PowerScribe® 360 Customer Cluster Configuration Information

INSTALLATION AND CONFIGURATION OF CLUSTERING REQUIRES A THOROUGH KNOWLEDGE OF THE SUBJECT.

THIS IS A LIVING DOCUMENT AND IS UPDATED FREQUENTLY TO ADD/DELETE/EDIT THE CONTENTS AS NECESSARY. ALWAYS CHECK THE NUANCE WEB SITE FOR THE LATEST COPY.

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OVERVIEW 1

General

The PowerScribe 360 product has been qualified in a clustered server environment using Microsoft Failover Clustering. Both the application server software and Microsoft SQL server software can be clustered in an active/passive configuration. It is the Customer's responsibility to acquire and maintain the clustered environment. Nuance will make recommendations in this document for the setup of the operating system and clusters prior to installation of the Microsoft SQL Server and PowerScribe 360 software and will support the PowerScribe 360 product in the clustered environment.

Important Considerations

Please read the following and then fill in the information in the next section and provide it to Nuance personnel prior to on-site installation.

- Virtual machine clusters (VMware) are not supported.
- GeoCluster setup is not supported.
- Only Microsoft Windows Server 2008 R2 is supported for clustering.
- Only Microsoft SQL Server 2008 is supported for cluster systems.
- The Customer must provide static IP addresses.
- The Cluster must consist of two Nodes, referred to as Node 1 and Node 2, or Primary and Secondary, in this document. Nodes and software should be installed using the ***same*** accounts and respective passwords.
- The Quorum disk for each cluster should be 1GB.
- The Microsoft DTC disk for the SQL cluster should be 1GB. Do not use the same disk as the Quorum disk.
- The SSL certificate must be installed *before* Nuance installs Microsoft SQL and the PowerScribe 360 software.
- The Customer must provide Host names and IP addresses for Virtual Cluster, Virtual SQL, RadBridge, DTC, and File Service.
- Objects must created in the domain in the proper Organizational Unit active directory prior to installing the PowerScribe 360 software.
- PowerXpress and SUS cannot be in a cluster and must be separate machines. Neither can be loaded on the two Failover system machines.

- Reporting Service is not cluster-aware. Nuance will install it on the Primary Node.
- The Cluster Servers needs failover clustering, file server, IIS, and application server roles installed.
- IPv6 should be turned off and disabled in the registry for both servers and clients (instructions provided in this document).
- High Performance should be set up for Clusters (instructions included in this document).
- The Customer should turn on Network Discovery (instructions included in this document).
- The Customer must fill in the PowerScribe 360 Preinstallation Information Form, which lists the required Cluster System configuration information, provided below. This information is required for Nuance to complete a successful installation. Print those pages and enter all required information.

PowerScribe 360 Preinstallation Information Form

The Customer must supply this information to Nuance prior to the Site installation of PowerScribe 360 for a cluster system and should have a copy of the completed information on site as well. Print the pages in this section and then complete the form.

Customer:	Date:
Contact Person:	Contact Phone:

Application Cluster Node 1

System Name:	System Location:
System Account:	System Password:
OS version:	SP:
Network:	
Connection Name:	IP:
Gateway IP:	
DNS1 IP:	DNS2 IP:
Subnet Mask:	
Additional IPs:	
Connection Name:	IP:
Connection Name:	IP:
Connection Name:	IP:
Connection Name:	IP:

Application Cluster Node 2

System Name: System Location:
System Account: System Password:
OS version: SP:
Network:
Connection Name: IP:
Gateway IP:
DNS1 IP: DNS2 IP:
Subnet Mask:
Additional IPs:
- Connection Name: IP:
- Connection Name: IP:
- Connection Name: IP:
- Connection Name: IP:

Application Cluster (Virtual)

Cluster Name:
Cluster Account: Cluster Password:
Cluster IP:
Note: Use Name/IP for ClientAdmin integration

Quorum Disk
- Driver Letter:
- iSCSI Target Portal Address: Port:
- LUN ID:
- Target Name: Size:

RadBridge
Bridge Generic Service Name:
Bridge IP:
Bridge Disk
- Driver Letter:
- iSCSI Target Portal Address: Port:
- LUN ID:
- Target Name: Size:

Note: Use Name/IP for PowerExpress integration

Cluster Data Disk(s)
- Driver Letter:
- iSCSI Target Portal Address: Port:
- LUN ID:
- Target Name: Size:

Paths

BridgeLogs:
DragonImages:
DragonUsers:
DragonUsersTemp:
PowerScribe360Download:
PowerScribe360Publish:
Wave:

SQL Cluster Node 1

System Name: System Location:
System Account: System Password:
OS version: SP:
Network:
Connection Name: IP:
Gateway IP:
DNS1 IP: DNS2 IP:
Subnet Mask:
Additional IPs:
Connection Name: IP:
Connection Name: IP:
Connection Name: IP:
Connection Name: IP:

SQL Cluster Node 2

System Name: System Location:
System Account: System Password:
OS version: SP:
Network:
Connection Name: IP:
Gateway IP:
DNS1 IP: DNS2 IP:
Subnet Mask:
Additional IPs:
Connection Name: IP:
Connection Name: IP:
Connection Name: IP:
Connection Name: IP:

Cluster Hosting SQL Server

Cluster Name:
Cluster Account: Cluster Password:
Cluster IP:

Quorum Disk

Driver Letter:
iSCSI Target Portal Address: Port:
LUN ID:
Target Name: Size:

MS Distributed Transaction Coordinator

DTC Name:
DTC IP:
DTC Disk

Driver Letter:
iSCSI Target Portal Address: Port:
LUN ID:
Target Name: Size:

Virtual SQL Cluster

Cluster Name:
Cluster IP:
Note: Use Name/IP for PowerScribe 360 database connection string

Cluster Data Disk(s)

Driver Letter:
iSCSI Target Portal Address: Port:
LUN ID:
Target Name: Size:

Paths

Data root directory:
User database directory:
User database log directory:
Temb DB directory:
Temp DB log directory:
Backup directory:

MICROSOFT WINDOWS INSTALLATION 2

Step 1 - Microsoft Server 2008 R2 Operating System

The installation of Windows Server 2008 ***must be exactly the same*** or the entire overall setup will not work properly. If you are setting up SQL and PowerScribe 360 application clusters, you would install Windows Server 2008 on both servers.

IMPORTANT

Do not power up NODE2 until you have completed the installation of the operating system on NODE1. If both machines see the shared disk before the cluster is configured, it can cause corruption issues on the quorum disk.

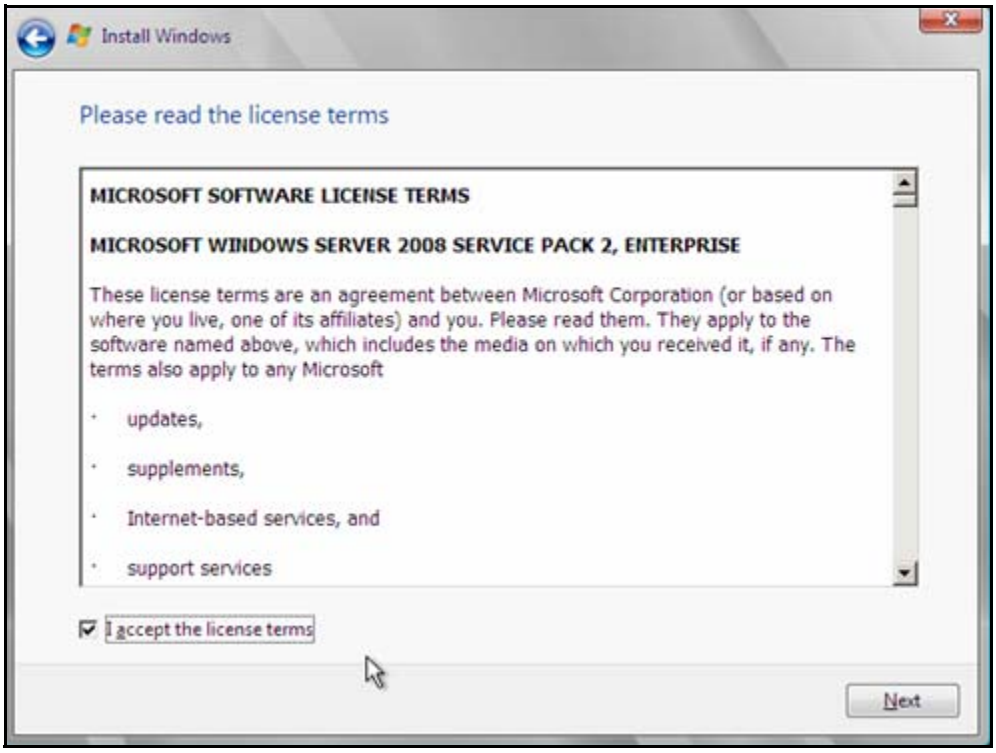
1. Using the CD or ISO image, start the installation application for Windows Server 2008.

2. Make sure that the entries shown above are correct for the site and click **Next**.

The following window displays.

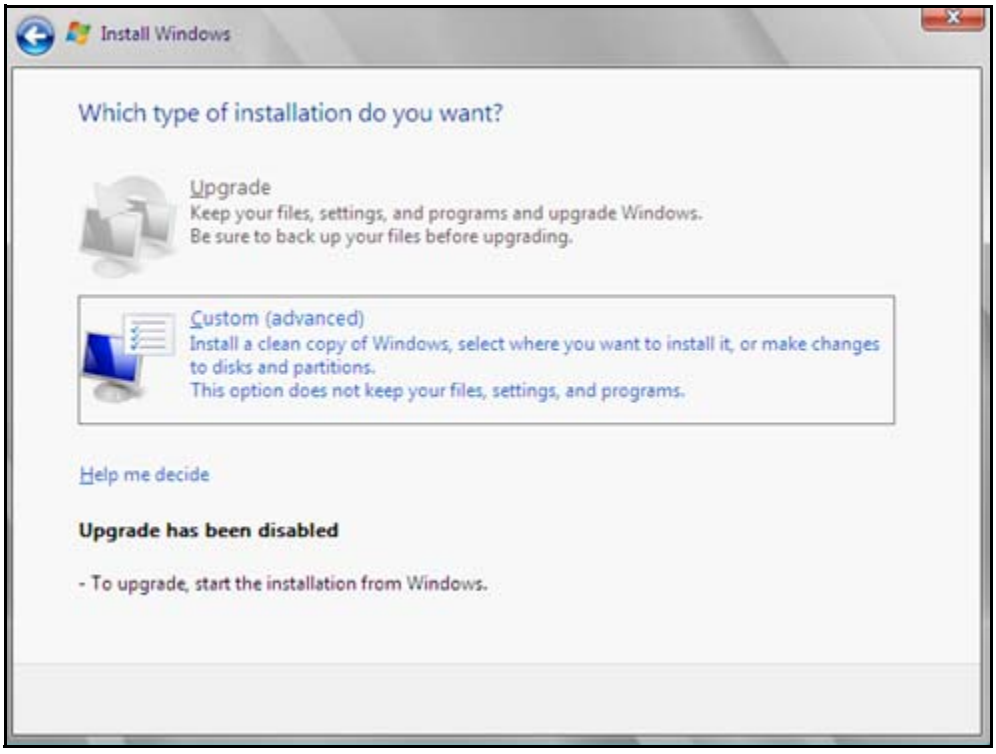
3. Click the arrow button beside **Install now**.
4. Select the version of Windows Server 2008 R2, depending on the edition you are using, and click **Next**.

The License window displays.



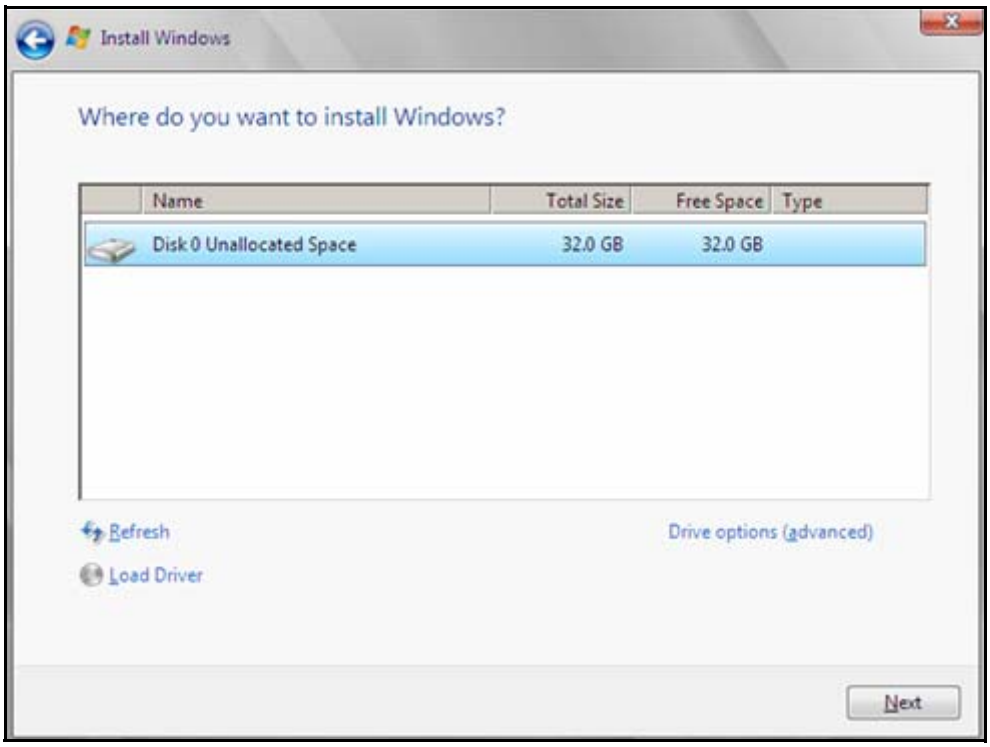
5. Check the **I accept the license terms** checkbox and click **Next**.

   You are given a choice between Upgrade or Custom (advanced) options.



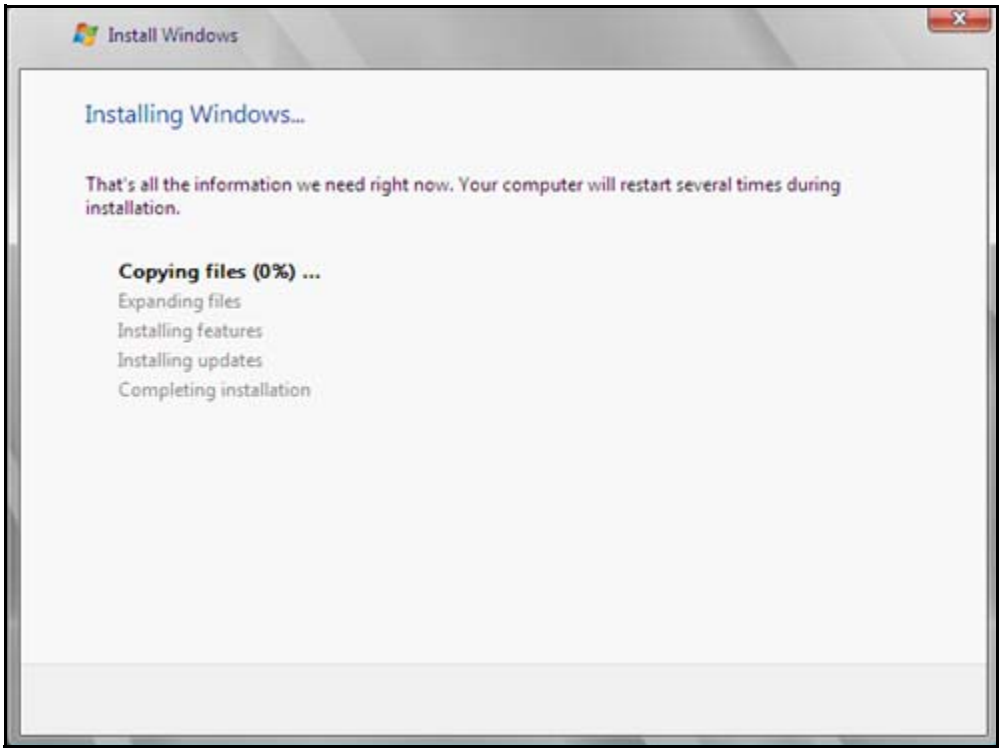
6. Choose the **Custom (advanced)** option by clicking on it.

The following window displays for the location for the Windows installation.

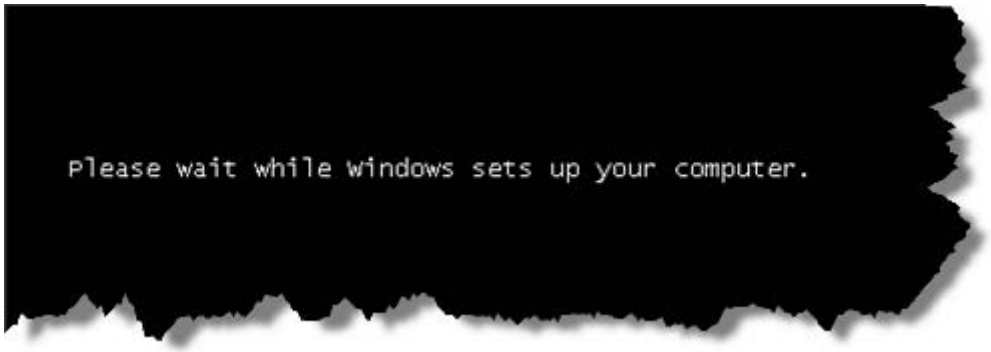


7. Click **Next**.

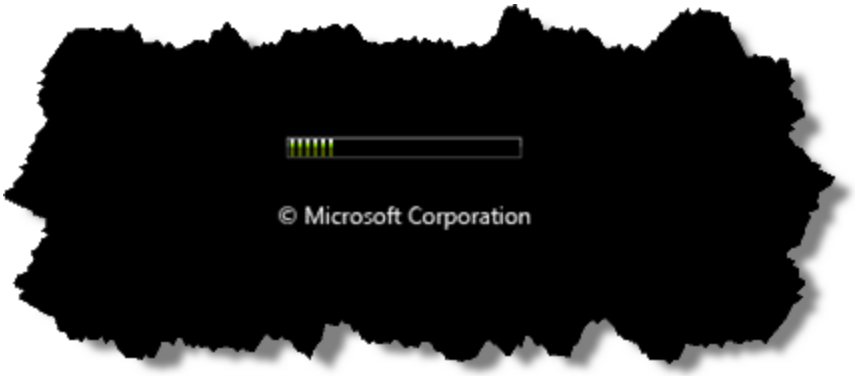
   The files are copied and the following windows display.



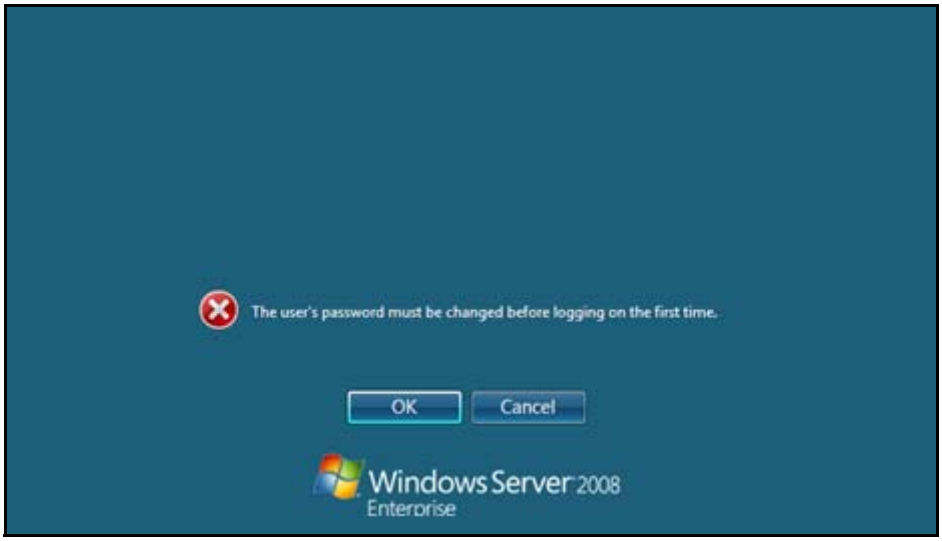
You are required to wait while the application sets up the computer.



As the installation progresses, you will see the actions being taken.



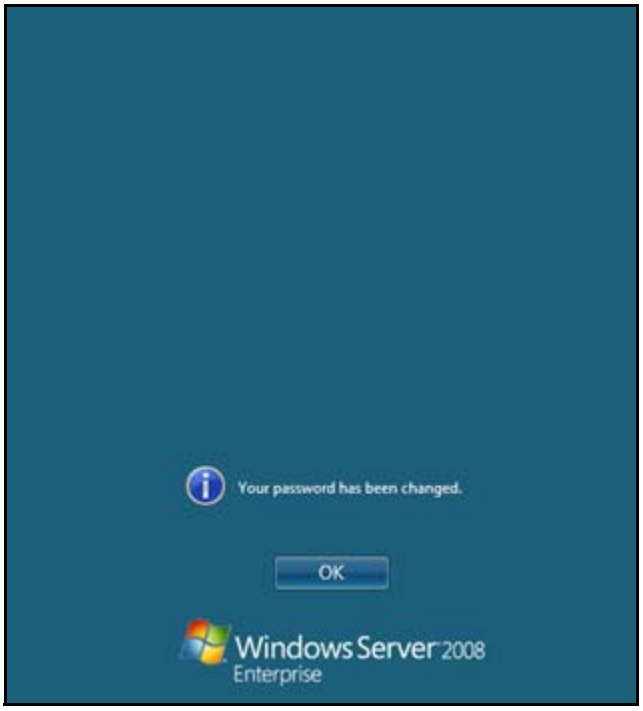
When finished, the following window displays for you to change the user's password.



8. Click **OK**.

9. Enter the new password in the first entry box and confirm it in the second entry box beneath it.
10. Click the arrow button to proceed.

The following window displays.



11. Click **OK**.

Step 2 - Apply Microsoft Updates

Before proceeding, apply all Microsoft updates at this point.

Step 3 - Microsoft .NET Framework

You must have .NET 3.5 SP1 installed and properly configured on ***all Servers and Client Workstations in the cluster*** for proper application function. In the case of an upgrade, you must check that the .NET 3.5 SP1 software is on every machine and ***make sure that it is properly configured*** prior to installing the SQL/PowerScribe software.

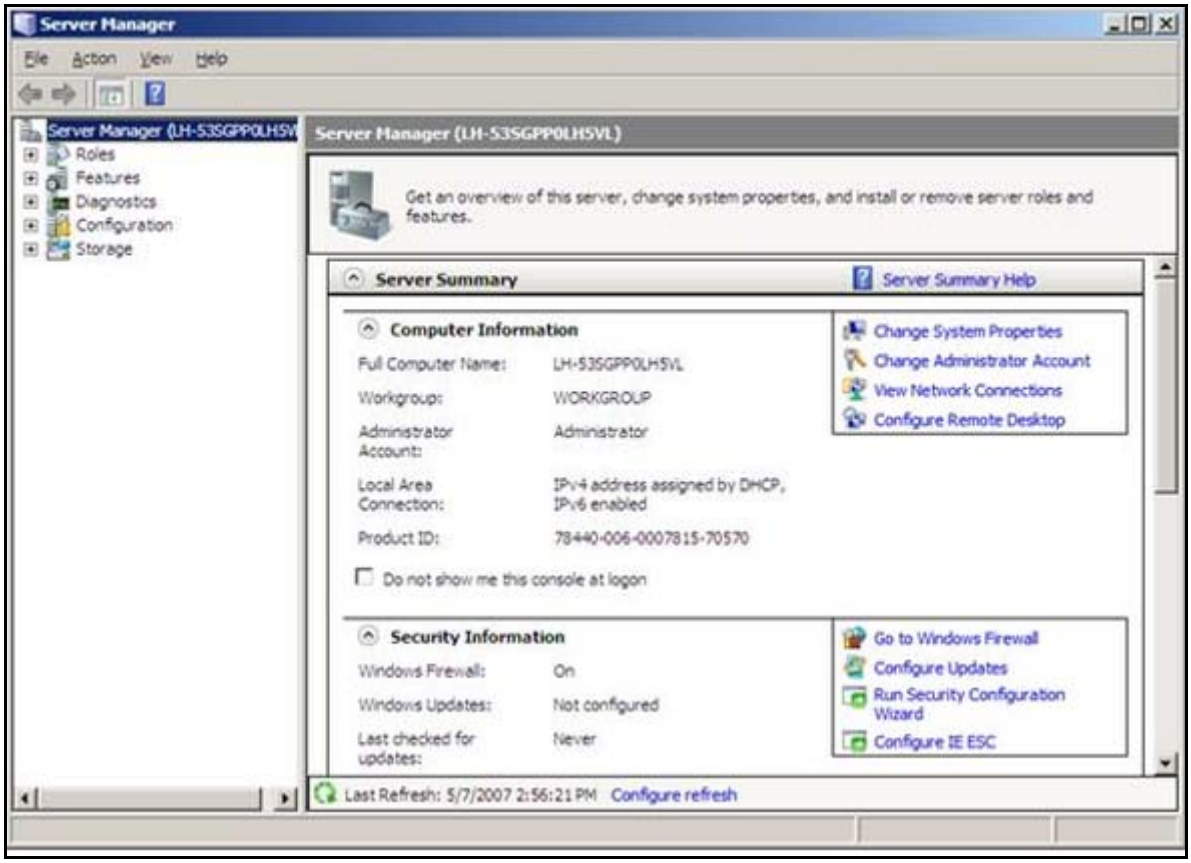
1. Check to see if .NET Framework 3.5 SP1 is installed by opening the **Programs and Features** applet in the **Control Panel** and verifying that is listed.
2. If the .NET Framework 3.5 SP1 is not already installed on the server, you should install it using **Windows Update in the Custom Mode**, not the Express mode.

Step 4 - Install the Roles and Features

You must install the Roles and Features on all servers in all systems.

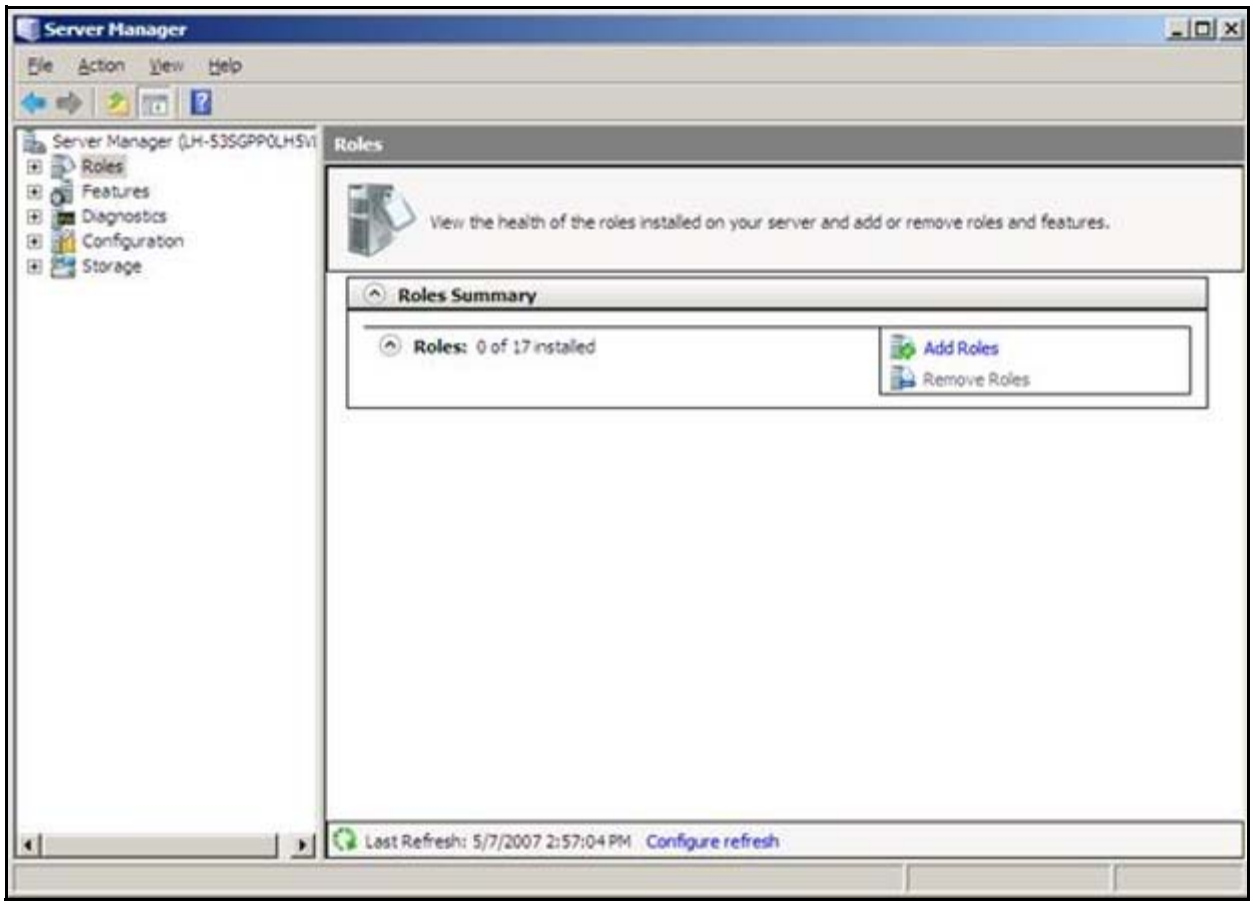
1. From the Control Panel, click **Programs and Features**.
2. Click **Turn Windows features on or off**.

   The **Server Manager** appears.



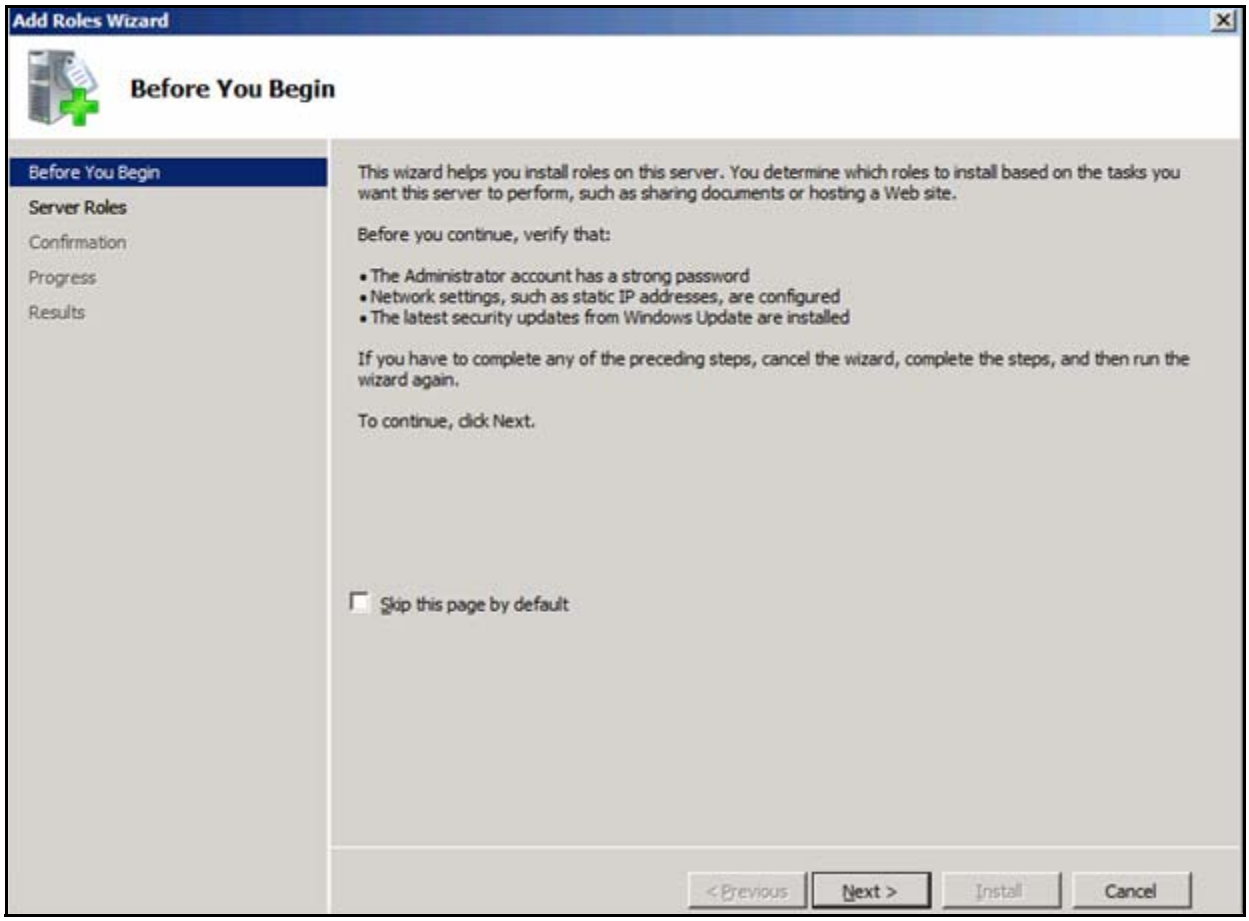
3. Click **Roles** in the left panel.

The Role Summary View is displayed.



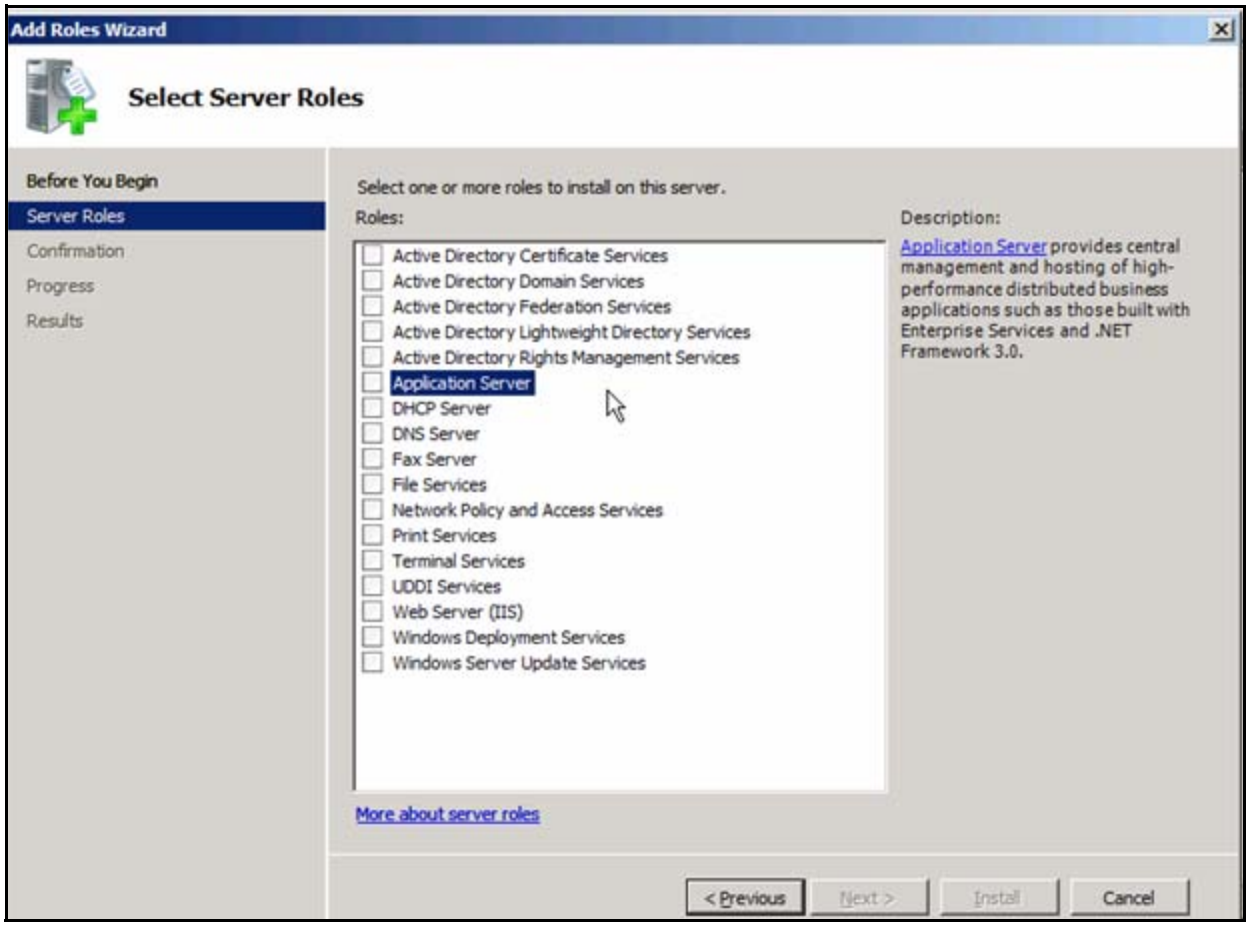
4. Click **Add Roles**.

The Add Roles Wizard opens.



5. Click **Next** to select roles to install.

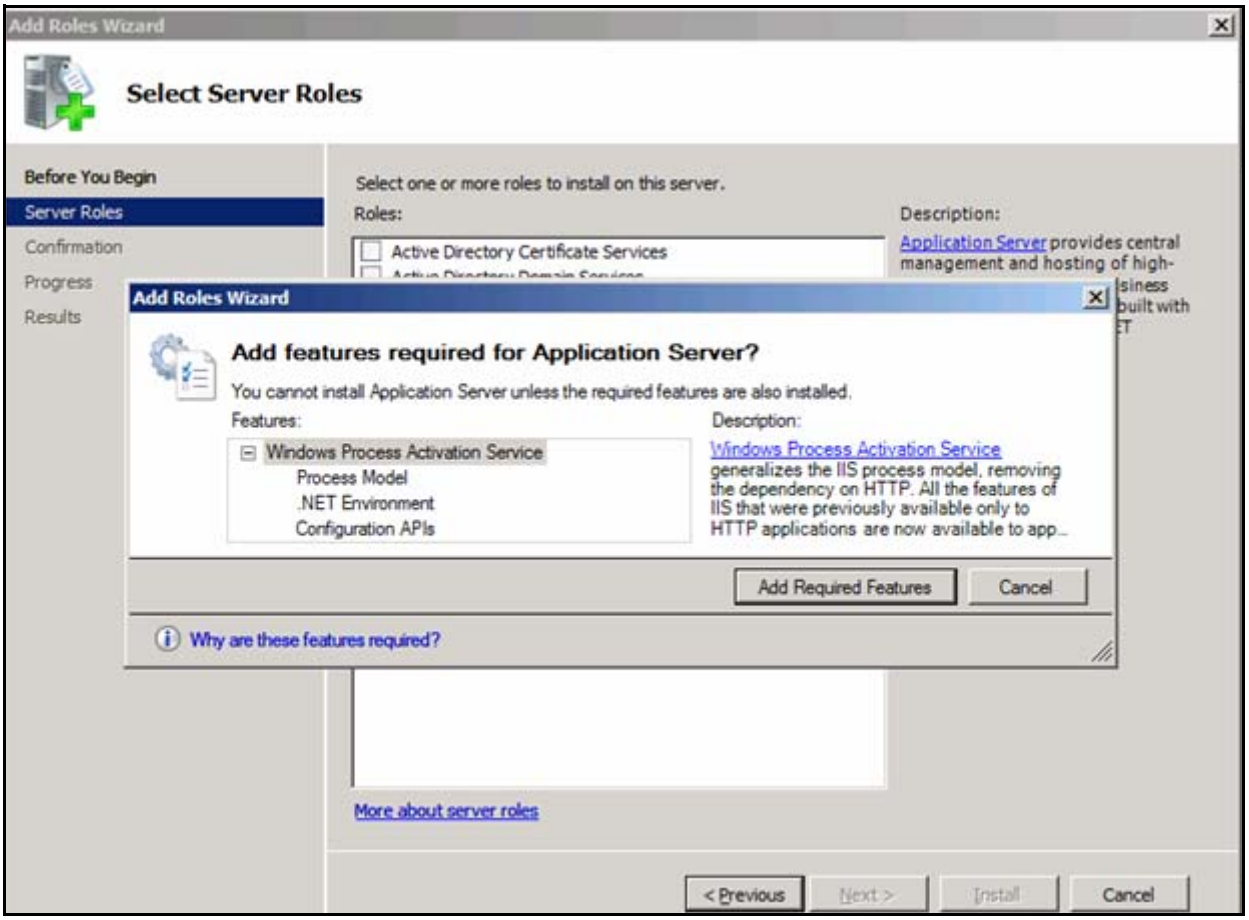
The Select Server Roles window displays with nothing checked.



6. **Check** the **Application Server**.

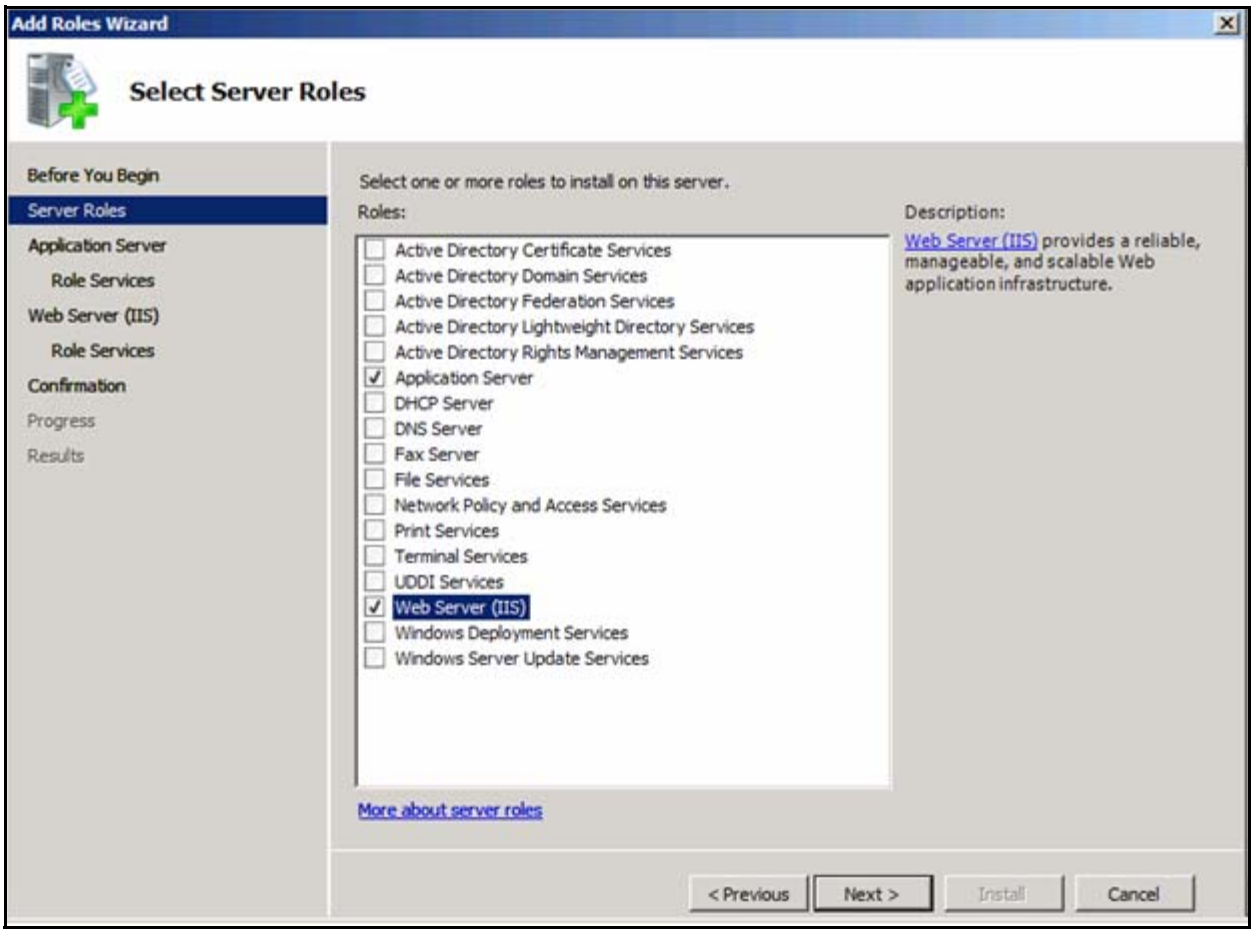
   The machine is checked for additional features required.

A message window displays.



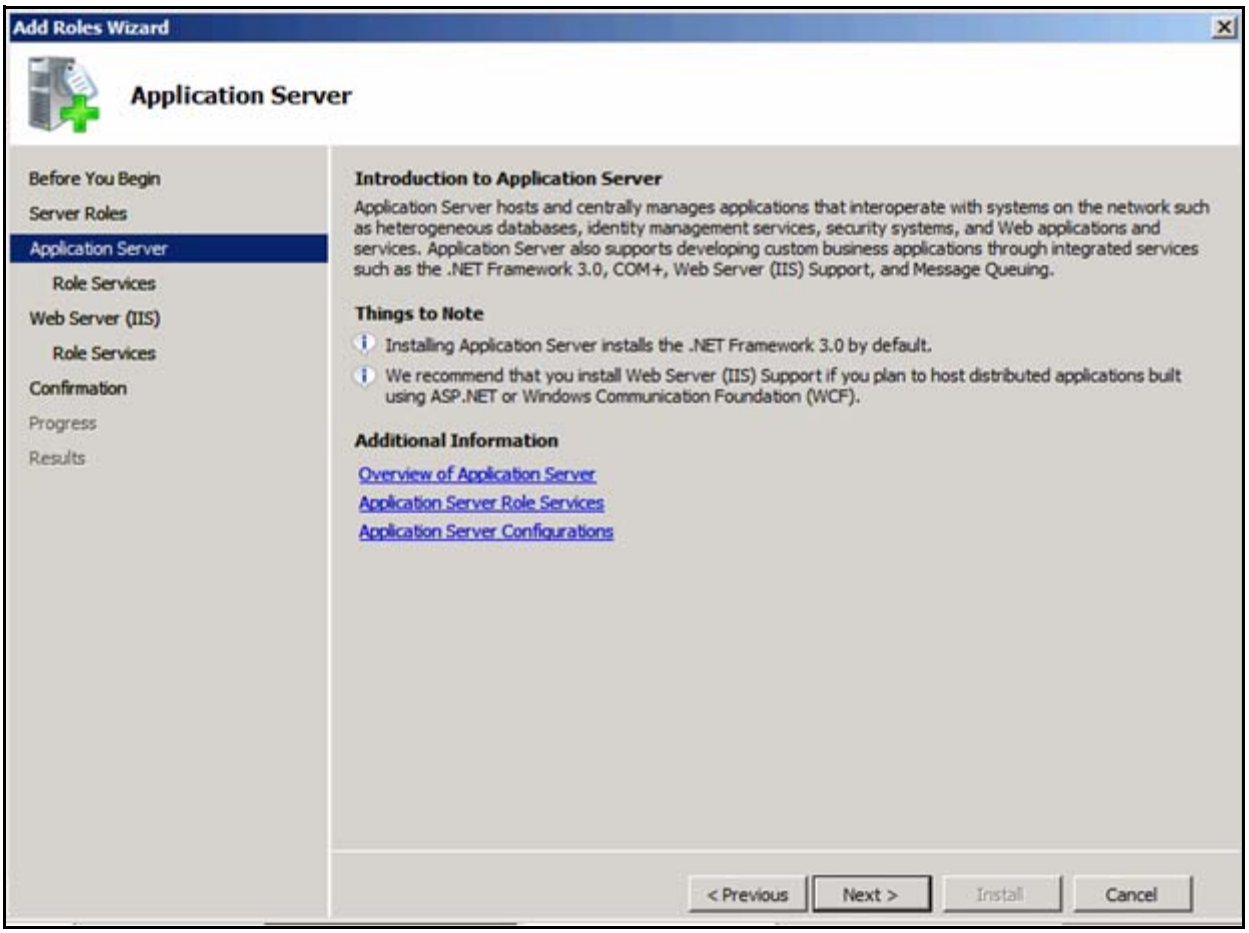
7. Click **Add Required Features**.

You are returned to the Select Server Roles window.



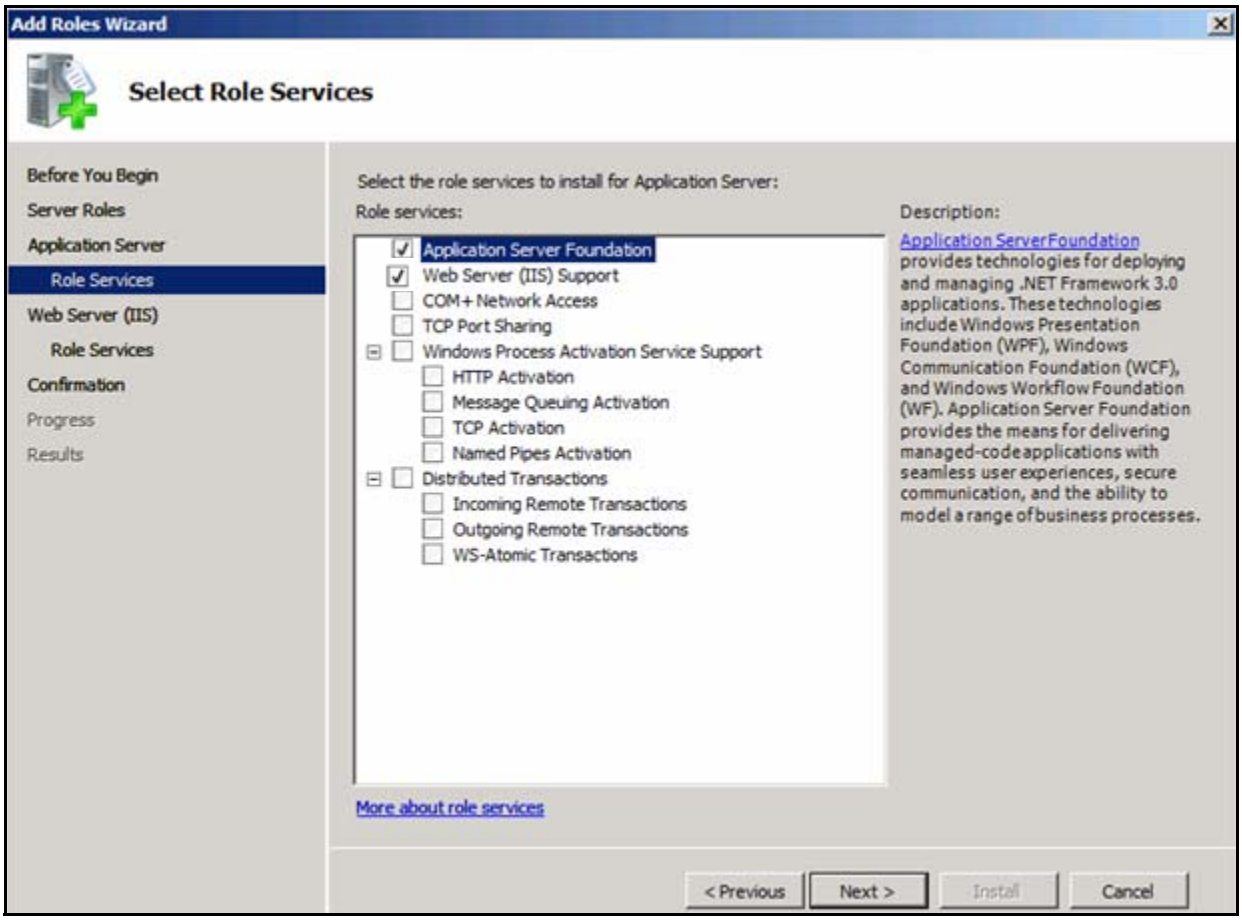
8. Check the **Web Server (IIS)** checkbox.
9. Click **Next**.

An information window displays.



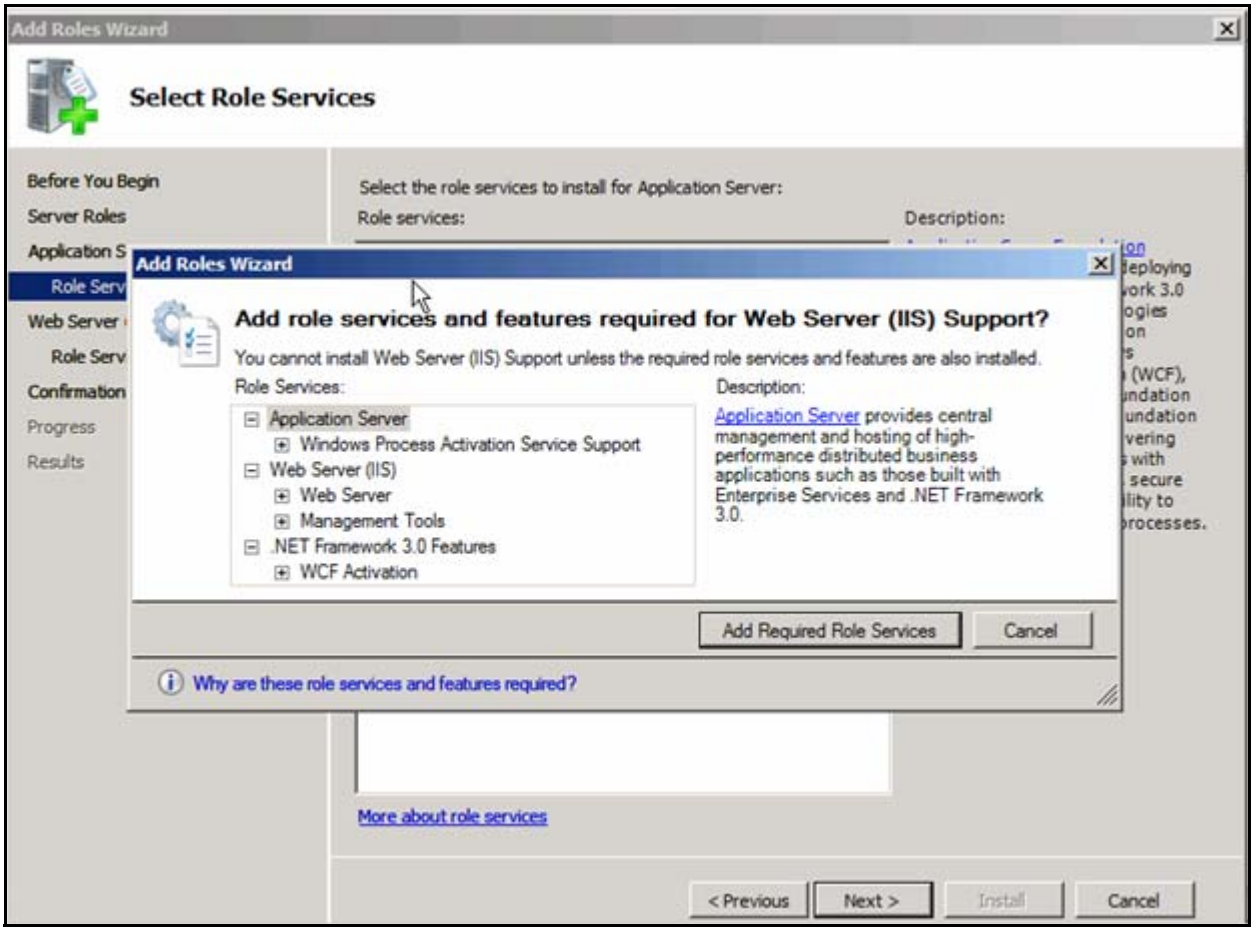
10. Click **Next**.

The following window displays where you will select the Role Services for Application Server.



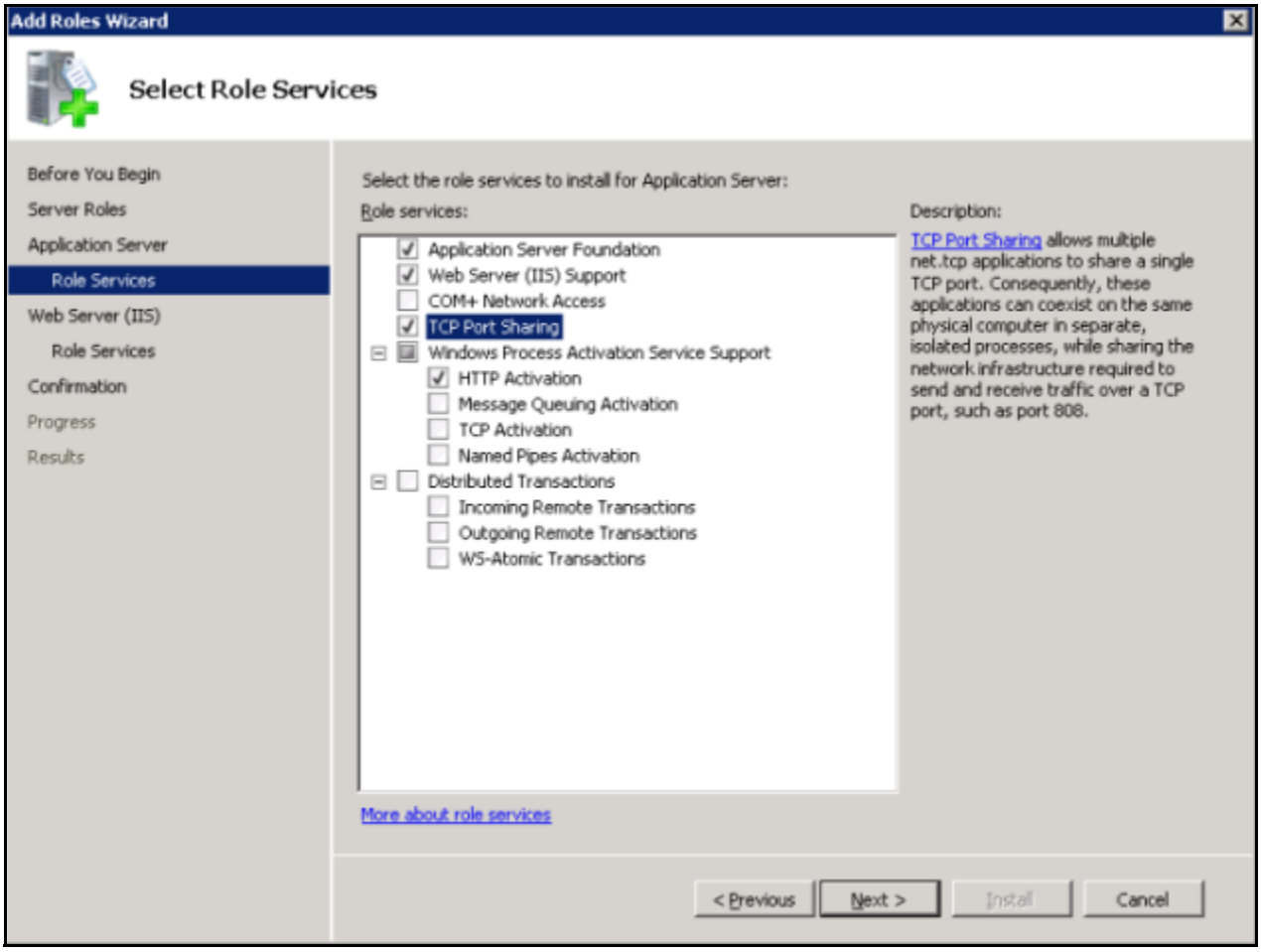
11. Check the **Application Server Foundation** checkbox.
12. Next, check the **Web Server (IIS) Support** checkbox directly below the Application Server Foundation.

Another window displays concerning required role services and features that must be added.



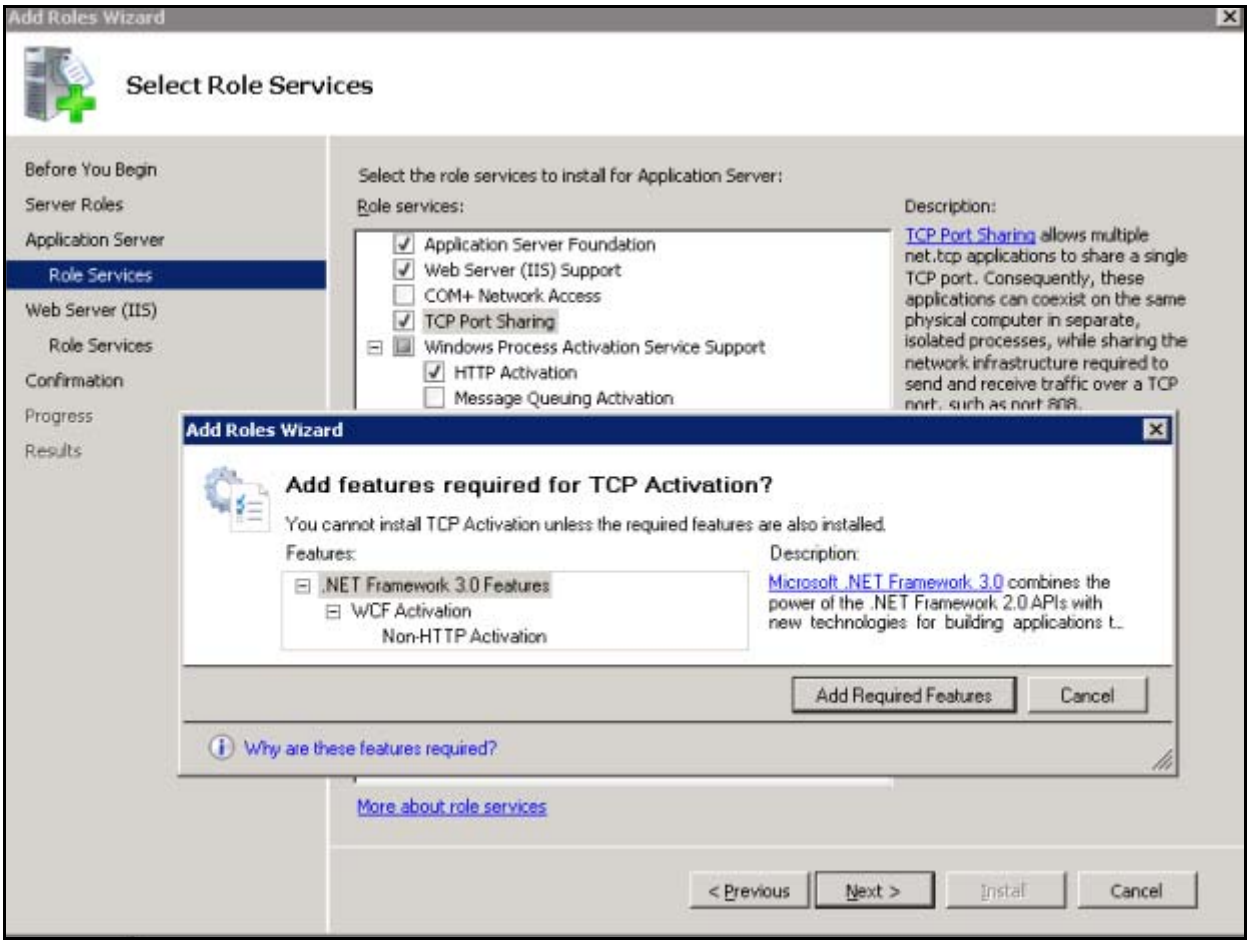
13. Click **Add Required Role Services**.

You are returned to the following window.



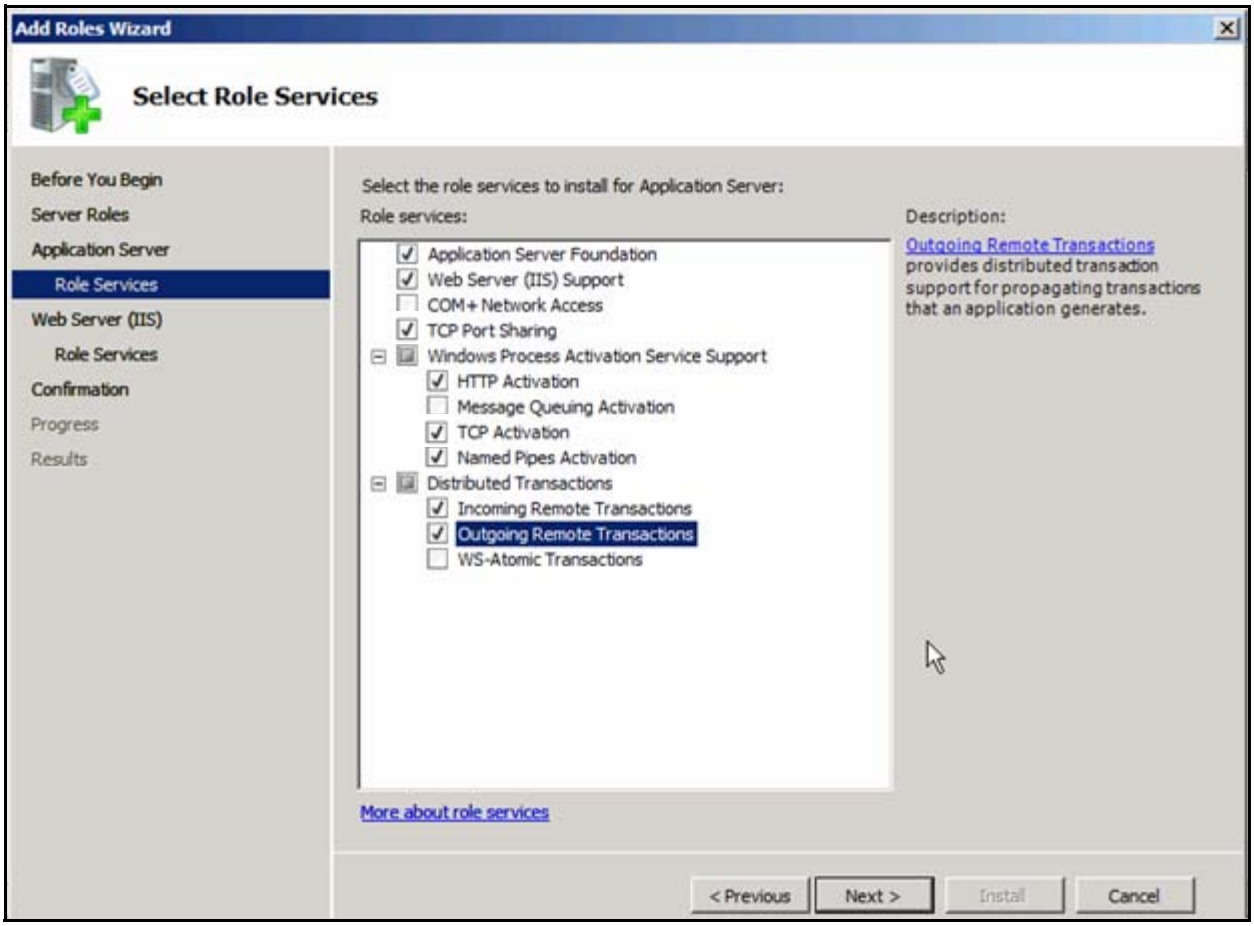
14. Check **TCP Port Sharing**.
15. Check **HTTP Activation**.

Another window displays concerning required role services and features that must be added.



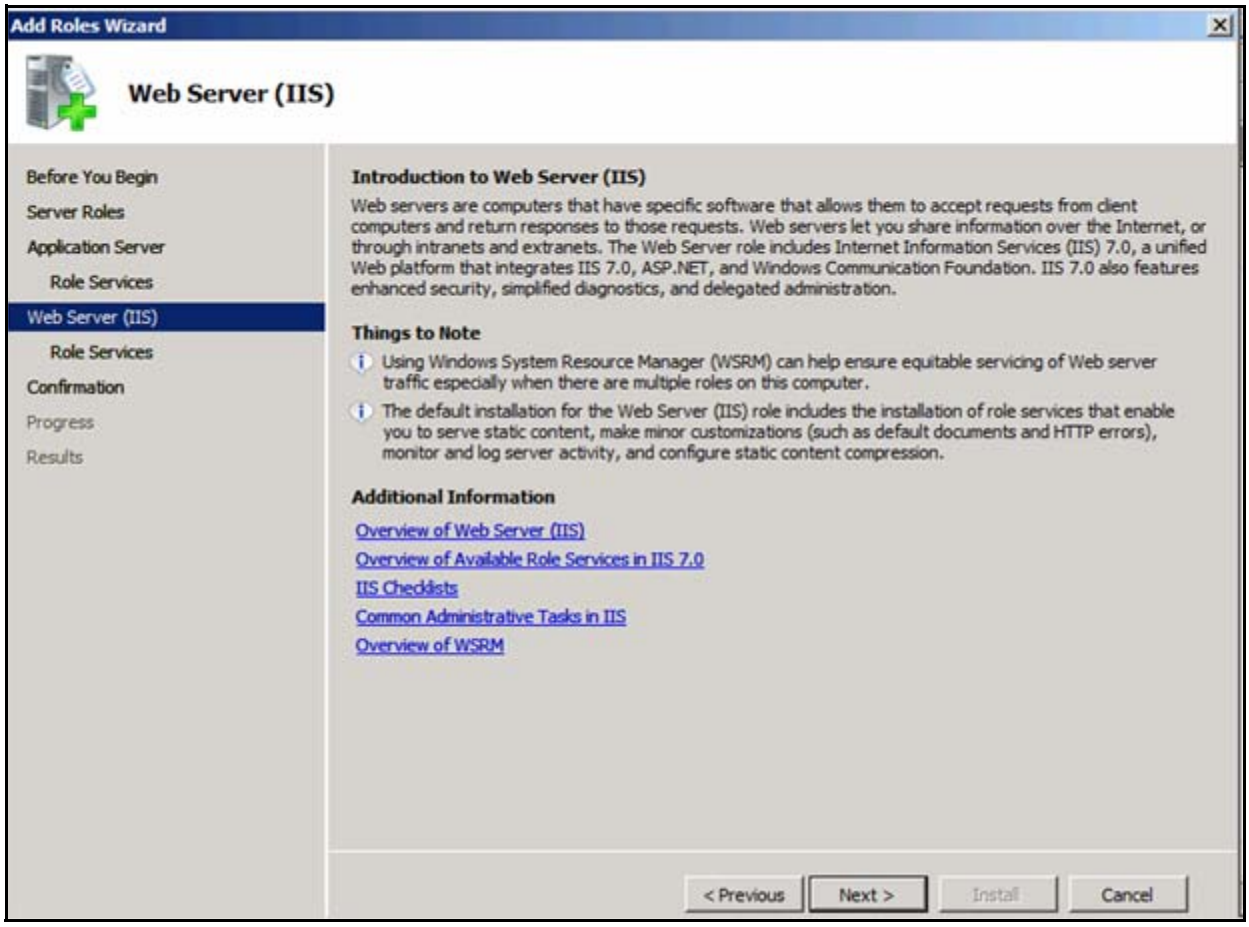
16. Click **Add Required Features**.

You are returned to the Select Role Services window.



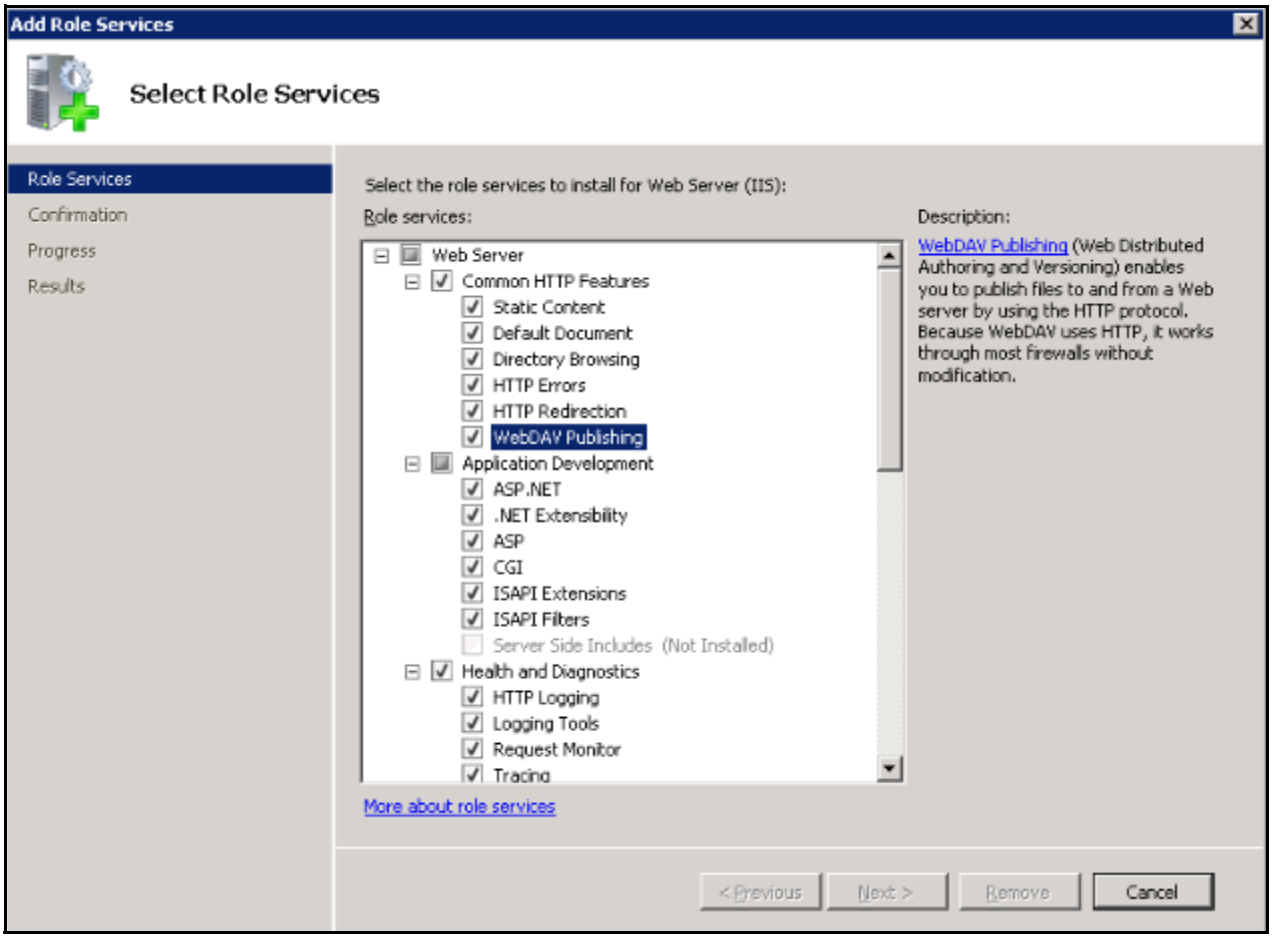
17. Check the following:
    - **Named Pipes Activation**
    - **Incoming Remote Transactions**
    - **Outgoing Remote Transactions**
    - **WS-Atomic Transactions *(Optional)*** - Check this option only if the site will be using SSL and have the certificate on hand for steps that may require SSL information input.
18. Click **Next**.

An information window displays.



19. Click **Next**.

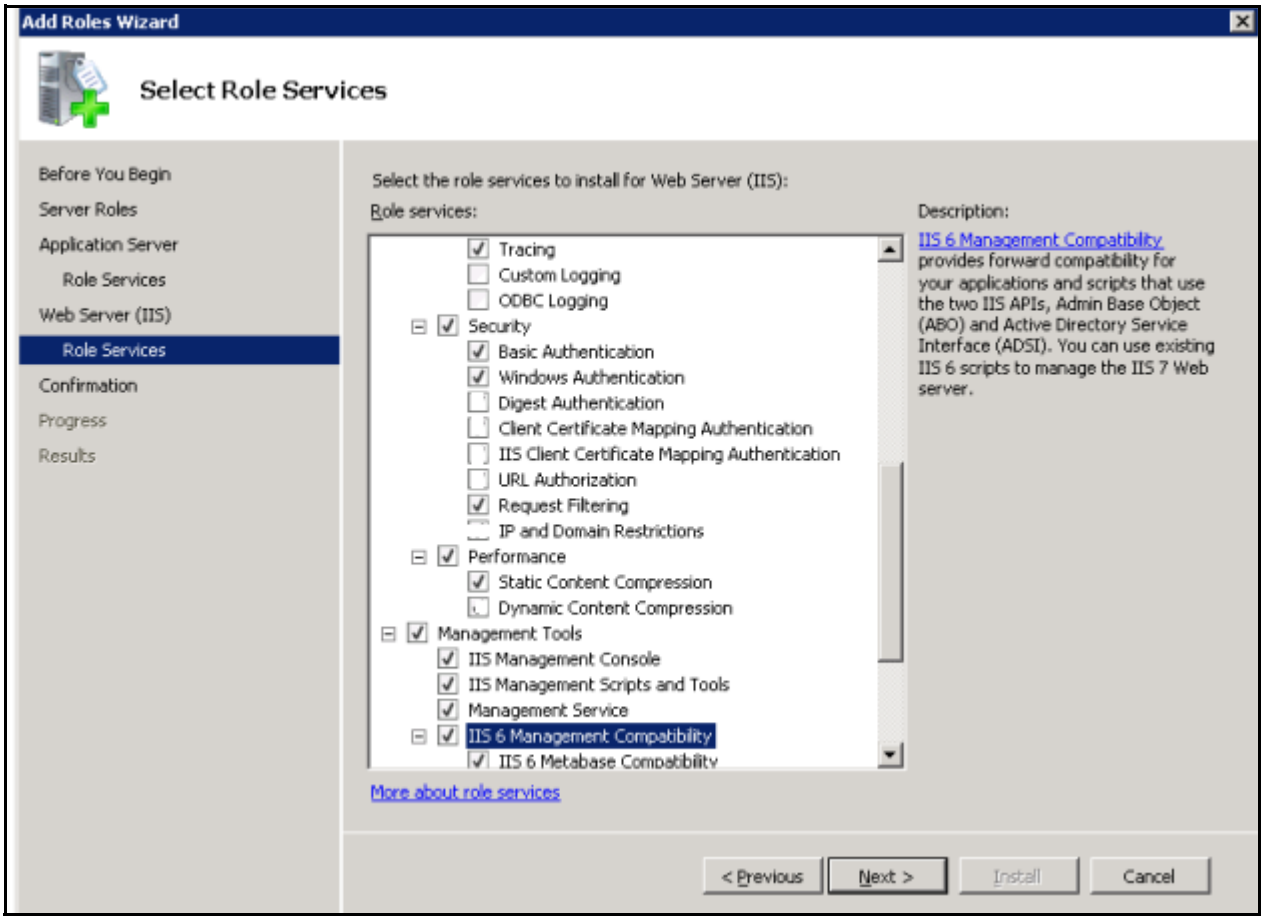
You will now select the options for the Web Server.



You will only see the WebDAV Publishing option for certain editions of Windows Server 2008. Select the option if it is listed. If not, you will be instructed to install WebDAV separately in the procedures below.

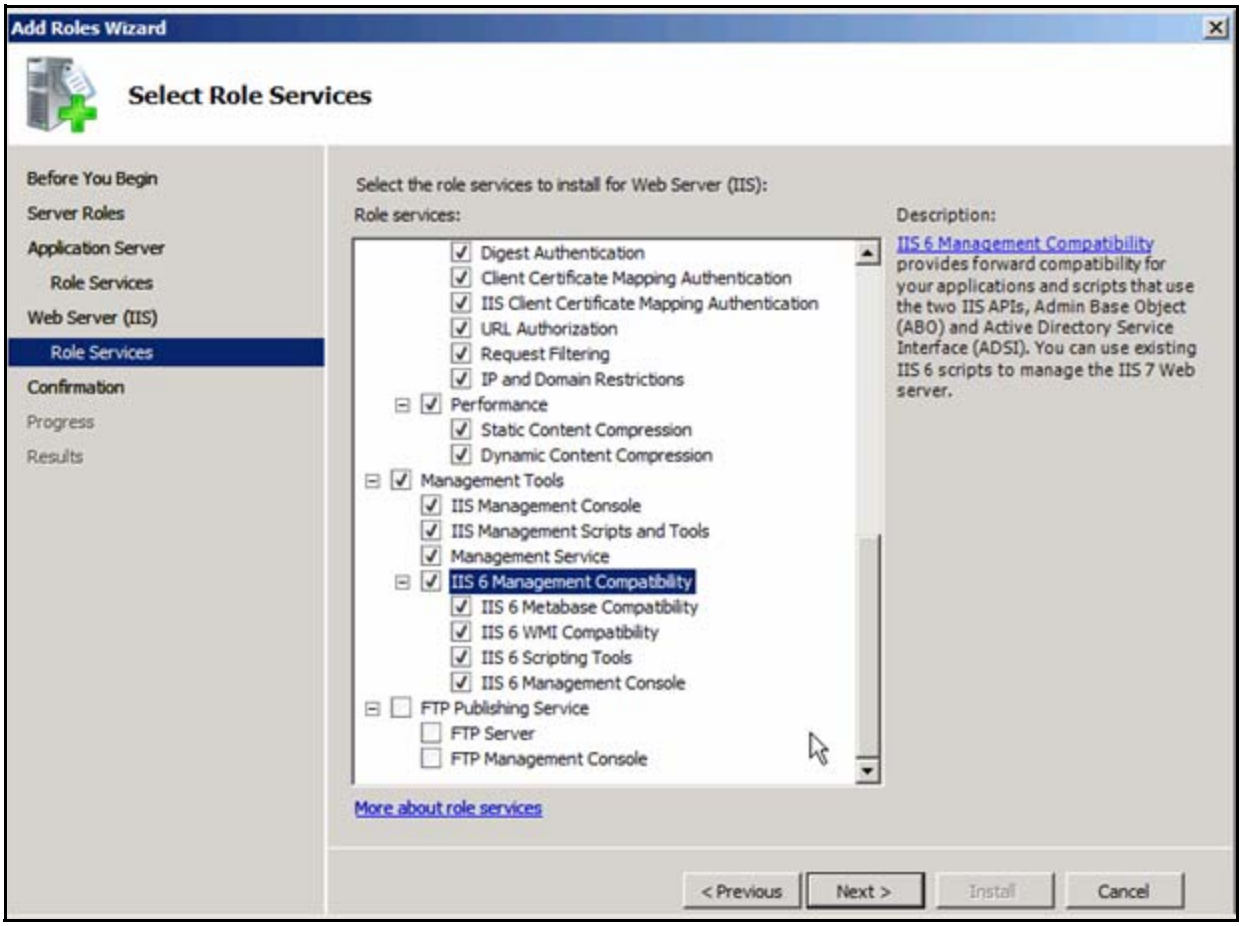
20. Select the options as shown above for the Web Server. There are more options to select so ***do not*** click Next.

21. Scroll the Role Services.



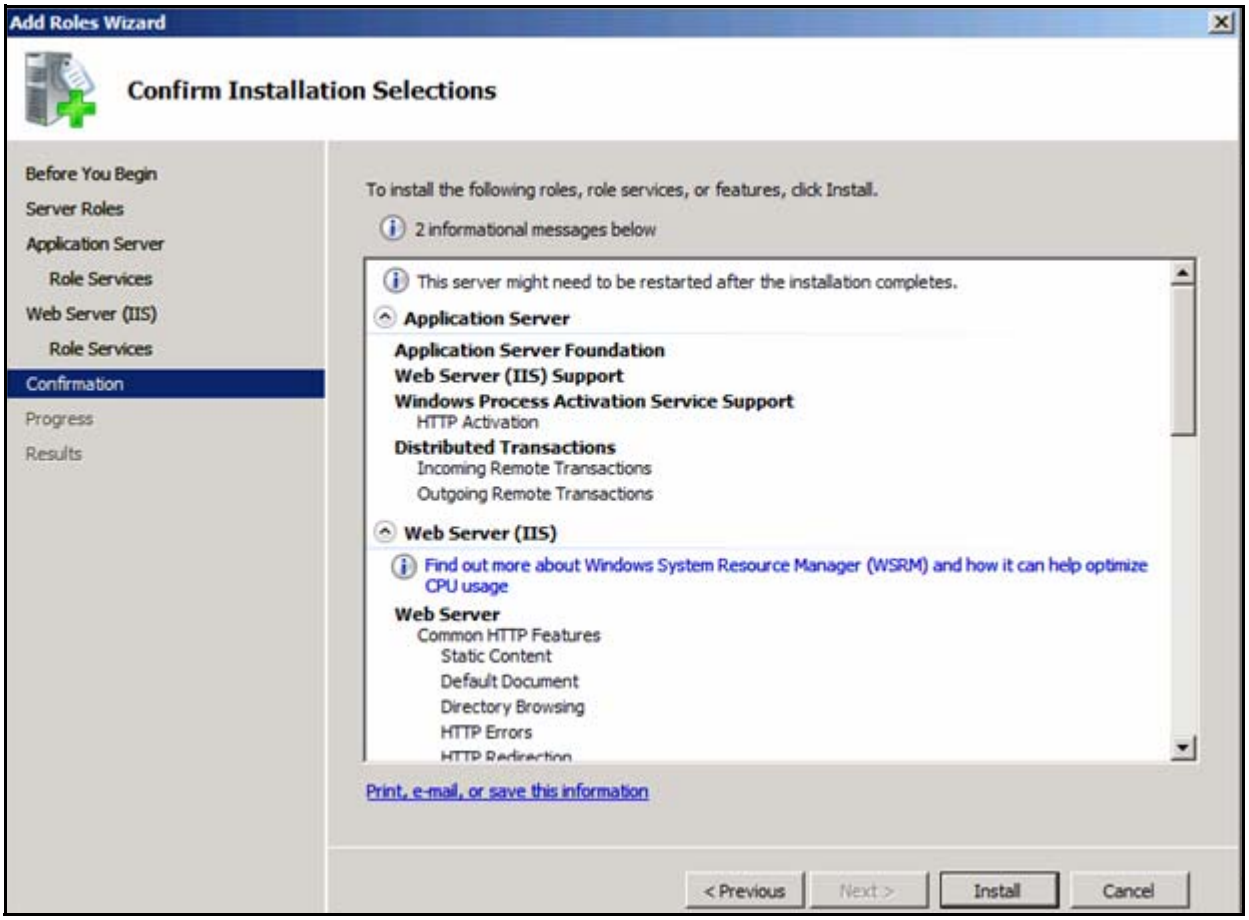
22. Expand **Security,** and click to select **Basic Authentication**, **Windows Authentication**, and **Request Filtering** check boxes.
23. Select the **Static Content Compression** check box under Performance if used by the site. This also applies to the Dynamic Content Compression option.
24. Check any other options that are required by the site for the Customer's specific configuration.

The following displays.



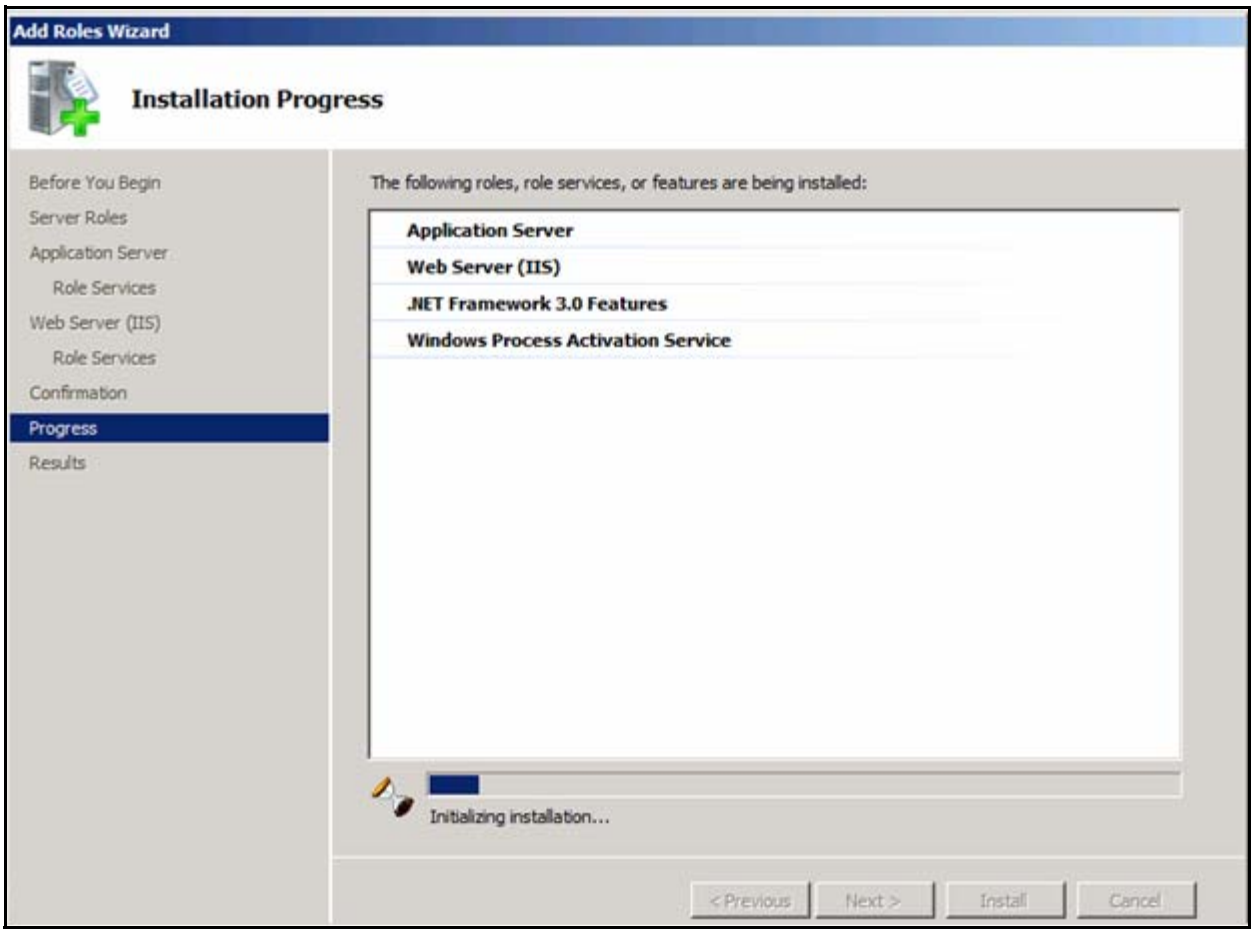
25. Check the options for Management Tools as shown above.
26. Click **Next**.

The Confirm Installation Selections window displays.



27. Scroll the list and make sure that you have selected all options required.
28. Click **Install**.

The Installation Progress window displays.



29. Allow the application to install the features and then close any open dialogs.
30. Repeat the procedure for all servers.

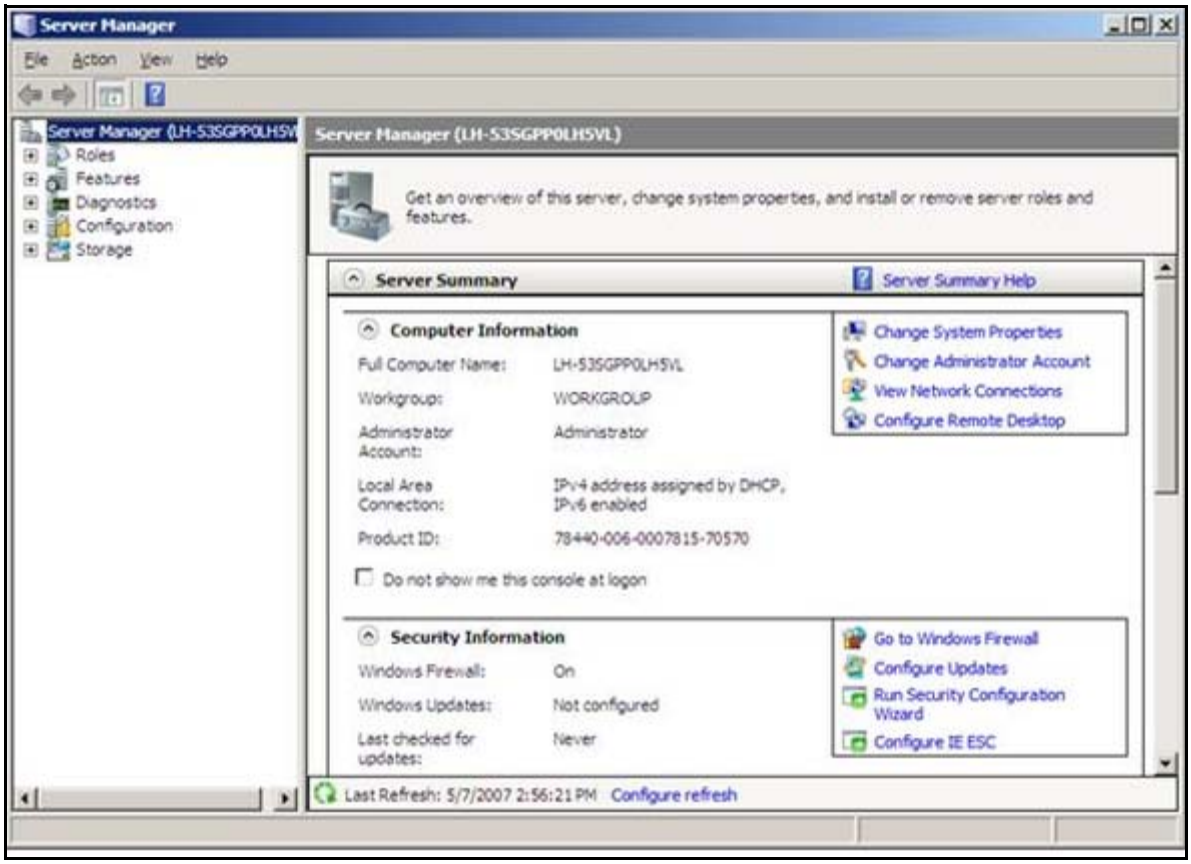
Install Additional Features

IMPORTANT

You must install the Failover Cluster additional features on all Nodes. The steps cover both Application and SQL clusters.

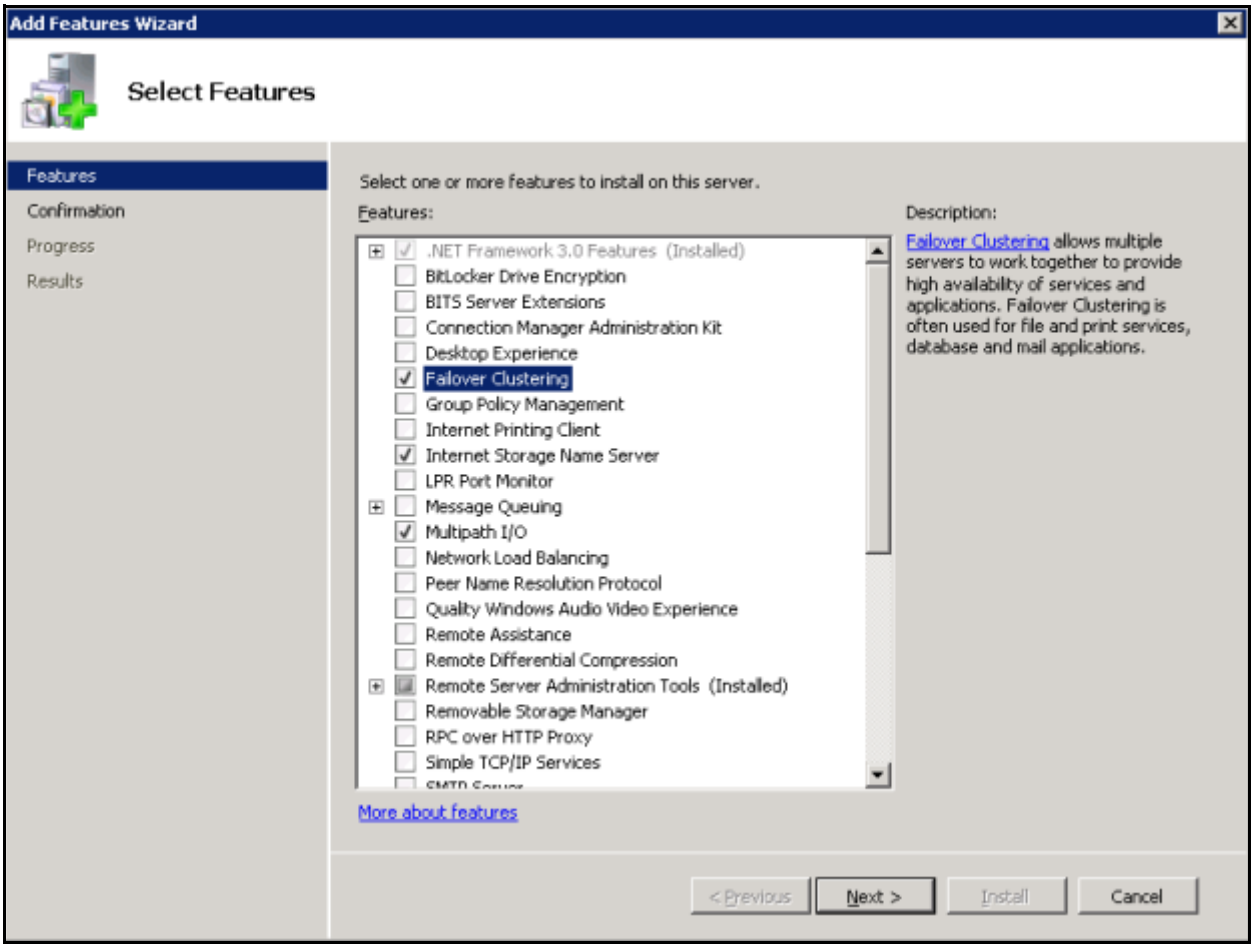
1. From the Control Panel, click **Programs and Features**.
2. Click **Turn Windows features on or off**.

   The **Server Manager** appears.



3. Click **Features** in the left pane.

The Select Feature window displays.



4. Check the following as needed:

   - **Failover Clustering - Required**
   - **Internet Storage Name Server - Optional based on customer environment**

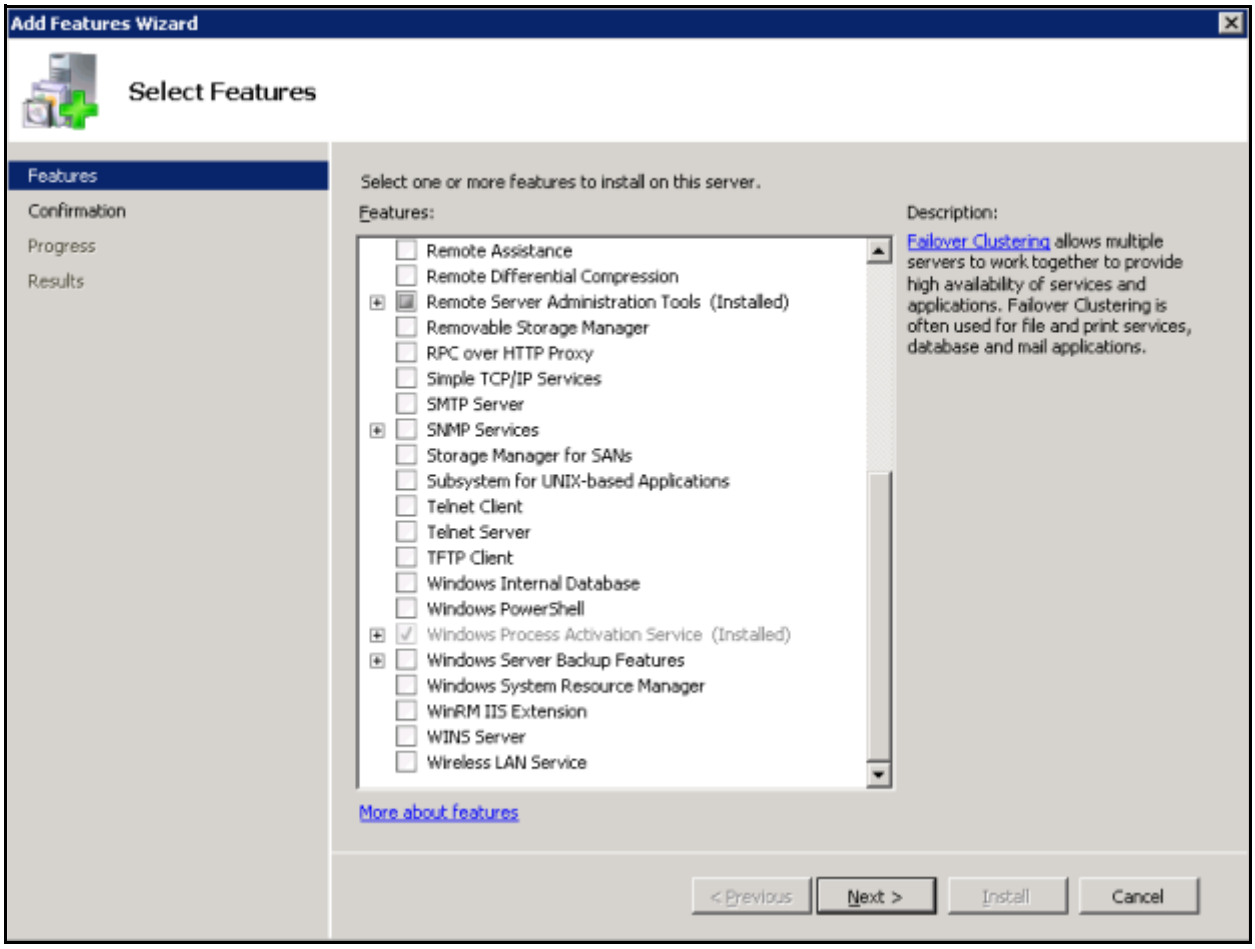
     Internet Storage Name Server (iSNS) provides discovery services for Internet Small Computer System Interface (iSCSI) storage area networks. iSNS processes registration requests, deregistration requests, and queries from iSNS clients.

   - **Multipath I/O - Optional based on customer hardware environment**

     Microsoft Multipath I/O (MPIO), along with the Microsoft Device Specific Module (DSM) or a third-party DSM, provides support for using multiple data paths to a storage device on Microsoft Windows.

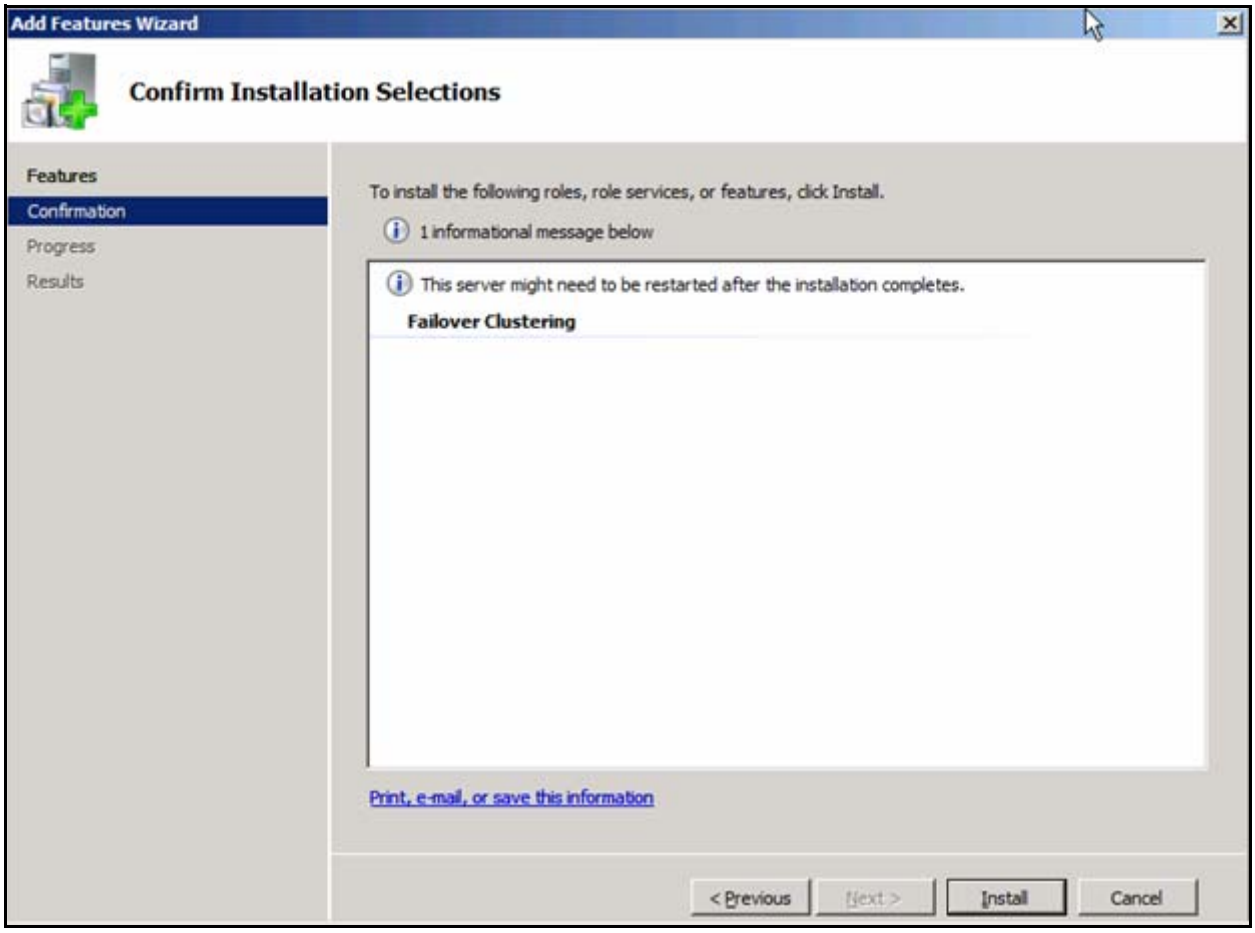
5. Scroll the list.

The following displays.



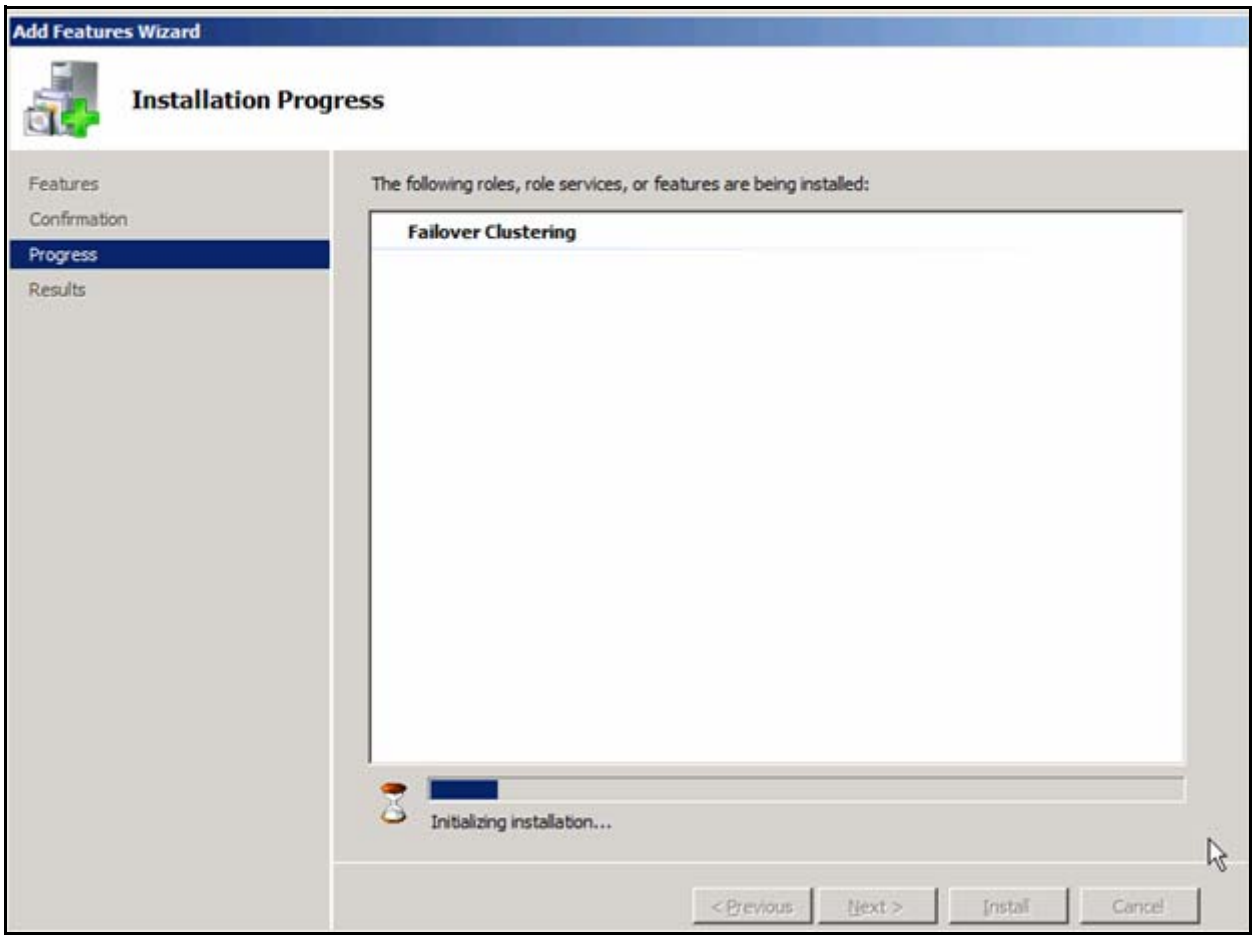
6. Verify that the list reflects the options as shown above.
7. Click **Next**.

The confirmation window displays for your choice.



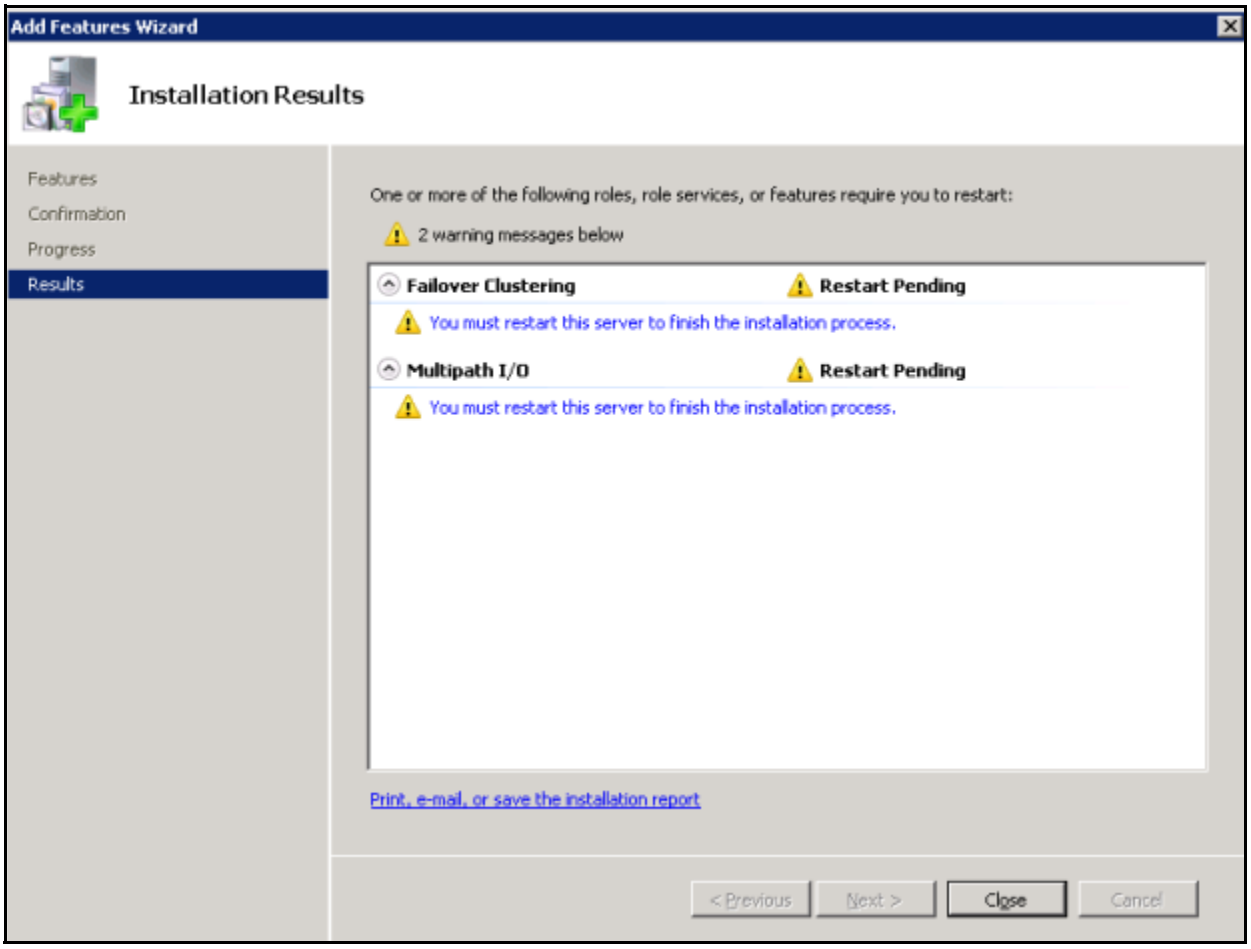
8. Click **Install**.

The Installation Progress window displays and the installation progresses.



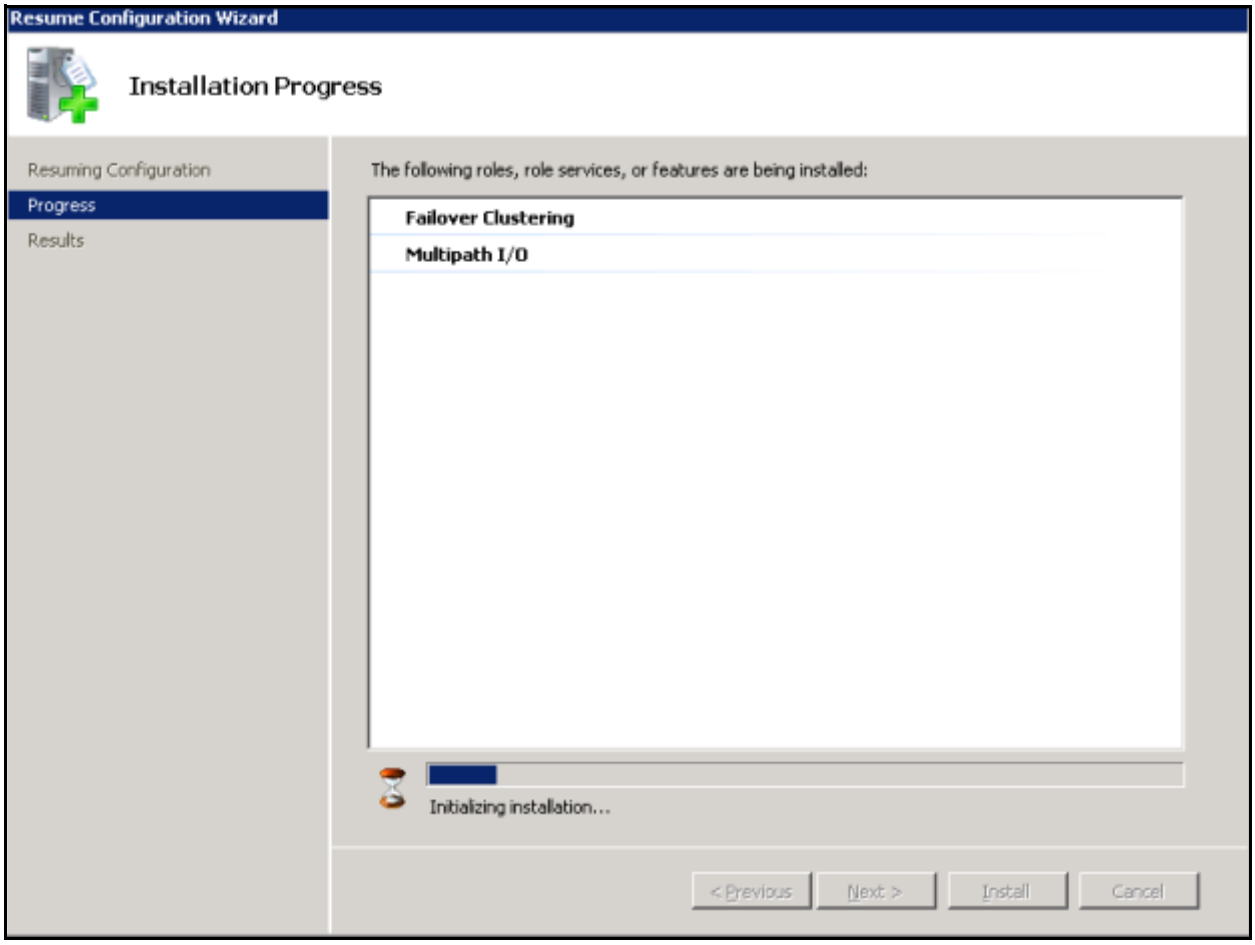
9. Allow the application to install the feature.

The Installation Results window displays, requiring you to restart the server.



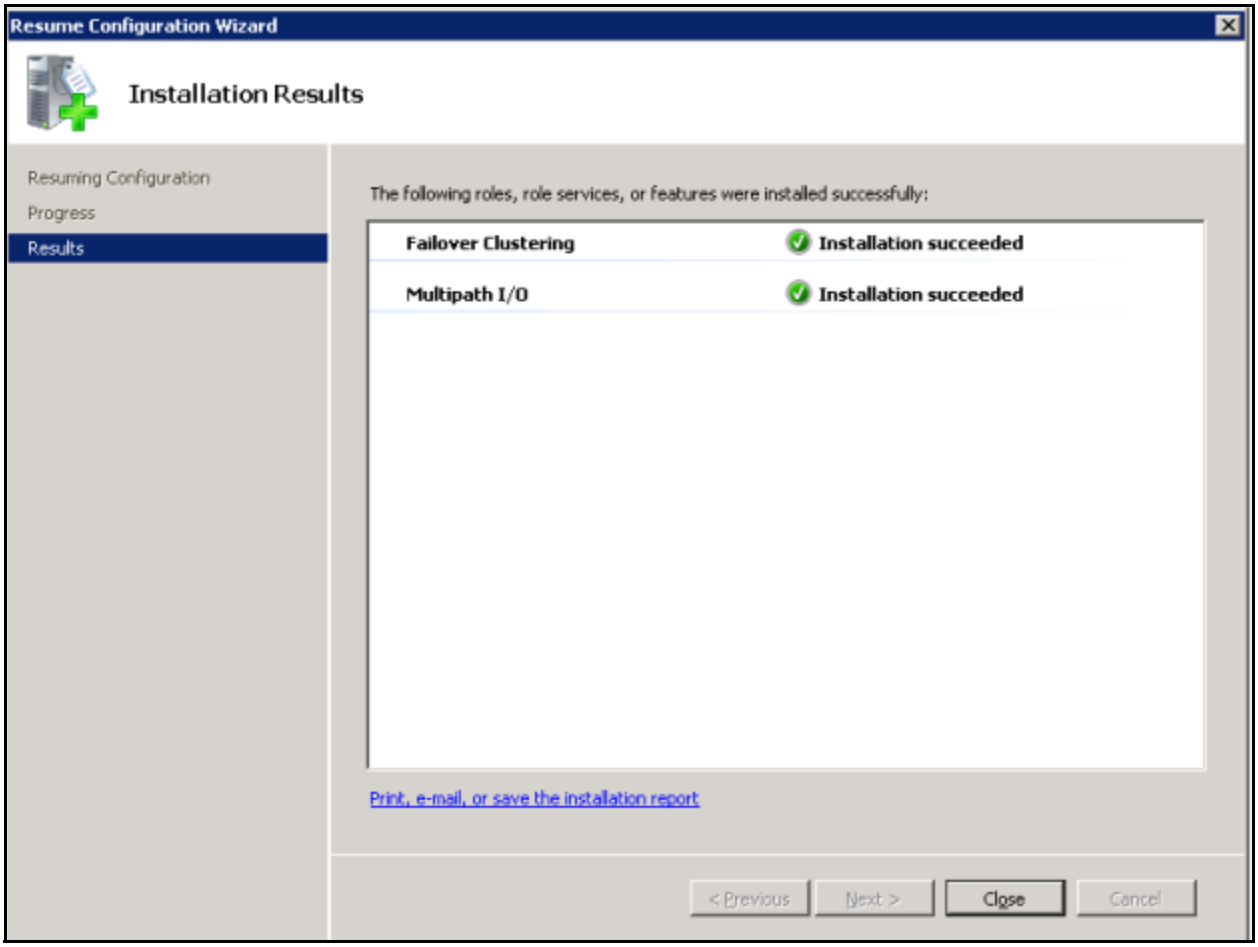
10. Click **Close**.
11. **Reboot** the server.
12. Log on to the server after the reboot is finished.

The installation will continue.



13. Monitor the progress.

The Installation Results display. The following is only an example (this model selected Multipath in addition to the required Failover Clustering). Your site will differ if you chose different options.

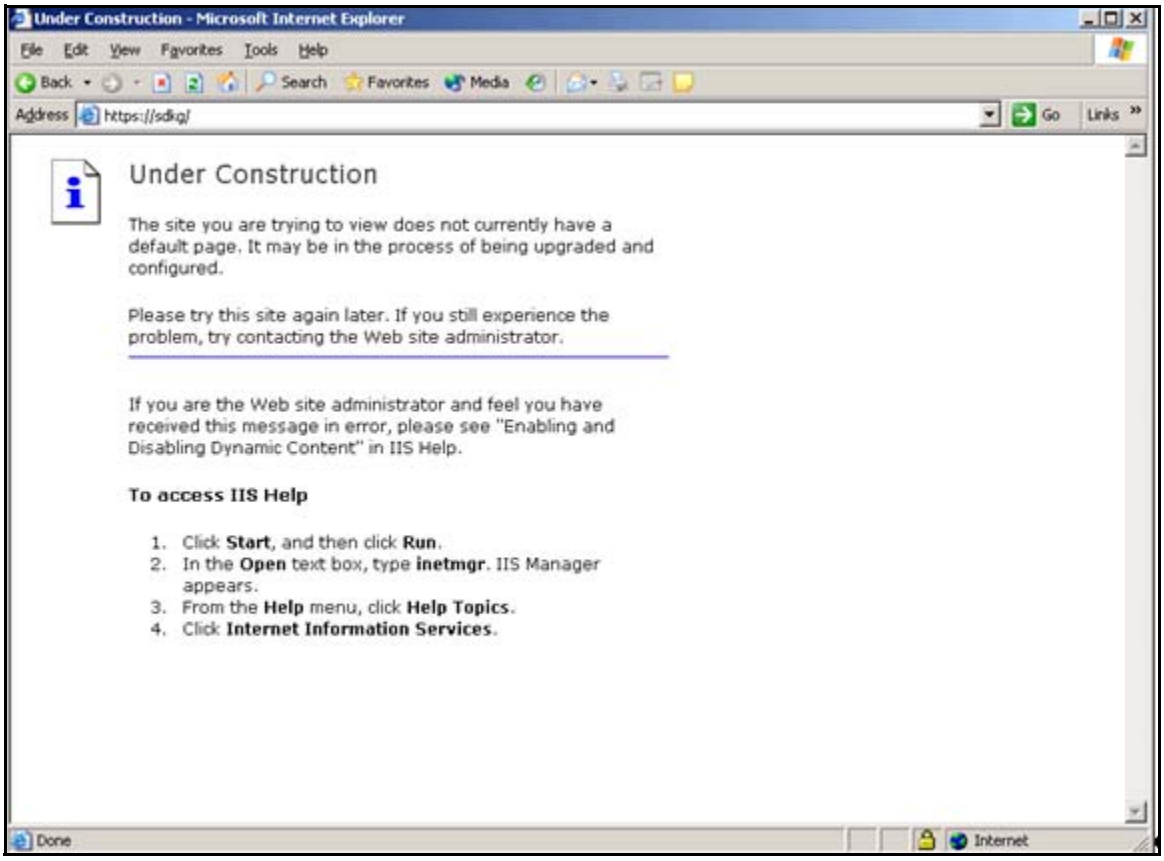


14. Click **Close**.

Step 5 - SSL Certificate of Authority and Intermediate Certificates (Optional)

It is the Customer's responsibility to obtain and install the SSL Certificate of Authority and Intermediate Certificates. Refer to your Vendor's Web site and follow the Vendor's instructions for obtaining and installing the SSL Certificates. Once the Certificates are properly installed, you must contact Nuance Support to request that you system be converted to SSL. ***The Certificate URL cannot contain the word "PowerScribe".***

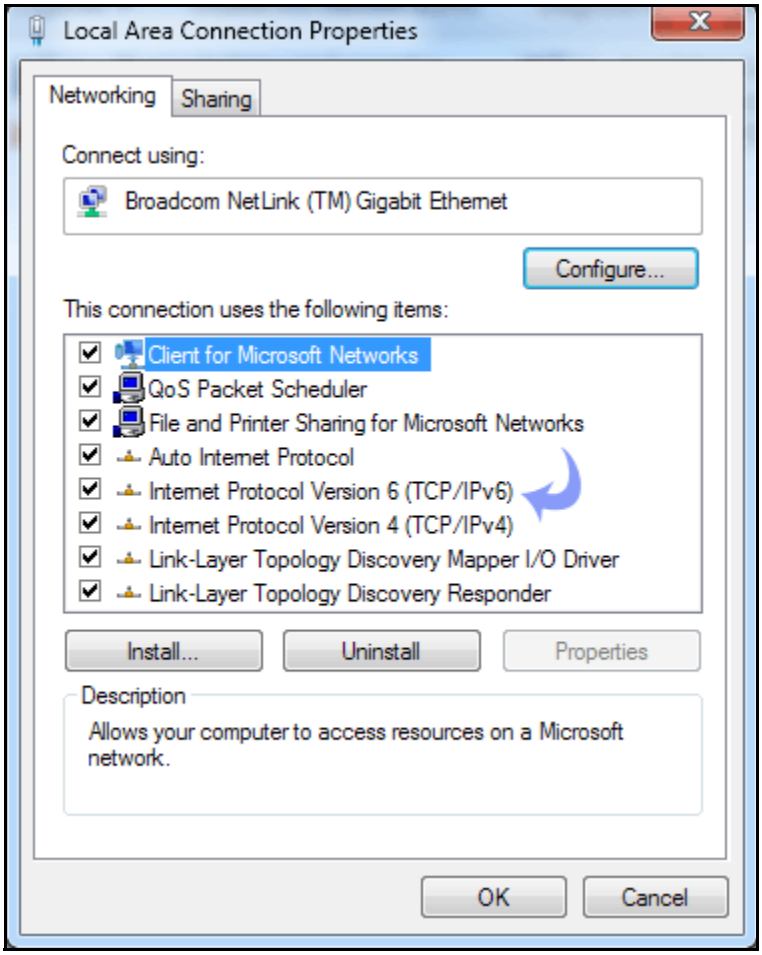
To confirm that your system is properly functioning, using the browser, go to the Web Server link https://<FQDN> (e.g., https://hcc2rectst.apple.orange.com). The site should display the Under Construction window.



Step 6 - Disable IPv6 in the Registry

For **all Windows 2008 servers** in all systems, you must perform the following steps to permanently disable IPv6 in the registry. This action is reversible if IPv6 is needed in the future.

1. Go to **Control Panel/Network and Internet/Network Connections**.
2. Right-click **Local Area Connection** and choose **Properties**.

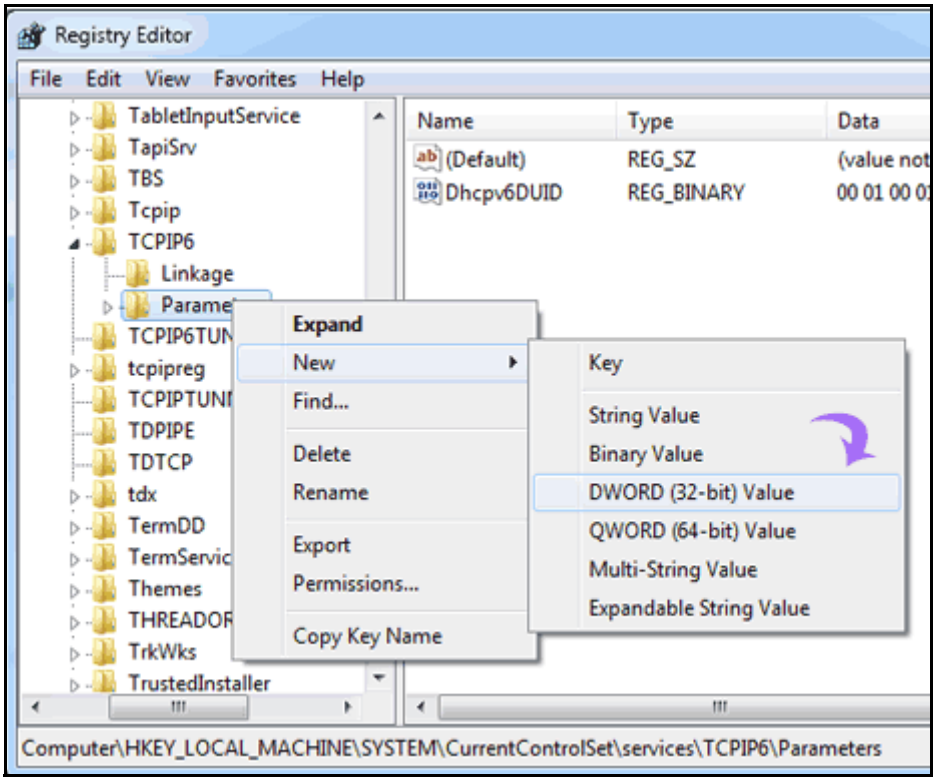


3. **Uncheck** the **Internet Protocol Version 6 (TCP/IPv6)** option.
4. Click **OK** and close the dialog box.
5. Click **Start/Run**.
6. Enter **regedit** in the Open entry box and press **Enter**.

   Registry editor opens.

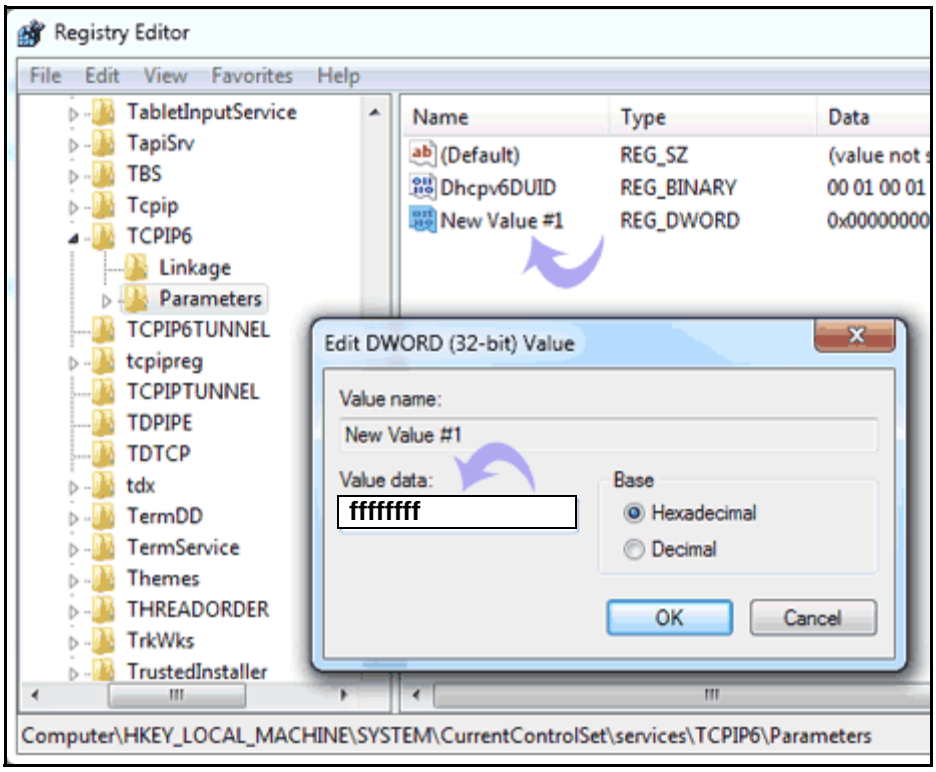
7. Navigate to:

HKEY_LOCAL_MACHINE/SYSTEM/CurrentControlSet/Services/TCPIP6/Parameters



8. Right-click **Parameters 7**, select **New**, and then choose **DWORD (32-bit) Value**.

A screen similar to the following displays.



9. Double-click **New Value**.
   a. In the **Value name** field, change **New Value #1** to **DisabledComponents**.

      This name is case sensitive and must be exactly entered as **DisabledComponents**.

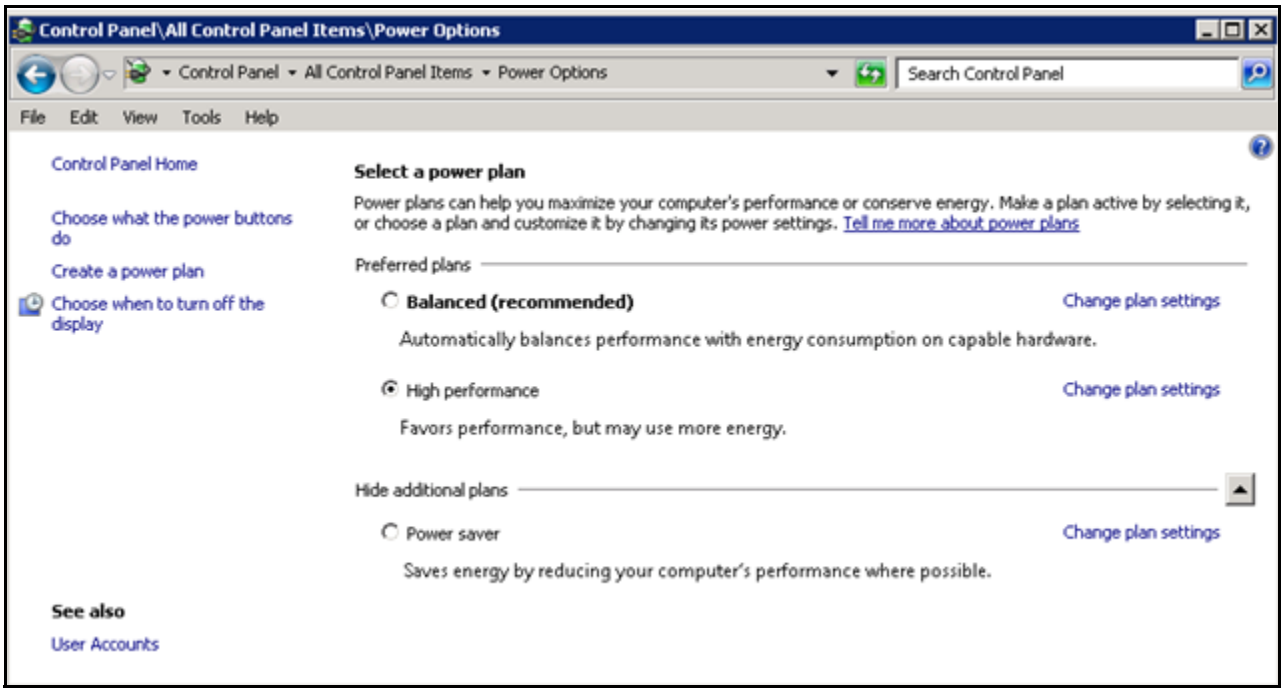
   b. In the **Value data** field, change the value from 0 to **0xffffffff** in the text box.
10. Click **OK**.
11. Reboot the machine.

    IPv6 will be permanently disabled on the machine. To re-enable IPv6, recheck the option in Local Area Connections/Properties and either delete the newly created value by performing the above steps and removing the parameter, or simply set the Value data to 0.

Step 7 - High Performance Setting

For better server performance on all Windows 2008 servers, you should set the Power Plan to High Performance.

Go to **Control Panel/All Control Panel Items/Power Options** and enable the **High performance** setting as shown below.



Step 8 - Network Discovery

Perform one of the following procedures provided below, depending on the version of Microsoft Windows Server 2008.

- Enable Network Discovery - Windows Server 2008 R2
- Enable Network Discovery - Windows Server 2008 Enterprise

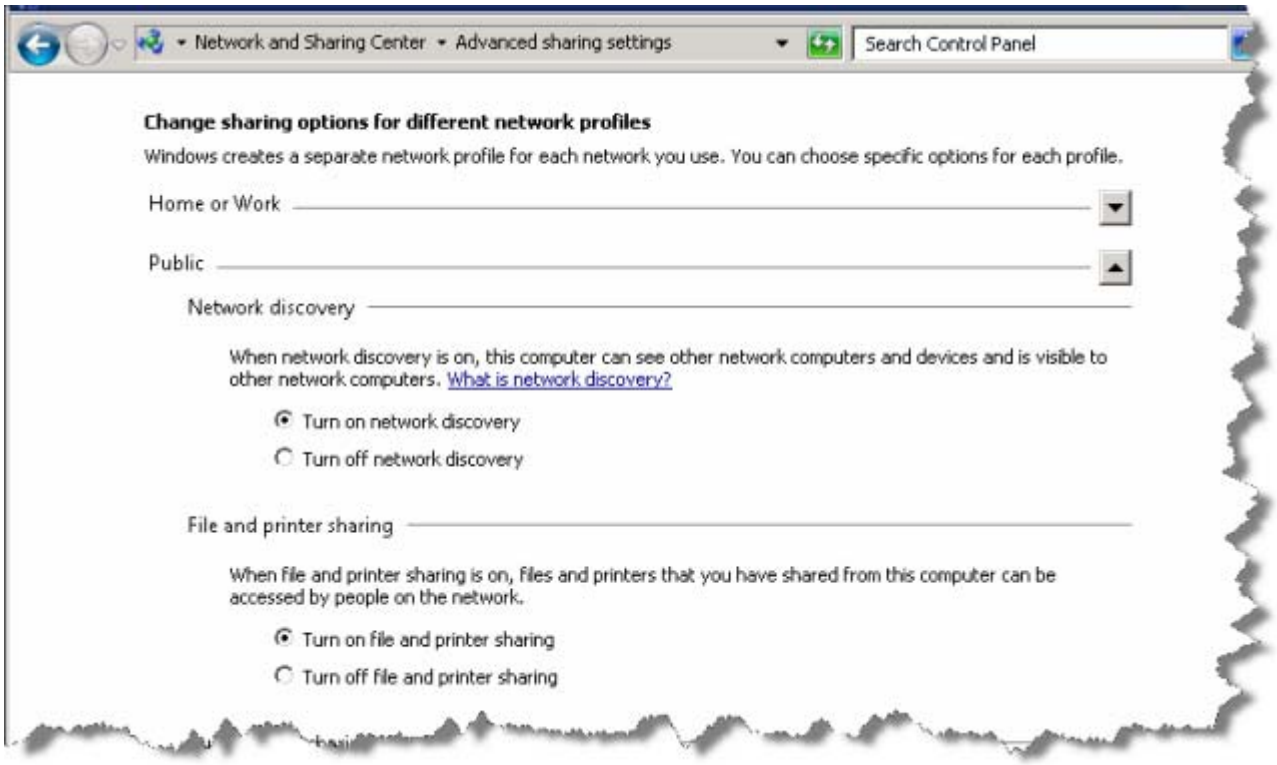
Enable Network Discovery - Windows Server 2008 R2

Make sure you are logged on as an Administrator or an account with Admin privileges.

1. Select **Start/Administrative Tools/Services** and enable the following services:
   - Function Discovery Resource Publication
   - SSDP Discovery
   - UPnP Device Host
2. Double-click **each** service listed above to display the **Properties** dialog box, make sure that the Startup type is set to **Automatic**, and click **Start**.
3. Close the application.
4. Select **Start/Control Panel/Network and Sharing Center**.
5. In the Network and Sharing Center left pane, click **Change advanced sharing settings**.

   The Advanced sharing settings folder opens.
6. In Advanced sharing settings, in **Change sharing options for different network profiles**, click the arrow for **Public**.

The following displays.

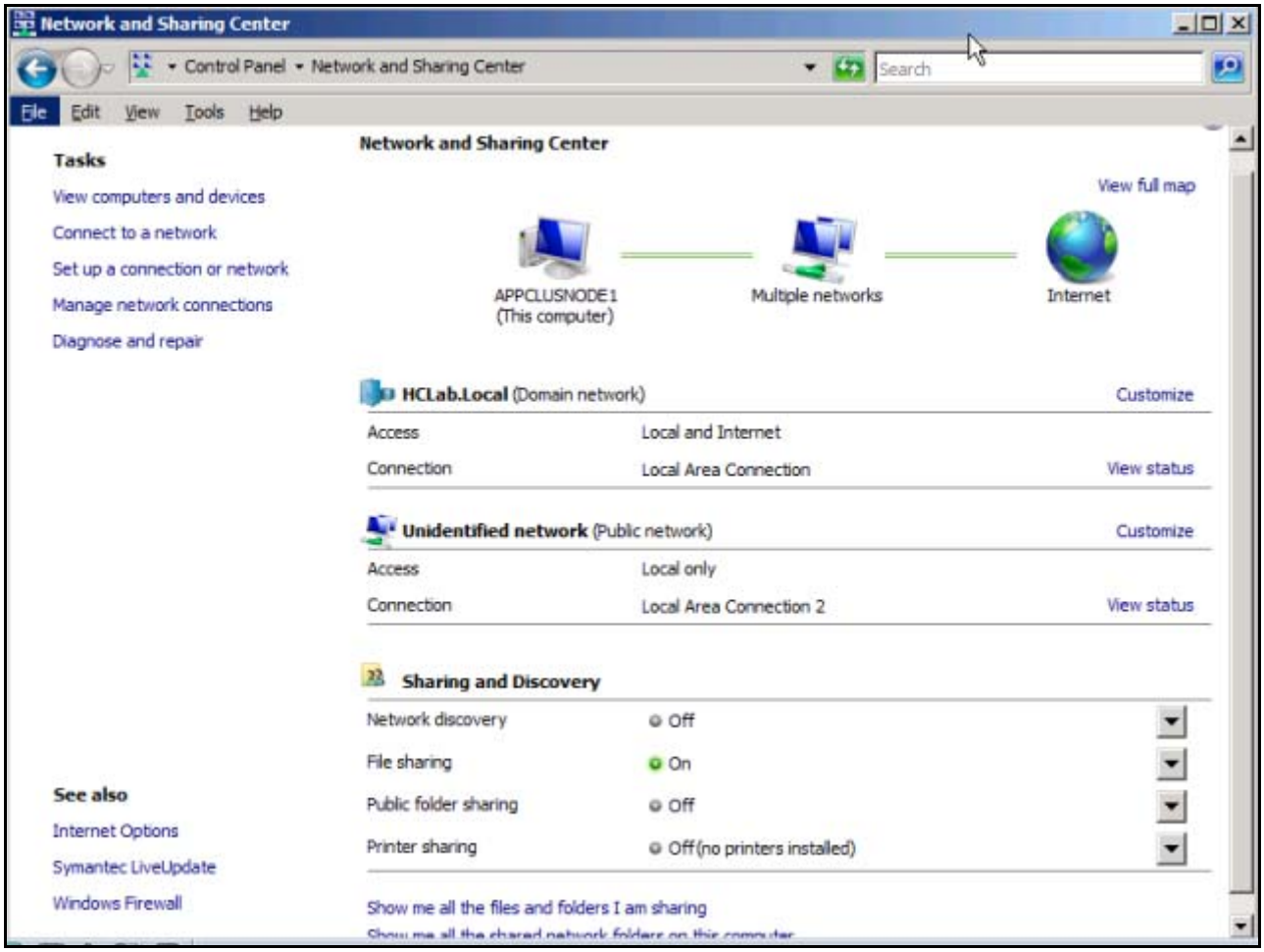


7. Enable the **Turn on network discovery** option.
8. Click **Save changes**.

Enable Network Discovery - Windows Server 2008 Enterprise

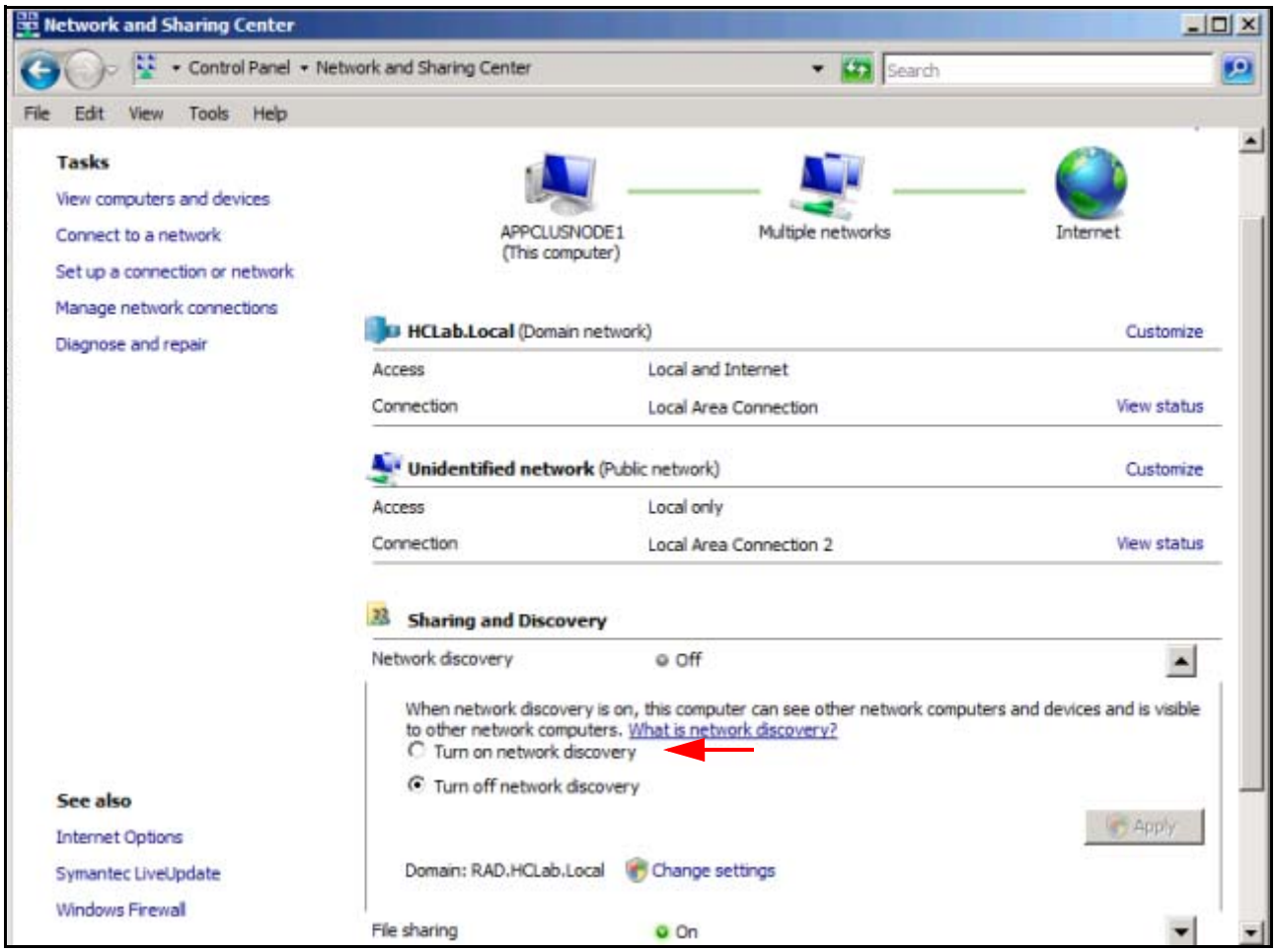
You must perform the following steps if the Network discovery option is set to Off. However, even if the option is set to On, it is best to verify the settings.

1. Select **Start/Control Pane/Network and Sharing Center**.



2. Click the drop-down arrow for the **Network discovery** option.

The following displays.

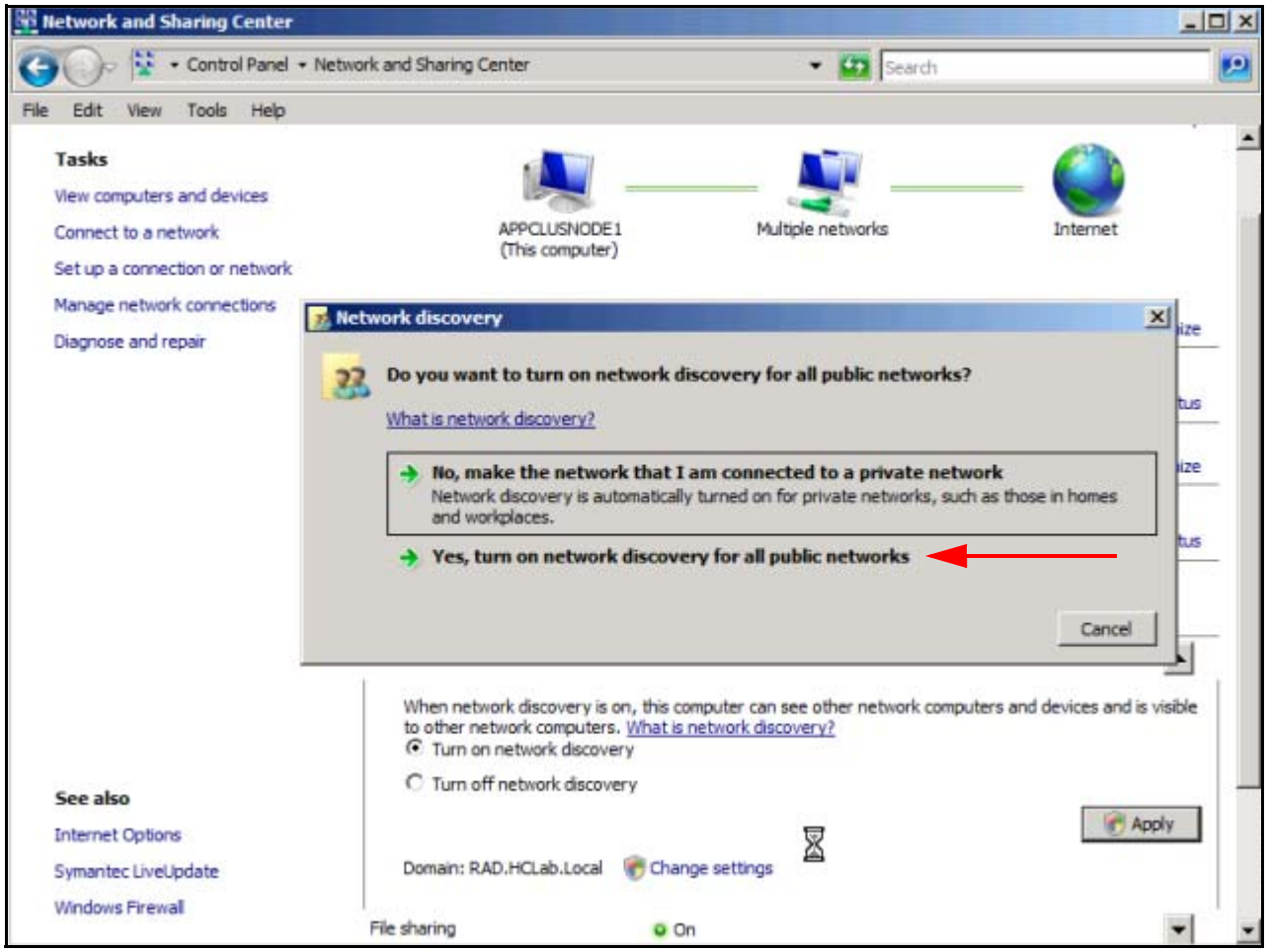


3. To enable the option, click **Turn on network discovery**.

   If the option is already turned on, as a precaution to check the next settings, change the option from On to Off and then back again to On.

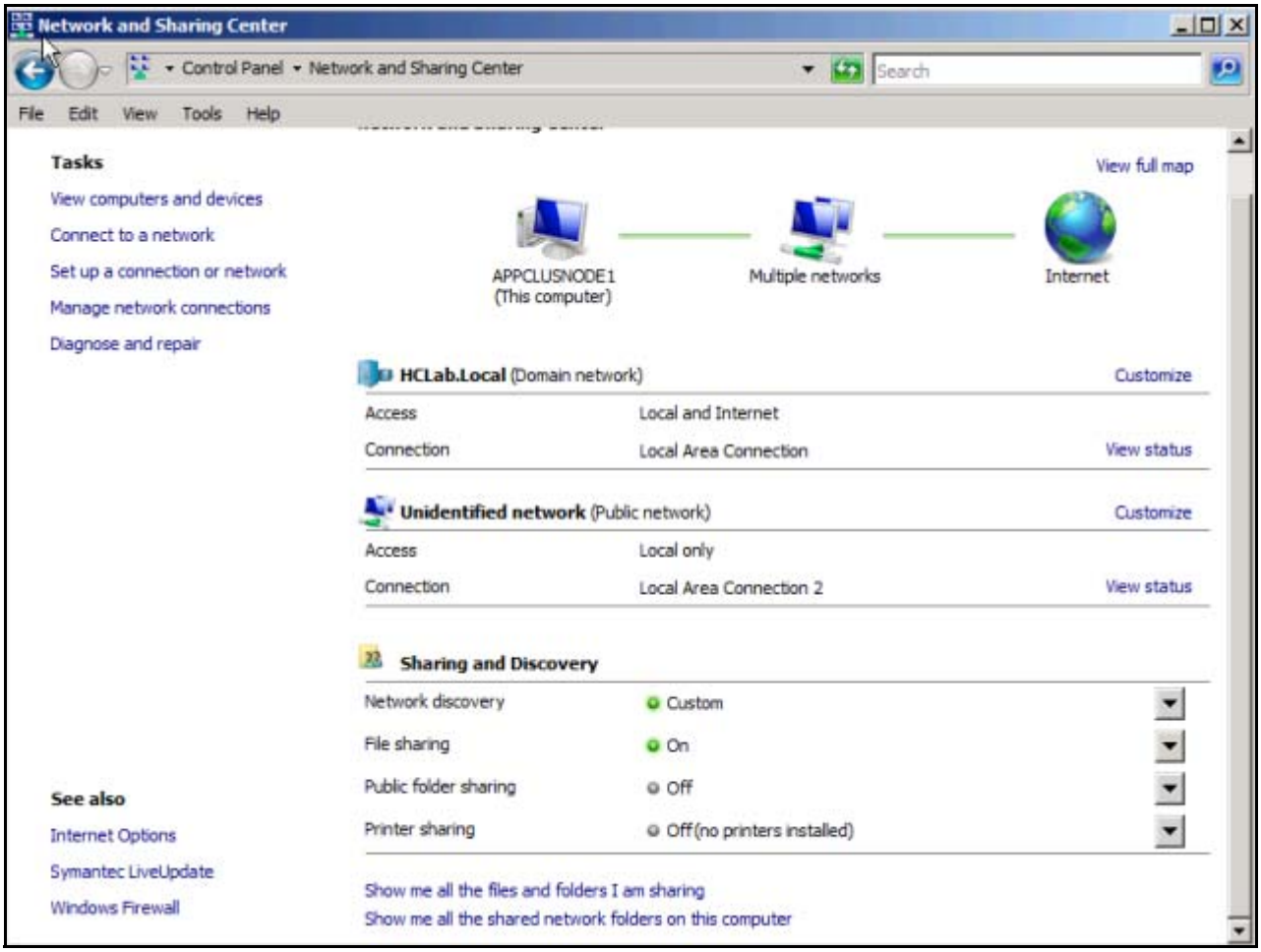
4. Click **Apply**.

You are prompted to turn on the network discovery for all public networks.



5. Click the **Yes, turn on network discovery for all public networks option**.

The window should look as below.



6. Close the dialog.

Step 9 - Disable Firewall

Disable the firewall on the servers.

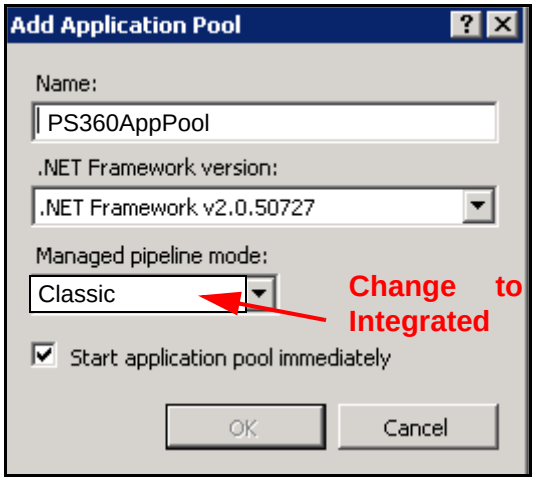
Step 10 - Create New IIS Application Pool

Application pools isolate sites and applications to address reliability, availability, and security issues. For optimum PowerScribe 360 performance, create a new IIS Application Pool for PowerScribe 360 named **PS360AppPool**.

Refer to the following documentation:

http://technet.microsoft.com/en-us/library/cc731784%28WS.10%29.aspx

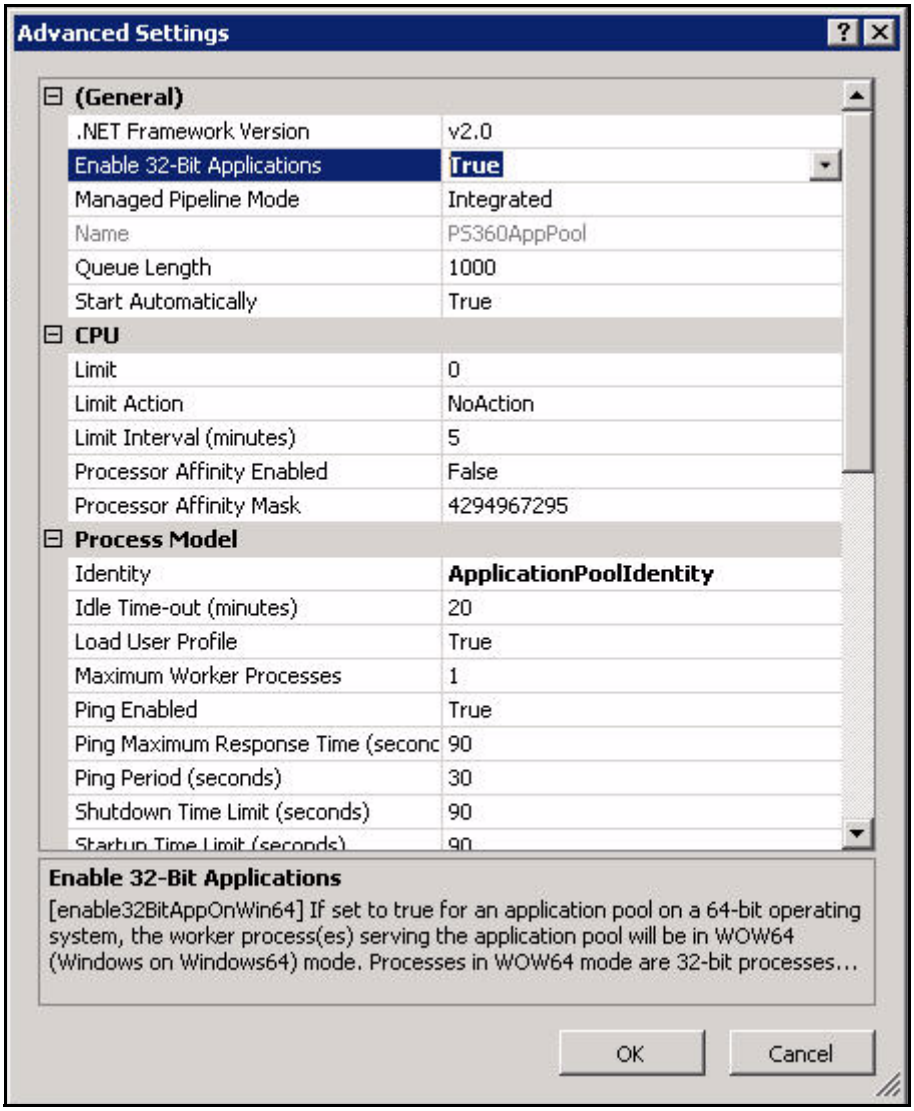
1. Open IIS Manager in Administrative Tools.
2. In the Connections pane, expand the server node and right-click **Application Pools**.
3. On the Application Pools page, in the Actions pane, click **Add Application Pool**.



4. On the Add Application Pool dialog box, enter **PS360AppPool** for the name for the application pool in the **Name** box.
5. From the .NET Framework version list, select **v2.0.50727** of .NET Framework.
6. From the Managed pipeline mode list, select the **Integrated** option from the drop-down box.
7. Check the **Start application pool immediately** option checkbox to start the application pool whenever the WWW service is started. ***Make sure that this box is checked.***
8. Click **OK**.

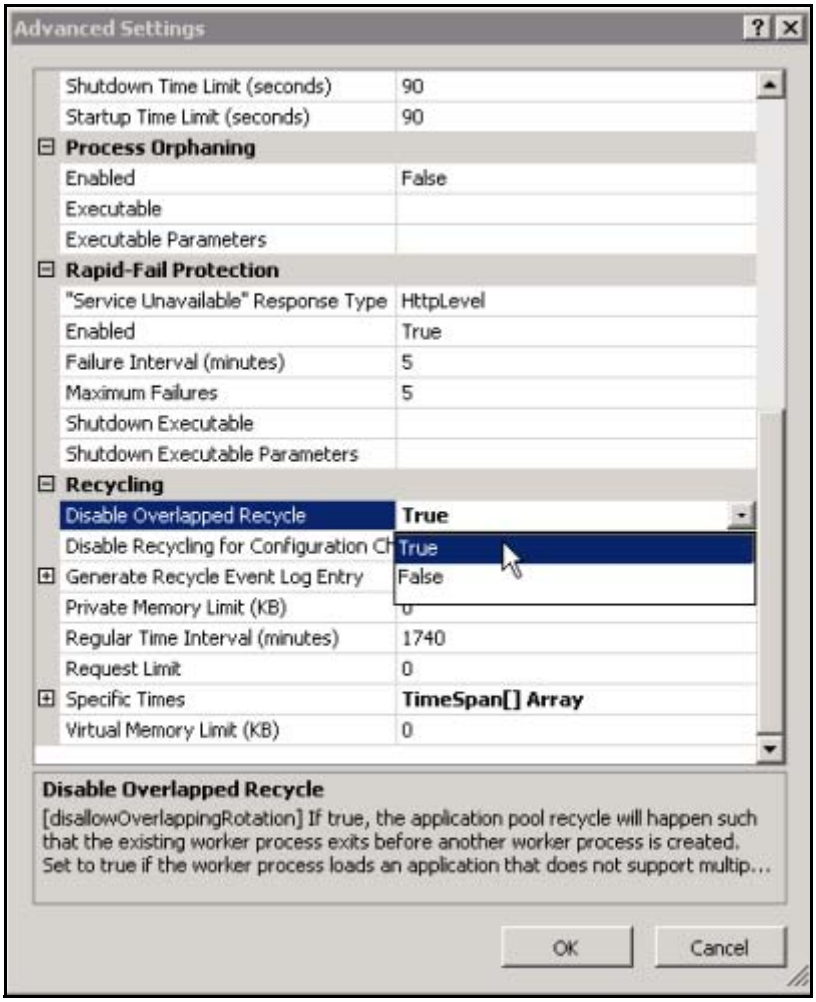
9. Return to the Application Pools page, right-click the new **PS360AppPool,** and click **Advanced Settings**.

   The Advanced Settings window displays.



10. If the machine is 64-bit, you must change the **Enable 32-bit Applications** to **True**. If this is a 32-bit machine, **do not** perform this step.
11. Scroll the list to display the **Recycling** group.

The window should look as follows:



12. Make sure that the Disable Overlapped Recycle option is set to **True**.
13. Click **OK**.
14. Close **IIS**.

MICROSOFT SQL 2008 3

Microsoft SQL Server Considerations

Database Name

The database for PowerScribe 360 is named Comm4 by default and must not be changed.

SA Account

The installation of this application requires use of the **sa** account name. If you, as the Customer, will not allow the use of the **sa** account, contact Support Director/Manager for guidance. The **sa** account is only used for installing Microsoft SQL and for updates. ***It is not used for application connections for PowerScribe 360.*** For that purpose, Nuance will create a PS360User account.

You can change the password of the **sa** account after it is used for the database installation and it will not affect the installation. However, when updates to the Microsoft application are applied, the **sa** password must be used so you must have the password on hand when performing updates for the latest application service packs.

Named Instances

PowerScribe 360 can support the use of named instances in SQL Server for Database, Reporting Services, or Analysis Services. To use Named Instances, you must use **<SERVERNAME>\<INSTANCENAME>** in the Data Connection string throughout the installation.

Mixed Mode Installation

SQL must be installed in Mixed Authentication mode.

Microsoft SQL Server 2008 - Cluster Configuration

IMPORTANT

IIS and WebDAV and the IIS Application Pool must be installed on BOTH NODES of the Cluster BEFORE you install Microsoft SQL.

Install SQL on the Active (Primary) Node

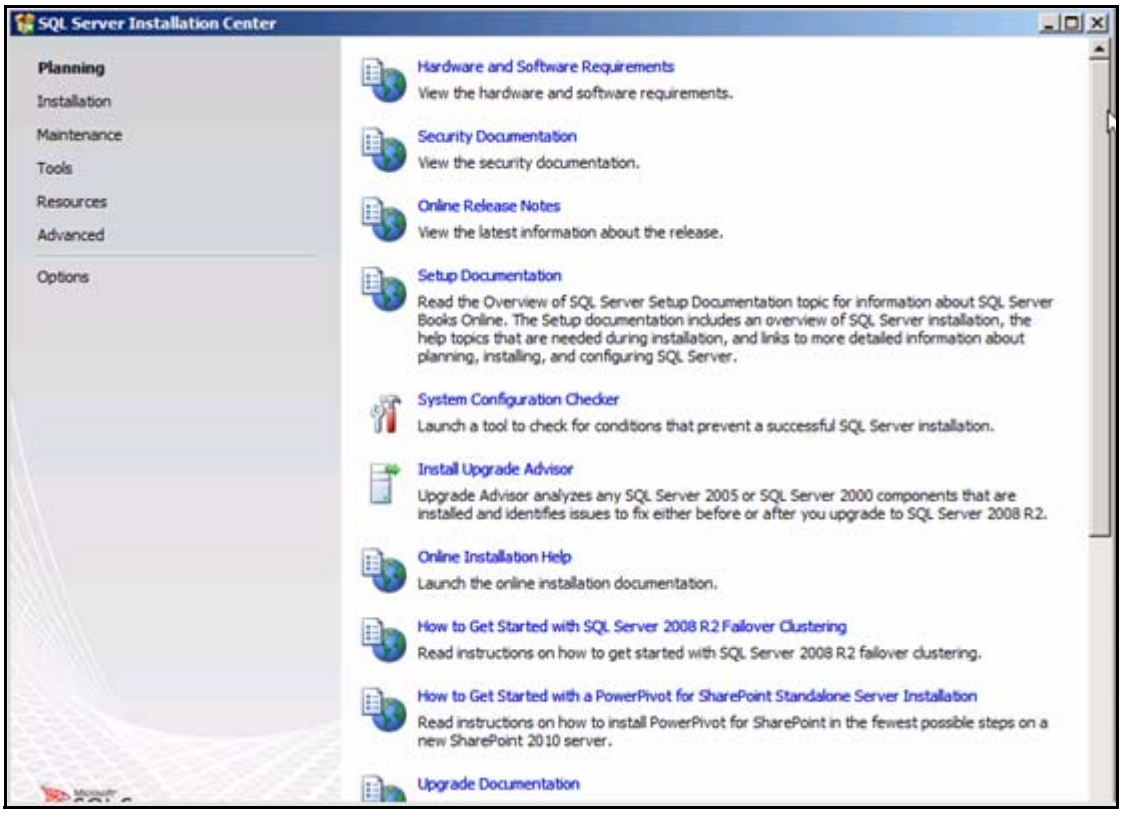
IMPORTANT

This procedure is for the Active Node only. You must log in with a Domain Admin account to perform the steps below.

For this setup, you will install the Microsoft SQL application on a non-clustered drive, such as **Drive C**, and install the database on a clustered drive.

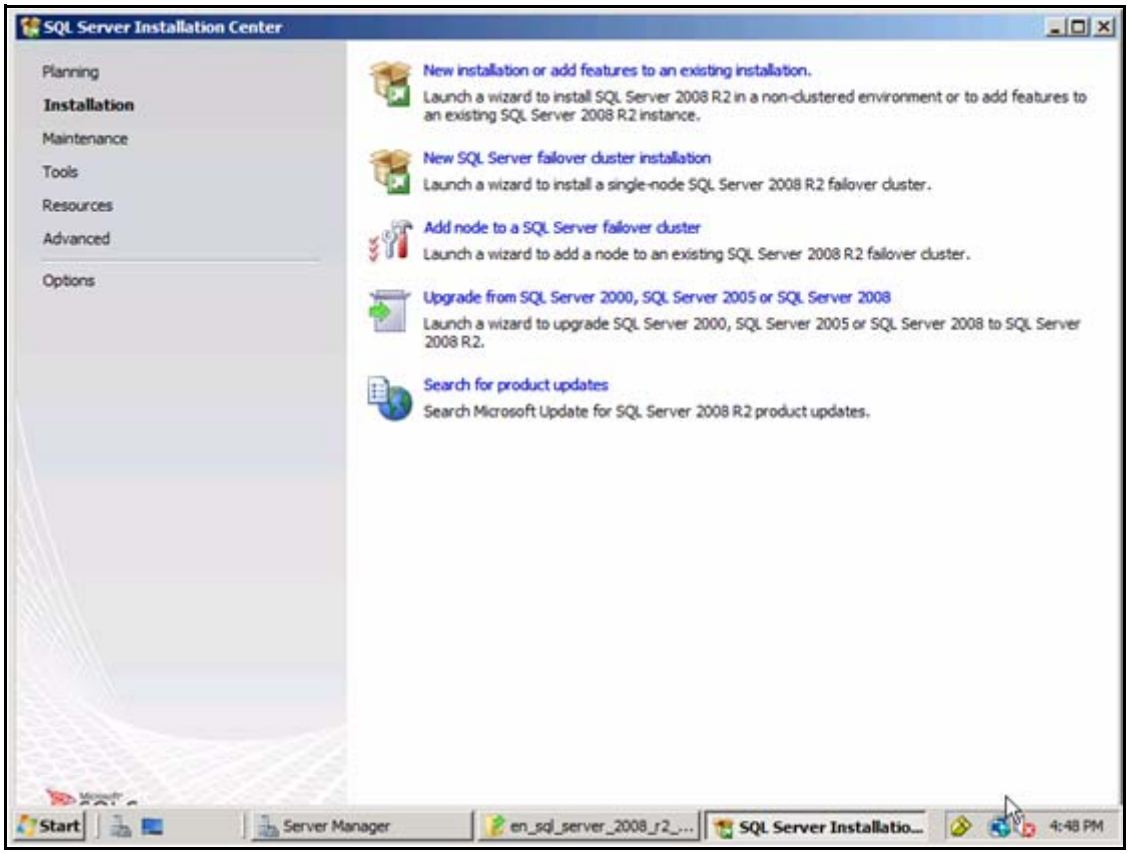
1. Using the Microsoft SQL Server 2008 installation disk, start the installation.

   The Planning window displays.



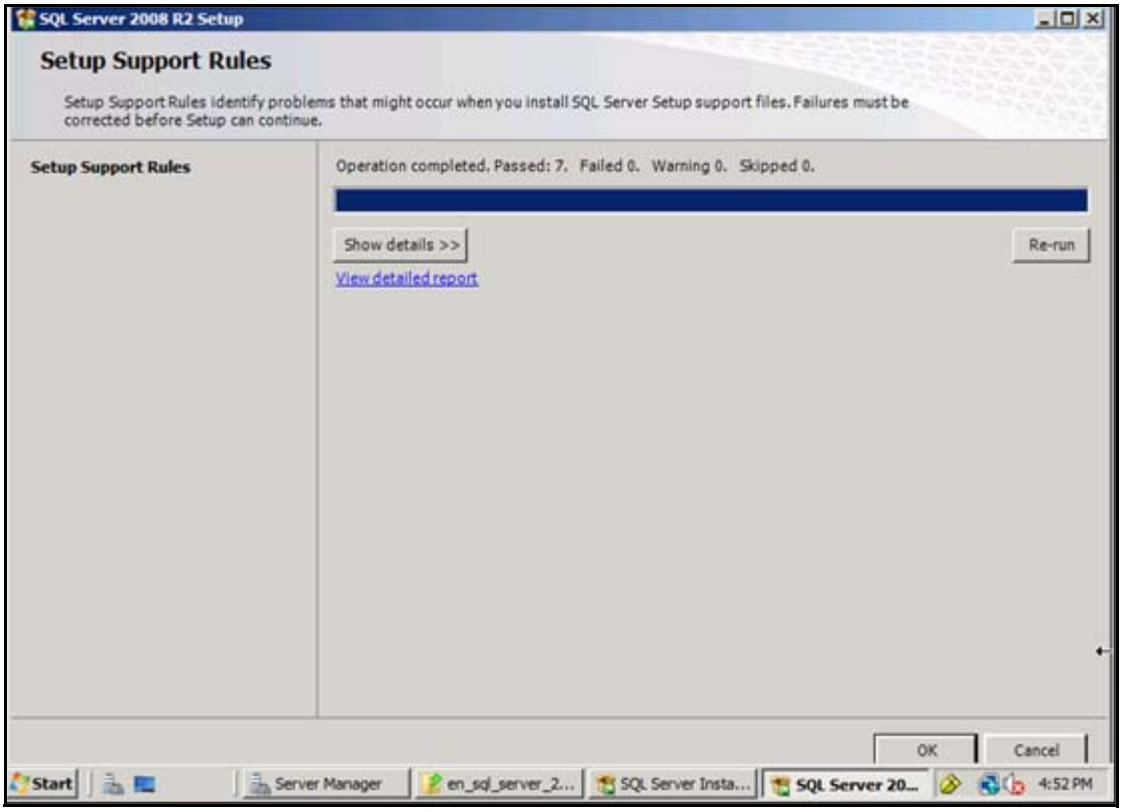
2. Click **Installation** on the left side of the window under Planning.

The Installation window displays.



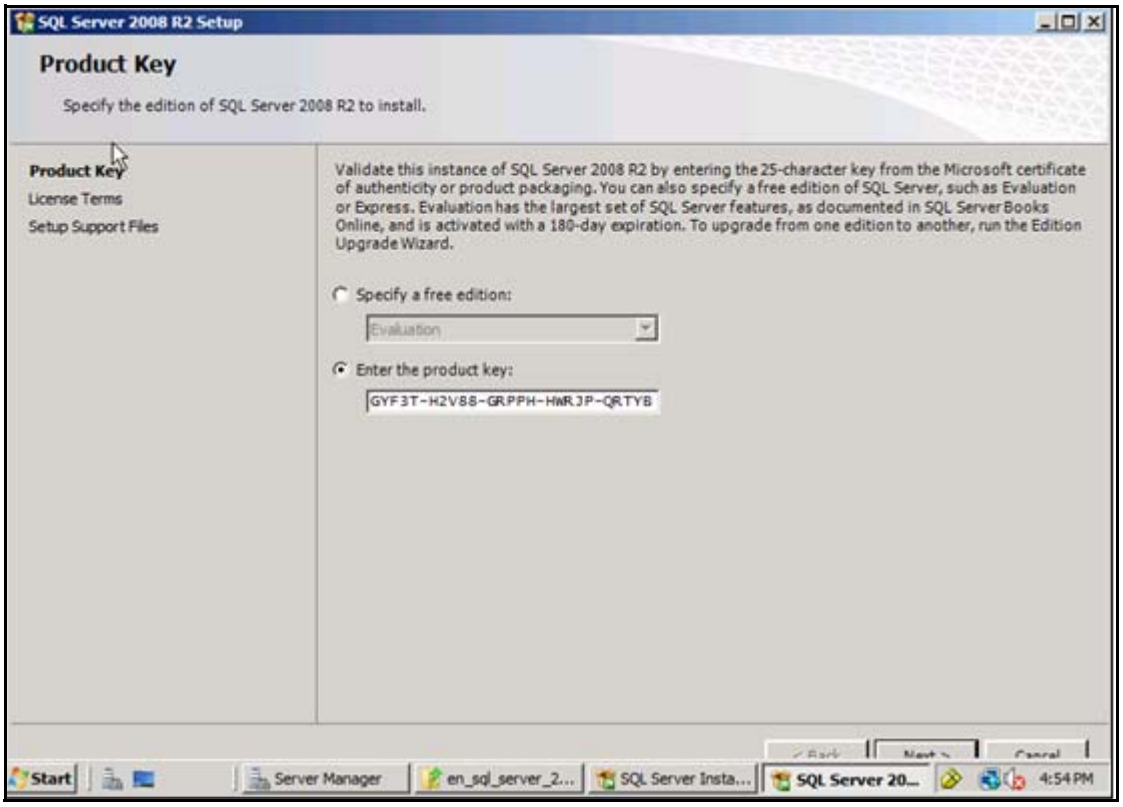
3. Select **New SQL Server failover cluster installation**.

The Setup Support Rules window displays.



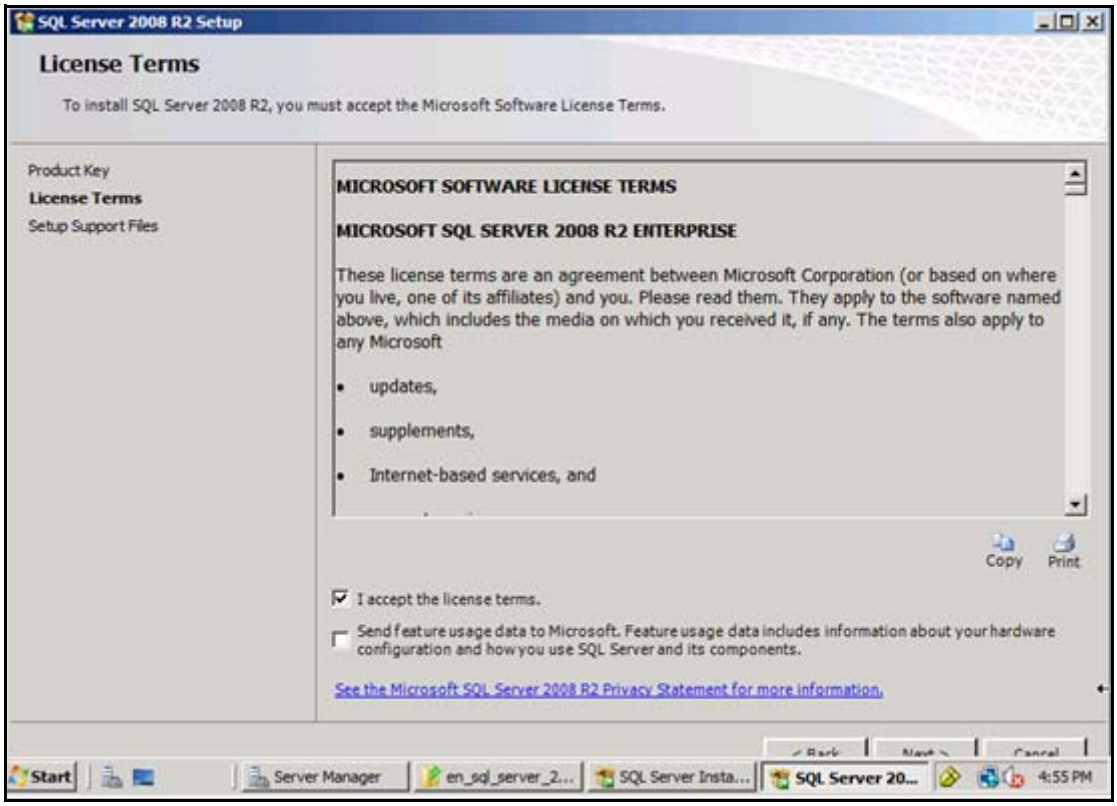
4. Click **OK**.

The Product Key window displays.



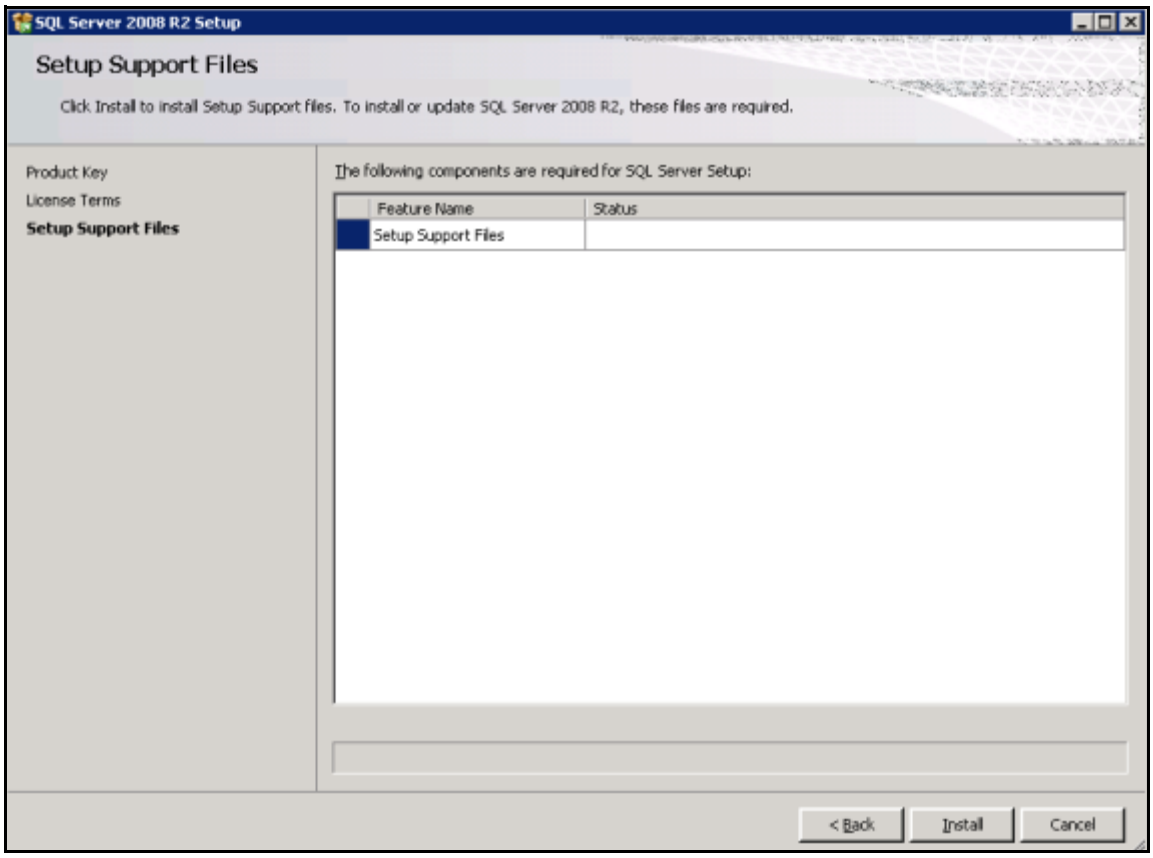
5. Enable the **Enter the product key** option and enter the key in the space provided (most times, the key is on the jewel case).
6. Click **Next**.

The License Terms window displays.



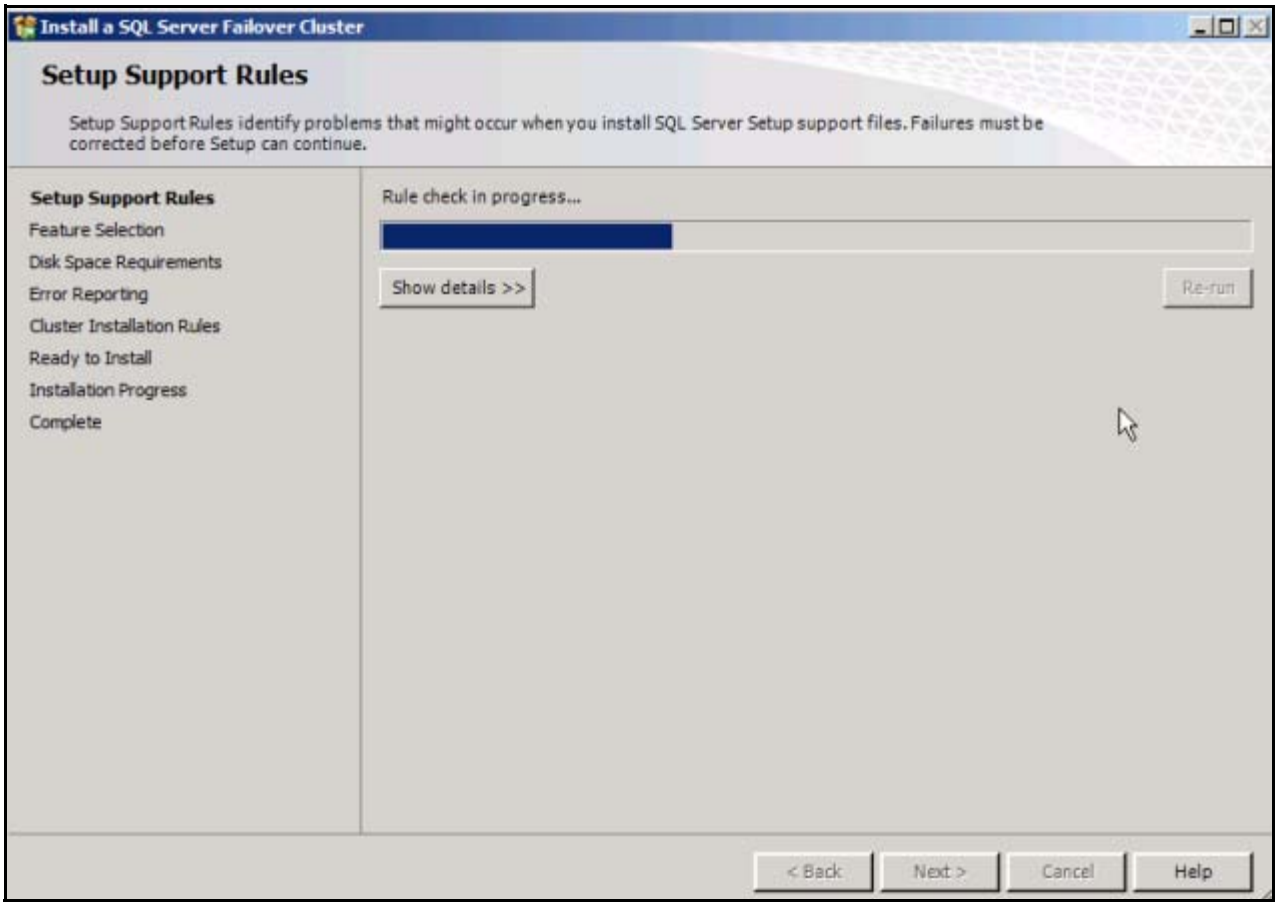
7. Check the **I accept the license terms** checkbox.
8. Click **Next**.

The Setup Support Files window displays.



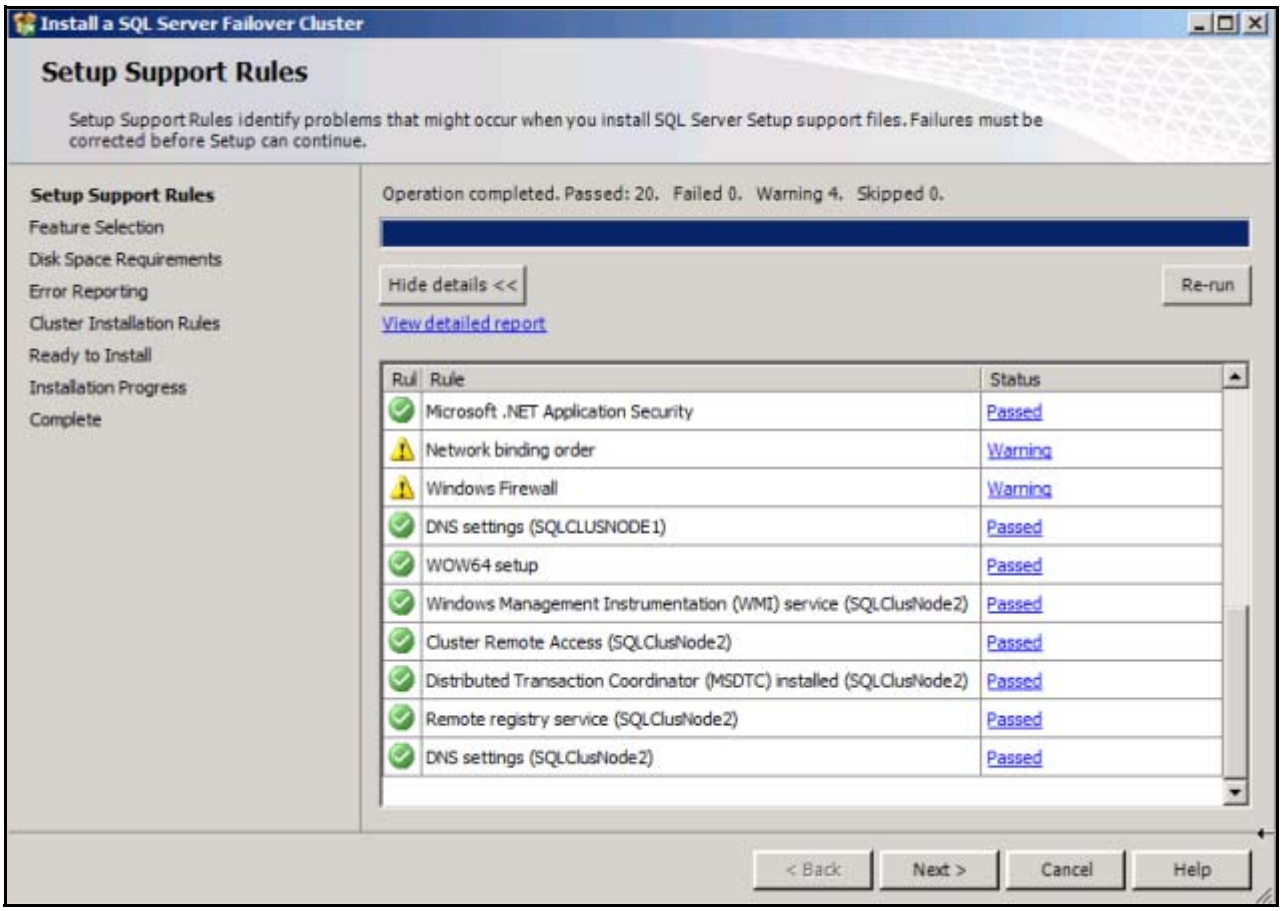
9. Click **Install**.

The Setup Support Rules window displays.



10. When the Rule check is complete, click **Next**.

The application identifies any problems.

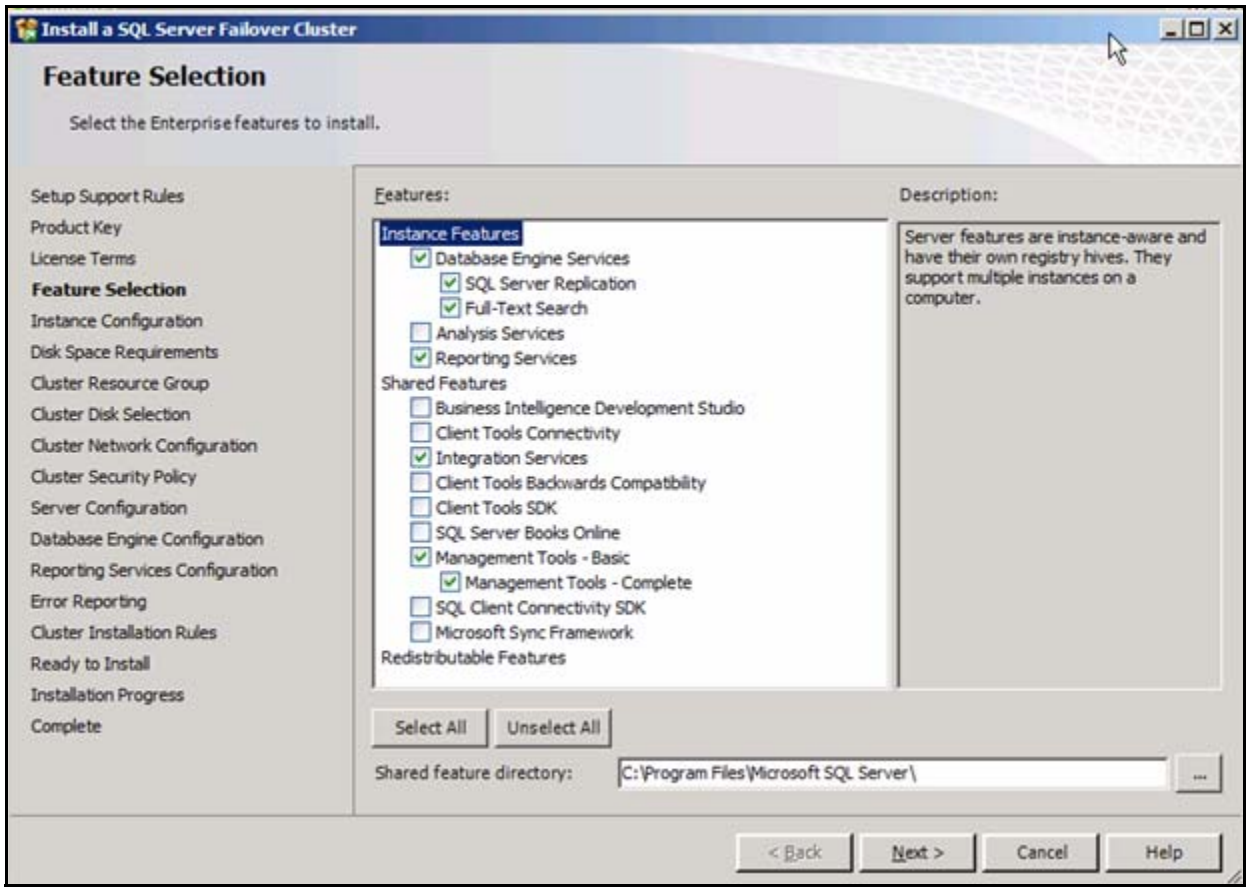


IMPORTANT

Make note of any Warnings. However, if there are any Errors (Failed) items, you must fix them before proceeding.

11. Click **Next**.

The Feature Selection window displays.



12. Check the following features for all PowerScribe 360 installations:

    Database Engine Services

    SQL Server Replication

    Full-Text Search

    Reporting Services

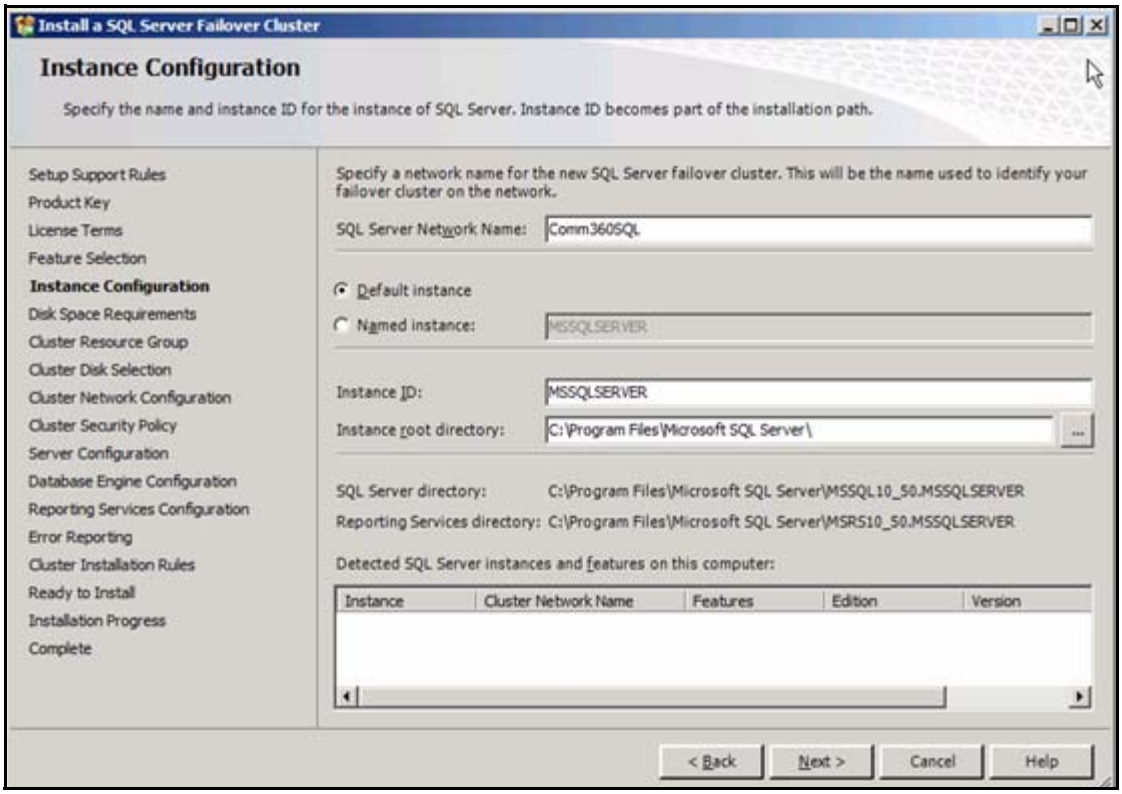
    Integration Services

    Management Tools - Basic

    Management Tools - Complete

13. Click **Next**.

The Instance Configuration window displays.

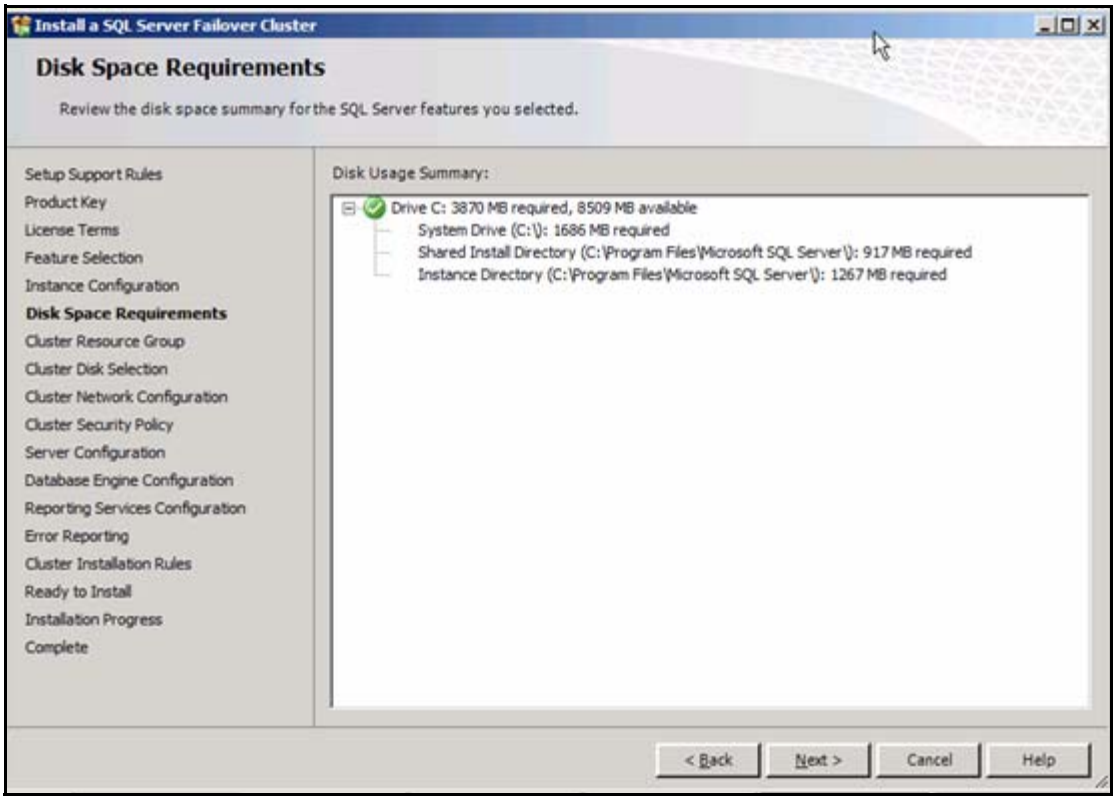


14. Enter an SQL Server Network Name for the new SQL Server failover cluster.

    This is the name of the Virtual SQL cluster itself, and not the Windows cluster, on which you are putting the SQL cluster. When you install the PowerScribe 360 application, this is the name you will use when you enter all of the SQL data connection strings.

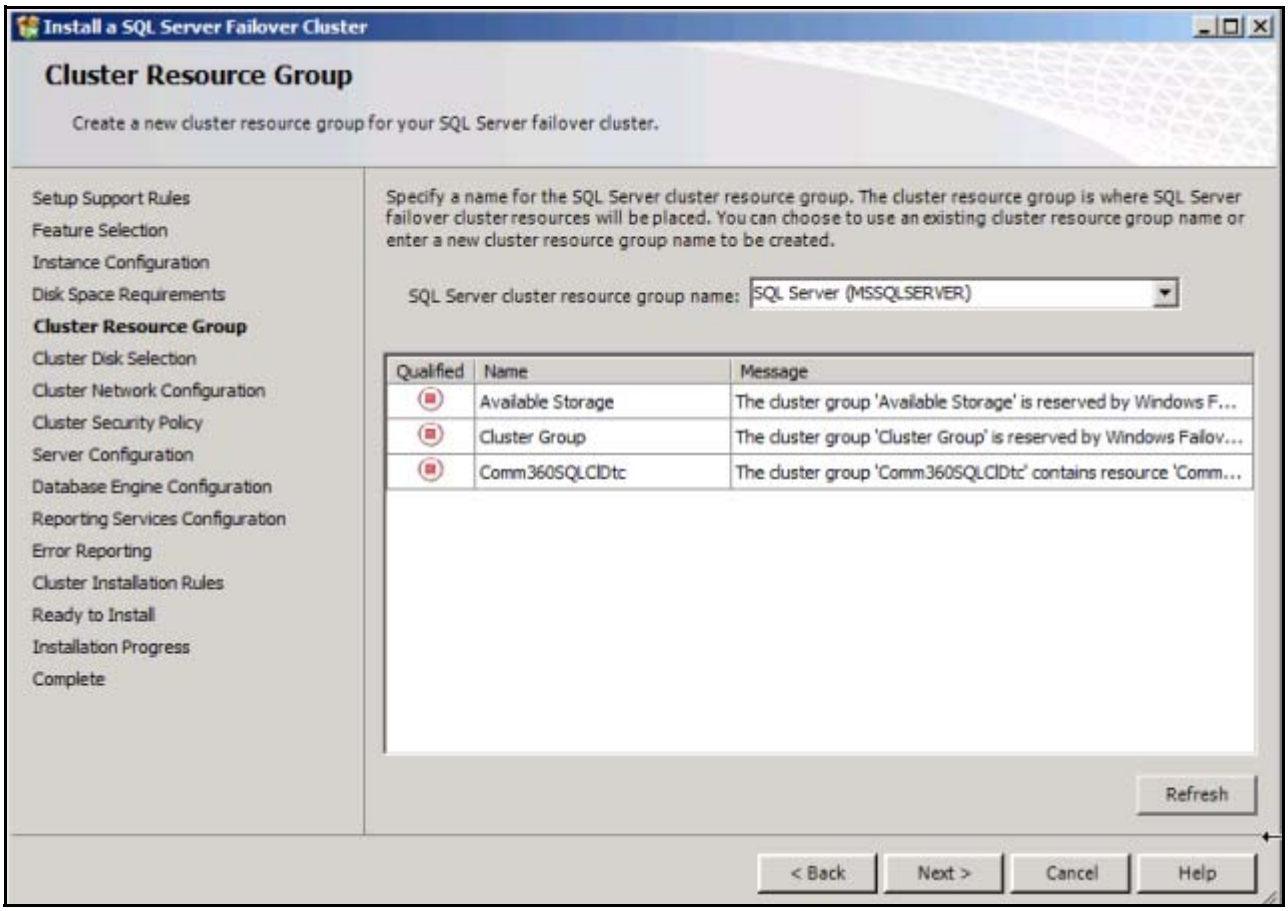
15. Enable the **Default instance** option.
16. Leave the Instance ID as **MSSQLSERVER**.
17. Allow the Instance root directory to default to **C:\Program Files\Microsoft SQL Server** or set it to that path if the default is missing on the Window.
18. Click **Next**.

The Disk Space Requirements window displays.



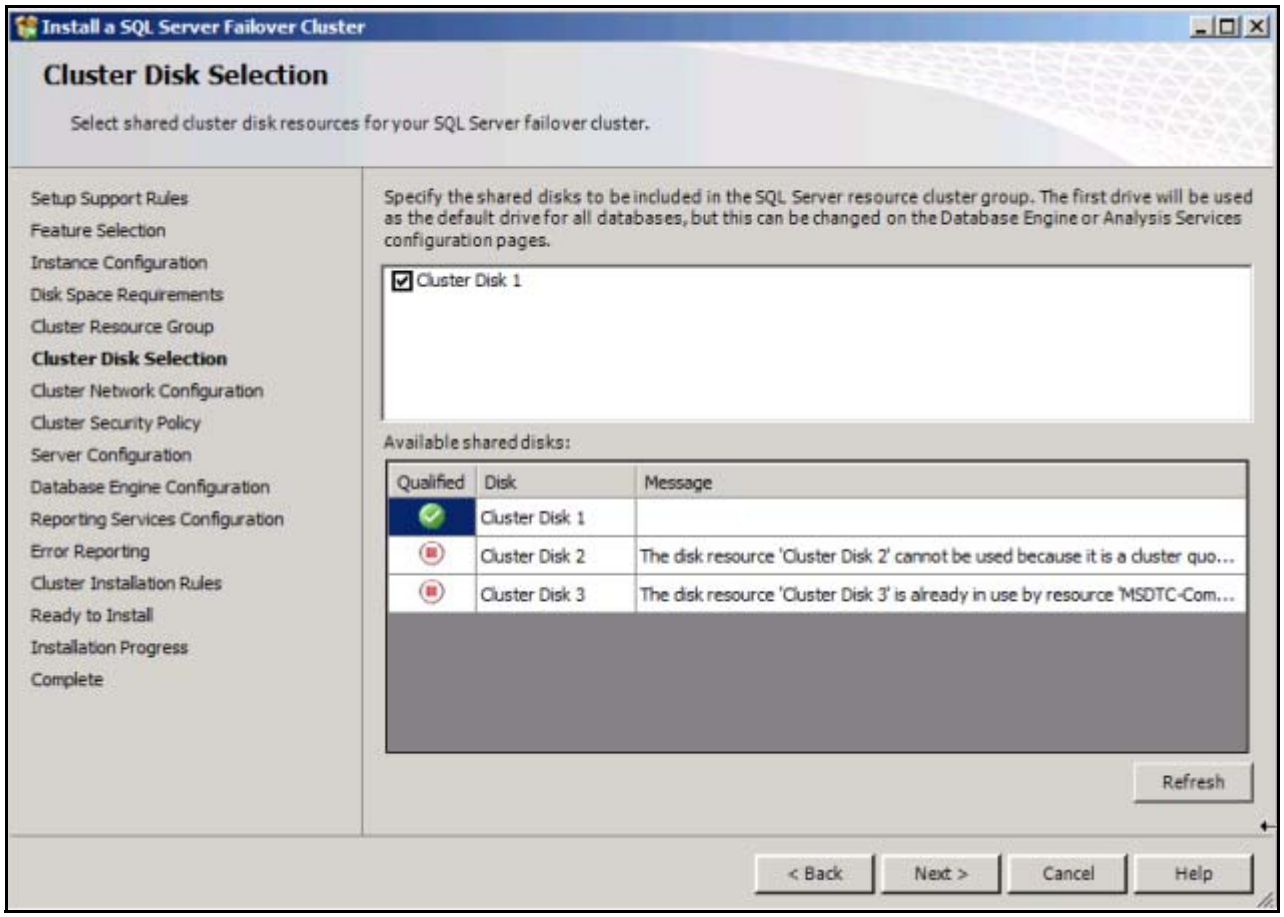
19. Click **Next**.

The Cluster Resource Group window displays.



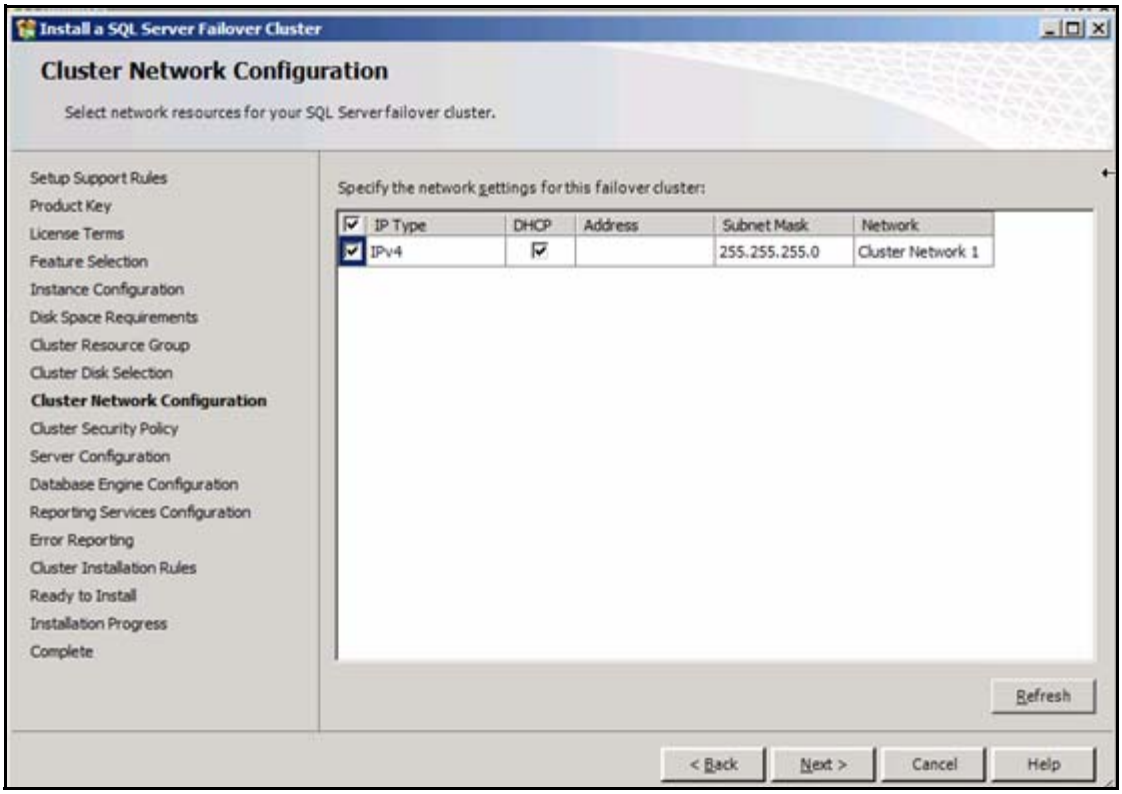
20. Select **SQL Server (MSSQLSERVER)** from the drop-down list.
21. Click **Next**.

The Cluster Disk Selection window displays.



22. Click **Next**.

The Cluster Network Configuration window displays.

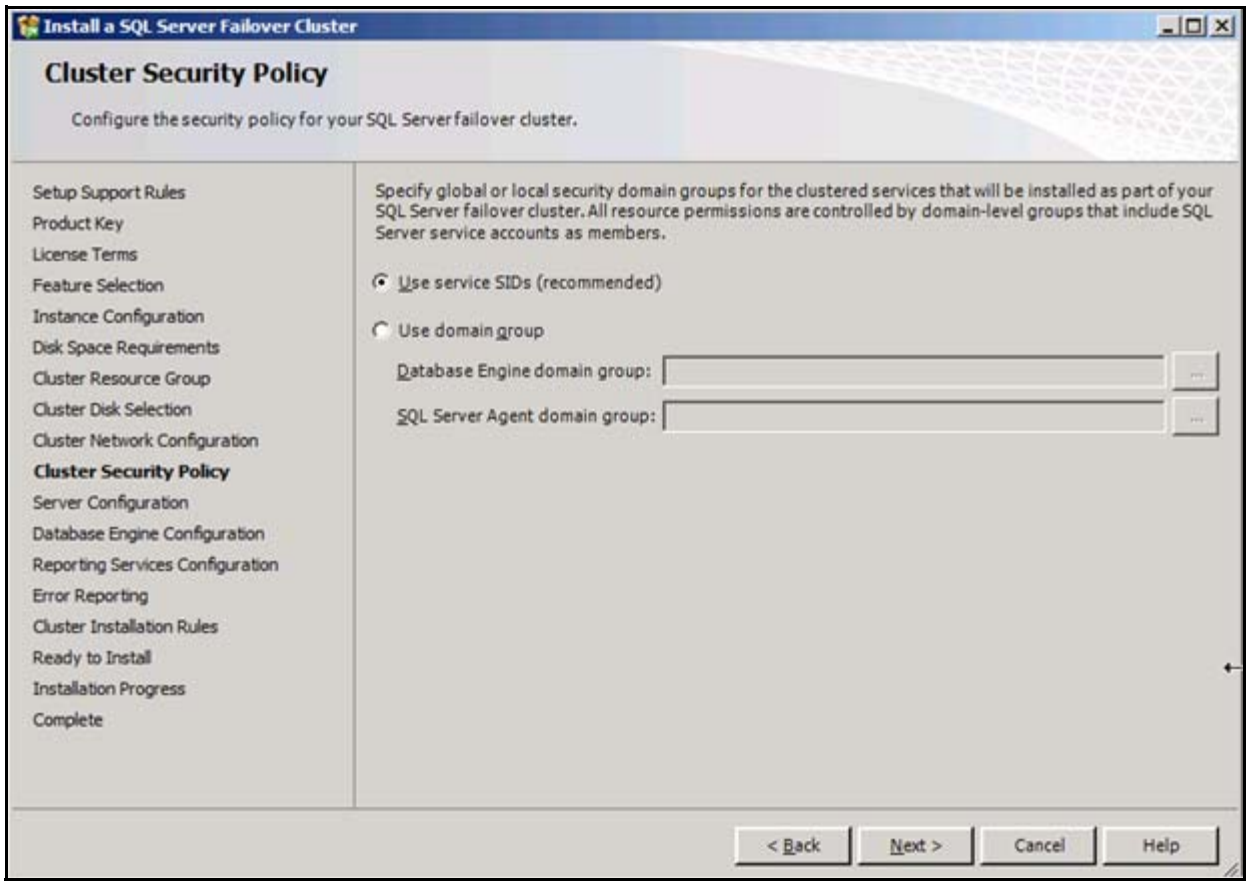


23. Check the network settings as shown above.

If you need to enter a static IP address, uncheck the DHCP checkbox and enter the Subnet Mask on this dialog.

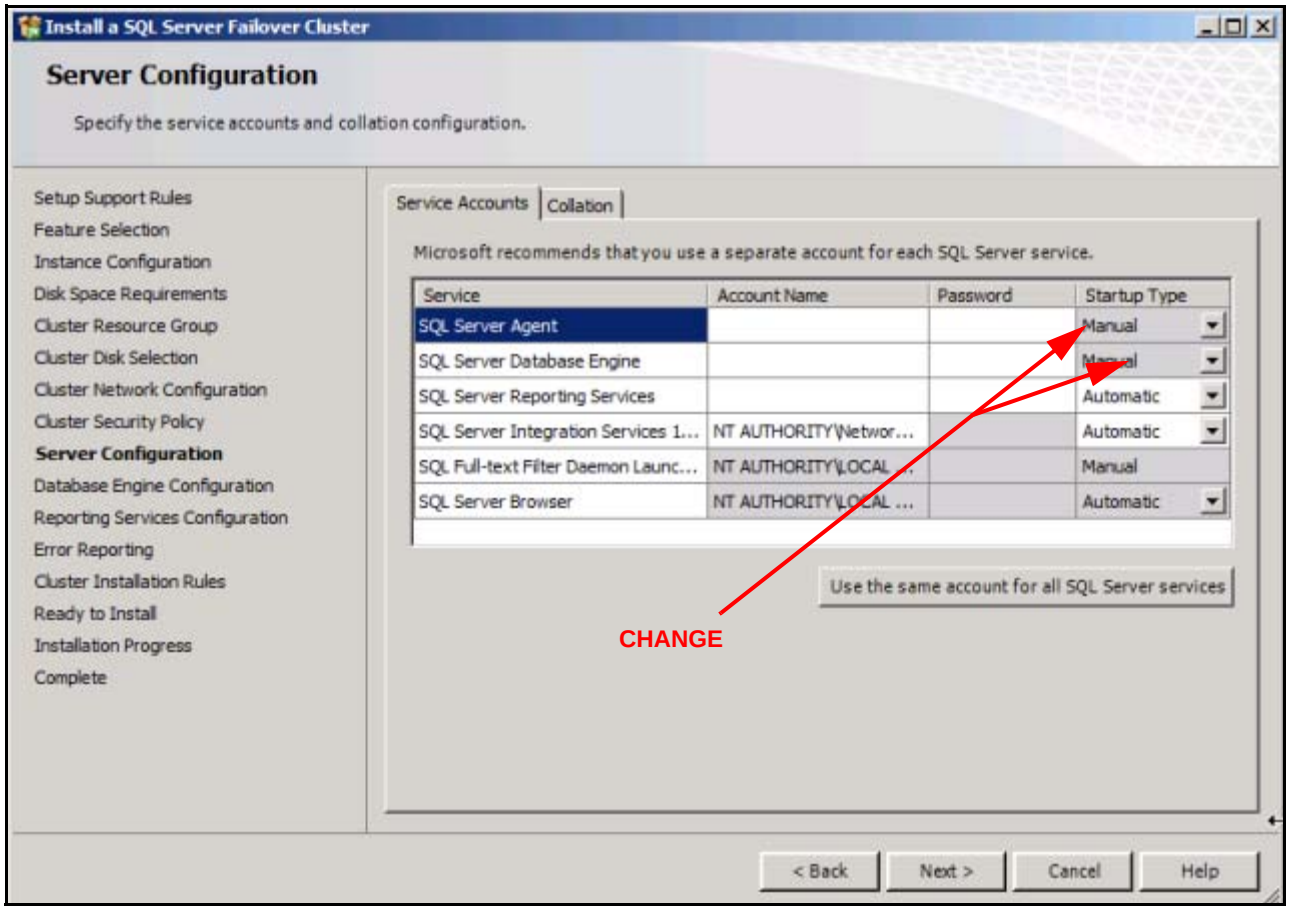
24. Click **Next**.

The Cluster Security Policy window displays.



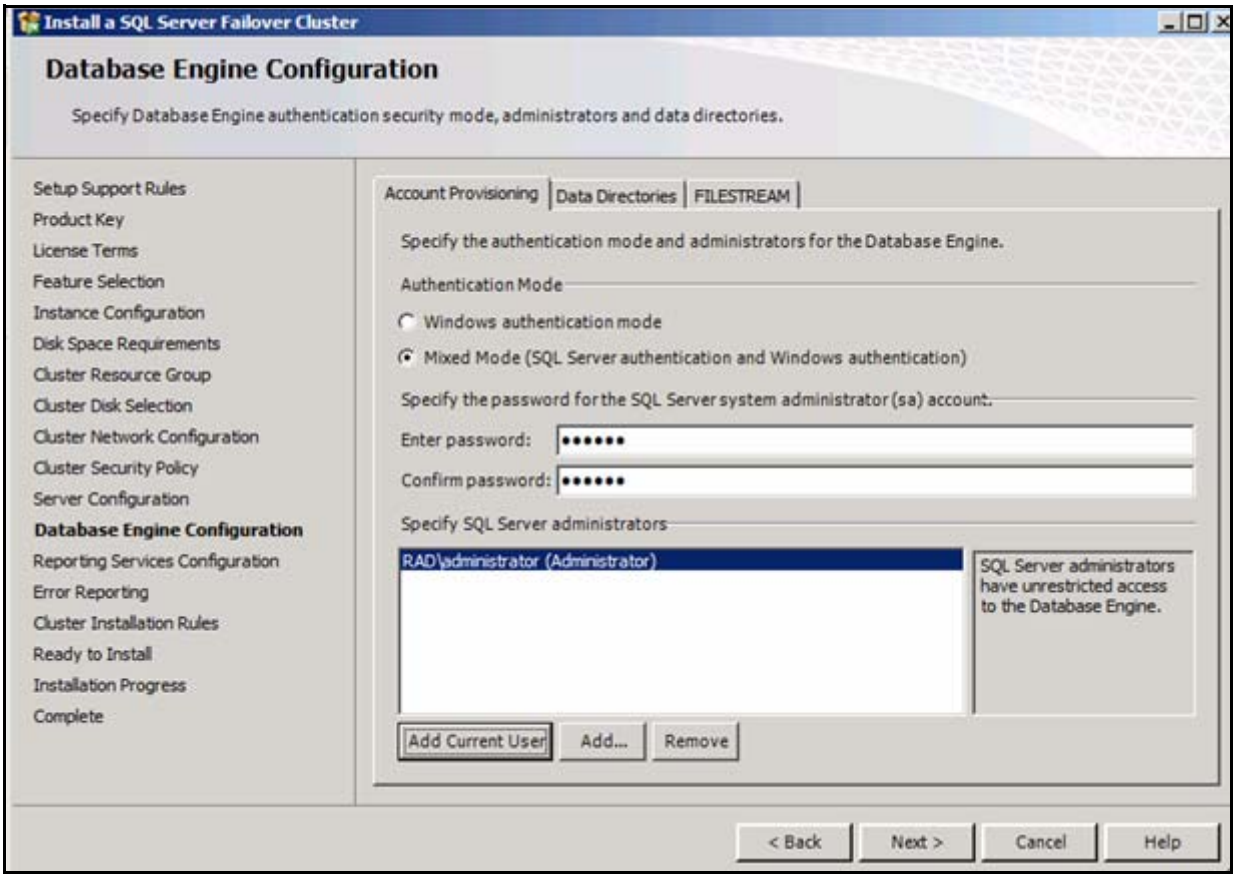
25. Select the **Use service SIDS (recommended)** option.
26. Click **Next**.

The Server Configuration window displays.



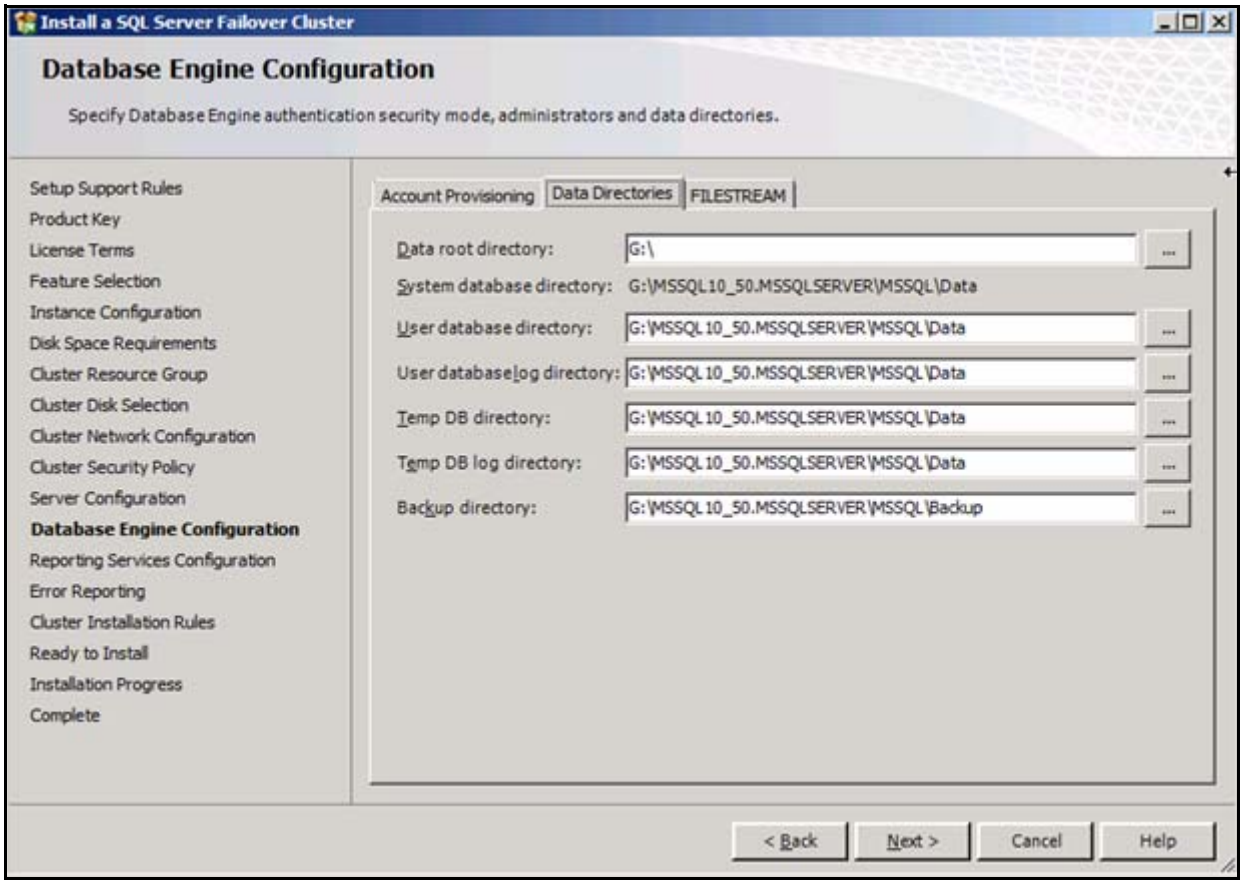
27. Enter the Account Names and Passwords - use the **DOMAIN** account, *NOT* a Local Admin account.
28. Change the SQL Server Agent and SQL Server Database Engine Startup Types to **Automatic**.
29. Click **Next**.

The Database Engine Configuration window displays.



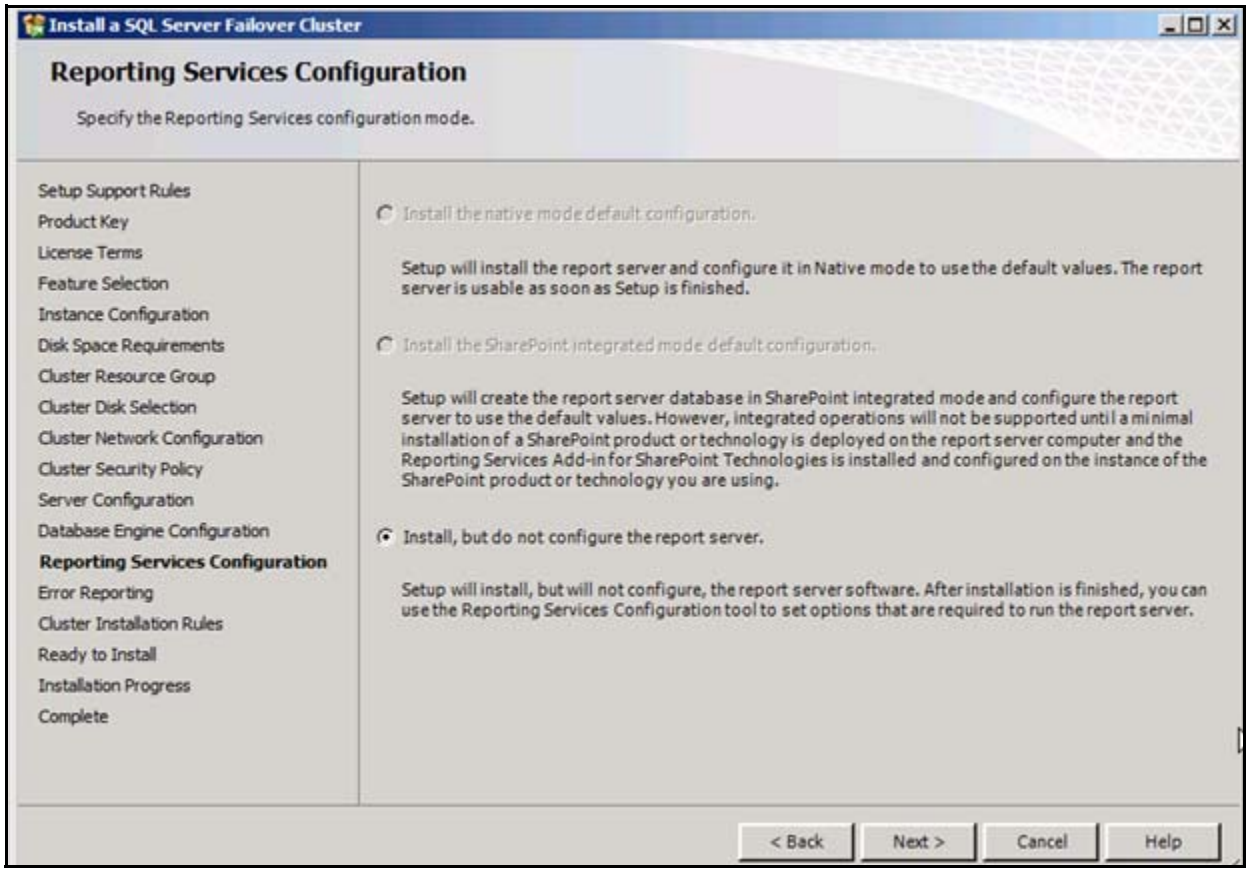
30. Make sure the **Account Provisioning** tab is displayed for the following:
    a. Enable the **Mixed Mode** option.
    b. Enter the Mixed Mode password and confirm.
    c. Click **Add** and add the **Administrators** Group.

31. Click the **Data Directories** tab.



32. Note that the G:\ cluster disk is being used for storage in the example above. However, you can split files across disks as hardware and requirements allow.
33. Click **Next**.

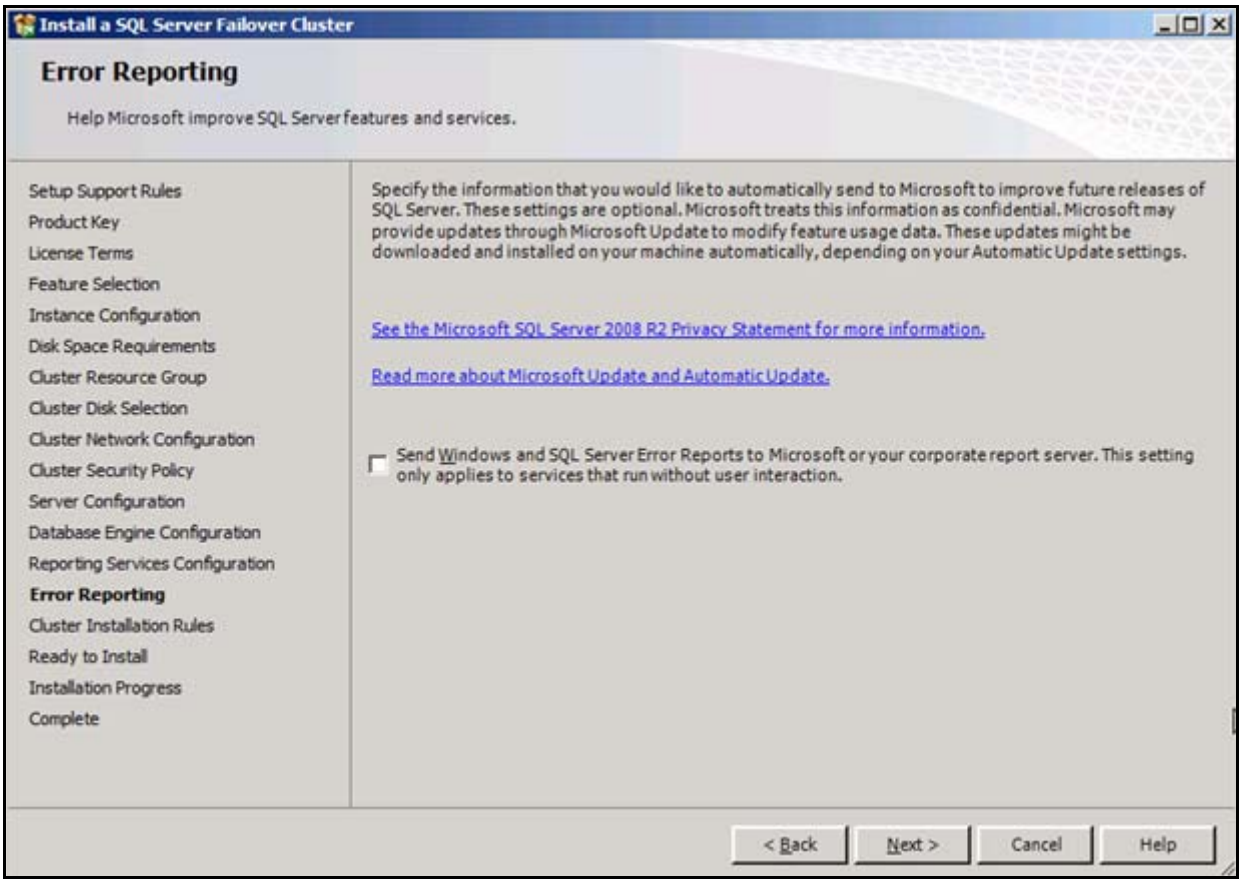
The Reporting Services Configuration window displays.



The Reporting Services feature is installed but not configured. You must configure it later. The reason for this is that Reporting Services is ***not*** *cluster-aware.*

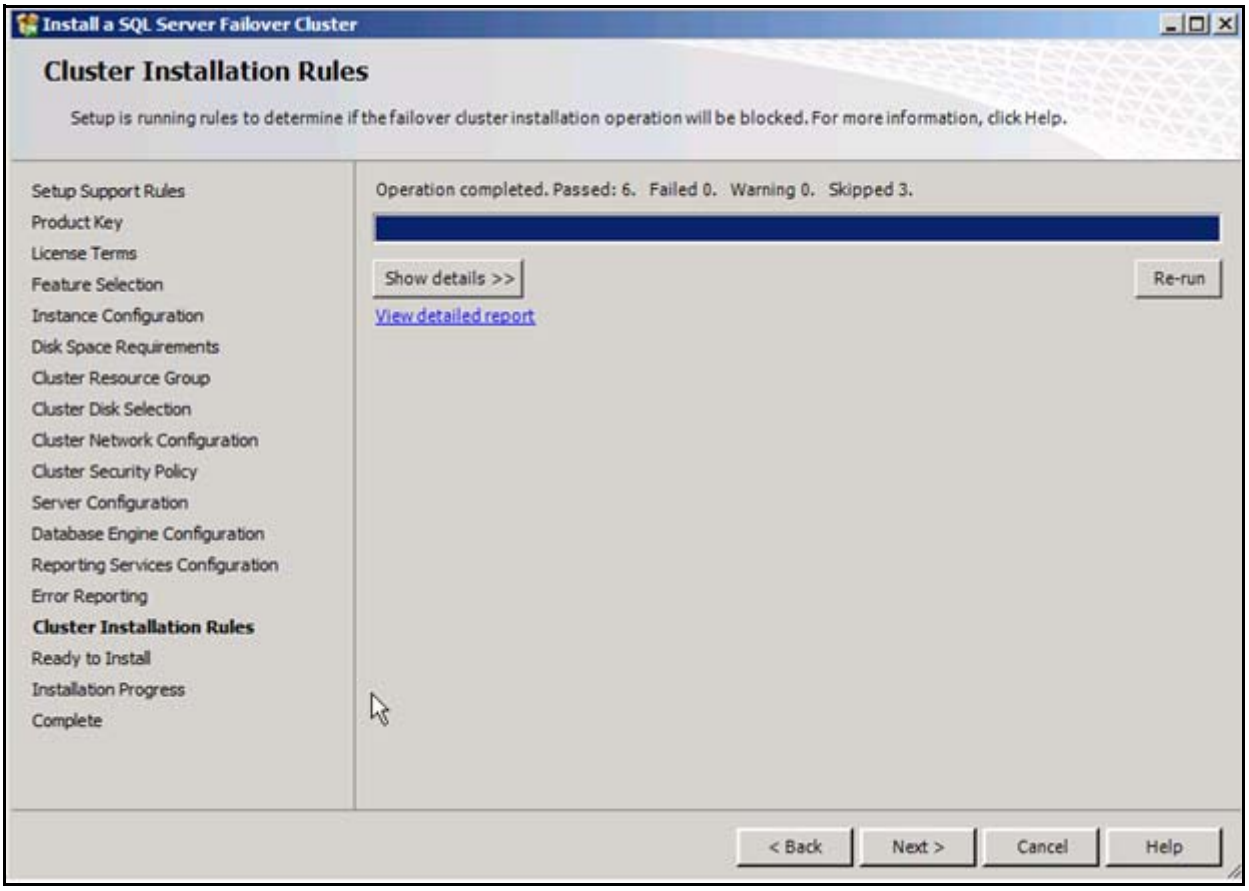
34. Click **Next**.

The Error Reporting window displays.



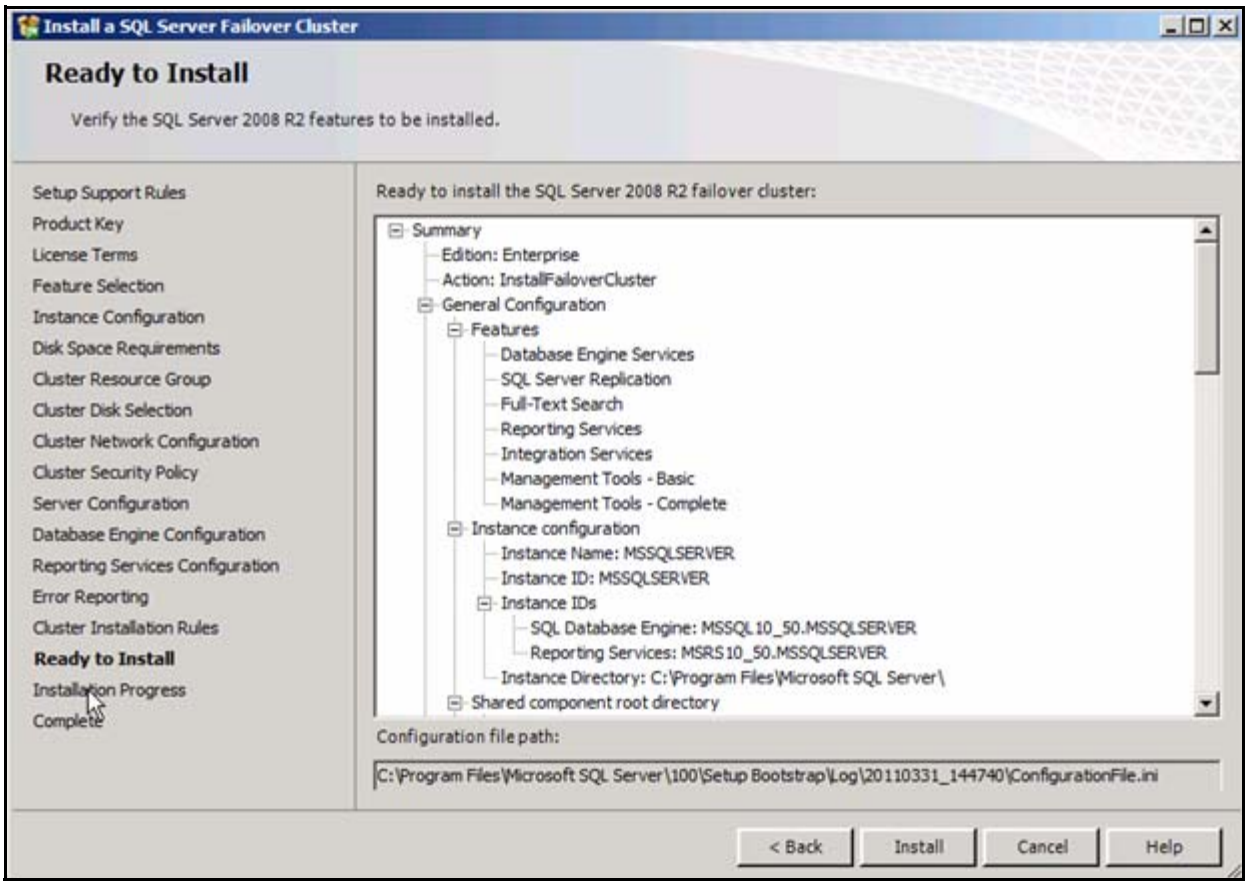
35. Leave the option for sending reports disabled.
36. Click **Next**.

The Cluster Installation Rules window displays.



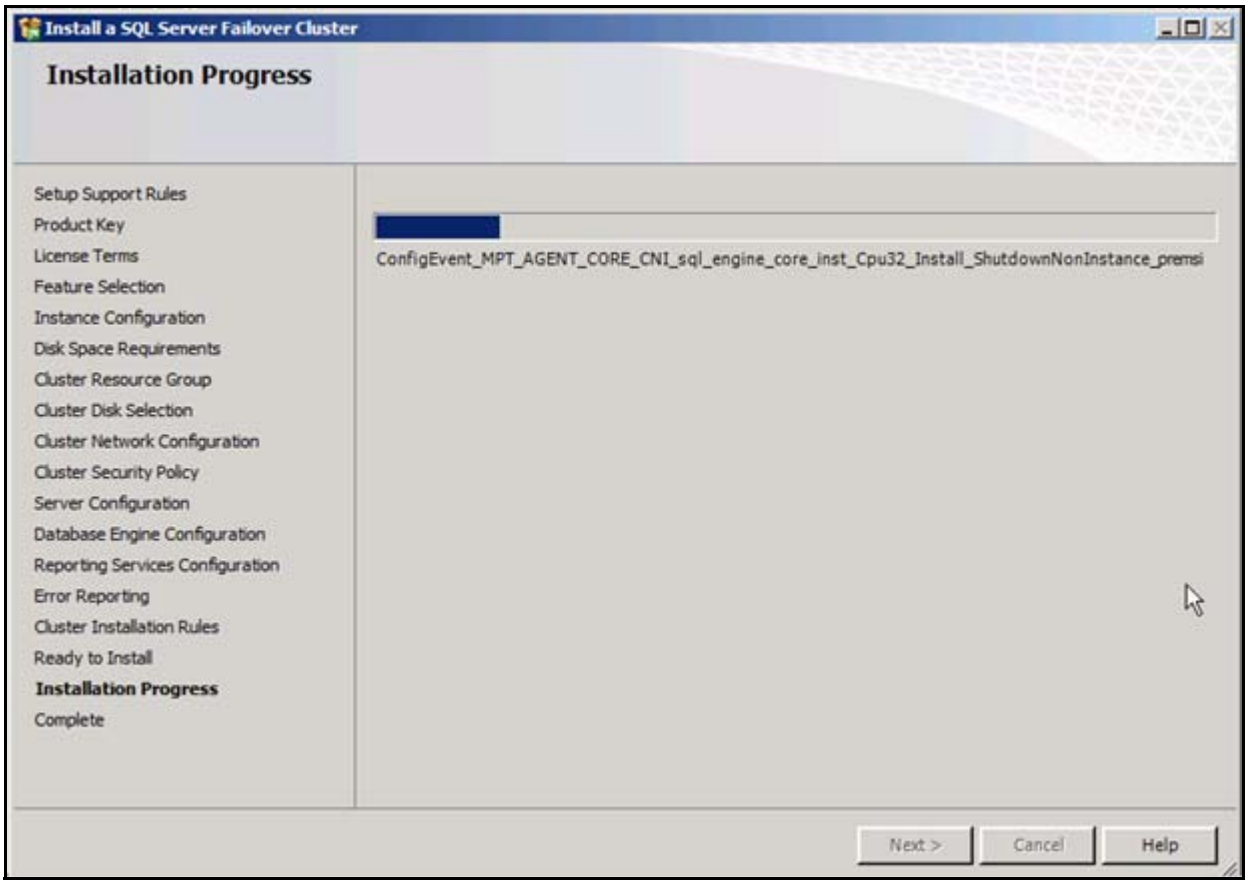
37. After the rules have been run, click **Next**.

The Ready to Install window displays.

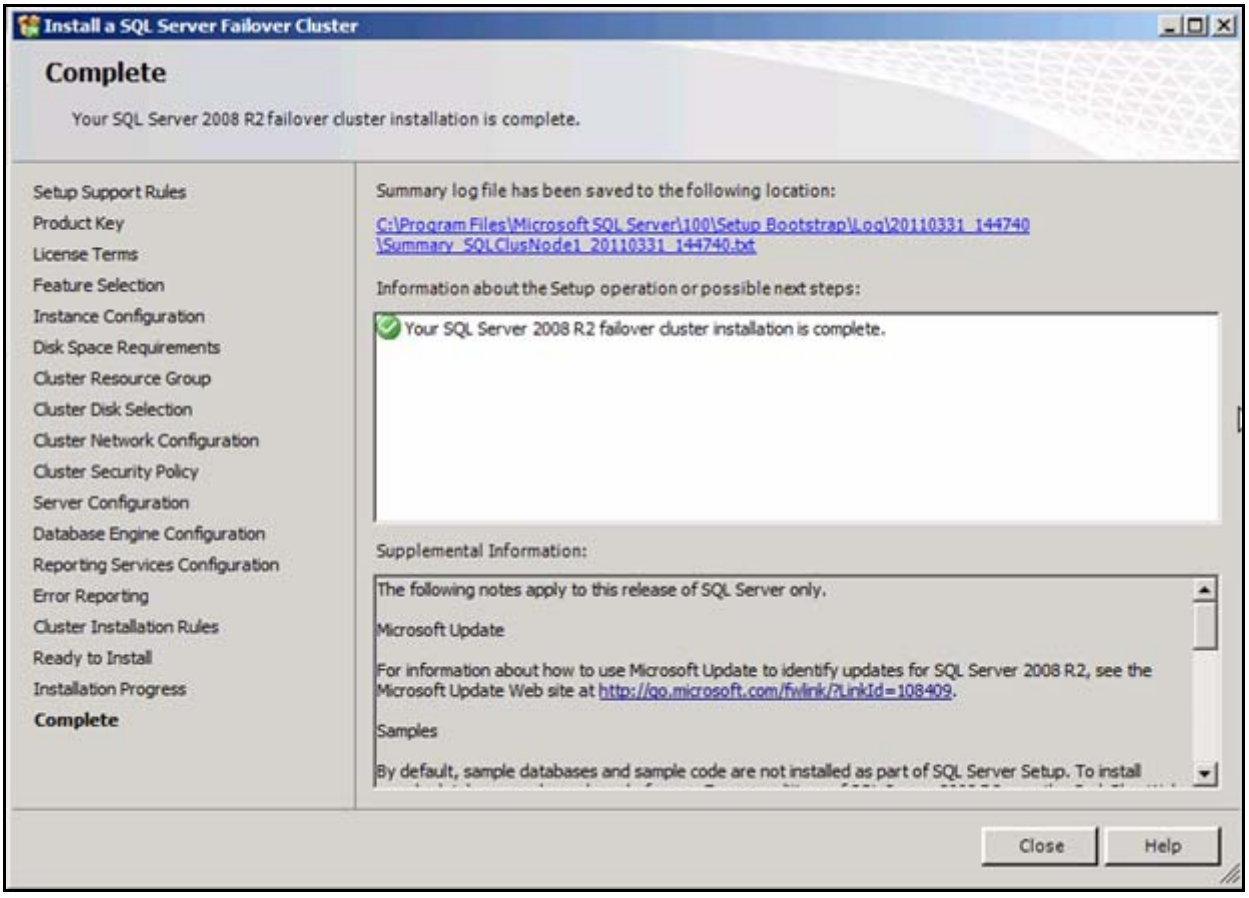


38. If the list is correct, click **Install**.

The Installation Progress window displays. Be patient as the application installs the required software, features, and configuration.



When the installation is complete, the Complete window displays.

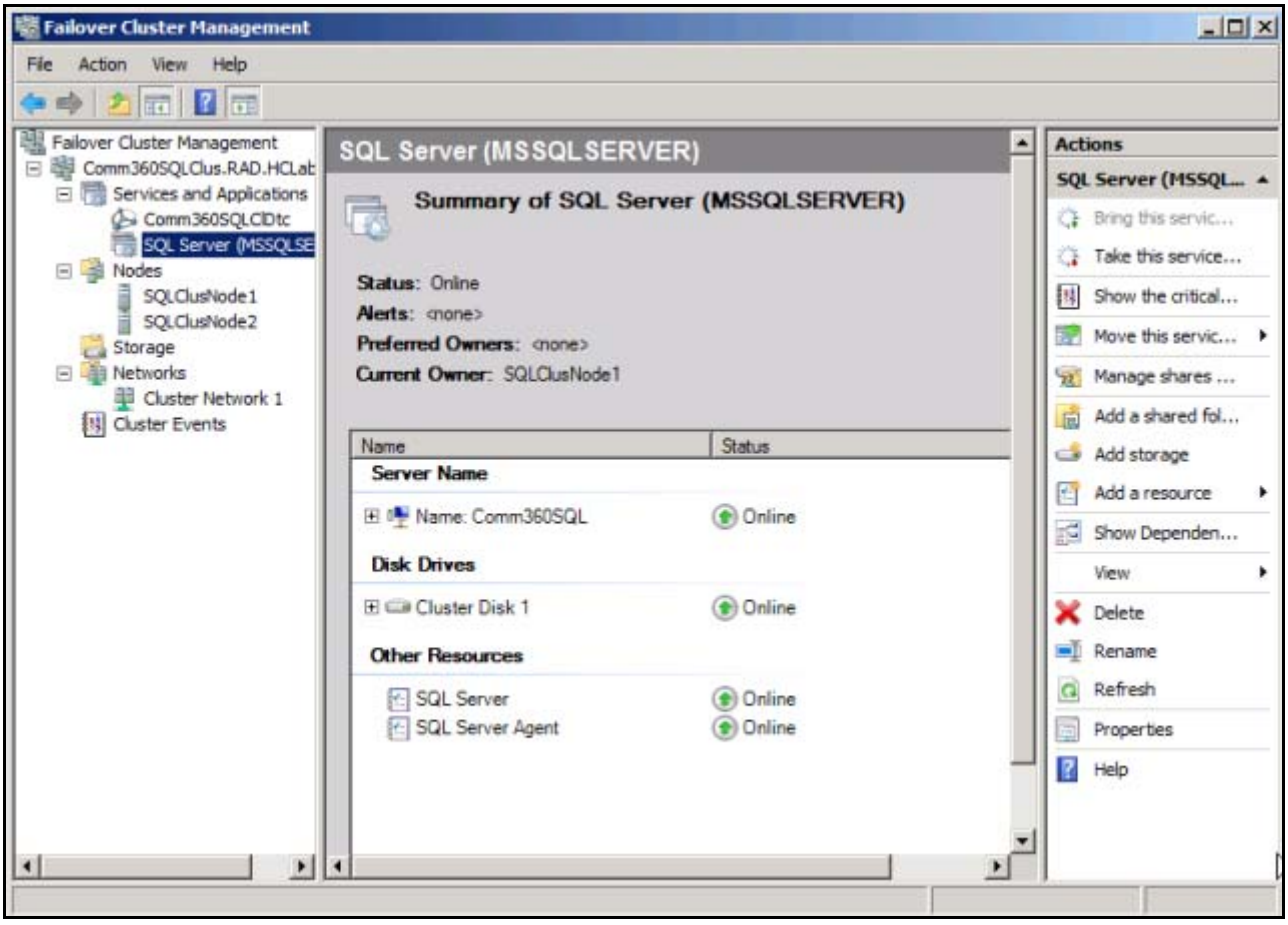


IMPORTANT

Make note of any Warnings. However, if there are any Errors (Failed) items, you must fix them before proceeding.

39. Click **Close**.

40. Open the Failover Cluster Management and check the setup. The display will look similar to the example below.



IMPORTANT

Make sure that all of the Disk Drives are Online. If not, set them to Online (right-click the drive and select Online).

41. As a check, log on to SQL Server Management Studio to verify that everything was set up correctly.

Install SQL on the Secondary (Passive) Node

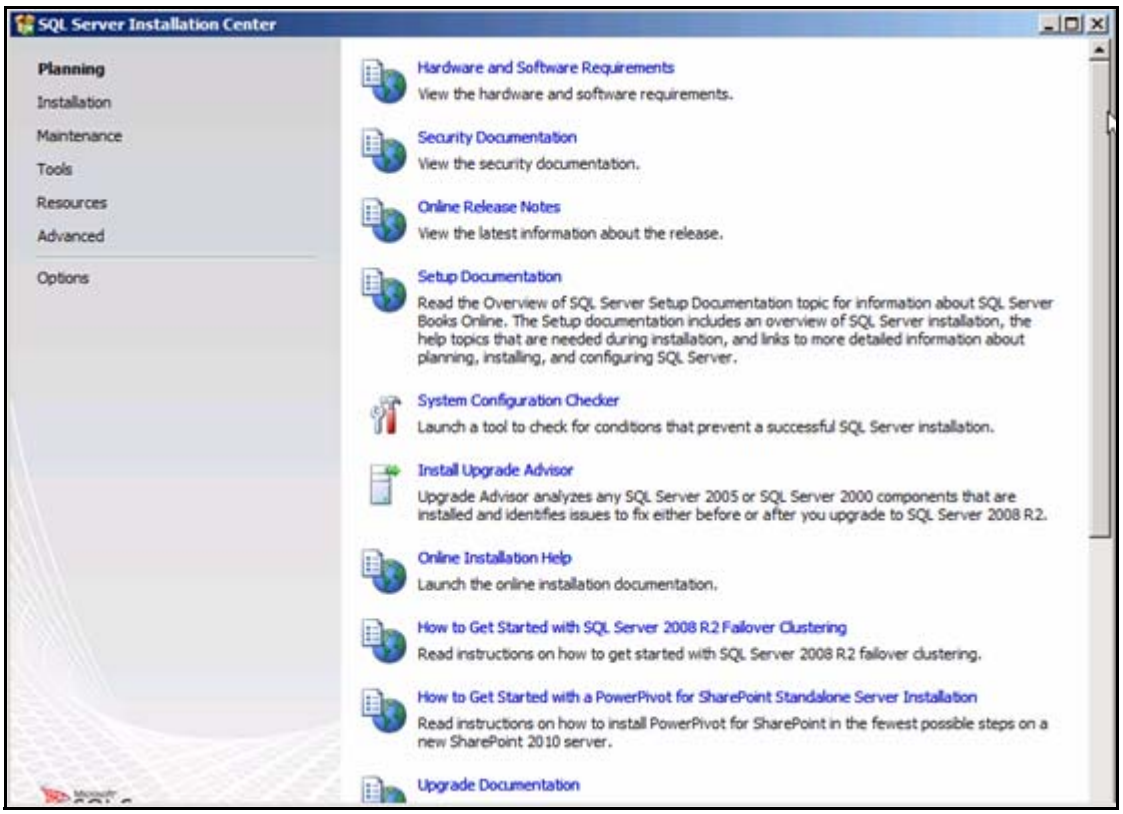
IMPORTANT

This procedure is for the Passive Node only. You must log in with a Domain Admin account to perform the steps below.

For this setup, you will install the Microsoft SQL application on a non-clustered drive, such as **Drive C**, and install the database on a clustered drive.

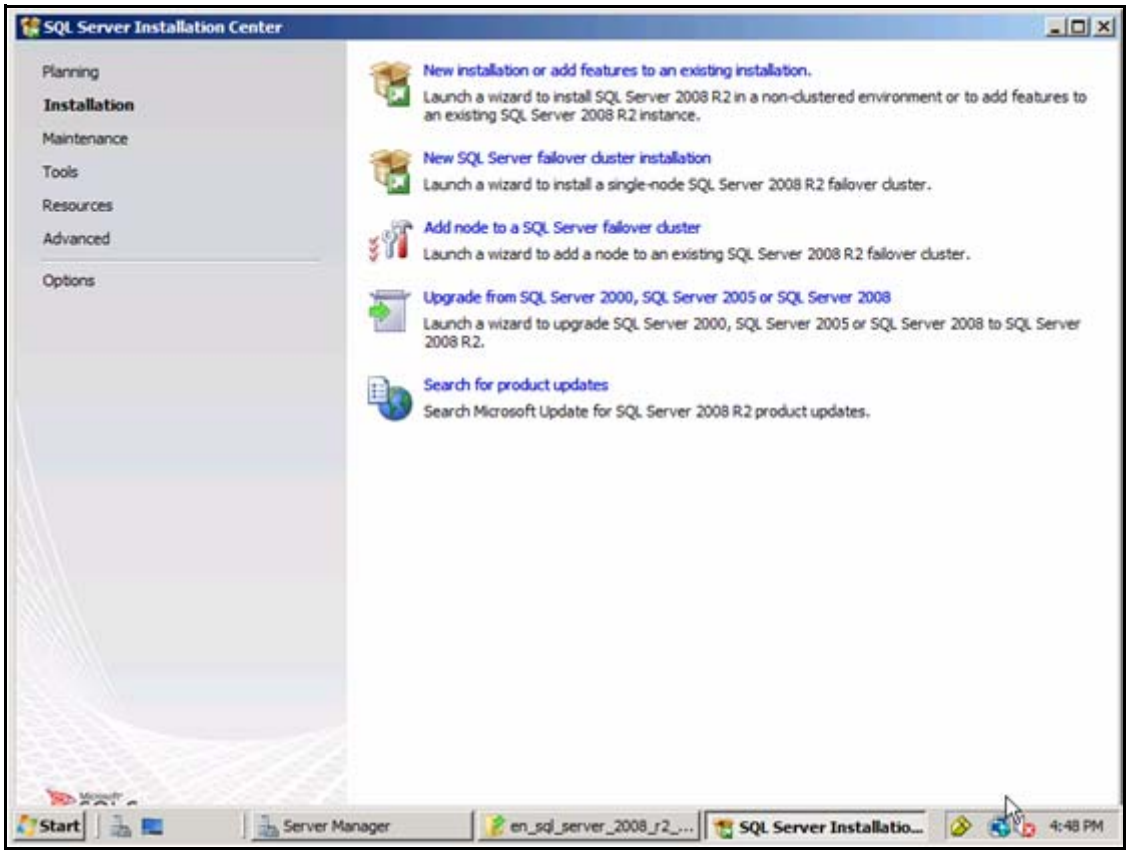
1. Using the Microsoft SQL Server 2008 installation disk, start the installation.

   The Planning window displays.



2. Click **Installation** on the left side of the window under Planning.

The Installation window displays.



3. Select **Add node to a SQL Server failover cluster**.
4. Follow the installation prompts, using the correct site information for the cluster.

Verify the SQL Resource Failover

After installation is complete, you must properly test it to ensure that it works as expected. Perform the following steps/

1. Start Cluster Administrator.
2. Right-click the resource group that contains the SQL Server or Analysis Services installation, click **Move Group**, and then click another node in the cluster.

   SQL Server stops on the node that it was owned by and start on the other node.
3. Repeat Step 2 for each node of the cluster.

Configure Reporting Service on Active (Primary) Node

When installing in a cluster, the Reporting Service components are installed but not configured. This must be done on the Primary Node, at a minimum. Configuration of the Reporting Service on the Passive (Secondary) Node is optional, and those steps are contained in Appendix A.

Reporting Services is not cluster aware and therefore will not fail over automatically from the Active to the Passive Node.

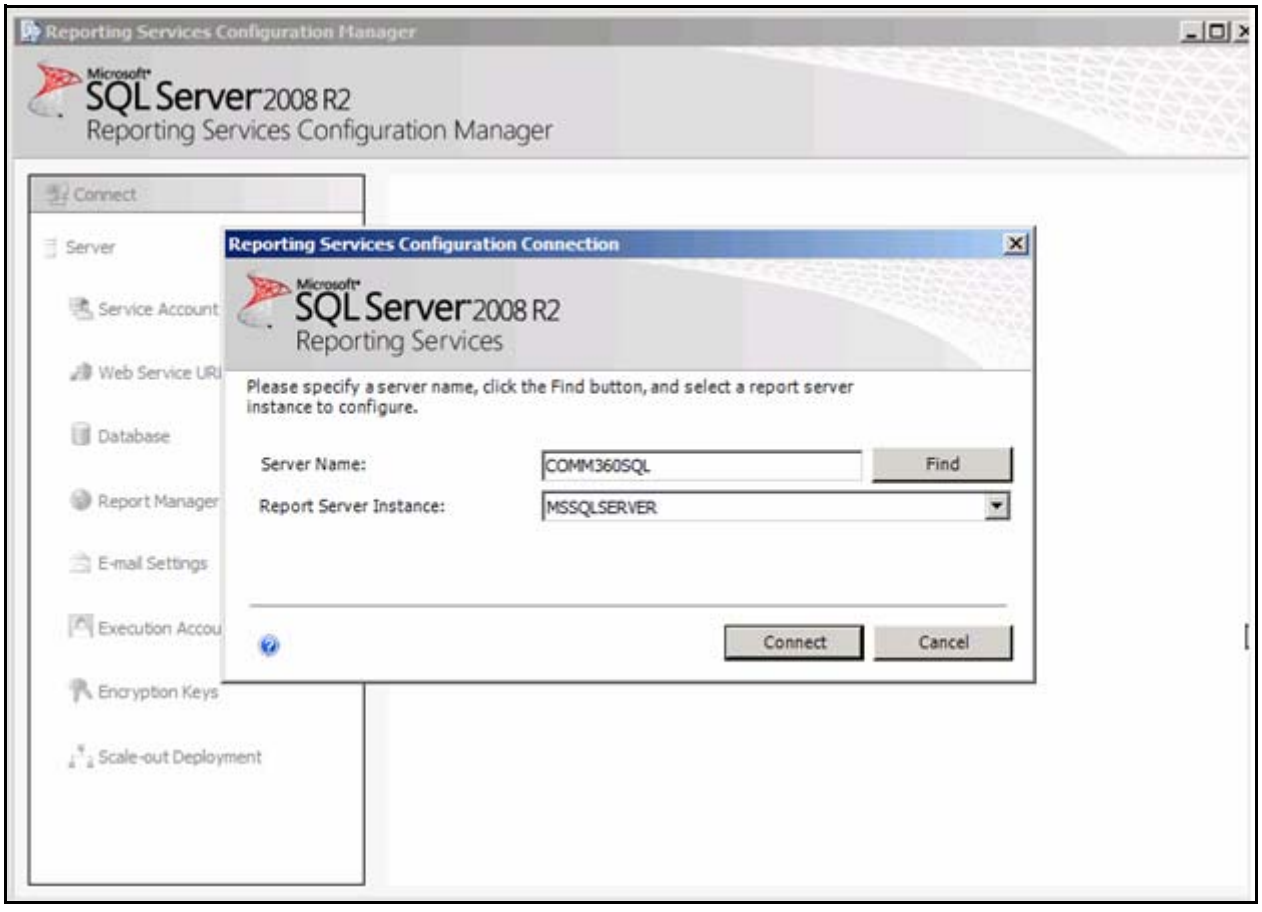
If you wish to use the Passive node, you must configure **Scale Out** clustering, which will allow the database to be shared and easily manually failed over to the passive node and then failed back when the issues are corrected.

Whether you use only the Active, or both the Active and Passive, you must configure Reporting Services on the node(s) used.

1. Start the Reporting Services Configuration Tool:

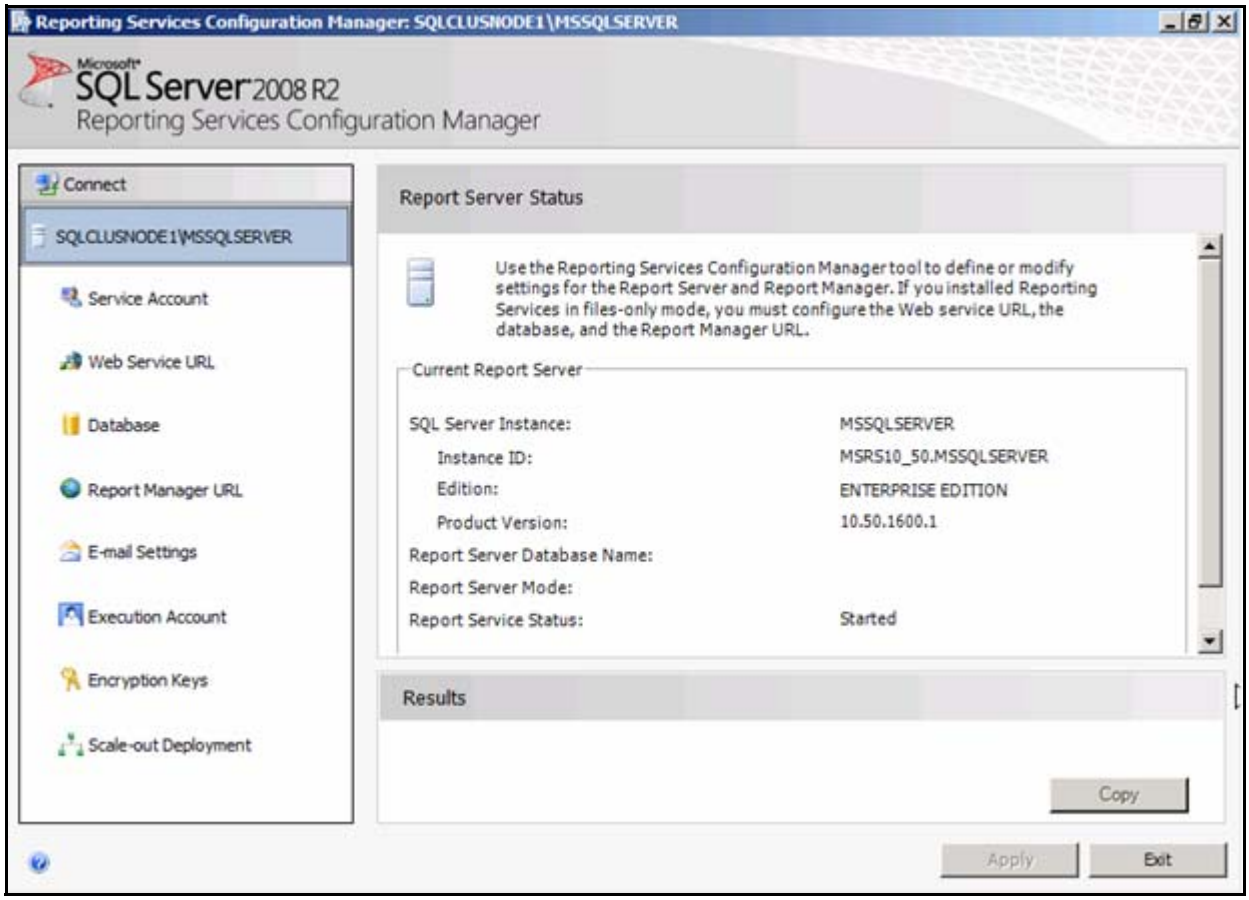
   Start/All Programs/Microsoft SQL Server 2008 R2/Configuration services/Reporting Services Configuration Manager

2. Point to the Primary Node of the SQL Cluster.

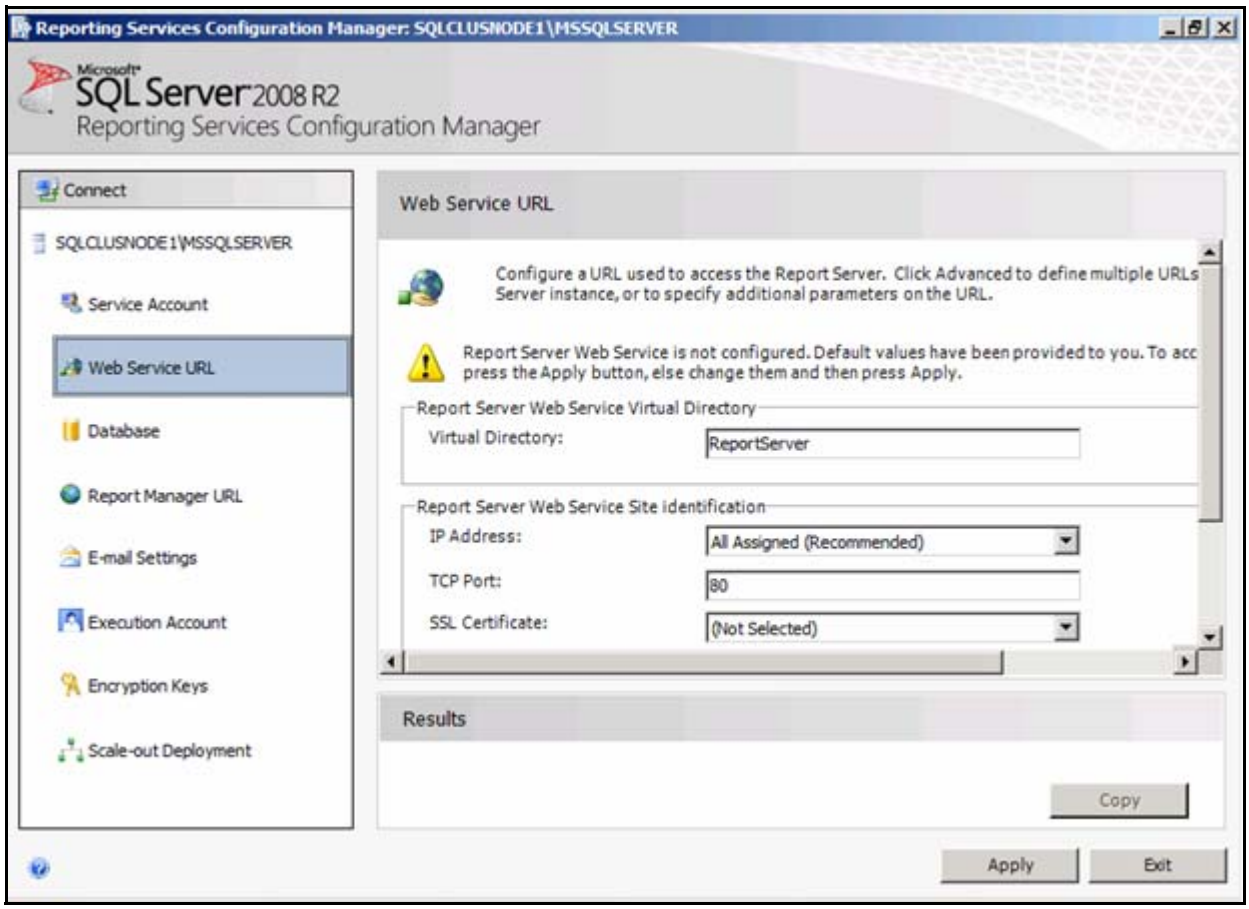


3. Click **Connect**.

The Report Server Status window displays for the Cluster.

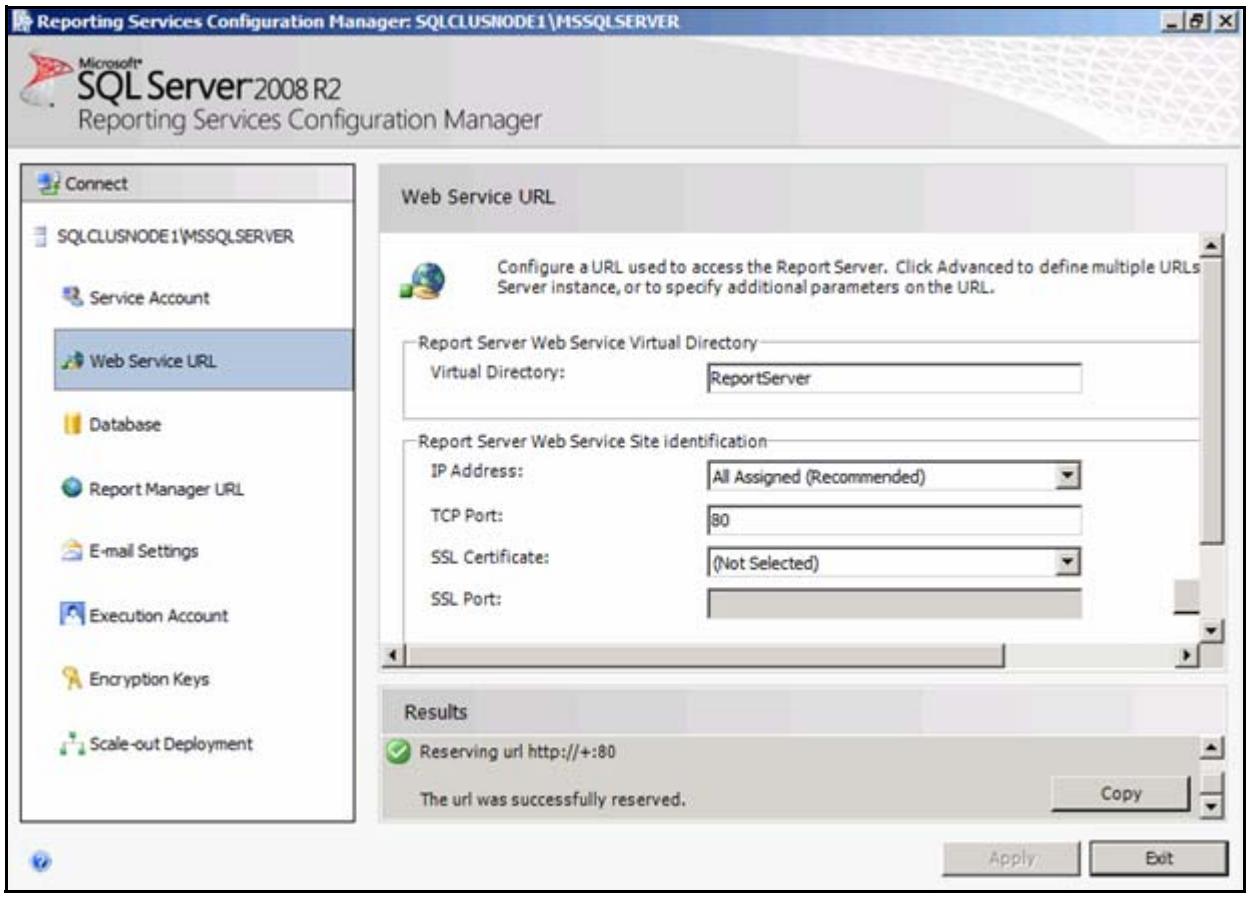


4. Click **Web Service URL** in the left pane to display that window.



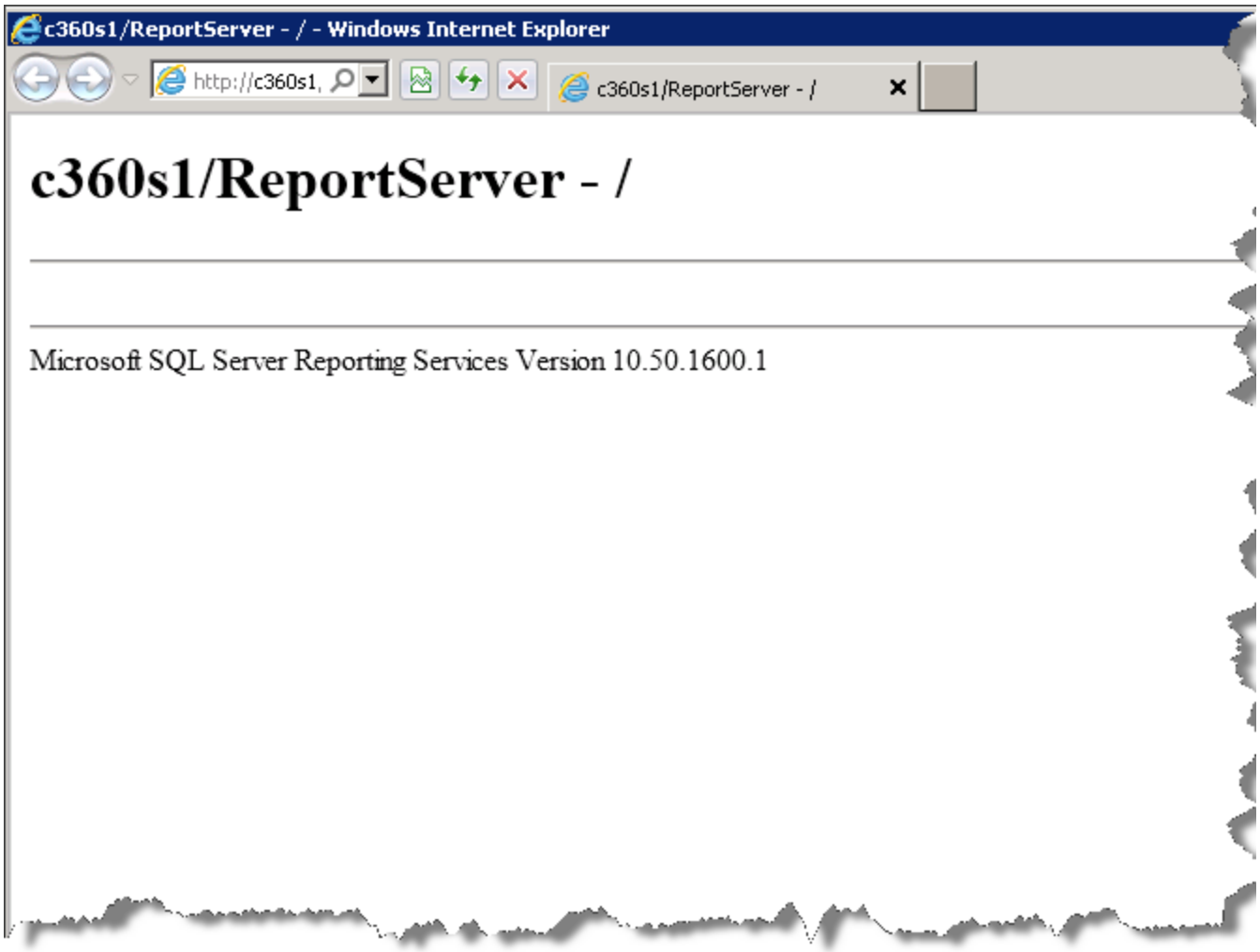
5. Confirm the entries and click **Apply**.

The following window displays.



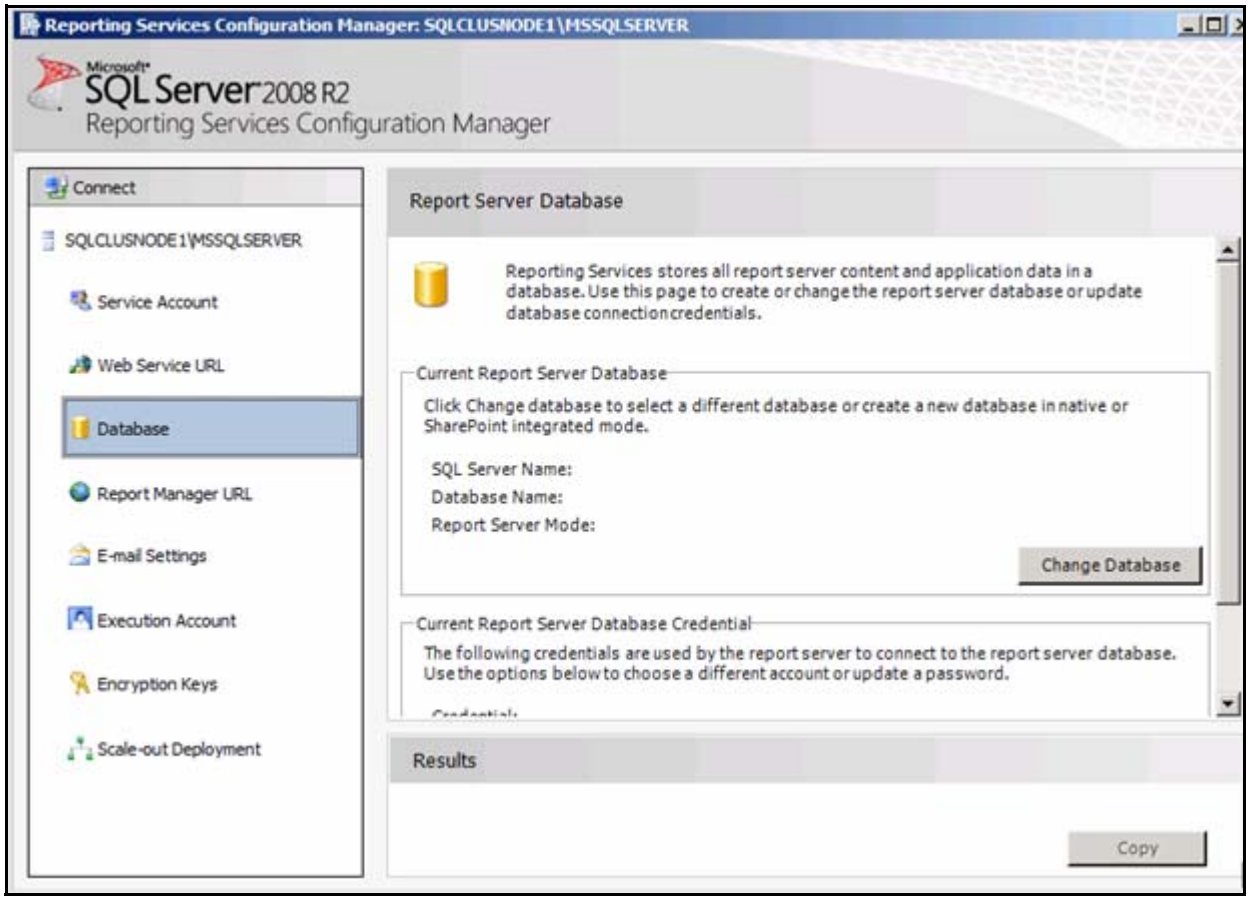
The service is set up. Note the results.

6. Click the link to display a window similar to the following:



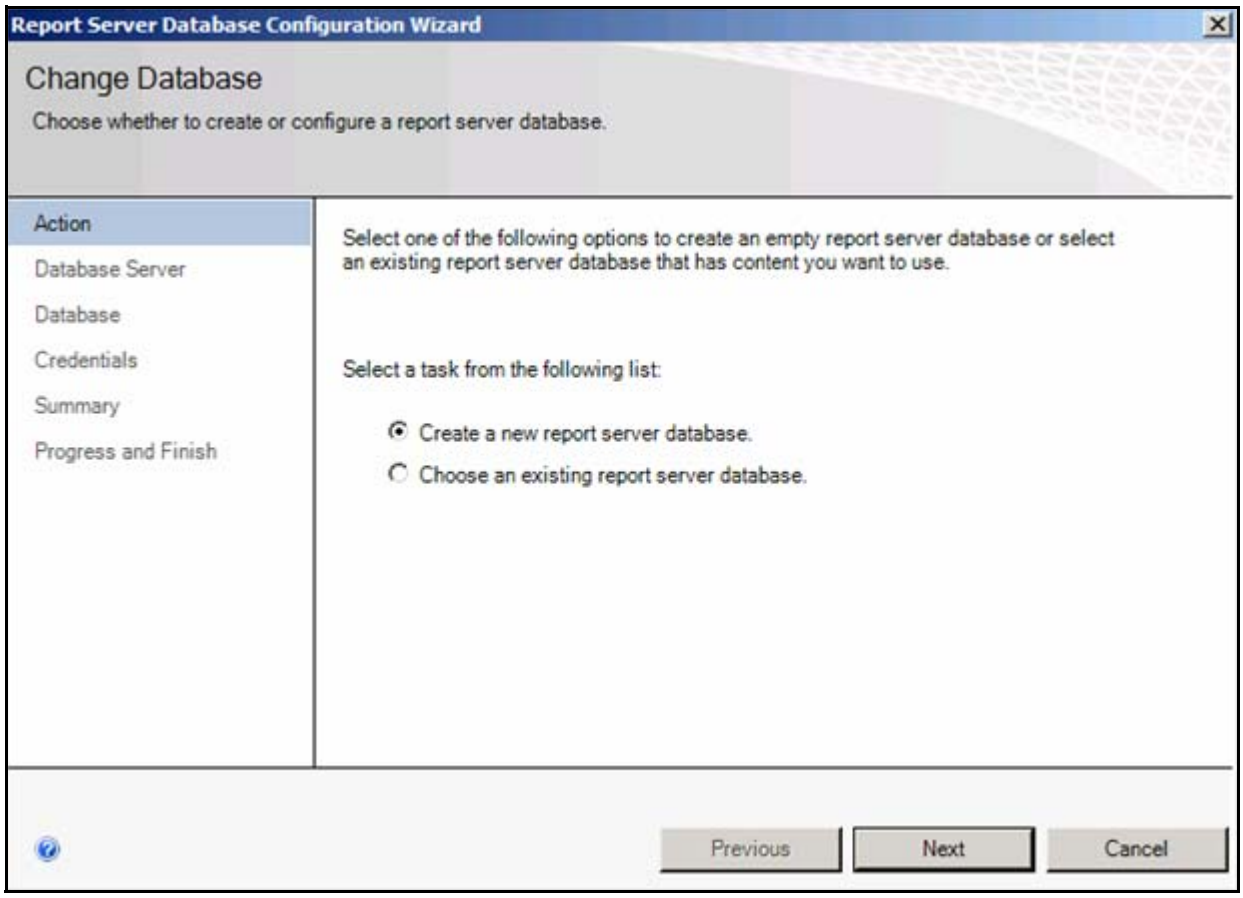
7. Close the window to return to the previous window.

8. Click **Database** in the left pane to display that window.



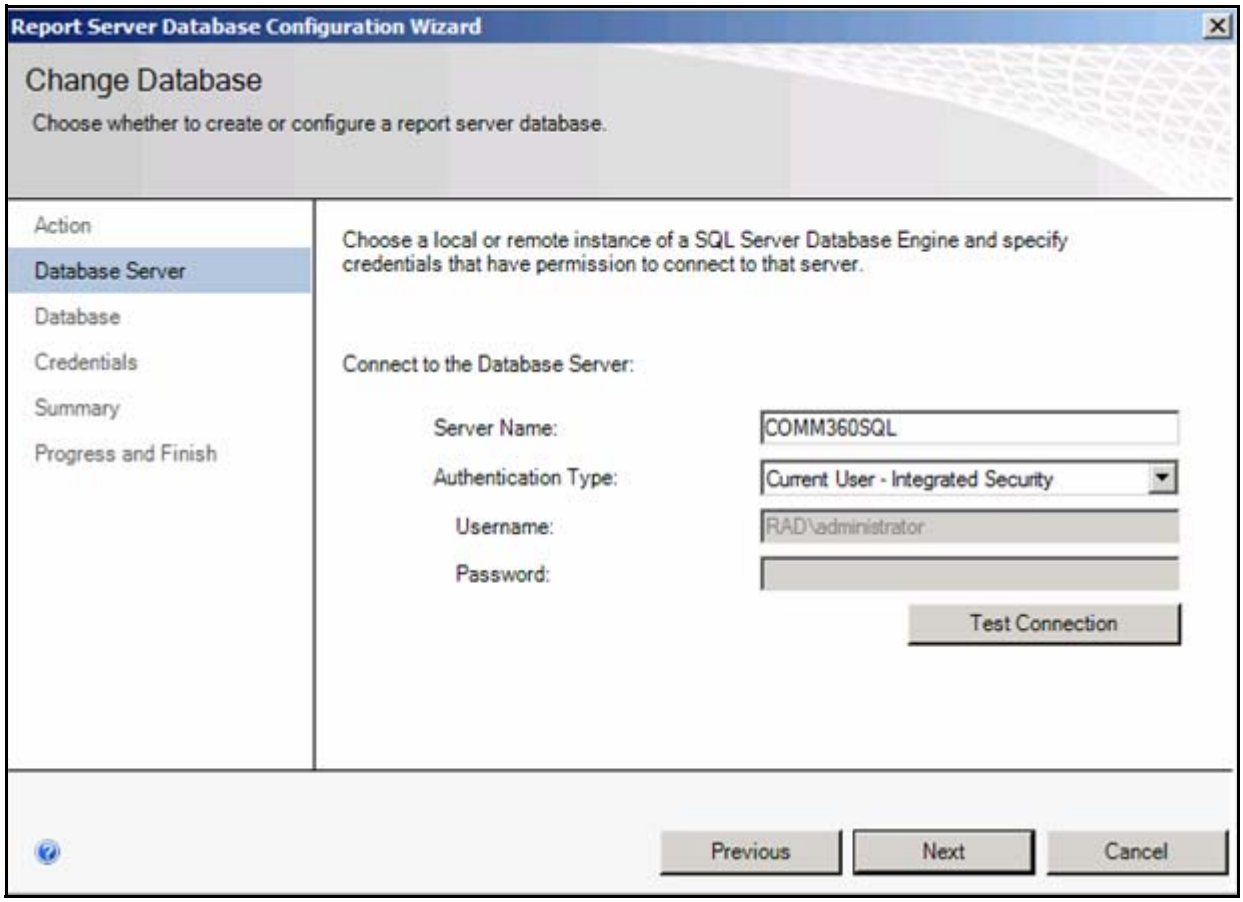
9. Click **Change Database**.

The Change Database window displays.



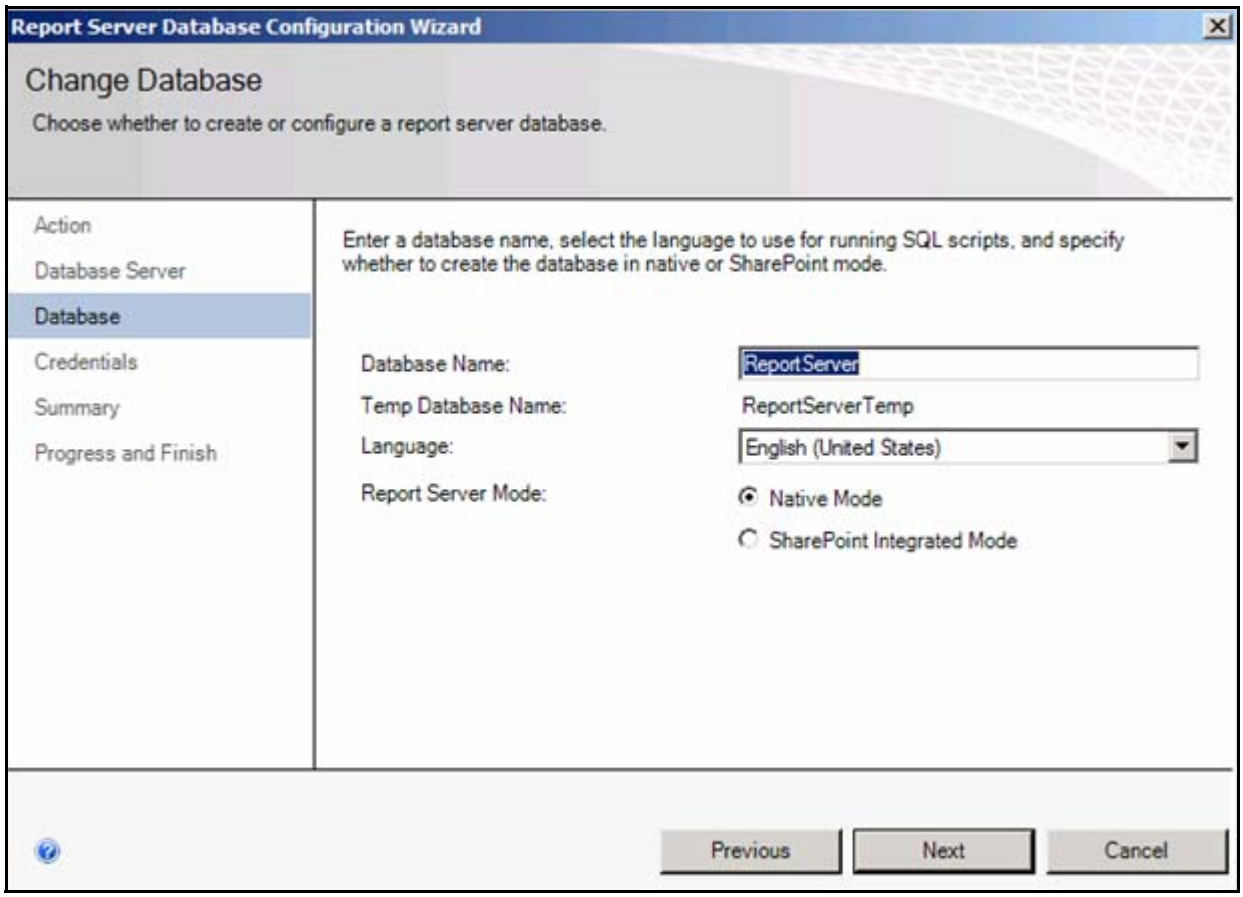
10. Enable the **Create a new report server database** option.
11. Click **Next**.

The Database Server window displays for choices.



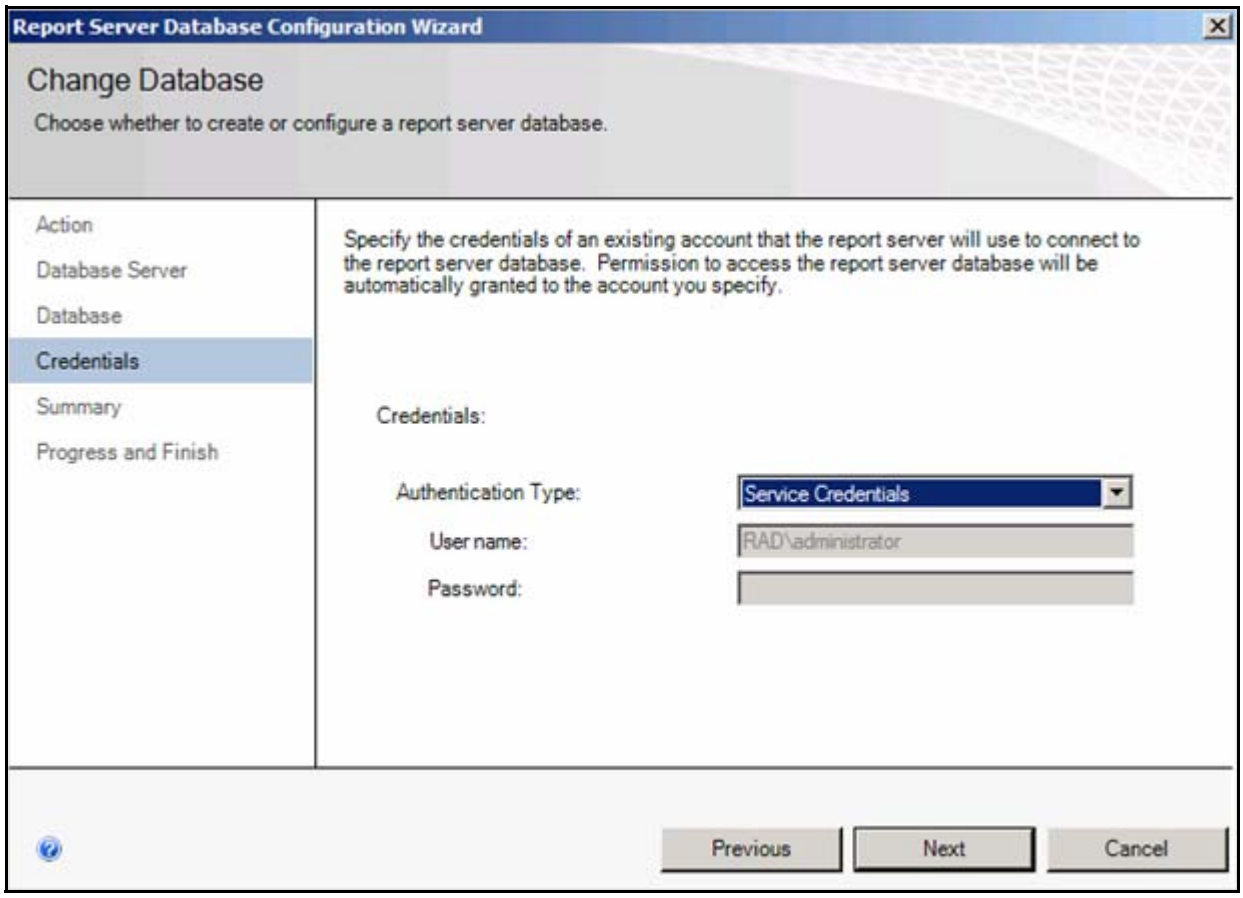
12. Set Server Name to name of the Virtual SQL CLUSTER.
13. For Authentication Type, use **Current User - Integrated Security** or **SQL Server Account**.
14. Click **Test Connection** to ensure the information entered is valid.
15. Click **Next**.

The following window displays.



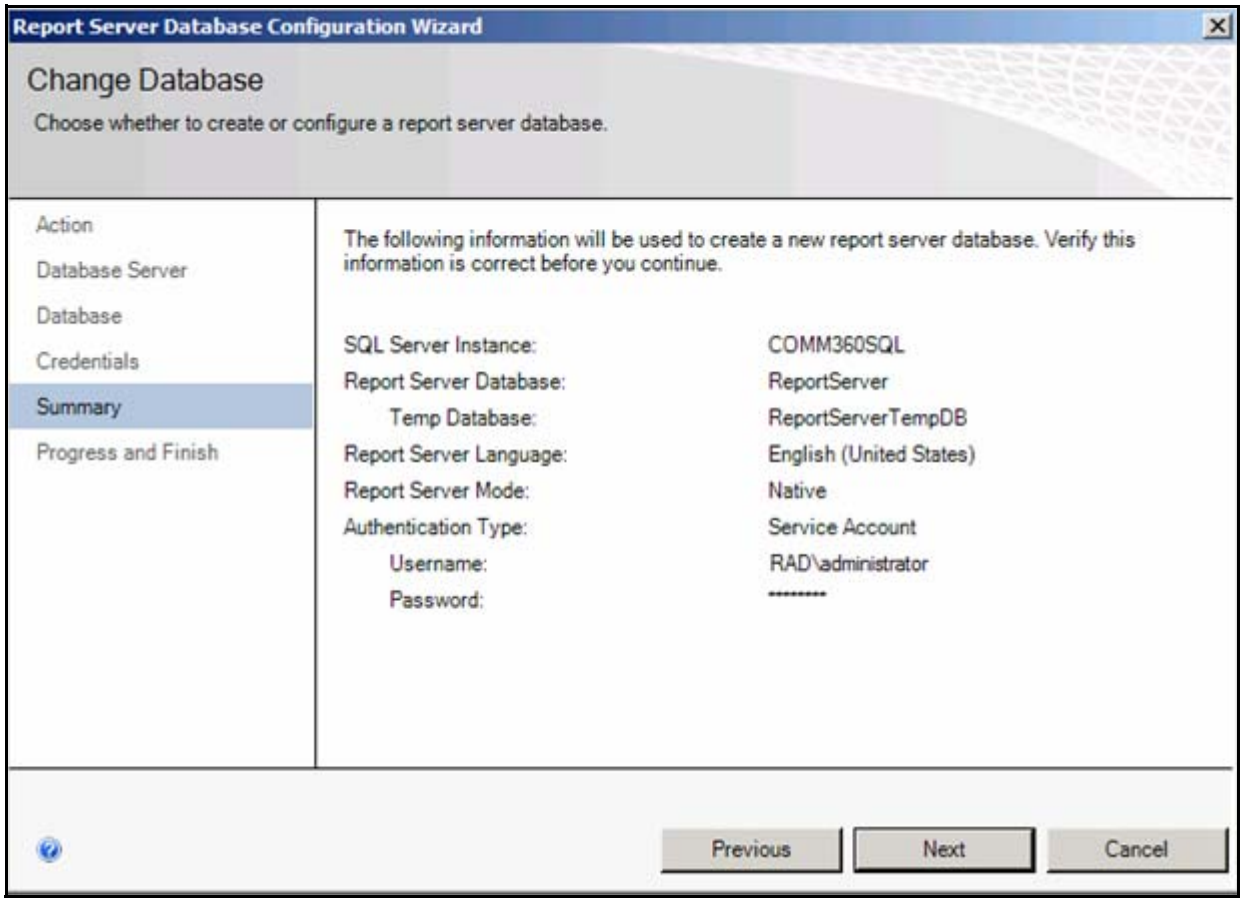
16. Verify that the information is correct.
17. Click **Next**.
18. Click **Next** again.

The Credentials window for Change Database displays.



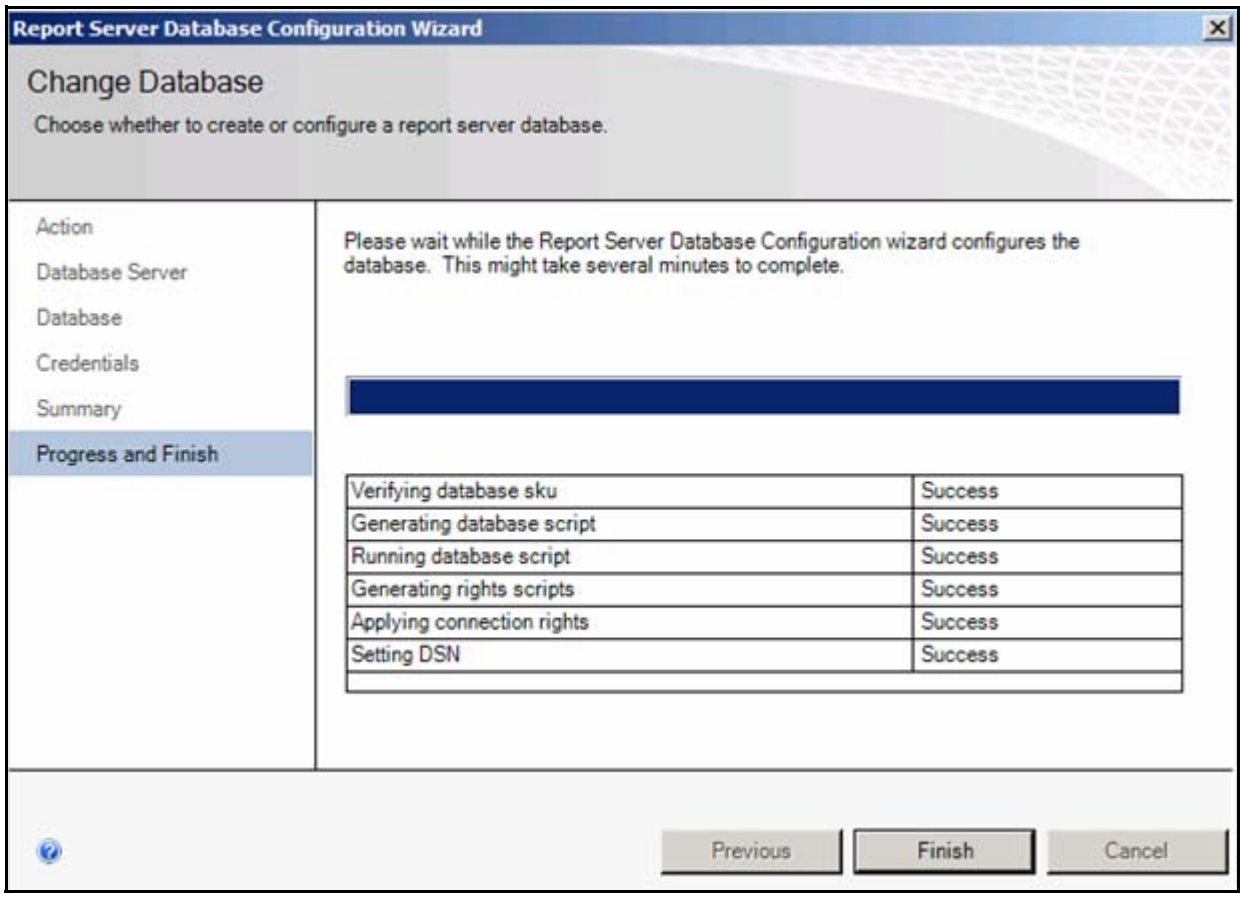
19. Use **Service Credentials** or **SQL Server Credentials** for the Authentication Type.
20. Click **Next**.

The Summary displays.



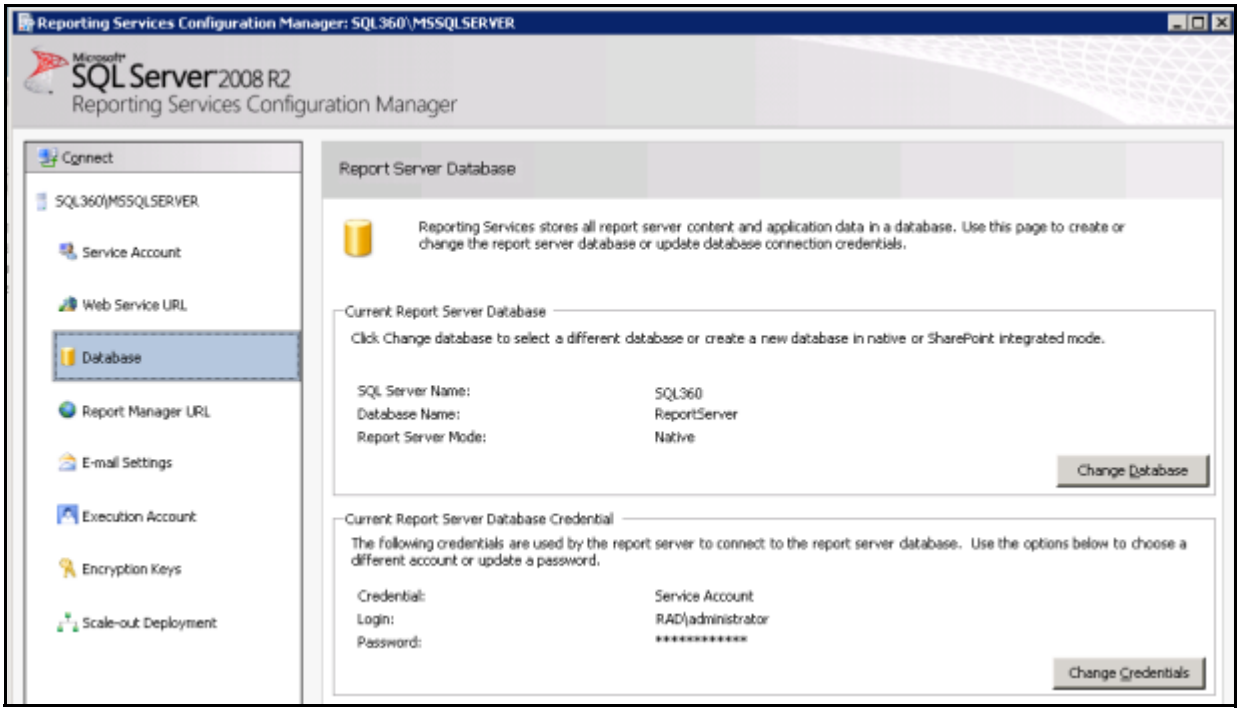
21. If all of the information is correct, click **Next**.

The wizard configures the database and shows the progress.



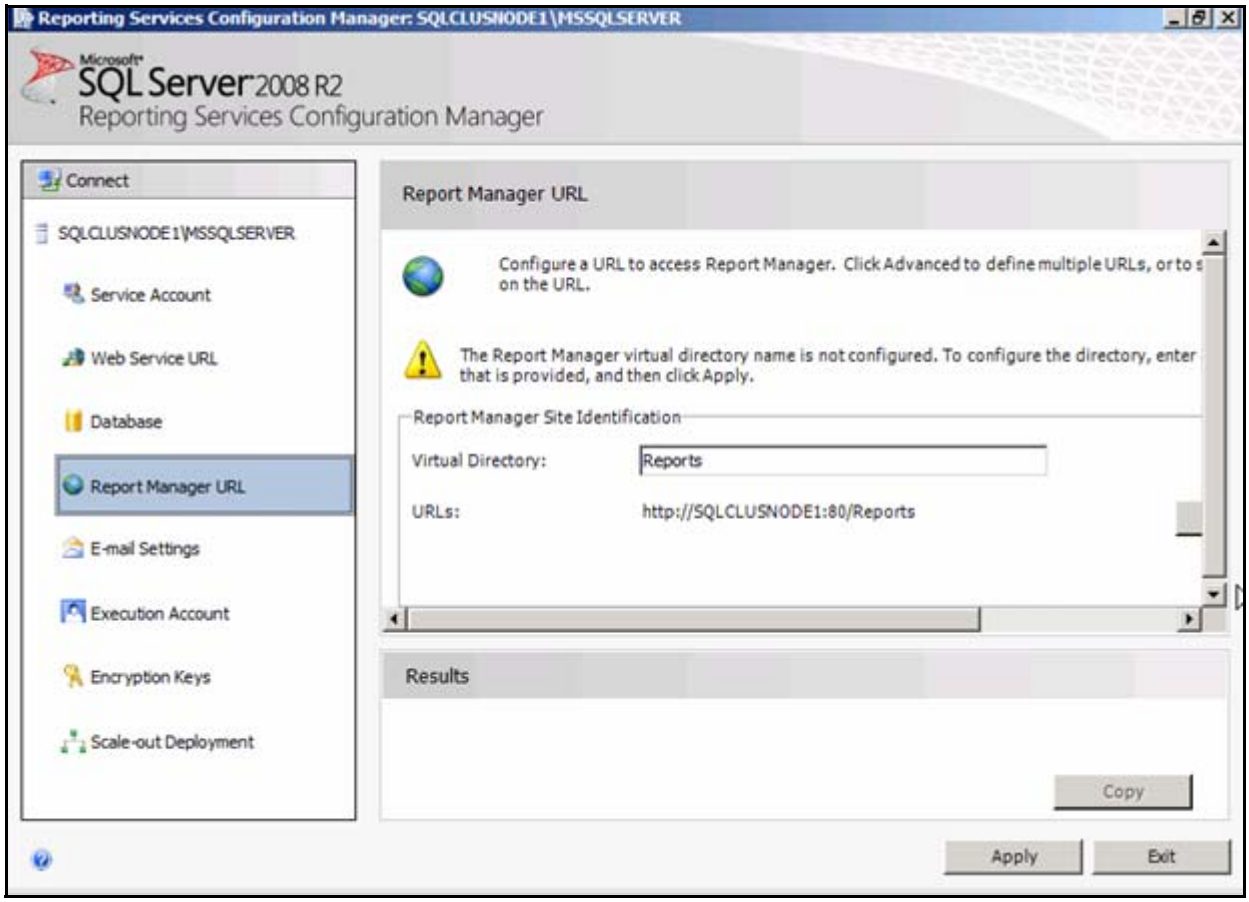
22. When the configuration is complete, click **Finish**.

You return to the Database window.



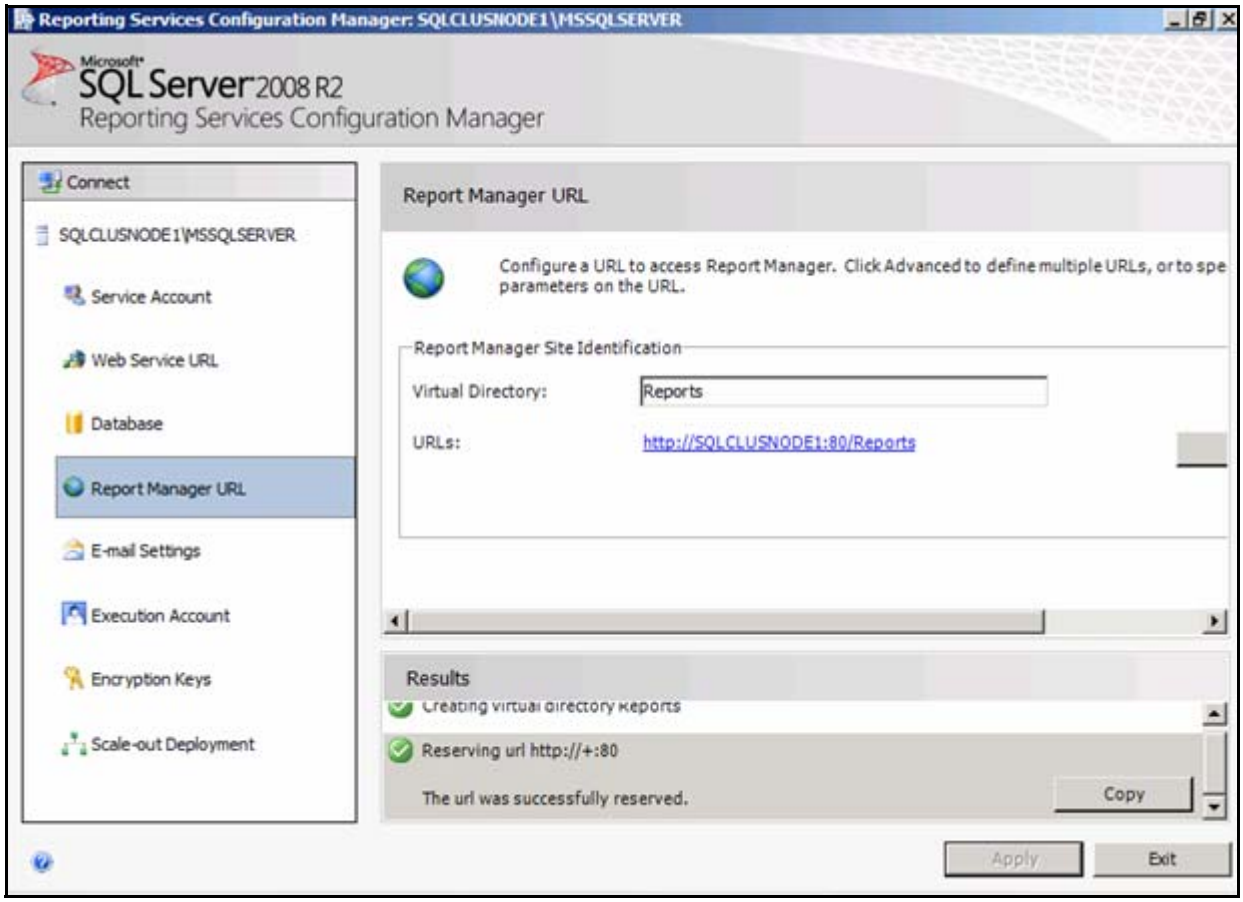
23. Click **Report Manager URL** in the left pane.

The Report Manager URL window displays.



24. Click **Apply**.

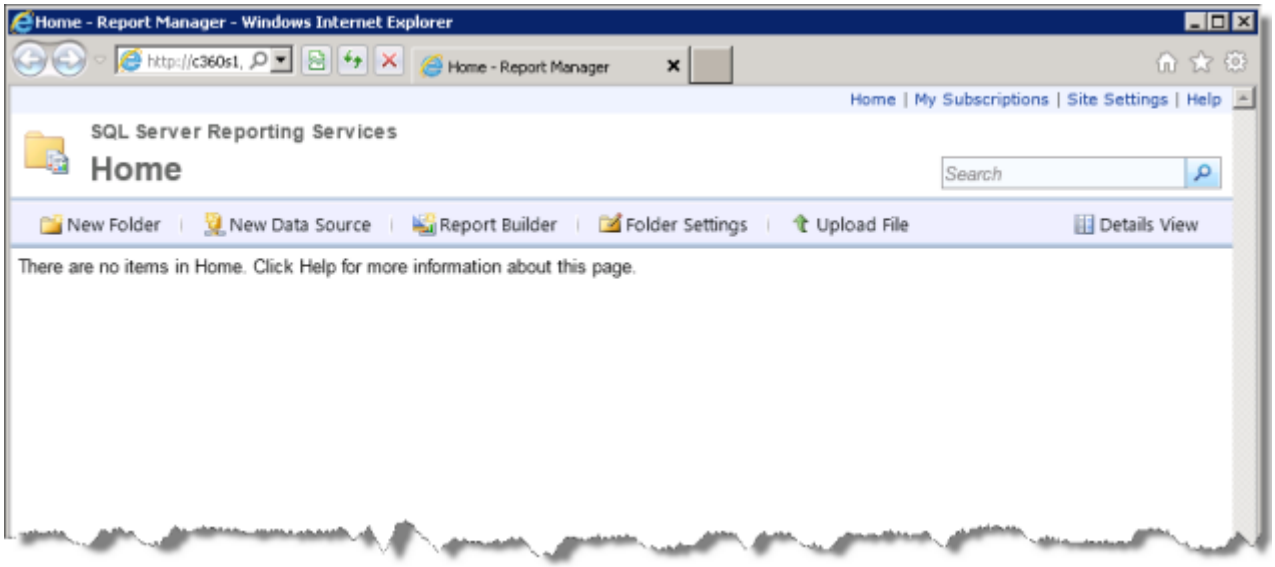
The following window displays with Results.



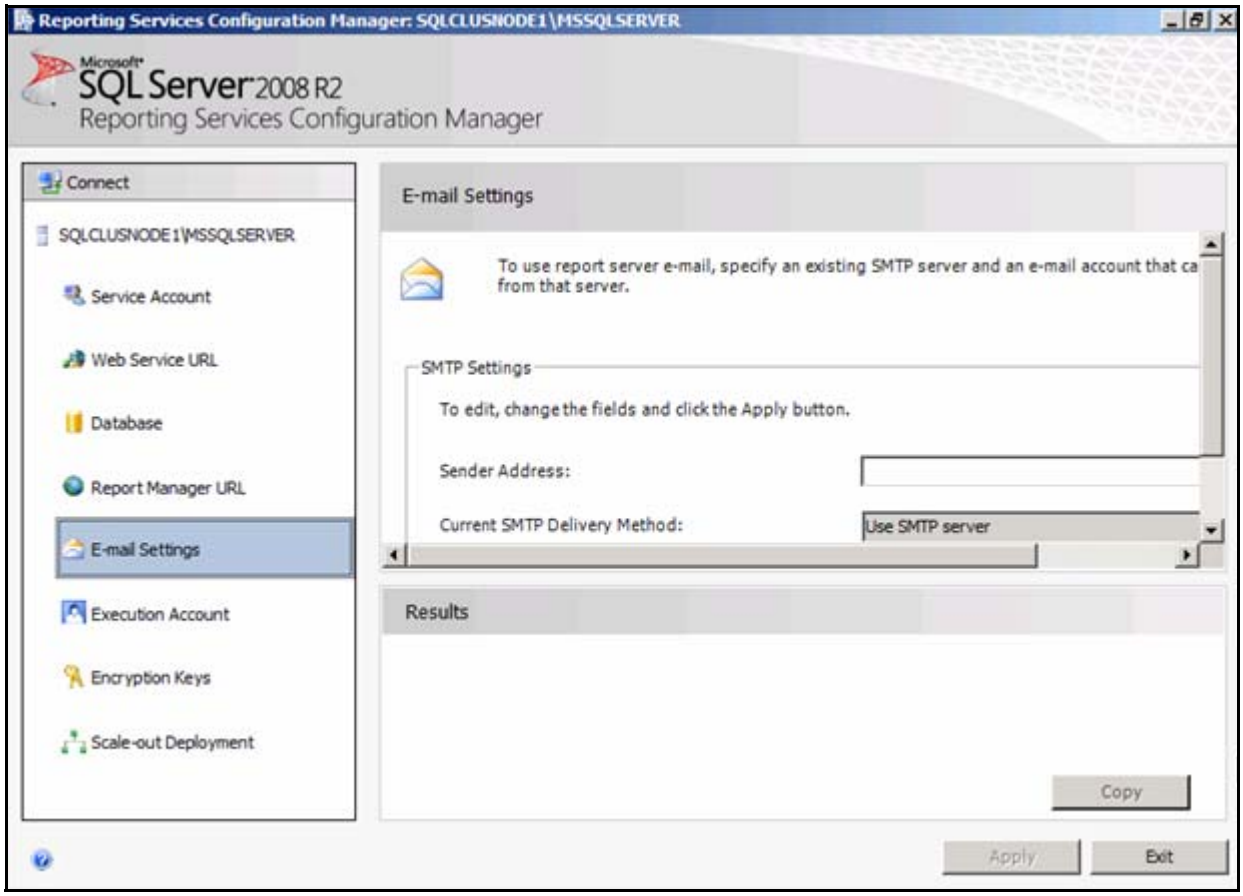
Note the results.

25. Click the URL to make sure that it works, i.e., shows the Reporting Service Web page similar to the following:

A window similar to the following displays.



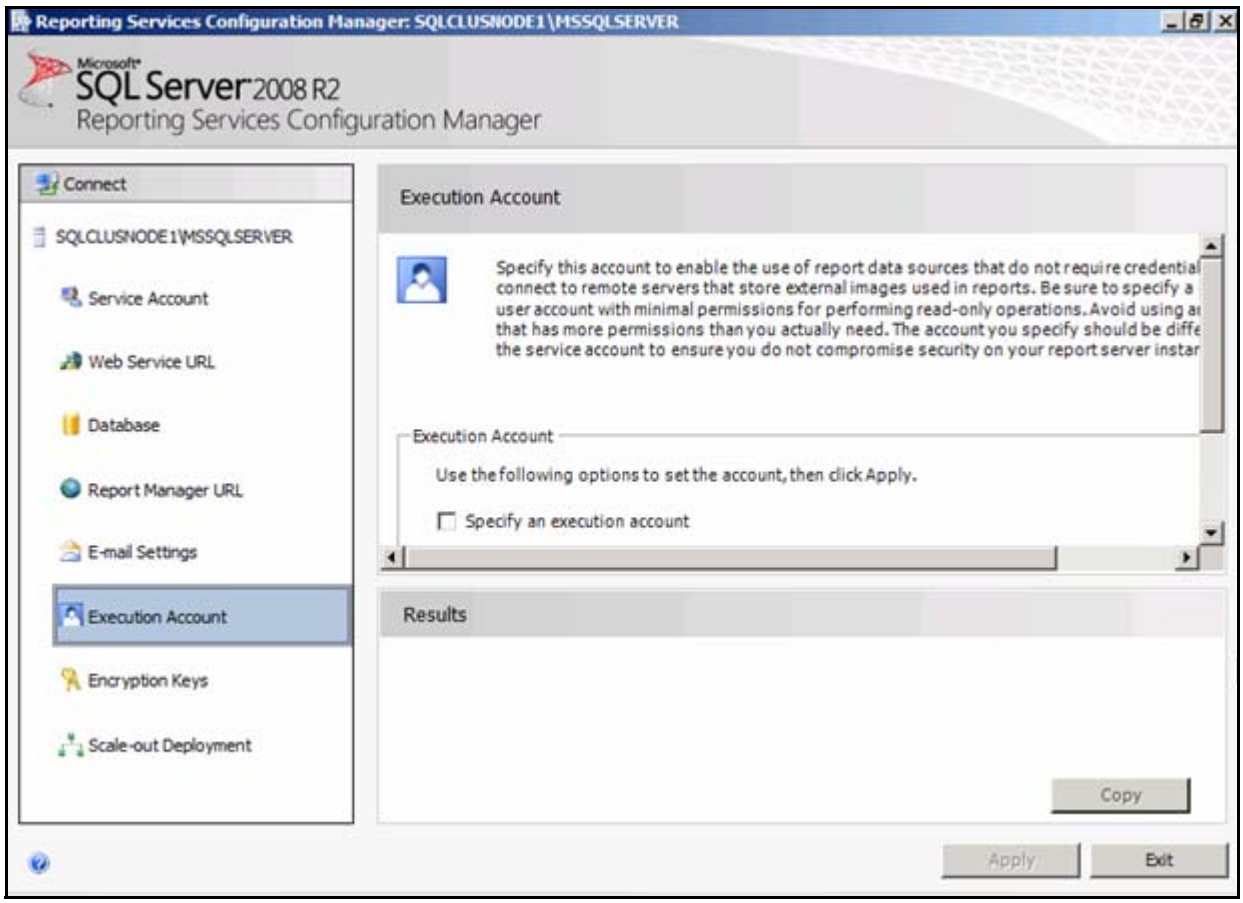
26. Close the link window.
27. Click **E-mail Settings** in the left pane to display that window.



28. ***If the Customer wishes*** to add an e-mail address, configure the proper settings and click **Apply**.

    The PowerScribe 360 application does not require this to be configured.

29. Click **Execution Account** in the left pane to display that window.



30. ***If the Customer wishes*** to have an execution account, configure the proper settings and click **Apply**.

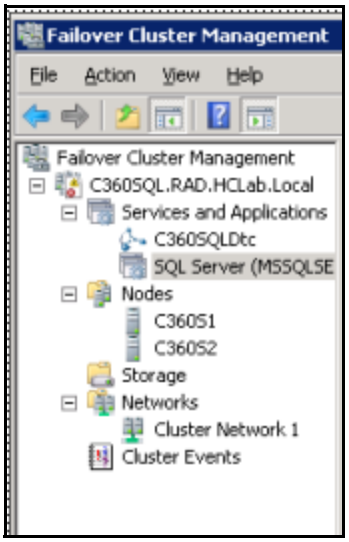
    The PowerScribe 360 application does not require this to be configured.

31. Click **Exit**.

Configure SQL Server Cluster Service

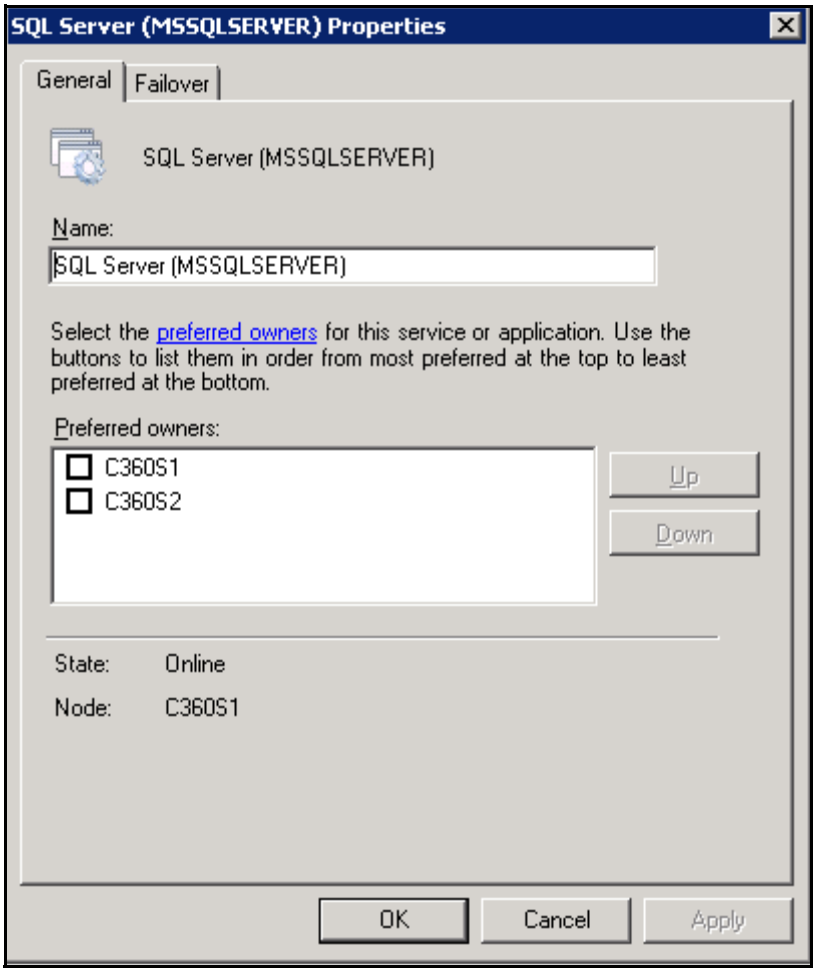
You must set the properties for the SQL Cluster service according to Customer requirements (if not already set).

1. Open **Failover Cluster Management**.



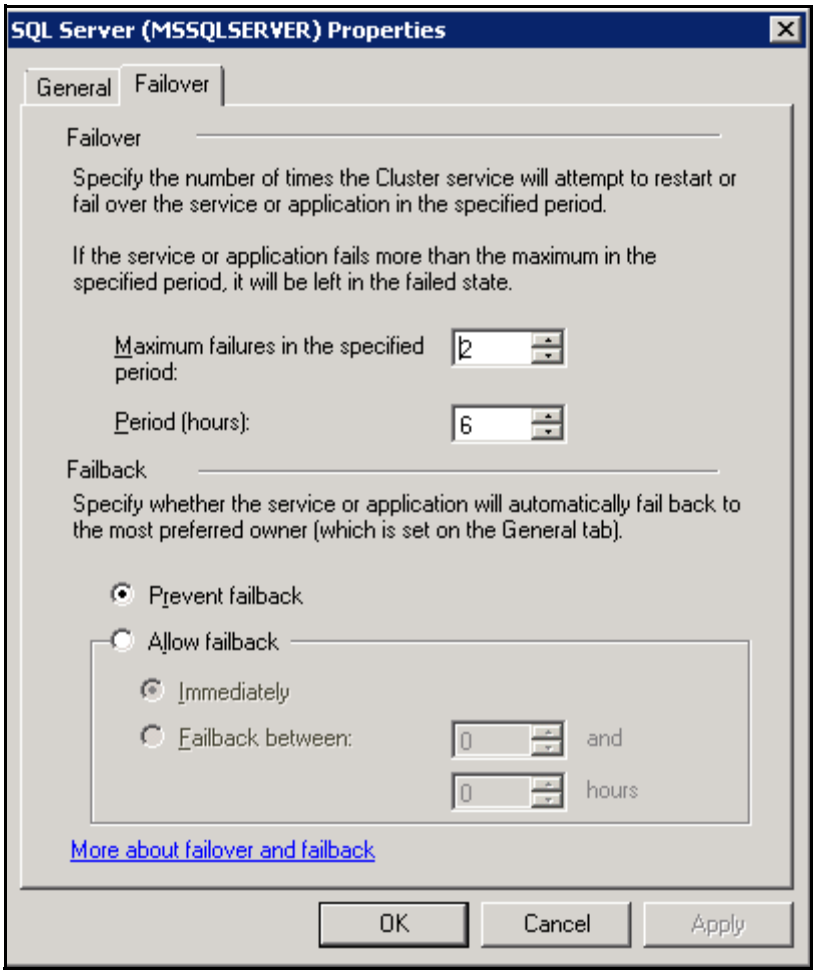
2. Right-click **SQL Server** in the left pane and choose **Properties**.

The following displays.



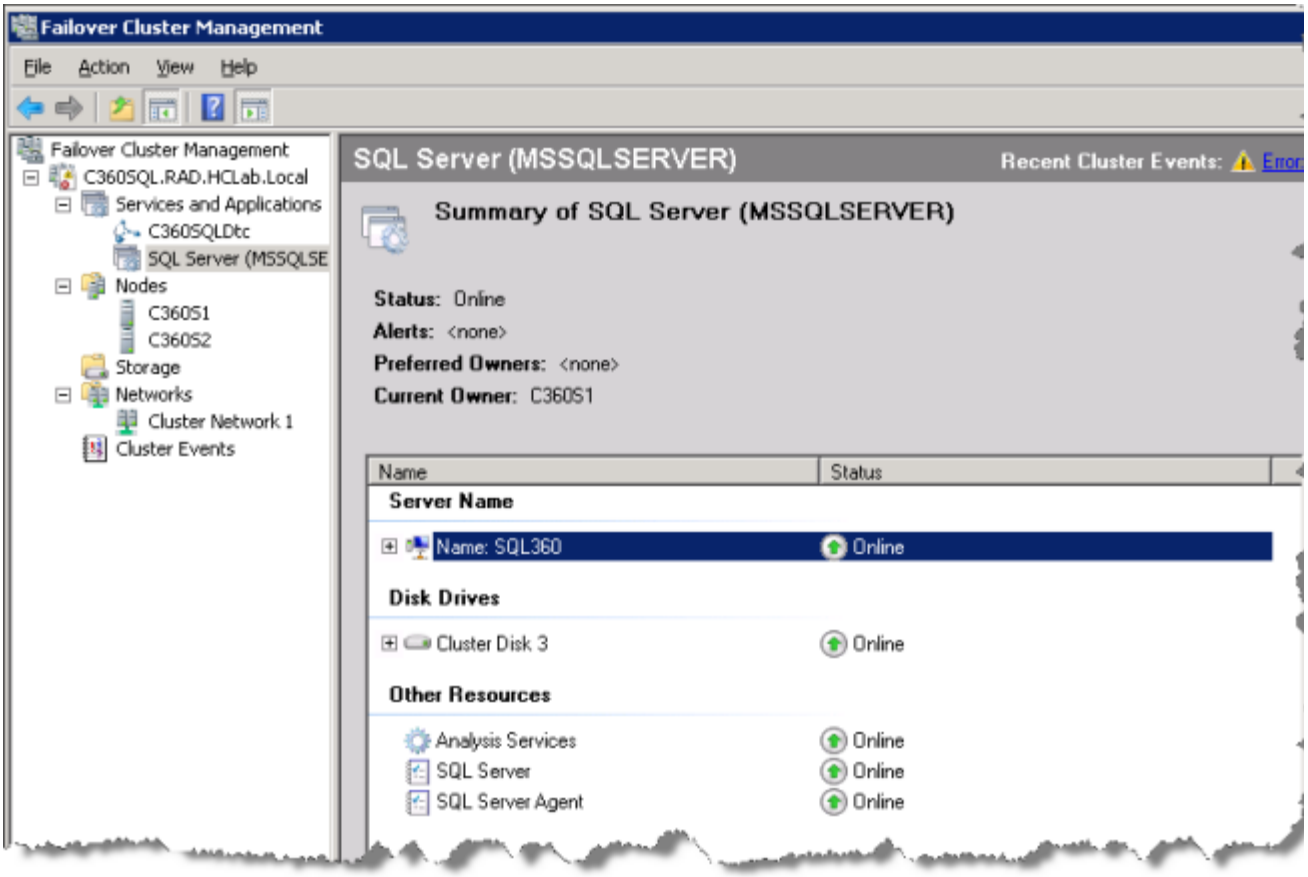
3. Select the preferred owner according to Customer site requirements and preferences.
4. Click the **Failover** tab.

The Failover tab window displays.



5. Set the Failover and Failback according to Customer preferences.
6. Click **OK**.

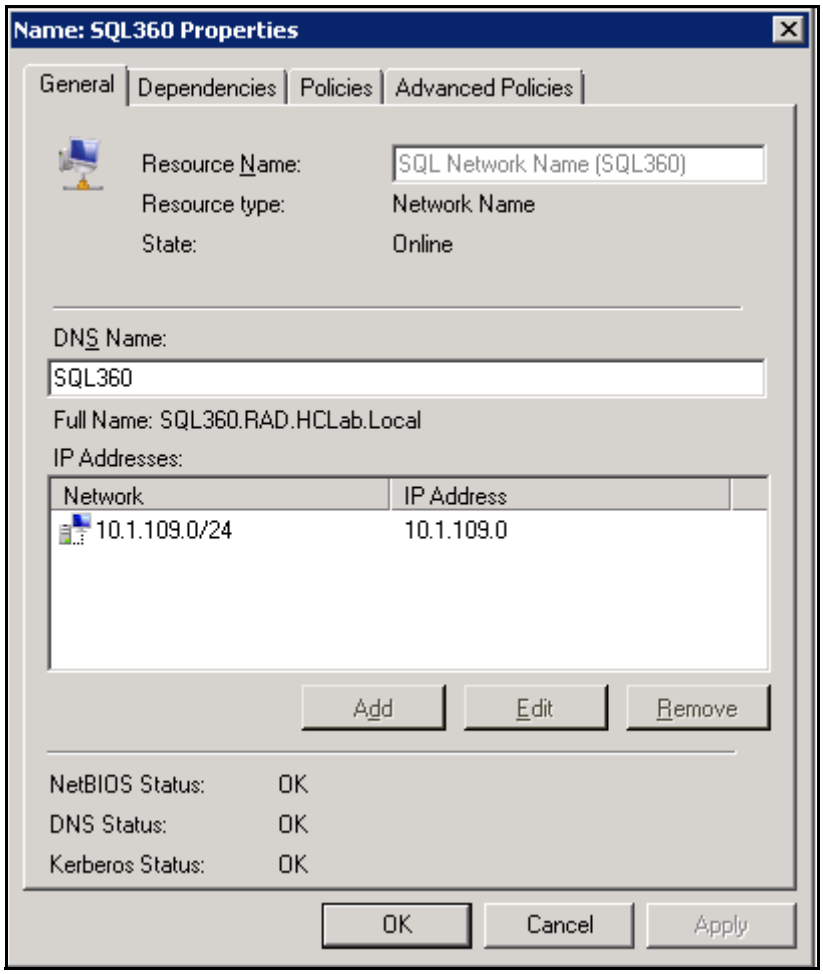
Verify you are at the following window.



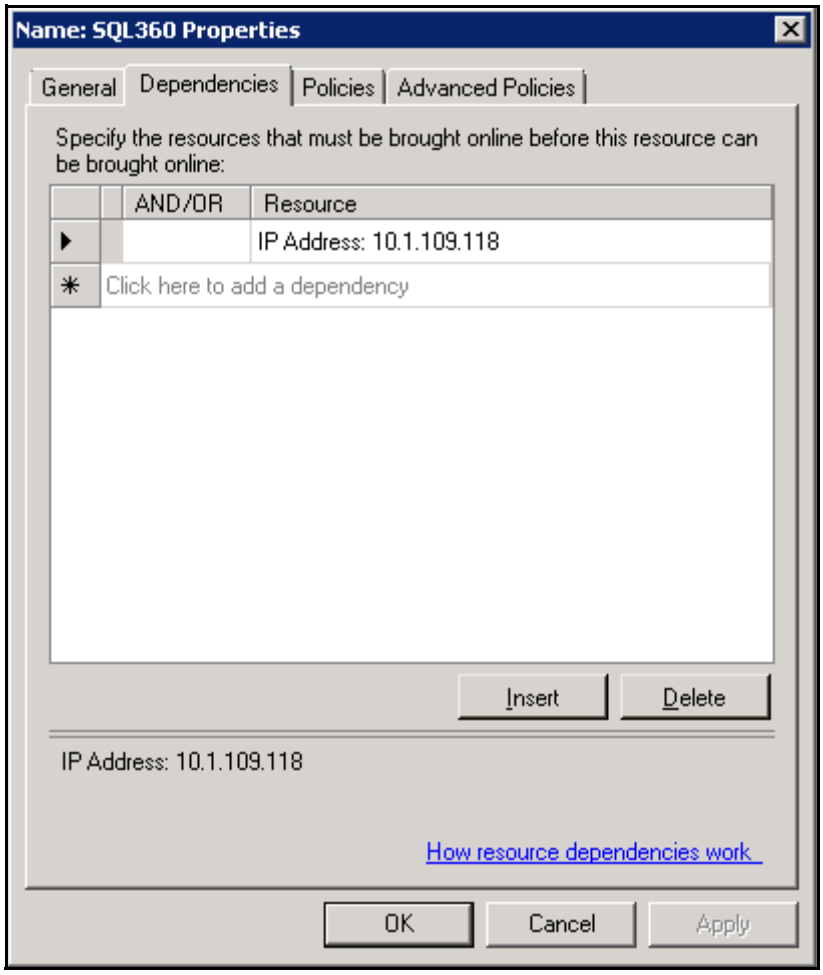
7. Right-click the Server name in the center pane and choose **Properties**.
8. Set these to the Customer requirements.

The following windows show the four tabs for the additional Properties. Set the Properties options and click **Apply** for each window.

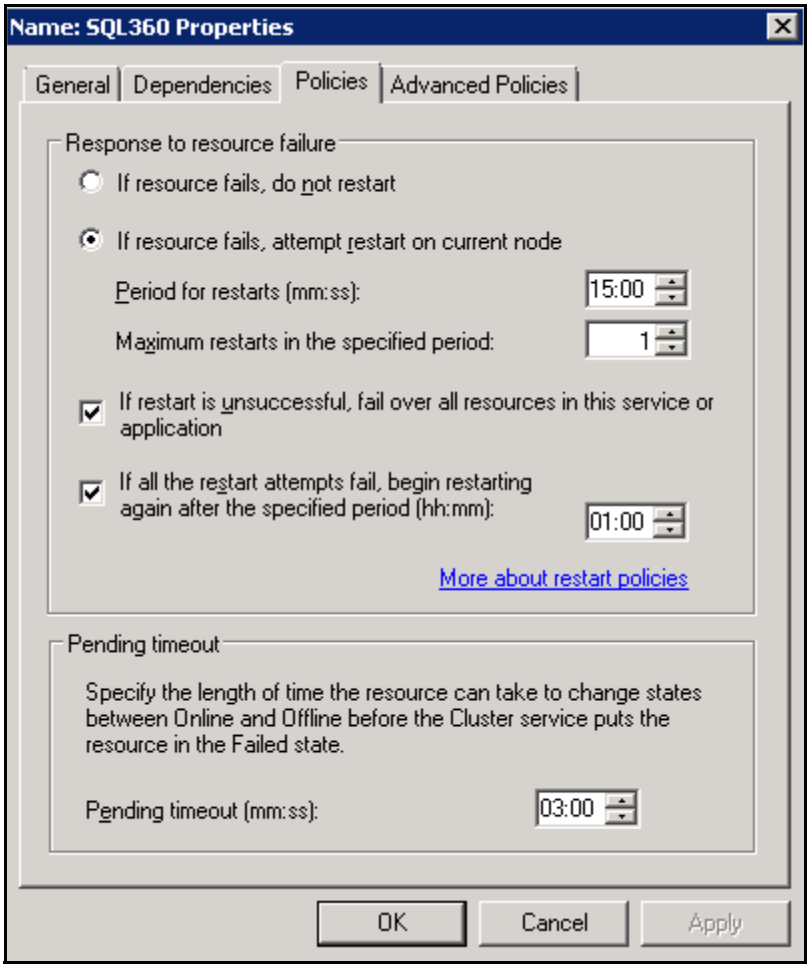
General:



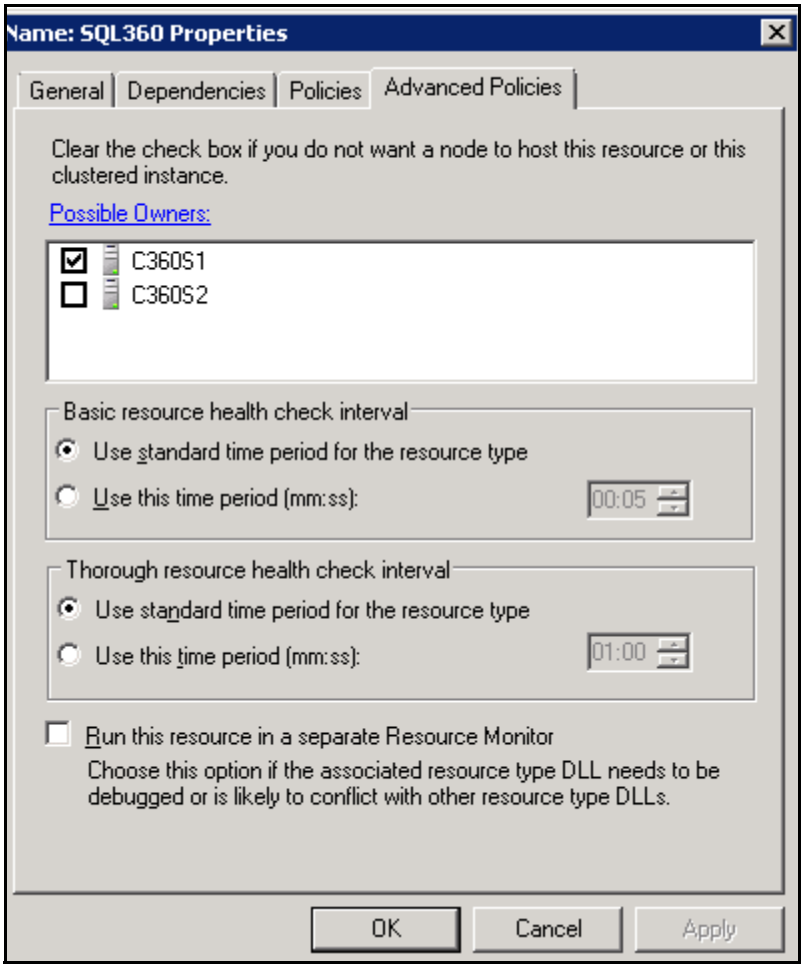
Dependencies:



Policies:


Name: SQL360 Properties
General
Dependencies
Policies
Advanced Policies
Response to resource failure
If resource fails, do not restart
If resource fails, attempt restart on current node
Period for restarts (mm:ss):
15:00
Maximum restarts in the specified period:
1
If restart is unsuccessful, fail over all resources in this service or application
If all the restart attempts fail, begin restarting again after the specified period (hh:mm):
01:00
More about restart policies
Pending timeout
Specify the length of time the resource can take to change states between Online and Offline before the Cluster service puts the resource in the Failed state.
Pending timeout (mm:ss):
03:00
OK
Cancel
Apply

Advanced Policies:



9. After setting all of the Properties options on all tabs according to Customer preferences and site requirements for this cluster environment, click **OK**.

Disable SQL from Enforcing HTTPS

Due to the way SQL RS enables (and enforces) HTTPS on a machine, if the SQL installer finds any certificates on the machine with the purpose set to * (anything) or server authentication, it will set the SQL RS SecureConnectionLevel to 2, which requires HTTPS. (This can happen in a few other scenarios too, but this is the common one.) Even though you may not have intended for Reporting Services to use SSL, in this case it is trying to enforce it.

The following will disable SSL for SQL RS.

1. Edit the following:

   X:\Program Files\Microsoft SQL Server\MSRS10.<ServerInstance>\Reporting Services\ReportServer\rsreportserver.config

2. Go to the following:

   <Add Key="SecureConnectionLevel" Value="2"/>

3. Change from whatever the current value is to 0.

The following describes the meaning of the Values:

3: Most secure - Use SSL for everything.

2: Secure - Use SSL for rendering and methods that pass credentials but do not insist on it for all SOAP calls.

1: Basic Security - Accepts HTTP but rejects any calls that might be involved in the passing of credentials.

0: Least Secure - Do not use SSL at all.

Install the Latest Service Pack

CAUTION

NEVER apply any Microsoft and/or third-party service packs to an active Node. You MUST take the Node offline from the Cluster and then perform the updates on it. Make sure that you apply updates to all Nodes so that they are exactly the same. The sequence is to take a Node offline, perform the updates, activate that Node and take the next Node offline and do the same.

STORAGE CONFIGURATION 4

Important Considerations

- **The information in this Section on Network Attached Storage and Direct Attached Storage is provided as a guideline to setting up storage methods. There will be fluctuations and differences between Customer sites and you will have to adjust the storage implementation accordingly.**
- **Storage configurations may be in place and may be such that by performing some of the formatting steps below you will actually be in conflict with the site storage configuration, hardware and software.**
- **You must attach the storage to each system so that the storage has the same Drive letters in all systems.**

Storage Area Network (SAN)

You must refer to the vendor documentation for SAN information.

Network Attached Storage (NAS)

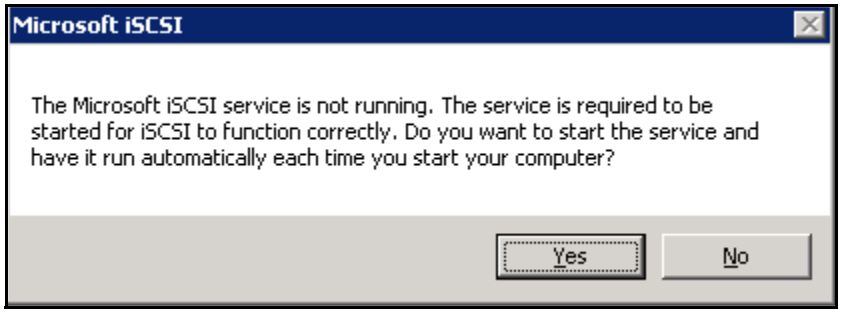
If using Network Attached Storage (NAS), you must complete this section and then proceed to the Direct Attached Storage (DAS) and perform those steps to bring the NAS online. If using only DAS, skip to the next section.

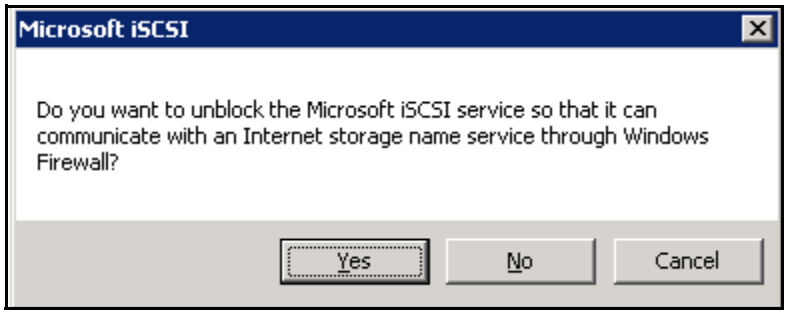
iSCSI

The following iSCSI procedure is only one of many ways to set up NAS. You must know the Customer's storage information (hardware, software, drive setup, allocation location and names) so that you can properly set up the Targets. These will differ for every site. Unless you know the exact setup, location, and target name(s), you should not proceed.

NOTE

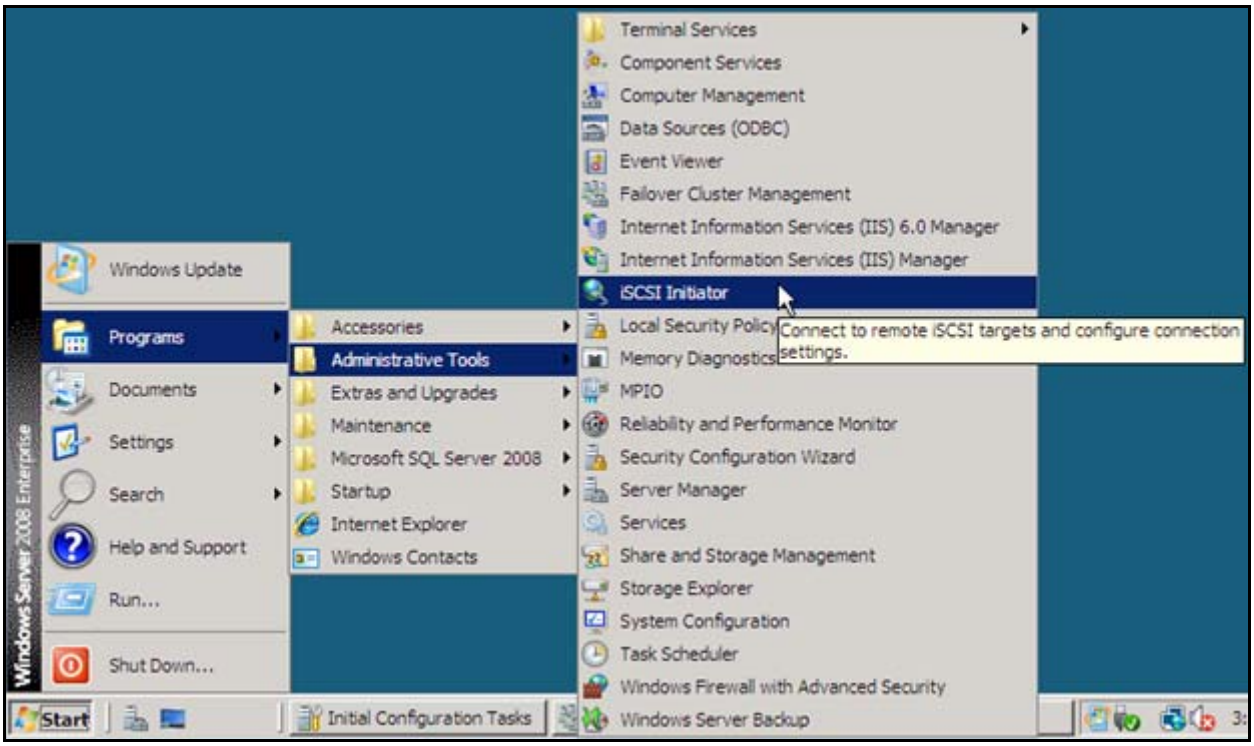
*When using iSCSI for the first time, the following popups may display. Click **Yes** for both.*



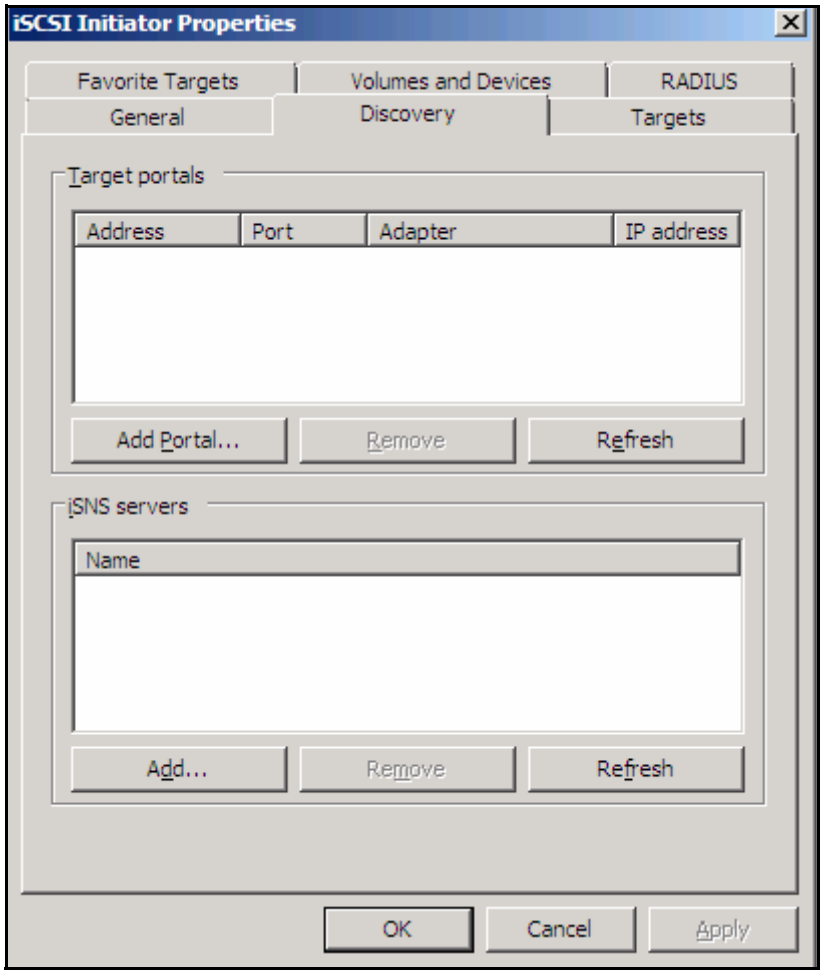


The following provides the steps for installing Network Attached Storage.

1. Select **Start/Programs/Administrative Tools/iSCSI Initiator**.

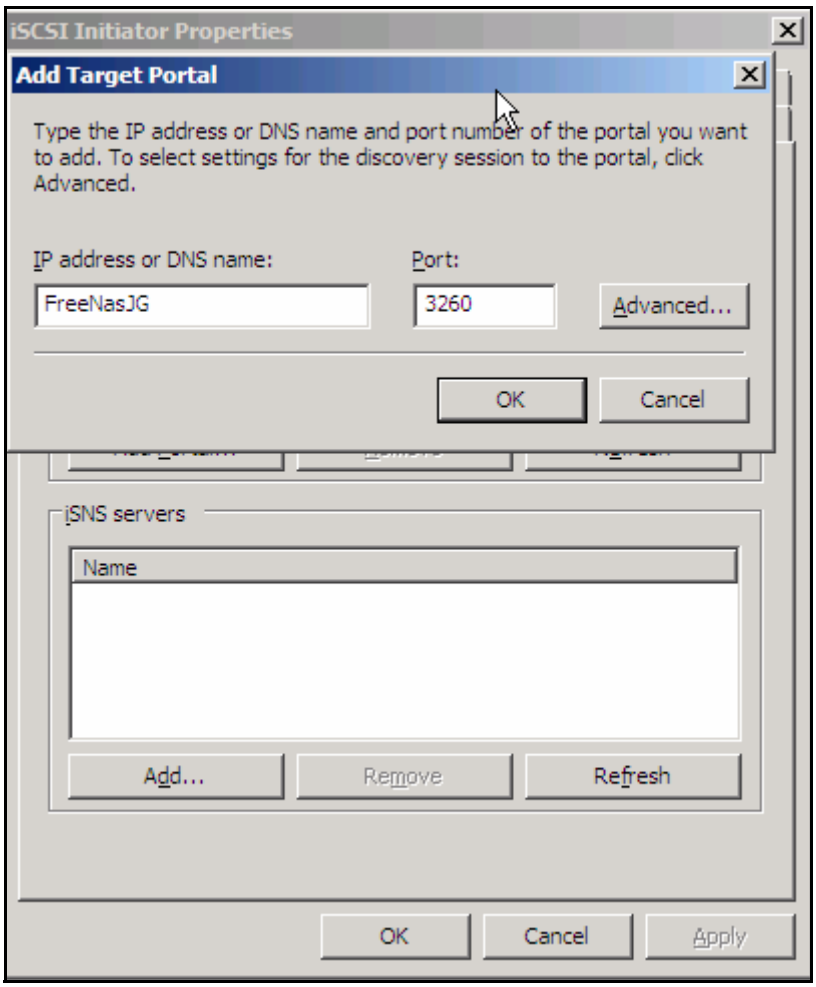


The iSCSI Initiator Properties window opens.



2. Select the **Discovery** tab.
3. Click **Add Portal**.

The Add Target Portal window displays.



4. Enter the IP address or DNS name and the Port.

NOTE

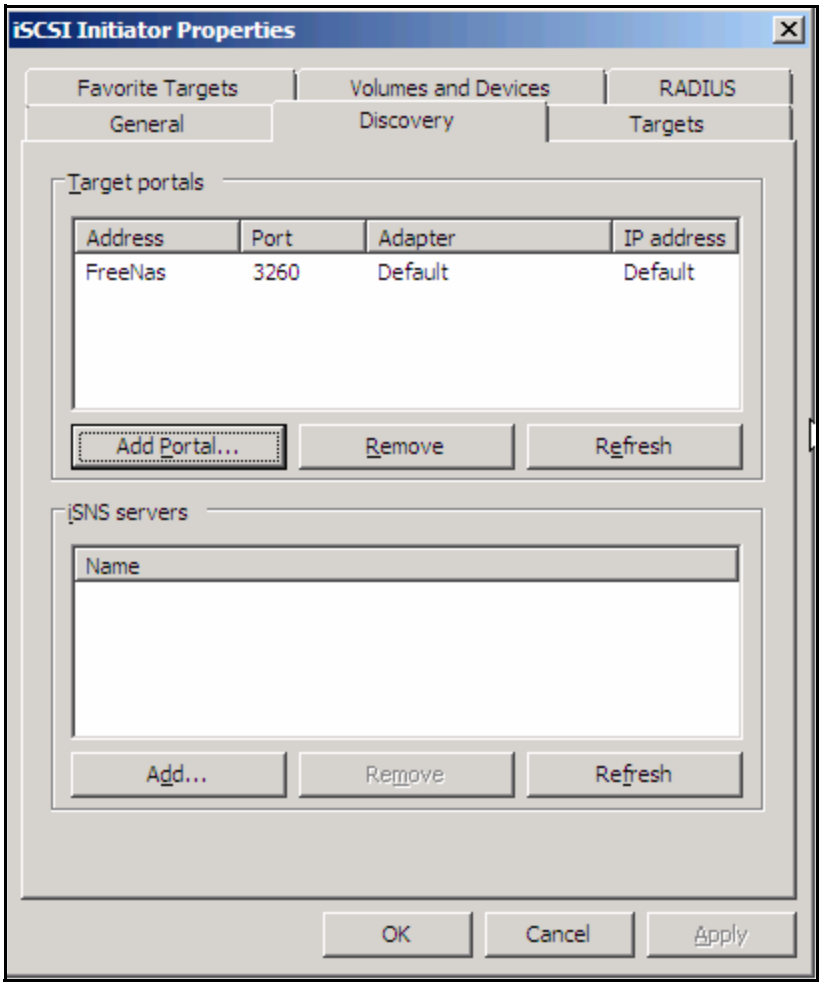
These options depend on the vendor used. You may have to open ports on the server as well.

5. Click **OK**.

IMPORTANT

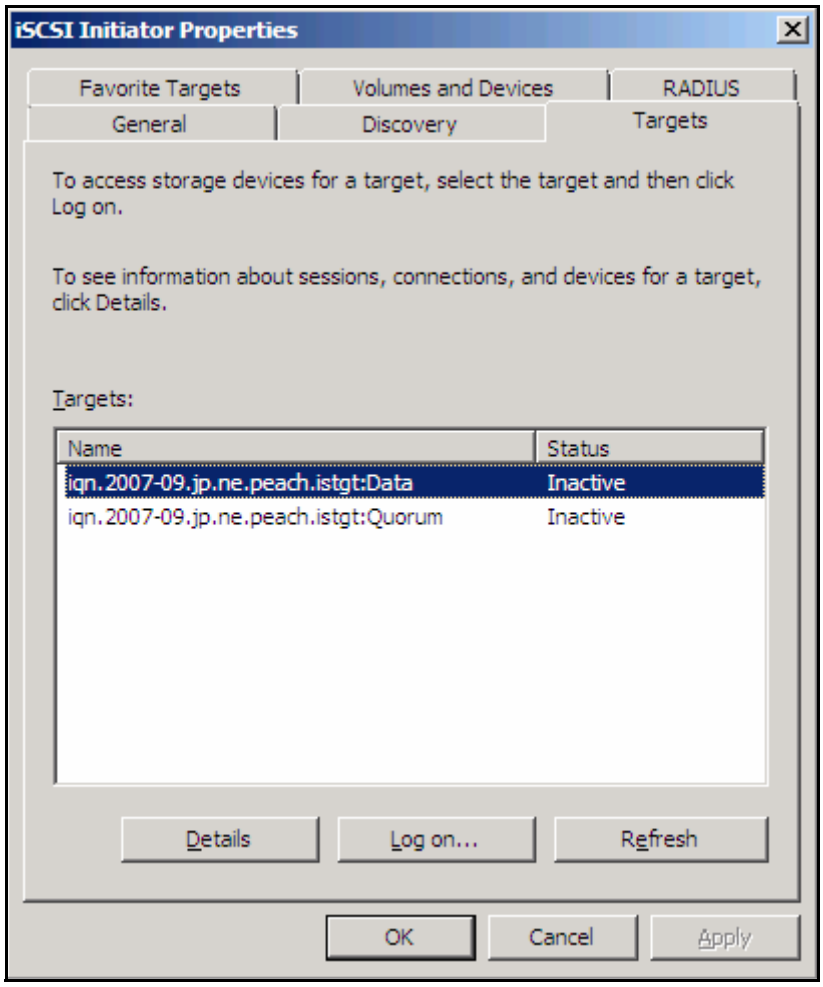
Repeat the steps above for all target portals (i.e., network storage systems).

You are returned to the iSCSI Initiator Properties Discovery tab.



6. Click the Targets tab.

The following example of a window displays.



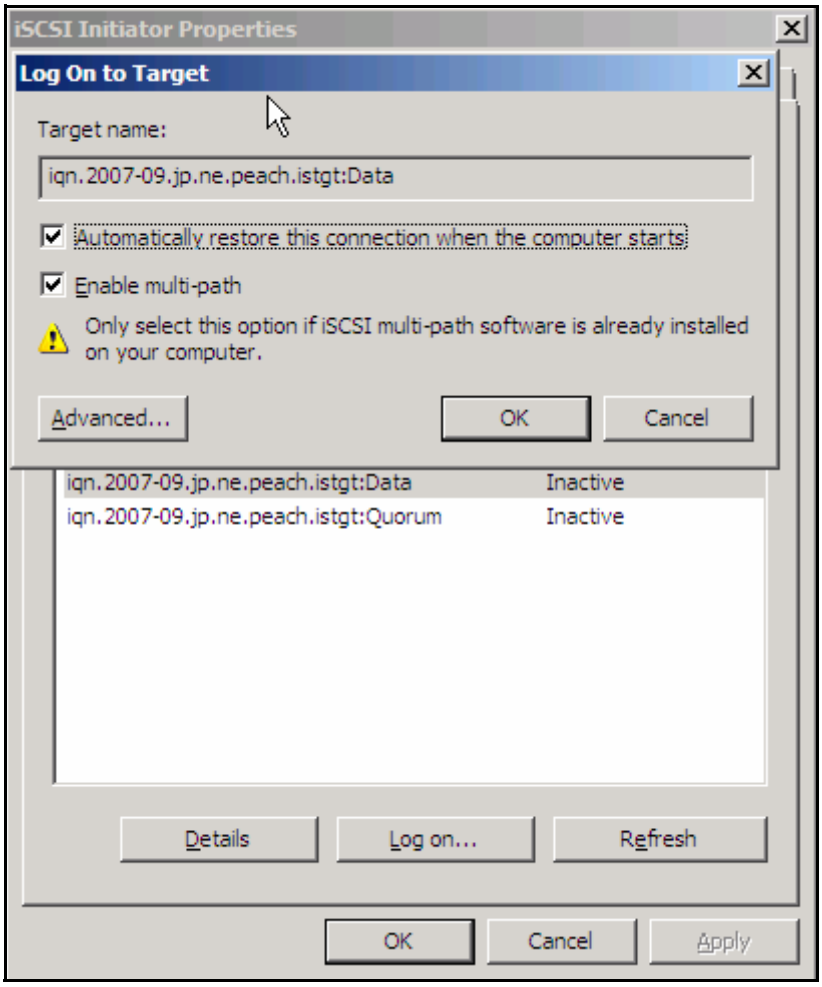
7. Highlight the first target in the list (there may be multiple targets) and click **Log on**.

   You must only select a target, or targets, that will be used for the PowerScribe system.

NOTE

When the drives have the same size, it may be difficult to determine which one is which. To get around this issue, if you are using drives of the same size, add ONE drive in iSCSI on each system, then in storage manager. Refer to the Direct Attached Storage (DAS) section. Bring that one drive on line in both systems, and then proceed to add the remaining drives, taking care to ensure that the drives letters on each system all point to the same drive.

The Log On to Target window for that target displays.



8. Check the following options:
   a. **Automatically restore this connection when the computer starts**
   b. **Enable multi-path** - only if multipath is supported by the device
9. Click **OK**.

   You are returned to the iSCSI Initiator Properties Target tab.

IMPORTANT

For every additional target that will be used by the PowerScribe system, repeat the procedure of selecting the target, logging on to the target, and checking the proper option(s).

10. Click **OK**.

    You are returned to the iSCSI Initiator Properties Target tab.

11. Click **OK**.

IMPORTANT

You have now completed the network portion and must place the storage online as if it were Direct Attached Storage. Proceed to the next section.

Direct Attached Storage (DAS)

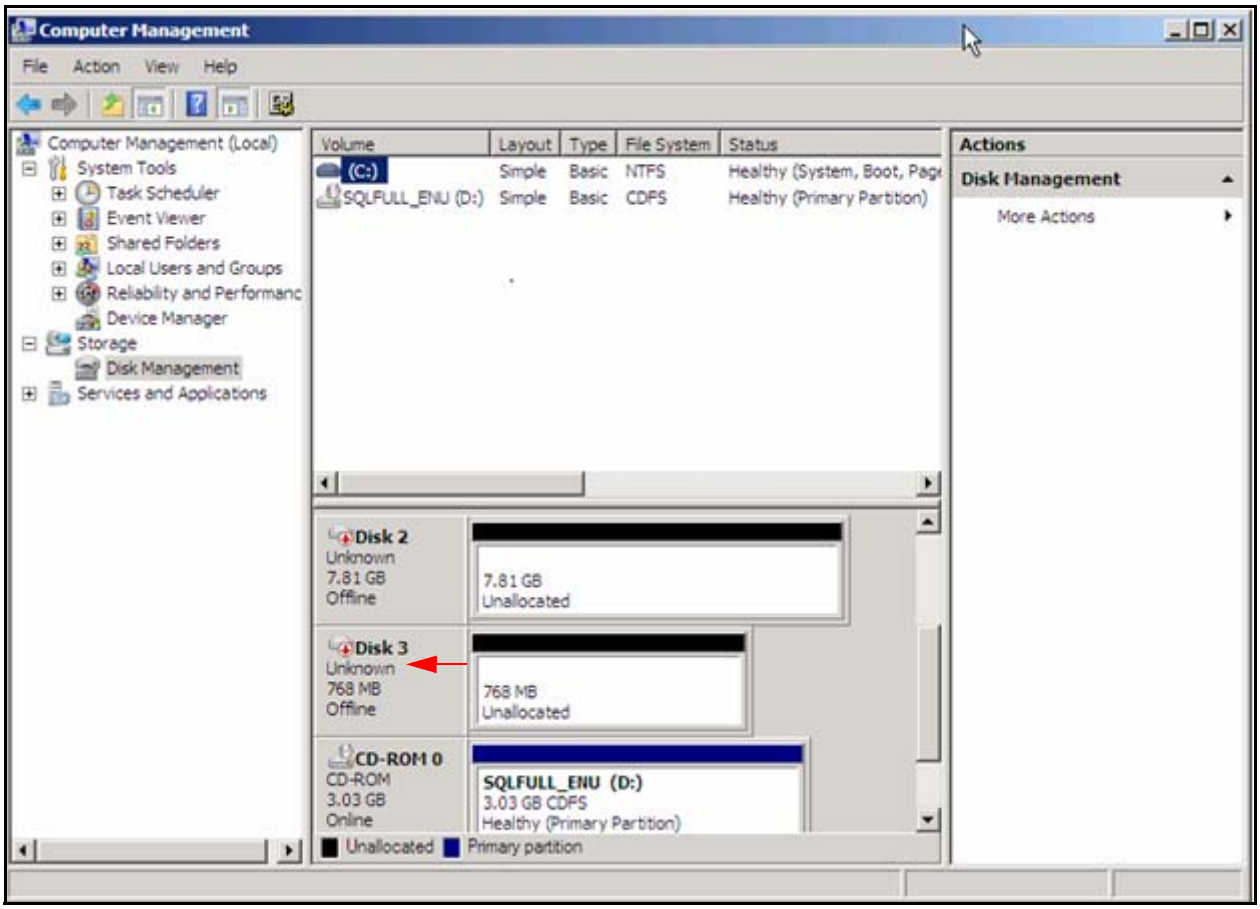
IMPORTANT

The DAS storage procedure MUST be performed on every server and all servers must be set up EXACTLY alike for Drive structure. The examples in the screen shots and steps will vary depending on the site configuration.

The following provides the steps for installing Direct Attached Storage. You will perform these steps on the Node that will become the Primary Node of the cluster FIRST. Repeat for all of the other systems that will become Nodes of the cluster EXCEPT for the formatting, and you will be instructed to perform that only for the Primary Node in the steps.

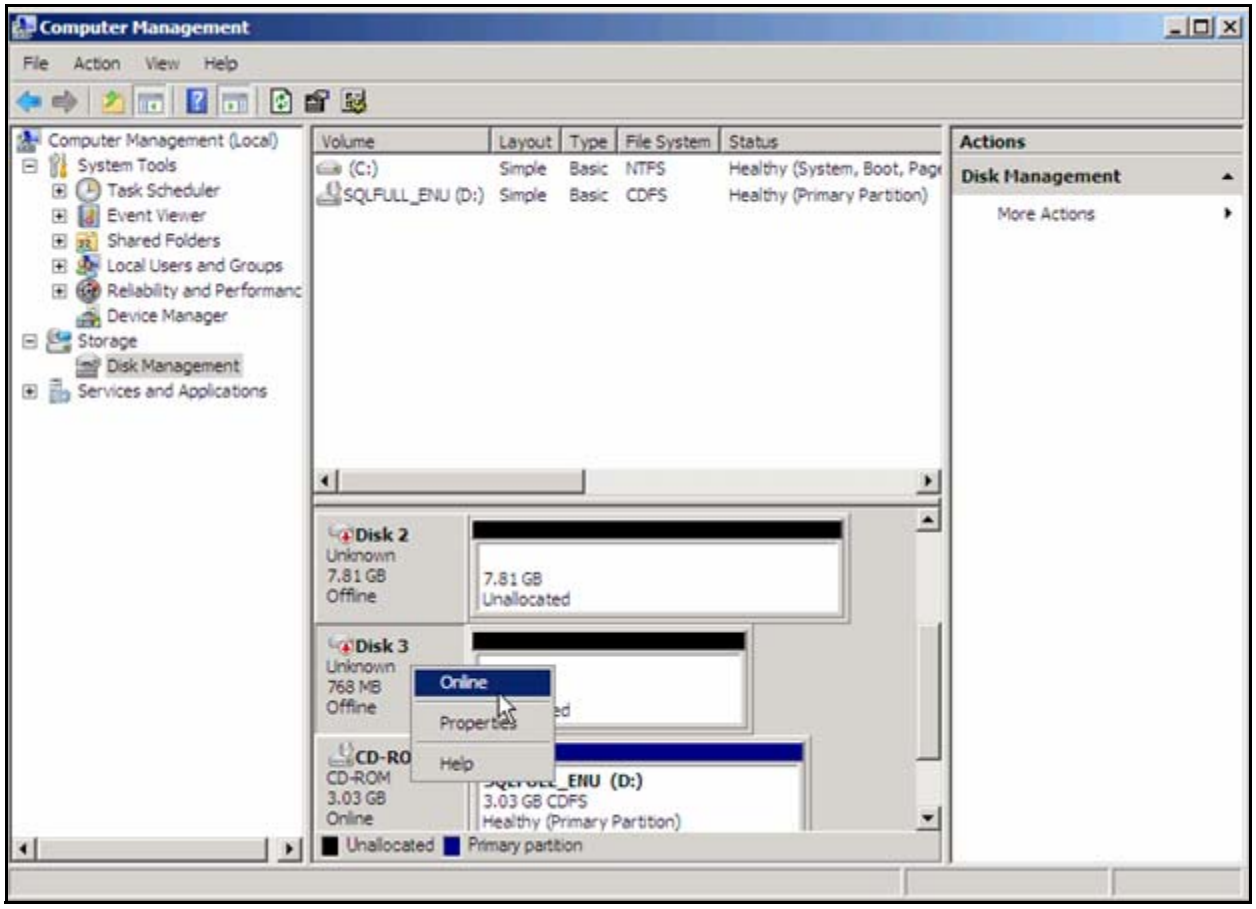
1. Select **Start/Programs/Administrative Tools/Computer Management**.

   The following is an example.



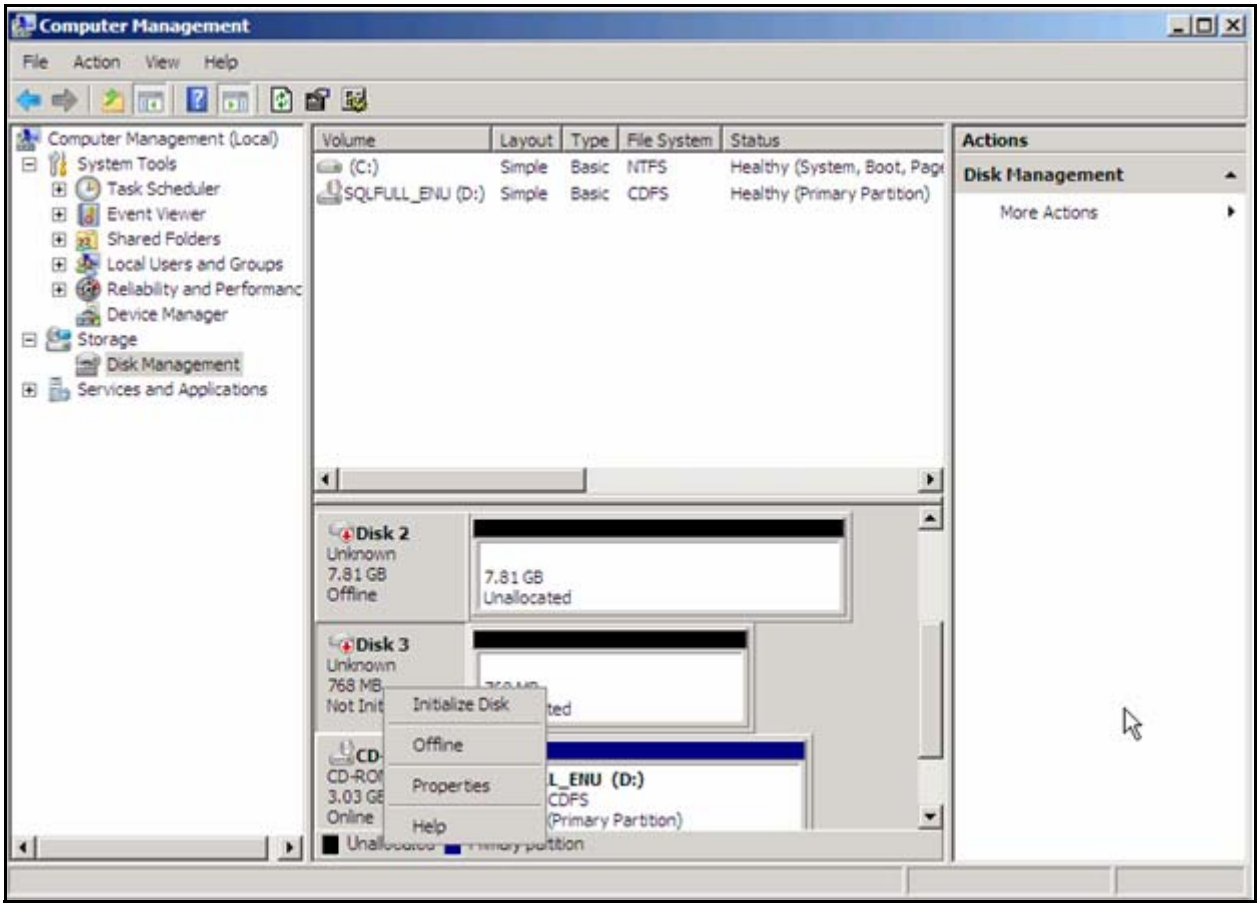
2. Under **Storage**, in the left pane, double-click **Disk Management**.
3. Right-click the **Disk 3** area.

The pop-up window displays.



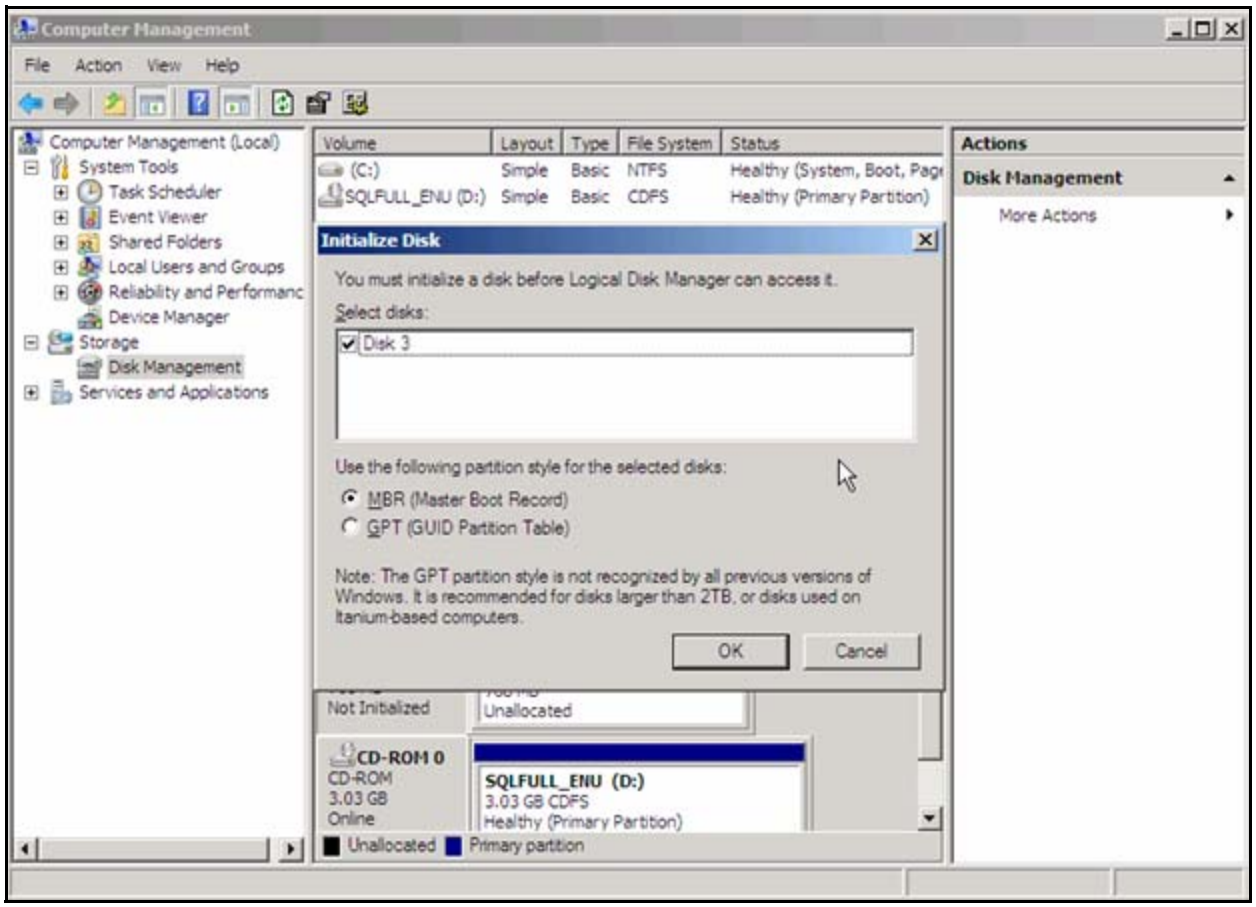
4. Select **Online**.

The pop-up window displays.



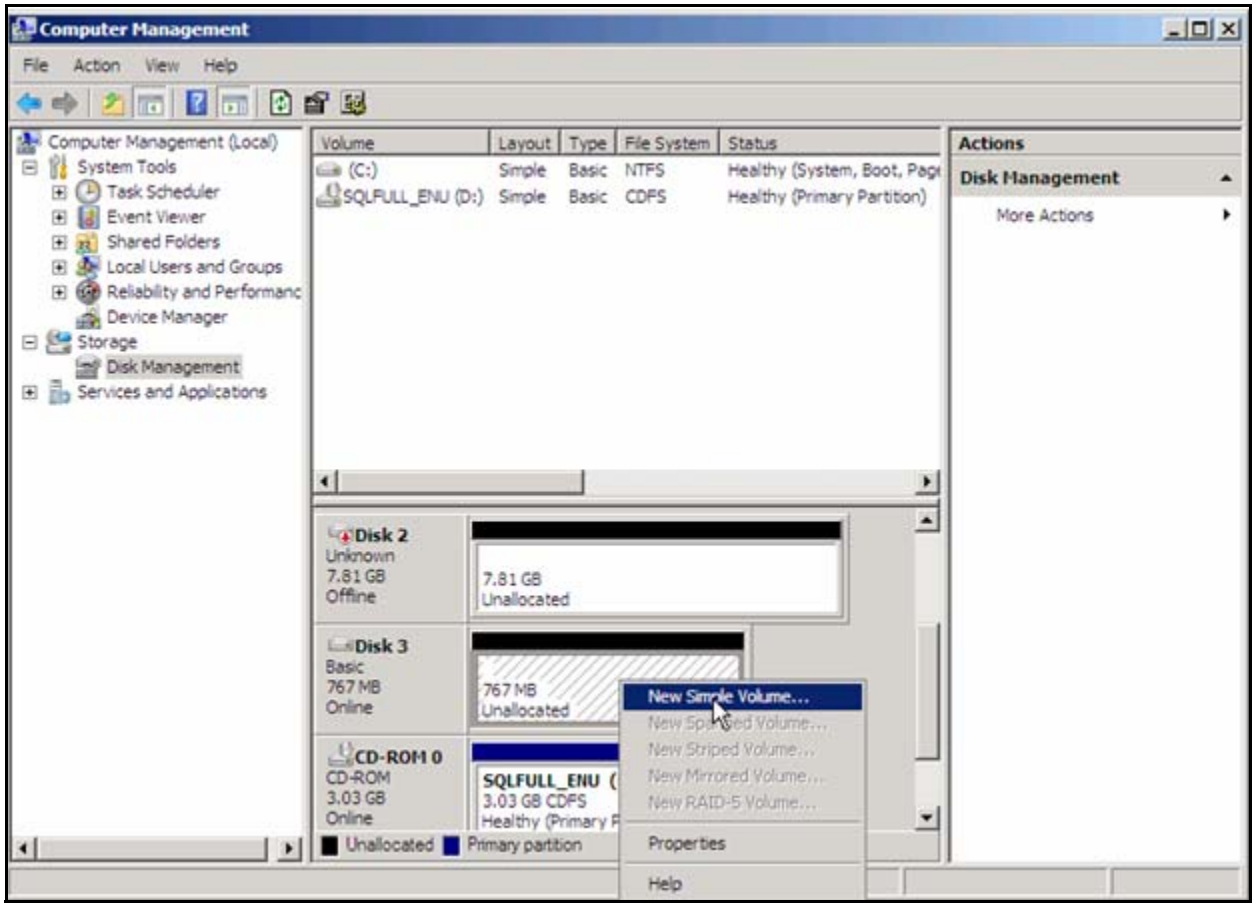
5. Select **Initialize Disk**.

The Initialize Disk window opens.



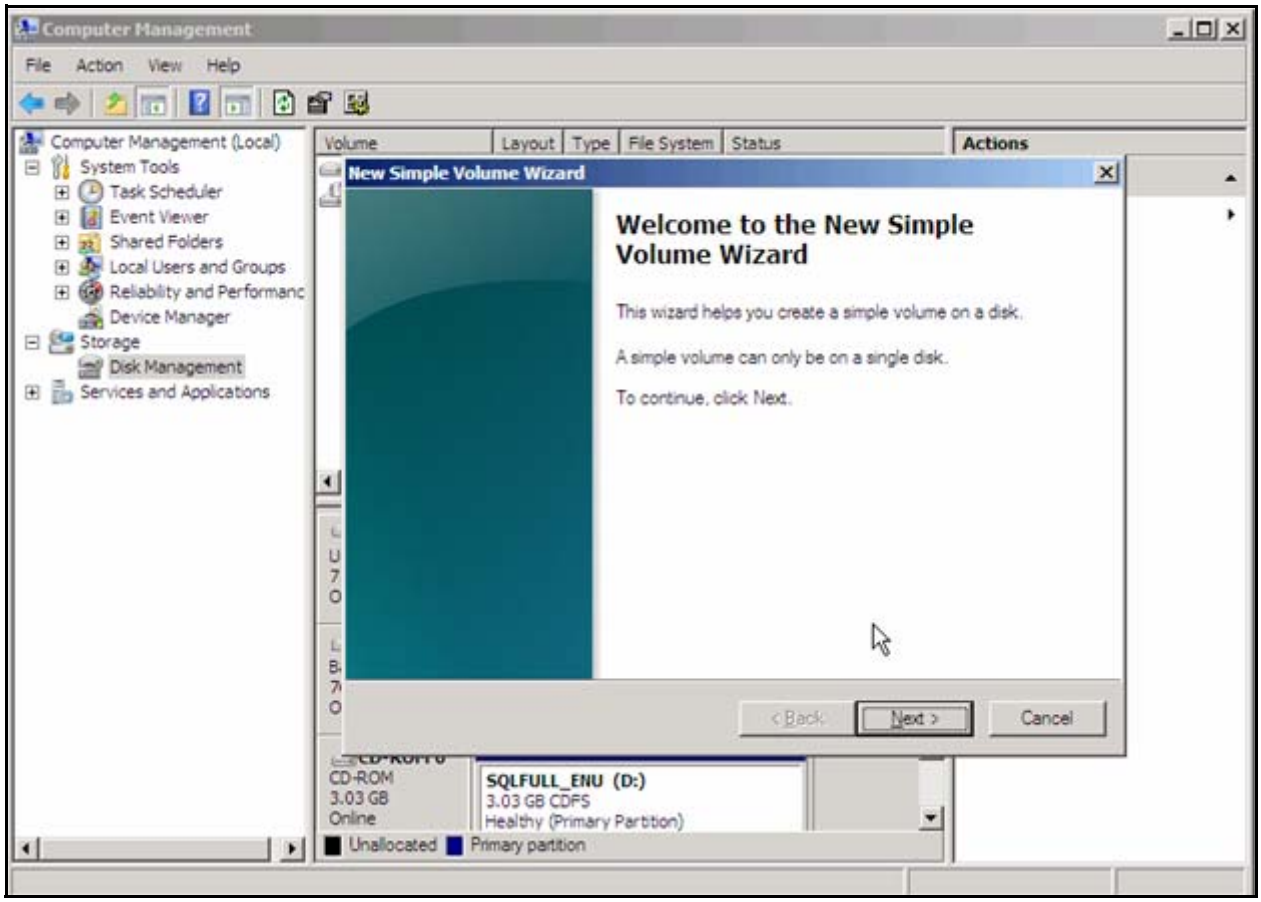
6. Check the **Disk 3** checkbox in the Select disks area and enable the **MBR (Master Boot Record)** option as the partition style for this disk.
7. Click **OK**.

The pop-up window displays.



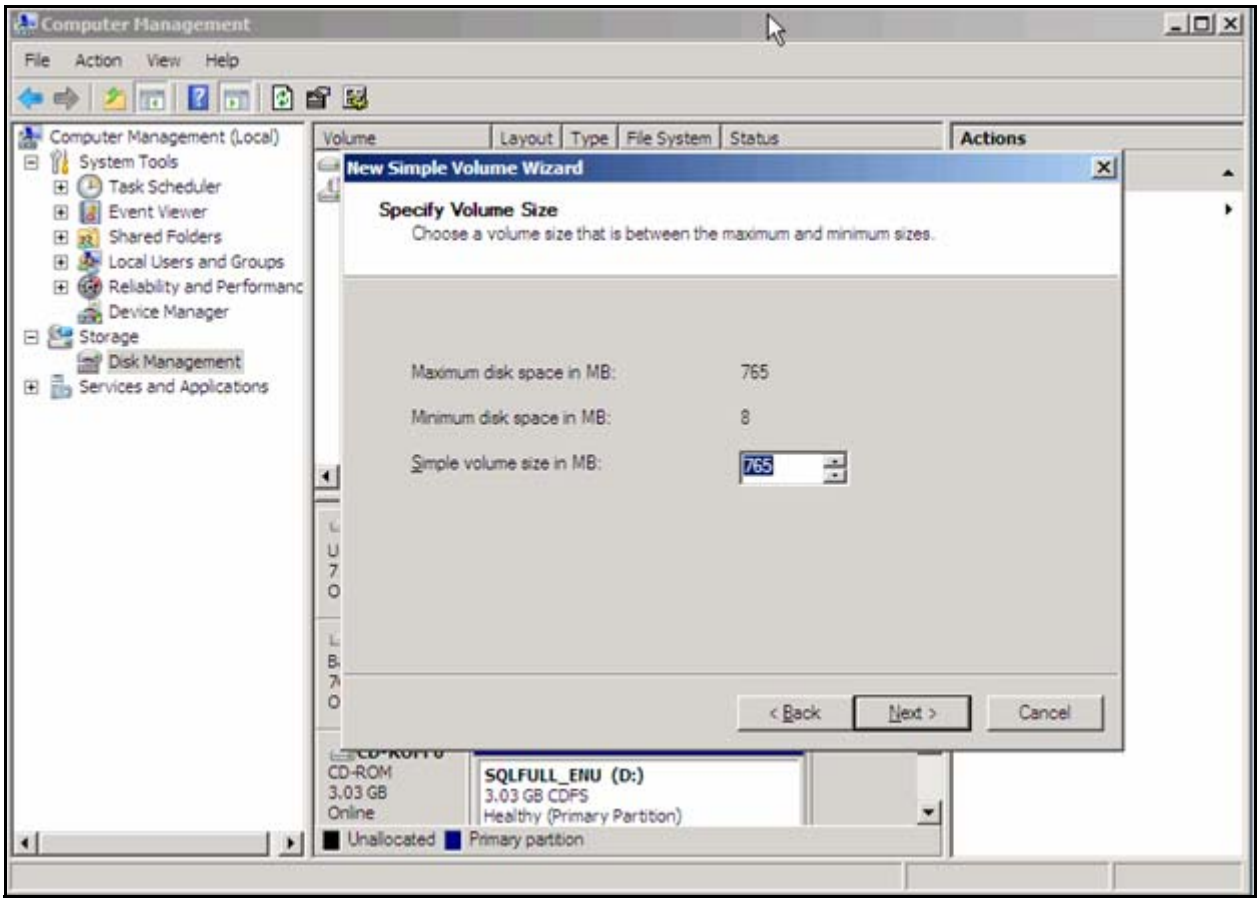
8. Right-click Disk 3 and select **New Simple Volume.**

The New Simple Volume Wizard opens.



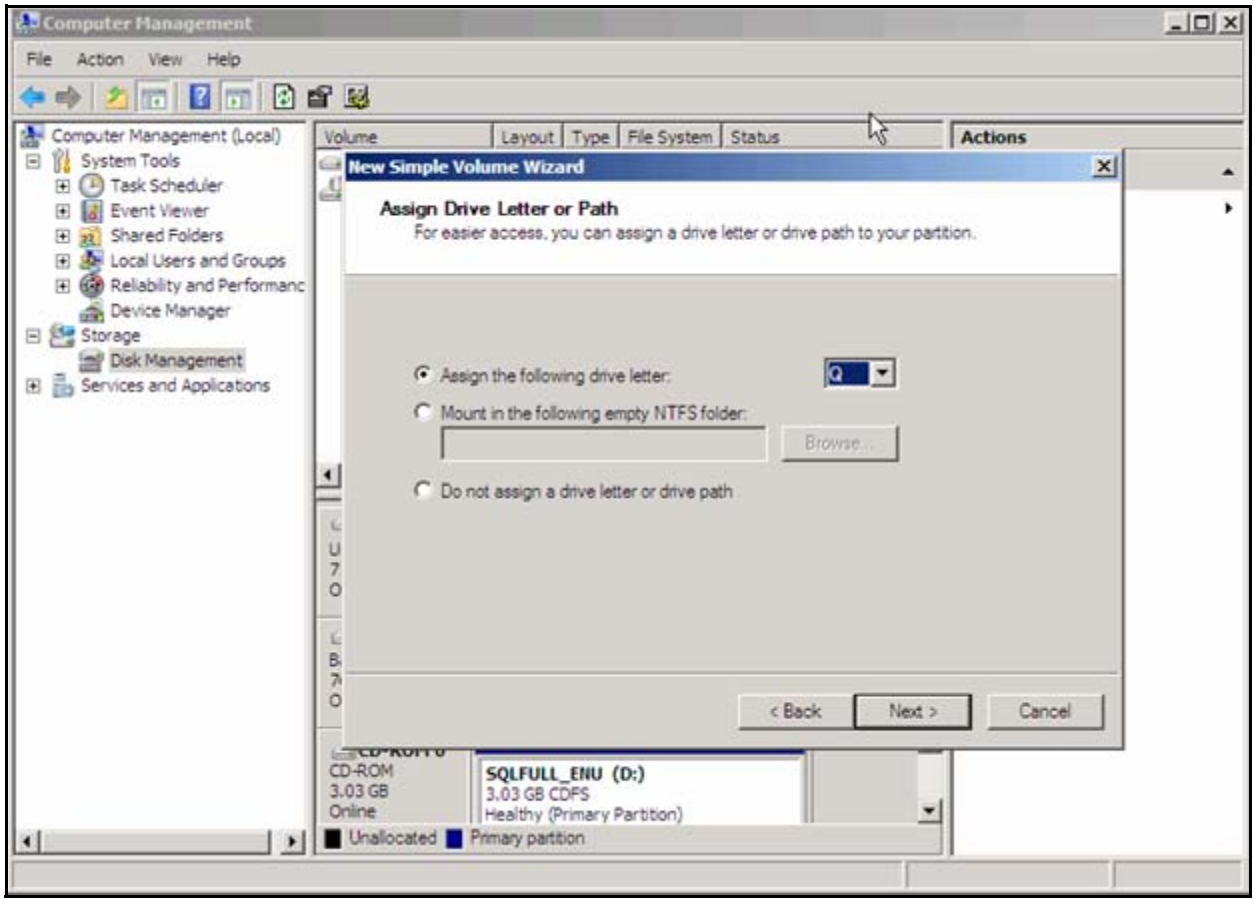
9. Click **Next**.

You must specify the volume size.



10. Enter the **Simple volume size in MB** (can be up to or equal to the Maximum disk space).
11. Click **Next**.

You must now assign the drive letter or patch.



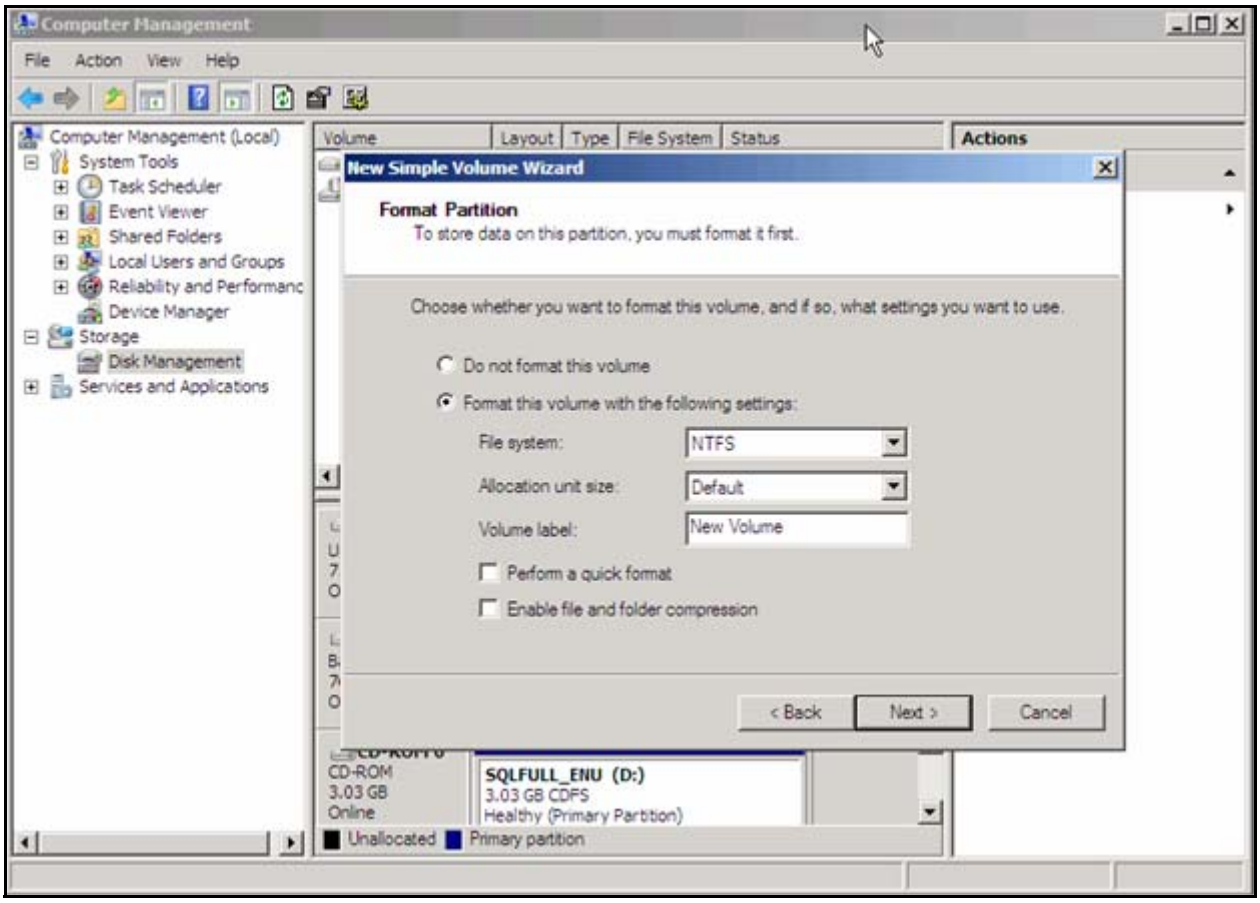
12. For the Assign the following drive letter option, choose a drive letter from the drop-down list.

IMPORTANT

Before choosing the drive letter, read the following important information

13. Click **Next**.

You will now format a partition.

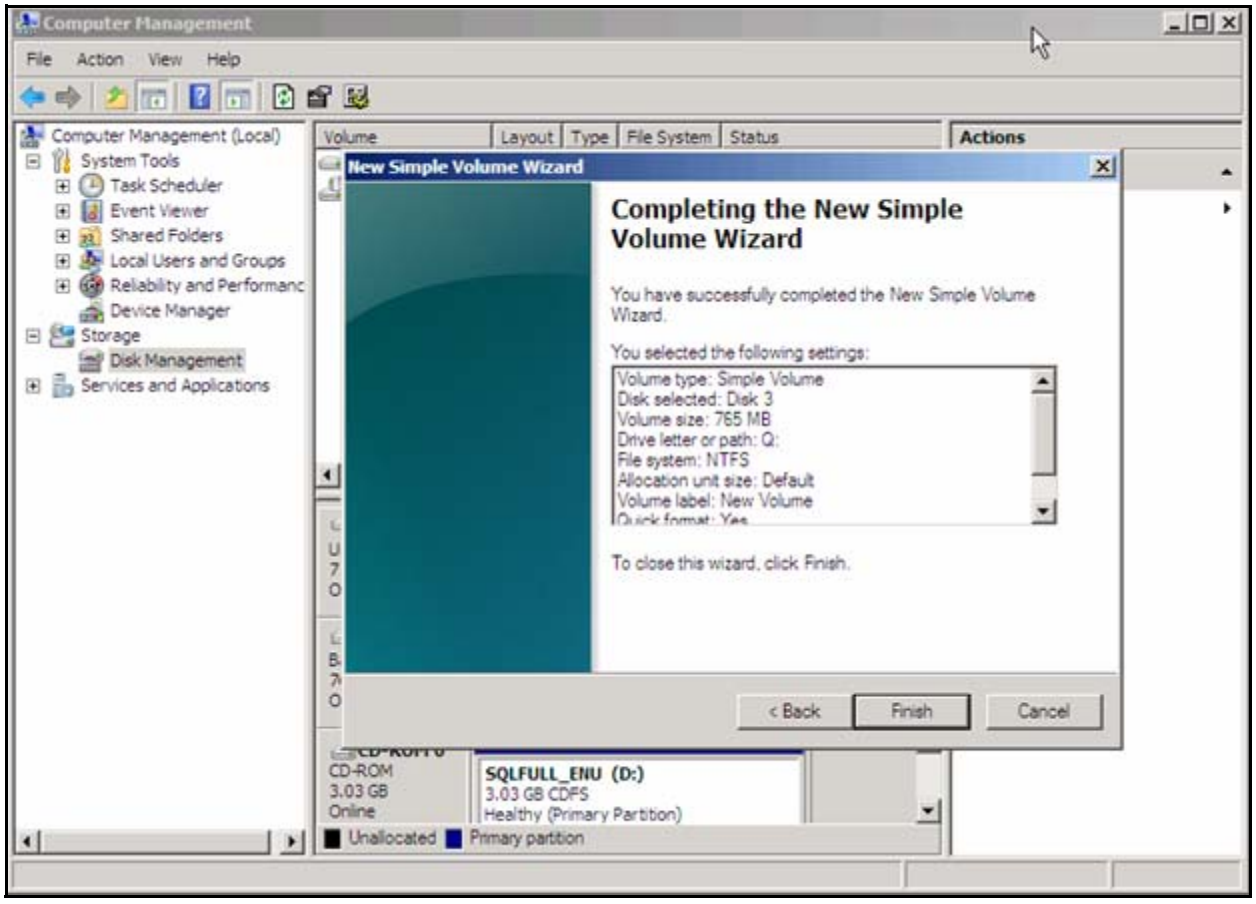


IMPORTANT

If it is properly formatted, use the Do not format this volume option. You should only use the ***Format this volume with the following settings*** *option if the volume is not already formatted. Enable the* ***Format this volume with the following settings*** *option for the* ***Primary Node only*** *since the other systems will be pointing to this drive and there is no need to duplicate the formatting.*

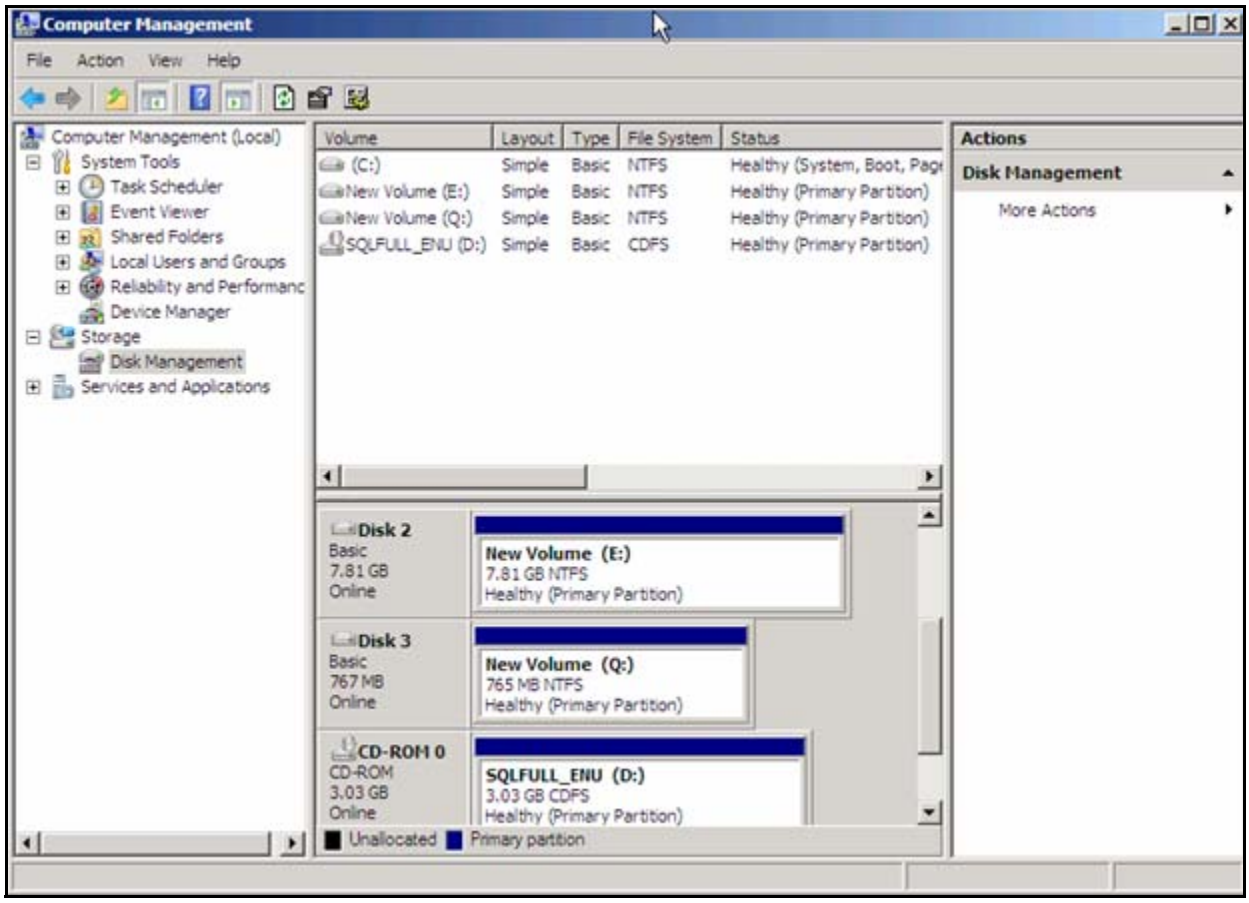
14. Enable the **Format this volume with the following settings** option. Under this option, choose the following:
    a. For the File system, choose **NTFS**.
    b. For Allocation unit size, choose **Default**.
    c. For Volume label, use **New Volume**.
15. Click **Next**.

The final screen appears.



16. Click **Finish**.

You return to the Computer Management window.



17. Verify that the information for Disk 3 is correct, as shown above.
18. Close the windows.

IMPORTANT

At this point, you should switch to the passive node and "online" the drives. However, do not format or initialize the drives as that has already been accomplished when you performed the steps on the active node.

CLUSTER CONFIGURATION 5

IMPORTANT

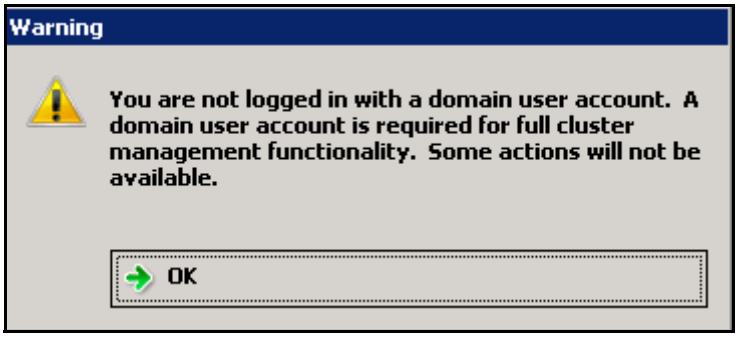
.The setups and configurations in this section may vary, depending on the specific hardware/software configuration for the shared storage at the site.

Create the Cluster

A system may have an Application Cluster and/or a SQL Cluster. The site may be set up for one of those of both. In any case, you MUST perform the steps in this section for any Application Cluster and any SQL Cluster that will exist.

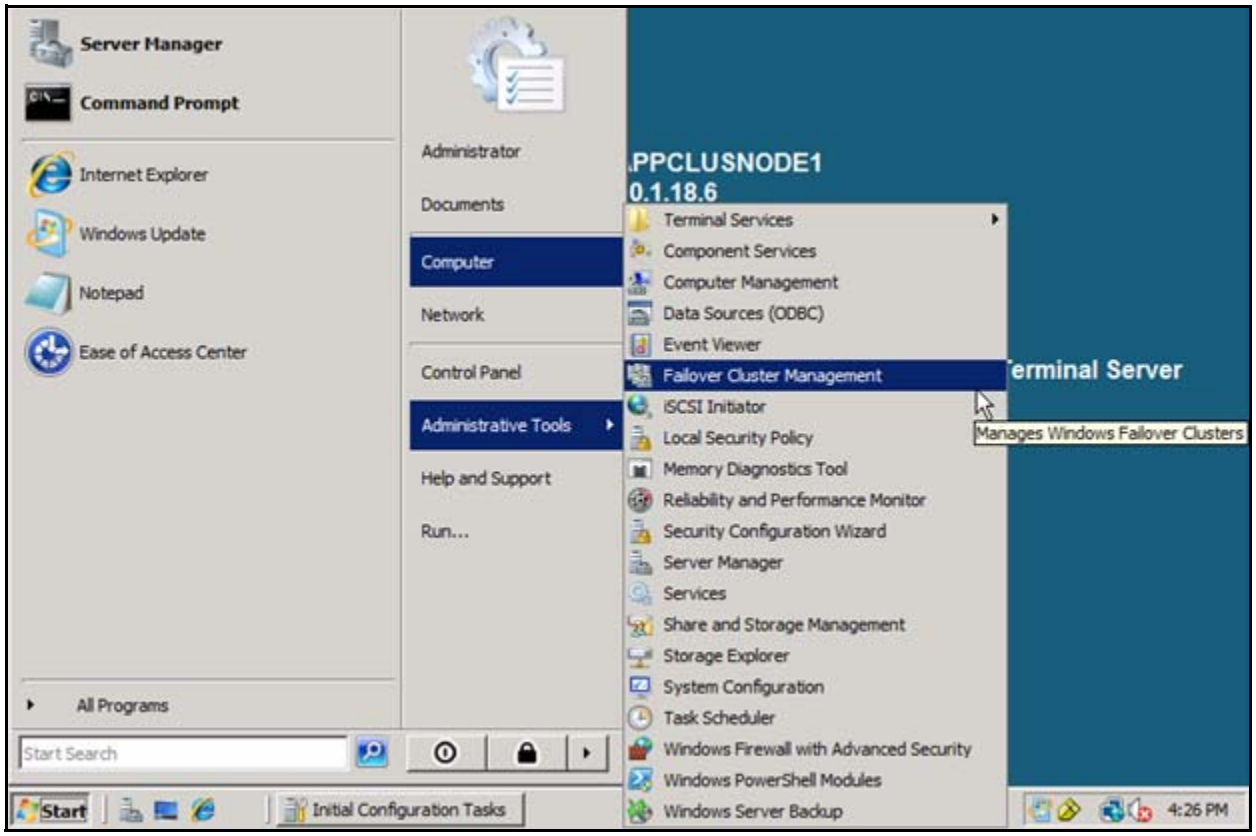
IMPORTANT

When you form the cluster, you MUST log on with a DOMAIN account that is also a local administrator account. If you are incorrectly logged in, you will receive the following error:

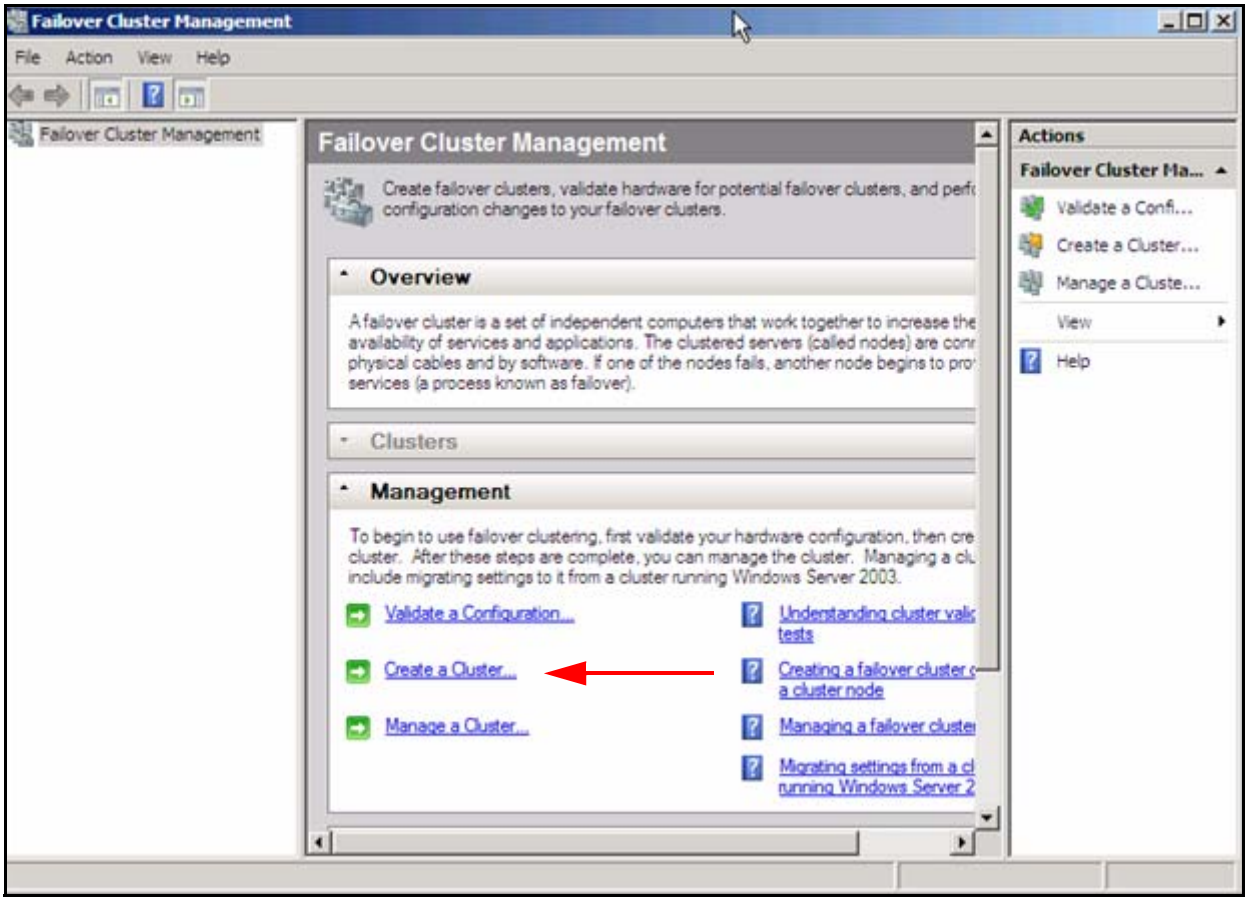


You MUST log out and then log in with a DOMAIN account that has the privilege to add network objects!

1. Click **Start/Administrative Tools/Failover Cluster Management**.

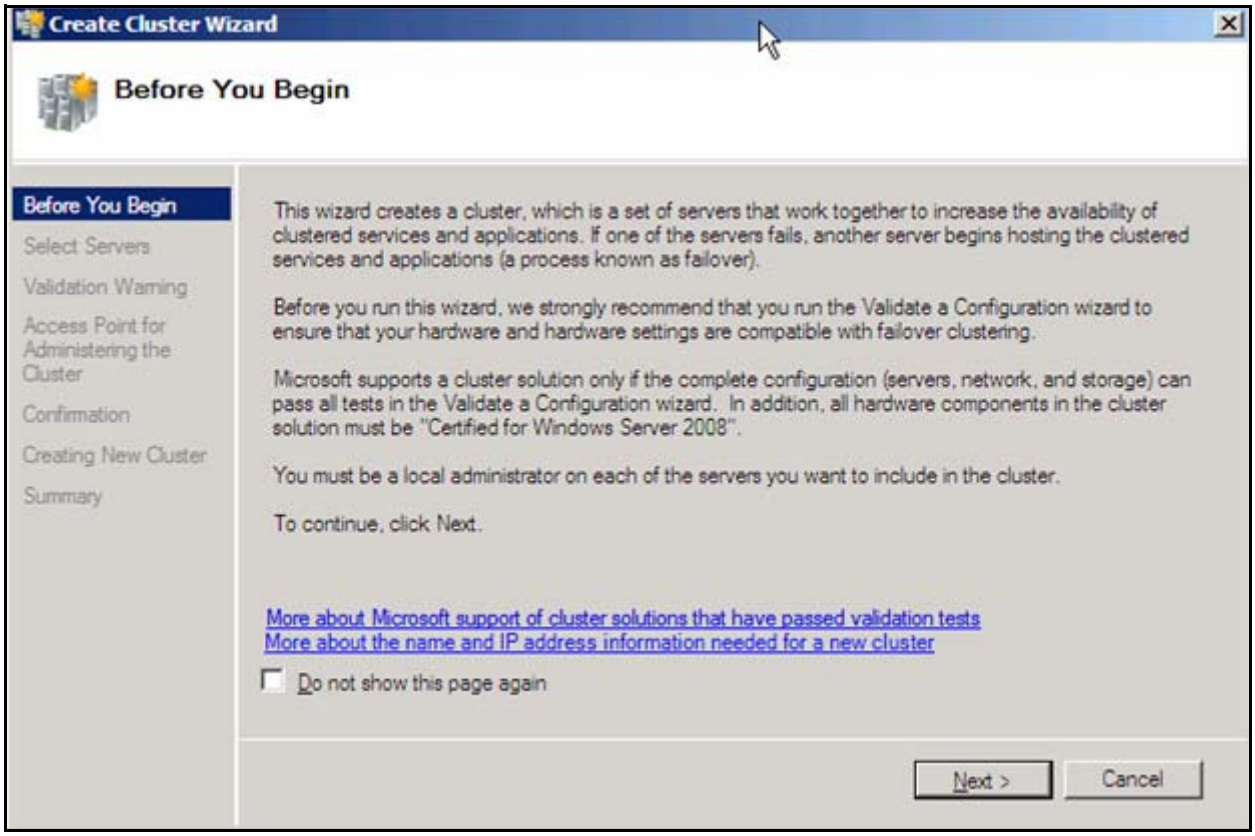


The Failover Cluster Management window displays.



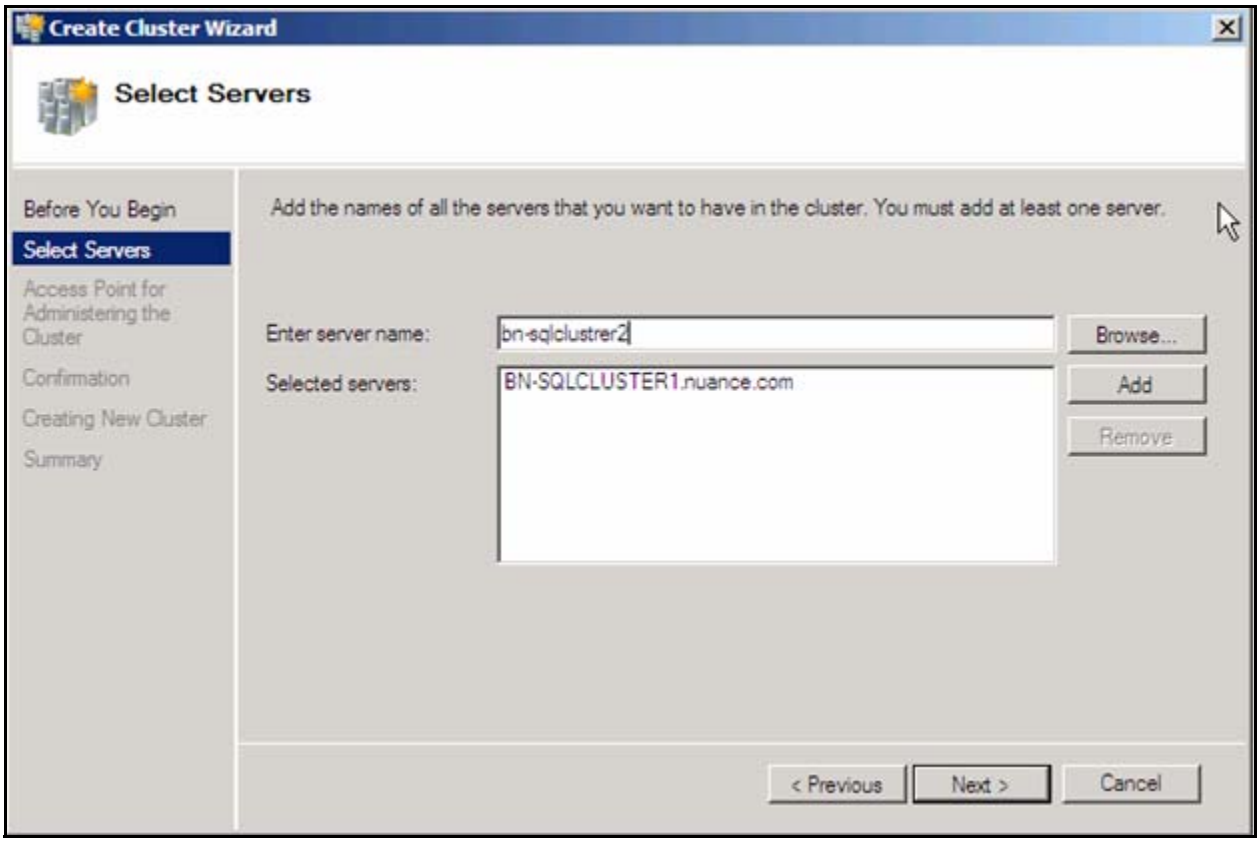
2. Click **Create a Cluster**.

The Create Cluster Wizard opens and displays an information window.



3. Click **Next**.

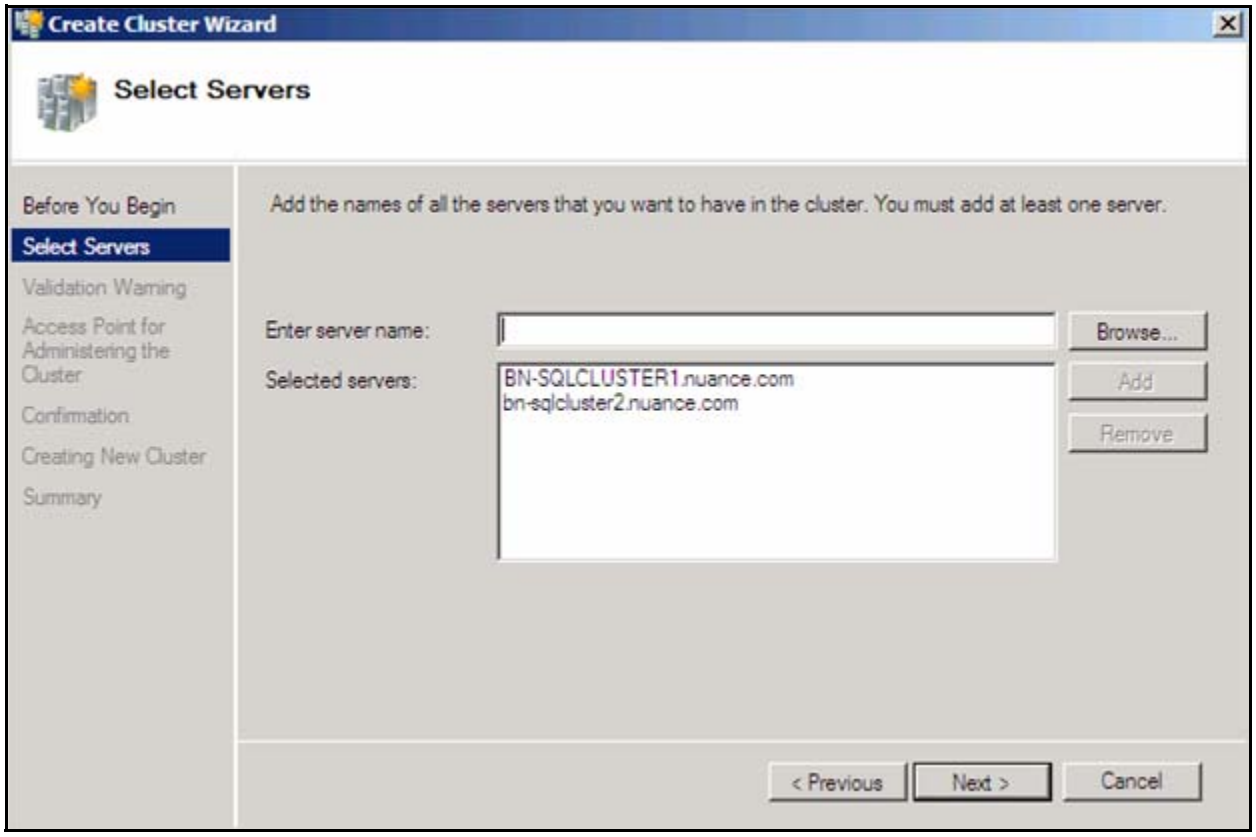
The Select Servers window displays.



4. Enter the names of all of the servers you want to have in the cluster, clicking **Add** after each entry.

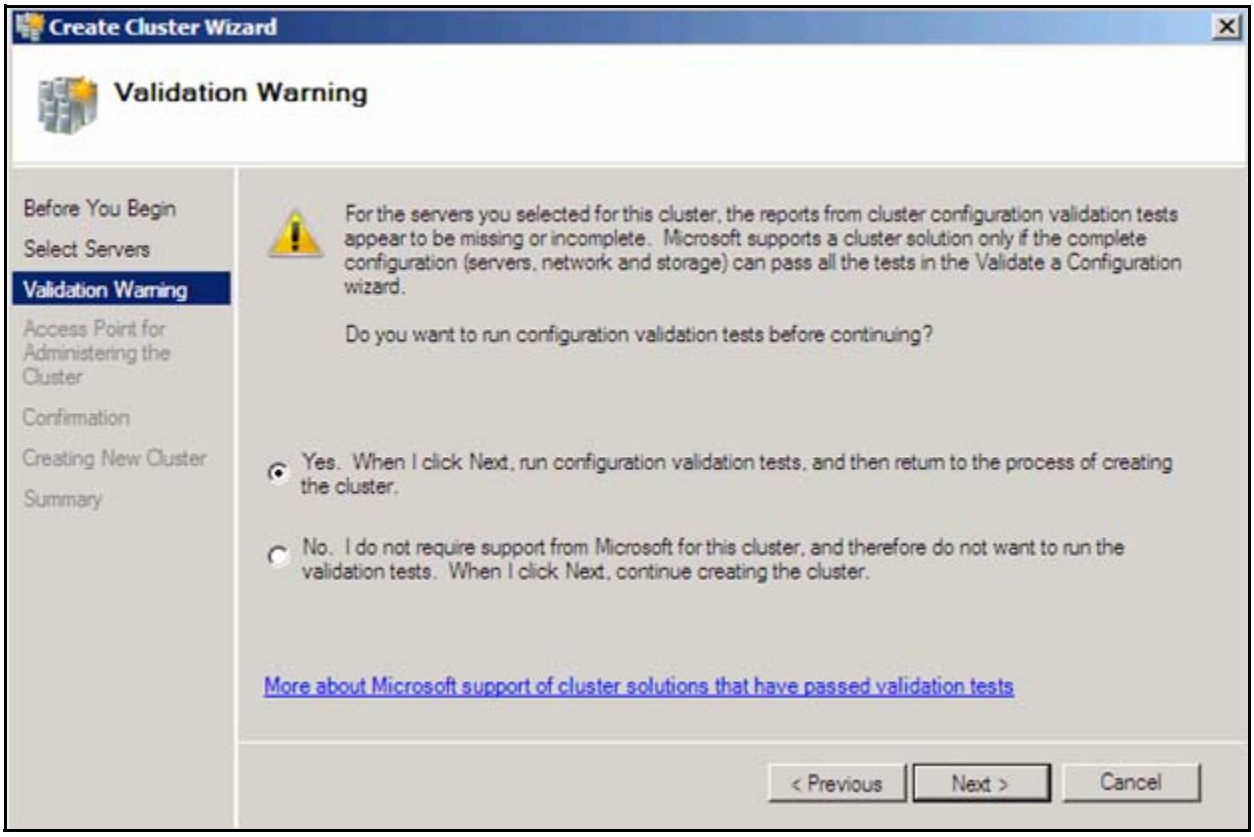
   There should be at least two servers. The example below uses two.

Example of window with two servers entered.



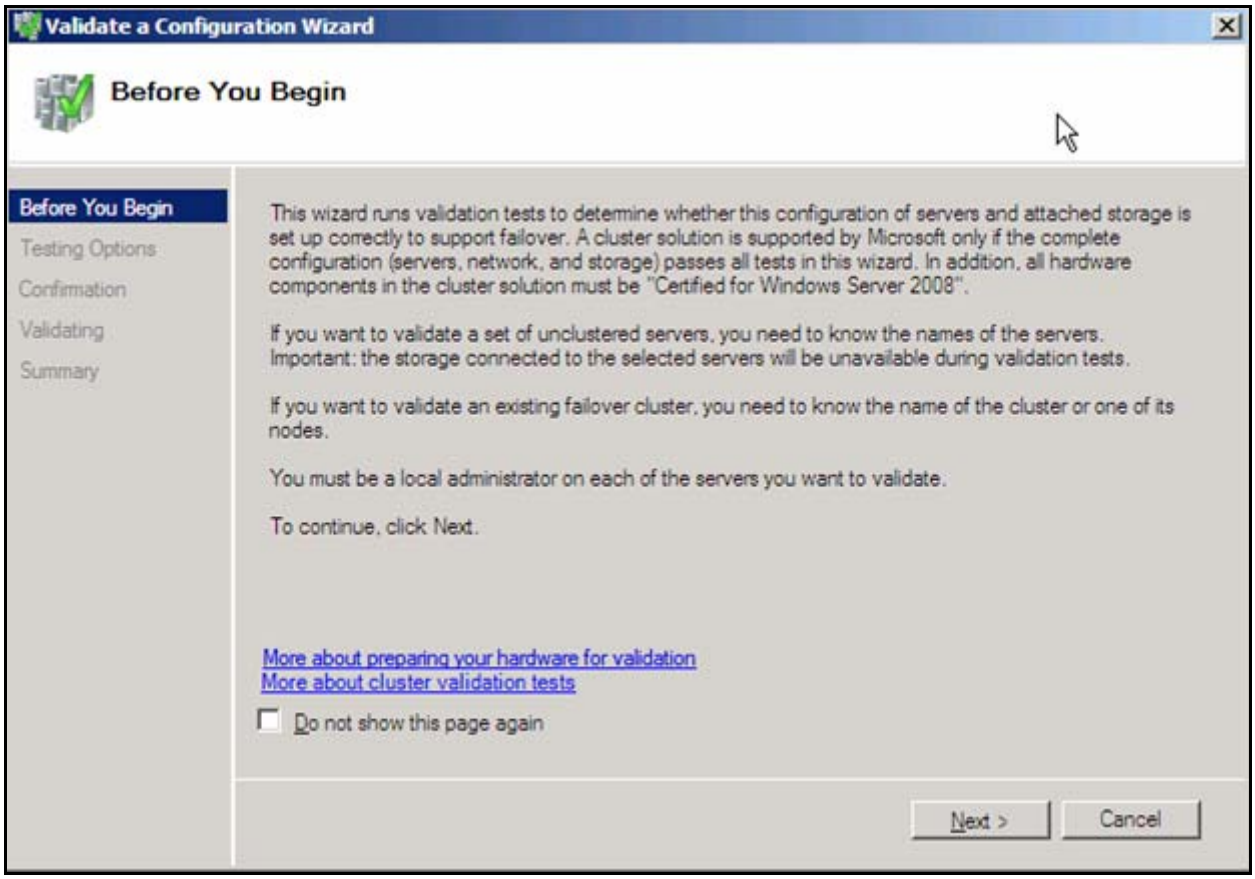
5. When you are finished entering the server names, click **Next**.

The Validation Warning displays. The application can check and make sure that the configuration is valid.



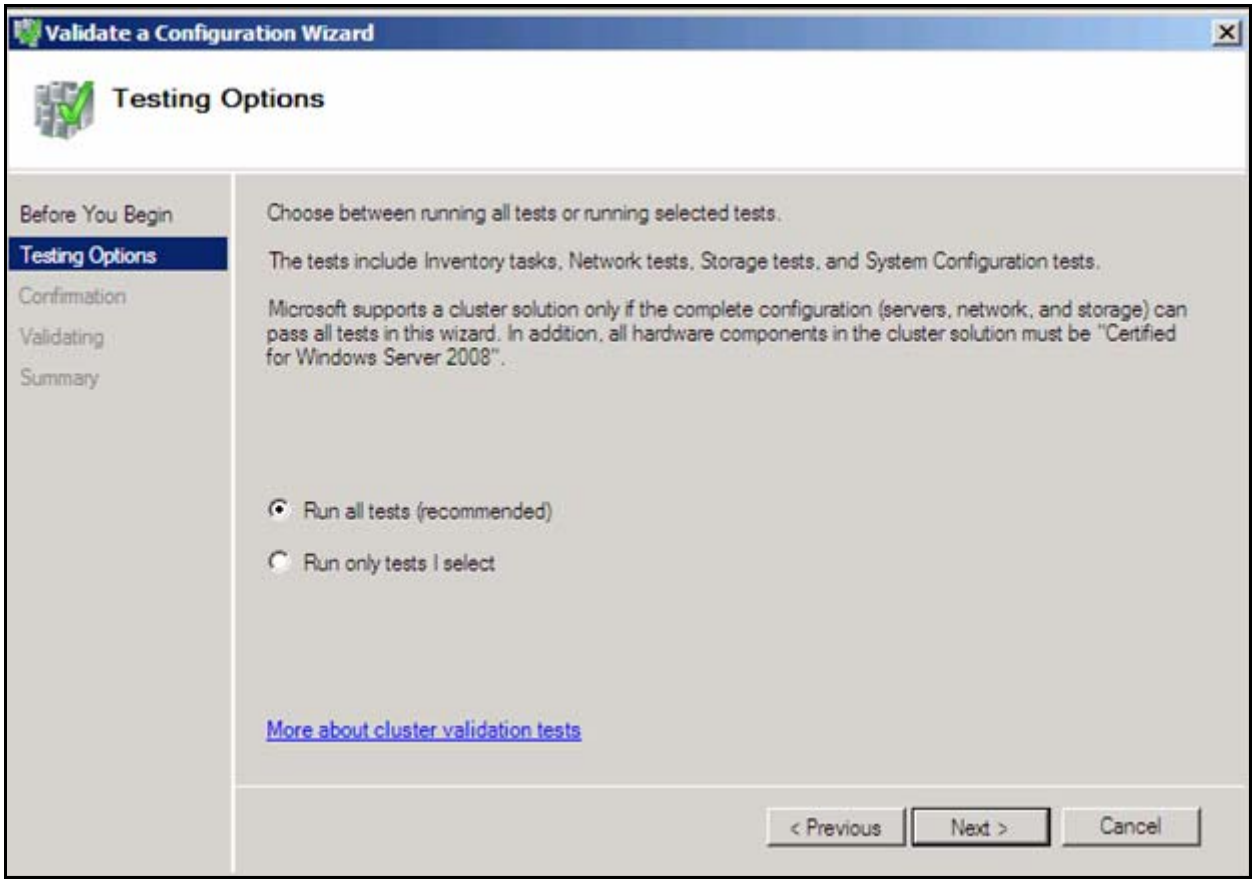
6. Enable the **Yes** option.
7. Click **Next**.

The following message dialog displays.



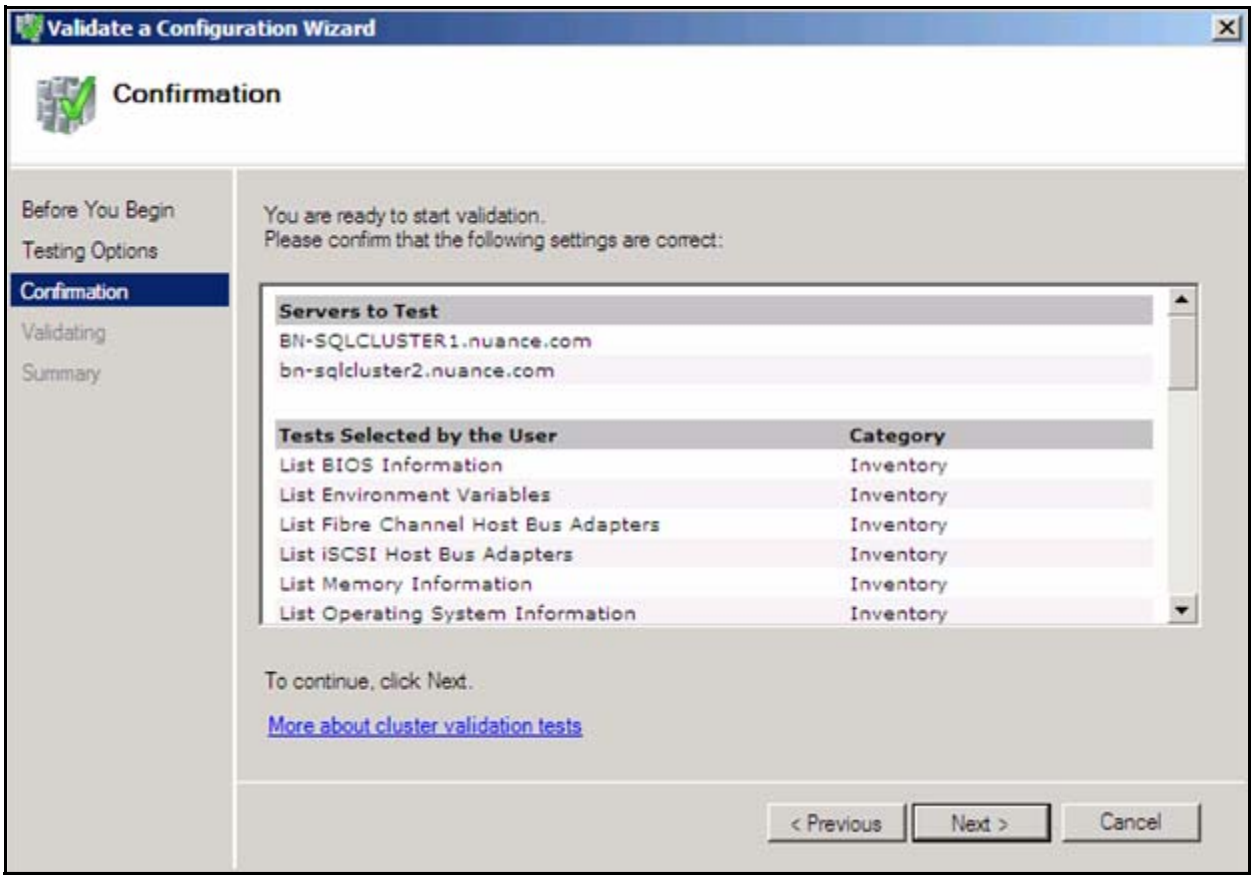
8. Click **Next**.

The Testing Options window displays.



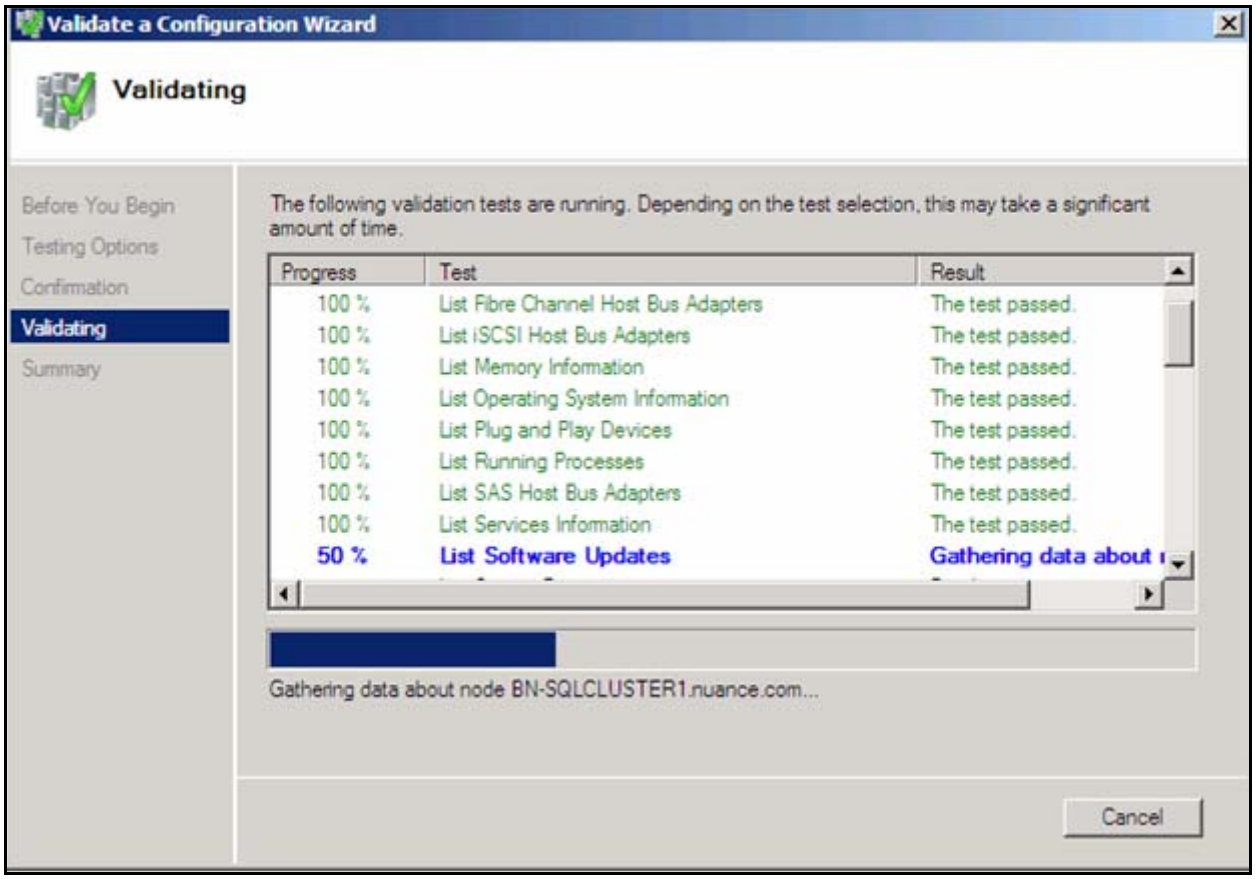
9. Enable the **Run all tests (recommended)** option.
10. Click **Next**.

The Confirmation window displays.

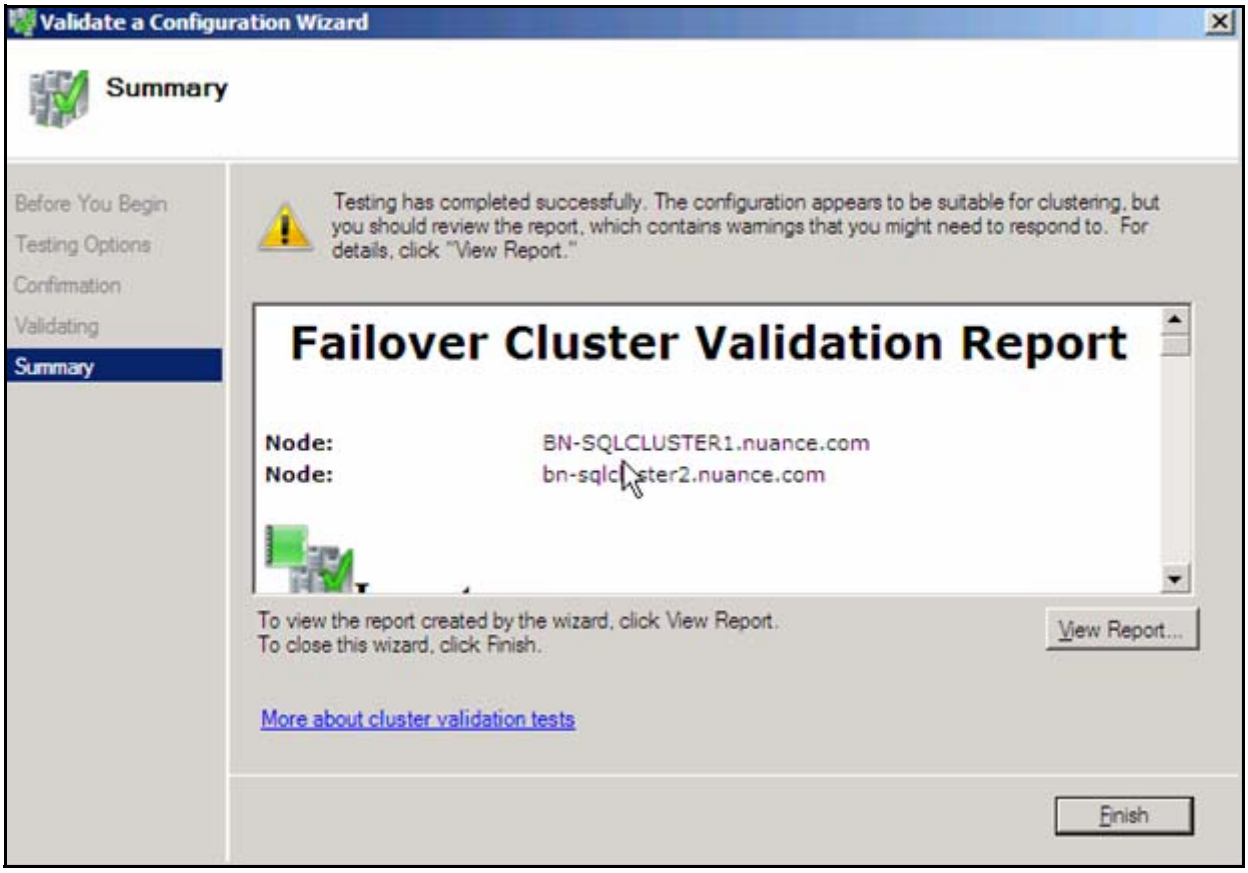


11. Click **Next**.

The Wizard application runs validation tests. This can take some time. You can see the progress on the following window.

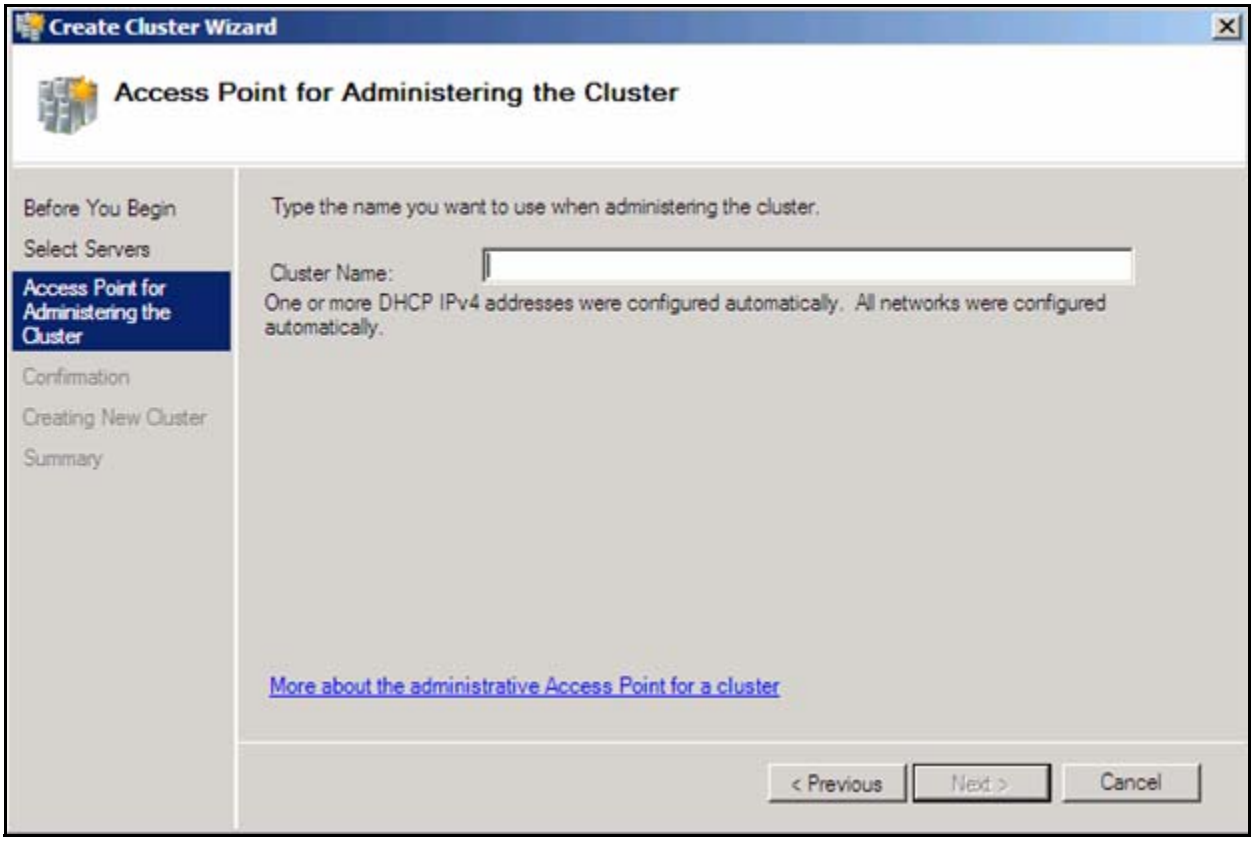


When the testing is finished, the Summary window displays.



12. To check the testing outcome, click **View Report** and verify that there are no errors.
13. Click **Finish**.

The Access Point for Administering the Cluster window displays.



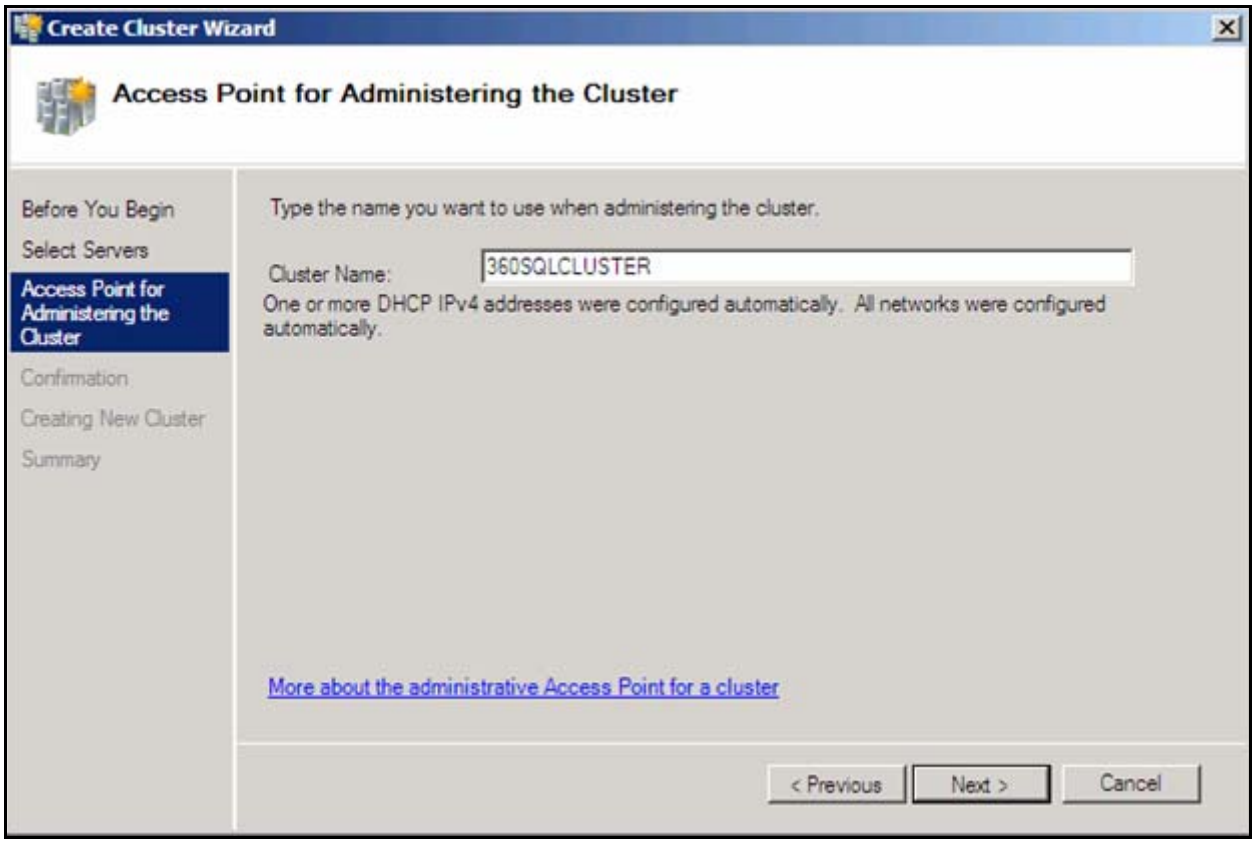
14. Enter the **Cluster Name** in the box provided.

    Our example uses **360SQLCluster**.

IMPORTANT

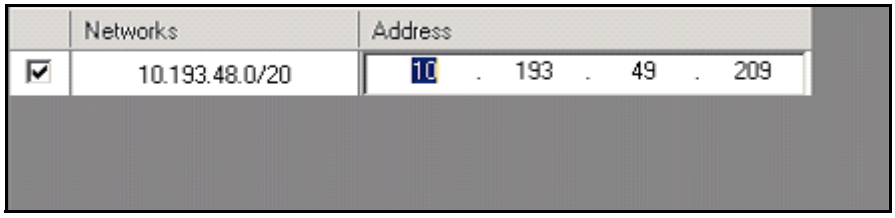
DO NOT USE AN ARBITRARY NAME. THIS NAME SHOULD BE SET PRIOR TO THE INSTALLATION IN THE PRE-INSTALLATION CHECKLIST AND USED CONSISTENTLY THROUGHOUT THE PROCEDURES IN THIS DOCUMENT. ANY DEVIATION FROM USING THE NAME CONSISTENTLY WILL PROHIBIT PROPER CLUSTER FUNCTION.

The following shows the window with the entry.



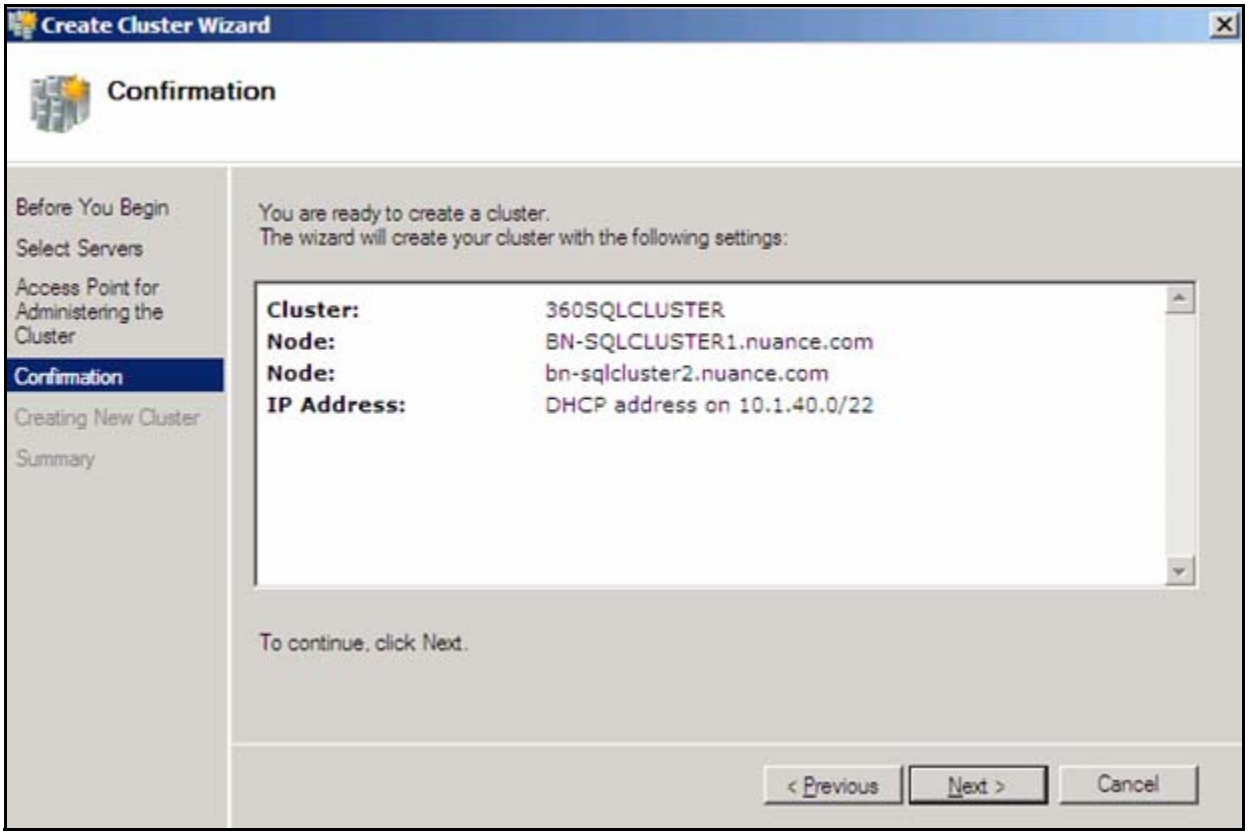
IMPORTANT

The window above may differ if you are using static IP addresses instead of allowing DHCP to assign addresses. If prompted, enter the static address(es) provided by the Customer. The following is an example of the area for the entries that will display on the window.



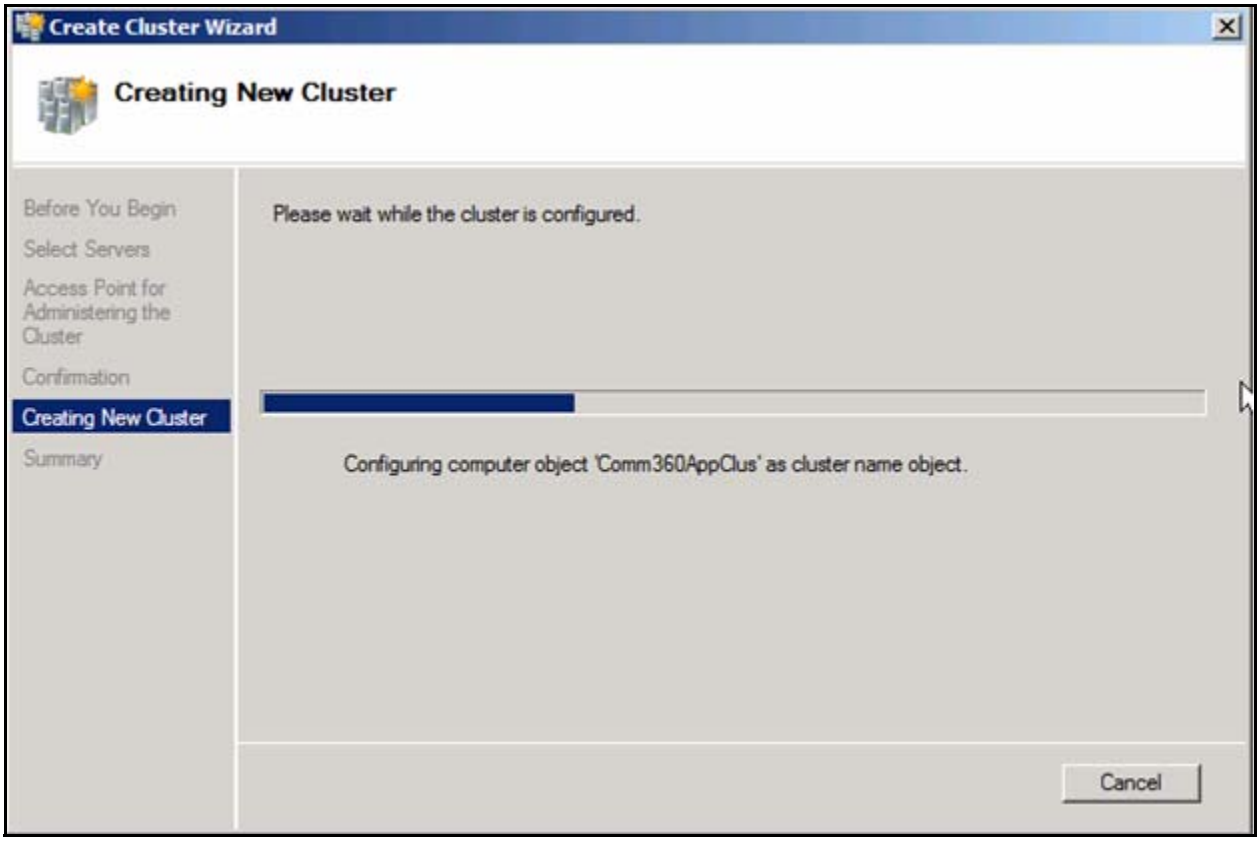
15. Click **Next**.

The Confirmation window displays.

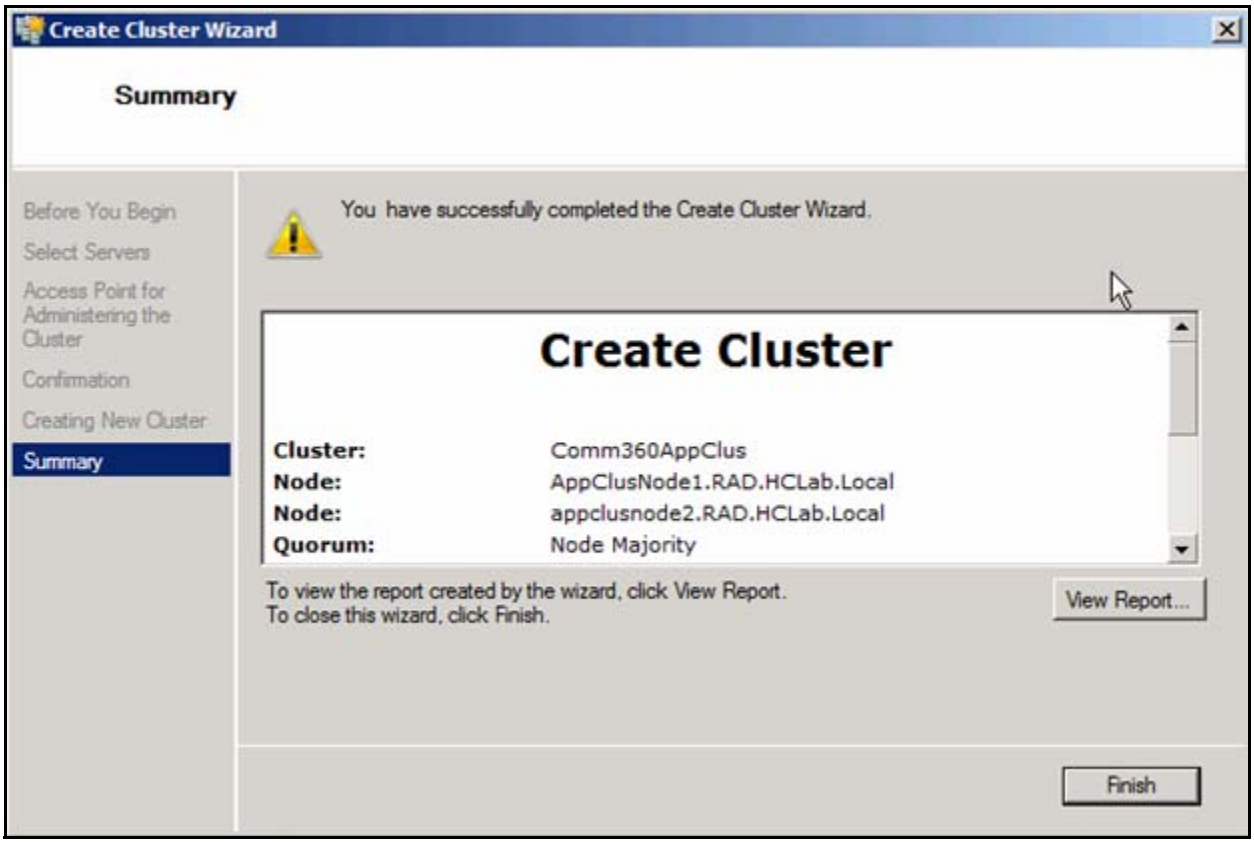


16. Click **Next**.

The application will now create the new cluster. You are able to see the progress in the following window. Wait for the completion of the task.



When the cluster has been created, the following window displays. You can verify what happened by clicking **View Report**.

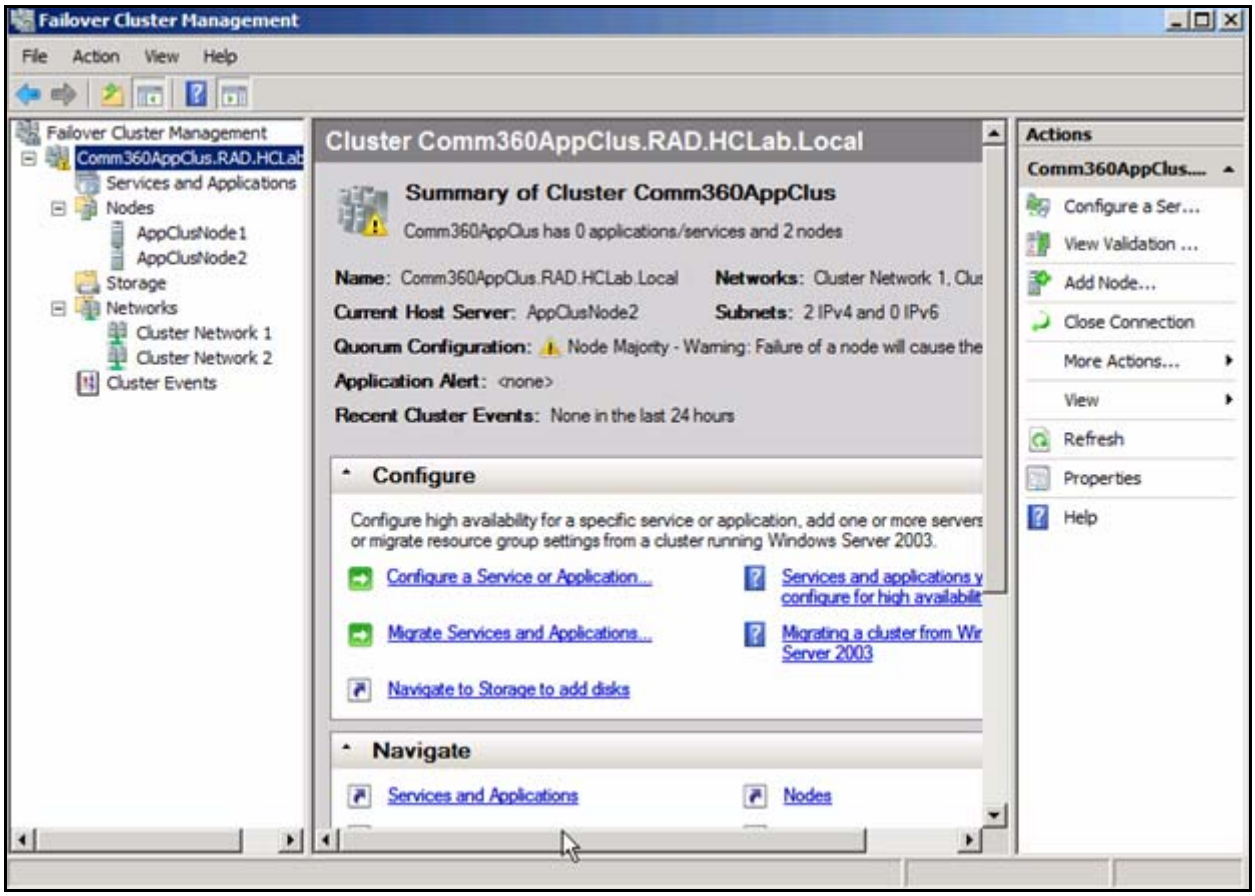


17. Click **Finish**.

    Keep the Failover Cluster Management window open for the next procedure.

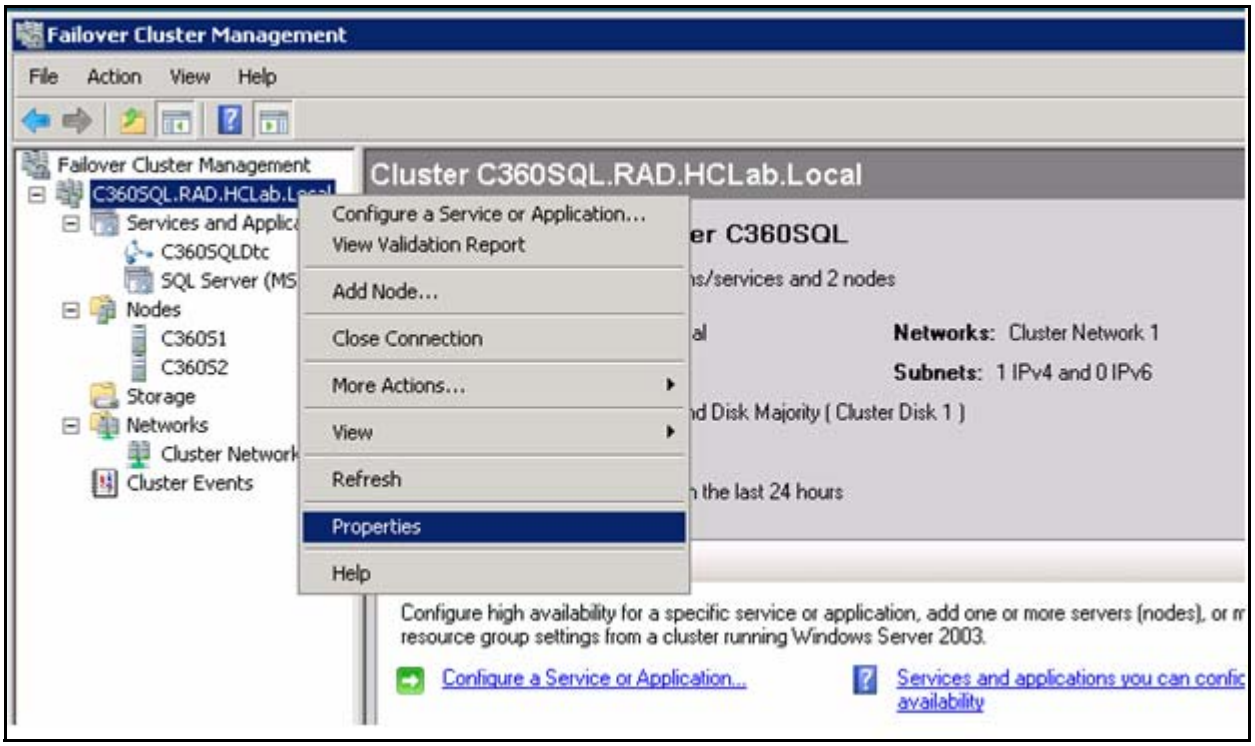
Configure Cluster Properties

You should be at the Failover Cluster Management window.



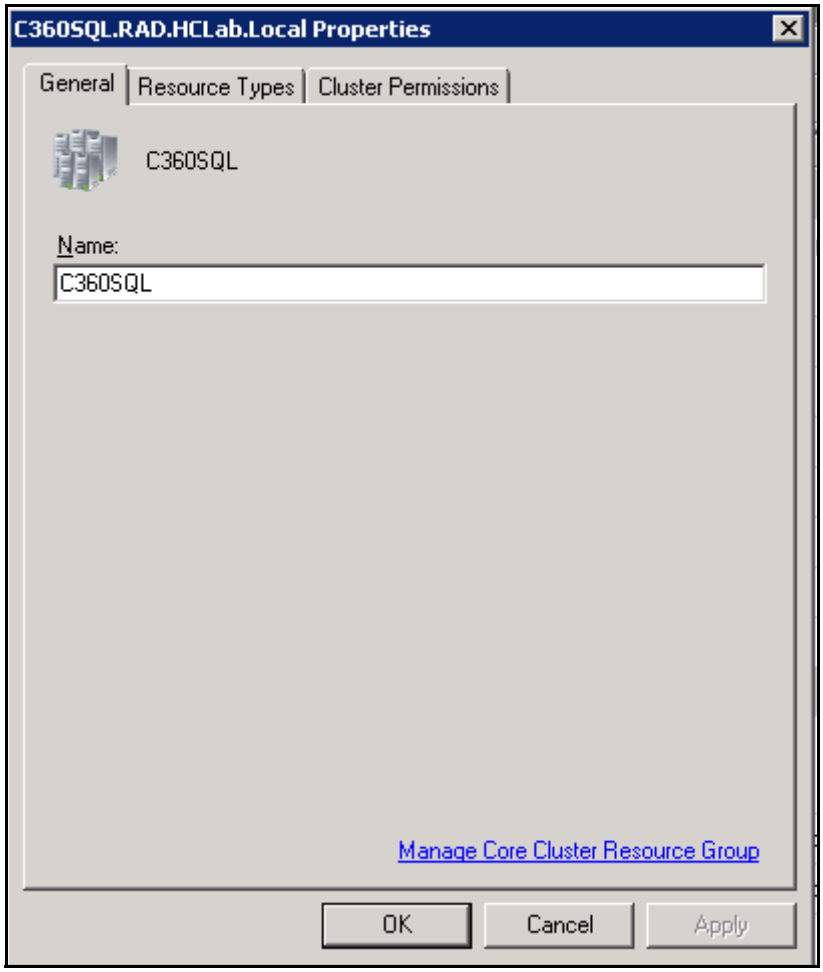
1. Right-click the Cluster in the left pane.

The drop-down menu displays.



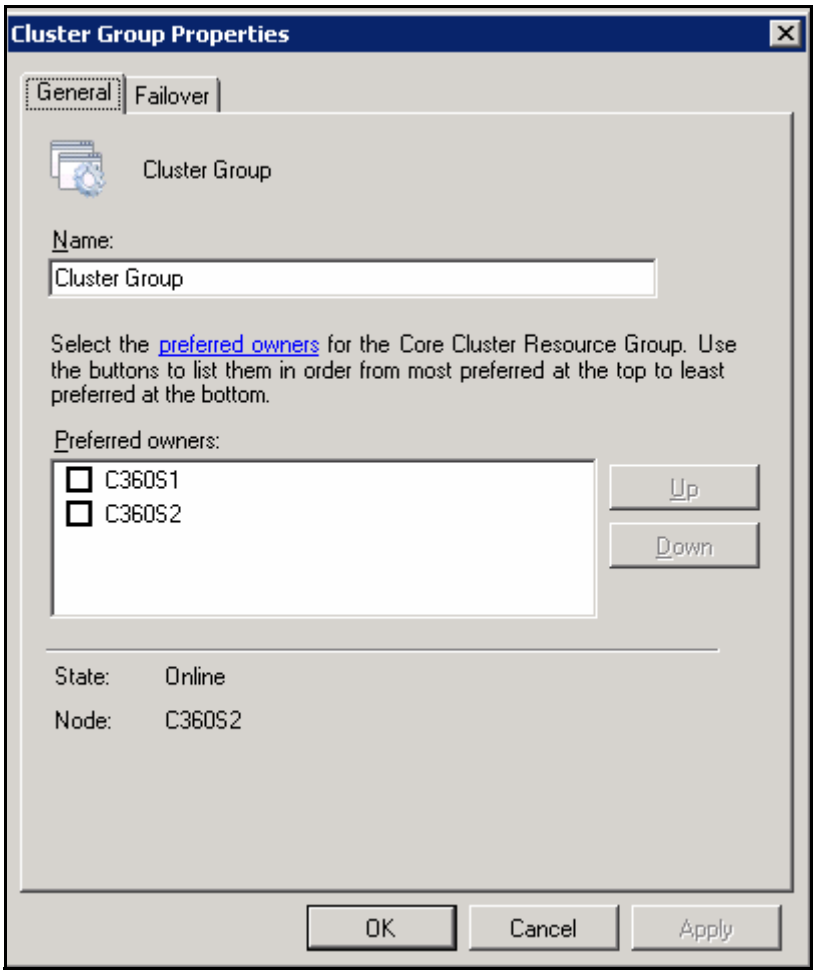
2. Select **Properties**.

The Cluster Properties window displays.



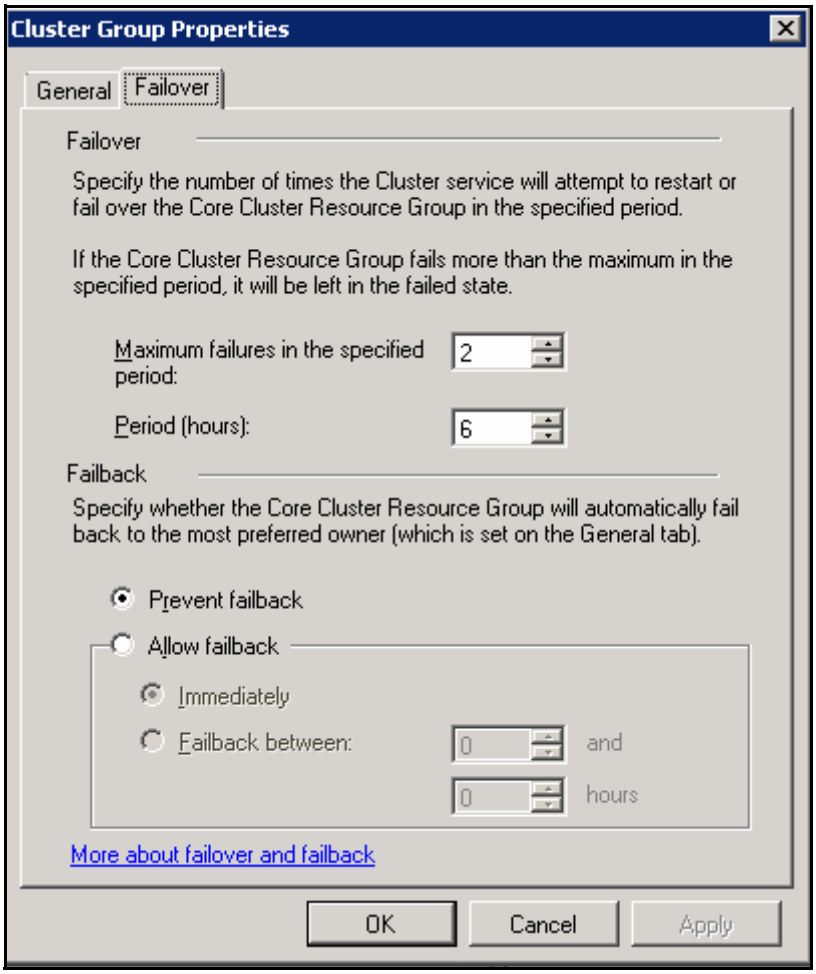
3. Click **Manage Core Cluster Resource Group**.

The Cluster Group Properties window displays.



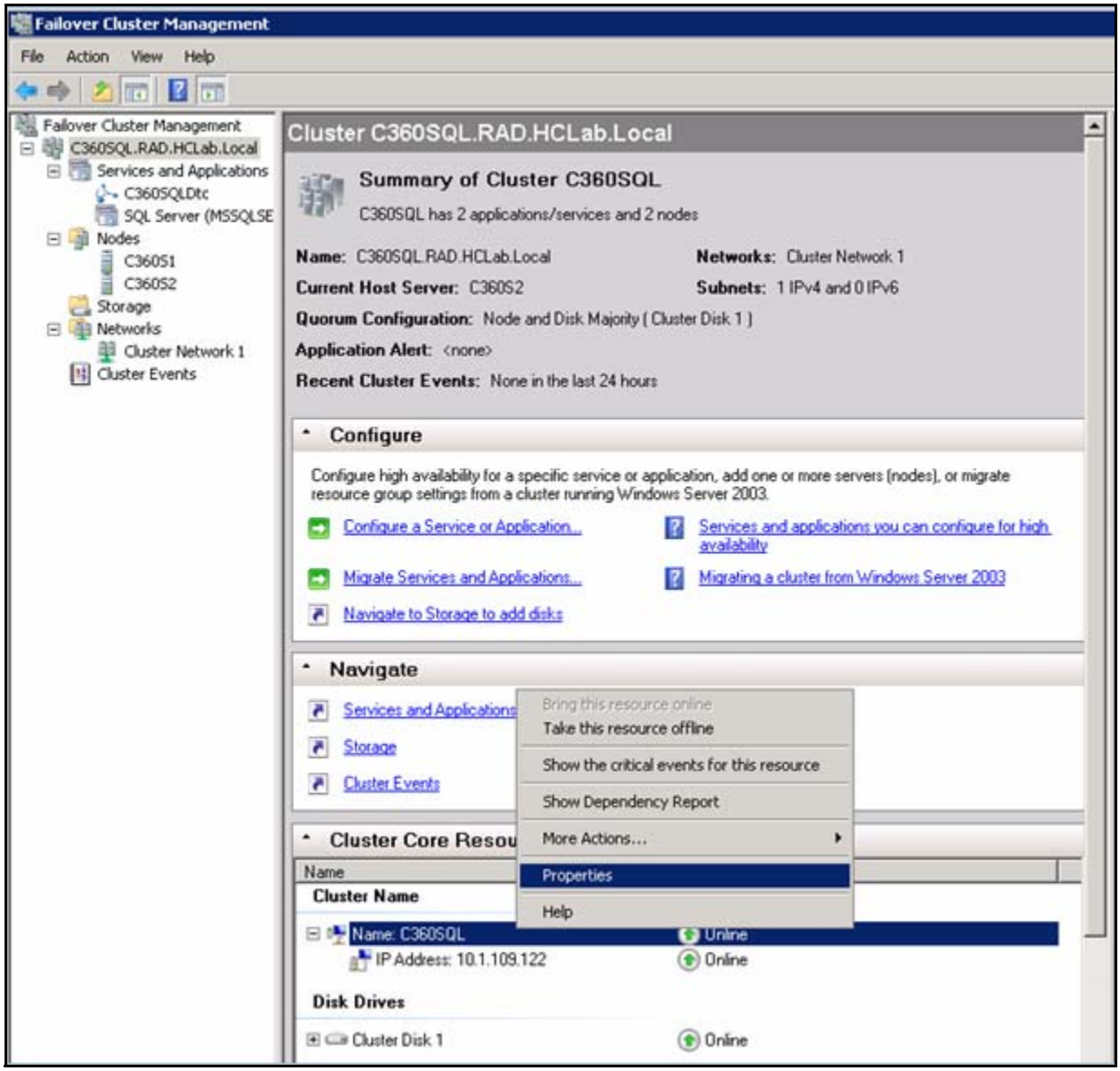
4. Select both of the Preferred owners and click the Failover tab.

The following window displays.



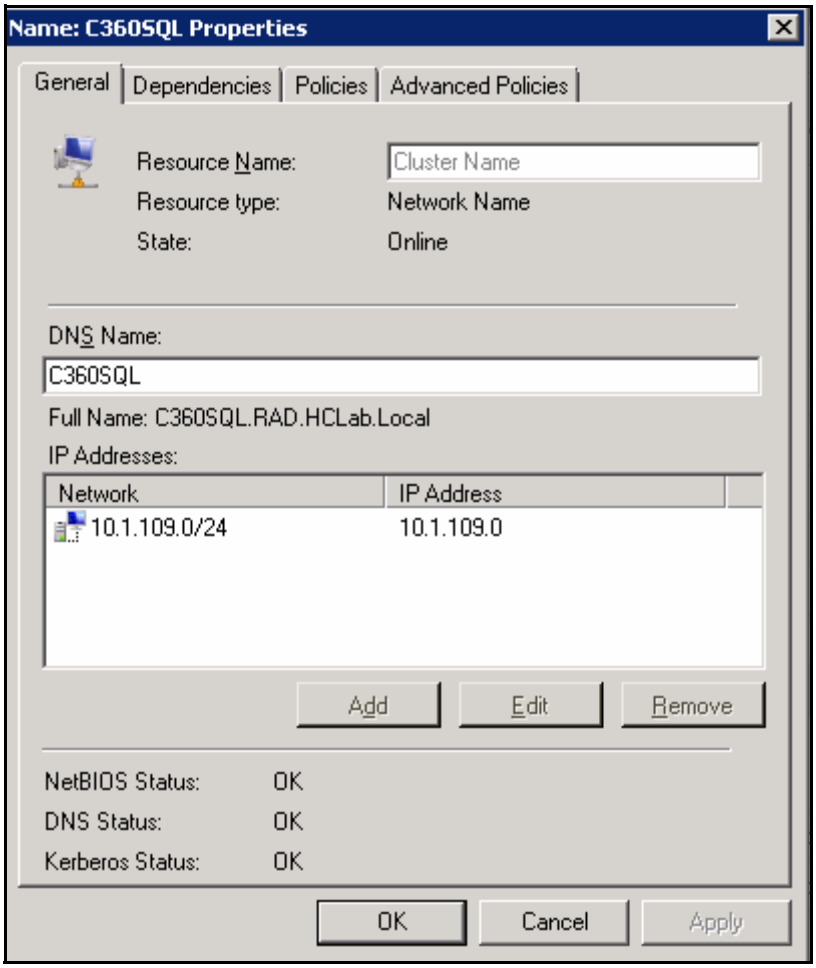
5. Set the Failover and Failback options and click **OK**.

You are returned to the following window.



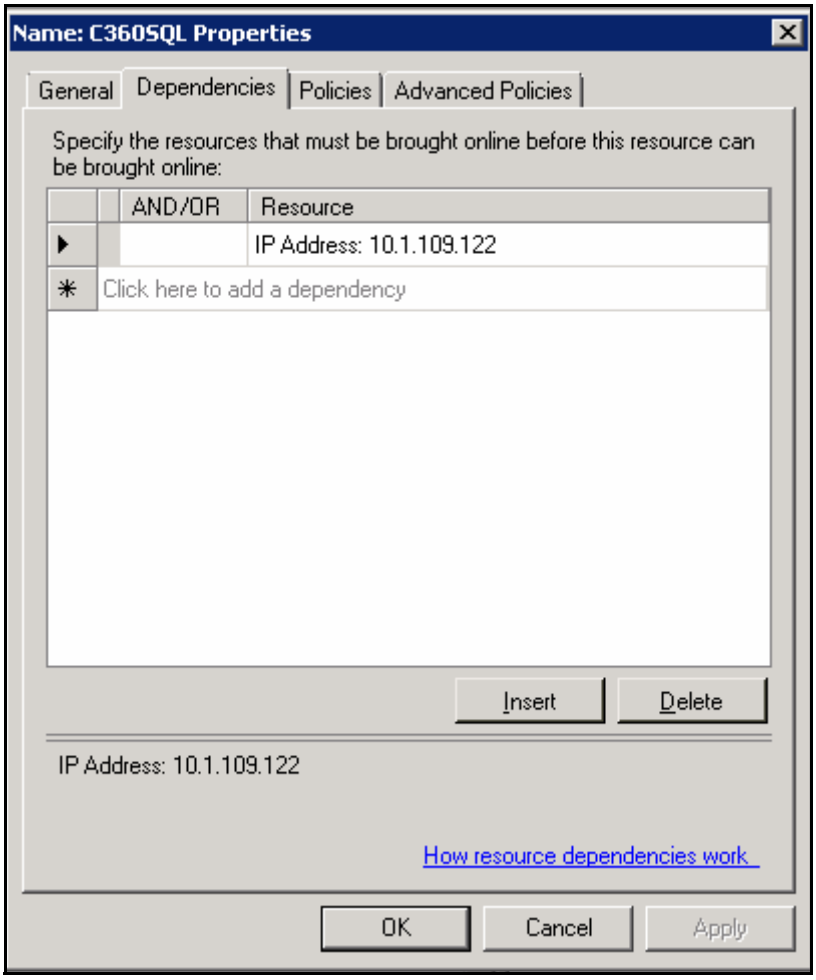
6. Right-click the Cluster Name under Cluster Core Resources and select **Properties**.

The following displays.



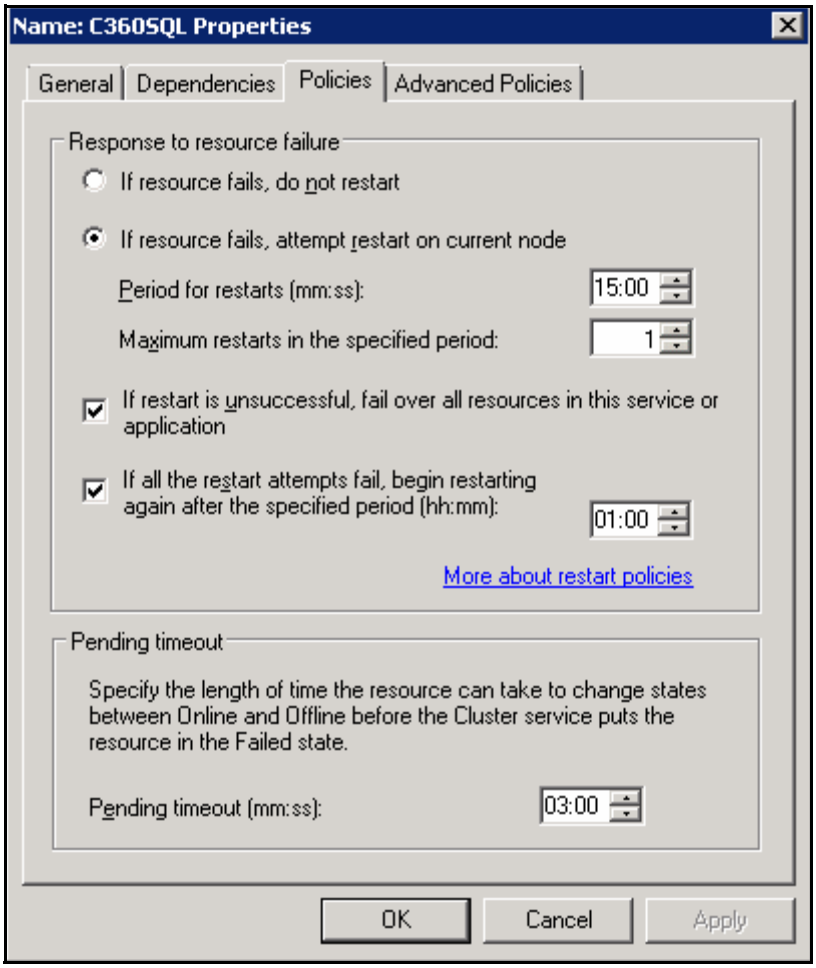
7. Set the window according to the Cluster setup and Customer requirements.
8. Click the **Dependencies** tab.

The following displays.



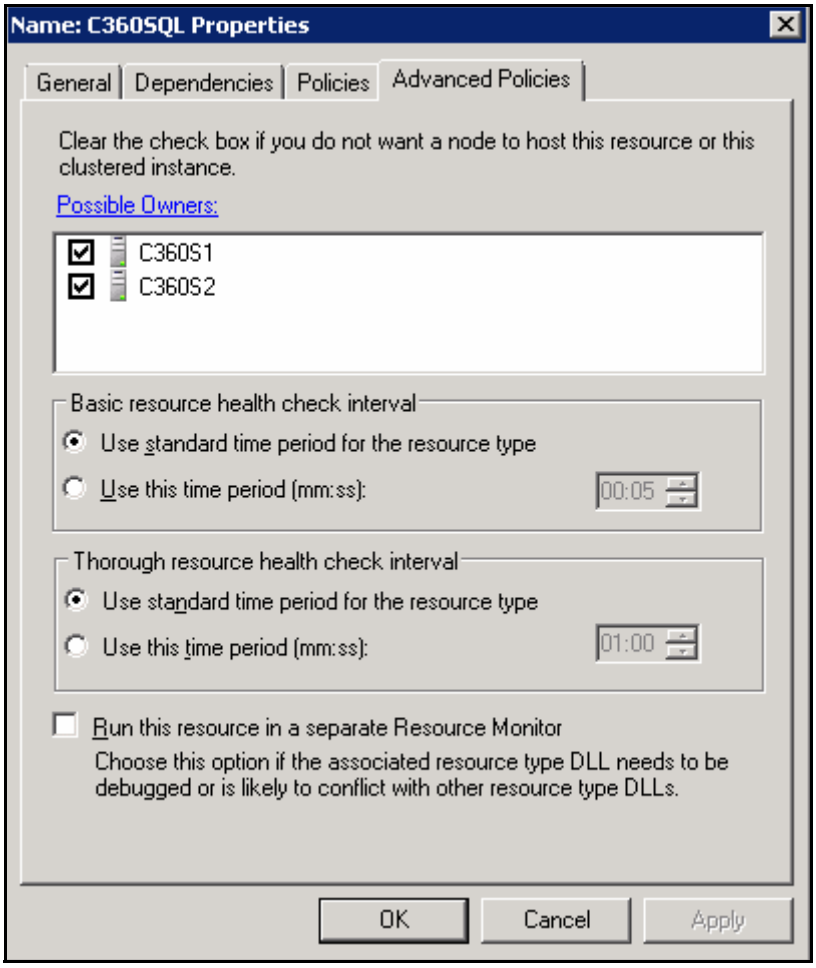
9. Set the window according to the Cluster setup and Customer requirements.
10. Click the **Policies** tab.

The following displays.



11. Set the window according to the Cluster setup and Customer requirements.
12. Click the **Advanced Policies** tab.

The following displays.



13. Set the window according to the Cluster setup and site requirements.
14. Click **OK**.

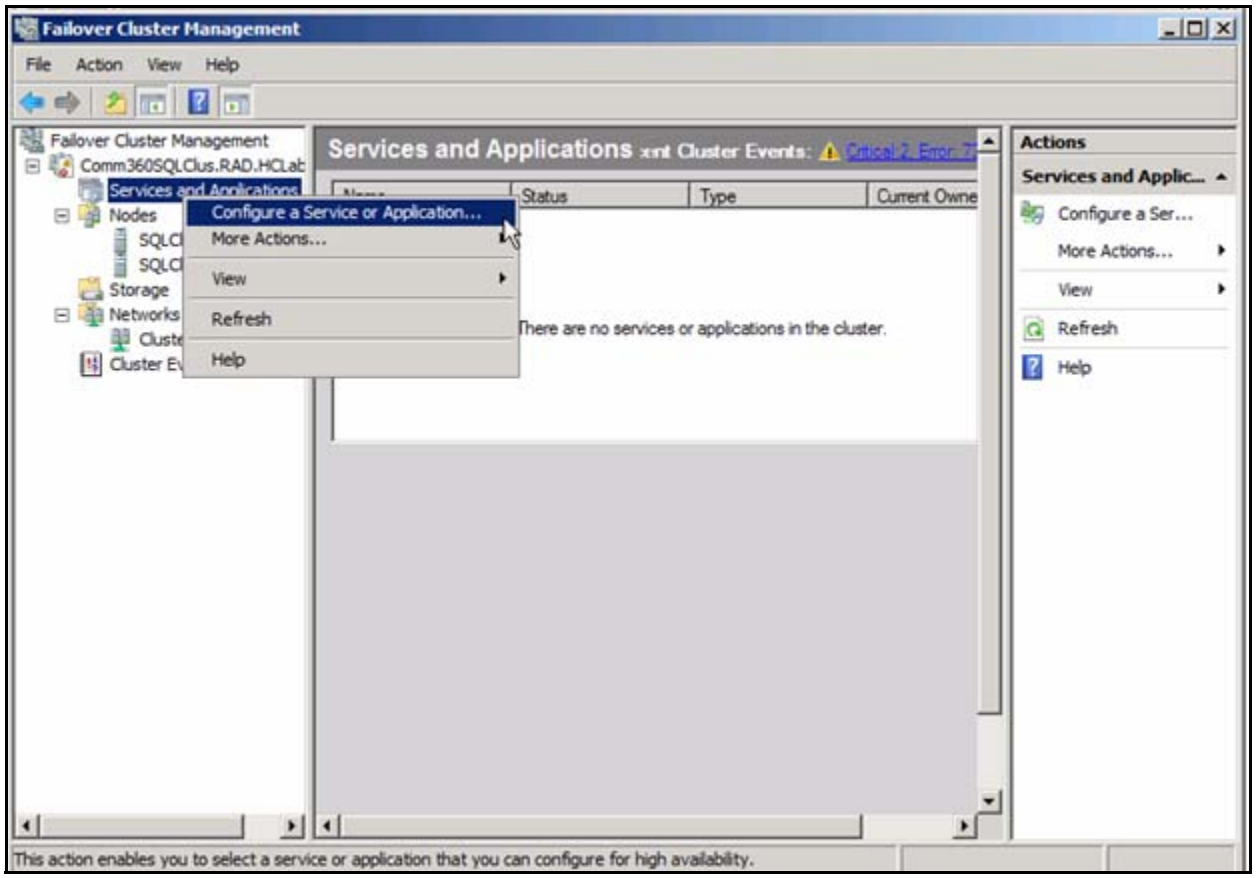
    Keep the Failover Cluster Management open for the next procedure.

Install Microsoft Distributed Transaction Coordinator (DTC)

Perform the following on the Windows Cluster (where you will install the SQL Cluster) in order to install the required Microsoft Distribution Transaction Coordinator (DTC). Cluster names in the illustrations are only examples.

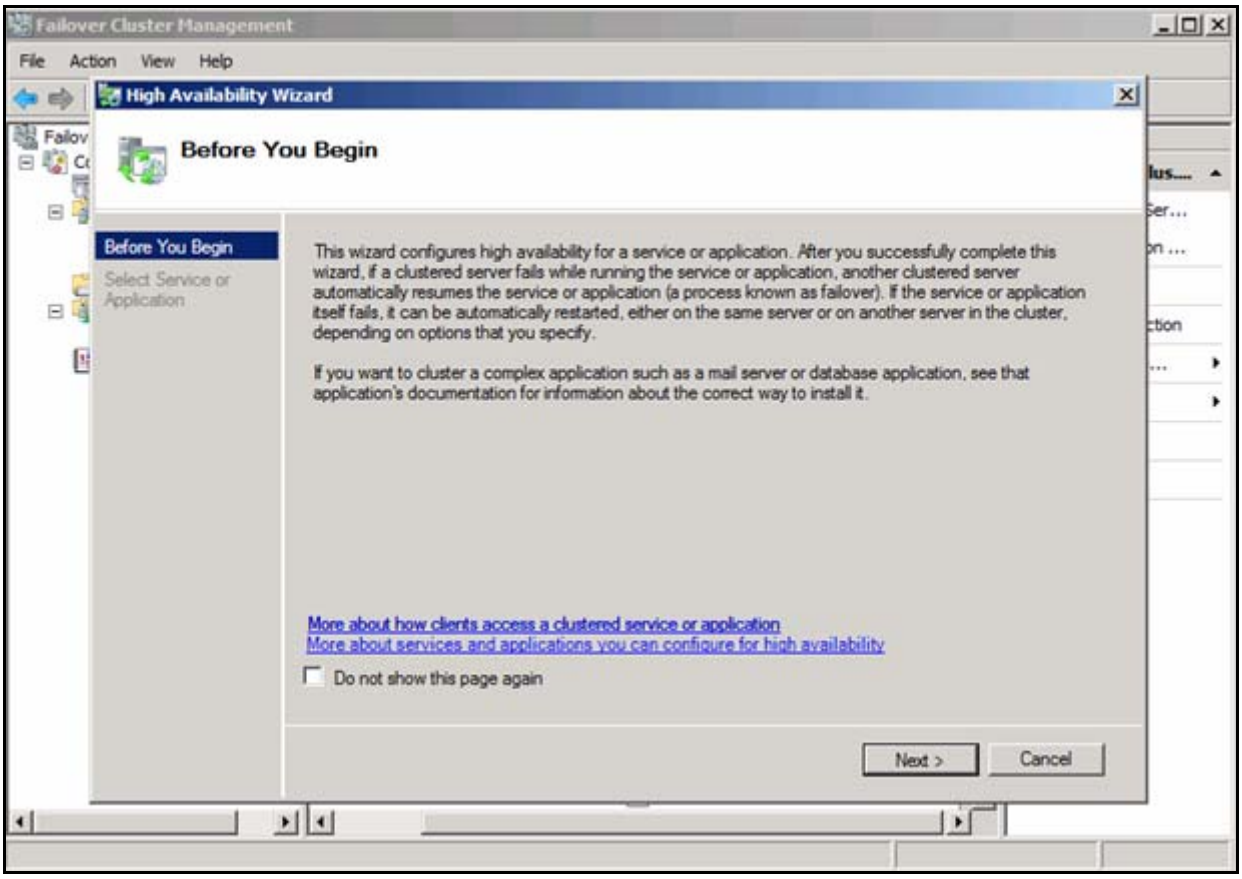
1. If the Failover Cluster Management application is not open, open it now.

   The following is only an example. The Cluster name will differ for the site cluster(s). However, you must perform this procedure for all clusters in the system, both Apps and SQL.



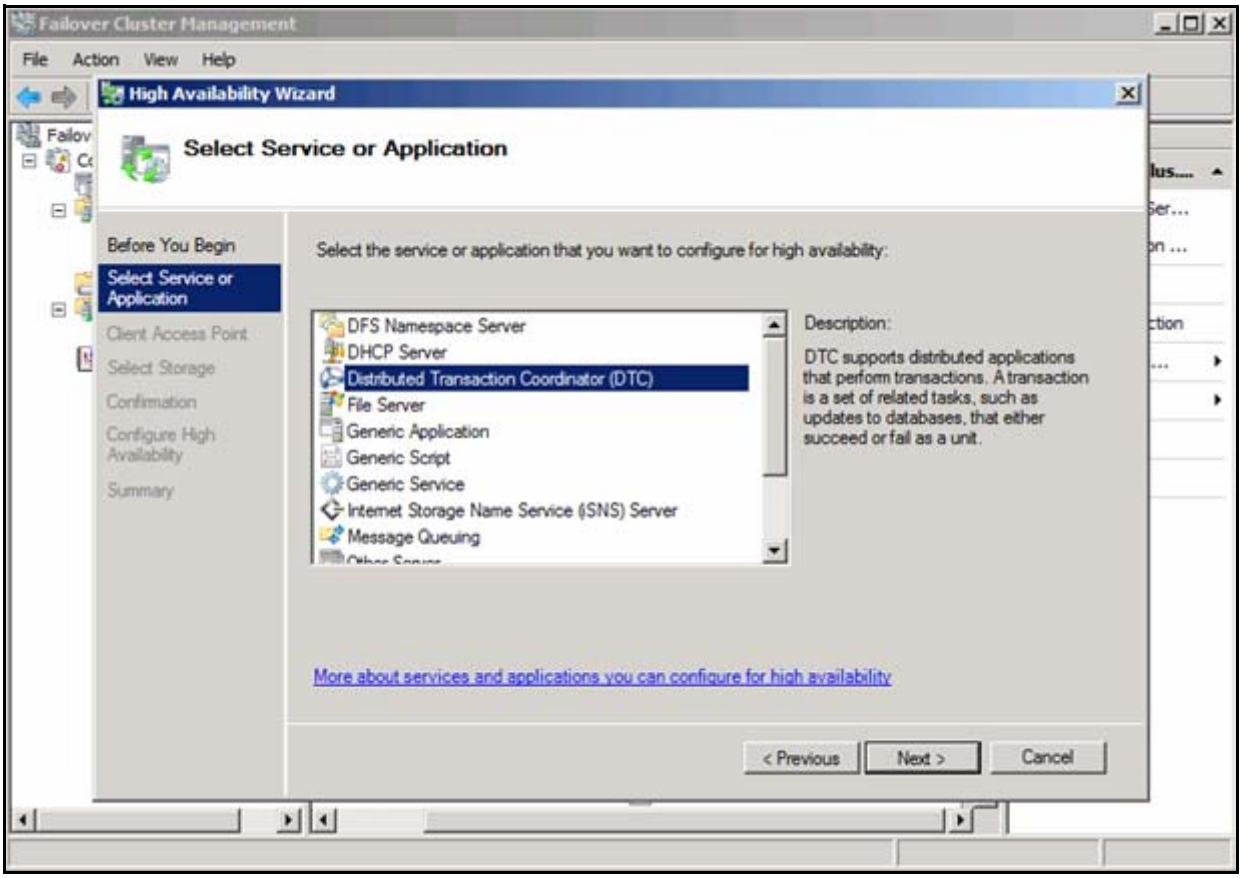
2. Under the Cluster, right-click **Services and Applications** and select **Configure a Service of Application**.

The Before You Begin information window displays.



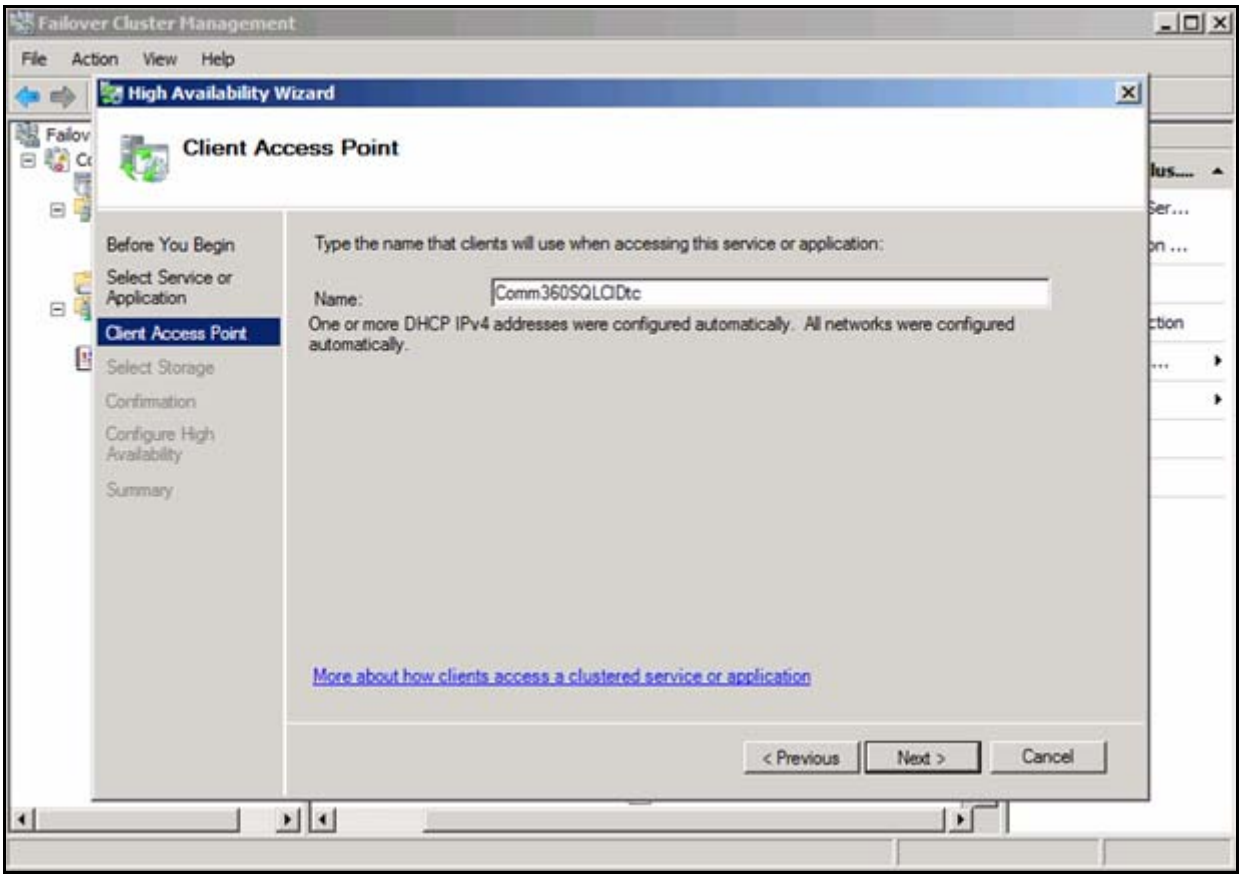
3. Read the information and click **Next**.

The Select Service or Application window displays.



4. Select the **Distributed Transaction Coordinator (DTC)** item on the list.
5. Click **Next**.

The Client Access Point window displays.

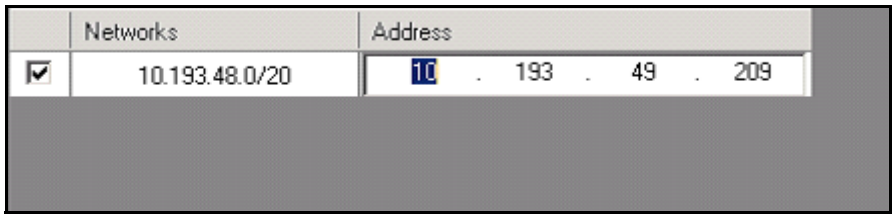


The **Client Access Port Name** that the clients will use for accessing the service/application should display in the Name field.

It should be the name of the cluster with **ClDtc** appended to it.

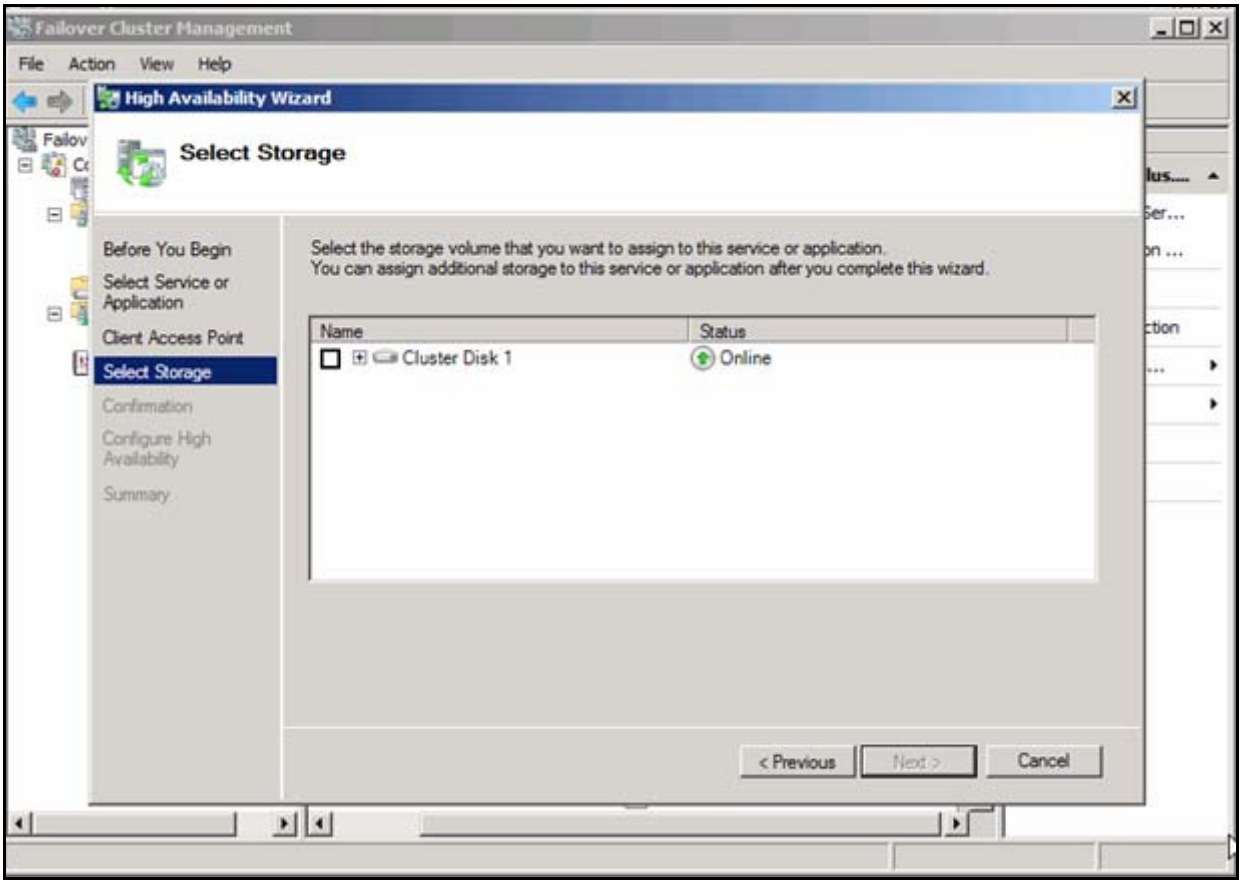
IMPORTANT

The window above may differ if you are using static IP addresses instead of allowing DHCP to assign addresses. If prompted, enter the static address(es). The following is an example of the area for the entries that will display on the window.



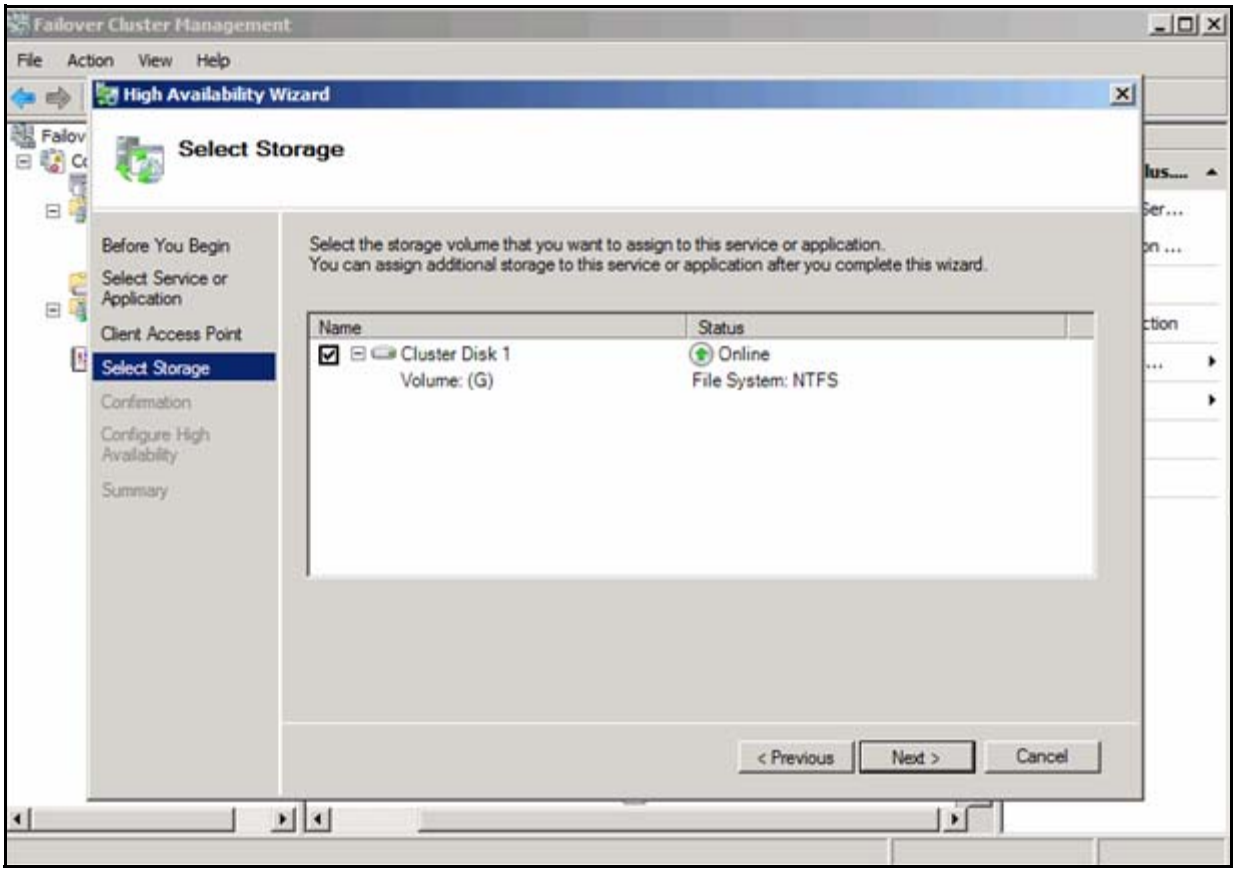
6. Click **Next**.

The Select Storage window displays, showing the Cluster disk.



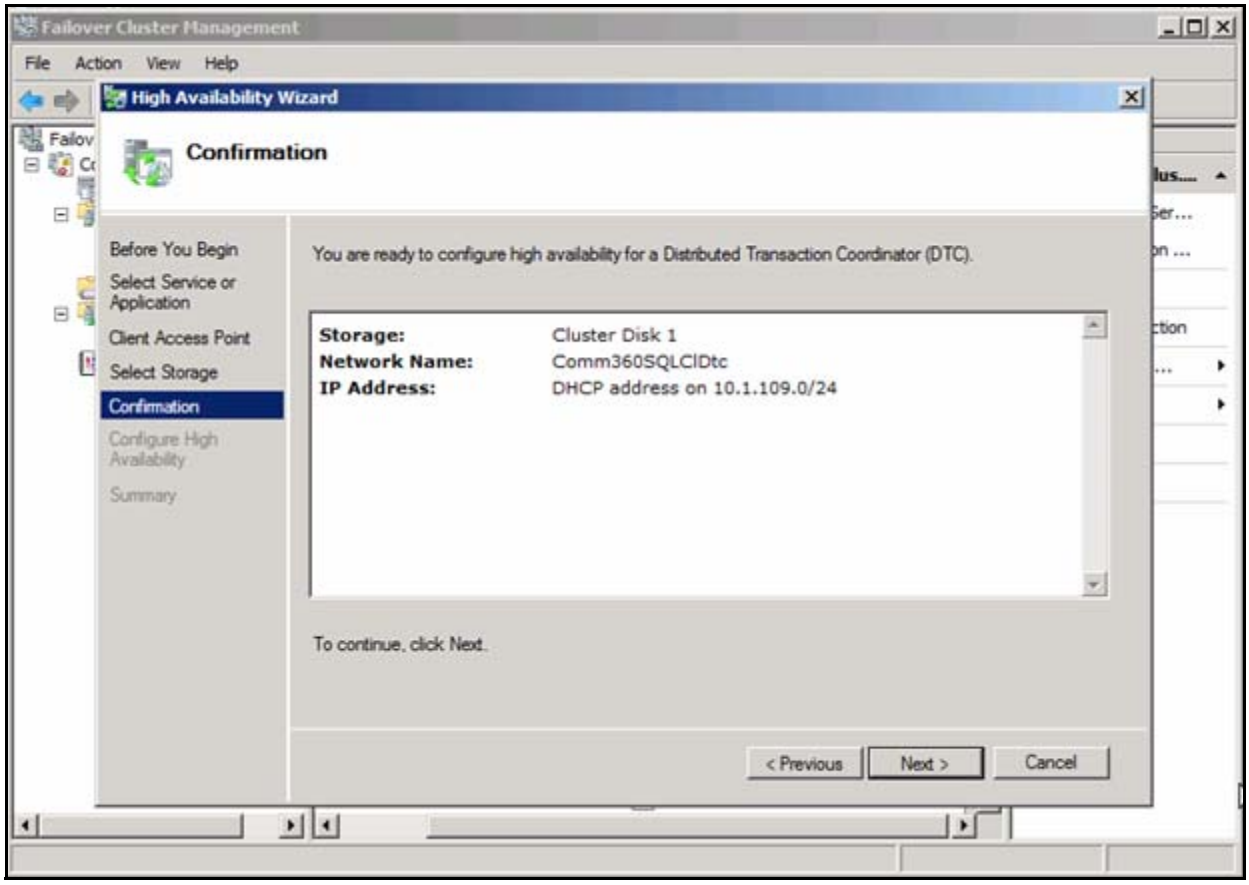
7. Check the Cluster Disk checkbox.

After checking the Cluster Disk, the **Next** button is enabled and the Volume displayed.



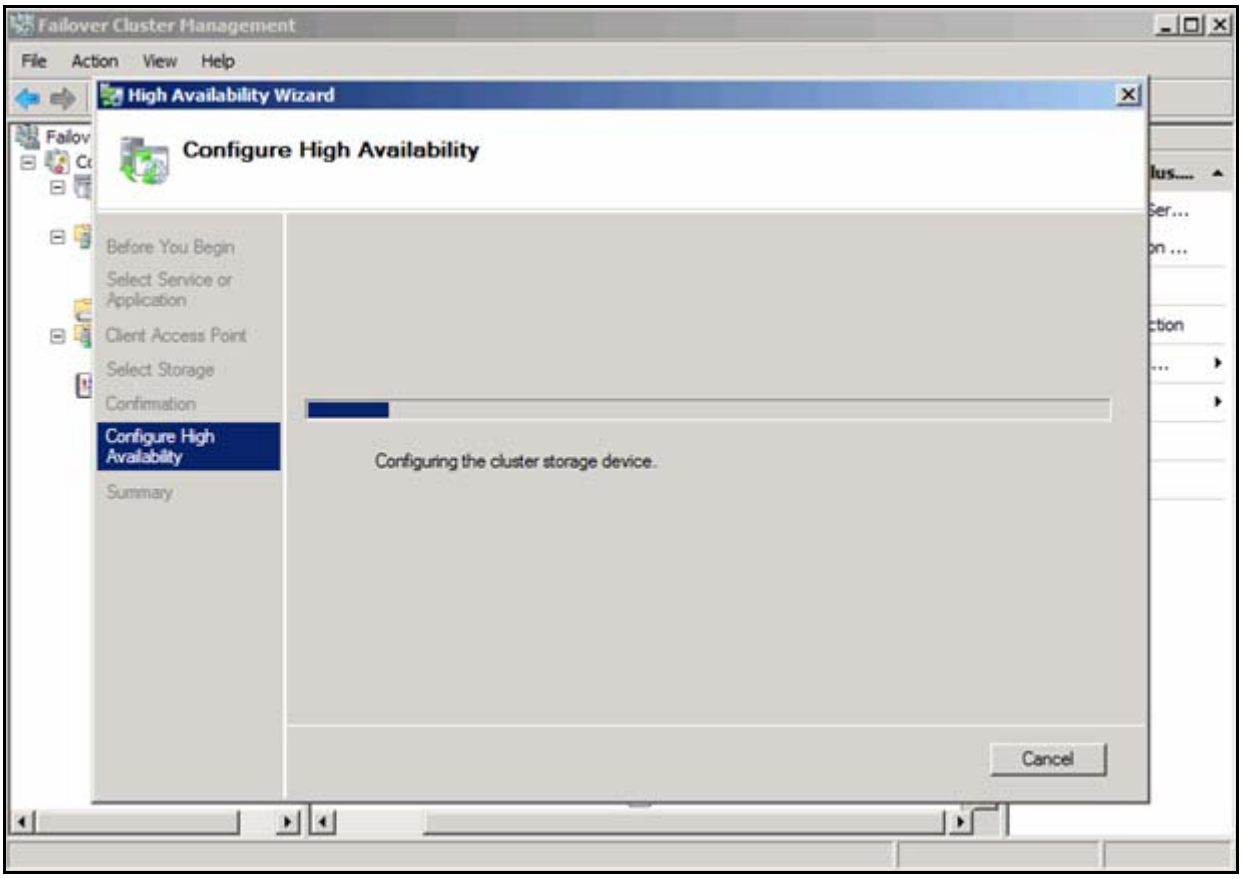
8. Click **Next**.

The Confirmation window displays.



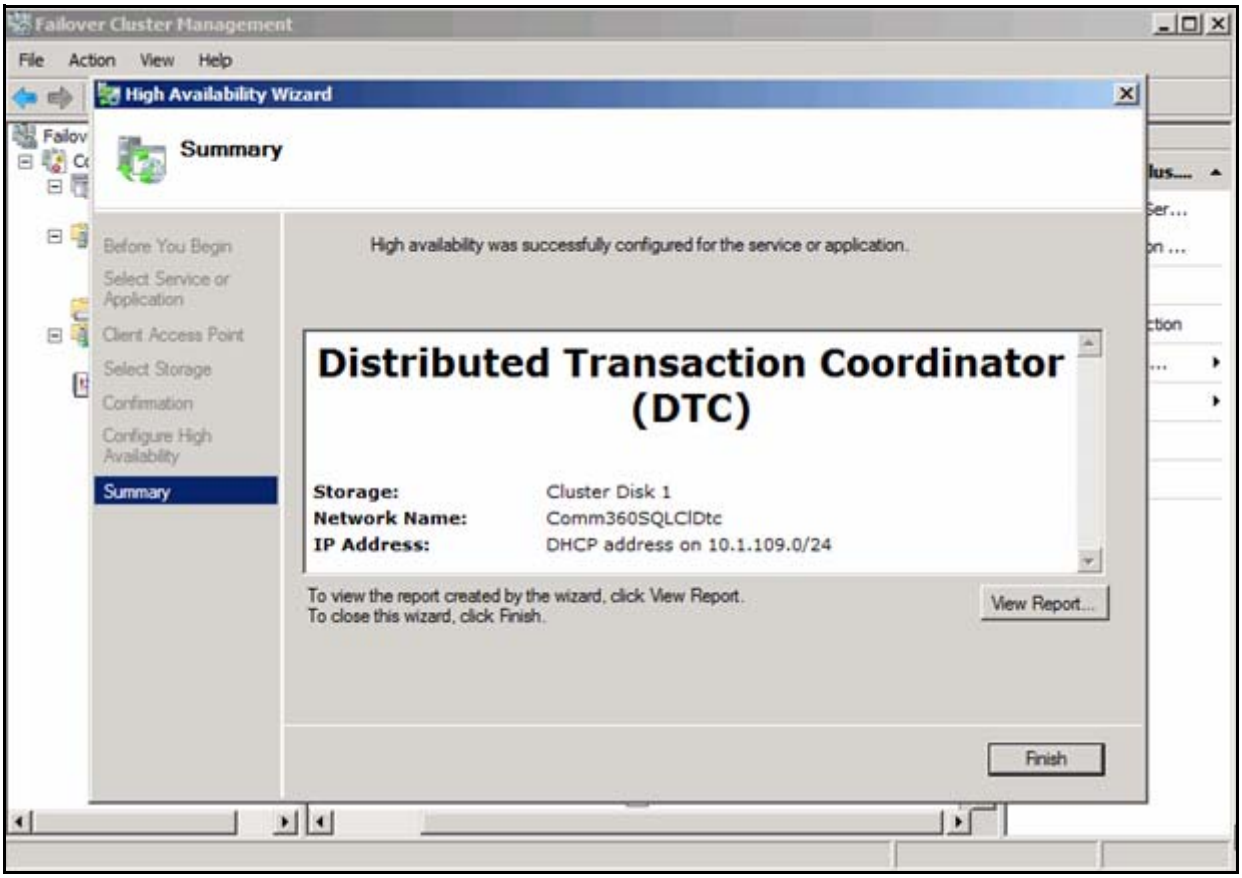
9. Verify the information and click **Next**.

The Configure High Availability window displays the progress.



10. Wait while the storage device is configured.

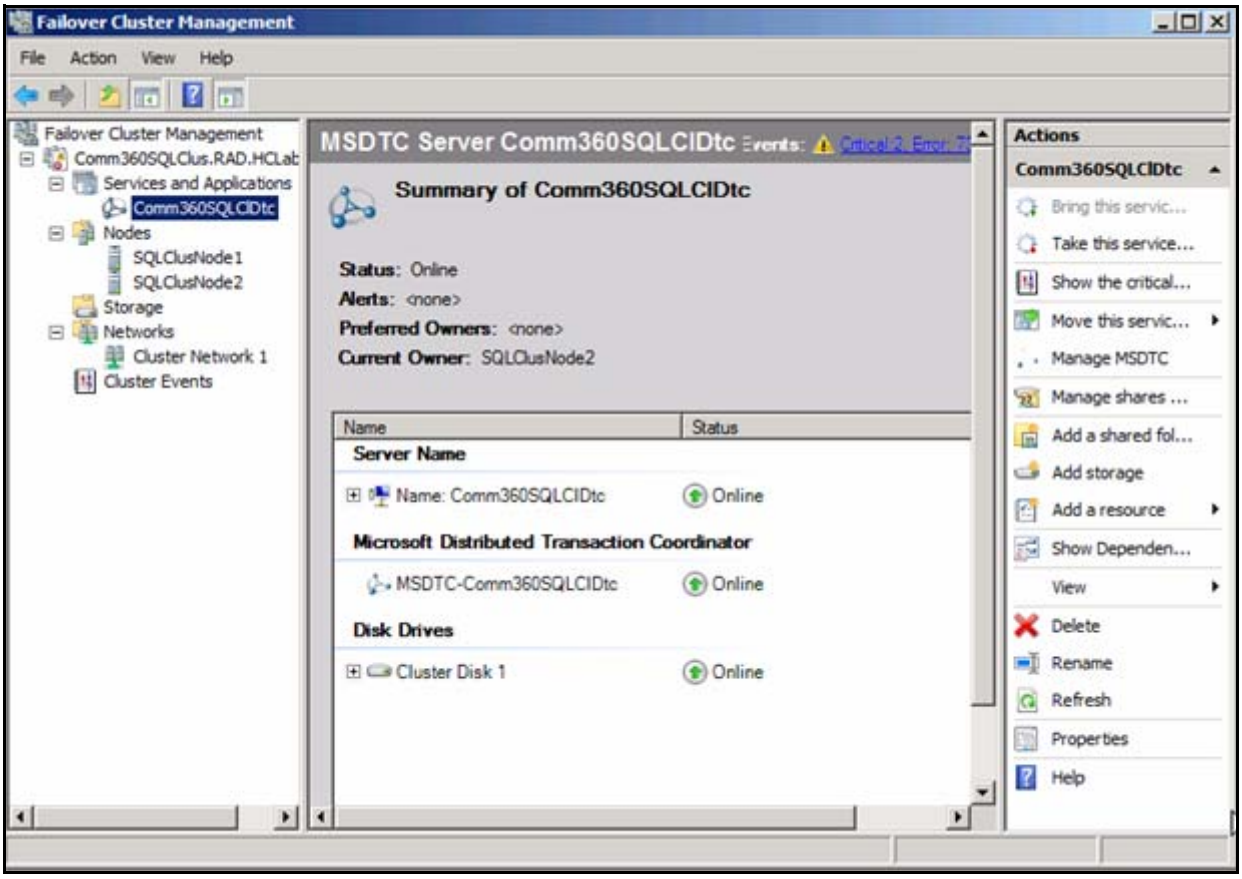
The Summary window displays.



11. Click **Finish**.
12. Keep Failover Cluster Management open for the next procedure.

Configure MS DTC Properties

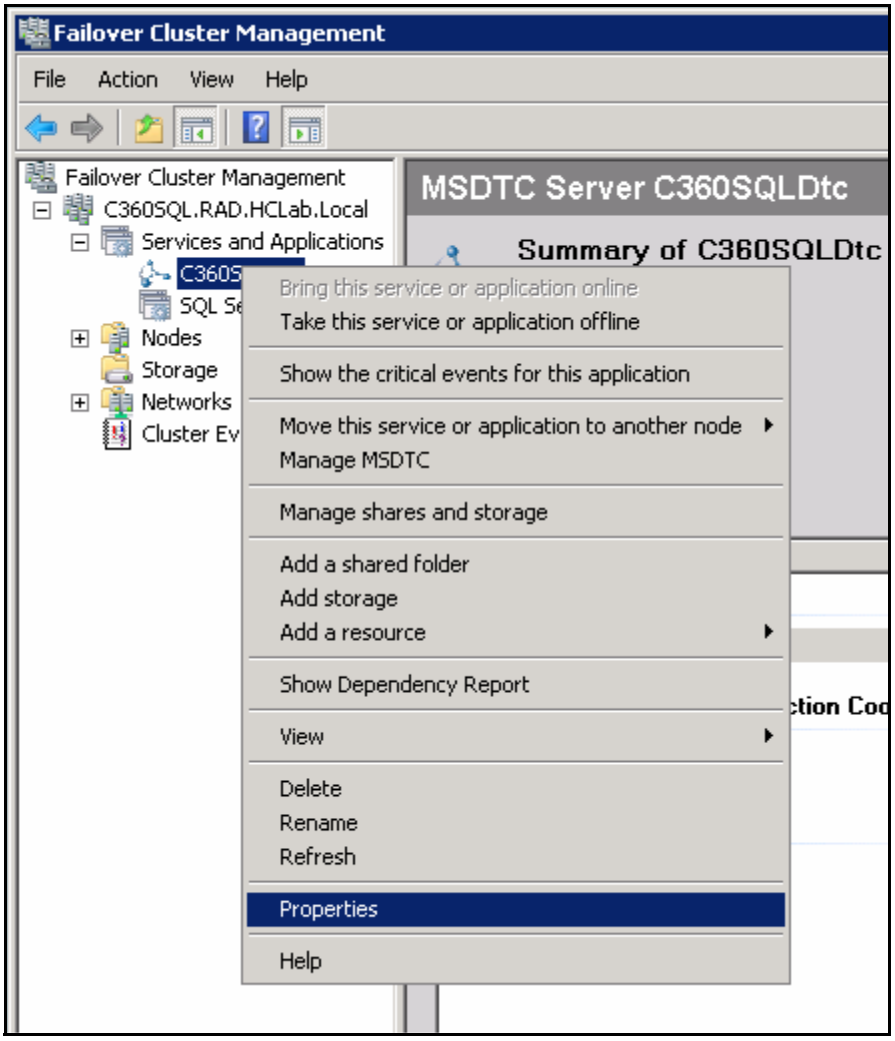
The following is an example of a Failover Cluster window after the installation.



IMPORTANT ***DO NOT ADD ANY SQL RESOURCES TO MS DTC CONTROL. SQL INSTALL WILL DO WHAT IS REQUIRED FOR PROPER INTEGRATION.***

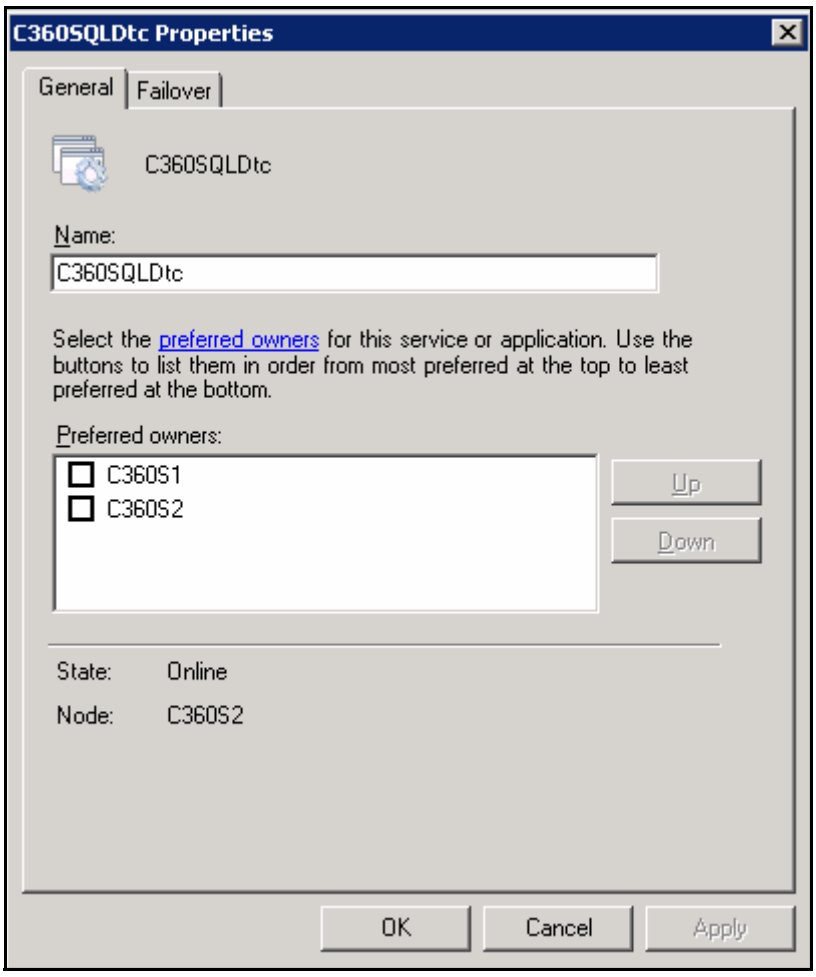
You must set the properties for the MS DTC according to site requirements (if not already set). There is no set rule for preferences.

1. Open **Failover Cluster Management** if it is not open.



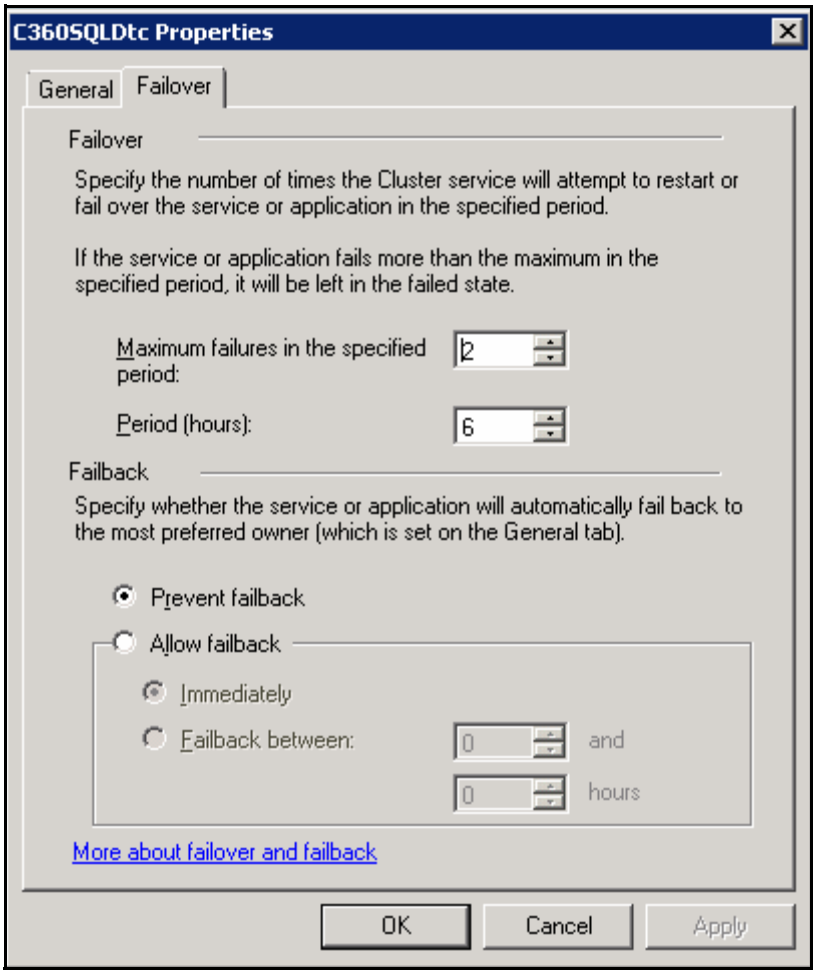
2. Right-click the **SQLDTC** entry in the left pane under Services and Application and choose **Properties**.

The following displays.



3. Choose the preferred owner as required by the site.
4. Click the **Failover** tab.

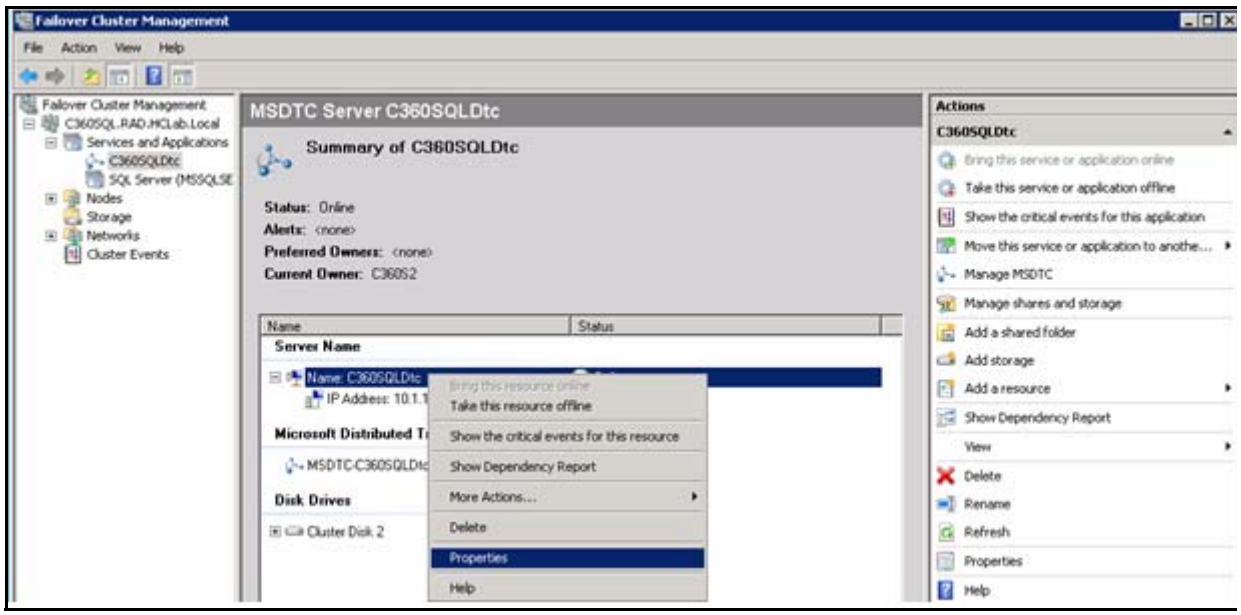
The Failover tab window displays.



5. Set Maximum failures and Period hours according to site preference.
6. Choose either the Prevent failback or Allow failback according to site preference.

   For example, you may wish to prevent the failback in order to examine the issue that is causing the failure.
7. Click **OK**.

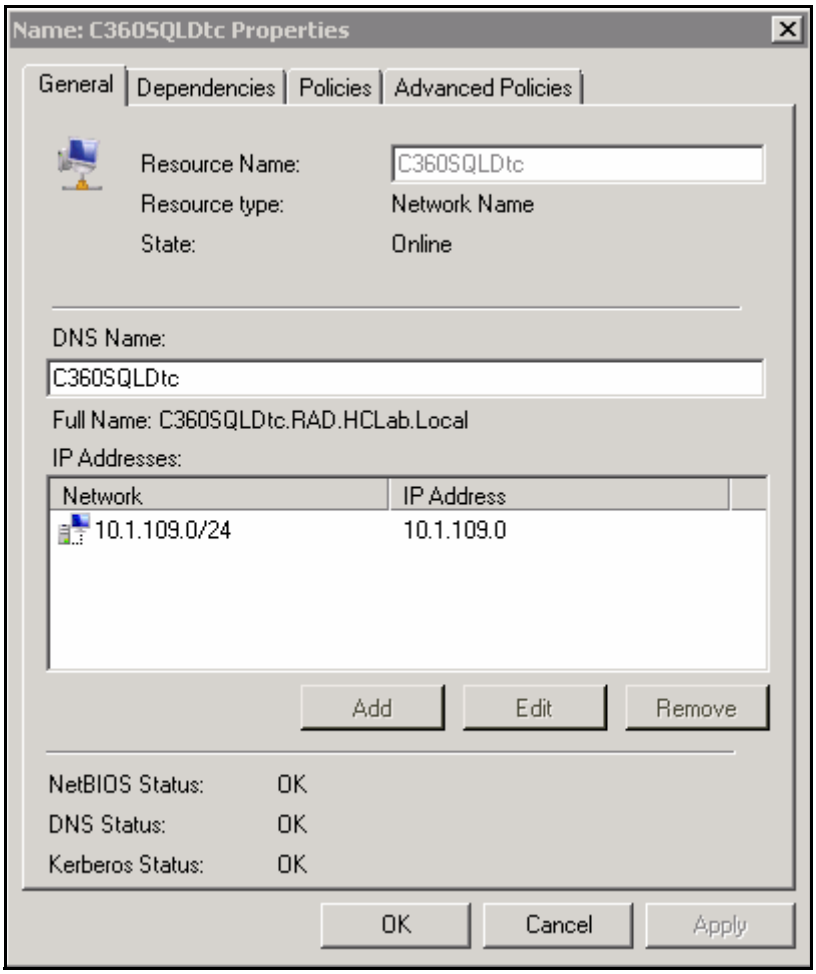
You return to the Failover Cluster Manager window.



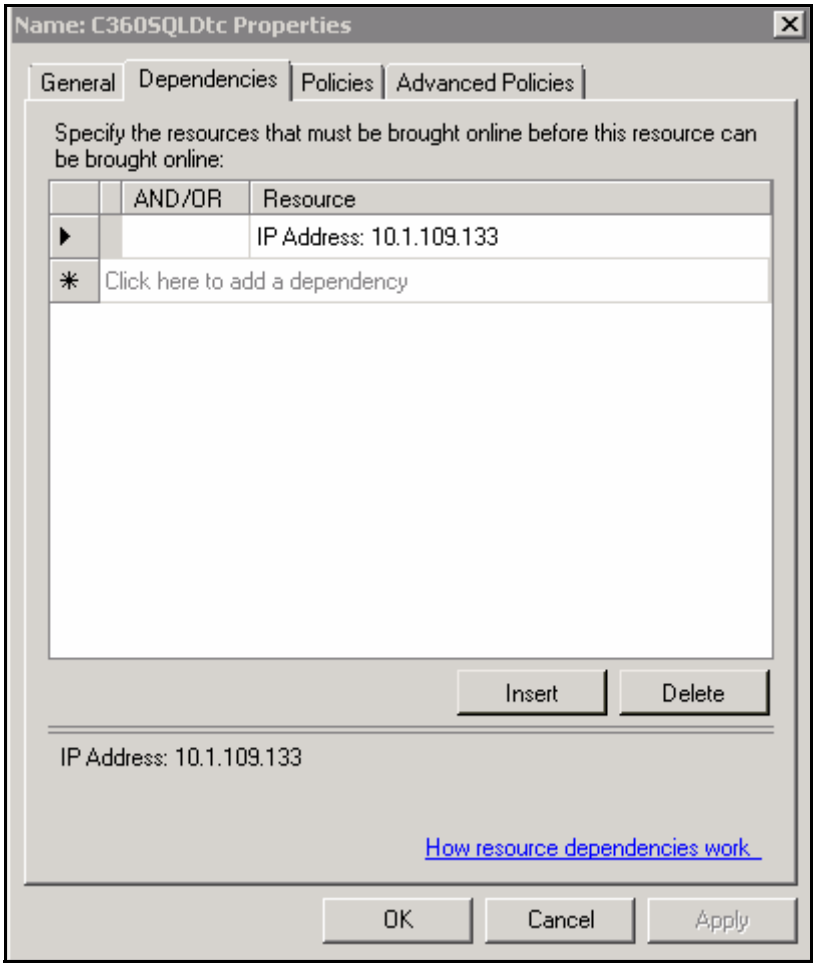
8. Right-click the SQLDTC Server Name in the center pane and choose **Properties**.
9. Set these to the site requirements.

The following windows show the four tabs for the additional Properties. Set the Properties options and click **Apply** for each window.

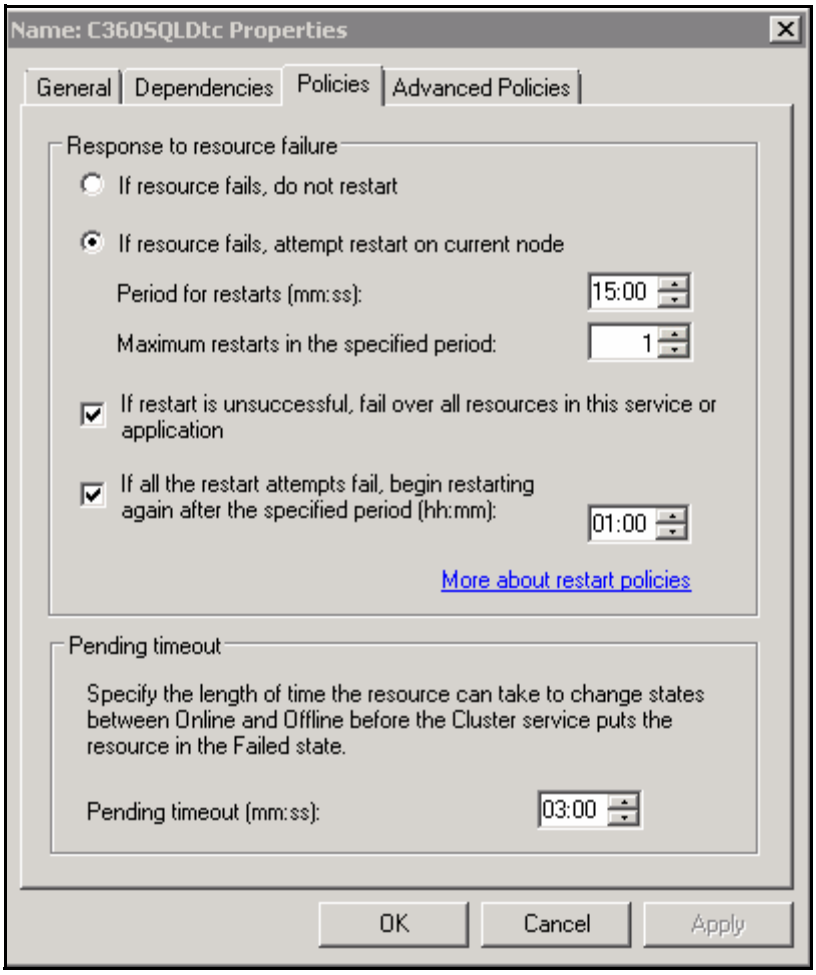
General:



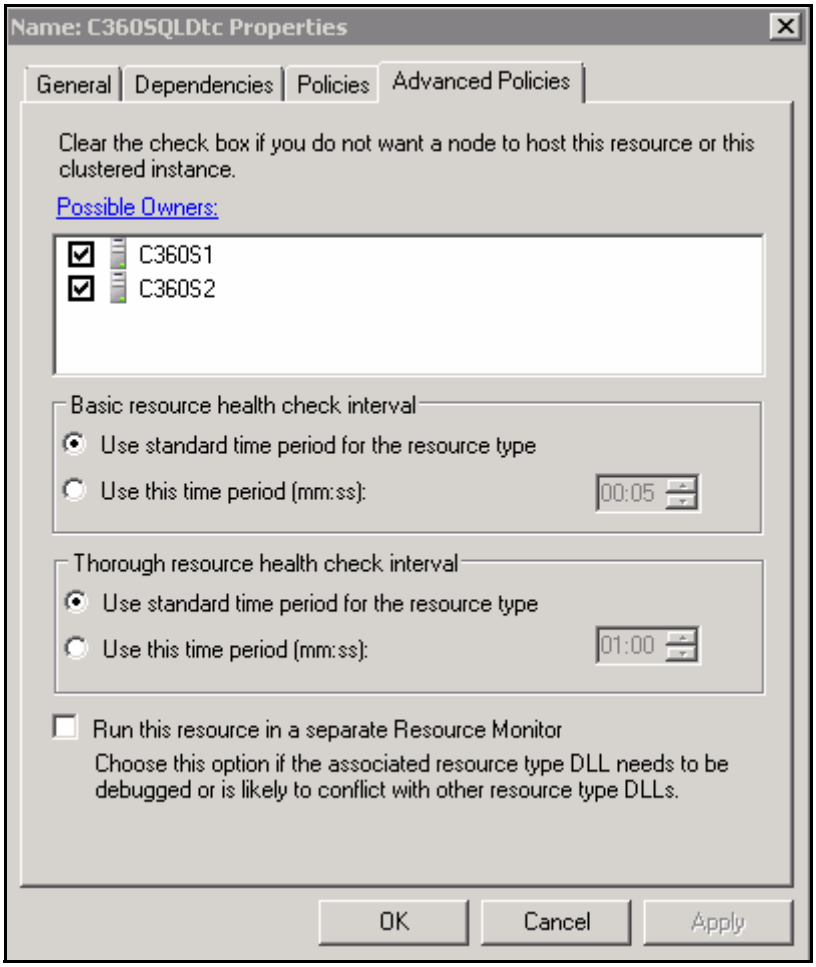
Dependencies:



Policies:


Name: C360SQLDtc Properties
General
Dependencies
Policies
Advanced Policies
Response to resource failure
If resource fails, do not restart
If resource fails, attempt restart on current node
Period for restarts (mm:ss):
15:00
Maximum restarts in the specified period:
1
If restart is unsuccessful, fail over all resources in this service or application
If all the restart attempts fail, begin restarting again after the specified period (hh:mm):
01:00
More about restart policies
Pending timeout
Specify the length of time the resource can take to change states between Online and Offline before the Cluster service puts the resource in the Failed state.
Pending timeout (mm:ss):
03:00
OK
Cancel
Apply

Advanced Policies:

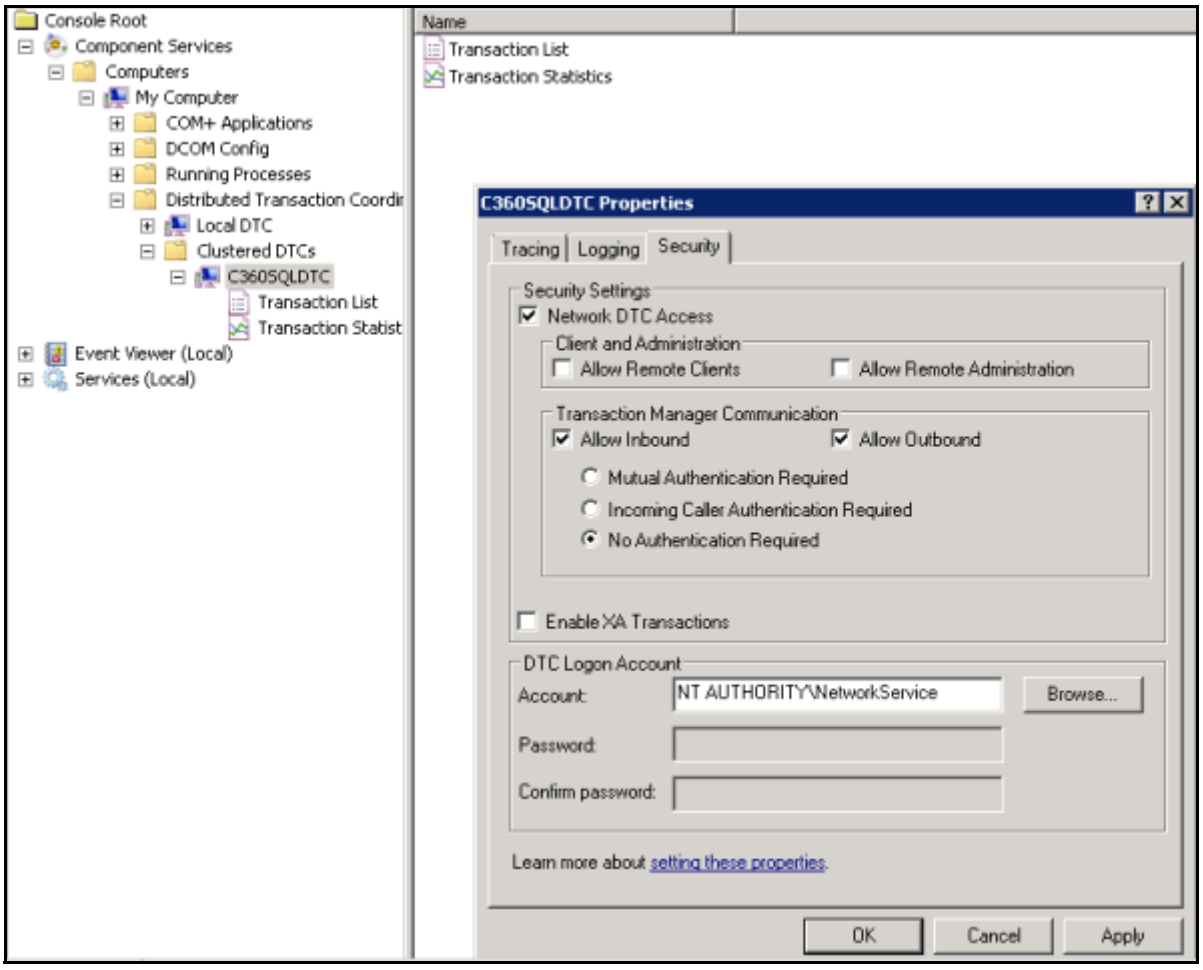


10. After setting all of the Properties options on all tabs, click **OK**.

Enable Network Access for MSDTC

After creating the MSDTC resource(s) for your cluster, you must enable network access for the MSDTC resource. This is done from the Component Services Management Console. In the Component Services Management Console, perform the following steps.

1. Expand **Component Services**, expand **Computers**, expand **My Computer**, expand **Distributed Transaction Coordinator,** and then expand **<Your instance of MSDTC>**.
2. Right-click the instance that you want to configure and click **Properties**.
3. Under Security Settings, select the **Network DTC Access**, **Allow Inbound**, and **Allow Outbound** check boxes, and then click **OK** to complete the configuration.



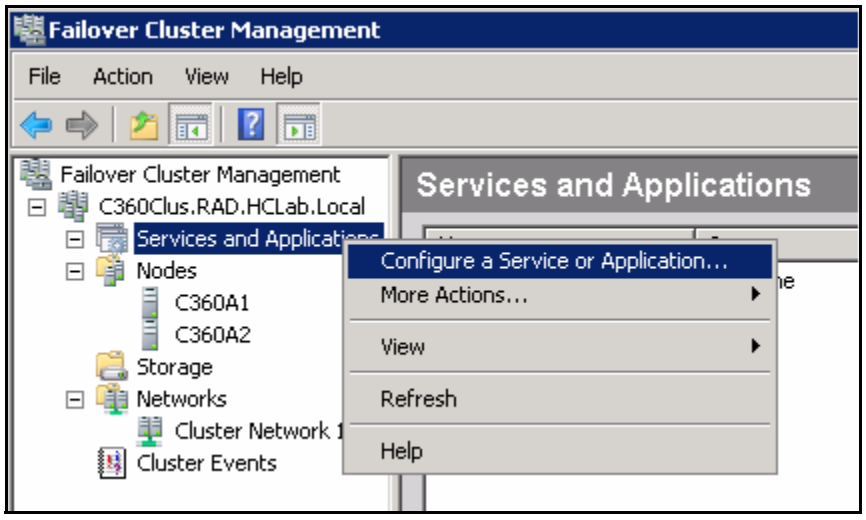
These configuration options enable MSDTC to access resources on the network and allow applications to access this instance of MSDTC from remote machines including other cluster nodes. It is not necessary to perform these actions on each node of the cluster because the changes will propagate to all nodes of the cluster for a clustered instance of MSDTC.

Install the File Server Service

You may wish to run this service on one member of the cluster and the MS DTC service, installed in the next procedure, on another member to spread them out across the cluster.

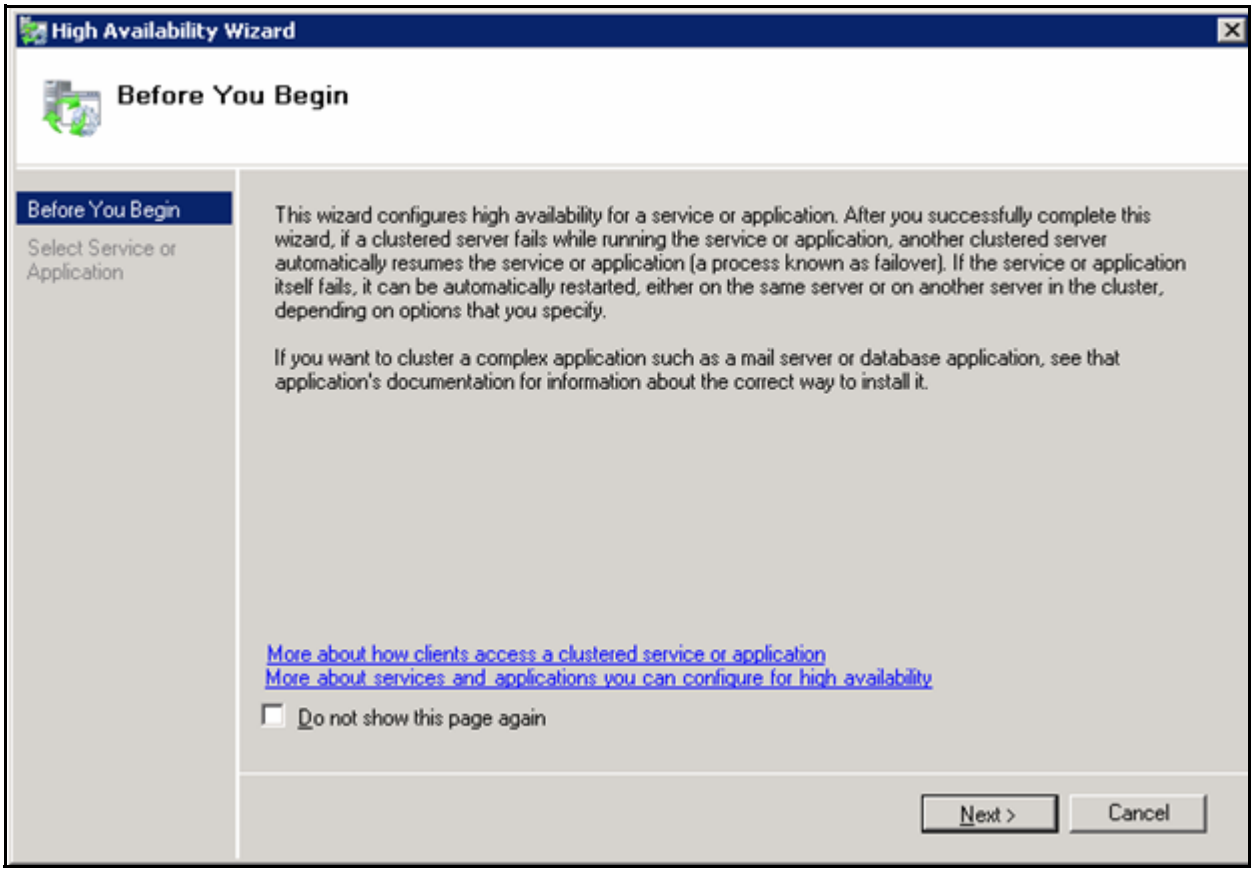
1. Open the Failover Cluster Management application if it is not already open.

   The following displays.



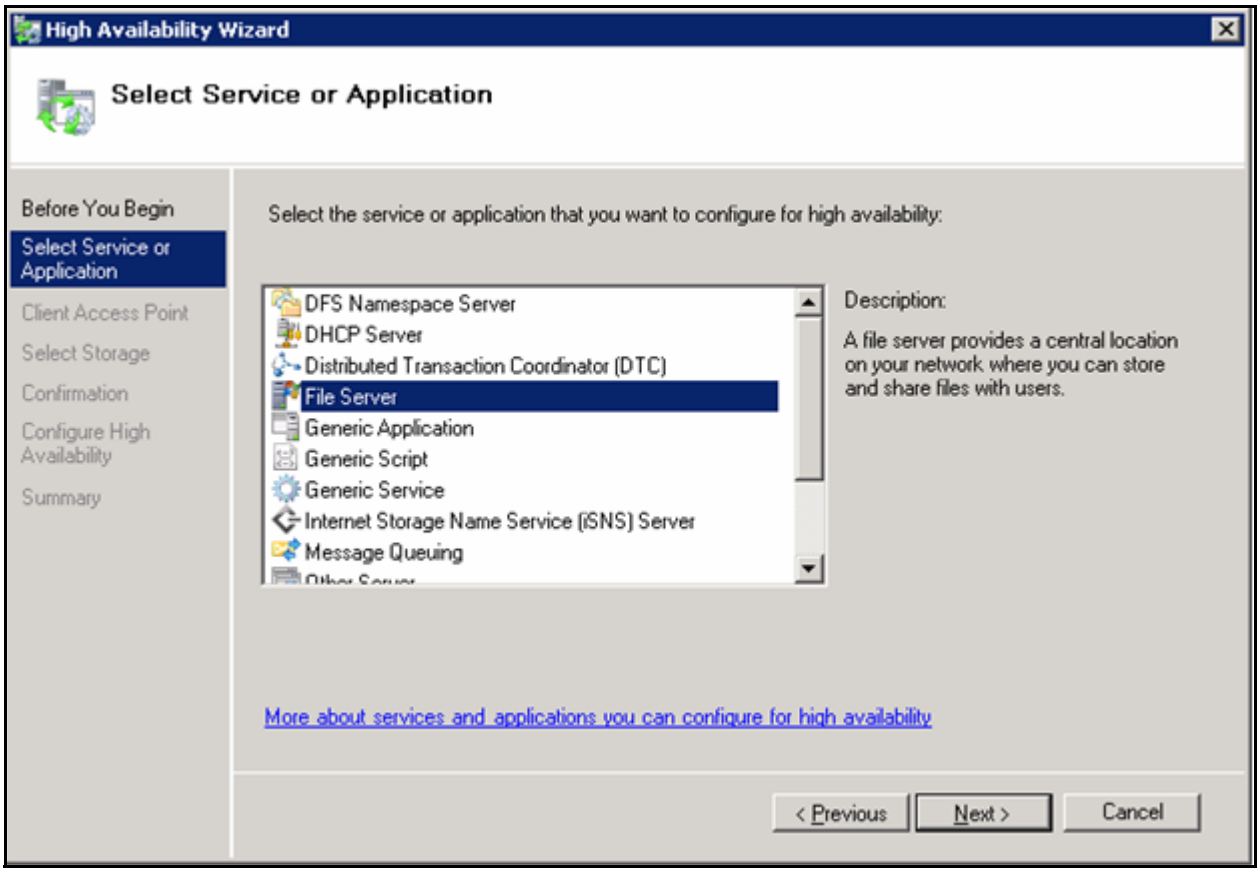
2. Right-click Services and Applications and select **Configure a Service or Application**.

The following window displays.



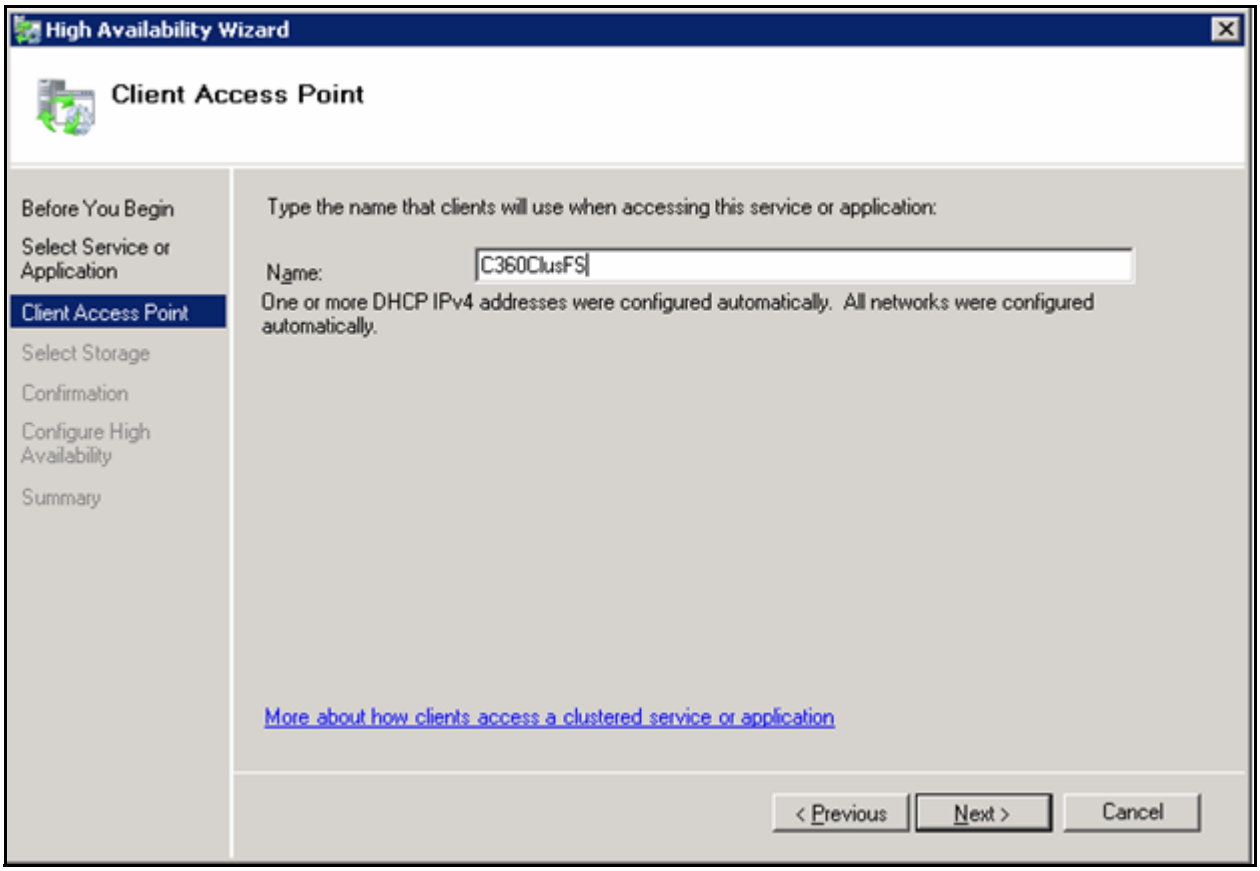
3. Read the information and click **Next**.

The Select Service or Application window displays.



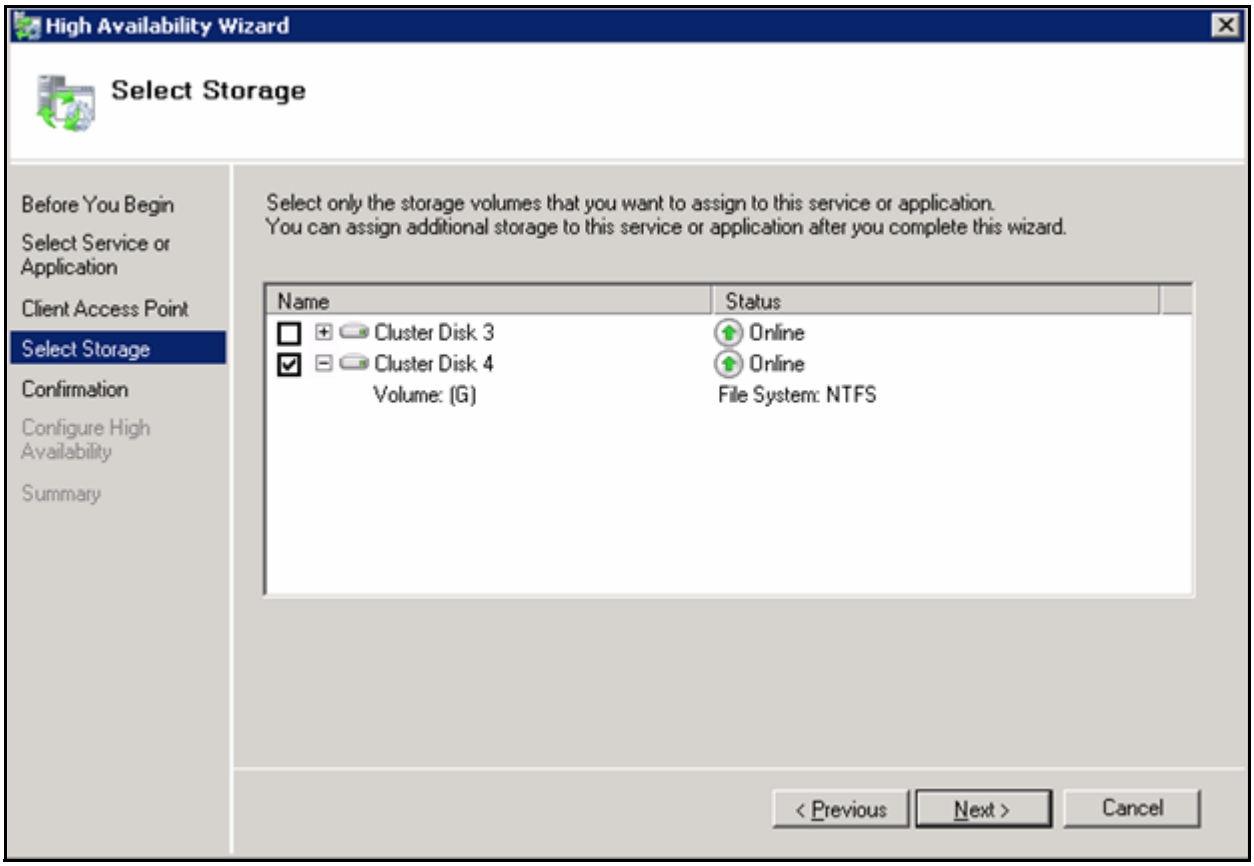
4. Choose **File Server** and click **Next**.

The Client Access Point window displays.



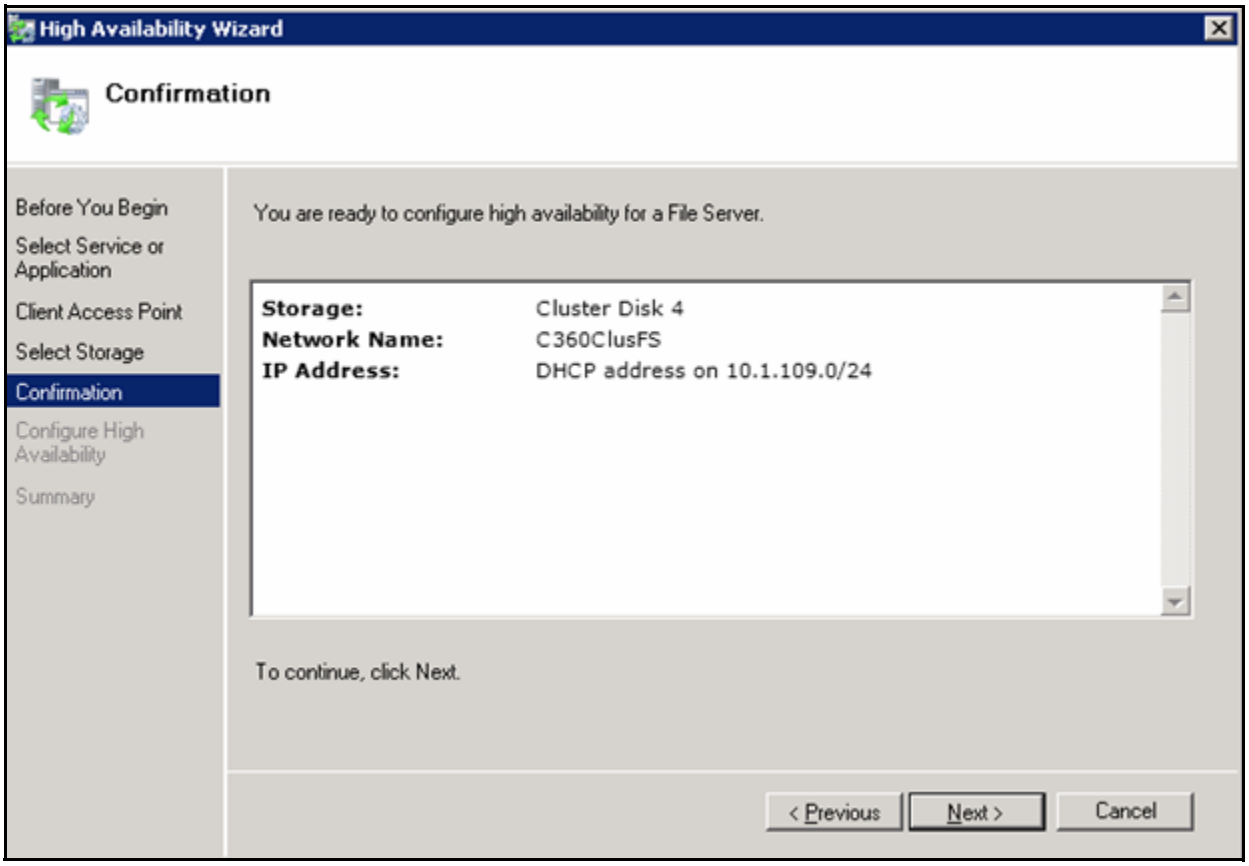
5. Enter the name that will be used to access this service, e.g., **C360ClusFS**.
6. Click **Next**.

The Select Storage window displays.



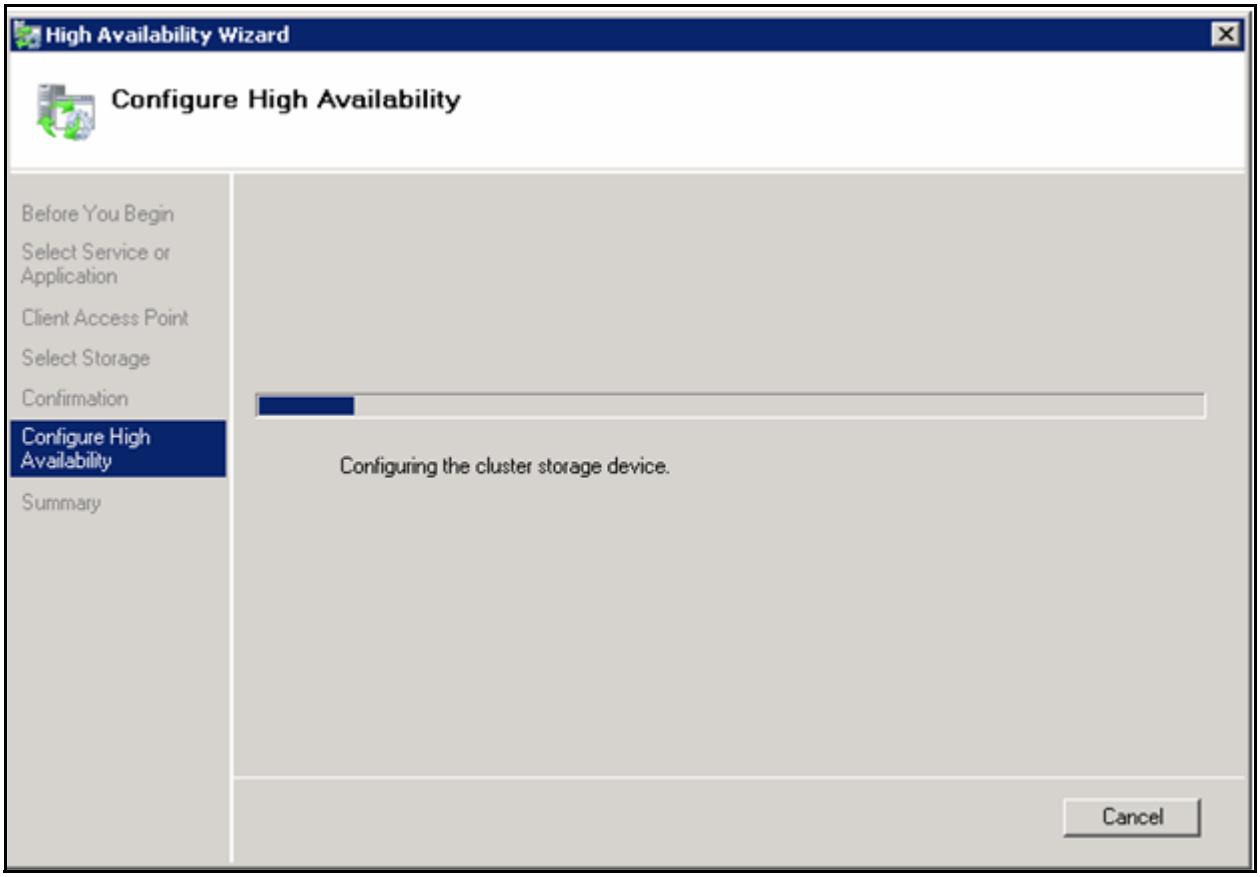
7. Select the Disk for storage for this service and note the Volume letter.
8. Click **Next**.

The Confirmation window displays.



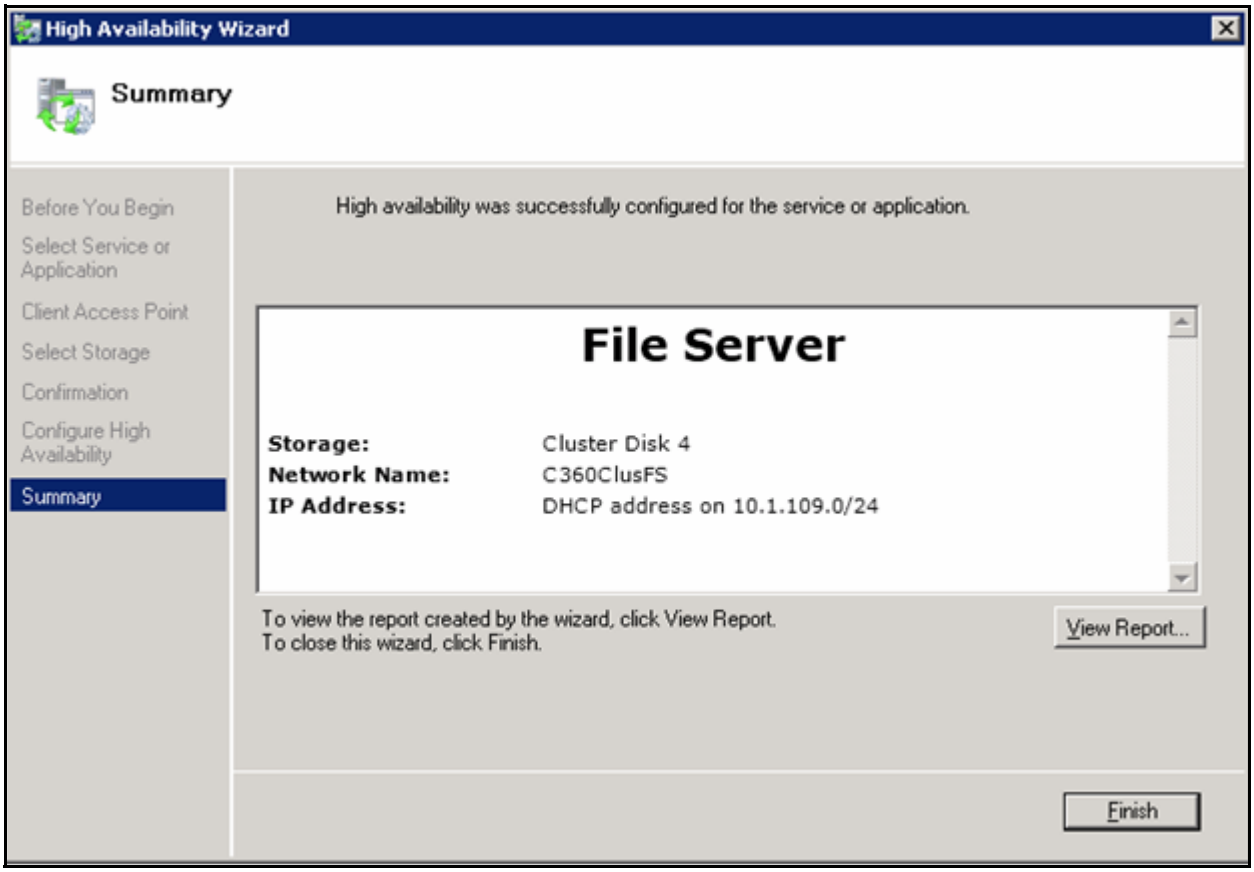
9. Click **Next**.

The Configure High Availability window displays.



10. Wait for the configuration to finish.

The Summary window displays.

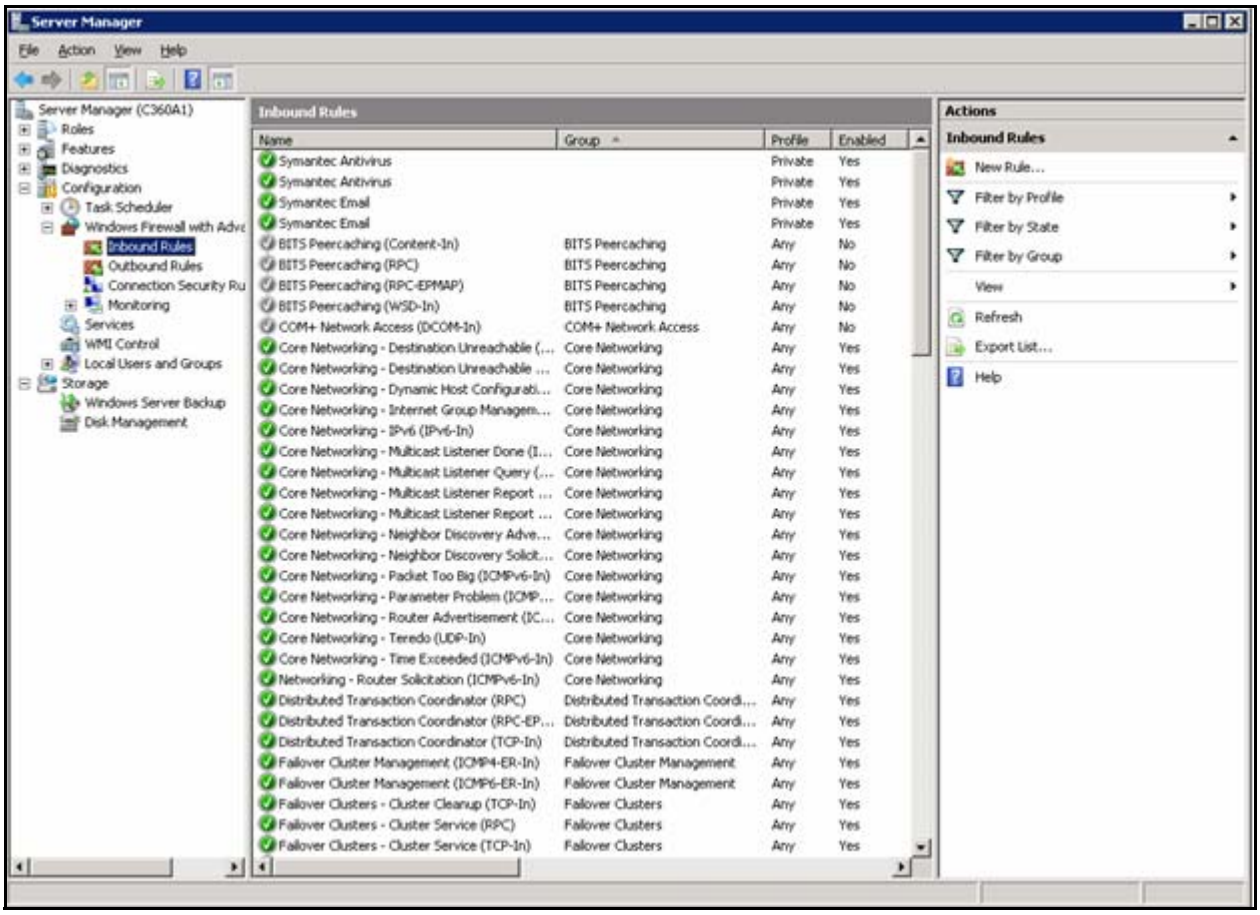


11. Click **Finish**.

NOTE *Keep the Failover Cluster Management application open for the next procedure.*

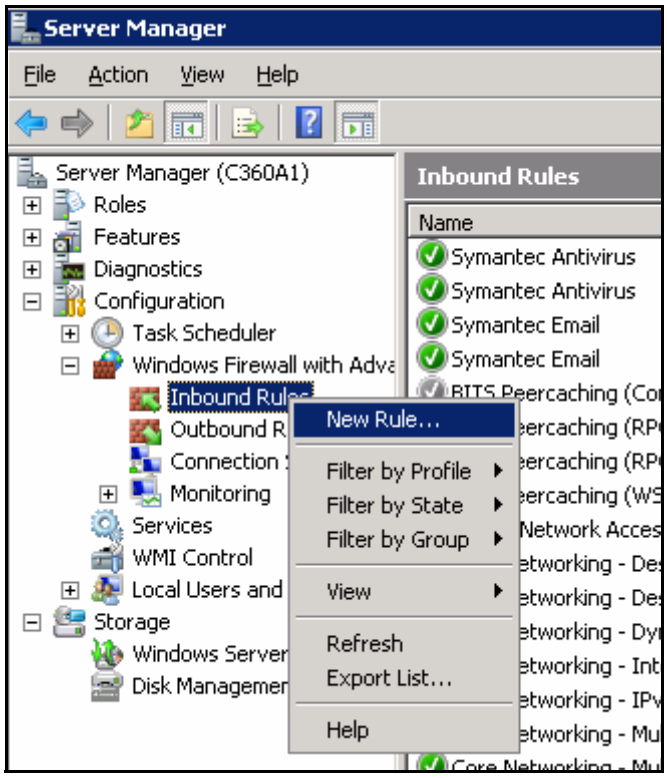
Now you will configure the Firewall.

12. Open Server Manager.



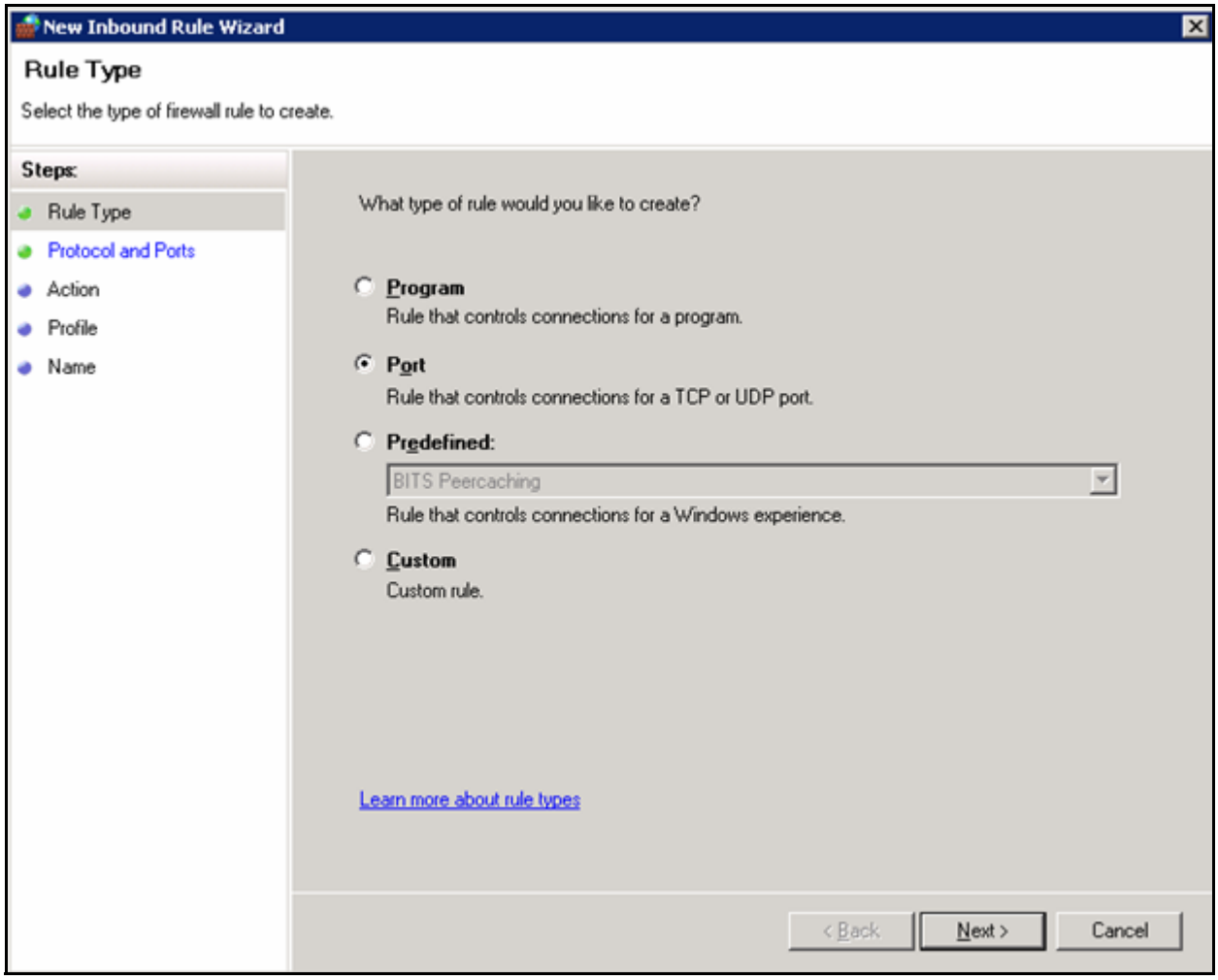
13. Right-click **Inbound Rules**.

The drop-down menu displays.



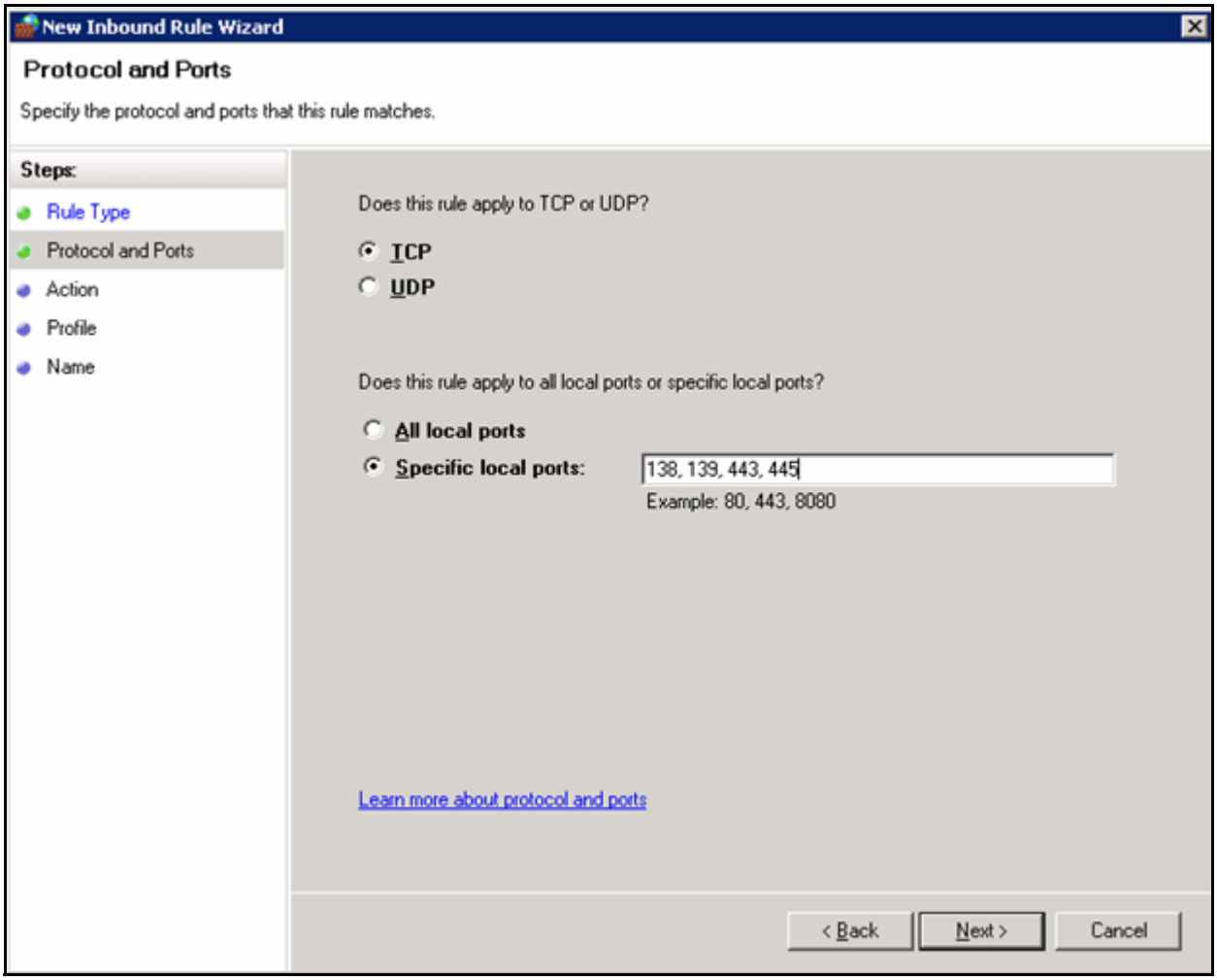
14. Select **New Rule**.

The New Inbound Rule Wizard displays the Rule Type window.



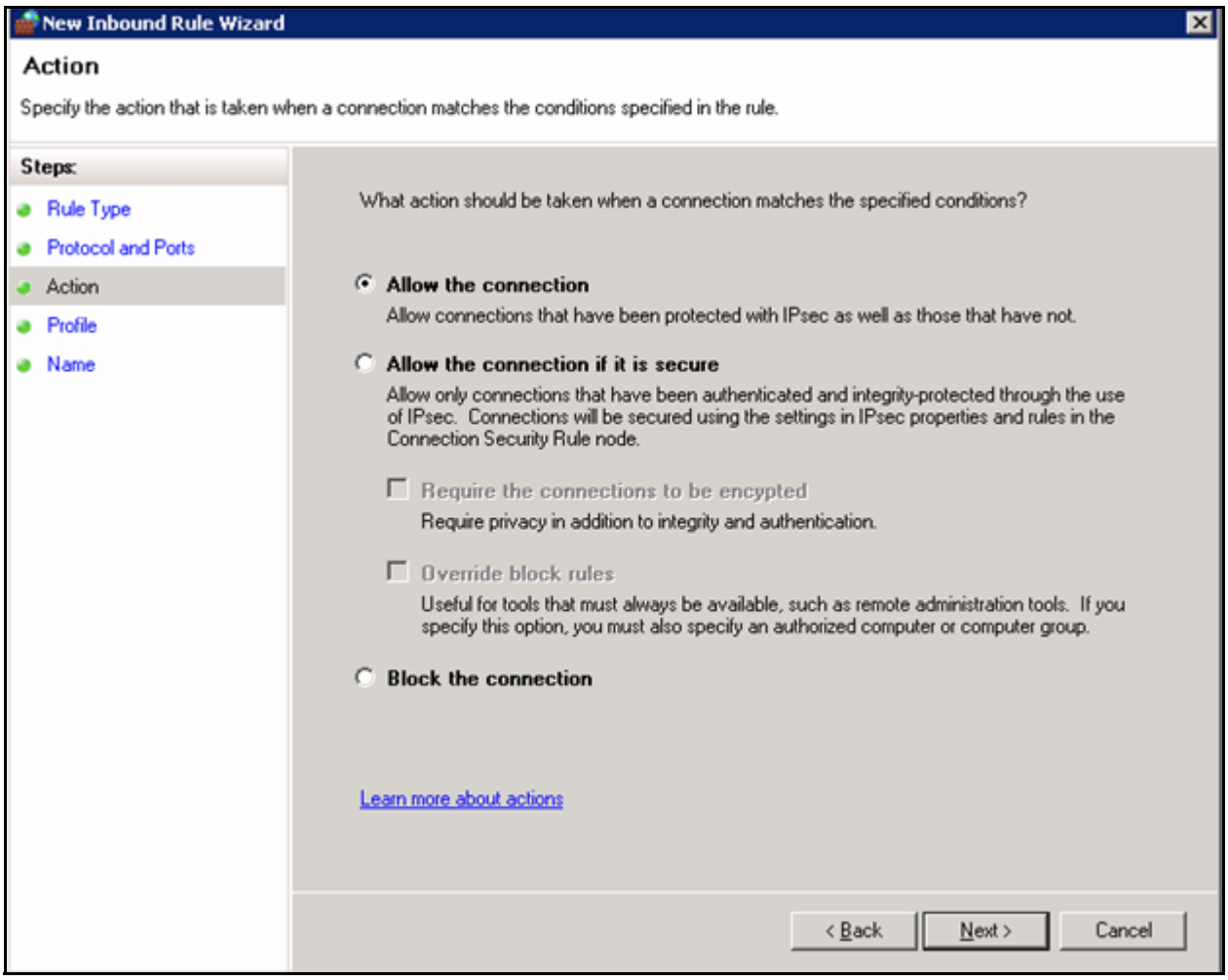
15. Choose the **Port** option.
16. Click **Next**.

The Protocol and Ports window display.



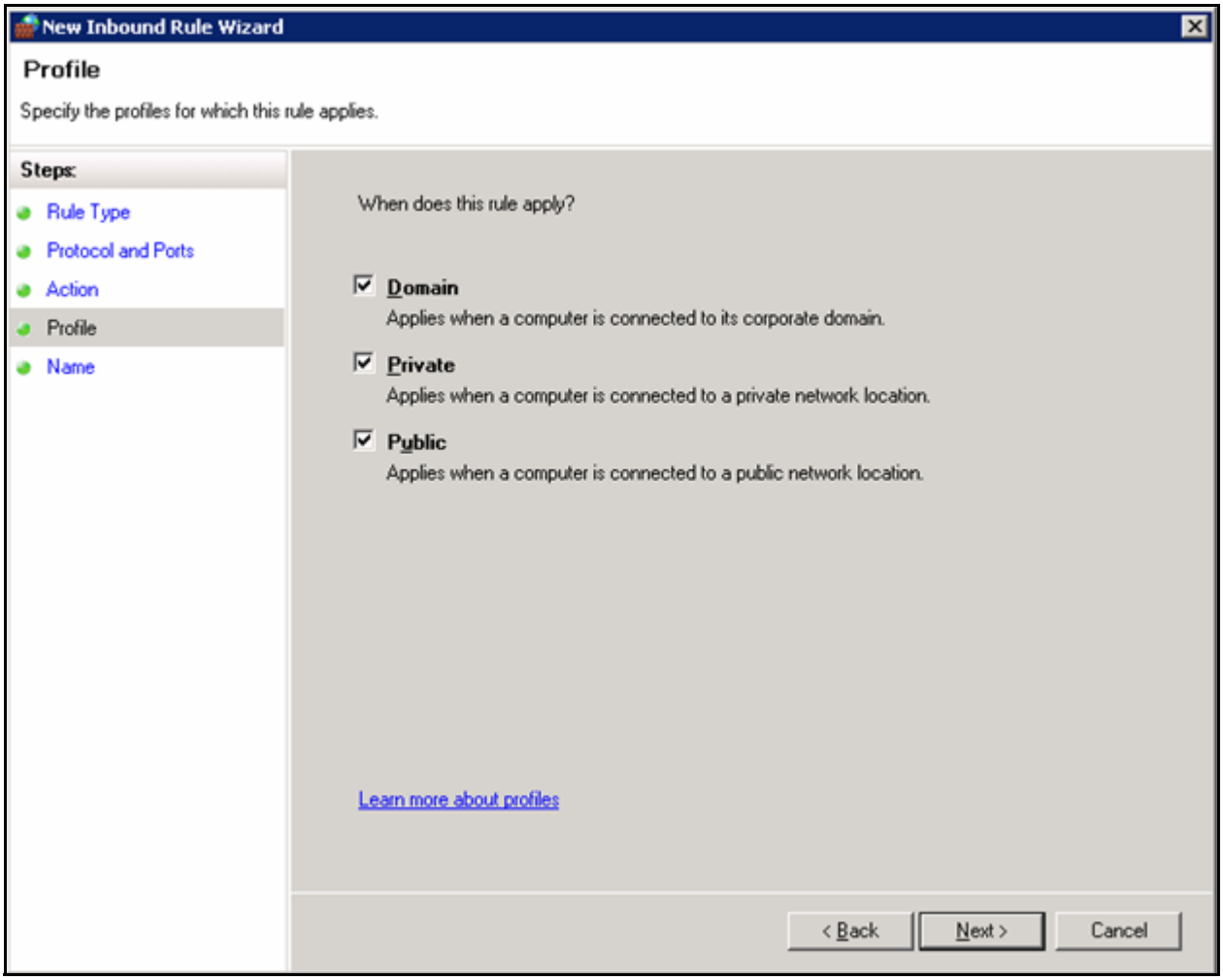
17. Choose the **TCP** option.
18. Specify the local ports.
19. Click **Next**.

The Action window displays.



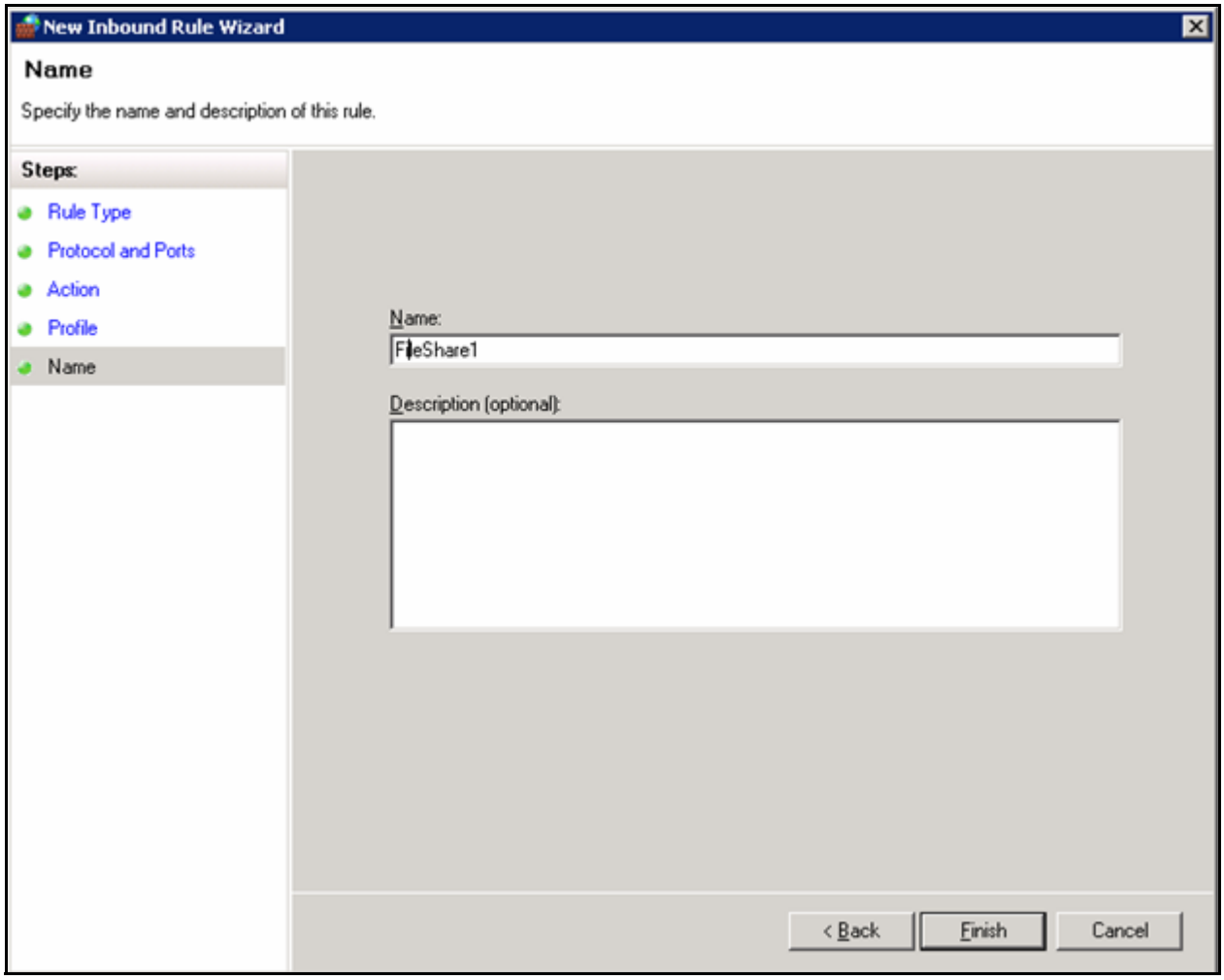
20. Choose **Allow the connection**.
21. Click **Next**.

The Profile window displays.



22. Choose all three options: **Domain**, **Private**, and **Public**.
23. Click **Next**.

The Name window displays.

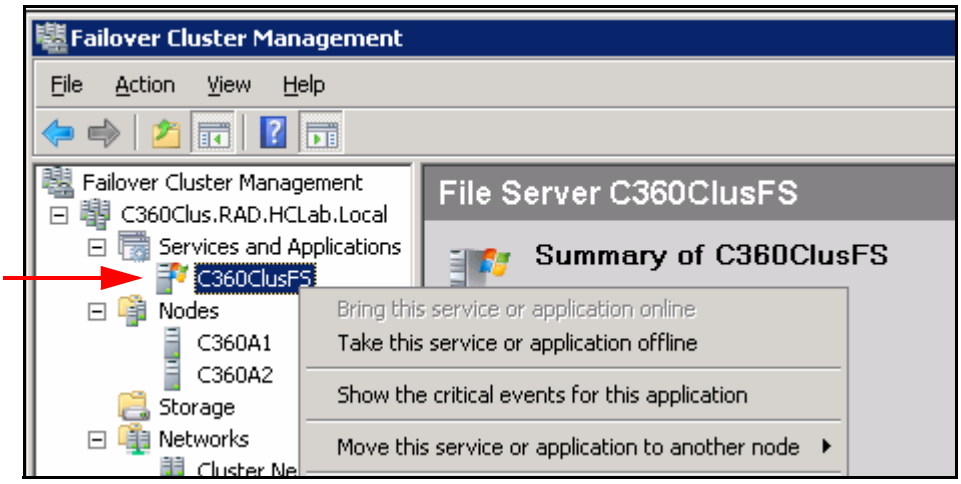


24. Click **Finish**.

Configure the File Server Service Properties

Refer to the Configure MS DTC Properties section starting on page 5-37 and configure the File Server Service properties, using the Failover Cluster Management application, in the same manner, setting the options for the particular site and Cluster requirements and preferences.

In the Failover Cluster Management application, substitute the name of the **PowerScribe 360 Application cluster** when using that procedure, as shown in the example below.



Manual Revision History

Note: In this table the most recent changes are first by date.

Date	Sec	Page	Change (Paragraph, Sentence, Figure, Table, etc.)	Initials
08/20/12	2 3	45 All	Removed WebDav for Windows 2008 Standard. That version is not supported. Microsoft Windows 2008 R2 or 2008 Enterpries R2 must be used. Added Section 3 for installing Microsoft SQL 2008 on clusters. All sections below were incriminated by one section number.	AFW
10/24/11	All	All	Major additions and rewrite of entire manual. Please delete older copies.	AFW
08/23/11	2	17	Added service role options for proper SQL installation.	AFW
08/02/11	All	All	Added new instructions for IIS and Network Discovery installations. Added instructions to disable IPv6 and set the machines to high performance. Edits made to many procedrues throughout the manual.	AFW
06/29/11	All	All	First Publish Date	AFW