How to create Windows 2008 cluster with DSS V6 iSCSI Failover

Software Version: DSS ver. 6.00 up10

Presentation updated: January 2010

How to create cluster with failover functionality on Windows 2008 open-e

TO CONFIGURE A CLUSTER WITH FAILOVER FUNCTIONALITY ON WINDOWS 2008 SERVER ENTERPRISE EDITION, THE FOLLOWING STEPS NEED TO BE PERFORMED:

1. Hardware configuration
2. Configure Domain Controller (DC)
3. Configure Network Interfaces on the DSS V6
4. Creating Volume Groups
5. Creating iSCSI volumes
6. Creating iSCSI targets
7. Setting both nodes Windows Enterprise Edition
8. iSCSI Initiator configuration
9. Disk Management
10. Failover Clustering configuration
11. Clustering configuration

NOTE:

You must be using DSS V6 up10 build 3719 or newer.

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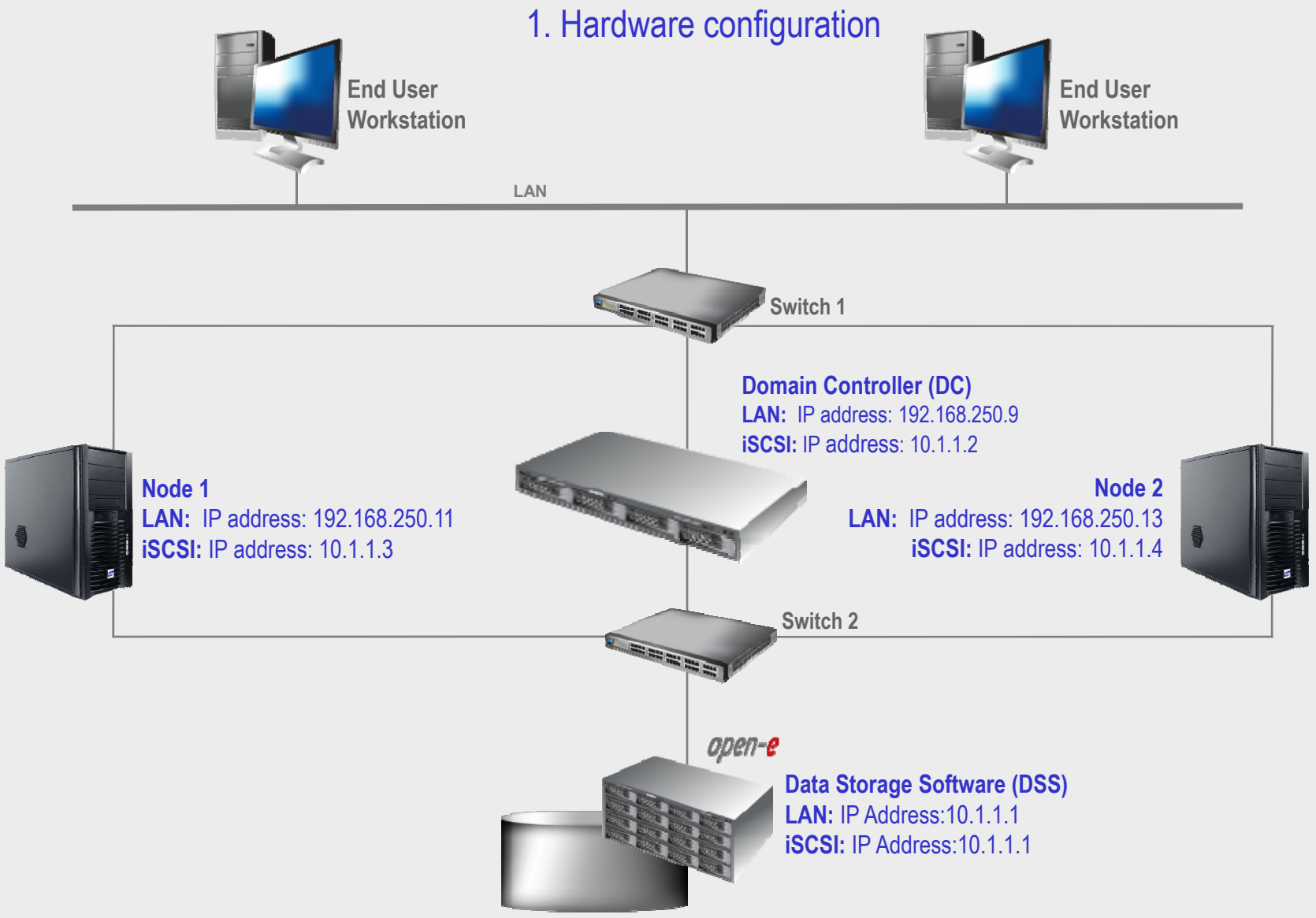

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Functions of server: Domain controller
Host Name: DC

LAN

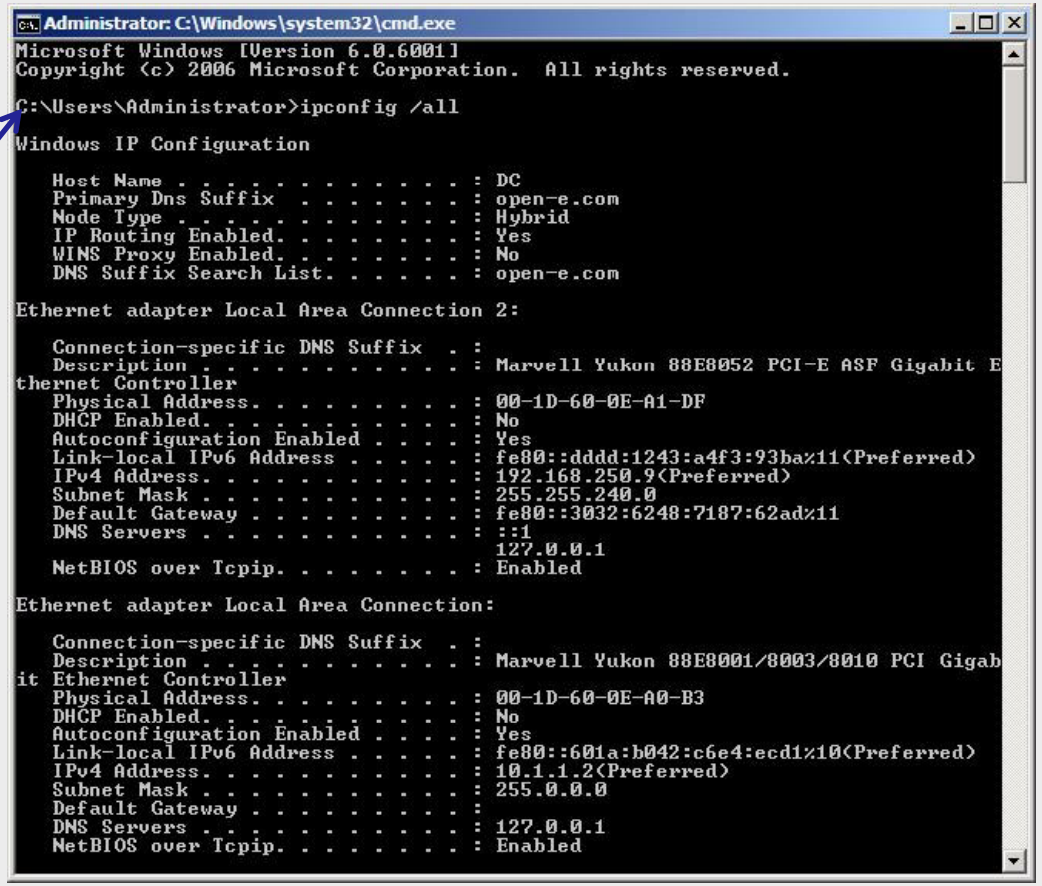
IP:	192.168.250.9
Netmask:	255.255.240.0
Default gateway:	192.168.240.1
DNS:	127.0.0.1

iSCSI

IP:	10.1.1.2
Netmask:	255.0.0.0

2. Configure Domain Controller (DC)

After configuring the DC server, check the settings with "ipconfig /all" from the DOS command prompt in windows.



NOTE:

Add the role of Active Directory Domain Services (AD DS) and run the Active Directory wizard to set up the domain. You can use this article for further details: Installing a New Windows Server 2008 Forest by Using the Windows interface.

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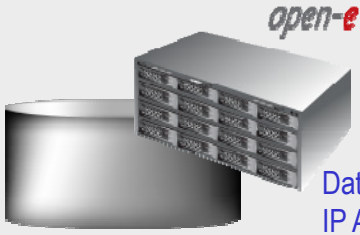
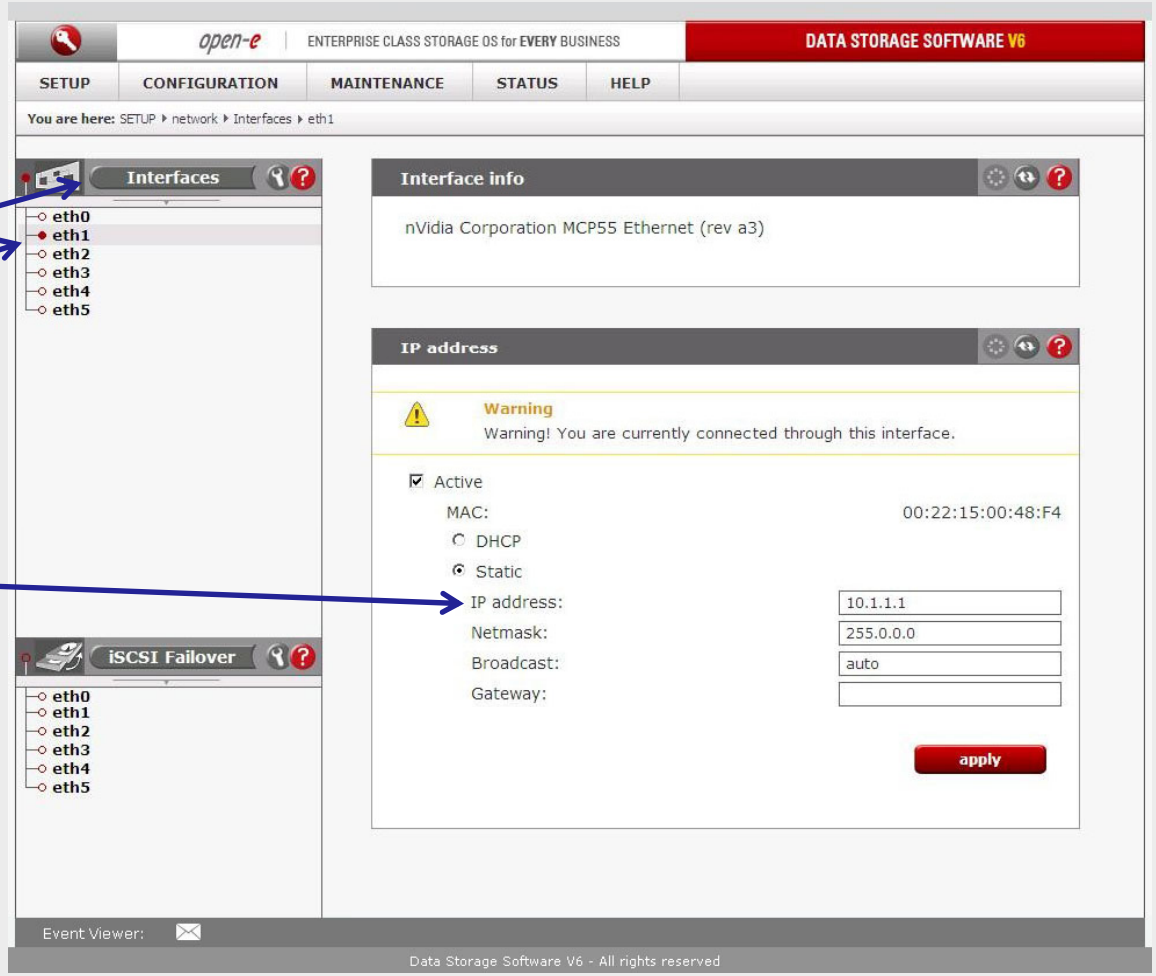


Data Storage Software (DSS)
IP Address:10.1.1.1

3. Configure Network Interfaces on the DSS V6

After logging on the DSS V6 please go to **"SETUP"** tab, **"network"** and **Interfaces**. Next select active interface, in this example please select **eth1.**

After selecting, change the IP Address from 192.168.1.220 in field **IP address** to 10.1.1.1, and click the apply button. (This will restart network configuration).



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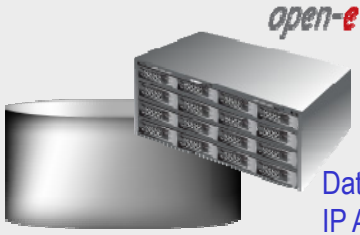
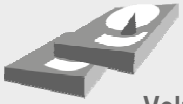


Data Storage Software (DSS)
IP Address:10.1.1.1

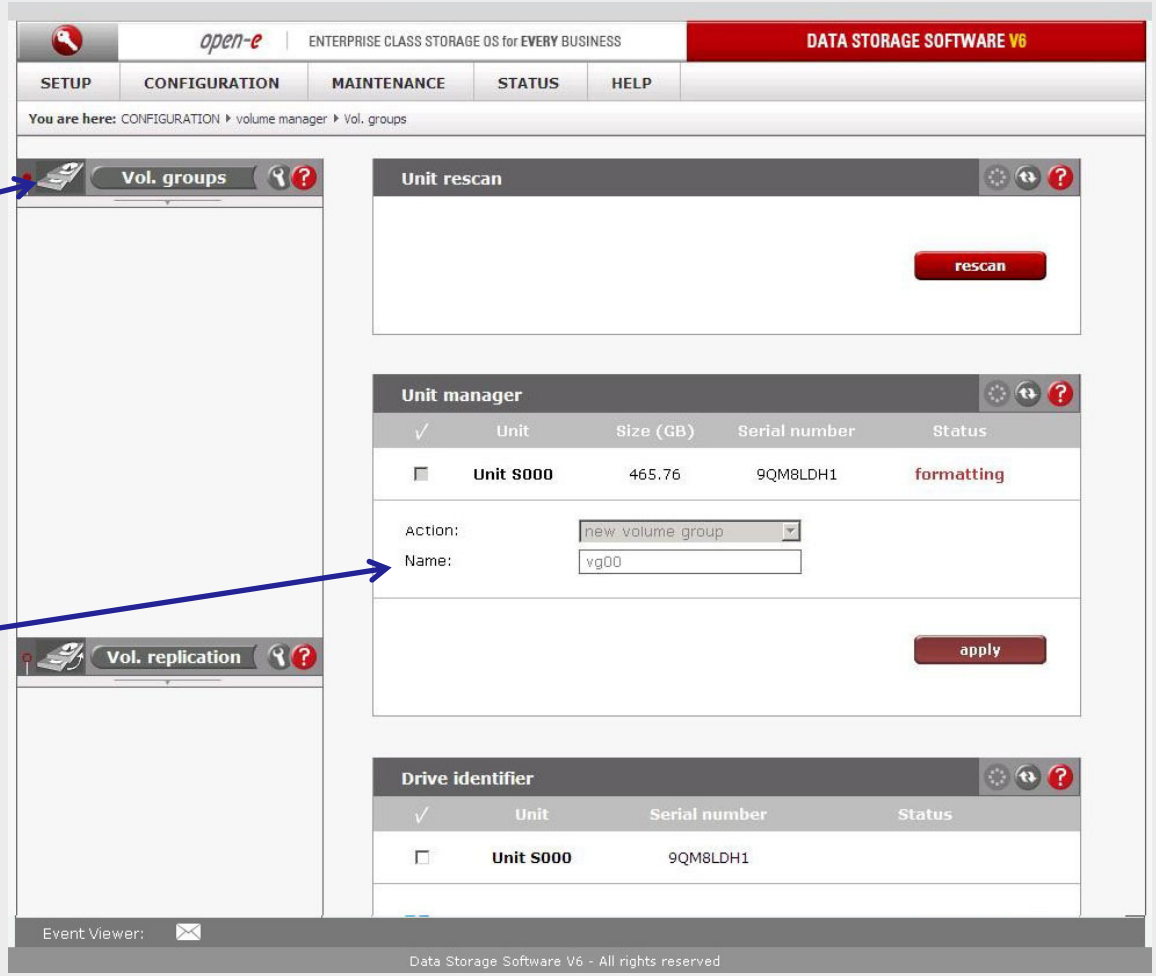
4. Creating Volume Groups

Under the **"CONFIGURATION"** tab, select **"volume manager"** and next **Vol. Groups.**



Volume Groups (vg00)

In **Unit manager** add the selected physical units (**Unit S000** or other) to create a new volume group (in this case, **vg00**) and click apply button



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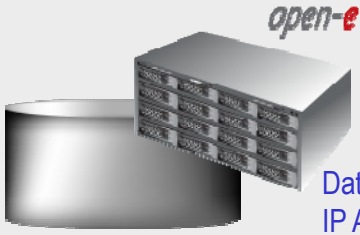
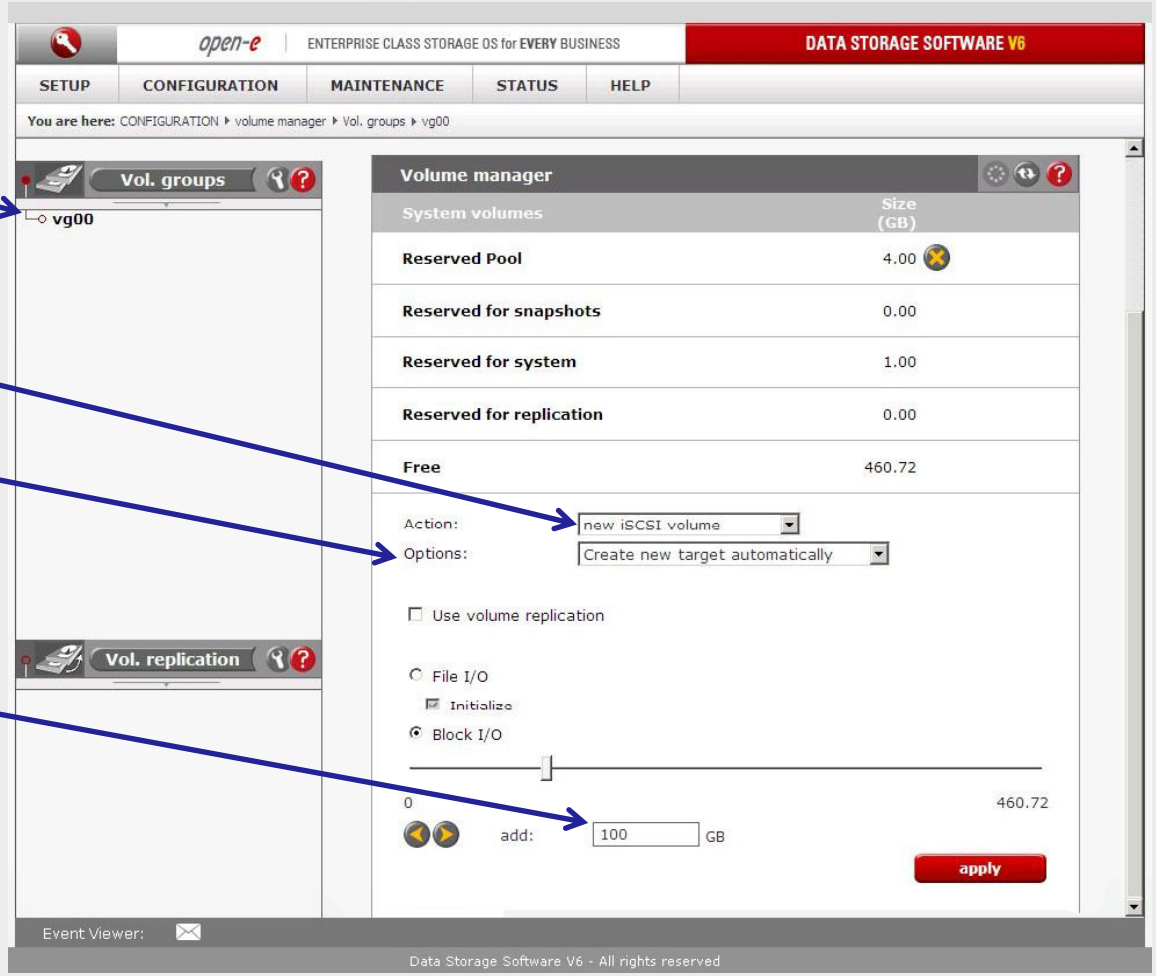


Data Storage Software (DSS)
IP Address:10.1.1.1

5. Creating iSCSI volumes

Select the appropriate volume group (**vg00**) from the list on the left and create a **new iSCSI volume** of the required size. This logical volume will be the destination of the replication process. Next select in **Options** field **Create new target automatically.**

After assigning an appropriate amount of space for the iSCSI volume, click the apply button



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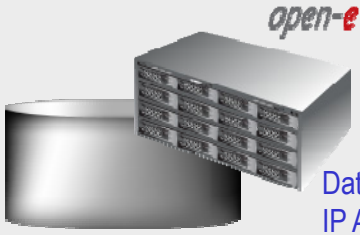


Data Storage Software (DSS)
IP Address:10.1.1.1

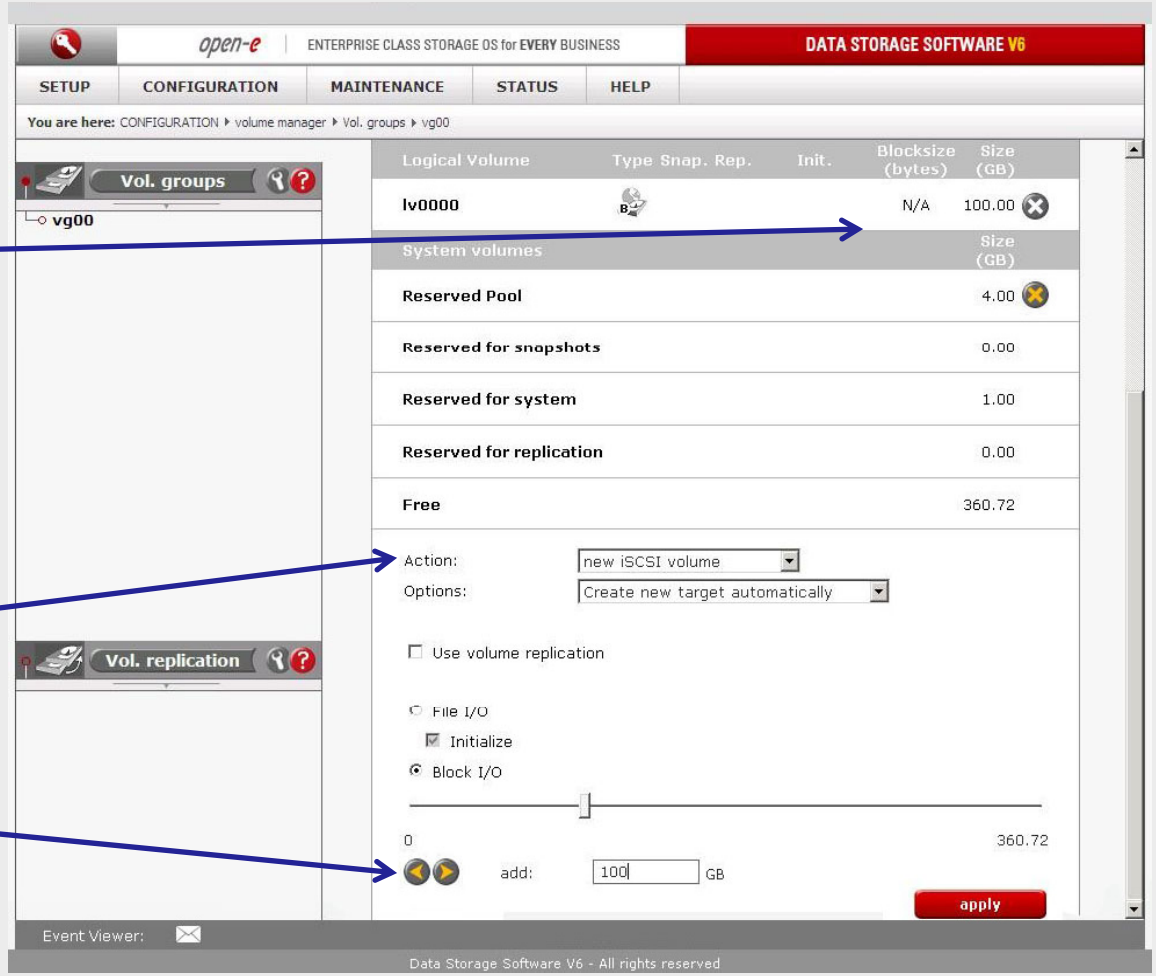
5. Creating iSCSI volumes

The iSCSI Volume Block I/O is now configured.

iSCSI volume (lv0000)

Next, in **Action** fileld select again **new iSCSI volume** to create the 2nd iSCSI volume. After assigning an appropriate amount of space for the iSCSI volume, click the apply button

iSCSI volume (lv0001)



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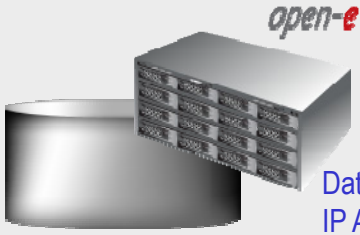


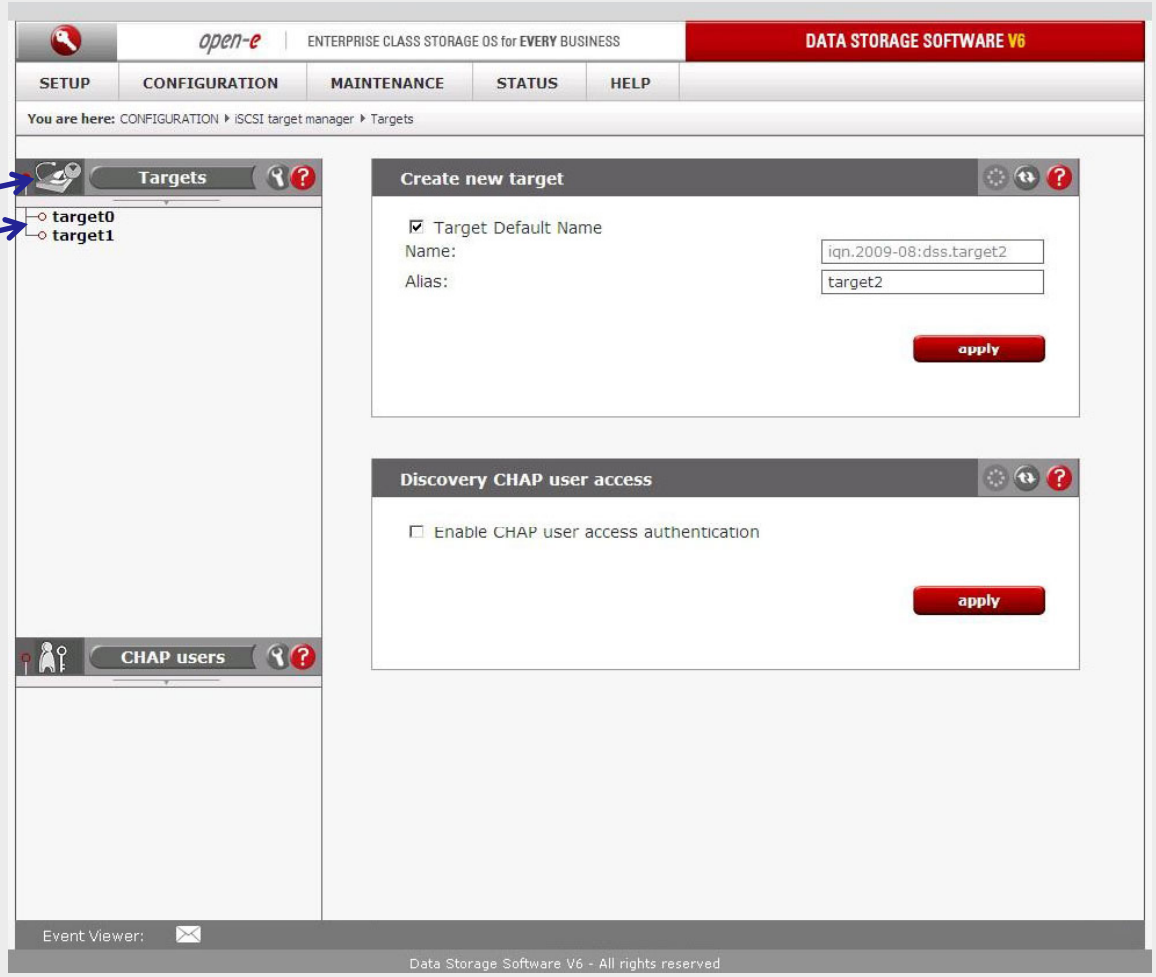
Data Storage Software (DSS)
IP Address:10.1.1.1

6. Creating iSCSI targets

Under the **"CONFIGURATION"** tab, select **"iSCSI target manager"** and next **Targets.** Both targets should be presented as (**target0** and **target1**).

iSCSI targets (target0)

iSCSI targets (target1)



7. Setting both nodes Windows Enterprise Edition

Set up two Windows 2008 Enterprise Server Edition systems. These will be the cluster nodes. Configure basic settings such as computer name, TCP / IP configuration for both network cards, membership in the domain. As in the case of the domain controller, we will also use and configure two network connections, one to communicate with the "public" LAN and the second reserved for iSCSI traffic.

Name: NODE1		Name: NODE2	
LAN		**LAN**	
IP:	192.168.250.11	IP:	192.168.250.13
Netmask:	255.255.240.0	Netmask:	255.255.240.1
Default gateway:	192.168.240.1	Default gateway:	192.168.240.1
DNS:	192.168.250.9	DNS:	192.168.250.9
iSCSI		**iSCSI**	
IP:	10.1.1.3	IP:	10.1.1.4
Netmask:	255.0.0.0	Netmask:	255.0.0.0

Add both servers to the previously created domain. All cluster nodes should be in the same OU (Organisational Unit).

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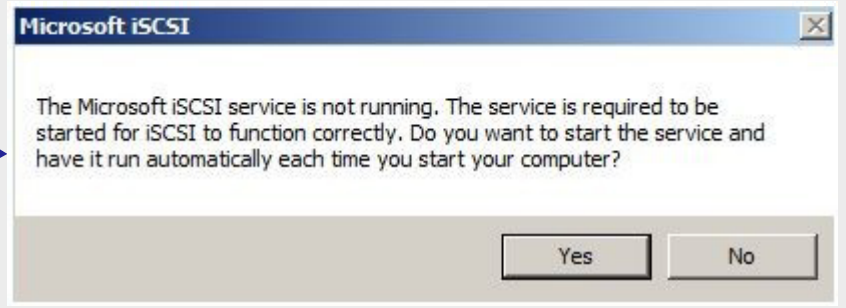
8. iSCSI Initiator configuration

After running the Windows Server 2008 Initiator application, you will be informed that the **Microsoft iSCSI** service is not running and that it is essential for the proper operation of the iSCSI.
By clicking on **Yes**, you agree to include such services in the auto start area.



You will be immediately presented another message asking if you want to unlock the iSCSI service and allow it to communicate via the iSNS (Internet Storage Name Service) protocol. This protocol allows you to automatically search for, manage and configure iSCSI targets

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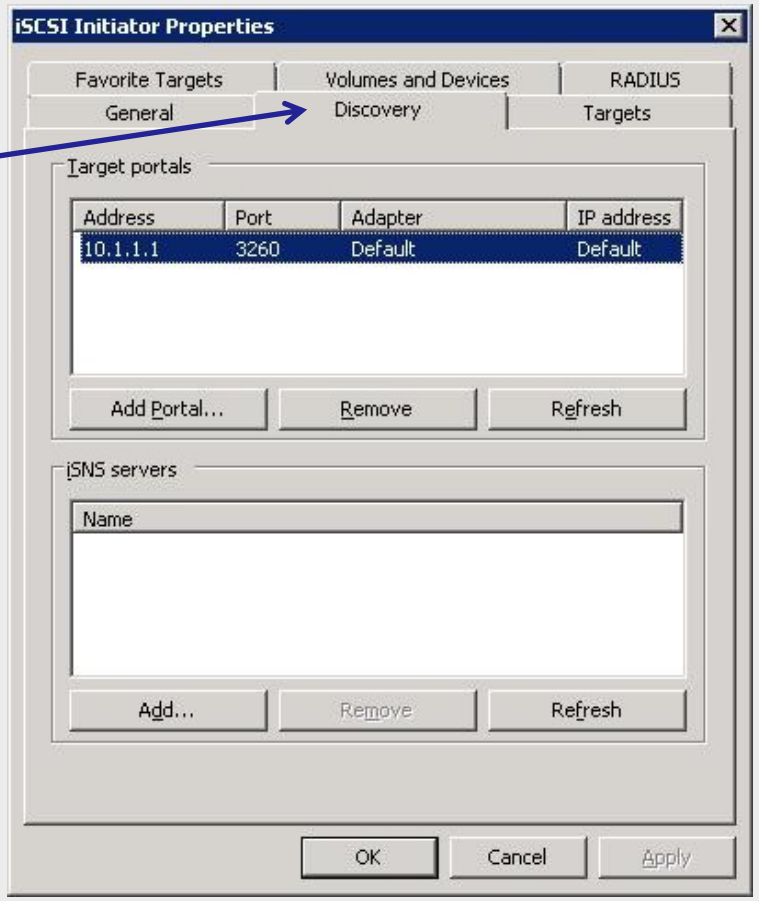
8. iSCSI Initiator configuration

In the iSCSI Initiator you have to visit at least two tabs “**Discovery**” and “Targets”. On the **Discovery** tab you need to enter the IP address of the iSCSI target. This will be the IP address of DSS V6 server, which in this example is 10.1.1.1. Click "Add Portal" and enter 10.1.1.1



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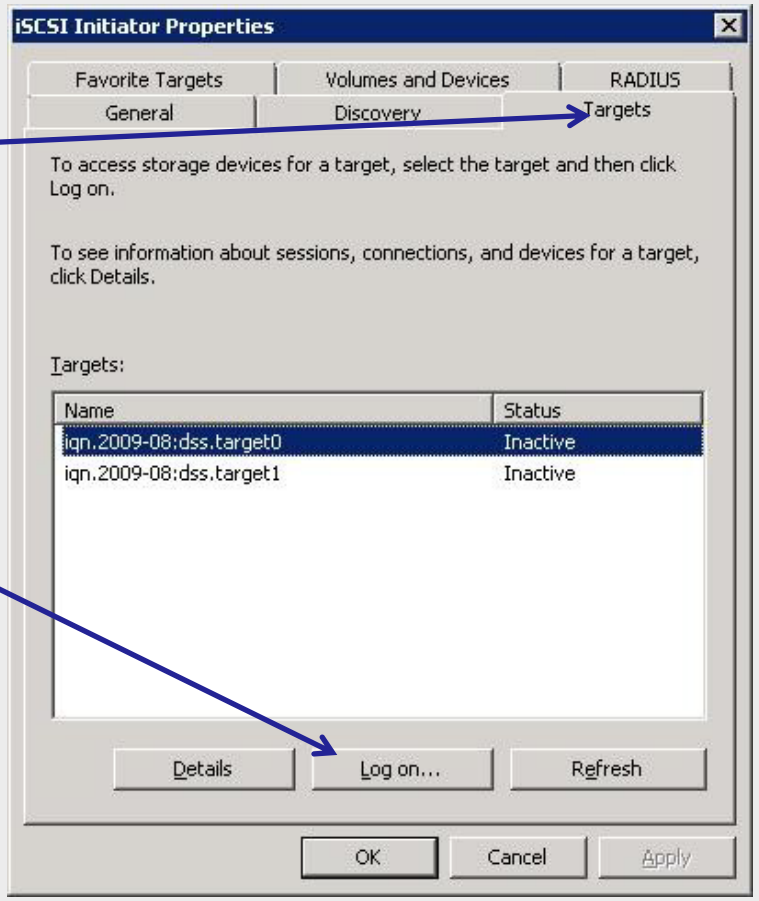
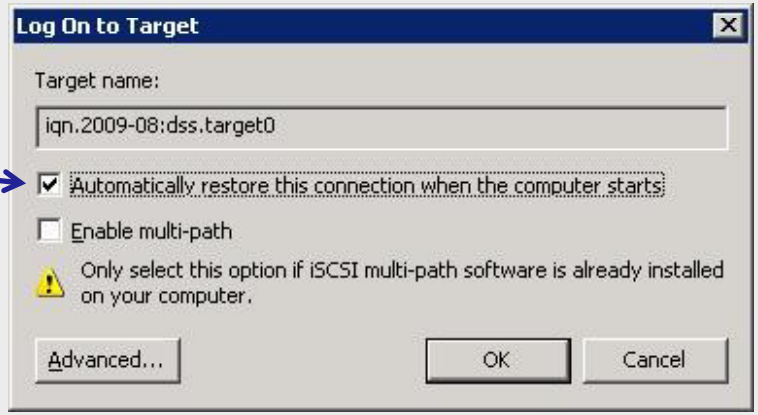
8. iSCSI Initiator configuration

Then go to the "**Targets**" tab.
You should see two targets, which have been created earlier on the DSS V6. If this is not the case, try to refresh the view using the Refresh button.
Log on to each of them by clicking on the **Log on...** button.



8. iSCSI Initiator configuration

As a result, a Log On to Target window appears . Select the option to "**Automatically restore this connection when the computer starts"** and click the **OK** button.



NOTE:
Target status should change from Inactive to Connected. These activities should be conducted on all servers you plan to use as nodes in the cluster, in this example NODE1 and NODE2

How to create cluster with failover functionality on Windows 2008

9. Disk Management

In the Disk Management window there should appear both targets added earlier. Click the right button on the first one and select the "**Online**" menu.

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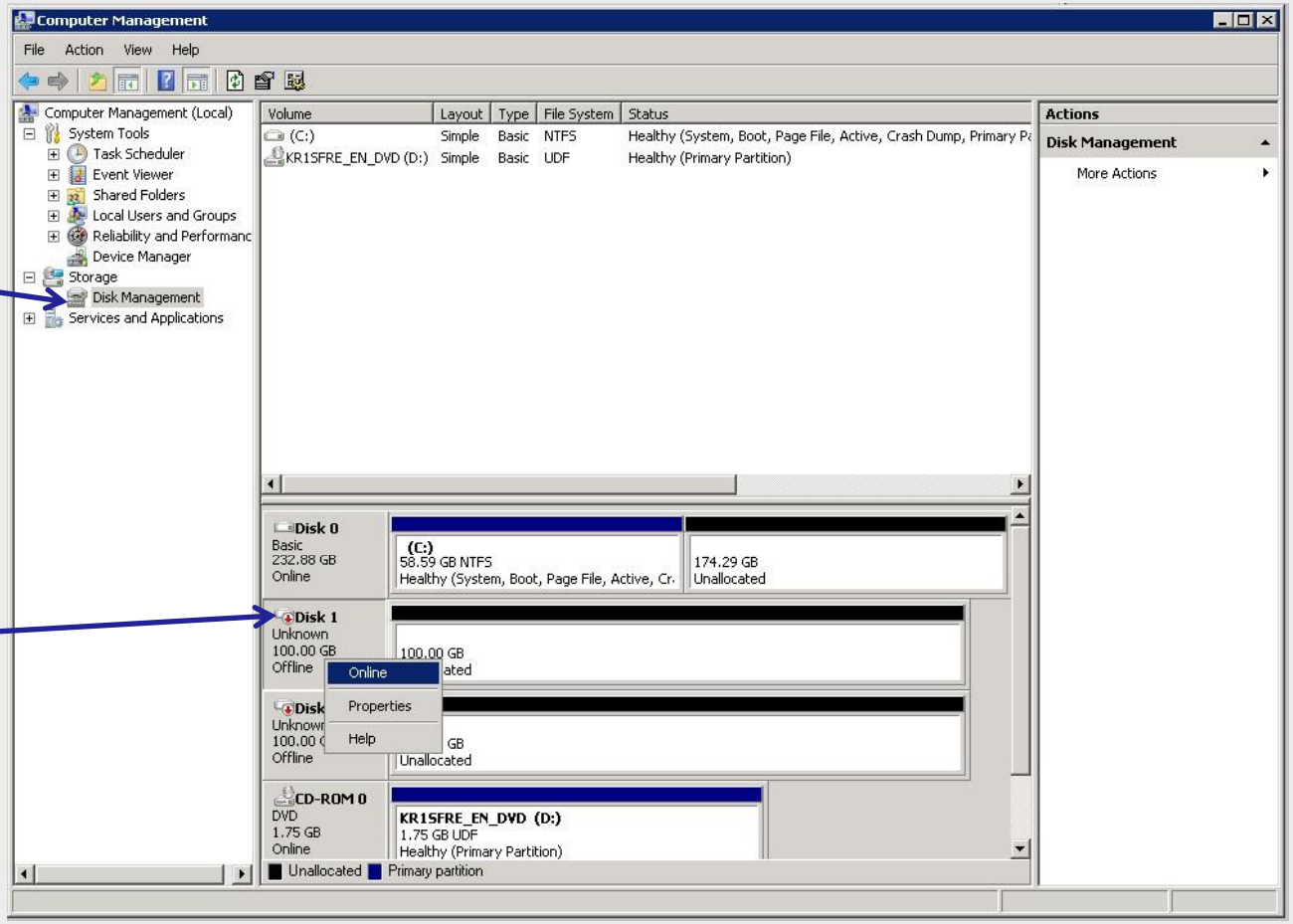
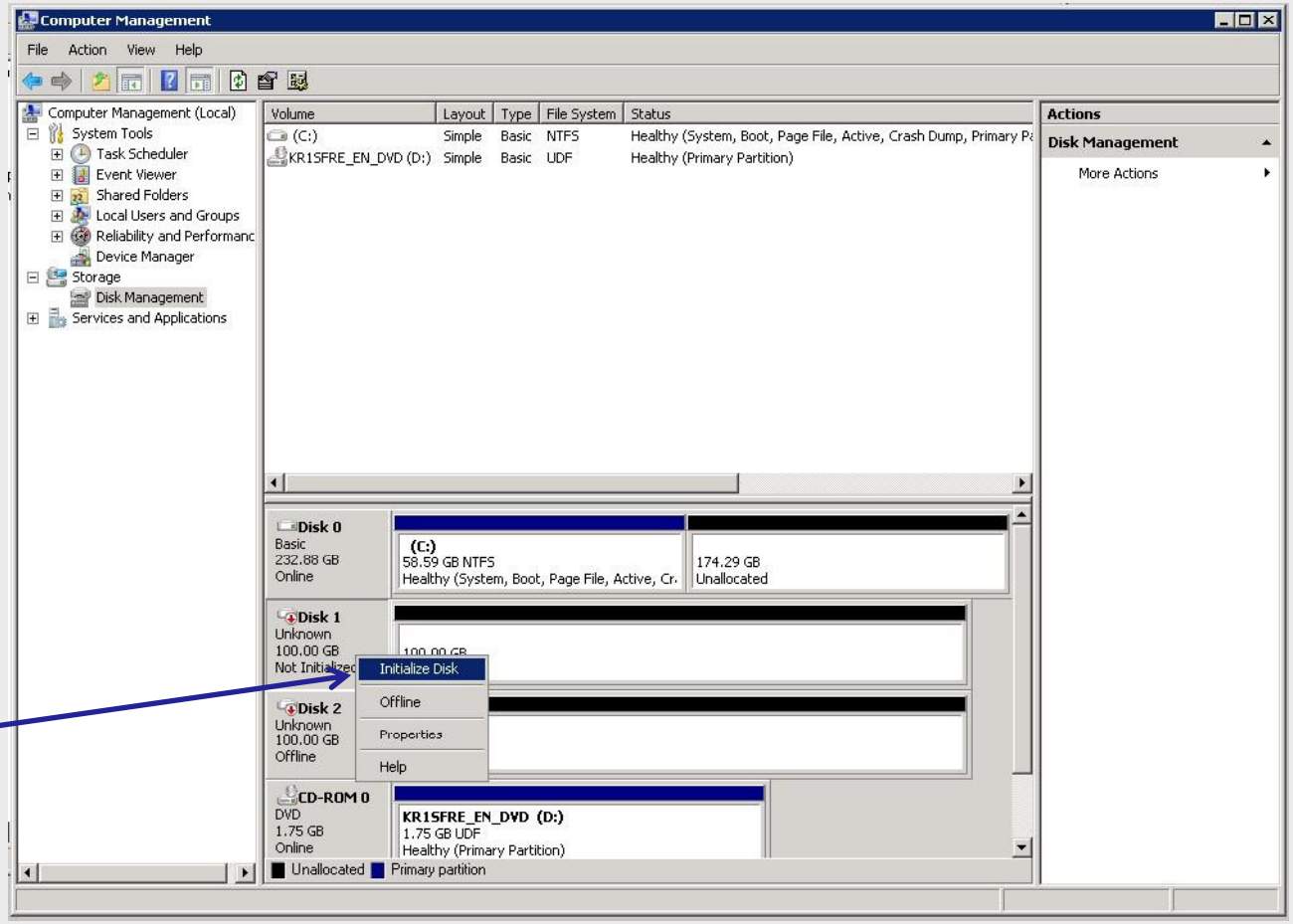


How to create cluster with failover functionality on Windows 2008

9. Disk Management

Then re-open the menu, click on "**Initialize Disk**"



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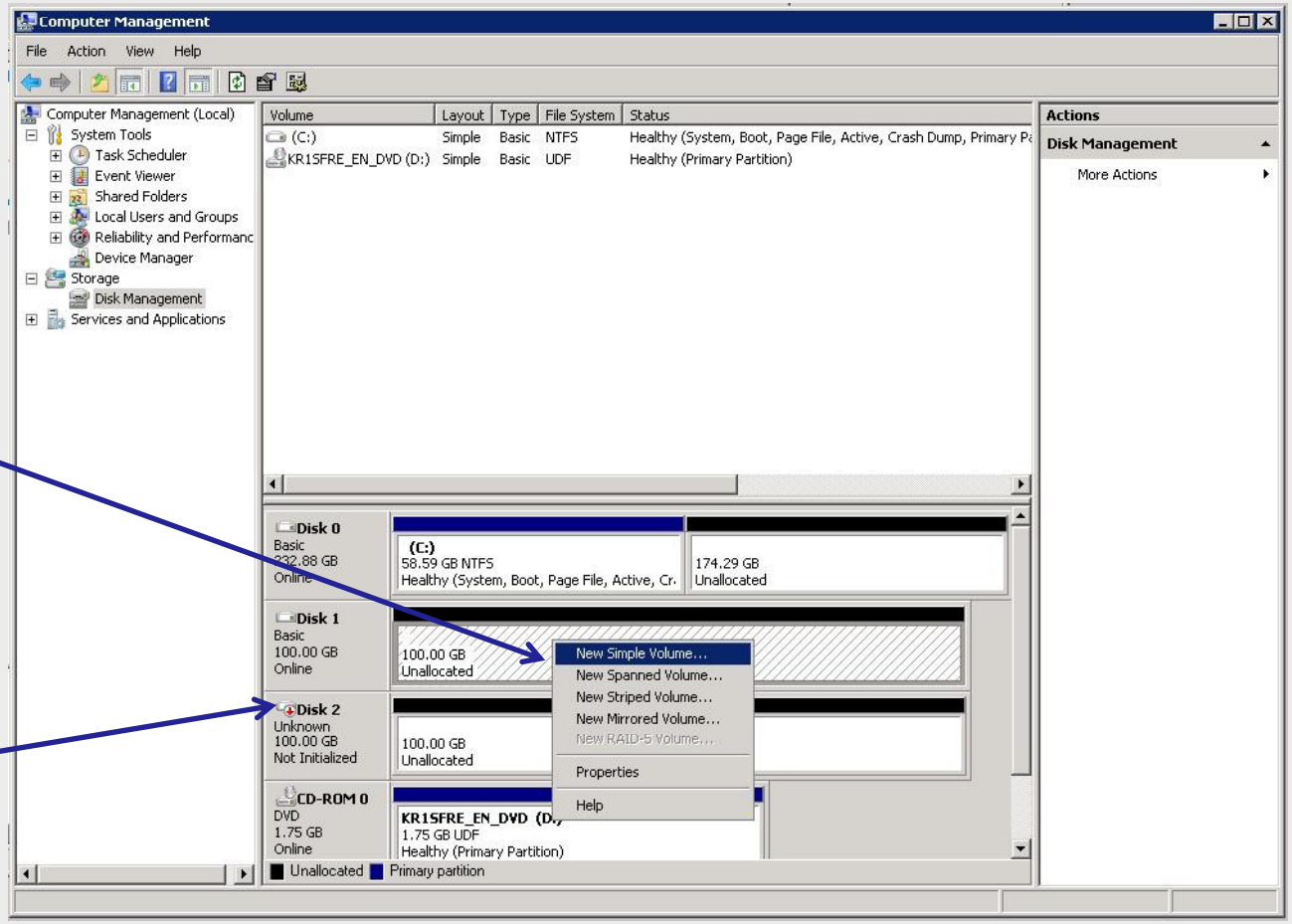
9. Disk Management

Finally you will need to create an "**NTFS volume"** on the target using the wizard and keeping the default settings.

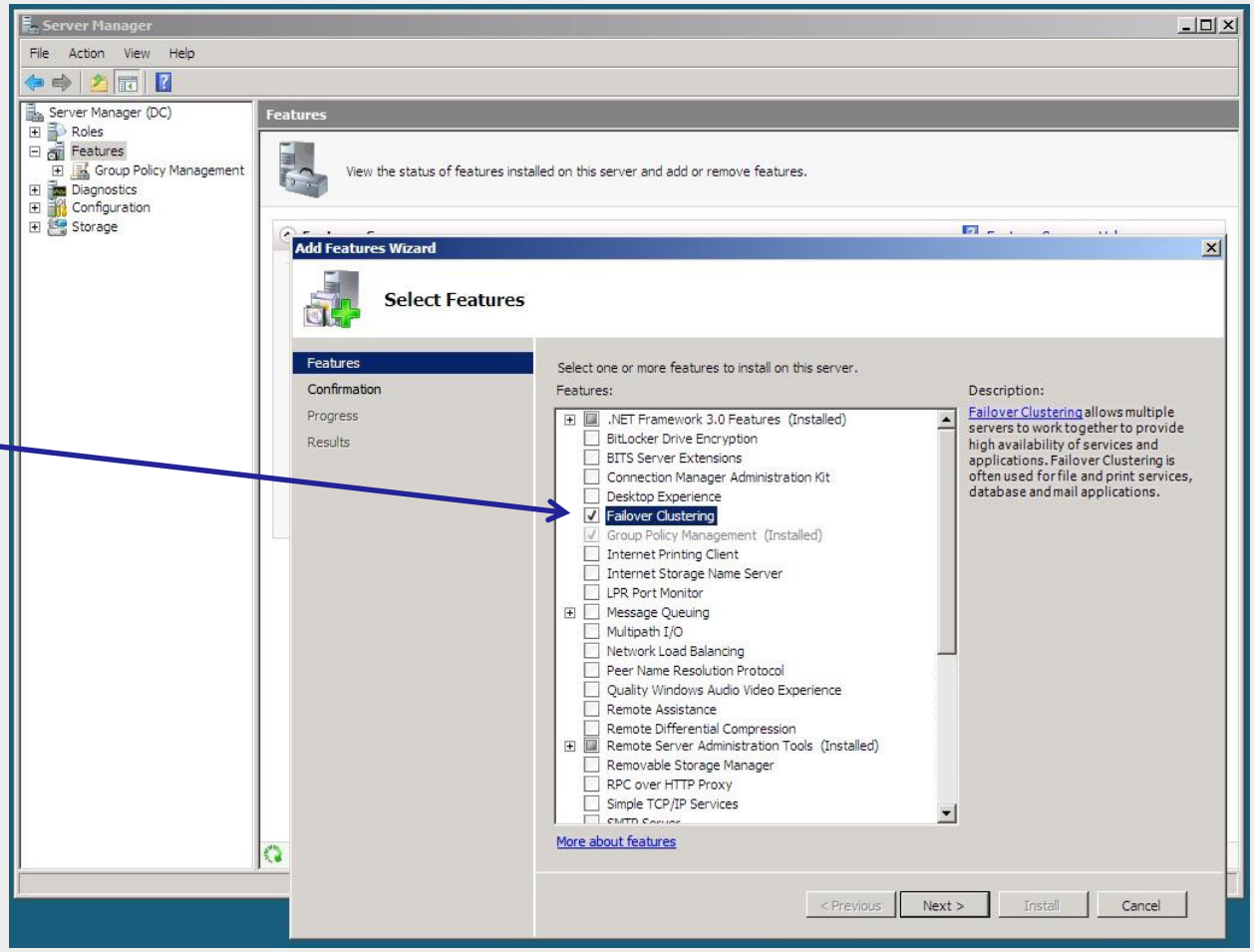
Perform the same steps on the second target.
On the second server (NODE2) go to "**Disk Management"**, click the right button on the target and select "**Online"** (Slide 16).



How to create cluster with failover functionality on Windows 2008

10. Failover Clustering configuration

To manage the clusters in Windows 2008 Server use the management console. You can gain access to it after adding the appropriate functionality.
For this purpose, in the Server Manager on both nodes as well as the domain controller right-click on the Features menu and choose "**Add Features**". In the available list, select "**Failover Clustering**" , then **Next** and **Install**.

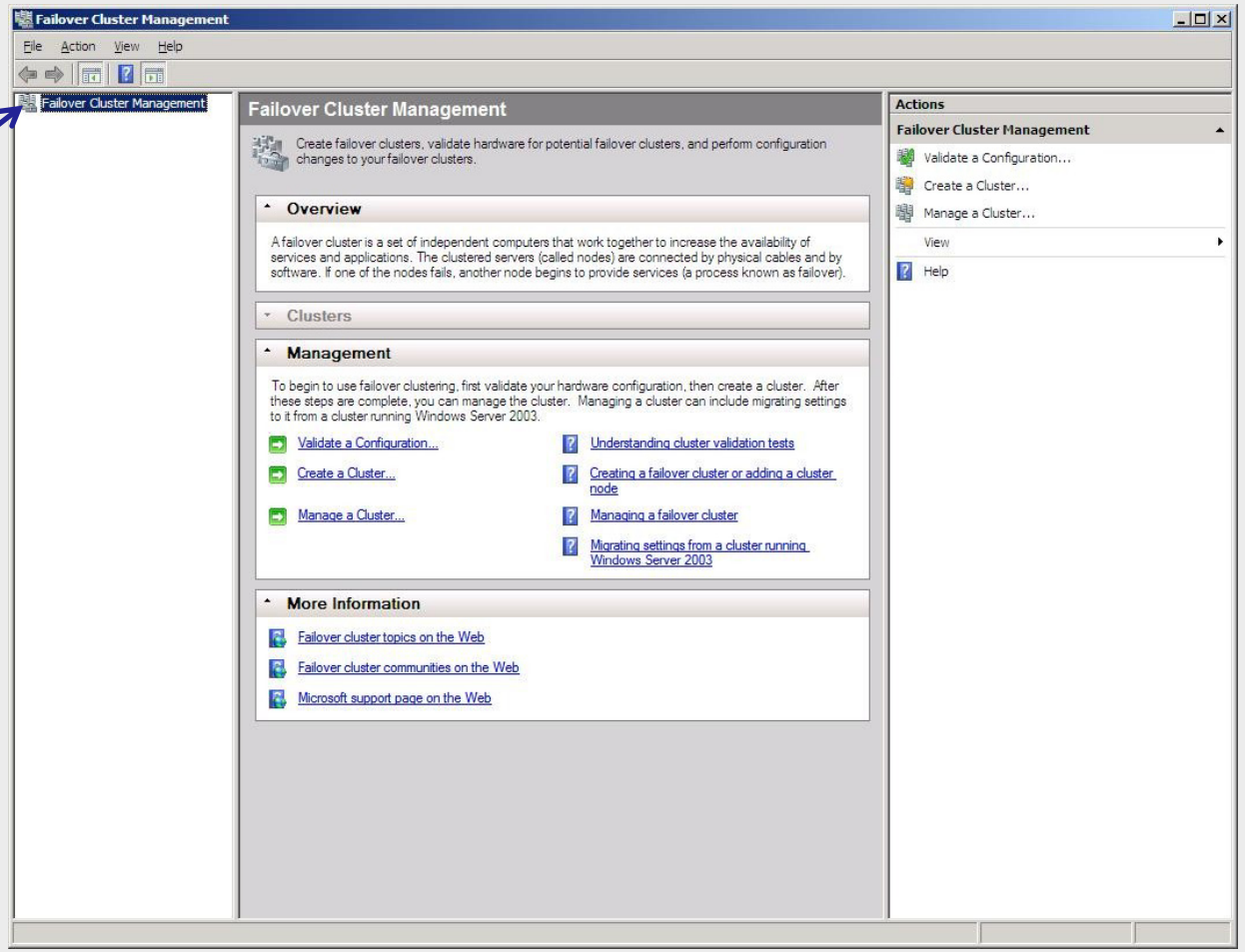


How to create cluster with failover functionality on Windows 2008

10. Failover Clustering configuration

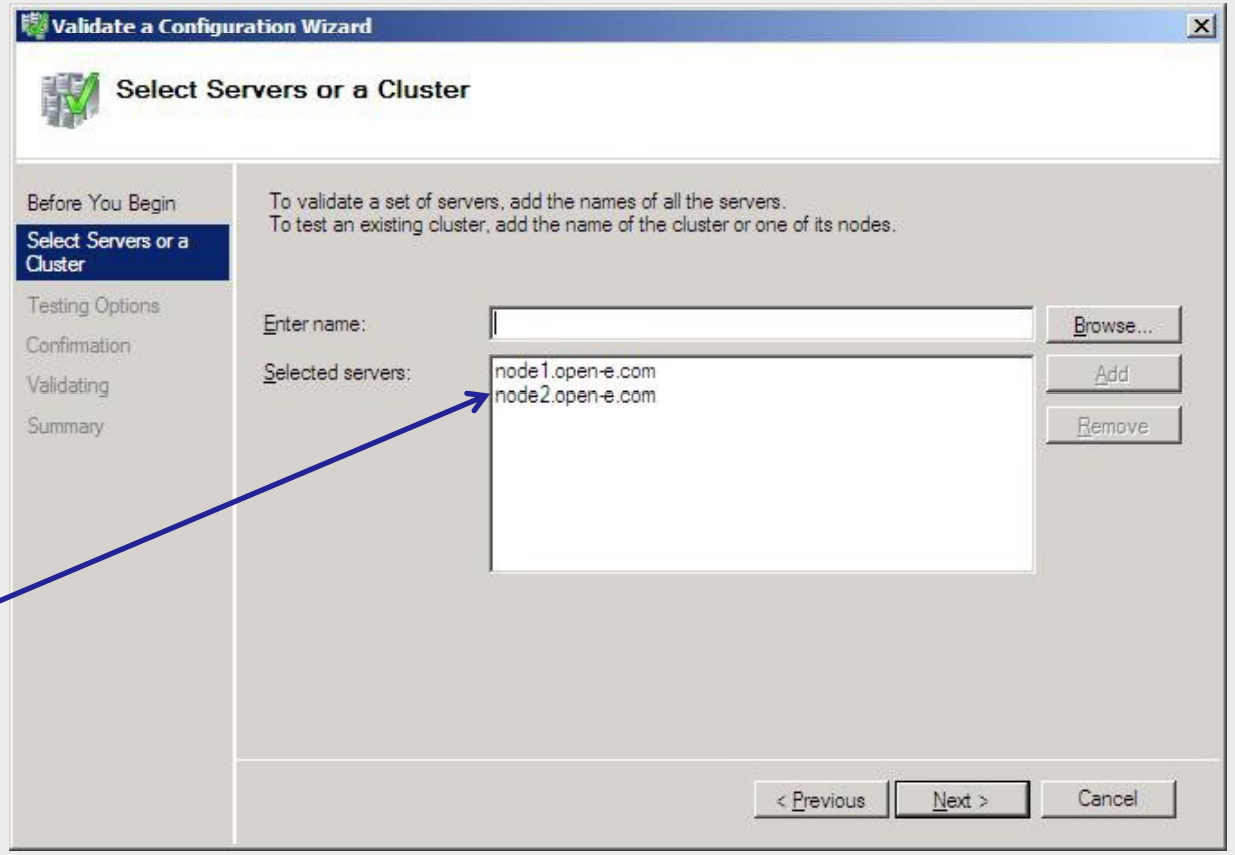
On the domain controller run the snap manage clusters: Start - Administrative Tools – "**Failover Cluster Management**".
From this level you can manage clustering.

One of the first steps that you should take here is to validate the components on which you have installed your cluster. For this purpose, a special wizard has been created, which can be run by clicking on the "**Validate a Configuration**" link in the middle of the console.



How to create cluster with failover functionality on Windows 2008

10. Failover Clustering configuration



In the wizard, add the two servers: **NODE1**, and **NODE2**.

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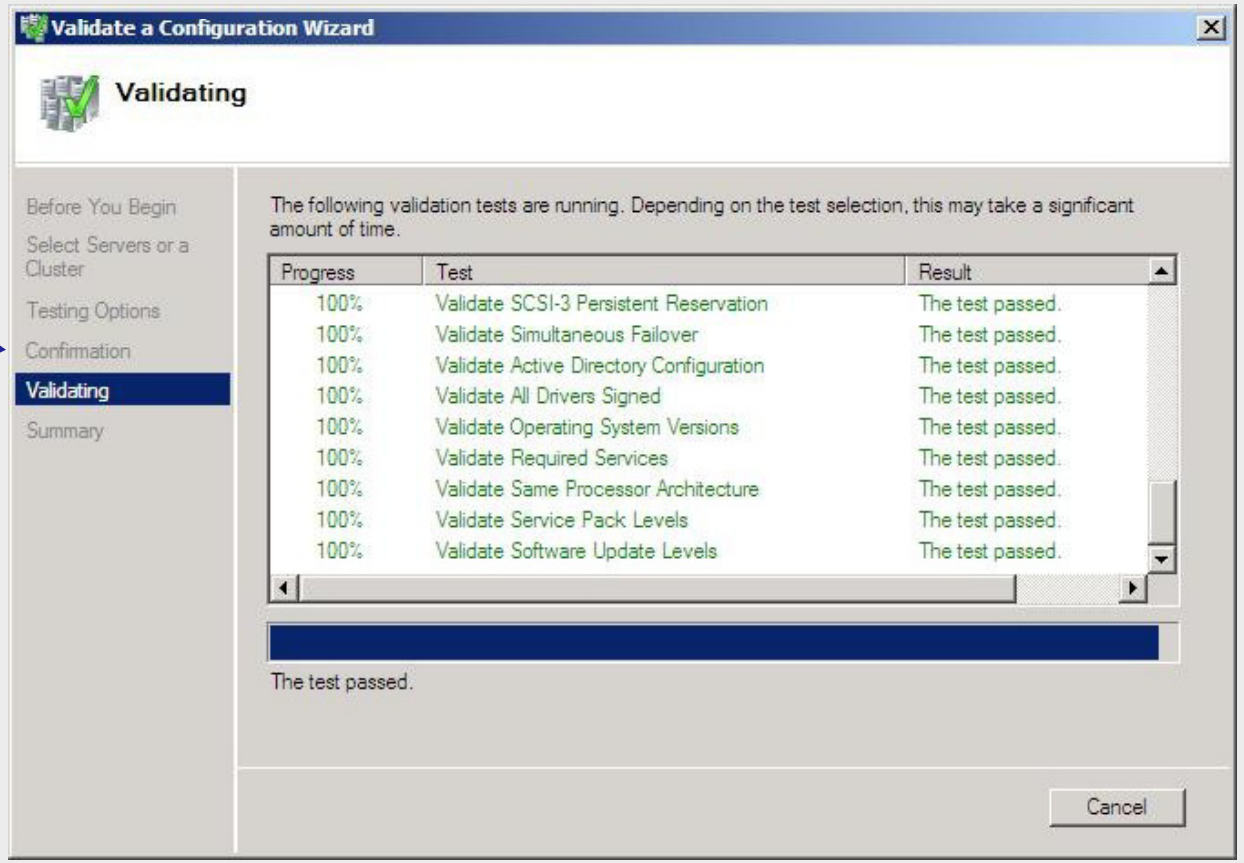
10. Failover Clustering configuration

Next perform all the tests, in the Testing Options window select the "**Run all tests"** (recommended) option. In the next window (**Confirmation**), you can view your pre-selected options and run the tests by clicking on Next

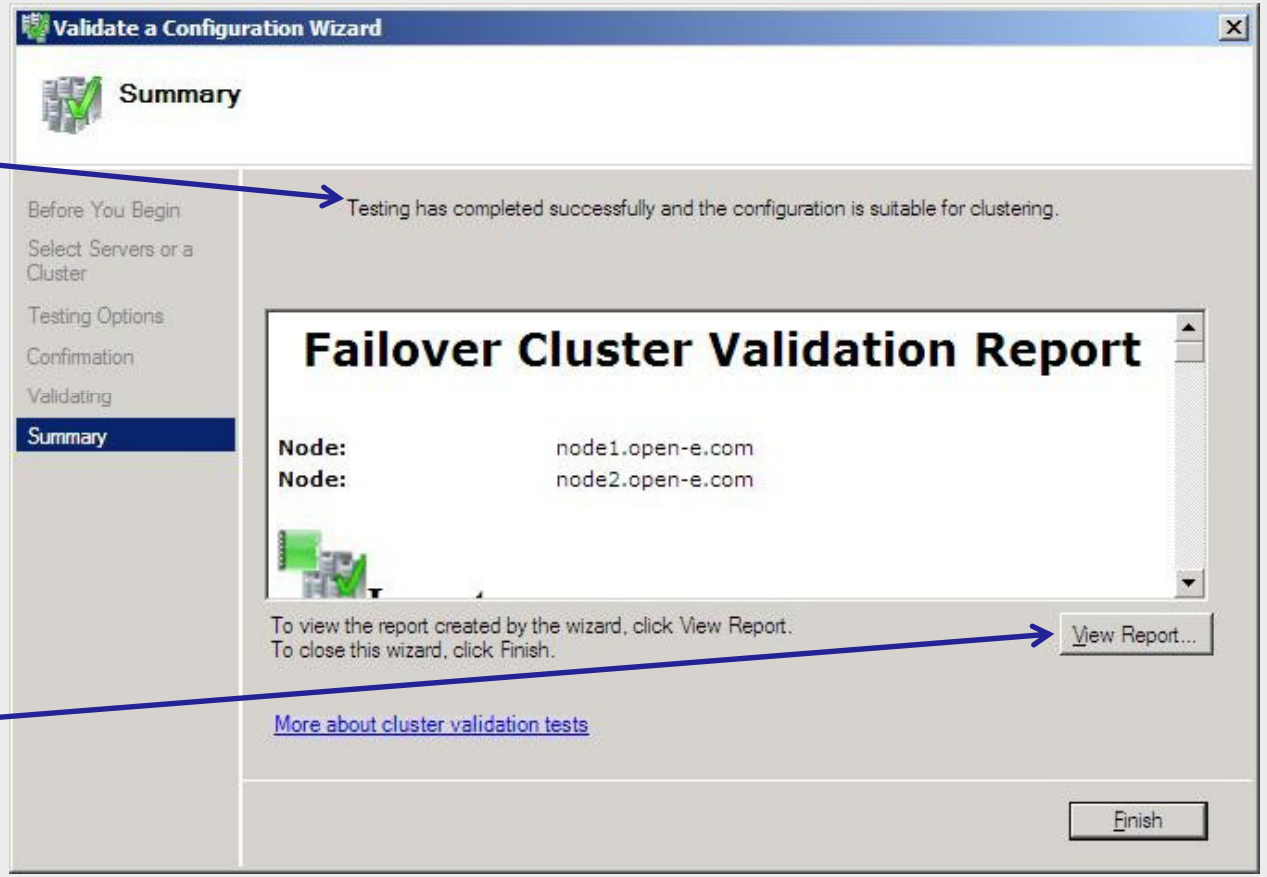


How to create cluster with failover functionality on Windows 2008

10. Failover Clustering configuration

If you have done the previous steps correctly, then after a few minutes testing should be completed successfully, and you should receive the following summary: **"Testing has completed successfully and the configuration is suitable for clustering".**

By clicking on the View Report you can view the Failover Cluster Validation Report, which contains a sizeable list of all the tests carried out along with information about what was tested specifically



NOTE:

If one of the tests fails, it does not necessarily mean that the cluster will not work. However, you need to be aware that in case of any later problems with the cluster this configuration will not qualify for technical support

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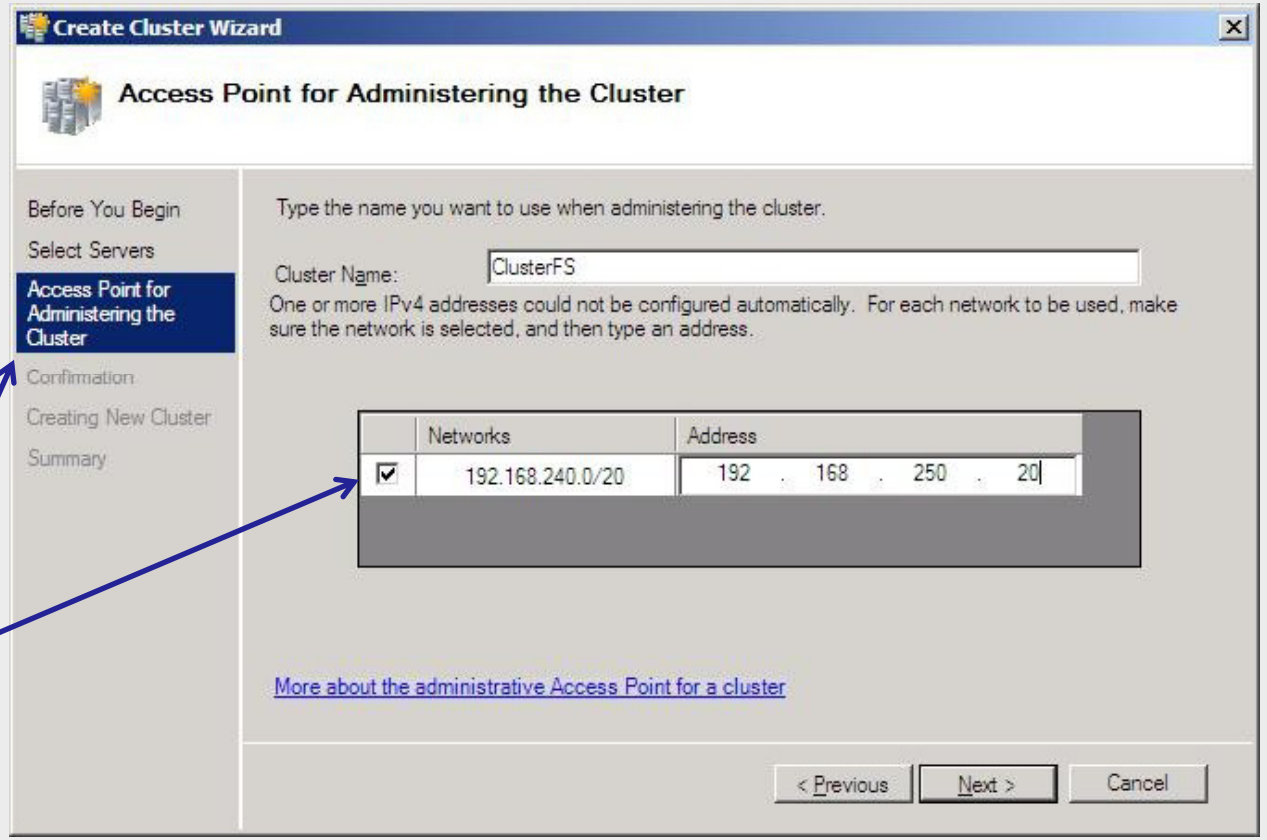
11. Clustering configuration

On the domain controller, run the Failover Cluster Management console and click on Create Cluster. In the **Select Servers** window, add the servers to perform the role of nodes (**NODE1** and **NODE2**).

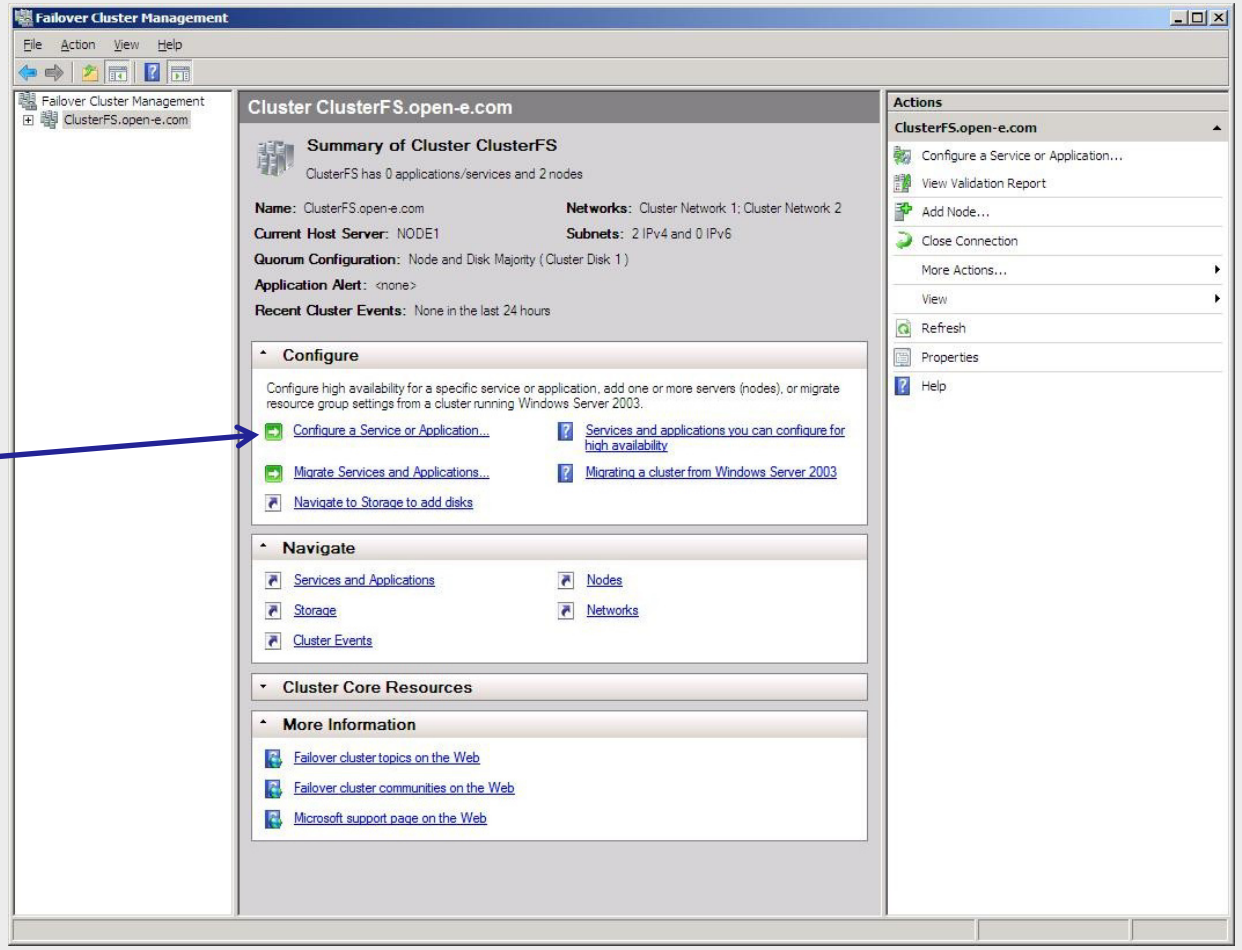
In **Access Point for Administering the Cluster**, select the name and IP address of the cluster . This is basically all the information you need to put in. Clicking on **Next** in order confirmation then will begin the process of creating a cluster. After the wizard is finished you can view a report which describes the various activities constituting the cluster installation process.



How to create cluster with failover functionality on Windows 2008

11. Clustering configuration

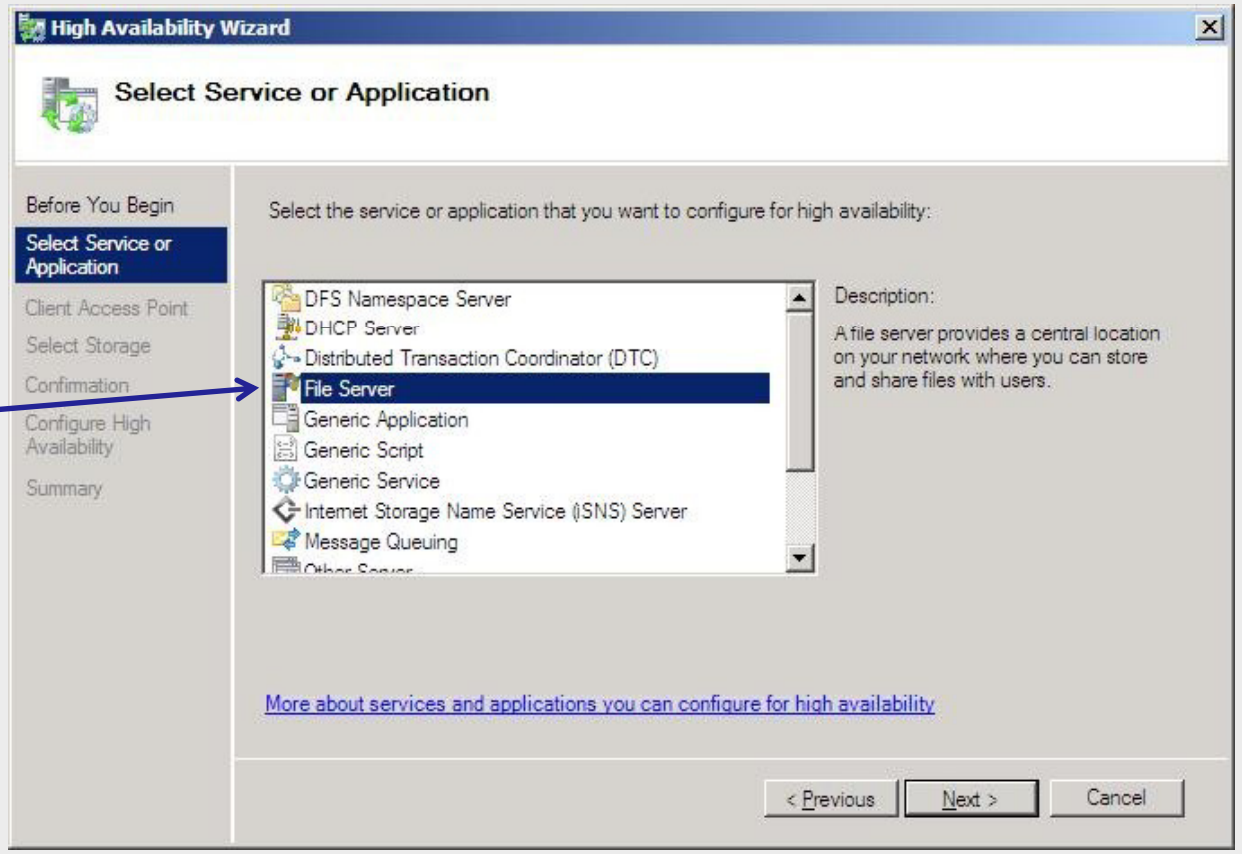
After creating the cluster you need to configure the cluster services, e.g. a file serving capability.
In the "**Failover Cluster Management**" console, right-click on the "**Services and Applications**" menu and select "**Configure a Service or Application ...**"



How to create cluster with failover functionality on Windows 2008

11. Clustering configuration

In the wizard, mark the **High Availability Wizard**, next **File Server** and click **Next** .

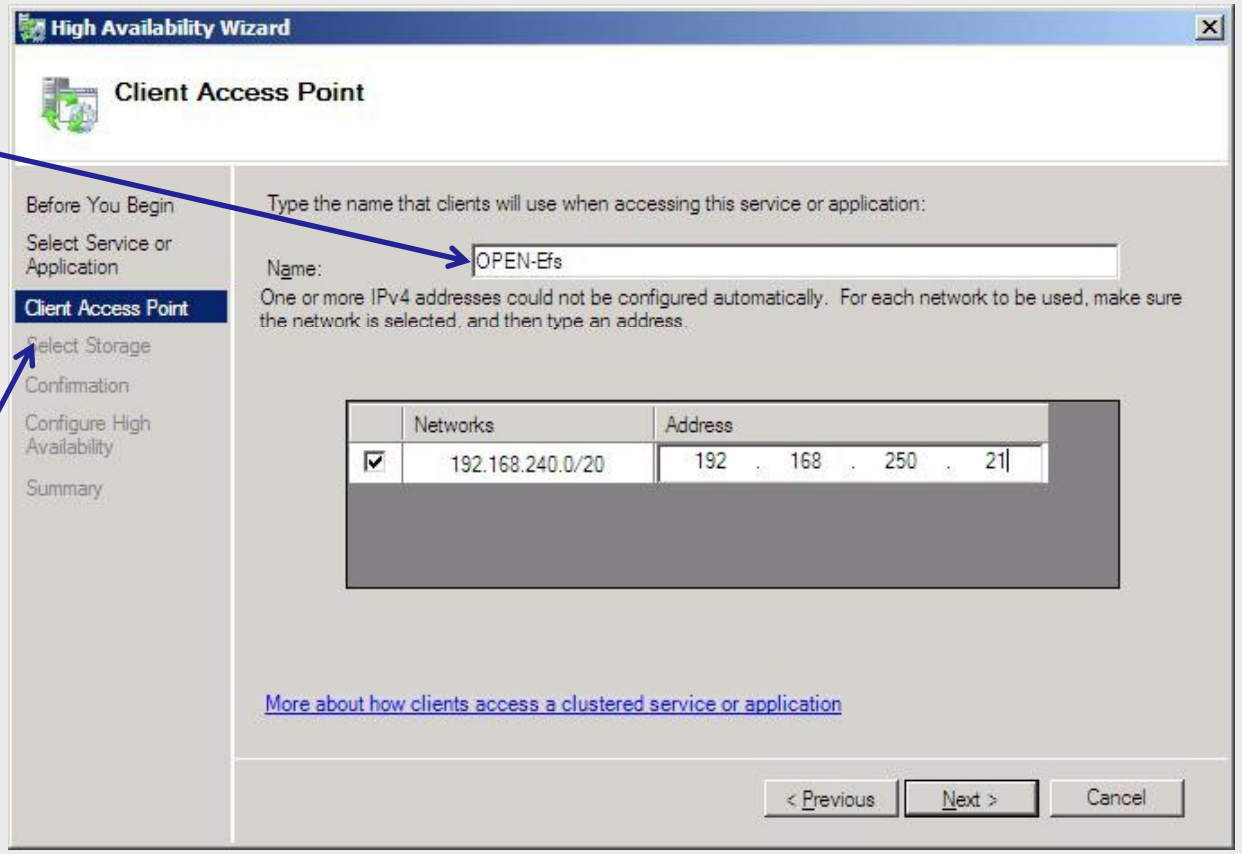


How to create cluster with failover functionality on Windows 2008

11. Clustering configuration

Next Define the name of the file server and its IP address and click **Next**.

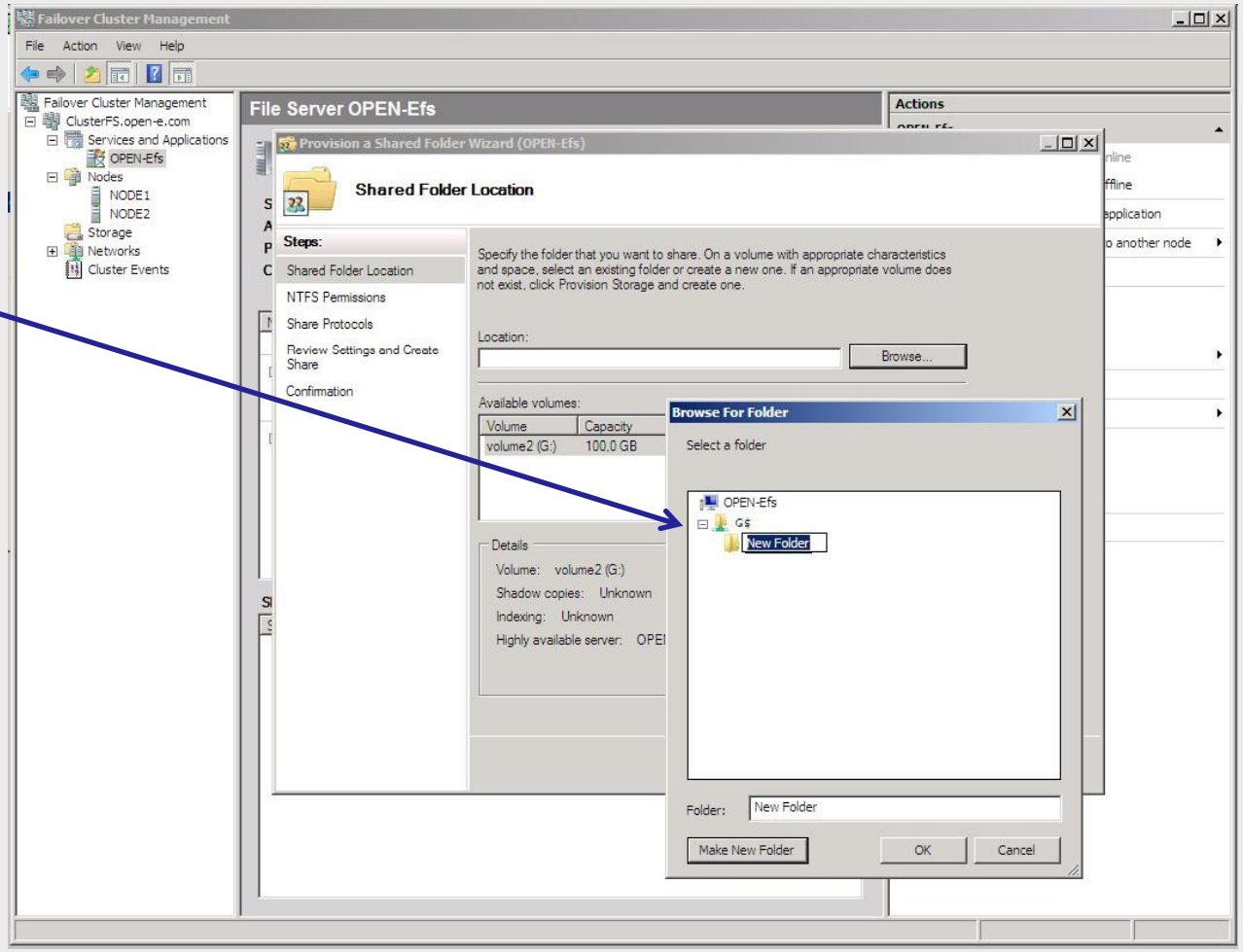
In **Select Storage** mark the only available drive and click **Next**, then allow the wizard to configure a highly available file server.
Now, you only need to provide resources to users.



How to create cluster with failover functionality on Windows 2008

11. Clustering configuration

For this purpose, start the Failover Cluster Management console on the domain controller and right-click on the cluster name. Afterwards select Add a shared folder and click **Browse** to create a new directory

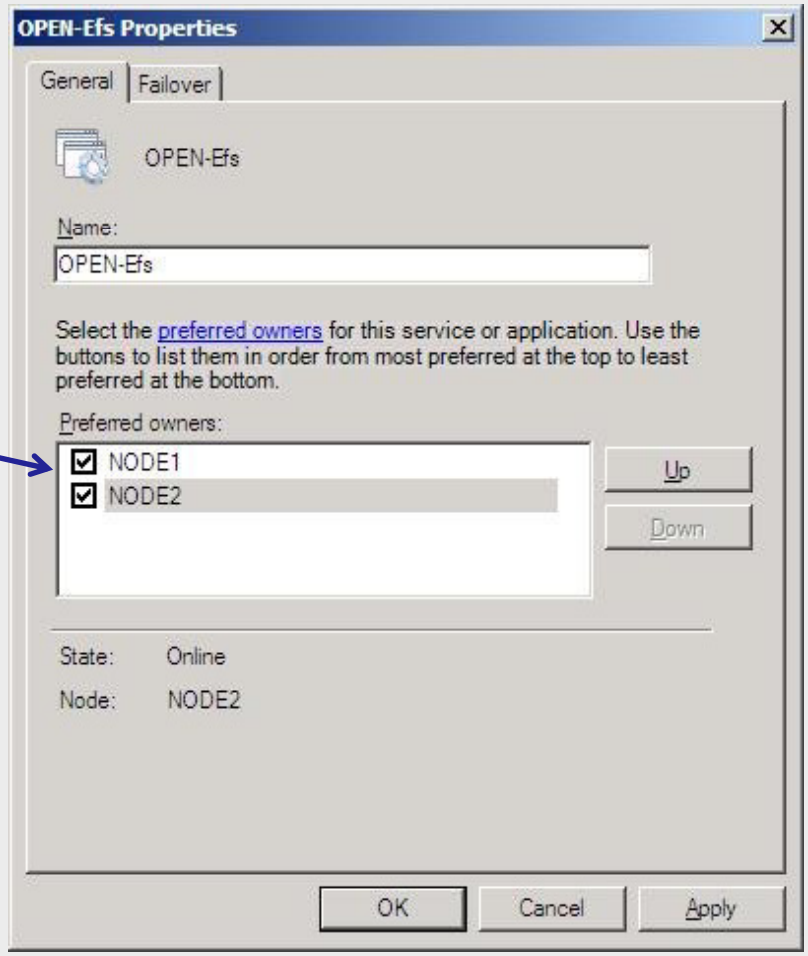


How to create cluster with failover functionality on Windows 2008

The next wizard window is mainly concerned with NTFS and access rights. Adjust them according to your own needs.
You can access the shared cluster resources by typing \ \[*cluster_name*]\

If you need auto failback you have to start the Failover Cluster Management console on the domain controller and select **Properties** after right-clicking on the cluster name. Next, select preferred nodes and click **Allow failback** on the **Failover** tab.

11. Clustering configuration



NOTE:
To test the configuration, you can start copying a file to the cluster resources and then turn off NODE2. After a few seconds, control should be delegated to NODE1 and the copying should resume.

The configuration and testing of clustering is now complete.

Thank you!