IPSWITCH
IMail Server™

Configuring Failover Clustering
with IMail Server

CHAPTER 1

IMail Server using Failover Clustering

In This Chapter

Overview

High Availability Failover Clustering is a system which allows a server to maintain as much uptime as possible while avoiding downtime due to maintenance or hardware failures. This can be achieved by utilizing Microsoft's Failover Cluster service in Windows Server 2008 which uses two or more identical servers in a cluster formation that switches services and IP addresses between the servers in the Failover Cluster.

Requirements

1 Active Directory

- Microsoft's Failover Cluster requires Active Directory. If an Active Directory server is not running on your network then one will be necessary to configure as part of this process.
- It is highly recommended that your Active Directory services are fault tolerant to prevent an Active Directory failure which will disrupt the failover cluster.

Note: Running Active Directory Services on one of the clustering nodes is not recommended.

2 Cluster Servers

- Two or more servers are needed to host each node of the failover cluster.
- Three Network Interface Cards for each server.

Note: Microsoft suggests using identical hardware on the nodes of the cluster as the Failover Cluster service is only available on Windows 2008 Enterprise or 2008 R2 Enterprise Server editions.

3 Microsoft SQL Server 2008

- Microsoft SQL Server to store collaboration data.

- It is highly recommended this server be fault tolerant to prevent a failure on the SQL Server that will bring down the IMail Services.

4 Network Storage

- Some type of Storage Area Network (SAN) is needed to hold the quorum disk for the cluster, and shared storage for IMail Server files, such as the spool, logs, and user mailbox storage.
- The quorum disk and IMail Server storage must be located on separate volumes.

  See Microsoft's recommendations: http://technet.microsoft.com/en-us/library/cc770620%28v=ws.10%29.aspx#BKMK_requirements.

Important: It is highly recommended that your network storage be fault tolerant.

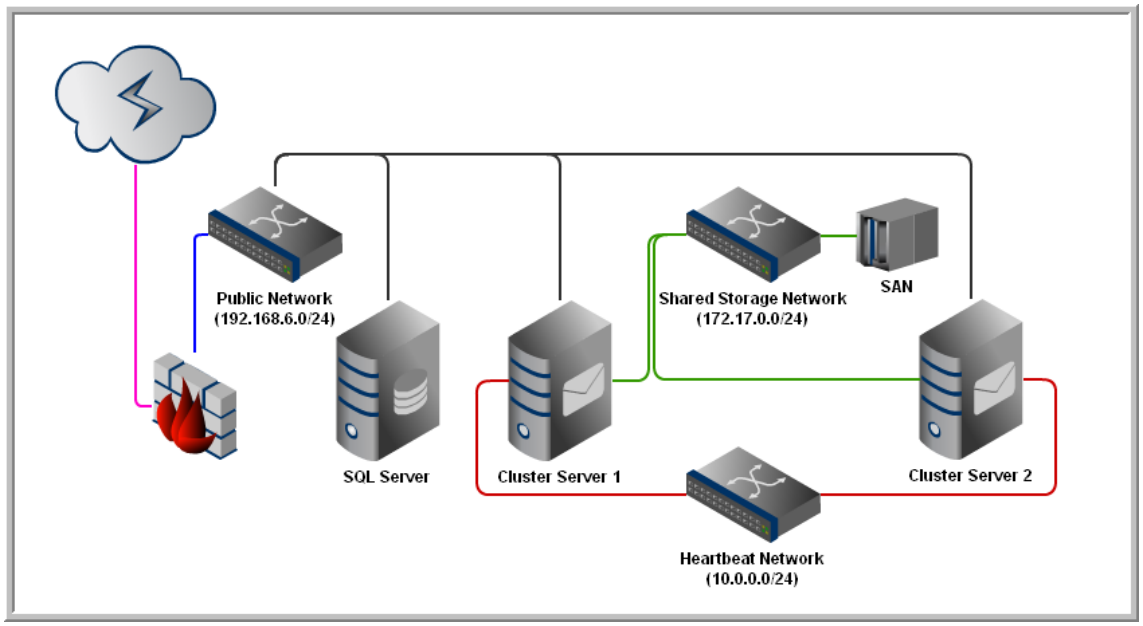
5 Three Separate IP Networks to utilize the three required network cards.

- **Public** handles normal network traffic and email traffic on your publicly available network or DMZ.
- **Shared Storage** for shared remote storage traffic to and from the active failover node and the SAN.
- **Heartbeat** handles node-to-node communication in the cluster.

a) This must be on its own uninterrupted network.

b) The simplest configuration of the heartbeat network is to use a crossover cable between the two servers and use a local, non-routable IP range (10.0.0.0 for example).

Network Diagram (IP addresses shown are for example)



CHAPTER 2

IIS

Installing Roles and Features

- Configure each node in the failover cluster with the roles and features listed in this section.
- Each node must have the same features and updates installed to avoid possible cluster verification reporting errors.

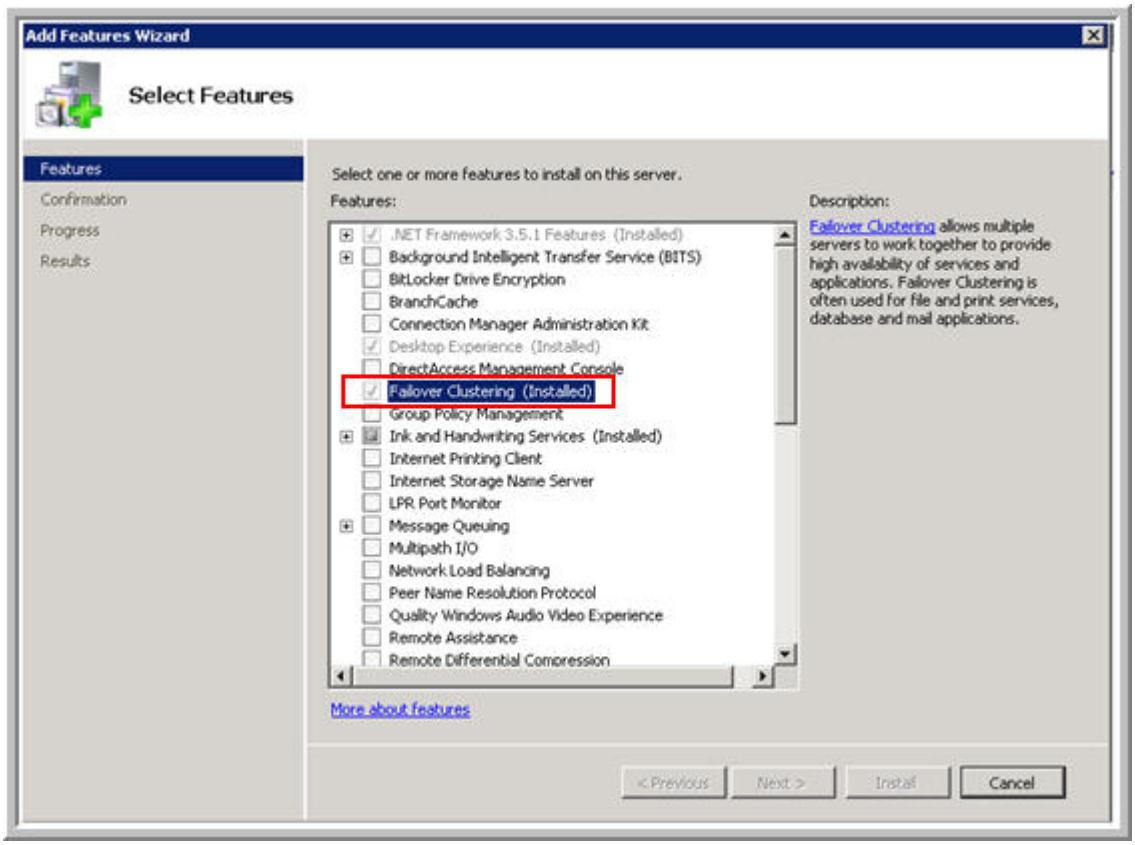
Tip: If machines are cloned, do not add the Failover Cluster feature until the machines have been individually set up, to avoid the cluster configuration from failing.

Note: These steps assume a new installation of Windows Server; if the roles or features are already installed then just verify they are installed as outlined below.

Step 1. Install the Web-Server (IIS) role with the following features installed.

Role Service	Status
Web Server	Installed
Common HTTP Features	Installed
Static Content	Installed
Default Document	Installed
Directory Browsing	Installed
HTTP Errors	Installed
HTTP Redirection	Installed
WebDAV Publishing	Not installed
Application Development	Installed
ASP.NET	Installed
.NET Extensibility	Installed
ASP	Not installed
CGI	Not installed
ISAPI Extensions	Installed
ISAPI Filters	Installed
Server Side Includes	Not installed
Health and Diagnostics	Installed
HTTP Logging	Installed
Logging Tools	Installed
Request Monitor	Installed
Tracing	Installed
Custom Logging	Not installed
ODBC Logging	Not installed
Security	Installed
Basic Authentication	Installed
Windows Authentication	Installed
Digest Authentication	Installed
Client Certificate Mapping Authentication	Installed
IIS Client Certificate Mapping Authentication	Installed
URL Authorization	Installed
Request Filtering	Installed
IP and Domain Restrictions	Installed
Performance	Installed
Static Content Compression	Installed
Dynamic Content Compression	Installed
Management Tools	Installed
IIS Management Console	Installed
IIS Management Scripts and Tools	Installed
Management Service	Installed
IIS 6 Management Compatibility	Not installed
IIS 6 Metabase Compatibility	Not installed
IIS 6 WMI Compatibility	Not installed
IIS 6 Scripting Tools	Not installed
IIS 6 Management Console	Not installed

Step 2. Install the Failover Clustering Feature.



Step 3. Download and Install .Net 4 Framework Extended.

See the following link:

.Net 4 Framework Link (*http://www.microsoft.com/download/en/details.aspx?id=17718*).

Step 4. Download and install all service packs and critical/important updates.

CHAPTER 3

Configuring Storage Area Network

In This Chapter

Requirements

Note: Due to all the many possible technologies which can be used for cluster storage, the following specifications will be configuring the cluster storage using an iSCSI target. For all other setups please refer to the documentation for all other solutions.

Two volumes are needed:

- One for the Quorum Cluster Disk and the
- Second for IMail Mailboxes and Log files.

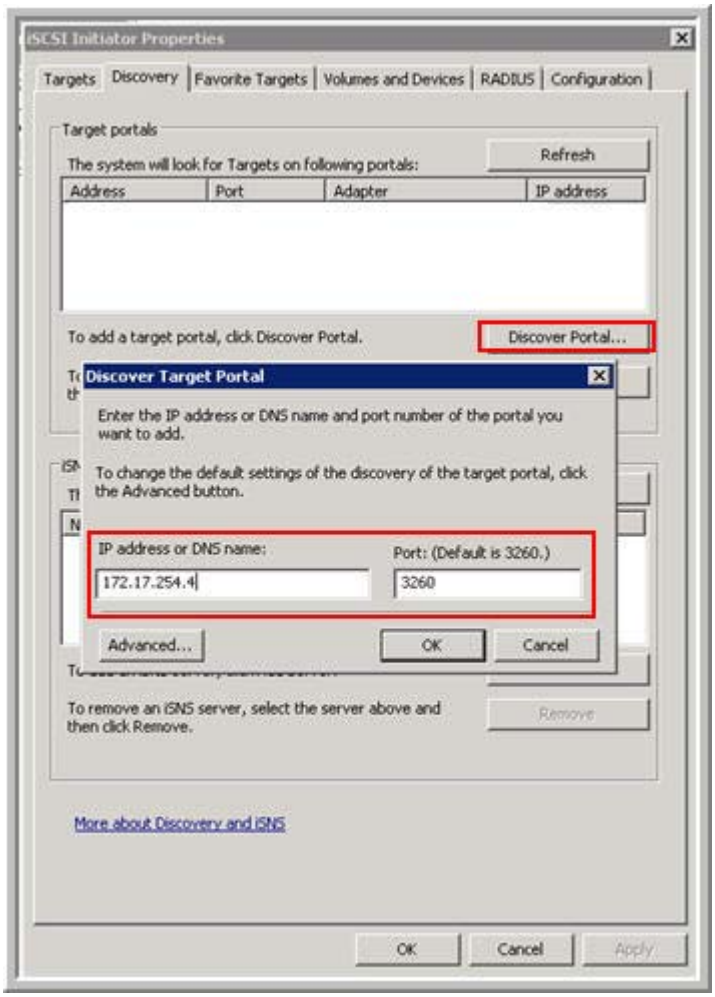
Recommended size for the Quorum Disk is 5GB. Choose an appropriate size based on your needs for the volume that will store the mailboxes and log files.

Connecting iSCSI Targets to Operating System

Configure each node in the failover cluster with the steps shown in this section.

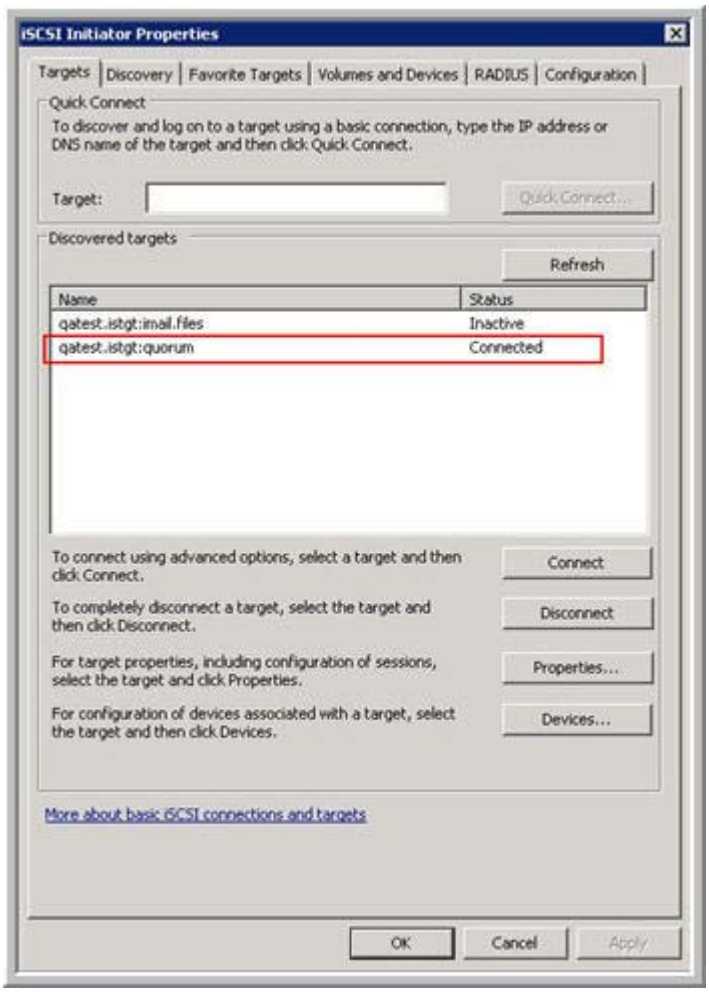
Step 5. Open the `"iSCSI initiator"`, located under `"Administrative Tools"`.

Step 6. Go to the **"Discovery"** tab and click on **"Discover Portal"**.



Step 7. Enter the IP address or DNS name of the iSCSI SAN and the port to be used, and click **"OK"**.

Step 8. Click on the **"Targets"** tab, select the target that will host the Quorum disk and click connect.

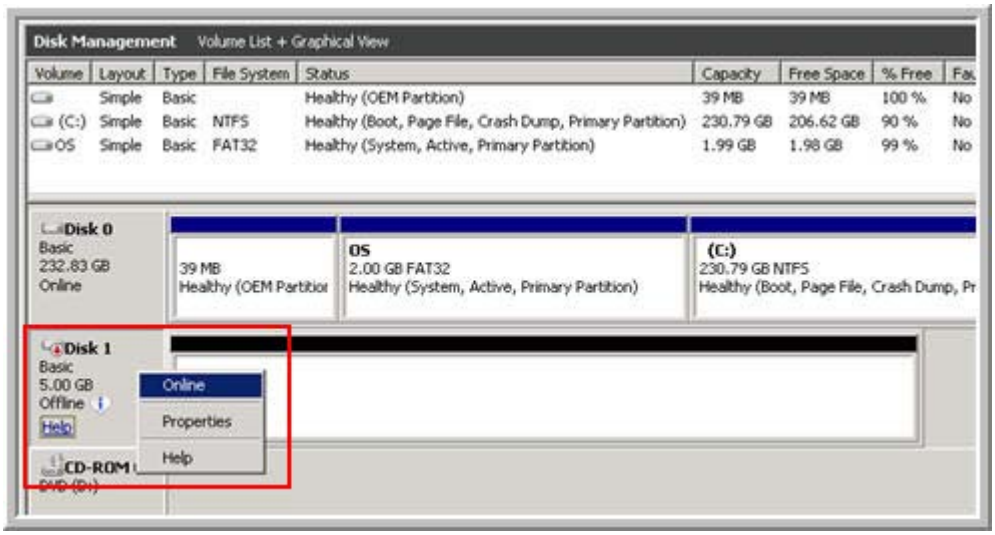


Tip: Leave this window open, as at a later point you will need to connect the target for the IMail Server Files.

Note: Only connect to the target for the Quorum disk at this point. Connecting to both the Quorum and the Drive for IMail Files, the Custer configuration may incorrectly choose the wrong target as the Quorum disk.

Important: Steps 9 and 10 must be performed on the first cluster node only. Skip these steps for the remaining cluster nodes.

Step 9. Open Disk Management and bring the new drive online.



Step 10. Now format the disk:

- No Drive Letter or Path
- Use NTFS
- Set `"Quorum"` as the volume label.

Step 11. Make sure to repeat steps 1 through 4 on the remaining cluster nodes.

CHAPTER 4

SQL Server Database

In This Chapter

The IMail Collaboration database should be located on an external SQL Server that is a member of same Active Directory Domain as the Failover Servers. This is very important for permissions between the servers to work correctly.

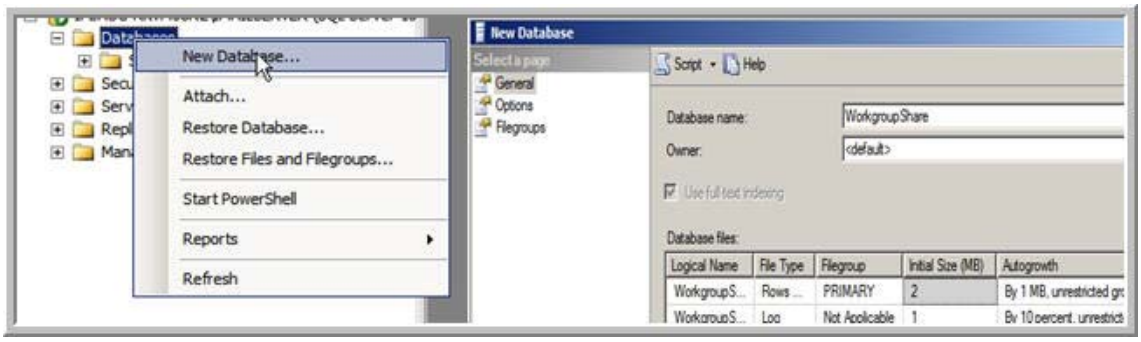
Creating SQL Server Database

The IMail Collaboration database must be located on an external SQL Server that is a member of the same Active Directory Domain as the Failover Servers. This is very important for permissions between the servers to work correctly.

Note: Be sure to log in to the server as an Administrator on the domain.

In the SQL Server Management Studio:

Step 12. Create a blank database with the name WorkgroupShare.

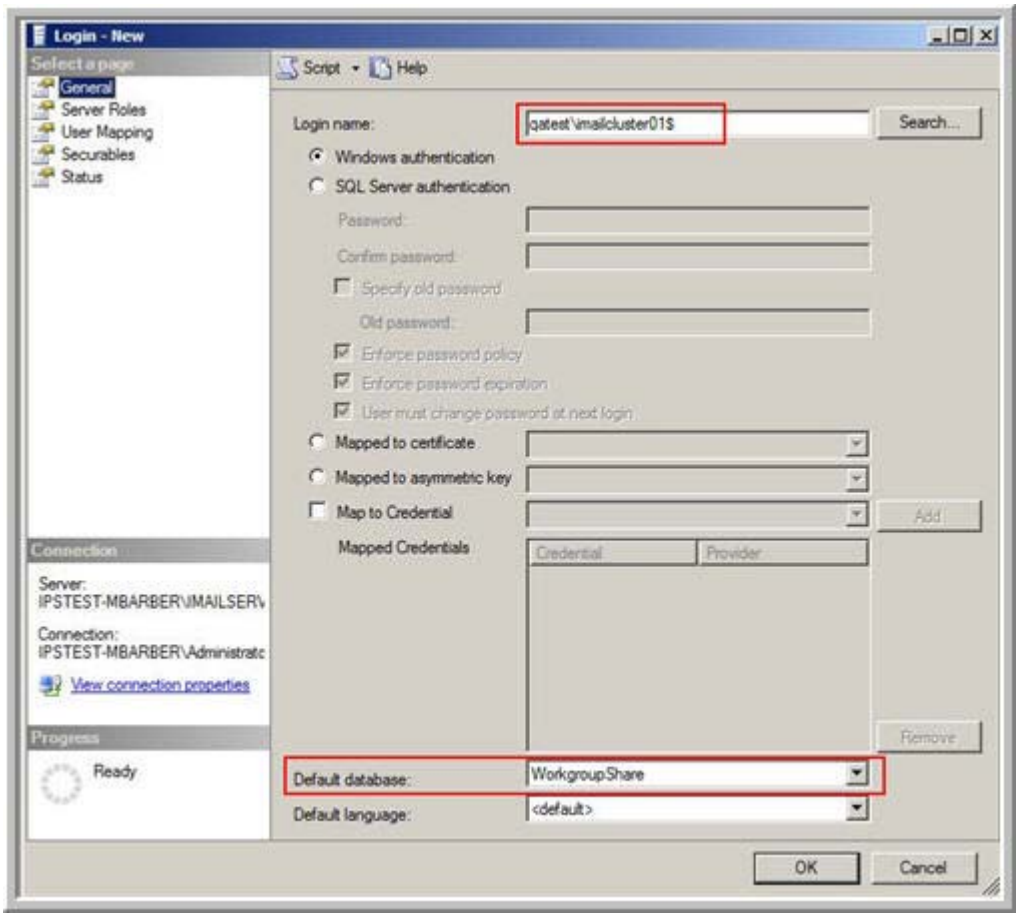


Setting Security Logins

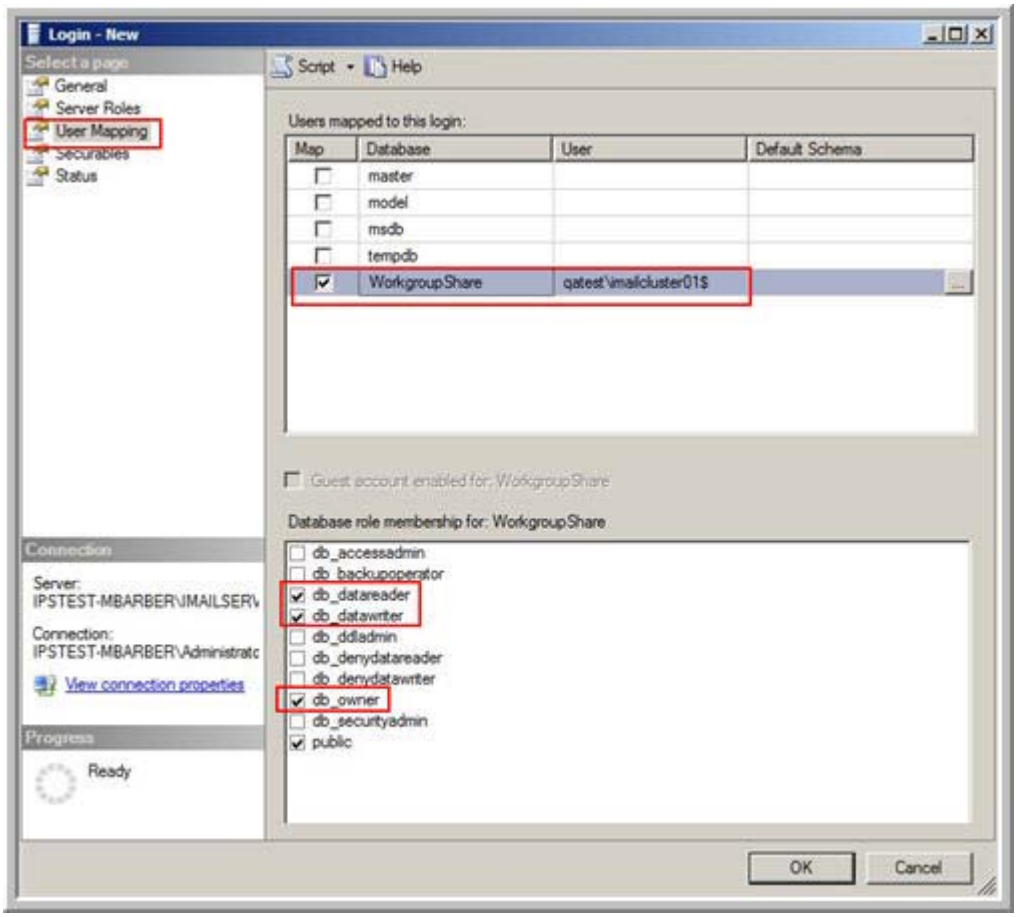
For each node in the cluster configuration repeat these steps

Step 13. Right Click on Logins under Security and select New Login…

Step 14. Enter the account name using the format of `"ADDomain\MachineName$"` in the Server Security Logins. Set the default database to WorkgroupShare.



Step 15. Select "User Mapping" group and check WorkgroupShare. Select the following database roles: "db_datareader", "db_datawriter", and "db_owner".



Step 16. Click "OK" and continue on to the next user for the remaining cluster nodes.

Step 17. When all machine accounts have been added, close SQL Server management and continue on to the next section.

CHAPTER 5

IMail Server

IMail Server will need to be installed on each node of the cluster and configured identically.

Installation and Configuration

Note: Make sure you are logged in to the node as a Administrator on the domain.

Step 18. On the Installation Directory dialog install IMail Server to the same directory on each node. Do **not** install IMail Server to the shared drive.

Step 19. On the Database Selection dialog `"Use Existing Local SQL Server"` option and point it to the SQL Server configured in the previous steps using Windows Authentication.

Note: The Install dialogs indicate this should be a local SQL server. Due to the configuration steps performed earlier, this can ignore this.

Step 20. `"Setup Type"` must be identical on each node.

Tip: If `"Custom"` is chosen, the features installed must be identical on each node.

Step 21. Make sure the IIS Web Site selected is configured identically on each node.

Step 22. Upon completion of installing IMail Server move on to the next node and repeat.

CHAPTER 6

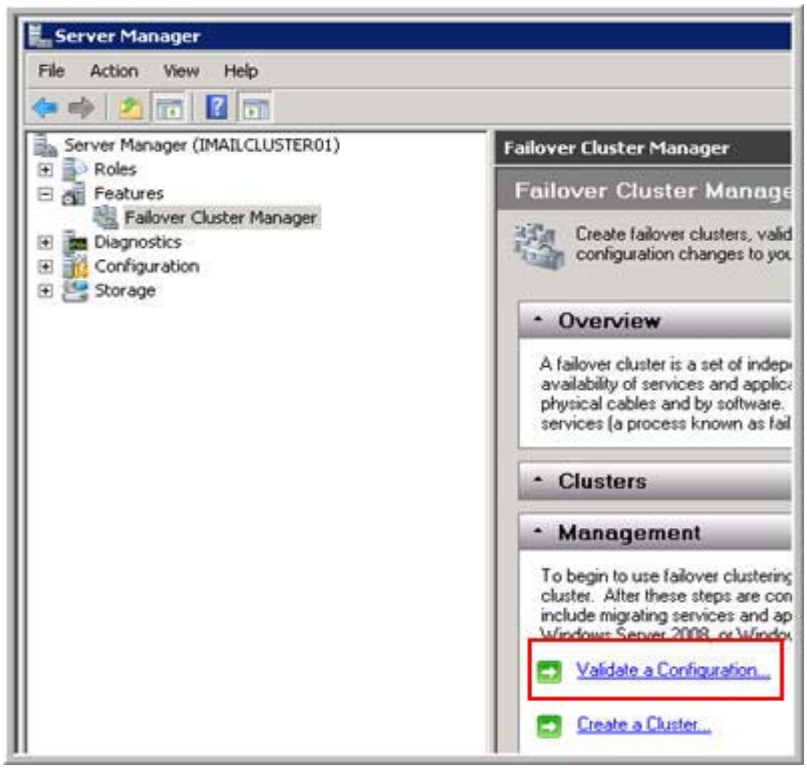
Failover Cluster

In This Chapter

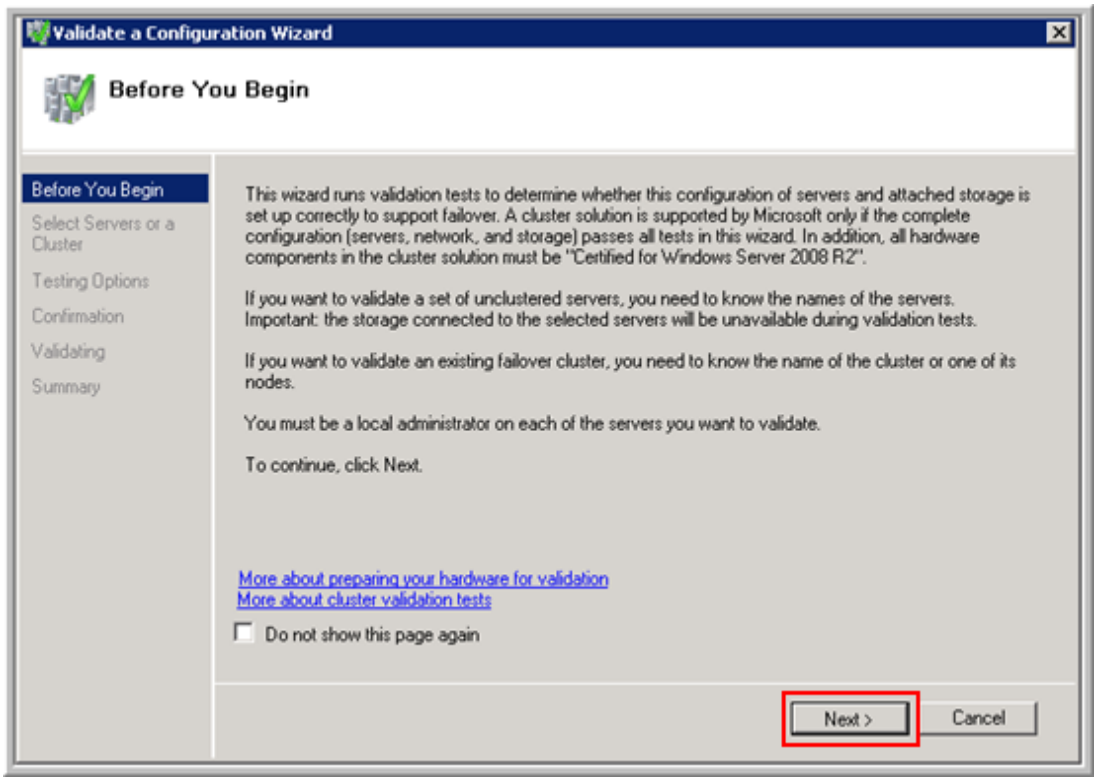
Creating the Failover Cluster

Important: The following section should only be performed on **one** of the Cluster Nodes.

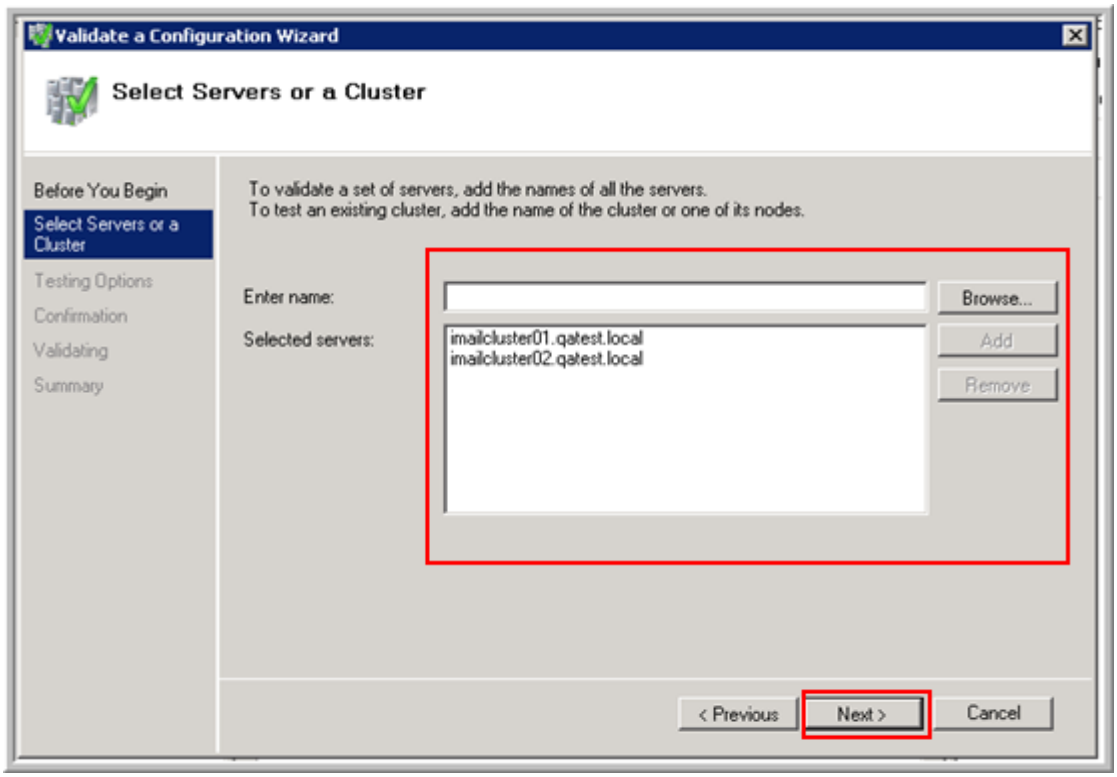
Step 23. Open the **Server Manager** and under **Features > Failover Cluster Manager** click "Validate a Configuration...".



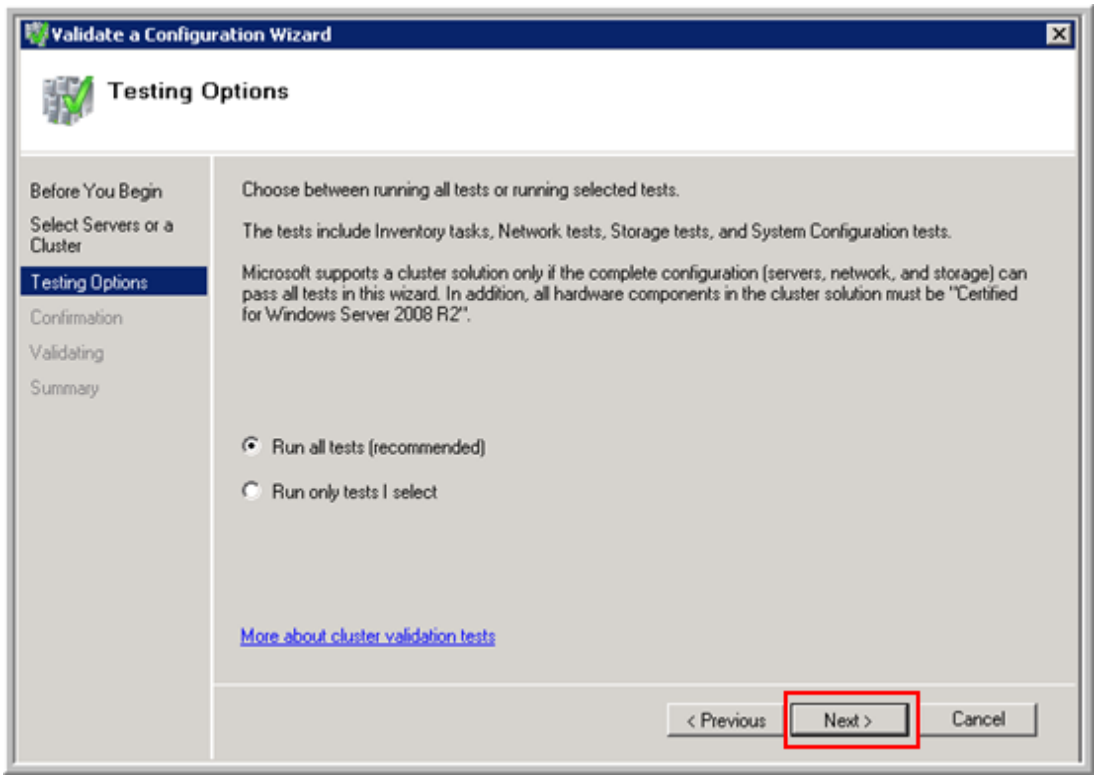
Step 24. Review the information on the **'Before You Begin'** dialog before clicking **Next.**



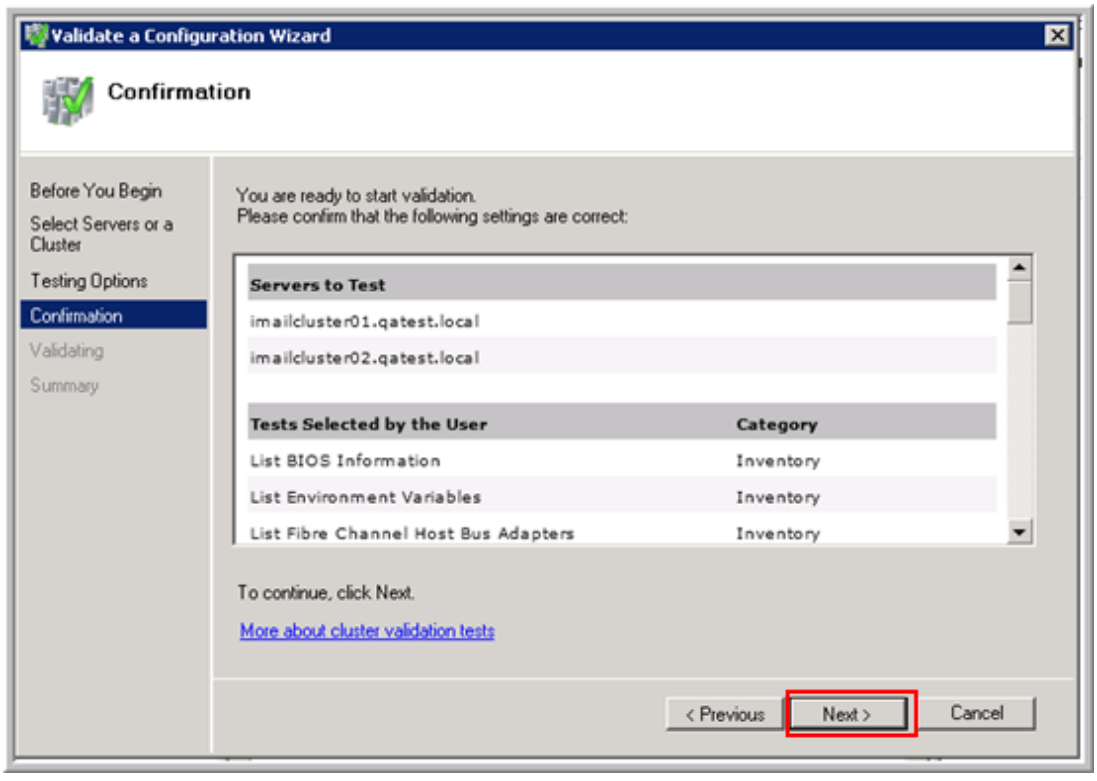
Step 25. Specify all the servers that will be a part of the failover cluster and click **"Next".**



Step 26. Testing Options dialog, click **"Next".**



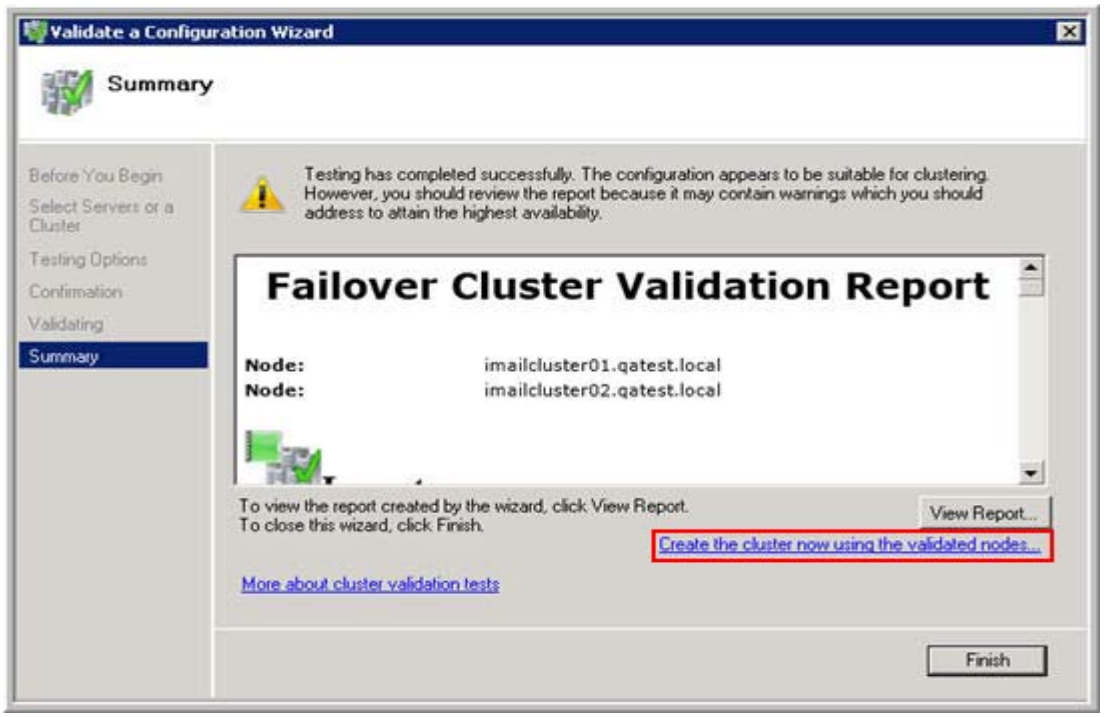
Step 27. Review the information on the Confirmation dialog and click **"Next".**



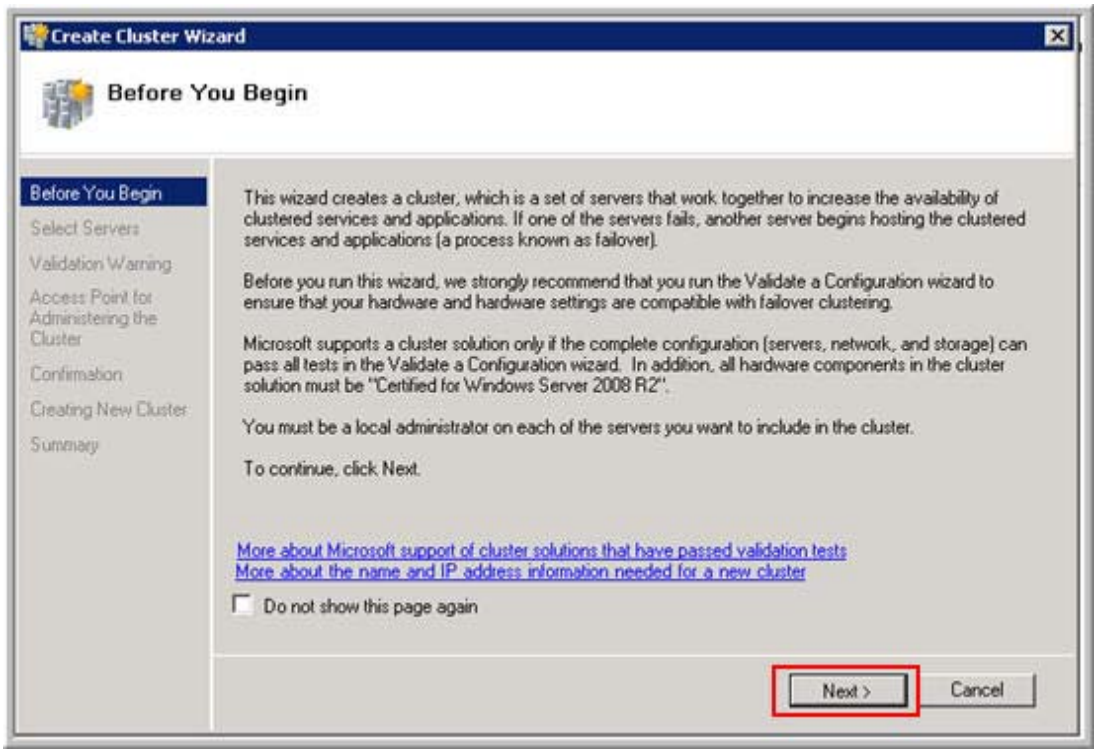
Step 28. The validation process will begin and take several minutes to complete.

Step 29. Review the **Failover Cluster Validation Report** and correct any issues found. Repeating the validation steps if necessary.

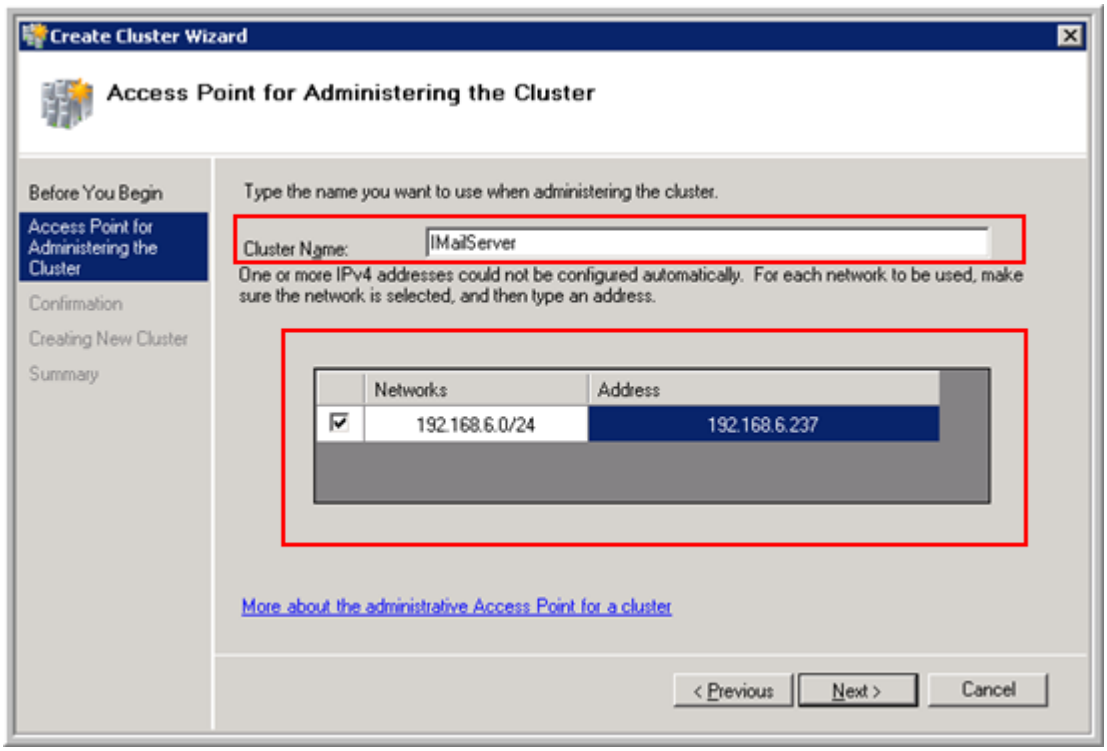
Step 30. Once all validation steps have passed, click **"Create the cluster now using the validated nodes…"**.



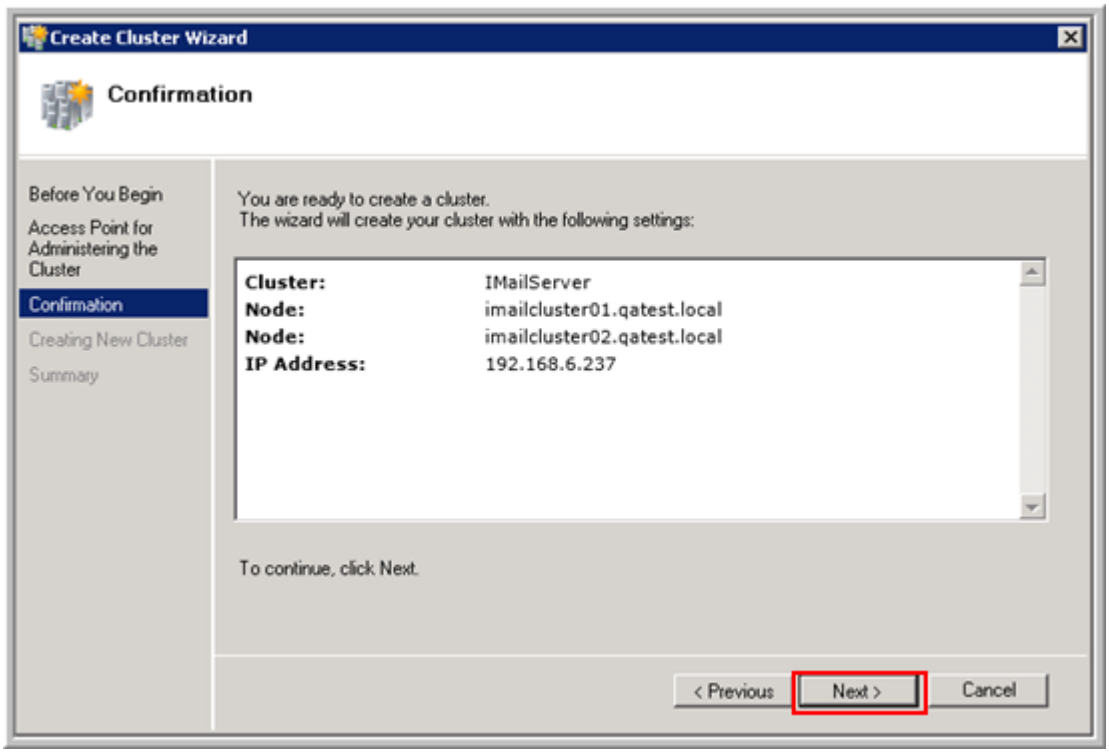
Step 31. Review the information on the **Before You Begin** dialog and click **"Next"**.



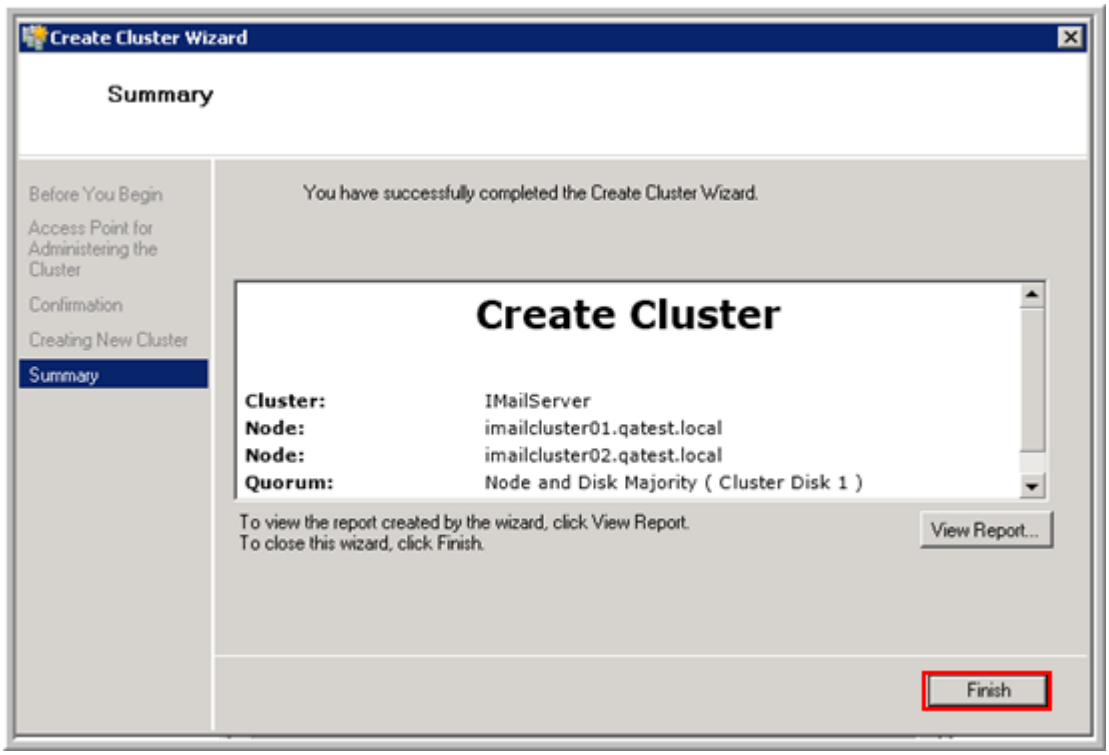
Step 32. Specify a **Cluster Name** and **IP address** to create an Access Point for administering the Cluster.



Step 33. Verify the information displayed in the **Confirmation** dialog and click **"Next"**.



Step 34. Review the information before clicking **"Finish"** to create the Cluster.



Shared Storage

Shared Storage - Connect the target for IMail Server Files

Now that the cluster is created, connection to the iSCSI target can be made for the IMail Server files.

Step 35. Refer to **Step 8** and connect the target for IMail Server Files on each node in the cluster.

Note: Be sure this is completed for **ALL** nodes in the cluster.

Step 36. Refer to **Step 9** and **10** and bring the specified disk online to format.

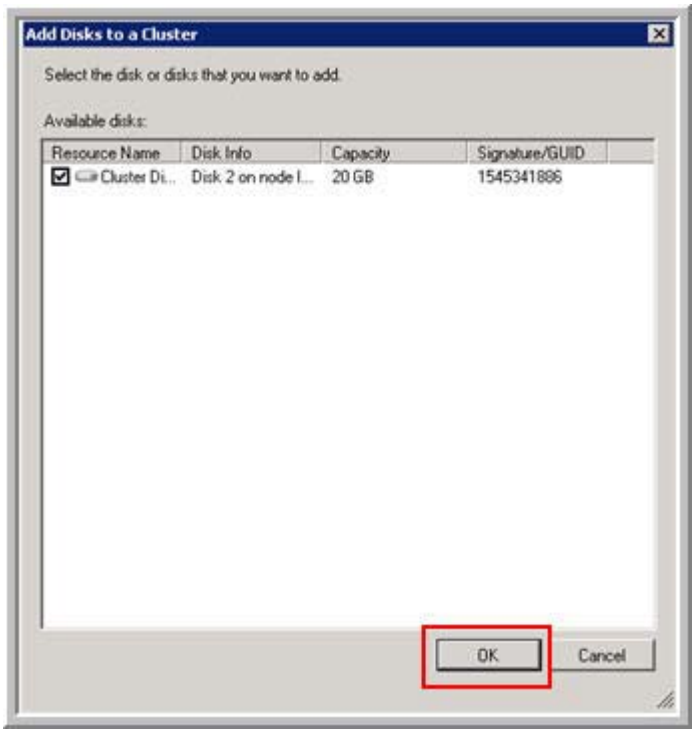
Warning: Be sure this is only done on **ONE** node in the cluster.

Assign any drive letter to the disk. However, all subsequent steps in this document will reference this drive as the **"I:\ Drive"**.

Cluster Management - Add the new disk to the Cluster

Step 37. Go back to the **Failover Cluster Manager**, "right click" on **"Storage"** under the Cluster created and select **"Add a disk"**.

Step 38. Make sure the new drive is selected in the list and click **"OK"**.

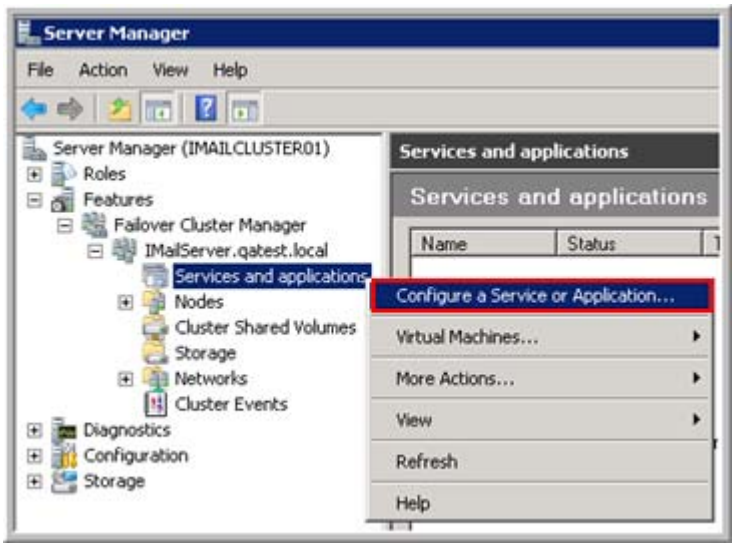


Note: If any errors are encountered during this process, double check the **"iSCSI Initiator Properties"** window and verify all nodes have the new target connected.

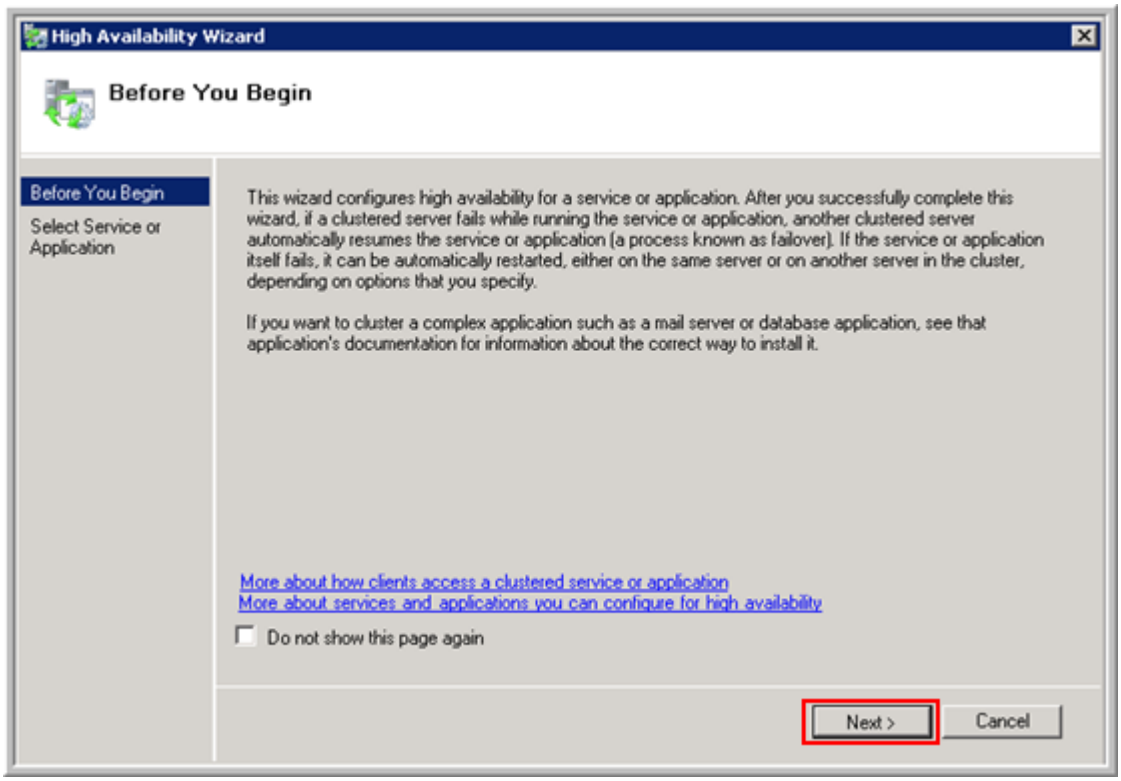
Creating Failover Service

Cluster Service Creation

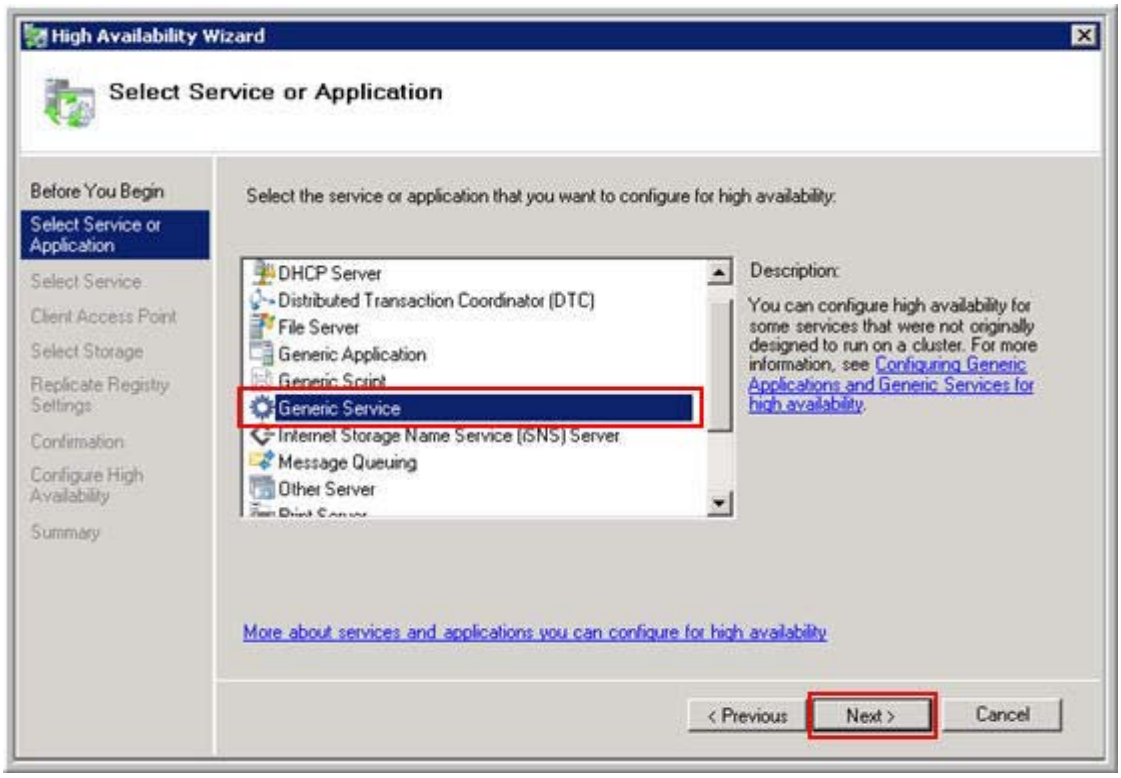
Step 39. Right click on **"Services and applications"** and click **"Configure a Service or Application..."**.



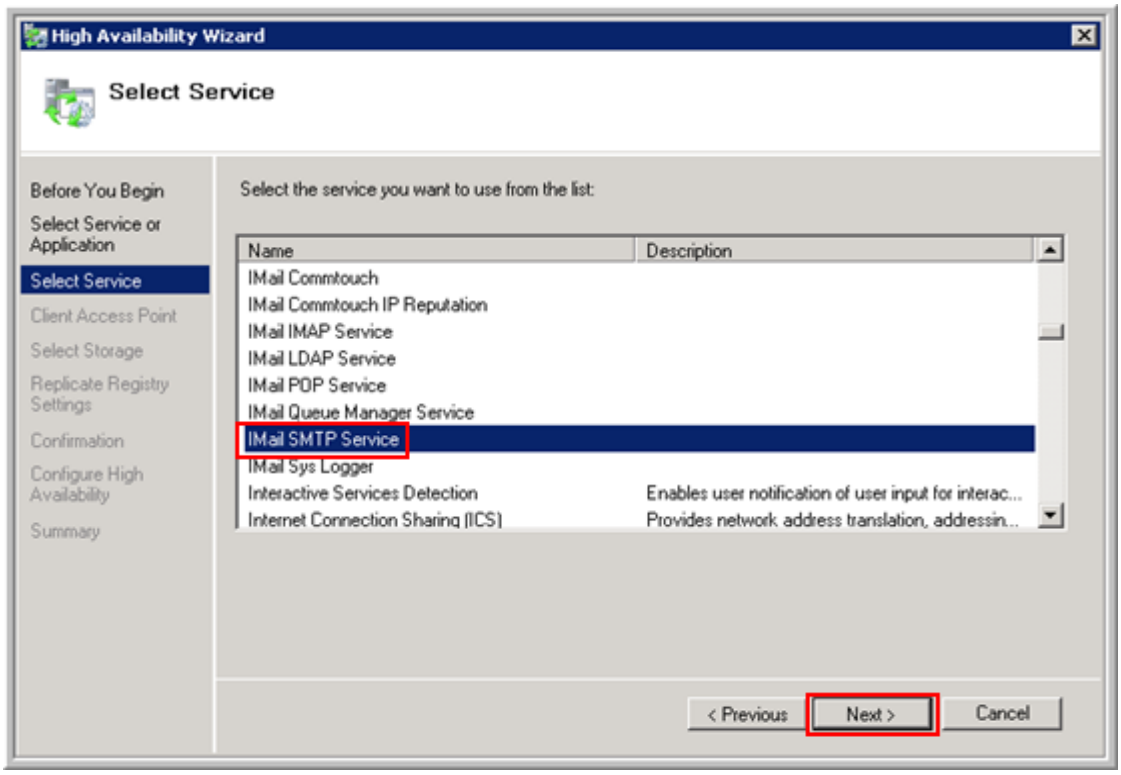
Step 40. Review the information displayed on the **Before You Begin** dialog and click **"Next"**.



Step 41. Select **Generic Service** and click **"Next"**.

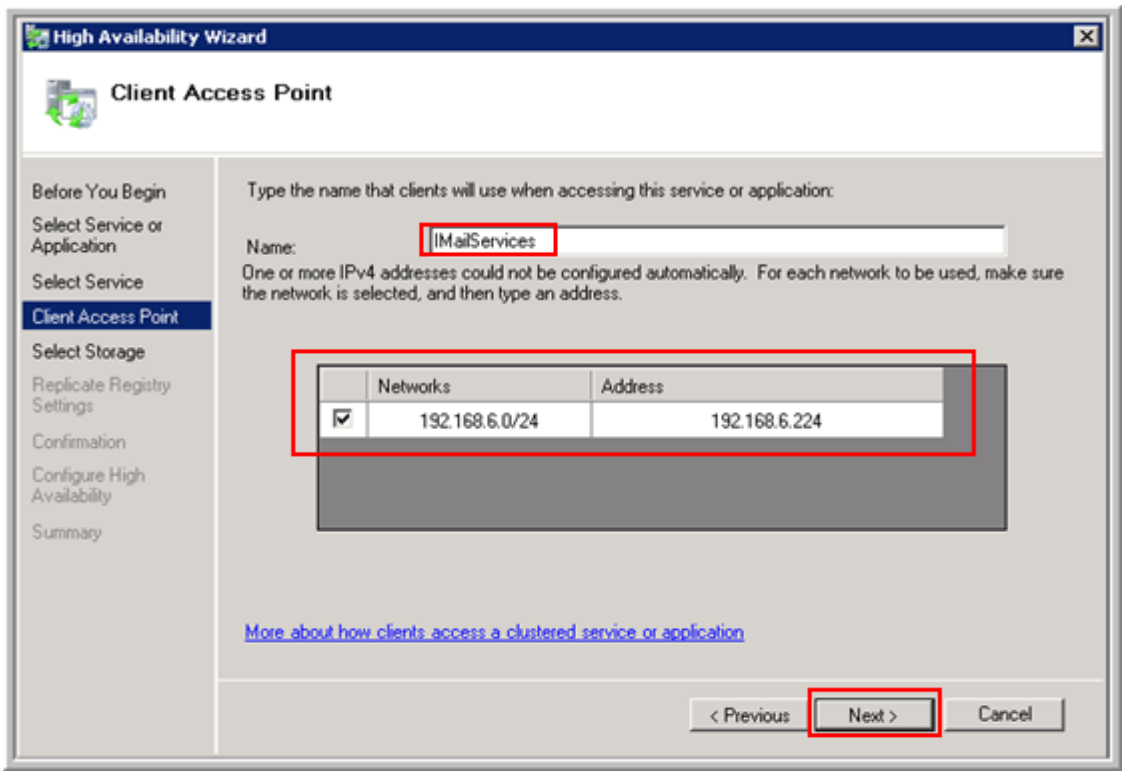


Step 42. Select the **IMail SMTP Service** and click **"Next"**.

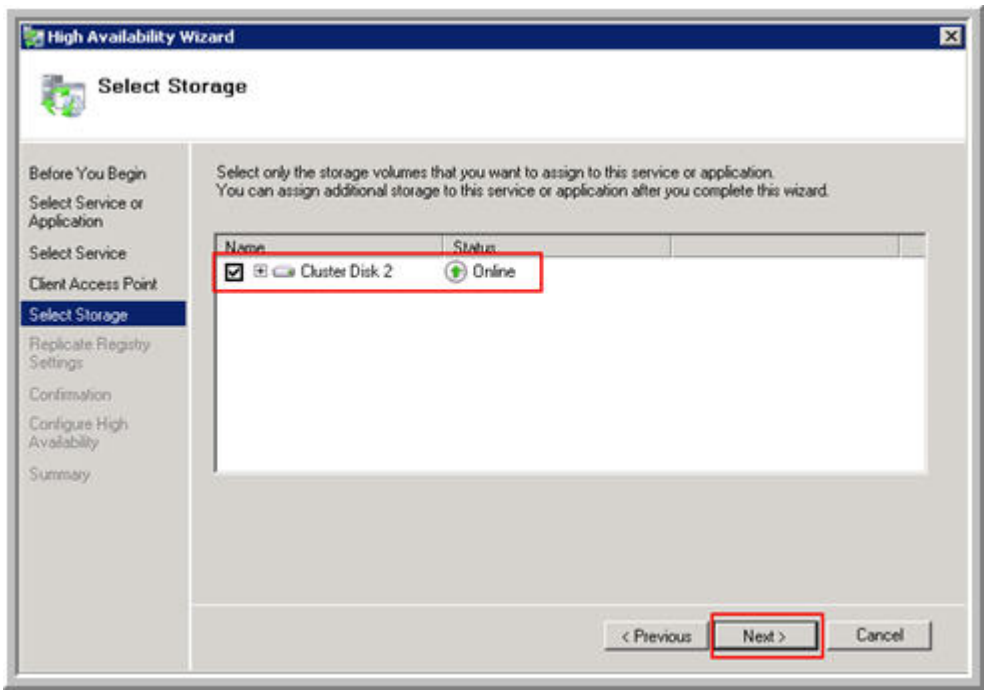


Step 43. Enter a **Name** and **IP Address** for the **IMailServices** Failover Cluster.

Note: This IP address must to be specified for your MX records (including all Clients) to access all E-Mail services in DNS.

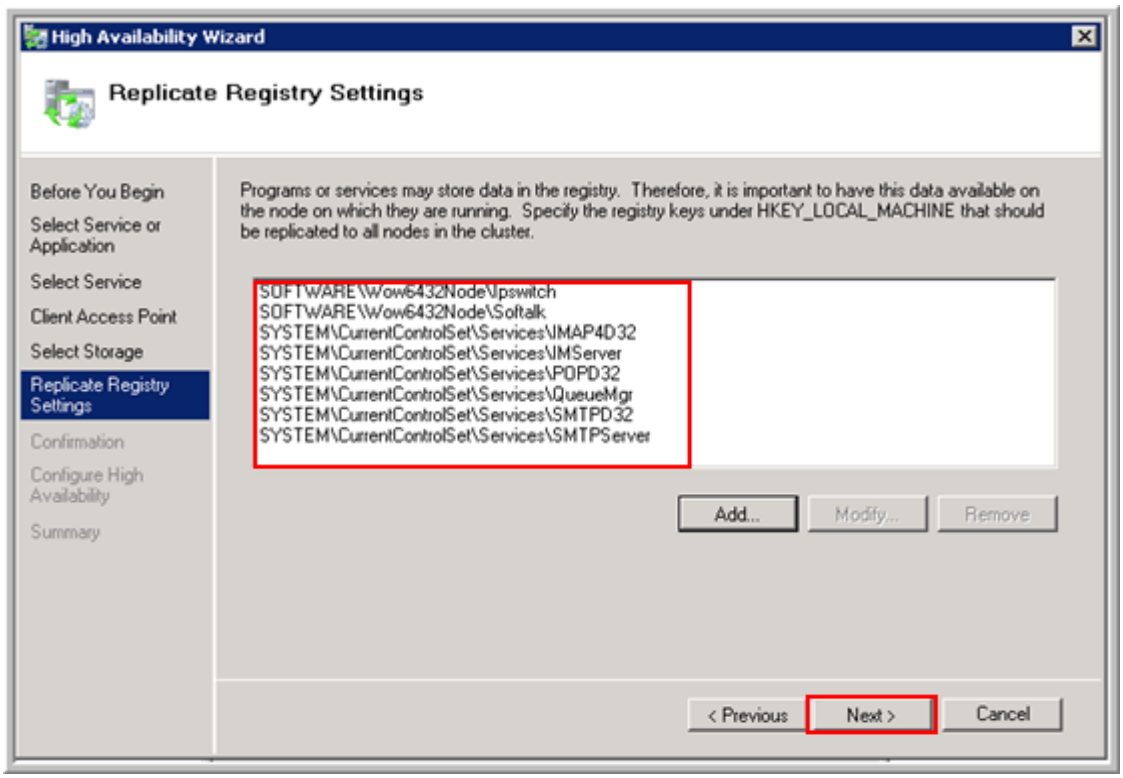


Step 44. Select the disk for **IMail Server Files** and click **"Next"**.



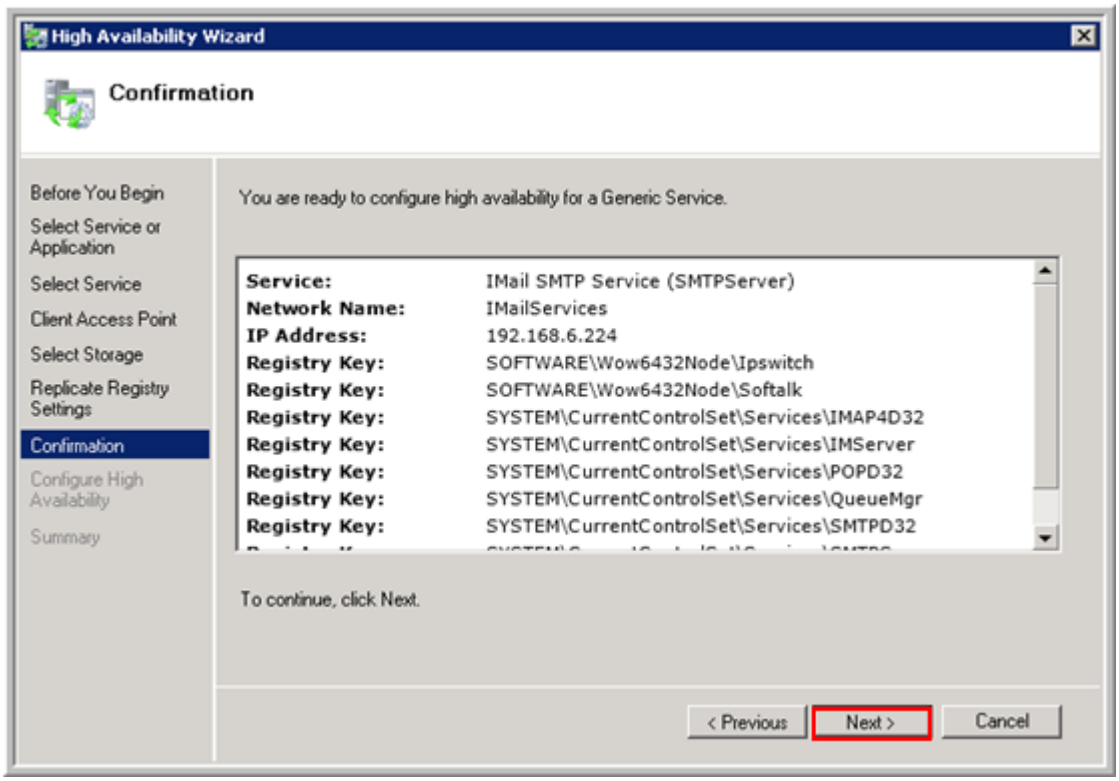
Step 45. Add the following registry keys to **Registry Replication List** and click **"Next"**.

```
SOFTWARE\Wow6432Node\Ipswitch
SOFTWARE\Wow6432Node\Softalk
SYSTEM\CurrentControlSet\Services\IMAP4D32
SYSTEM\CurrentControlSet\Services\IMServer
SYSTEM\CurrentControlSet\Services\POPD32
SYSTEM\CurrentControlSet\Services\QueueMgr
SYSTEM\CurrentControlSet\Services\SMTPD32
SYSTEM\CurrentControlSet\Services\SMTPServer
```

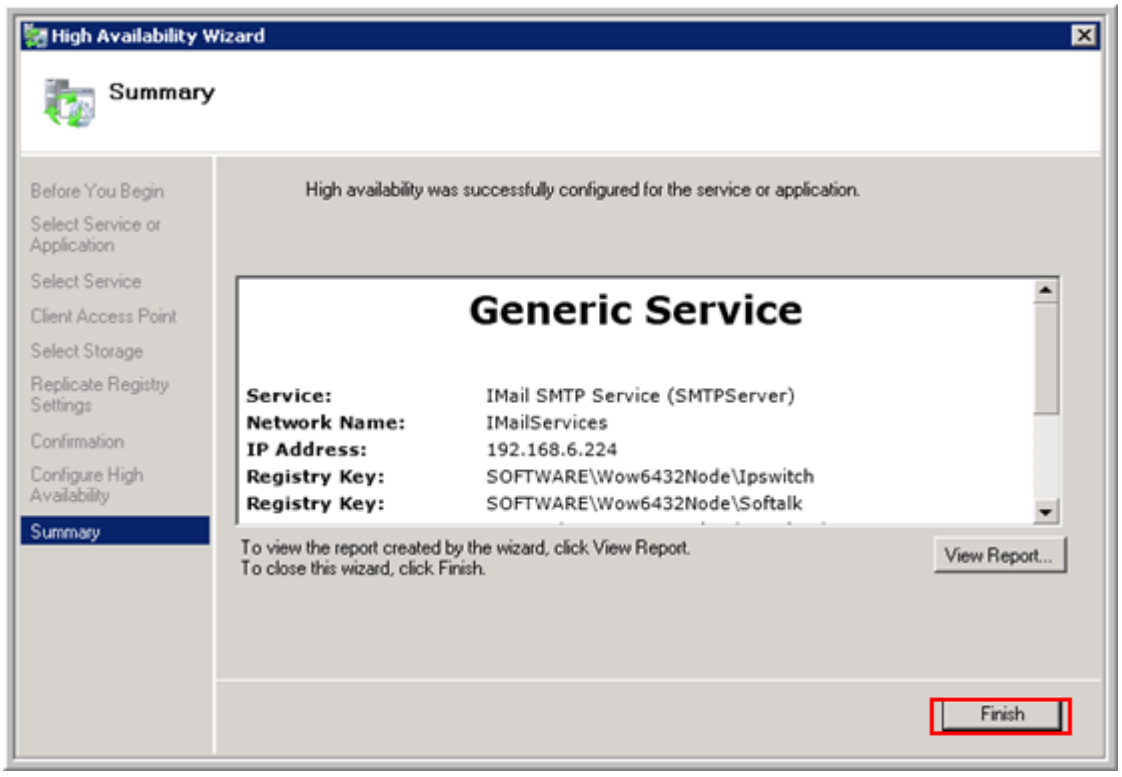


Note: When configuring on 32 bit hardware, remove the `"Wow6432Node"` registry key paths specified above.

Step 46. Review the settings in the **Confirmation Dialog** and click **"Next"**.

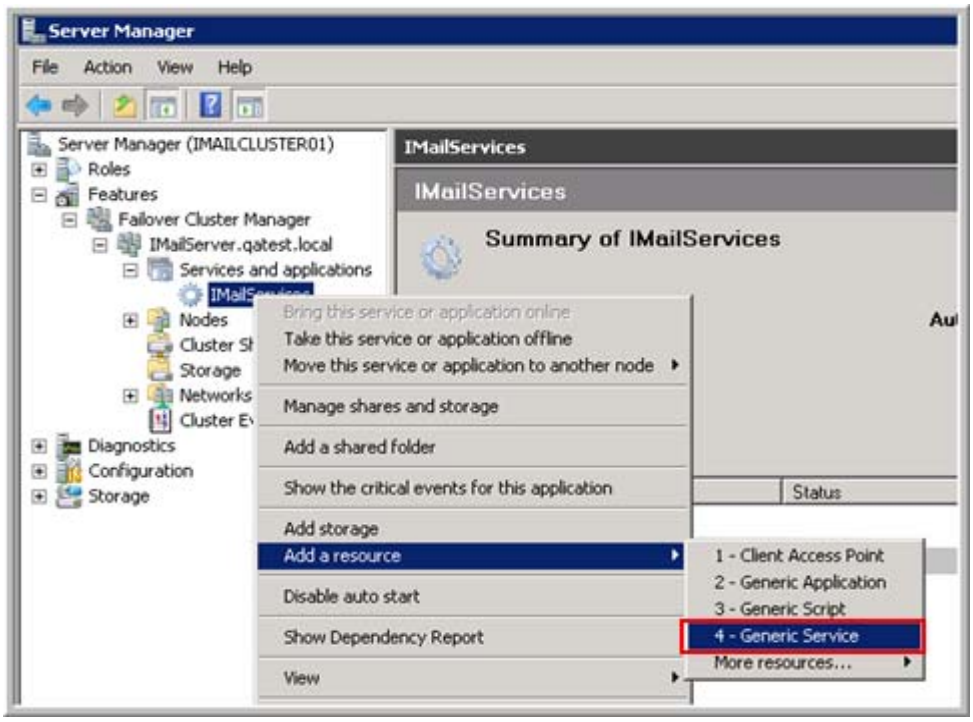


Step 47. Review the information displayed on the **Summary** dialog and click **"Finish"**.

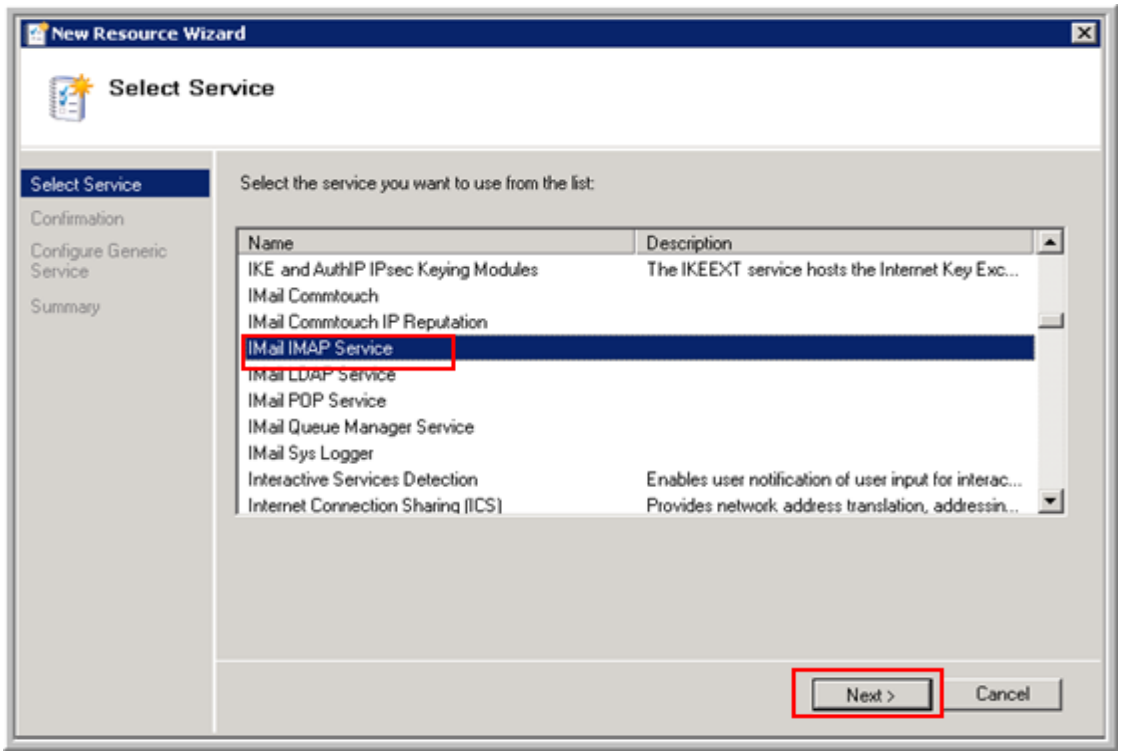


Configuring Failover Service

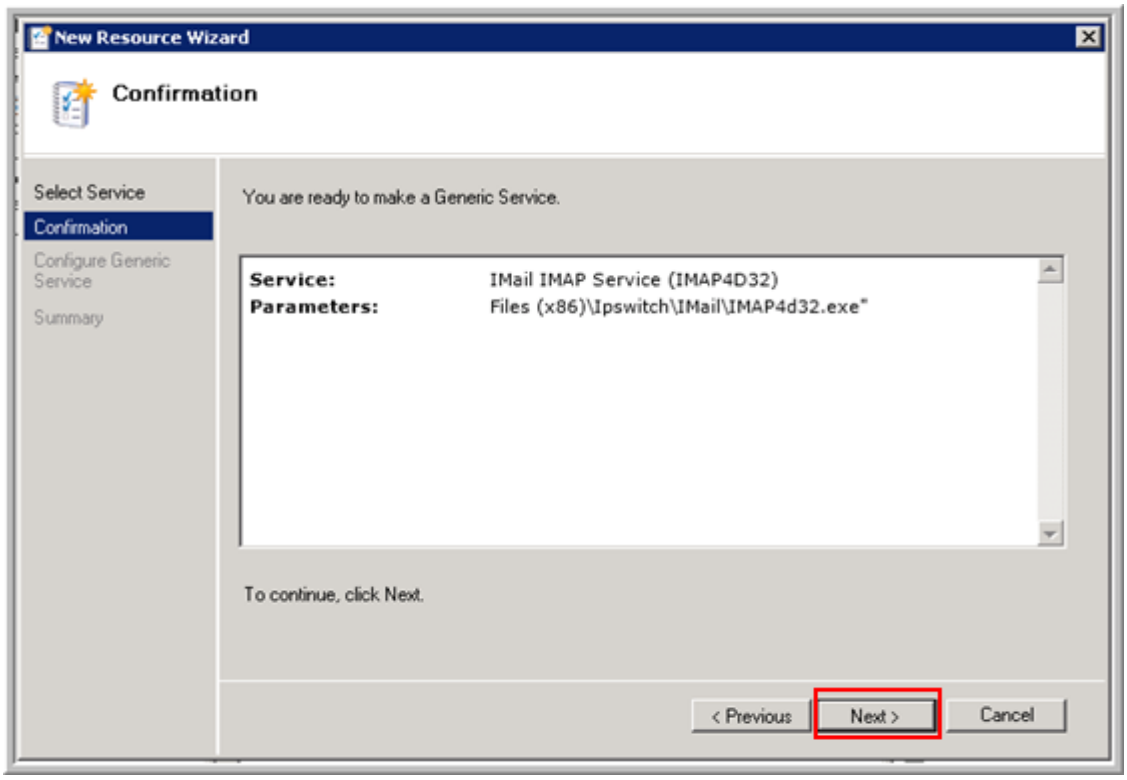
Step 48. In **Server Manager** (as shown below), right click on **"IMailServices"** (or whatever the chosen name) and select **Add a resource > 4 – Generic Service**.



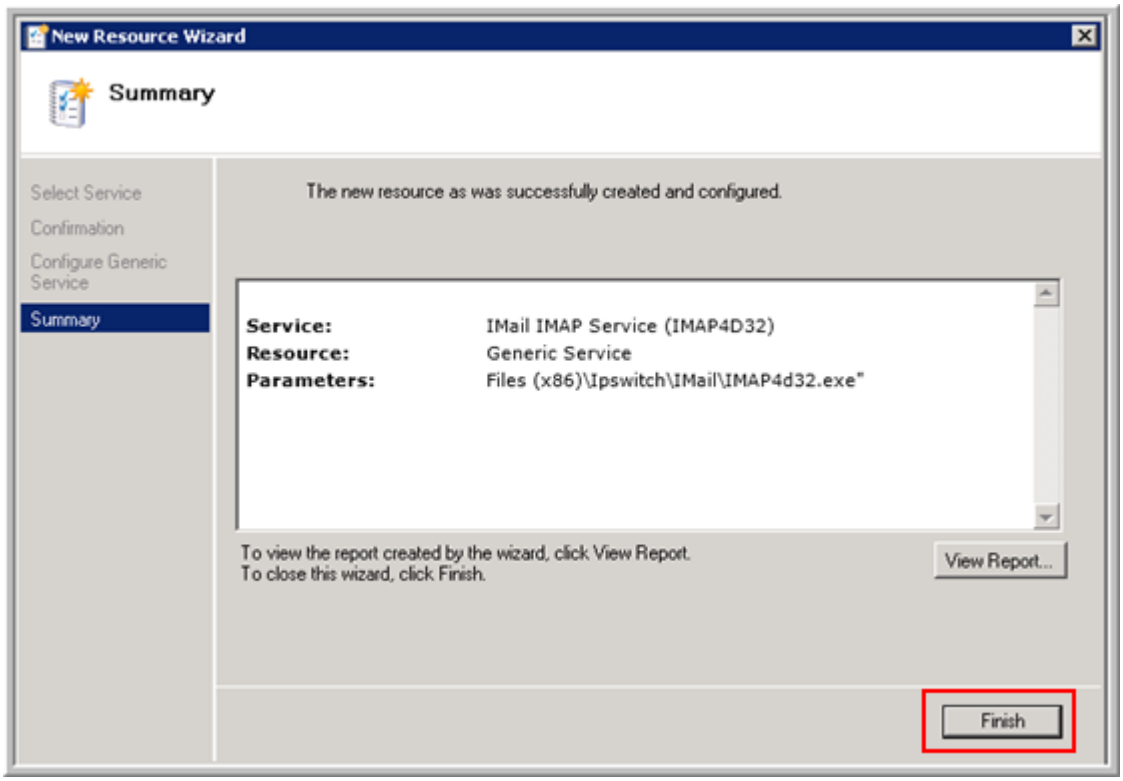
Step 49. Select **IMail IMAP Service** and click **"Next"**.



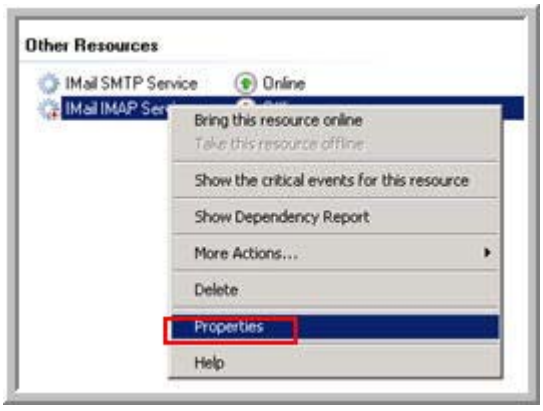
Step 50. Click **"Next"** on the Confirmation dialog.



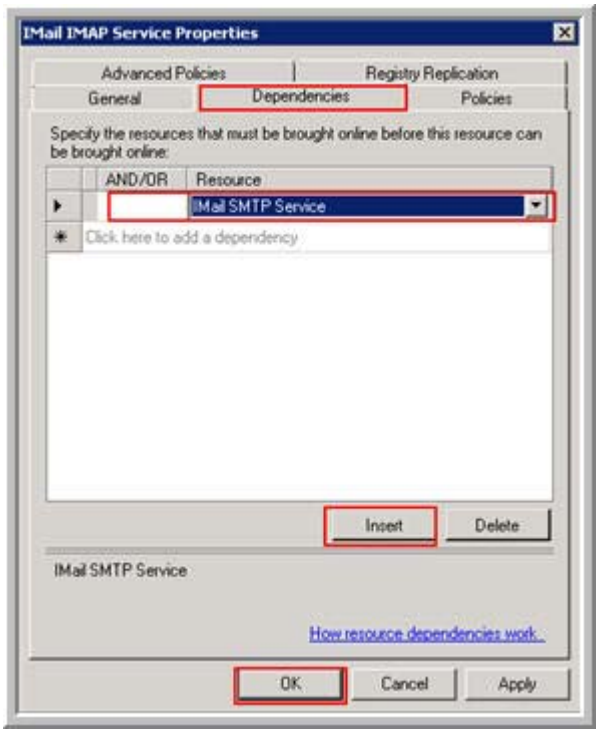
Step 51. Review the **Summary** dialog and click **"Finish"**.



Step 52. Right click on the new **Service** and select **"Properties"**.



Step 53. Select the **Dependencies** tab. Click **Insert** and select **IMail SMTP Service** from the list, and click **"OK"**.



Step 54. Repeat **Steps 48 through 53** adding the following IMail Services:

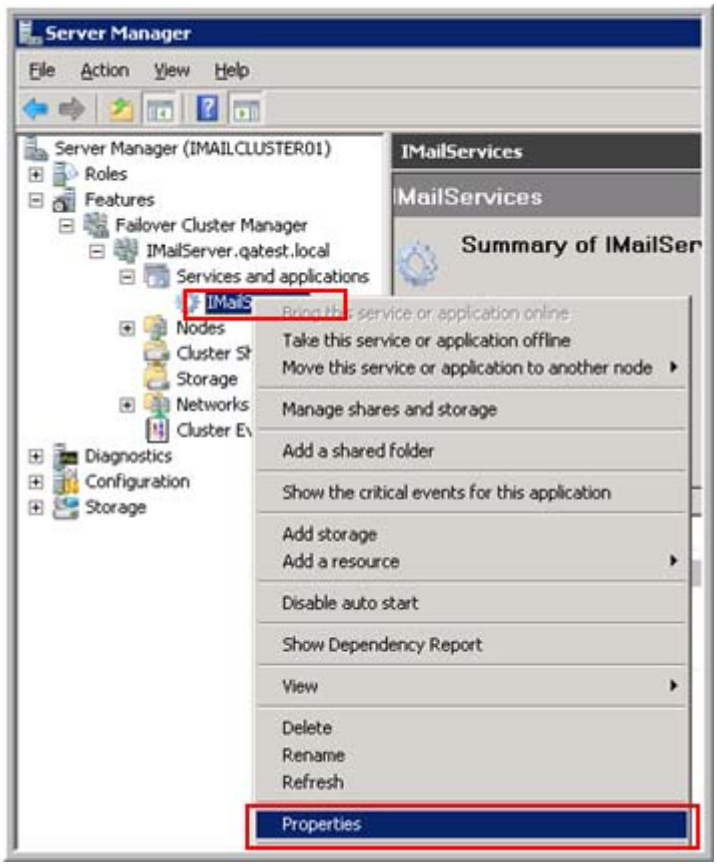
- IMail POP Service
- IMail Queue Manager Service
- Ipswitch Instant Messaging Server
- WorkgroupShare

Step 55. Right click on each of the services that were just added and click bring **Online**.

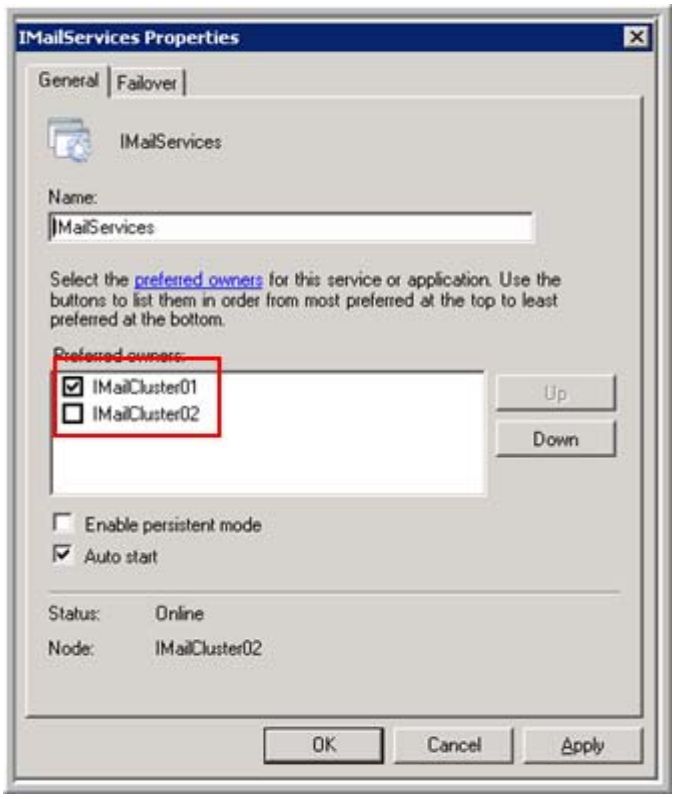
Setting the Preferred Owner and Failover Settings

This will describe how to set control for a server to run the IMail Services, under normal circumstances.

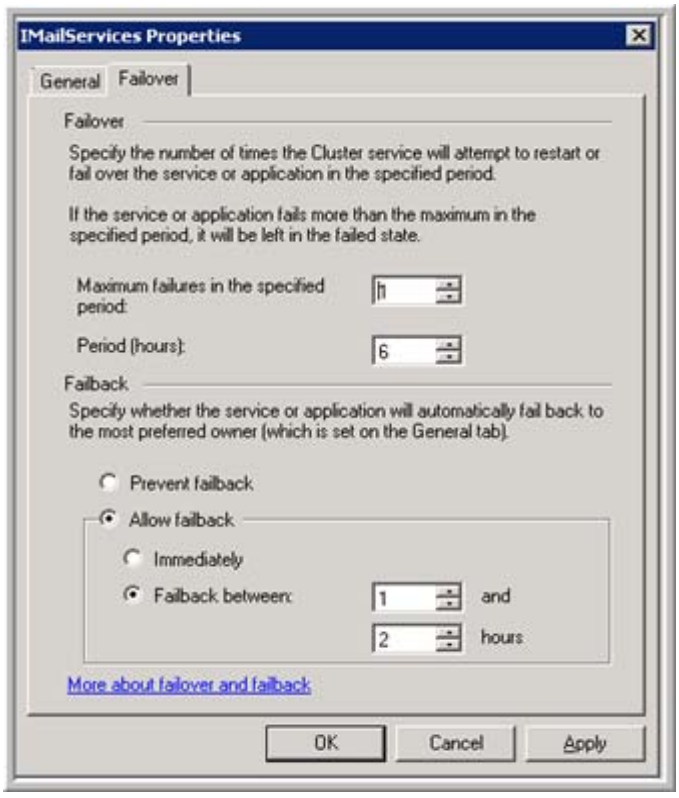
Step 56. Right click on the **Cluster Services** (IMailServices) and select **Properties**.



Step 57. Select the **Node** or **Nodes** to be the preferred server.



Step 58. Click on the **Failover** tab and configure behavior of the Cluster should failure occur.



CHAPTER 7

IMail Server Configurations

In This Chapter

When making changes to IMail Server Settings be sure it is the Active node in the cluster. Changes made on an inactive node will be lost when the cluster fails-over to that node.

IP Address Changes

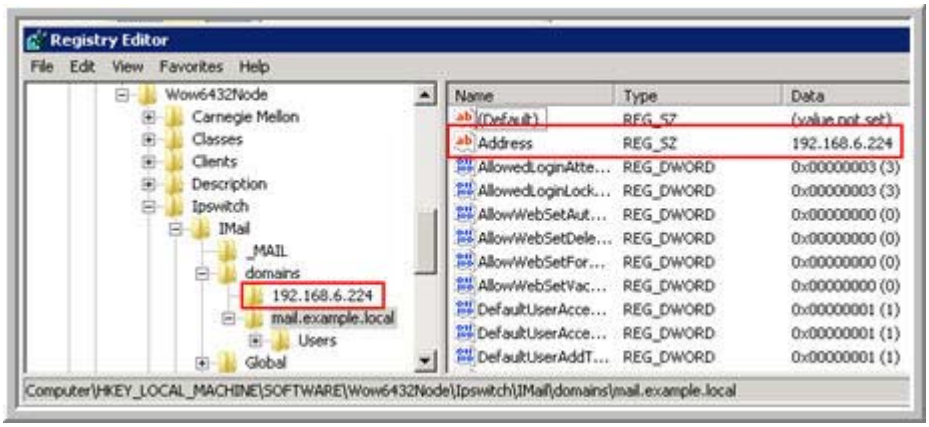
Step 59. All traffic (SMTP / MX, POP, IMAP, IIM, Web) should be pointing to the IP address configured for the cluster (In this example it was 192.168.6.224).

Configuration of SMTP Service and WorkgroupShare are necessary to listen on the Address of the cluster. Failing to do this configuration will result in these services failing to start when the cluster attempts to failover.

IP Address Changes for IMail Server

Step 60. IMail Server Address Change, requires manually editing the registry in IMail.

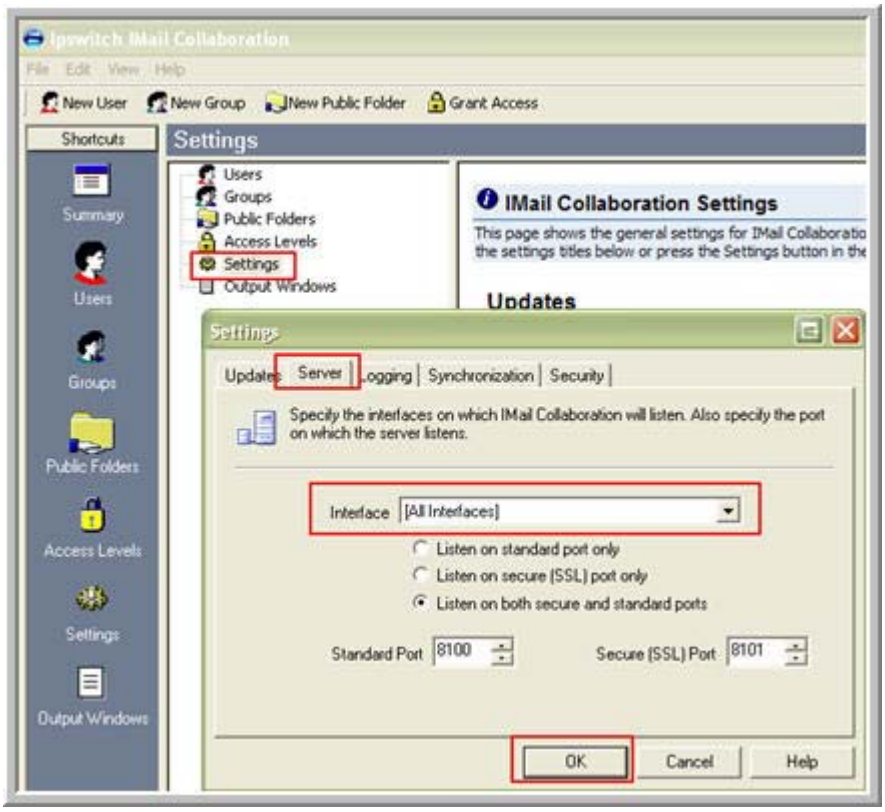
- Be sure the Console Admin is not open and open REGEDIT.
- Go to `"HKEY_LOCAL_MACHINE\Software\Wow6432Node\Ipswitch\IMail\Domains\".`
- Under the `"Domains"` key rename the IP address Key to the IP address of the cluster.
- Under the domain name key modify the `"Address"` value to be the IP address of the cluster.
- Restart the IMail Services after changes are complete.



IP Address Changes for WorkgroupShare

Step 61. WorkgroupShare Address Change.

- Open **Collaboration Administration** (WorkgroupShare) console application.
- Double click on **Settings**.
- Select the **Server** tab and select "`[All Interfaces]`" from the drop down menu and click "OK".



Step 62. Restart the **WorkgroupShare** Service.

Configuring IMail Server to use the I:\ Drive

Step 63. Recommended Directory Structure is as follows

```
I:
      \IMail
            \Domains\
                  \Directory for each IMail Domain
            \Logs\
            \Spool\
      \IIM Logs
```

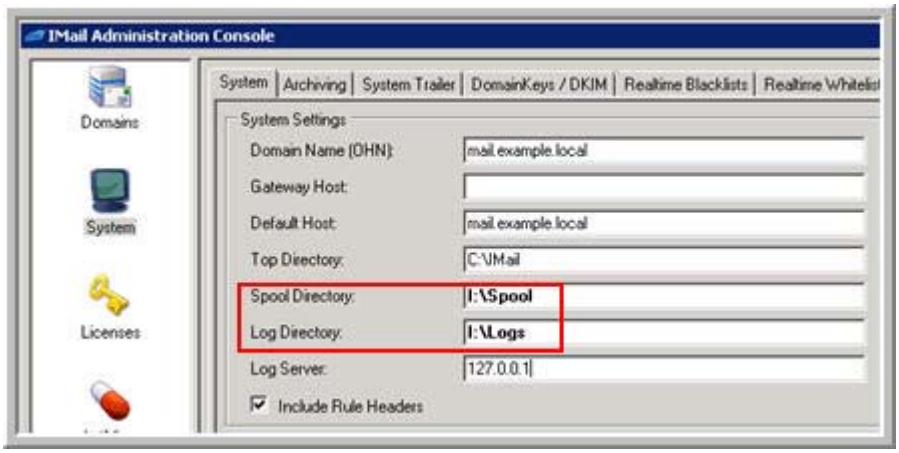
Step 64. IMail Domain Top Directory

Set the top directory for the domain to the I: drive path.

Step 65. System Directories

Change the **Spool and Log directory** to their paths on the I:\Drive.

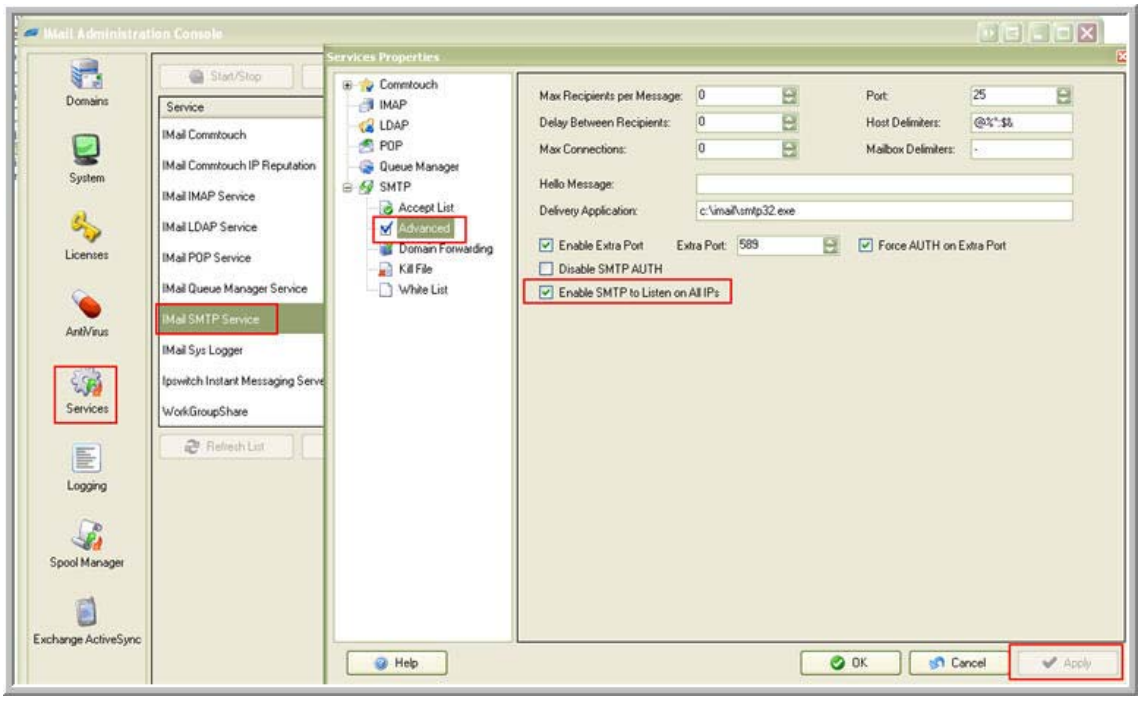
Warning: DO NOT CHANGE the Top Directory path!



Step 66. Setting SMTP to listen on All IP Addresses.

- Open the IMail Console Administrator.
- Click on **Services** on the left navigation bar.
- Double click on **IMail SMTP Service** and click on Advanced under SMTP navigation bar.

- Enable **SMTP to Listen on All IP's** and click **"Apply"**.



Step 67. Restart All **IMail and IIM Services** for the above changes to take effect.

Step 68. If a custom SSL certificate is in use, make sure the Certificate `".crt"` and `".key"` files are stored on the **"I:\ Drive"** so all the cluster nodes have access to the certificate.

Step 69. From a command window navigate to the IMail Server Installation directory and run the following utility to configure the necessary permissions on the new directories.

```
"InstallUtilityConsole.exe"
```

Step 70. Test **"Moving the Failover"** service to each node.

Right click on IMail Services and select **Move this service or application to another node**, then select one of the cluster nodes.

- Verify all services start and all services respond correctly on the IMailServices Failover Cluster IP address.
- Login to the Web Client and send a few test messages to verify email is being processed correctly.

Step 71. Configuration for the Failover Cluster is now complete. The IMail Server is ready for use.

Configurations that will not automatically move on failover

There are several settings in the IMail Server that will not also update between the failover nodes. The following settings will require performing changes on each node in the Failover Cluster.

- IP Control Access lists for the following services:
  a) POP3
  b) IMAP
  c) Syslog
  d) SMTP
- SMTP Relay for Addresses List
- SMTP Domain Forwarding List
- CYREN Anti-spam service settings. (ctasd.conf and ctipd.conf)
- Accept List
- Kill File
- White List

CHAPTER 8

Upgrading IMail Server

Upgrading Failover Cluster Process

To upgrade IMail Server with a Failover Cluster in place, will require performing the following steps:

Note: Make sure to log in to the cluster nodes as a Administrator on the domain.

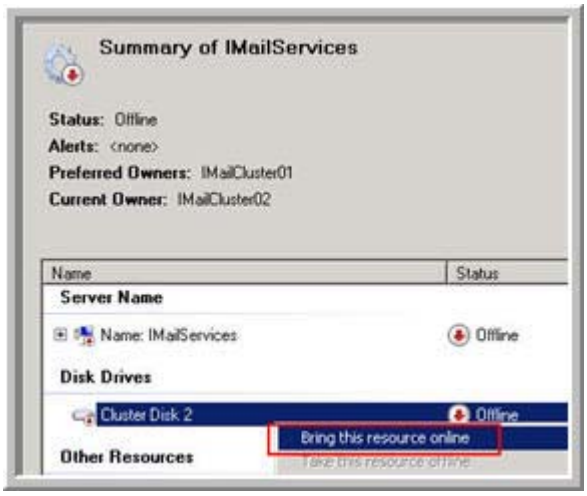
1 Open the **Failover Cluster Manager**.

2 Right click on the **Failover Service** and select **"Take this service or application offline"**.

3 Click **"Take IMailServices offline"** (Text will differ depending on the failover service name).

4 Determine which cluster node currently owns the service and connect to that node. Open the **Failover Cluster Manager**.

5 Right click on the **Cluster Disk** and select **"Bring this resource online"**.



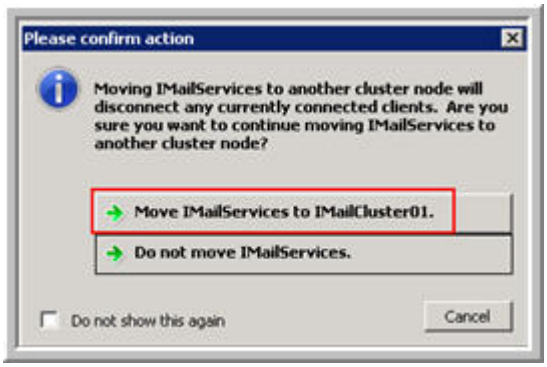
Note: IMail Server installation will not successfully complete, if mailboxes and other configuration files are not accessible.

6 Install the new version of IMail Server on the node, making sure each node has the same features installed.

7 When the installation is complete go back to the Failover Cluster Manager and right click on the **Cluster Disk** and select **"Take this resource offline"**.

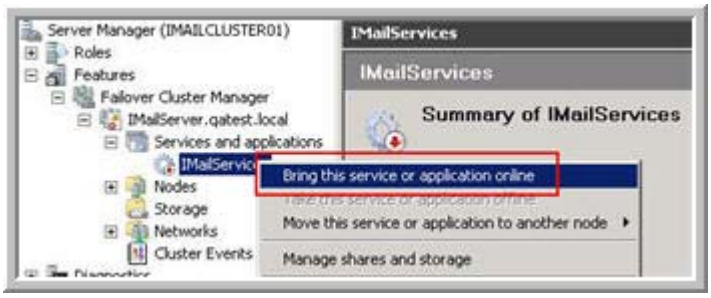
8 Right click on the **Failover Service** and select **"Move this service or application to another node"**. From there select one of the remaining nodes where IMail Server has not yet been updated.

9 Click **"Move IMailServices to #name of node#"** and then login to that node to perform the install.



10 Repeat steps 5 through 9 on each node until all nodes have been updated.

11 Right click on the **Failover Service** and select **"Bring this service or application online".**



12 Upgrade procedures are complete.