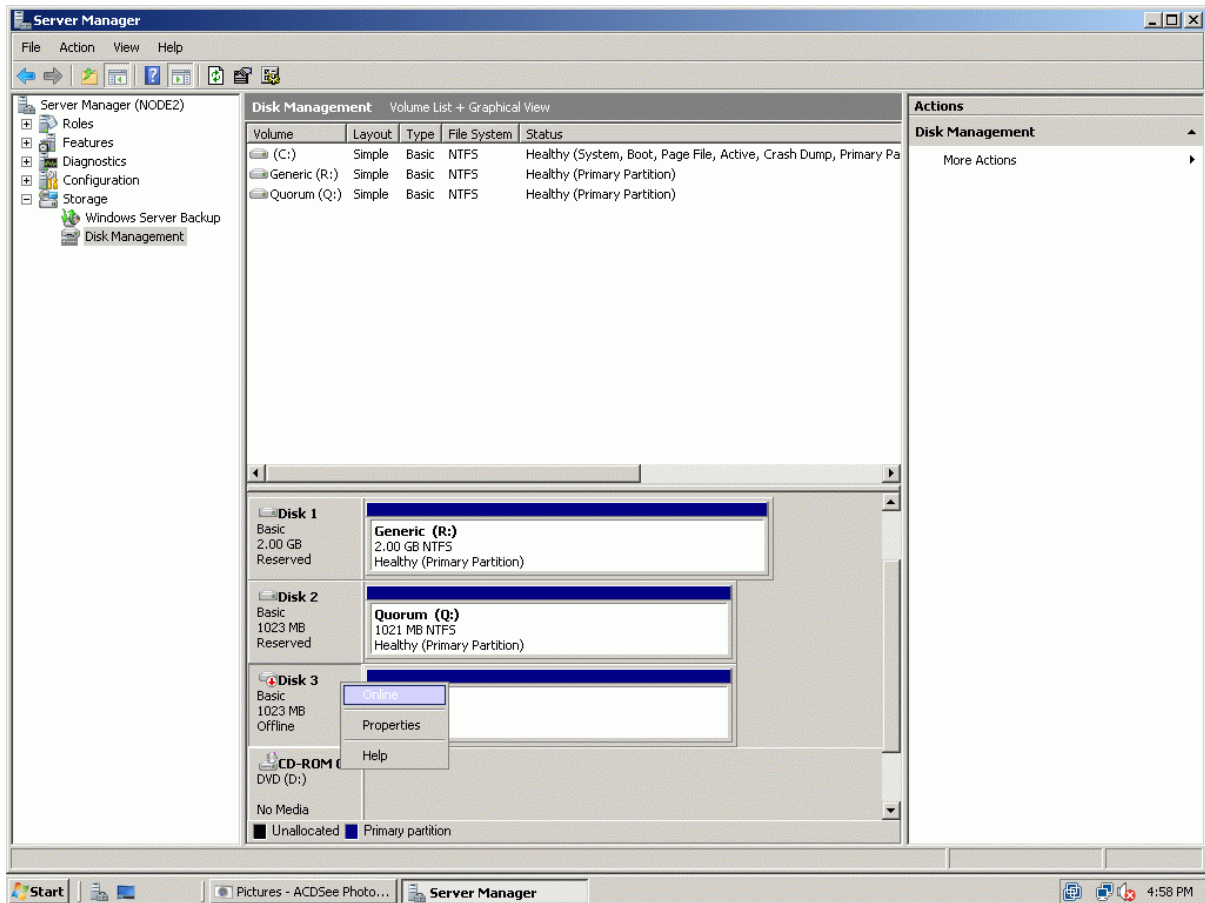
Press the **Log On...** button.

The **Log On to Target** dialog now appears. In this dialog click on the checkbox **Automatically restore this connection when the system boots** to make this connection persistent.



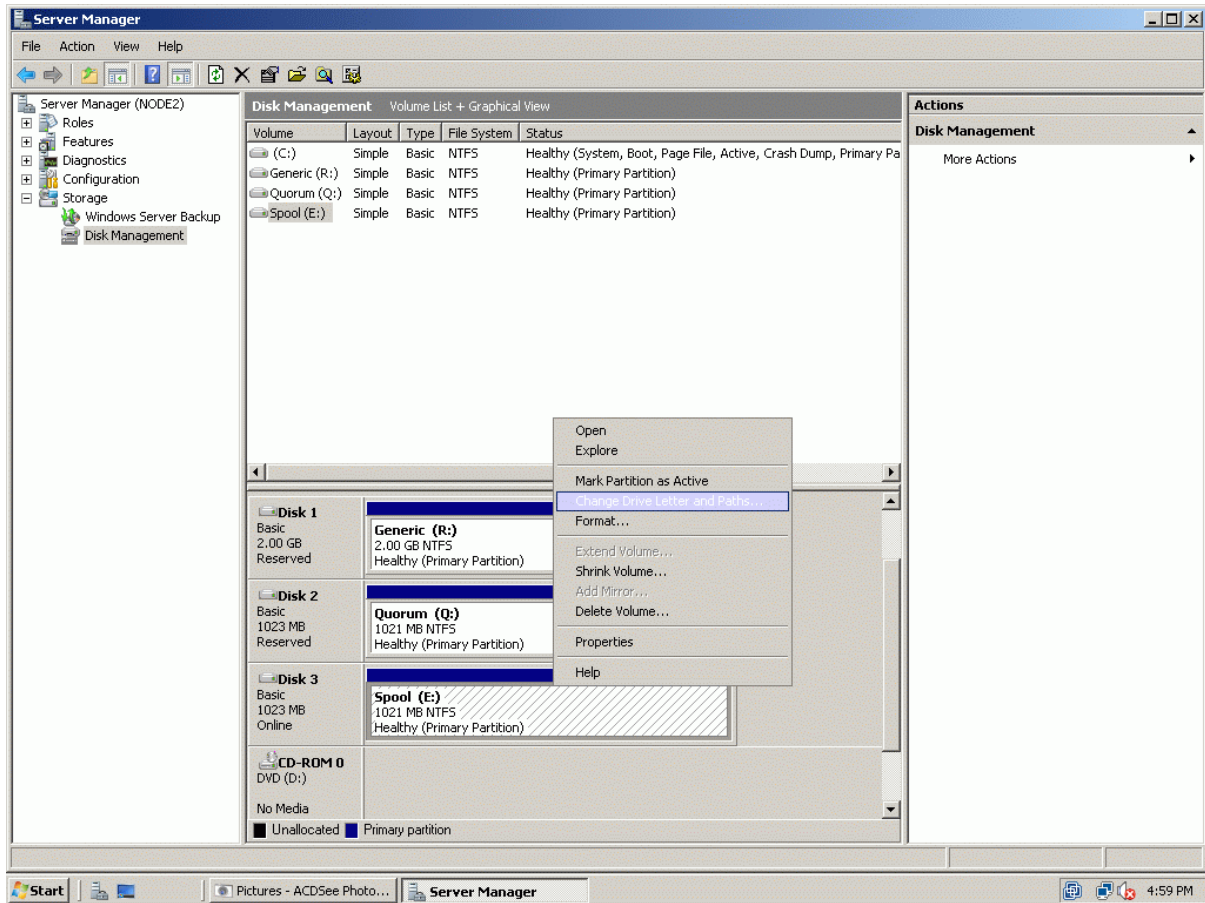
Press the **OK** button to continue.

When the StarWind Disks are connected, they show up on the initiator machine as new disk devices. Before these devices can be used as cluster disks, they have to be mounted. Launch the **Computer Management** console. Select **Disk Management**.



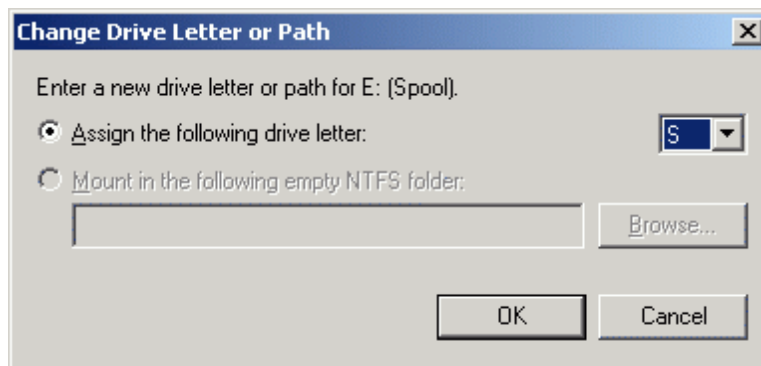
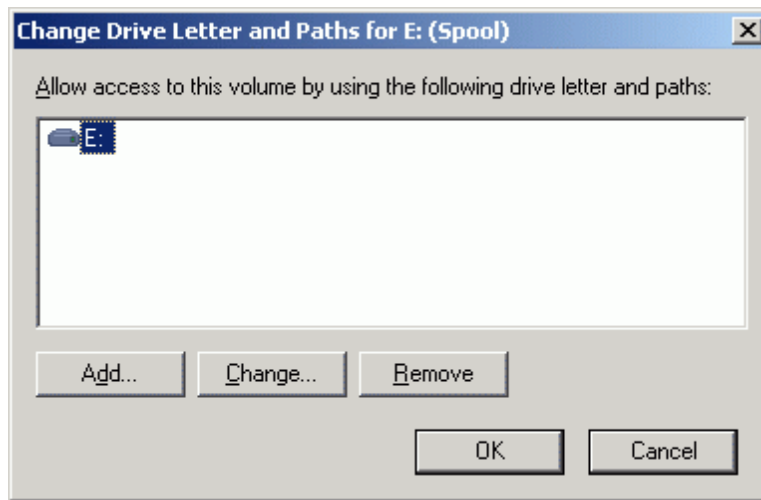
Bring disks online. Press the right mouse button over the disk and select **Online**.

The picture below shows that Windows has automatically assigned Drive Letters to the mounted volumes. As these are local drive letters they may not be the same as we have assigned to these volumes on the first node. However, as all volumes of a cluster must be assigned the same drive letters, any differences must be manually changed. Press the right mouse button over the **Spool** volume.

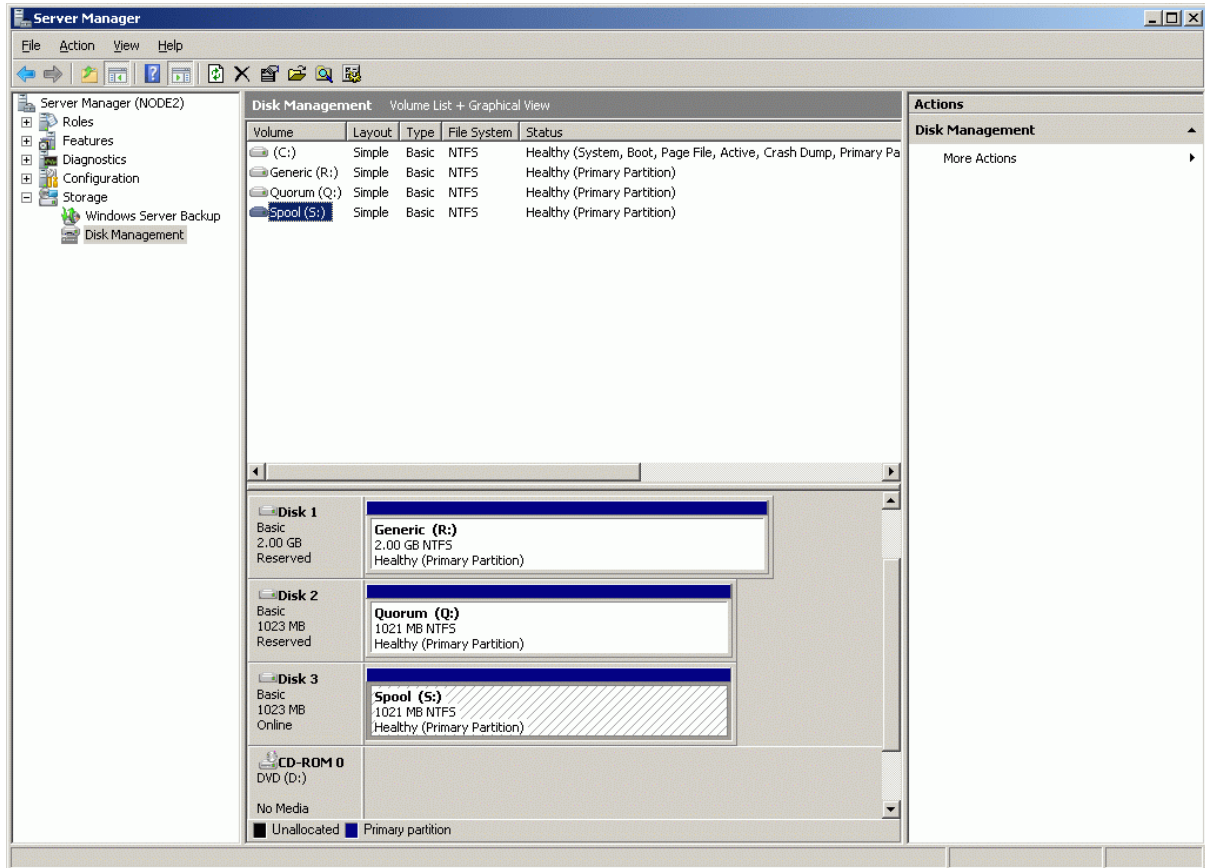


Select **Change Drive Letter and Paths...**

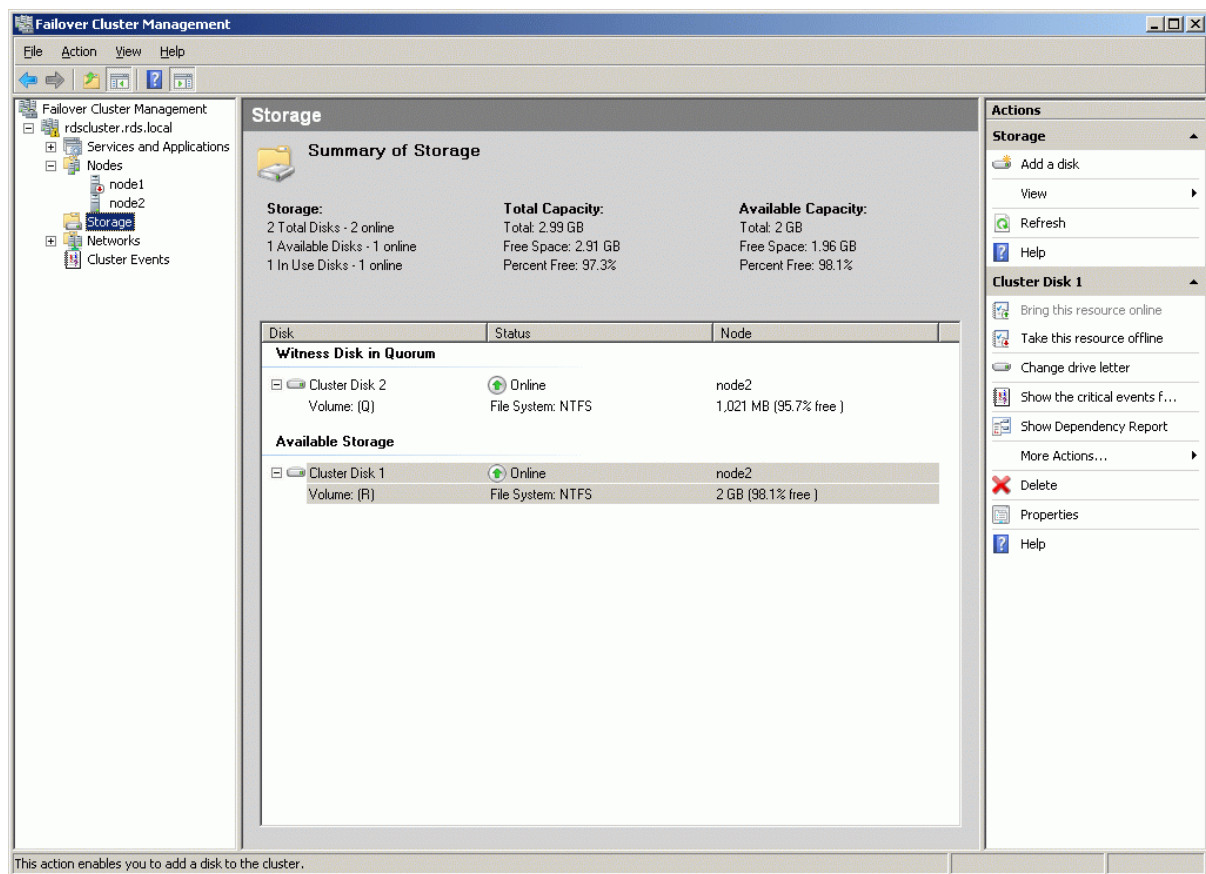
Change the Drive Letter for the Spool to S.



If successful, the **Computer Management** console should look like the sample image provided below.



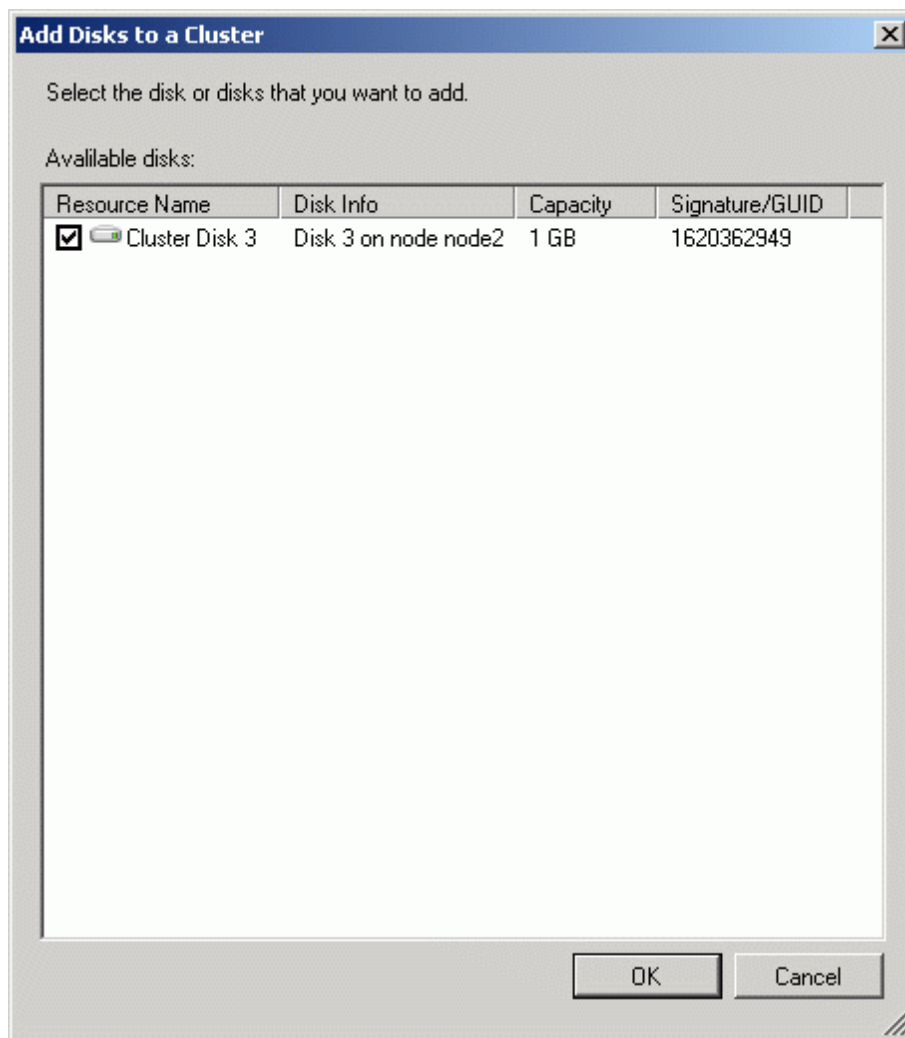
Launch the **Failover Cluster Management** console. Click on **Storage** node.



Click **Add a Disk** item from the Actions panel shown on the right.

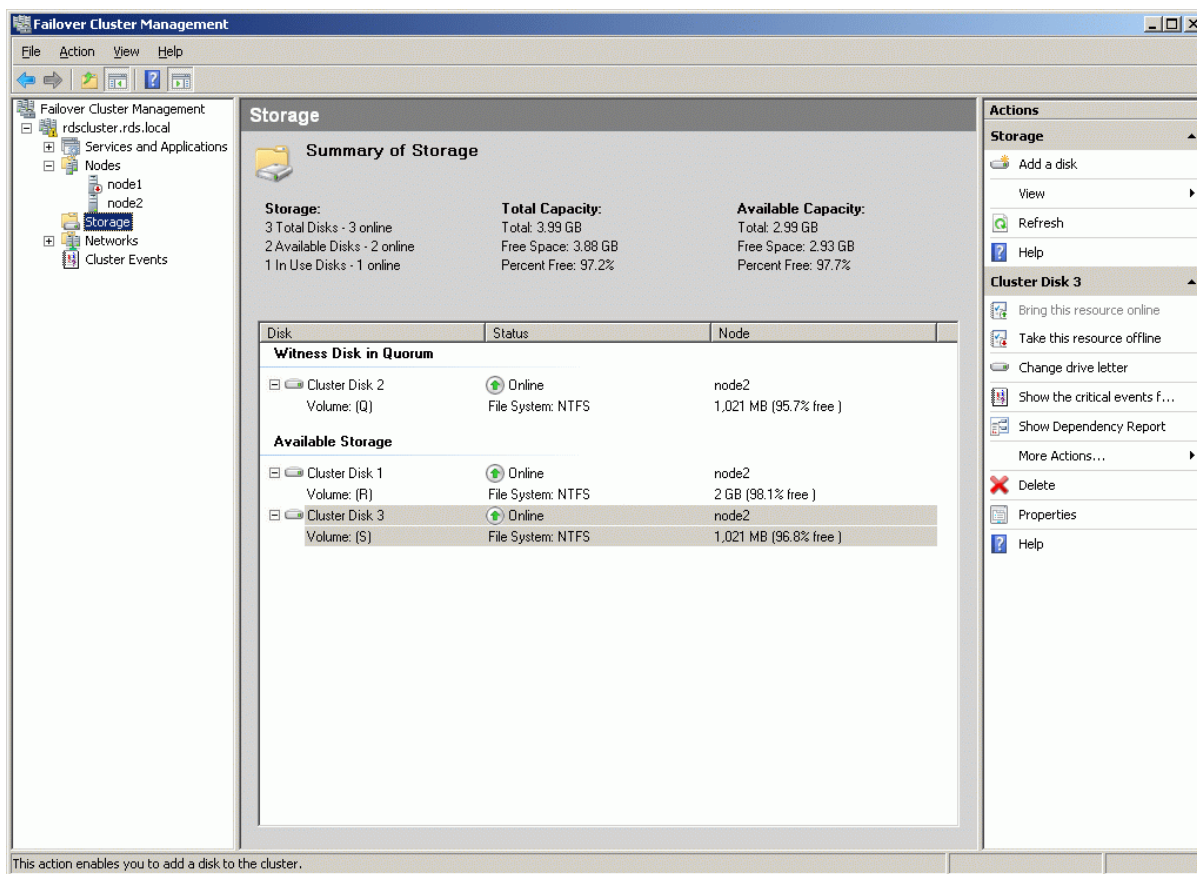


**Add Disks to a Cluster** dialog appears. Select the disk to add.

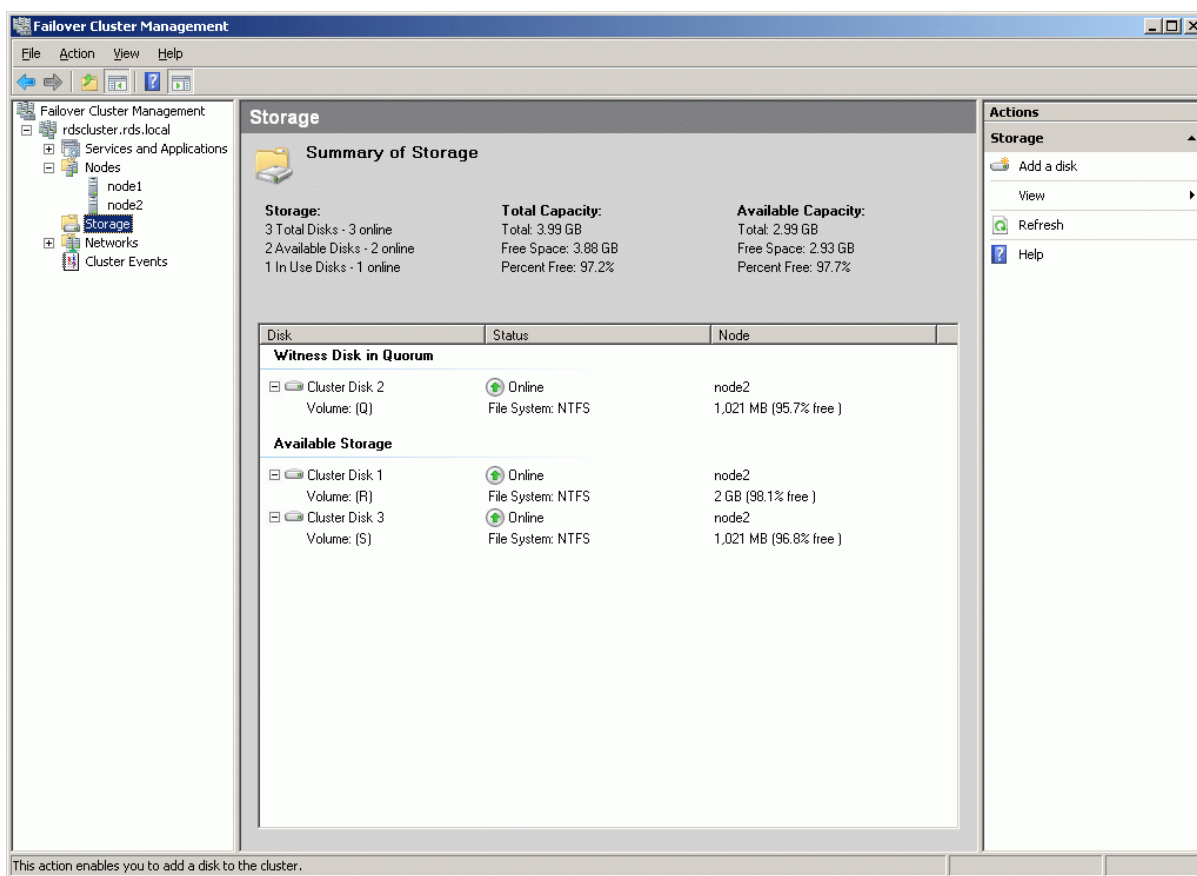


Press the **OK** button to continue.

When completed, the disk is now a cluster disk.



Start the other servers in the cluster.



## Contacts

Support: [www.starwindsoftware.com/support](http://www.starwindsoftware.com/support)  
Support Forum: [www.starwindsoftware.com/forums](http://www.starwindsoftware.com/forums)  
Sales E-mail: [sales@starwindsoftware.com](mailto:sales@starwindsoftware.com)

## US Headquarters

Direct phone number: 1-617-449-7717  
Fax: 1-617-507-5845

## EMEA, APAC

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