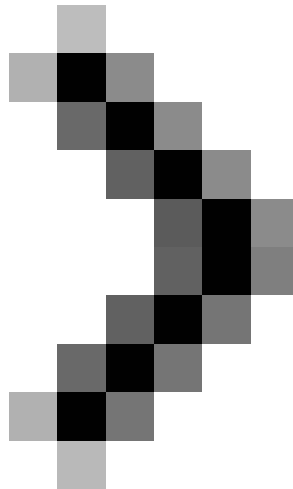


Deploy CCR Cluster of Exchange 2007 SP1 on Windows Server 2008 Failover Cluster (Part 2)

In the series related to the deployment of the CCR cluster of Exchange 2007 SP1 on Windows Server 2008, we will continue with what was introduced in Part 1. We will set up a Windows Server 2008 Failover Cluster as well as Validate its configuration using the new cluster utility included in Windows Server 2008.



Part 1: Prerequisites & failover configuration

Henrik Walther

Part 2: Creating and validating Failover Cluster

In the series related to the deployment of the CCR cluster of Exchange 2007 SP1 on Windows Server 2008, we will continue with what was introduced in Part 1. We will set up a Windows Server 2008 Failover Cluster as well as Validate its configuration using the new cluster utility included in Windows Server

2008.

Install the necessary Roles and features of Windows Server 2008

In Part 1, we configured two servers to be used as nodes in the Windows Server 2008 Failover Cluster as well as to add them to the domain. The next step is to install the necessary roles and features of Windows Server 2008. A grouped Mailbox Server requires the following roles and features on each failover cluster node:

1. Web Server (IIS)
2. PowerShell
3. Fail-Over Clustering

The easiest way to install the role and features is to use the ServerManagerCMD.exe tool based on the new Windows Server 2008 command-line utility, which will allow you to install through the command prompt or use it. Use an arbitrary script. To install a separate role or feature, run the following commands in the command window.

```
ServerManagerCmd -i PowerShell  
ServerManagerCmd -i Failover-Clustering  
ServerManagerCmd -i Web-Server  
ServerManagerCmd -i Web-ISAPI-Ext  
ServerManagerCmd -i Web-Metabase  
ServerManagerCmd -i Web-Lgcy-Mgmt-Console  
ServerManagerCmd -i Web-Basic-Auth  
ServerManagerCmd -i Web-Windows-Auth
```

If you prefer to install them with a command, you can create an XML answer file with the following content:

```
Action = "Install"  
xmlns = "http://schemas.microsoft.com/sdm/Windows/ServerManager/Configuration/2007/1">
```

To do so, open notepad and paste it into the above code, then save it as an XML file.

With the script just created, type **ServerManagerCMD -ip** at the command prompt. The required roles and features will be installed automatically as shown in Figure 1.

```
Administrator: Command Prompt
C:\Users\administrator.MSEXCHANGELAB\Desktop>servermanagercmd -ip E2K7_CMS.xml
.....
Start Installation...
[Installation] Succeeded: [Web Server (IIS)] Management Tools.
[Installation] Succeeded: [Web Server (IIS)] Web Server.
[Installation] Succeeded: [Web Server (IIS)] Performance.
[Installation] Succeeded: [Web Server (IIS)] IIS 6 Management Compatibility.
[Installation] Succeeded: [Web Server (IIS)] Health and Diagnostics.
[Installation] Succeeded: [Web Server (IIS)] Security.
[Installation] Succeeded: [Web Server (IIS)] Common HTTP Features.
[Installation] Succeeded: [Windows Process Activation Service] Configuration API
[Installation] Succeeded: [Windows PowerShell].
[Installation] Succeeded: [Failover Clustering].
[Installation] Succeeded: [Windows Process Activation Service] Process Model.
[Installation] Succeeded: [Web Server (IIS)] IIS 6 Metabase Compatibility.
[Installation] Succeeded: [Web Server (IIS)] IIS Management Console.
[Installation] Succeeded: [Web Server (IIS)] Static Content.
[Installation] Succeeded: [Web Server (IIS)] Default Document.
[Installation] Succeeded: [Web Server (IIS)] Windows Authentication.
[Installation] Succeeded: [Web Server (IIS)] Request Monitor.
[Installation] Succeeded: [Web Server (IIS)] Basic Authentication.
[Installation] Succeeded: [Web Server (IIS)] Directory Browsing.
[Installation] Succeeded: [Web Server (IIS)] HTTP Logging.
[Installation] Succeeded: [Web Server (IIS)] Static Content Compression.
[Installation] Succeeded: [Web Server (IIS)] HTTP Errors.
[Installation] Succeeded: [Web Server (IIS)] Request Filtering.
[Installation] Succeeded: [Web Server (IIS)] IIS 6 Management Console.
<100/100>
Success: Installation succeeded.
C:\Users\administrator.MSEXCHANGELAB\Desktop>
```

Figure 1: Installing the necessary roles and features with an XML file

Create and set up a Failover Cluster

The next step is to establish a Failover Cluster. This step can be done via the command prompt using Cluster.exe or using the new Failover Cluster Manager utility. To give you some insight into the new Failover Cluster Manager utility in Windows Server 2008, we will use this GUI in these series.

Note :

If you want to use Cluster.exe, you can look in the corresponding documents at TechNet.

To launch the Failover Cluster Manager, first click Start then Administrative Tools and finally select Failover Cluster Management as shown in Figure 2.

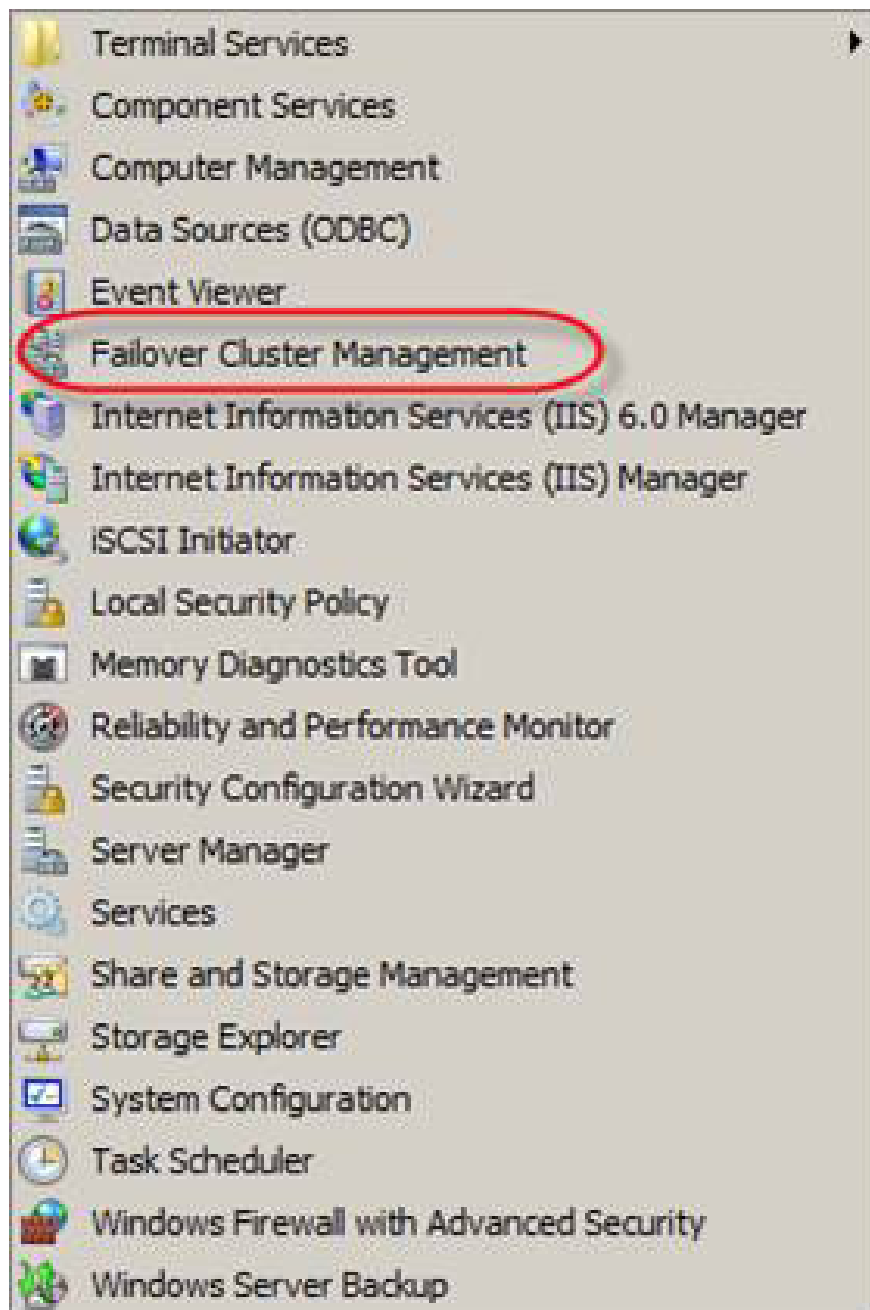


Figure 2: Launch the Failover Cluster Manager

The Failover Cluster Manager will launch. In the Management section, click Create a Cluster as shown in Figure 3.

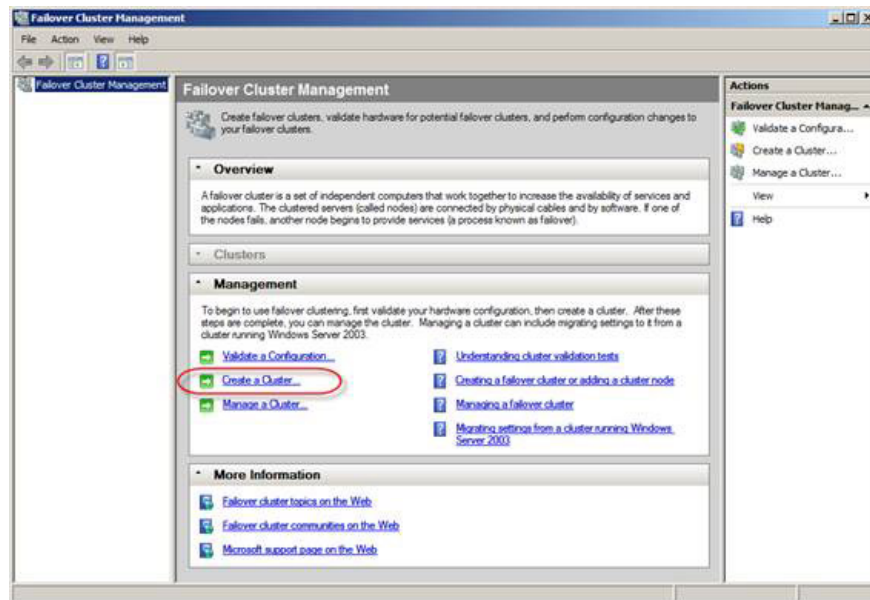


Figure 3: Open the Create Cluster utility

In the Create Cluster Wizard (Figure 4), click Next.

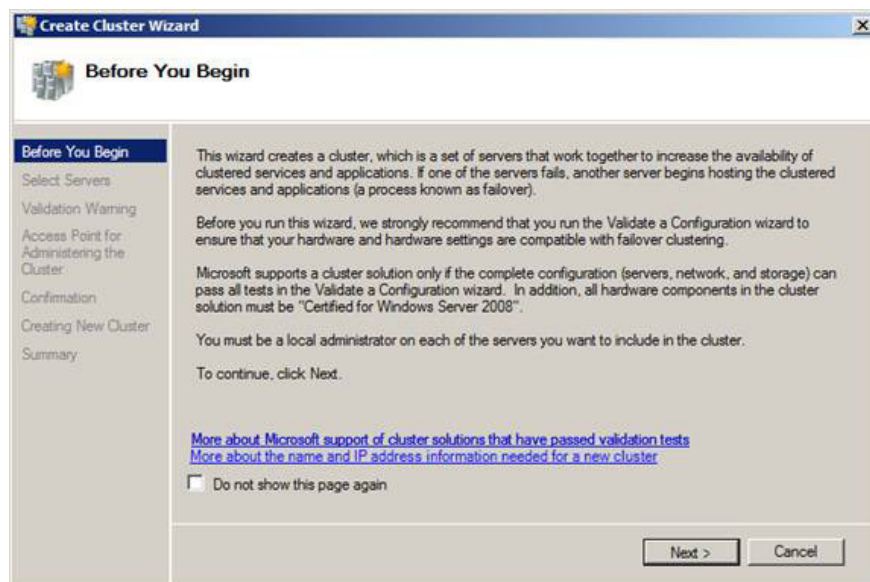


Figure 4: The Before You Begin page in Create Cluster Wizard

Now we need to add the names of the servers that will work as nodes in the cluster (Figure 5). After that, click Next.

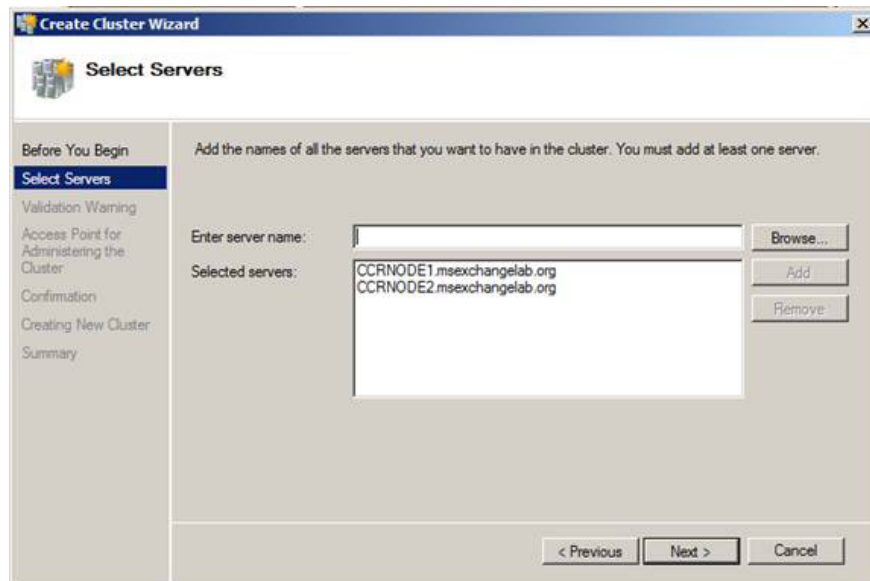


Figure 5: Add servers to the failover cluster

Name the failover cluster and its IP address as shown in Figure 7, and then click Next.

Note :

This name is not mistaken for the clustered mailbox server name that the Outlook clients will connect to.

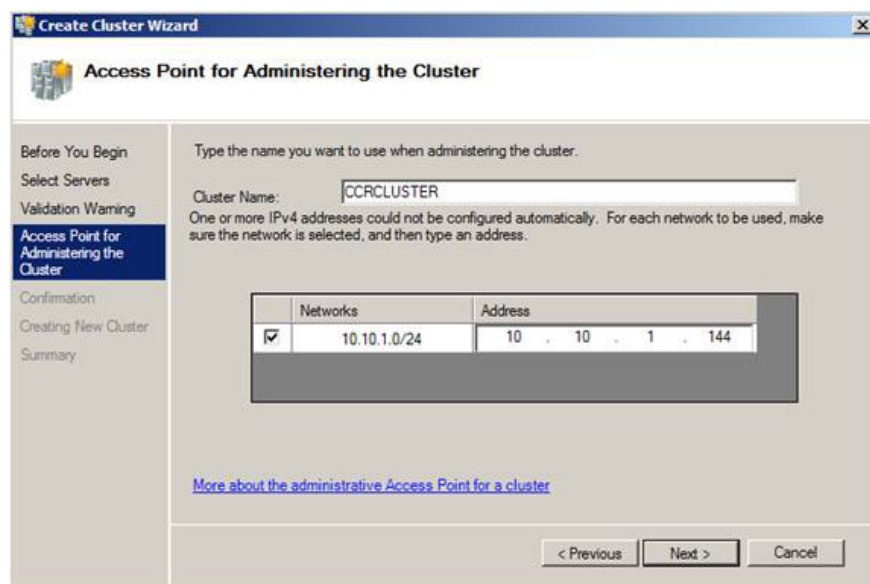


Figure 6: Specify the name and IP address for the failover cluster

Next confirmation page, click Next.

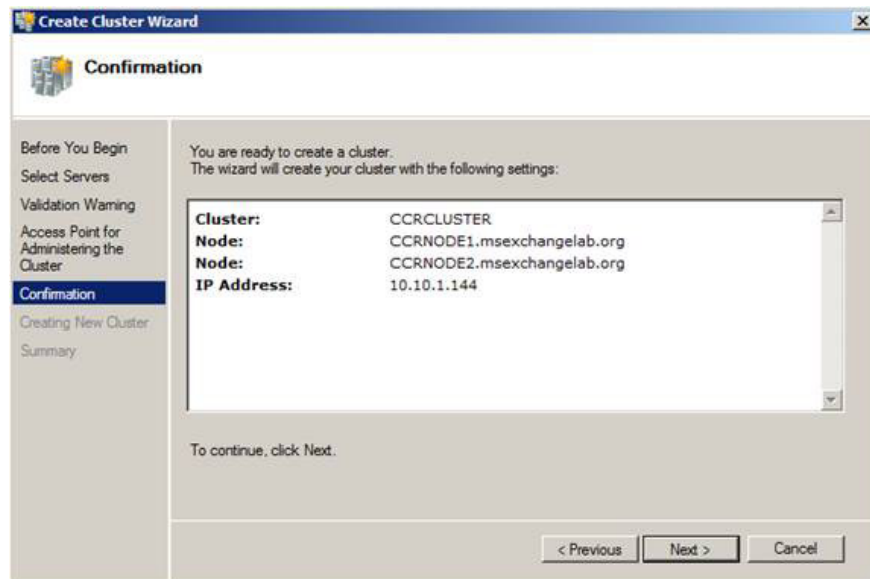


Figure 7: Confirmation page

The cluster wizard will now create and configure the failover cluster as shown in Figure 8.

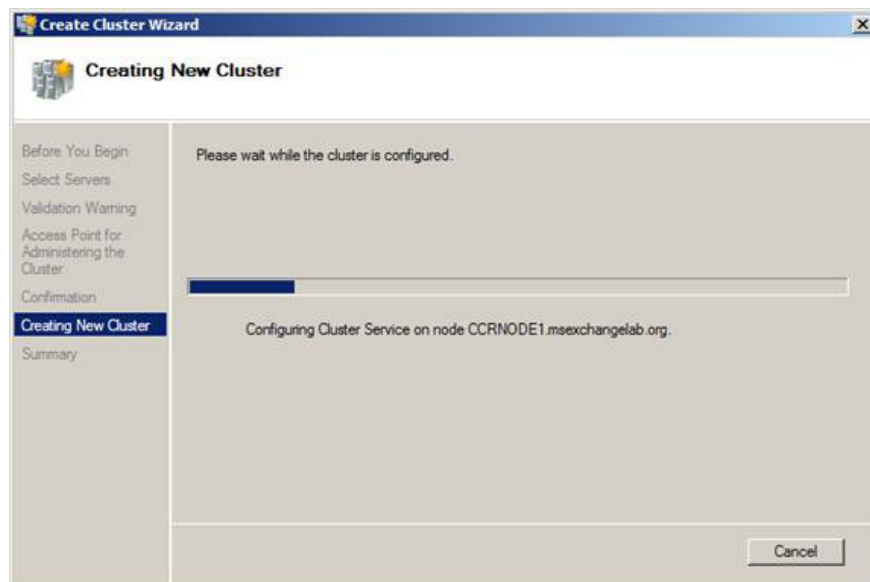


Figure 8: Failover cluster is being created and configured

Once the failover cluster has been created, you will be taken to the Summary page as shown in Figure 9, now you can choose to view or click Finish to exit the utility.



Figure 9: Summary page

Now that we have created a basic Windows Server 2008 failover cluster, there are still some configurations that need to be done before being ready for the Exchange 2007 SP1 Clustered Mailbox server.

Configuring Cluster Network

With failover clusters created, we must configure cluster networks, so that a network interface allows client connections and another interface is specifically limited to traffic between nodes. Let's start by opening the property page for the public network interface (Figure 10).

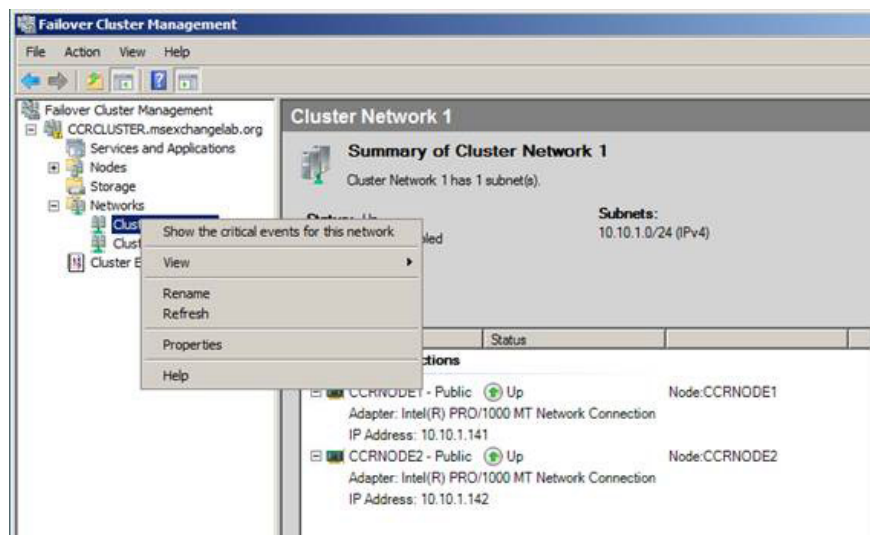


Figure 10: Open the properties page for the Public network interface

Now we change the name of the network interface to Public or something else that is easy to see that this interface is indeed connected to the Public network. Also make sure the ' *Allow the cluster to use this network* ' option is checked and ' *Allow clients to connect through this network* ' is also ticked, and then click OK.

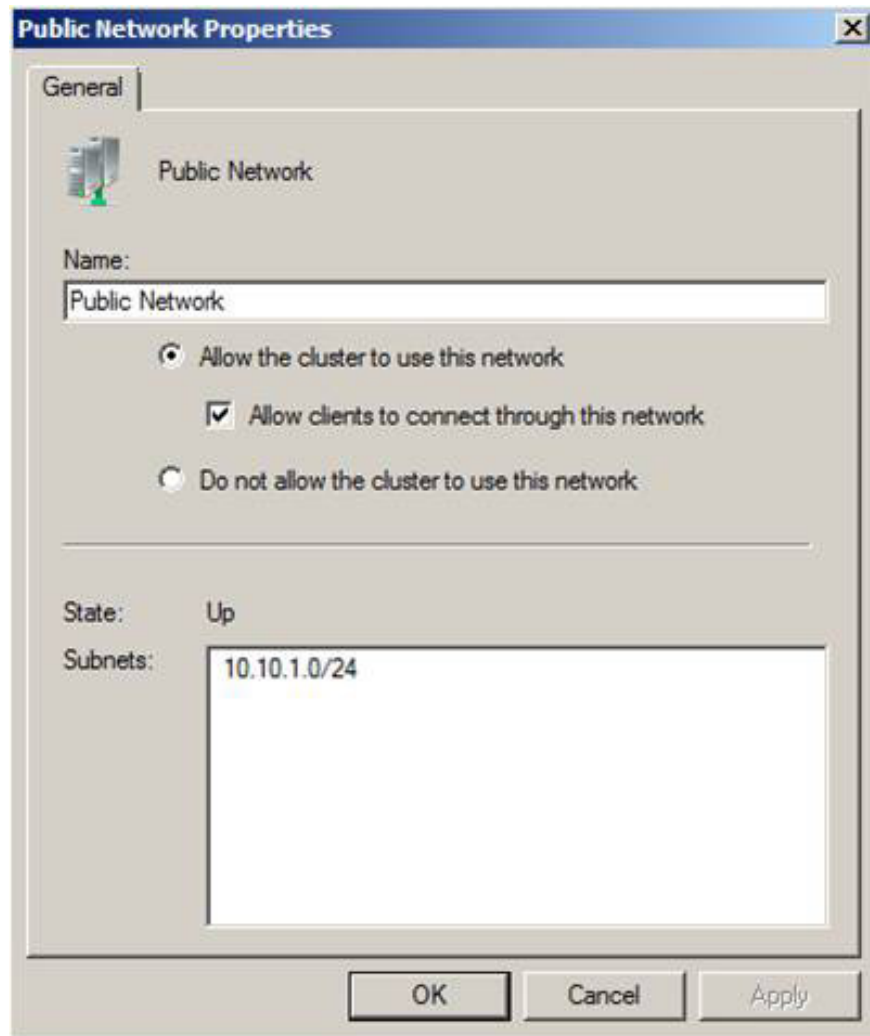


Figure 11: Property page of Public Network interface

Open the properties page for the private network interface, perform the same steps, but the option ' *Allow clients to connect through this network* ' is not included. We do not want any client to connect to the private network interface. This is used for traffic between nodes.

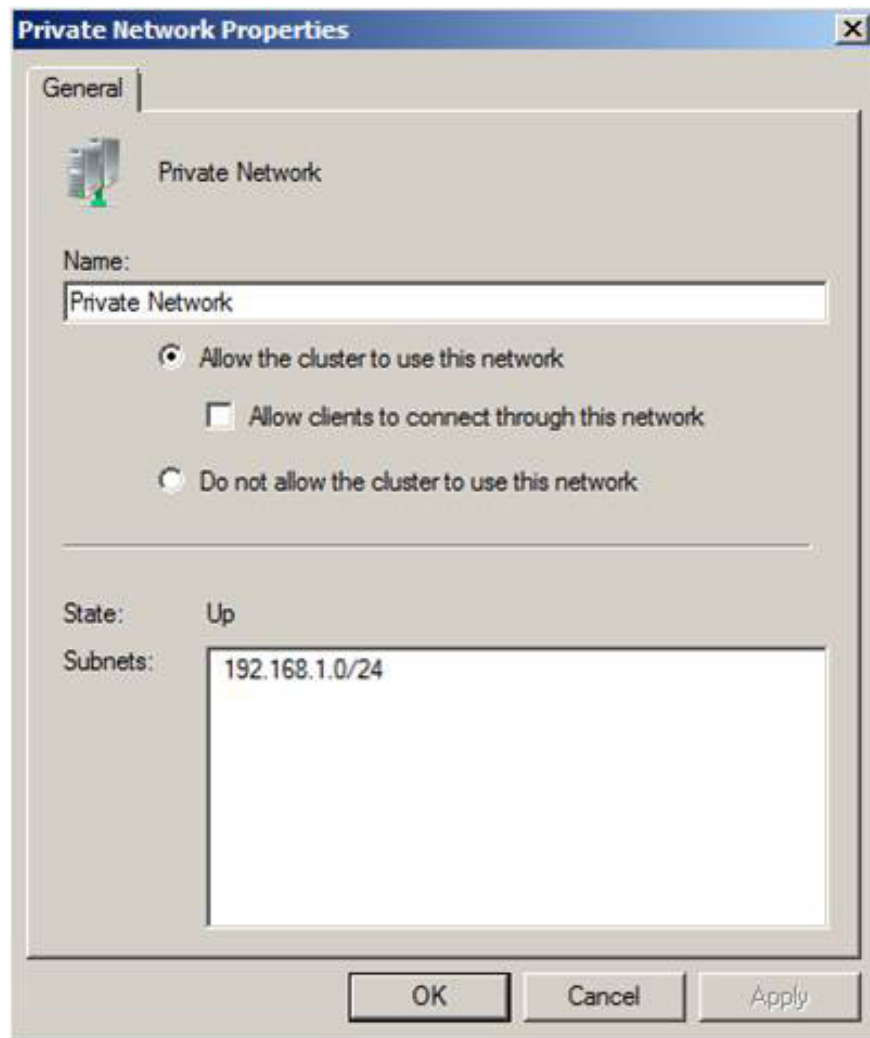


Figure 12: Property page for Private network interface

Note :

With Exchange Server 2007 SP1, networks configured to use the cluster and accept client connections can all be used for CCR initialization, record creation and re-initialization. To configure, use the `Enable-ContinuousReplicationHostName` new cmdlet.

Configuration File Share Majority Quorum

Now we need to configure failover cluster quorum. That is, create a shared file on a separate server (preferably using a Hub Transport server in the same AD with failover cluster nodes). To do so, log on to the server in the lab environment, on which the Client Access and Hub Transport roles have been preinstalled, then open the command prompt and create a new folder using the attack:

MKDIR FSM_DIR_MBX

MBX is the name that you plan to use for the clustered mailbox server. It doesn't really matter to what you set, but in case you plan to use a Hub Transport server as a share majority quorum file for CCR clusters, it's best to

use the name you set for CMS.

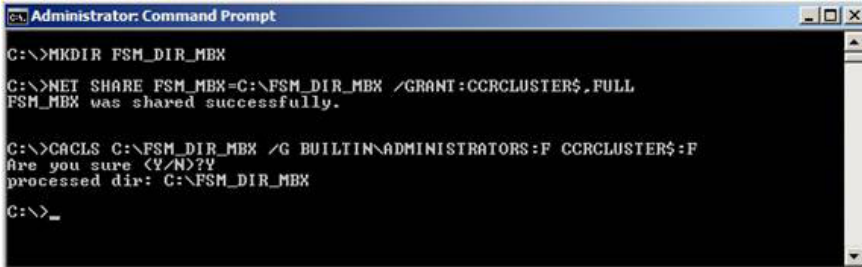
Now we share the new folder created with the following command:

NET SHARE FSM_MBX = C: FSM_DIR_MBX / GRANT: CCRCLUSTER \$, FULL

Note that only the Windows 2008 failover cluster account has permissions that can access and share this. Also note that the failover cluster machine account is hidden, meaning that you must add a '\$' after the name.

Configure file system permissions with:

CACLS C: FSM_DIR_MBX / G BUILTINAdministrators: F CCRCLUSTER \$: F



```
Administrator: Command Prompt
C:\>MKDIR FSM_DIR_MBX
C:\>NET SHARE FSM_MBX=C:\FSM_DIR_MBX /GRANT:CCRCLUSTER$,FULL
FSM_MBX was shared successfully.

C:\>CACLS C:\FSM_DIR_MBX /G BUILTIN\ADMINISTRATORS:F CCRCLUSTER$:F
Are you sure (Y/N)?Y
processed dir: C:\FSM_DIR_MBX
C:\>_
```

Figure 13: Create and share FSM folder

With the newly created file system share, we must configure the quorum settings for the failover cluster. To do so, open the Failover Cluster Manager, then click More Actions in Action Pane, select Configure Cluster Quorum Settings in the context menu (Figure 14).

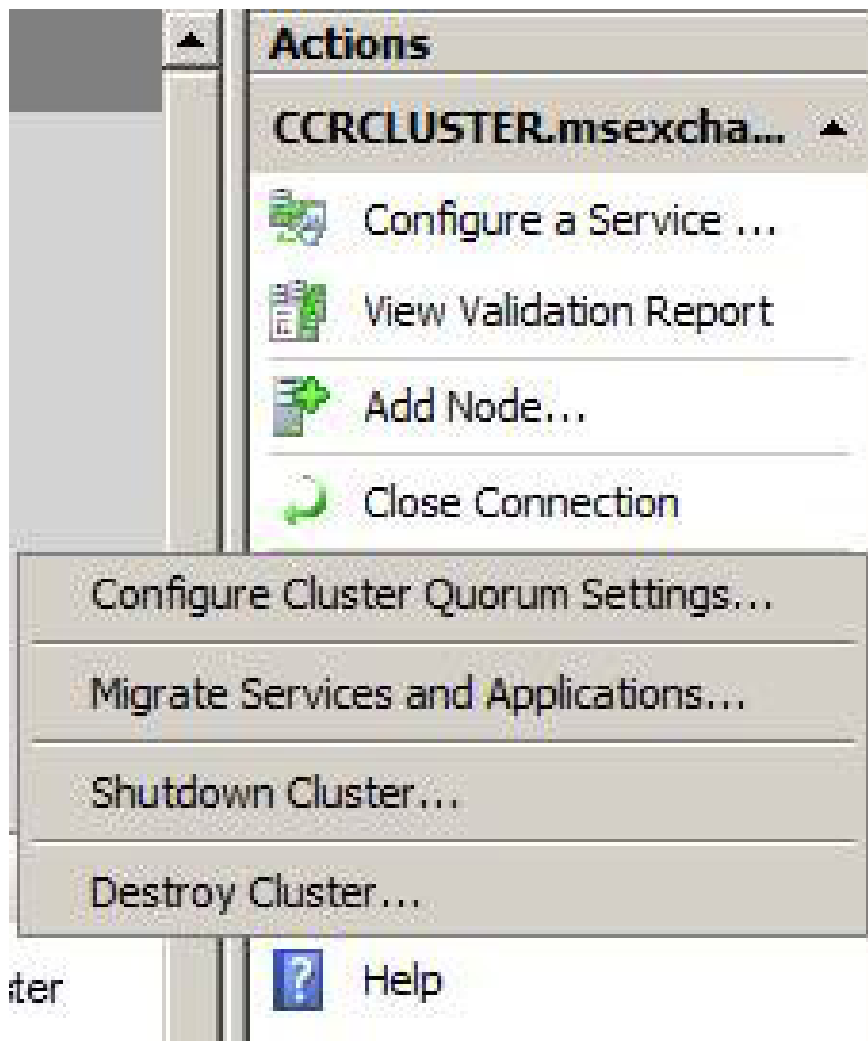


Figure 14: Open the Configure Cluster Quorum settings

In the Configure Cluster Quorum utility (Figure 15), click Next.

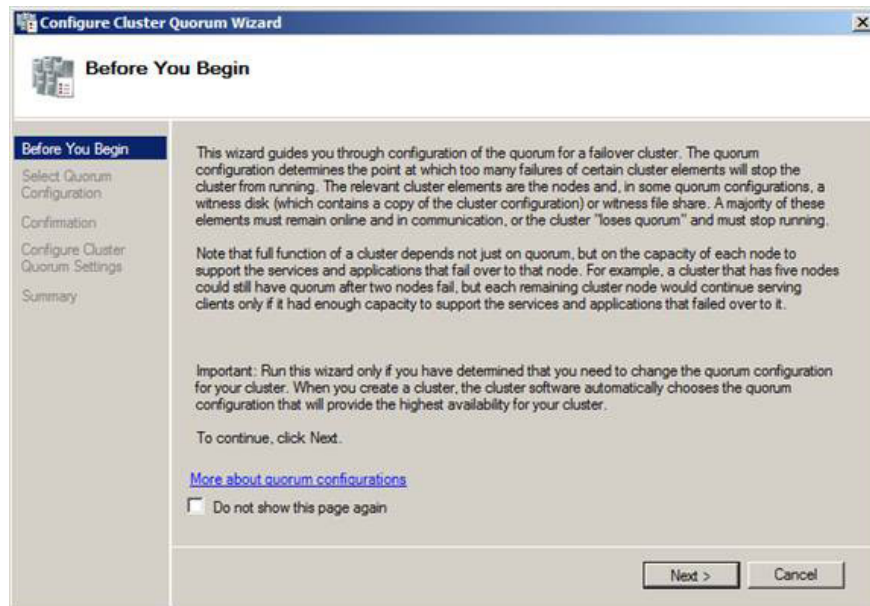


Figure 15: Page Before You Begin in the Configure Cluster Quorum utility

On the Select Quorum Configuration page, select Node and File Share Majority (for clusters with special configurations) then click Next.

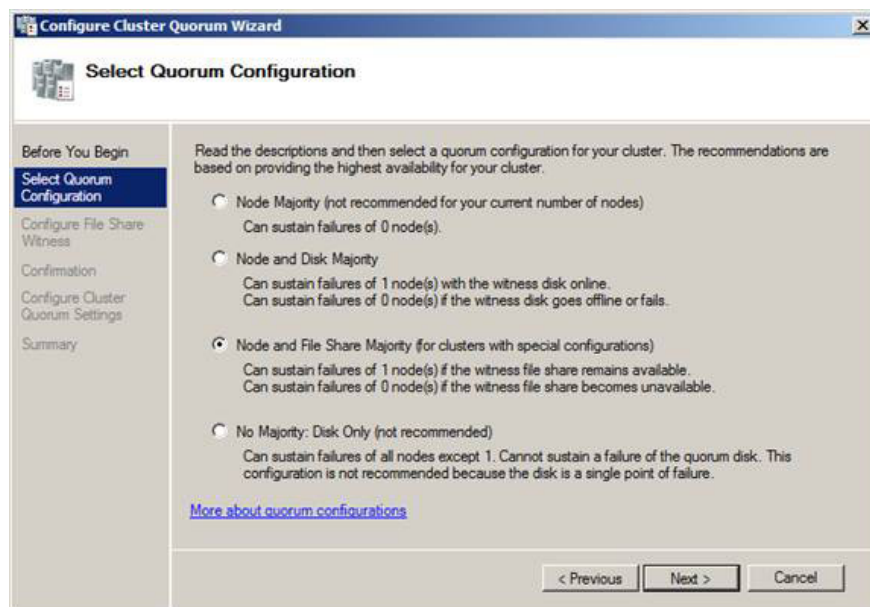


Figure 16: Select the appropriate delegate configuration for the failover cluster

Now we need to specify the path to the shared folder created on the Hub Transport server. You can do this by typing the path directly or browsing to the shared folder by clicking the Browse button (Figure 17). Once the corresponding path has been entered, we can click Next.

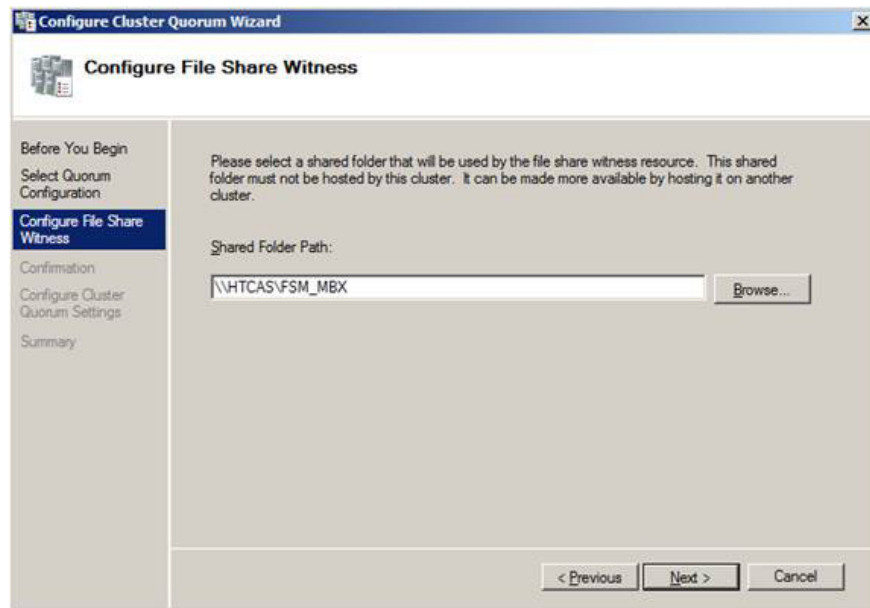


Figure 17: Enter the shared directory path used by the file sharing confirmation resource

This brings us to the confirmation page, there are many options to verify that you have configured the cluster delegate appropriately. If everything is satisfied, click Next and then Finish on the Summary page.

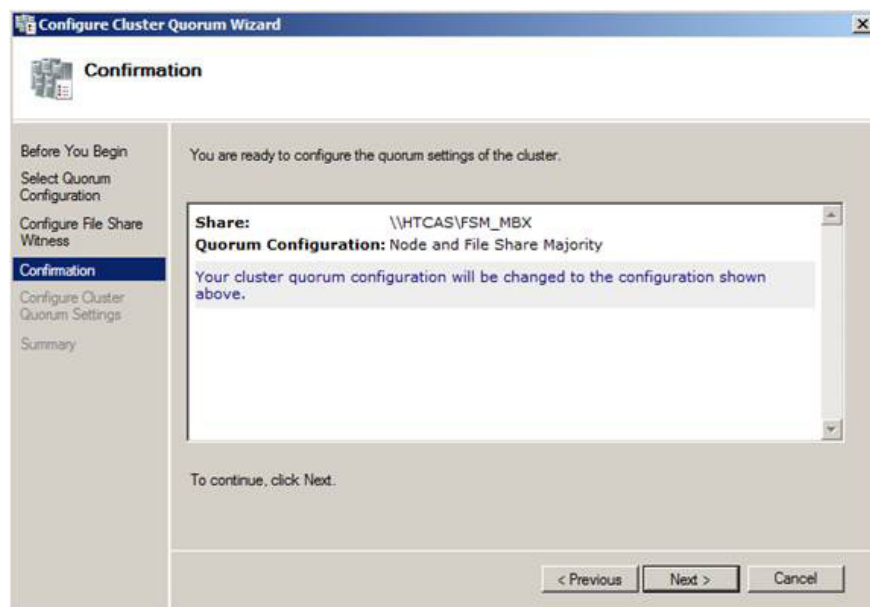


Figure 18: Confirmation page in Configure Cluster Quorum Wizard

Note :

You can also configure delegate settings with Cluster.exe. However, as I explained earlier, in this article we will use the new GUI failover cluster to show you how to do something with it.

As you can see in Figure 19, we have a Windows Server 2008 failover cluster waiting for Exchange 2007 SP1

binaries to be installed, but before installing Exchange 2007 we need to validate the failover cluster configuration.

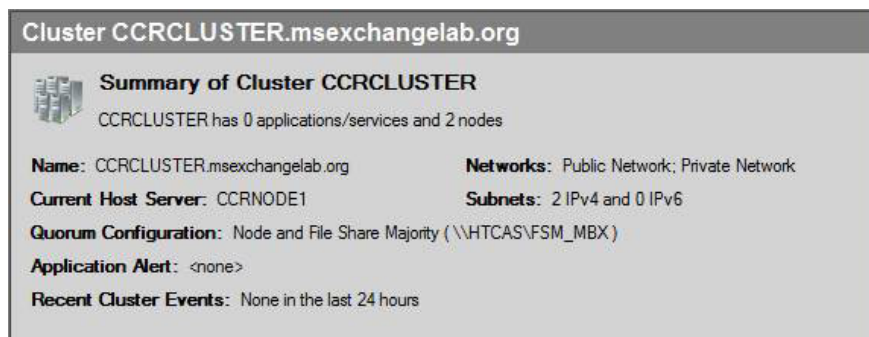


Figure 19: Failover cluster status

Validate the failover cluster configuration

In this series, we are dealing with several servers in a lab environment, but when deploying Windows Server 2008 Failover clusters in a production environment you need to ensure that the failover cluster needs to be properly validated by Use cluster validation utility. As mentioned, this step is not so important in the lab environment, but let you see how this utility is used to go through these steps.

To validate the failover cluster configuration, we need to click Validate a Configuration as shown in Figure 20.

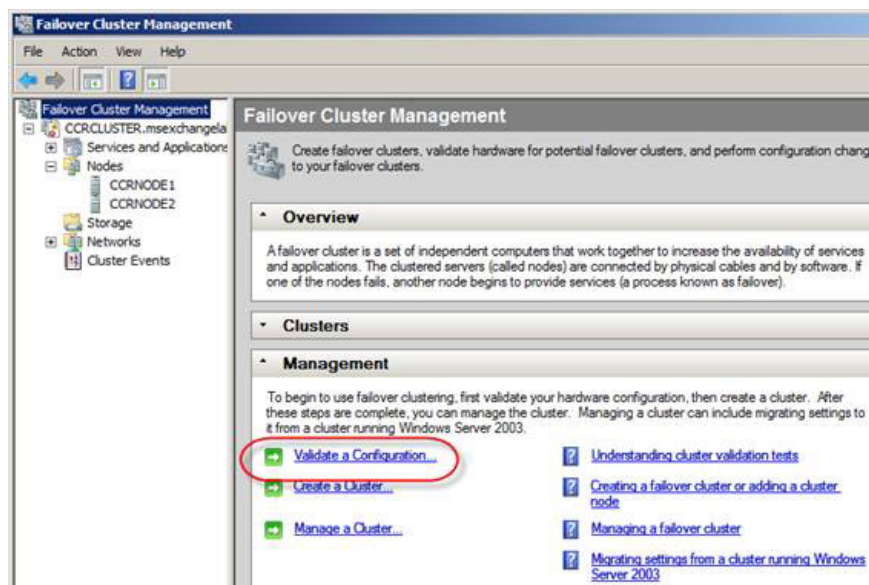


Figure 20: Click Validate a Configuration

On the Before You Begin page, click Next (Figure 21).

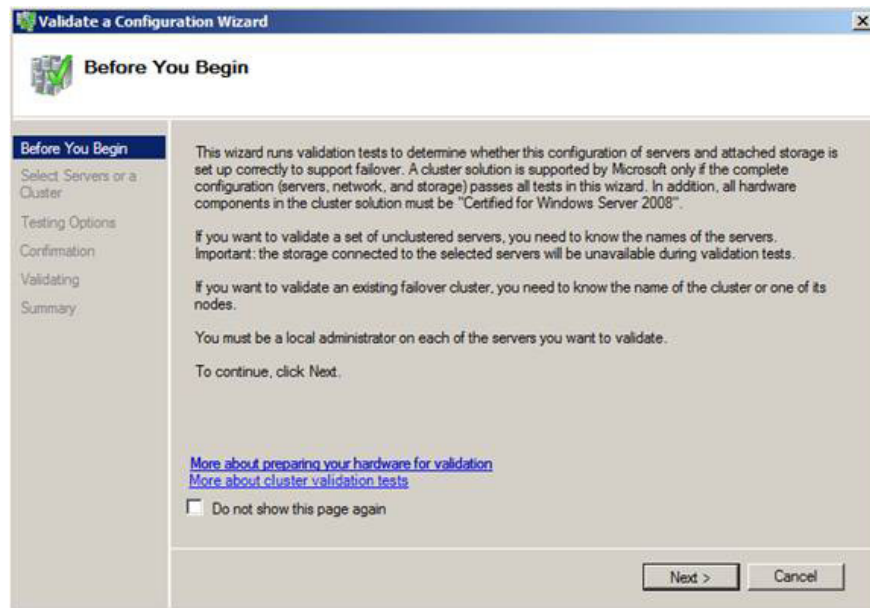


Figure 21: Before You Begin page in Validate a Configuration Wizard

To validate the set of servers in an existing failover cluster, you need to add the server name separately or type the name of the failover cluster itself. When you're done, click Next.

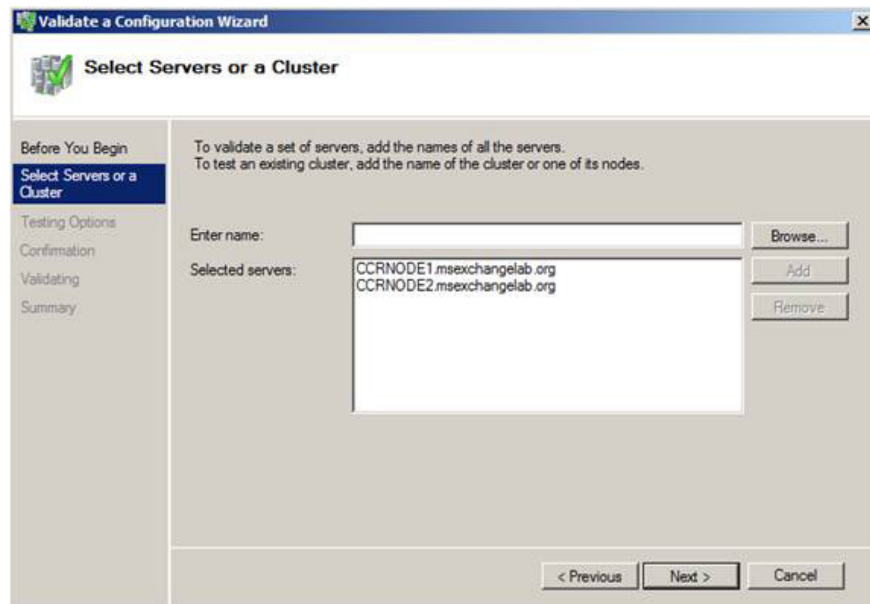


Figure 22: Enter the name of the cluster or the cluster nodes.

Now we have two different test options (Figure 23). For ease you should select the Run all tests option (recommended). When ready, click Next.

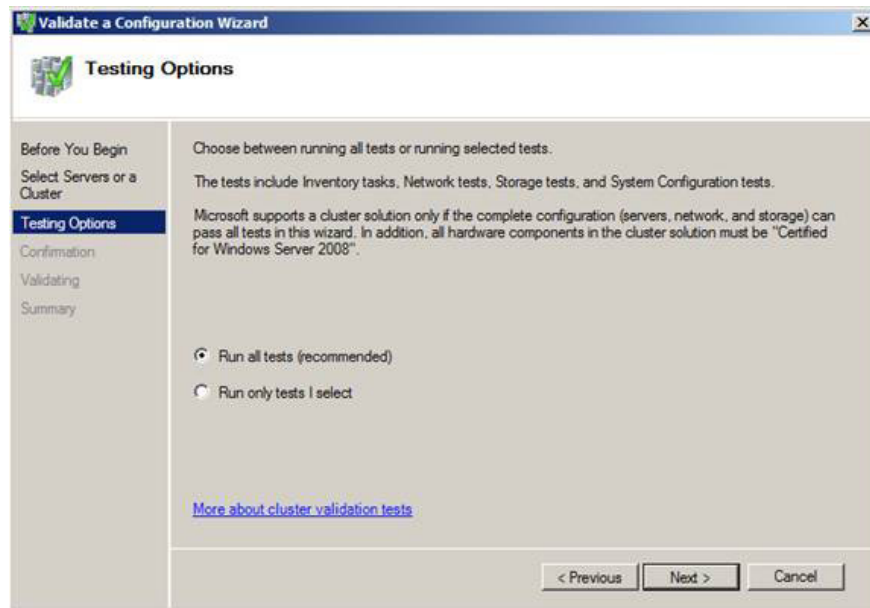


Figure 23: Select which test you want to run

We can start the failover cluster validation, to start this process, click Next (Figure 24).

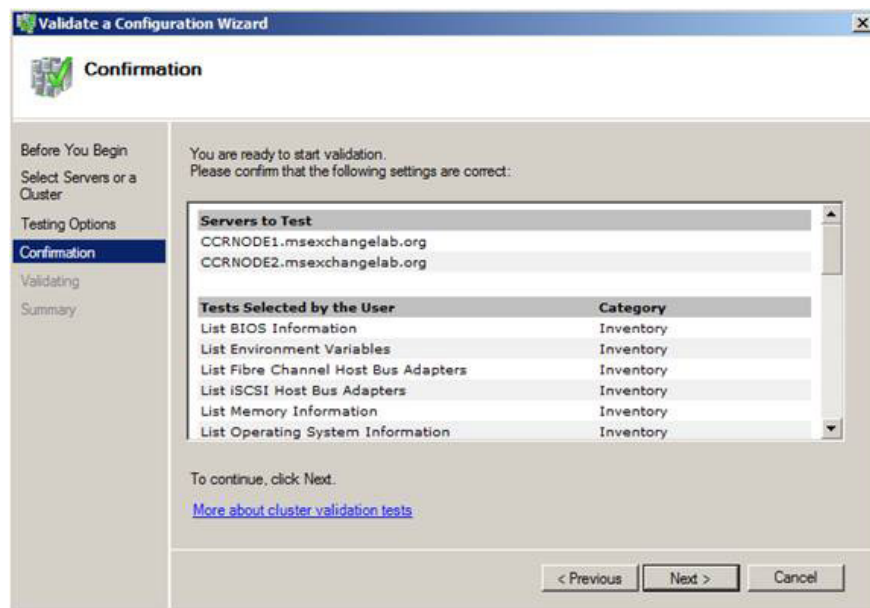


Figure 24: Validate page in Validate a Configuration Wizard

Validation utilities will go through several tests; Some tests may be long (Figure 25). Depending on the hardware specifications, you need to be patient when the configuration is validated because it can take several minutes at this time.

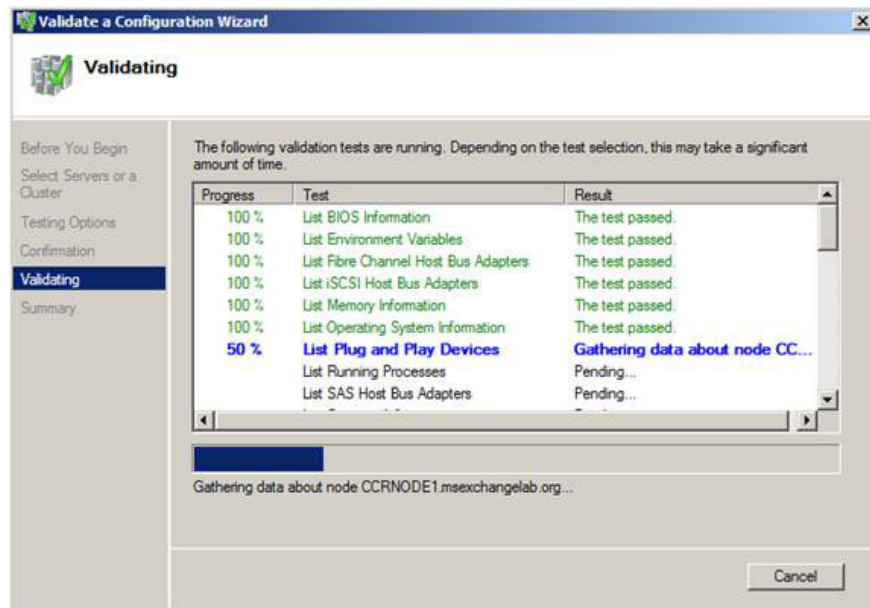


Figure 25: Running validated tests

Once all tests have been completed, you will be taken to the Summary page and here you can check any problems that have been detected.



Figure 26: Checking for detected problems while running the tests

In addition, you can view detailed reports (by clicking View Report). Note that this report has been saved, meaning you can choose to test it whenever you want.

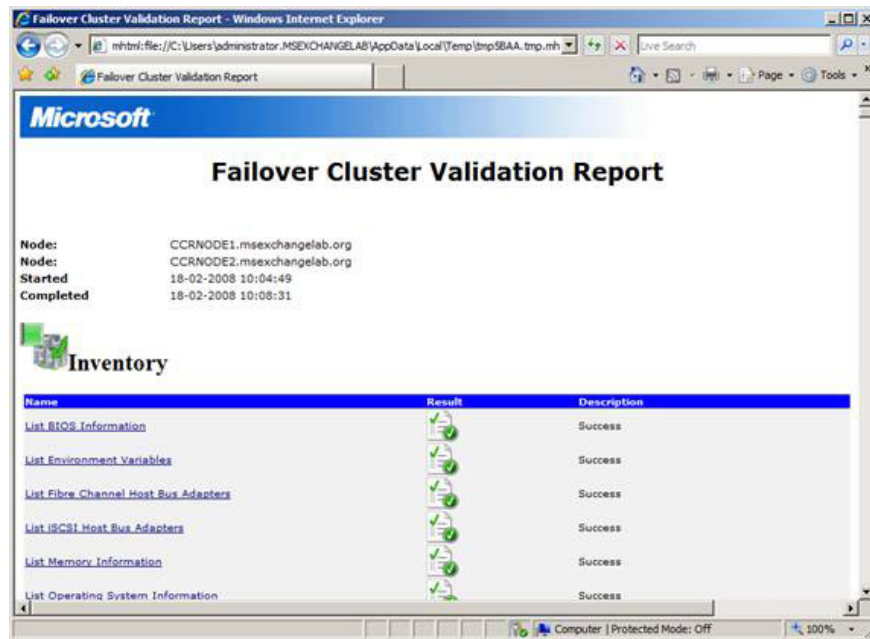


Figure 27: Failover cluster validation report

In Part 3 of this series, we will deploy the CCR-based clustered mailbox server (CMS) as well as test whether the CMS works as expected.

You finished reading the article "**Deploy CCR Cluster of Exchange 2007 SP1 on Windows Server 2008 Failover Cluster (Part 2)**" edited by the [TipsMake](#) team. We hope this article has provided you with many useful tech tips and tricks. You can search for similar articles on tips and guides. Thank you for reading and for following us regularly.