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Technical Bulletin

Configuring a Windows Server 2003 Cluster as a Prinergy Tertiary Server

Overview

A Microsoft® Windows® Server 2003 cluster provides redundancy for a front-end server. When one cluster node fails, other cluster nodes can take over tasks that the failed node was performing. This document describes how to set up and configure a Windows Server 2003 cluster for use as a Prinergy® system tertiary server. Setup and configuration are the customer's responsibility. Windows Server 2003 clustering does not support File Services for Macintosh®. Mac OS® 9 clients cannot be used in a Prinergy system that uses a Windows 2003 cluster tertiary server.

Software Requirements

- Microsoft Windows Server 2003 Enterprise Edition or Windows 2003 Datacenter Edition
- Prinergy 3.1.0.3 or later software for Mac OS X Workshop client support (SMB connectivity)
- Cluster nodes must be in a domain environment.
- All nodes must be members of the same domain.
- All nodes must have the InSiteService account if the tertiary server is to be used with the Kodak InSite(TM) software in a DMZ configuration. Without this account, InSite will not be able to access jobs on the tertiary server.
- A cluster service account, a domain-level account that is a member of the local administrators group on each node, is required—a dedicated account is recommended.

Hardware Requirements

- The cluster hardware must be in the cluster service Windows Server Catalog. (http://www.microsoft.com/windows/catalog/server/)
- Two mass storage device controllers—a local system disk for the operating system to be installed on one controller, and a separate controller for the shared disks
- Two network adapters on each node in the cluster
- A shared storage device, with cables to connect it to the cluster nodes

Network Requirements

- A unique NetBIOS name
- Static IP addresses for all network interfaces on each node
- Domain environment
- All nodes must have at least two physically independent LANs for public and private communication.

Shared Disk Requirements

- All shared disks, including the quorum disk, must be attached to a shared bus.
- Shared disks must be on a different controller than the one used by the system drive.
- A dedicated disk (50 MB minimum) to use as the quorum device. A partition of at least 500 MB is recommended for optimal NTFS file system performance.
- All shared disks must be configured as basic disks.
- All shared disks must be configured as master boot record (MBR) disks on systems running 64-bit versions of Windows Server 2003.
- All partitions on the clustered disks must be formatted as NTFS.
- Hardware fault-tolerant RAID configurations are recommended for all disks.
- A minimum of two logical shared drives is recommended (quorum drive and data drive).

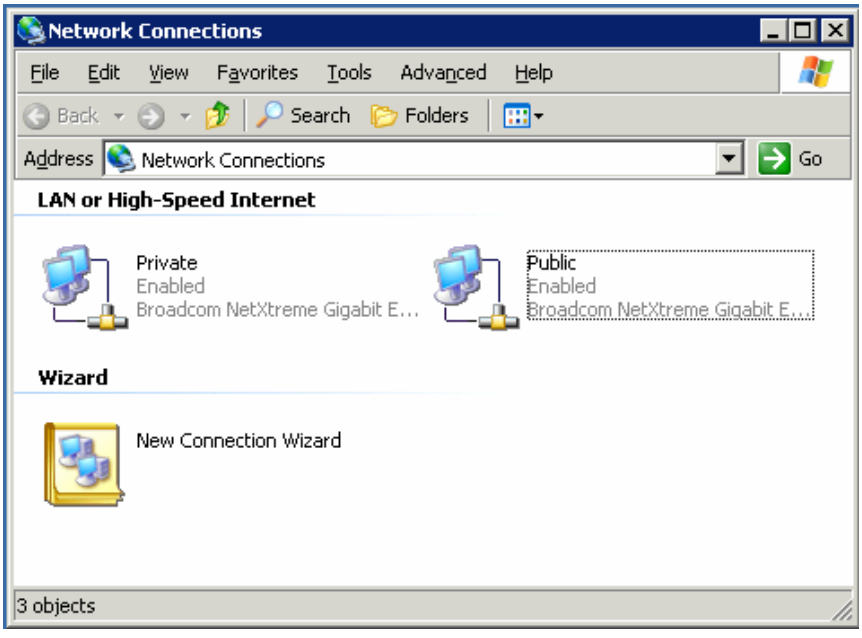
Cluster Installation

This procedure describes the installation of a two-node Windows 2003 cluster. It is assumed that Windows 2003 is already installed on both nodes.

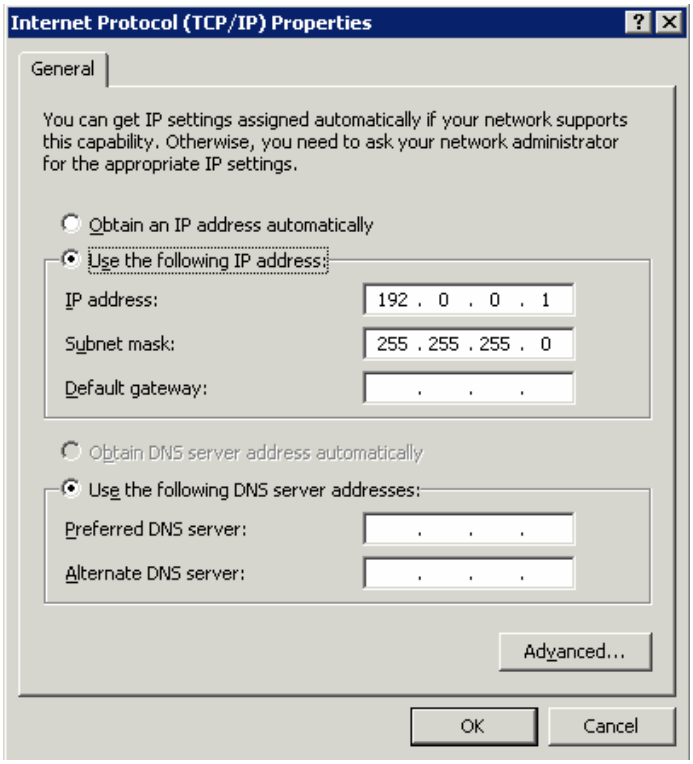
Setting up Networks

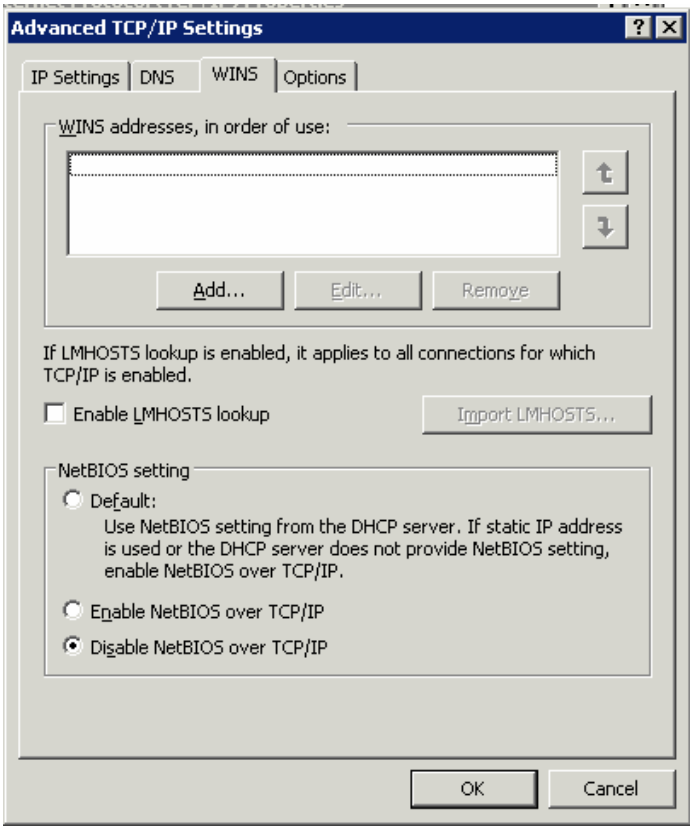
Each node requires two network adapters.

1. Configure the first network adapter to connect to the production network with a static IP address. In **Network Connections**, rename the first Local Area Connection (LAN) to **Public** for easier identification. Do this in both nodes.

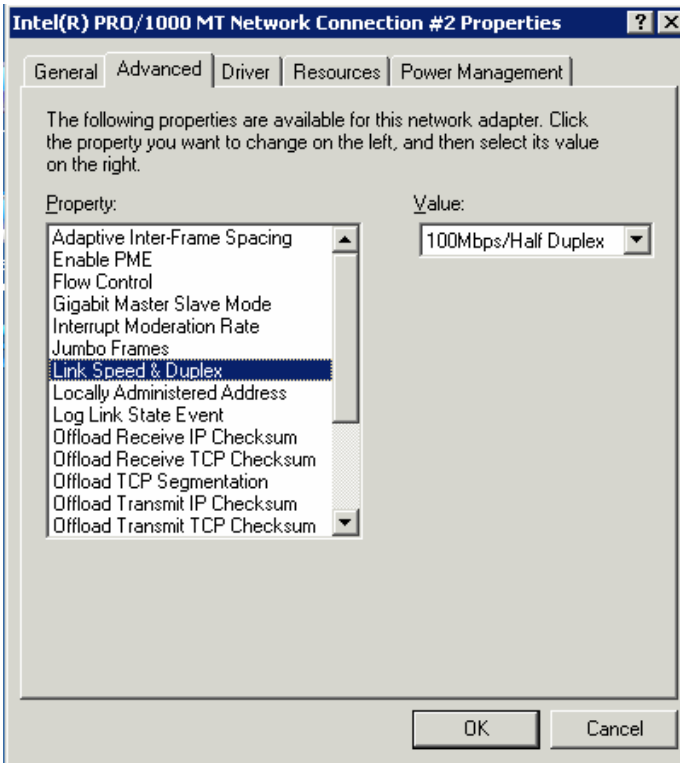


2. Configure the second network adapter on a separate network with another static IP address on a different subnet for private cluster communication.
   a. Ensure that the IP address is not on the same subnet or network as any other public network adapter.
   b. Do not enter any default gateway or DNS server addresses.
   c. On the **WINS** tab, verify that no values are defined. Select **Disable NetBIOS over TCP/IP** (see the following screenshots).
   d. You can use a crossover network cable to connect the two nodes via this network adapter.
   e. For easier identification, in **Network Connections**, rename the second Local Area Connection to **Private**. Do this in both nodes.





3. Configure the binding order of networks in both nodes in the following order:
   a. Public
   b. Private
4. Configure the network adapters in the Private LAN to have the same link speed and duplex mode. Do not use an auto-select setting for speed, because some adapters may drop packets while determining speed. You can set the link speed and duplex mode to **100Mbps/Half Duplex** for all adapters in the Private LAN.



Setting Up Shared Disks

Set up the shared disks with only the first node running; shut down the second node. Start the second node only after you install the cluster service on the first node. The shared disks may be corrupted if you start both nodes before the cluster service is installed on the first node.

Configuring Quorum Disk

The quorum disk is used to store cluster configuration database checkpoints and log files that help manage the cluster and maintain consistency. Microsoft recommends the following quorum disk procedures:

- Create a logical drive with a minimum size of 50 MB to be used as a quorum disk (500 MB is optimal for NTFS).
- Dedicate a separate disk as a quorum resource.
- Use a volume on a hardware RAID array for the quorum disk.
- Do not use the quorum disk for anything other than cluster management.
- Q is the standard quorum disk drive letter.

  To set up drive Q:

  1. Ensure that only the first node is turned on.
  2. Right-click **My Computer** and select **Manage > Storage**.
  3. Double-click **Disk Management**.
  4. If the Write Signature and Upgrade Disk Wizard appears, select **Write Signature** but *do not* upgrade the disk to dynamic. Click **Next**.
  5. Right-click **Unallocated disk space**.
  6. Select **New Partition**.
  7. The New Partition Wizard starts. Click **Next**.

8. Select **Primary partition** type. Click **Next**.
9. The default is set to maximum size for the partition size. Click **Next**. (Multiple logical disks are recommended over multiple partitions on one disk.)
10. Use the drop-down list to change the drive letter. Use drive letter **Q** for the quorum disk.
11. Format the partition using NTFS. Label the volume as **Drive Q**. Labeling the volume can be helpful during troubleshooting.

Configuring Other Shared Disks

Other shared disks are needed to host the production files. To configure a shared disk, follow the configuring quorum disk procedure, but use drive letter R, S, and so on.

Verifying Disk Access and Functionality

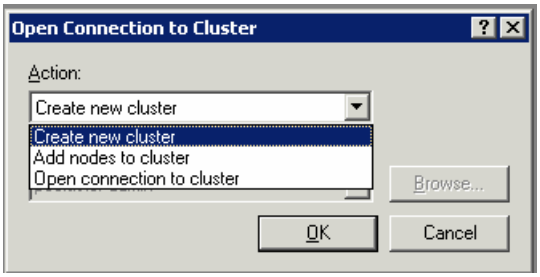
1. After configuring the shared disks, check that the newly created volumes are accessible from the first node.
2. Verify that files can be created and copied into the new volumes.
3. Verify that the files in the new volumes can be accessed.
4. Turn off the first node.
5. Turn on the second node and verify that the new volumes are accessible.
6. Verify that files can be created and copied into the new volumes.
7. Verify that the files in the new volumes can be accessed.
8. Turn off the second node.
9. Turn on the first node.

Configuring the Cluster Service

The second node should be turned off when configuring the cluster service on node one.

Configuring the First Node

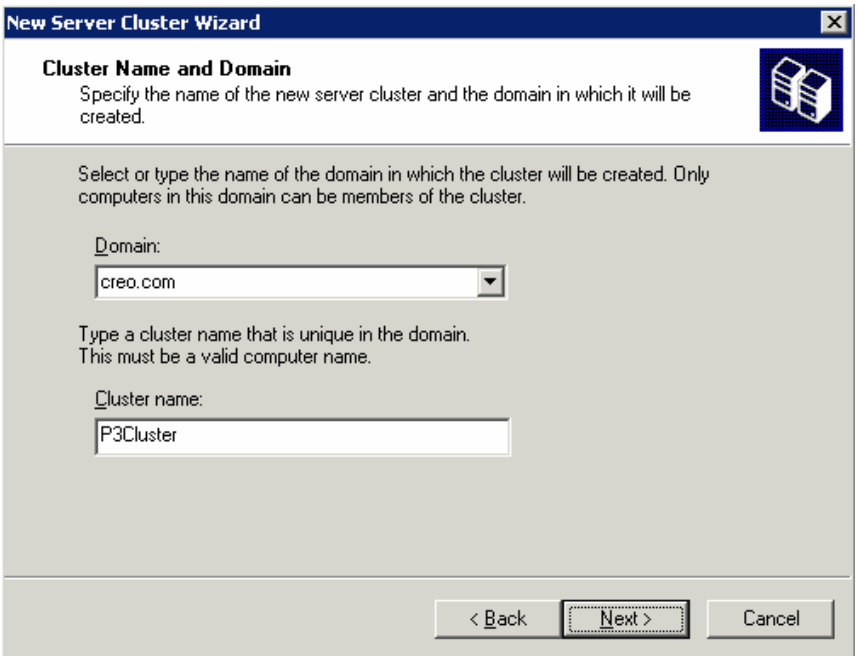
1. Log on to node one using a domain account with local administrative privileges.
2. Run the Cluster Administrator (**Start > All Programs > Administrative Tools > Cluster Administrator**).
3. In the Open Connection to Cluster dialog box **Action** list, select **Create new cluster** and click **OK**.



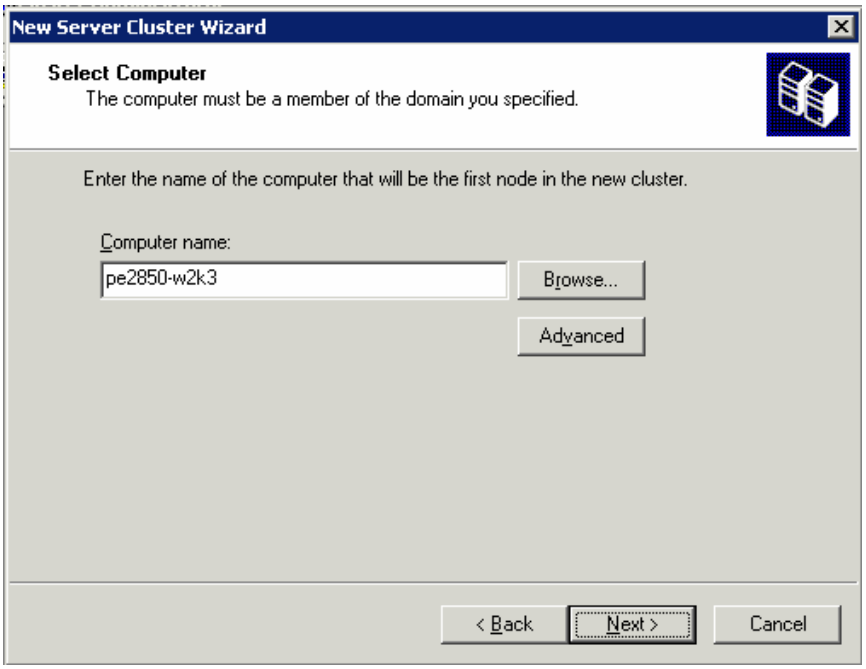
4. The New Server Cluster Wizard starts. Verify that you have all the necessary information to configure the cluster as listed in the Welcome page. Click **Next**.



5. If you have more than one domain in your network, in the **Domain** list, select the domain in which the cluster will be created. Type a unique NetBIOS name for the **Cluster name**. Click **Next**.

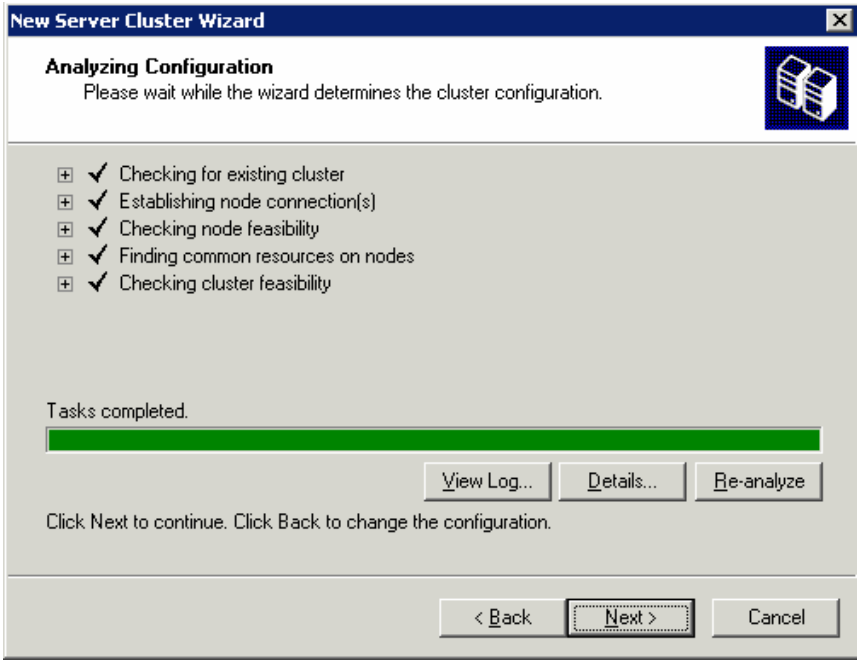


6. In the **Computer name** box, type the name of the first node server.

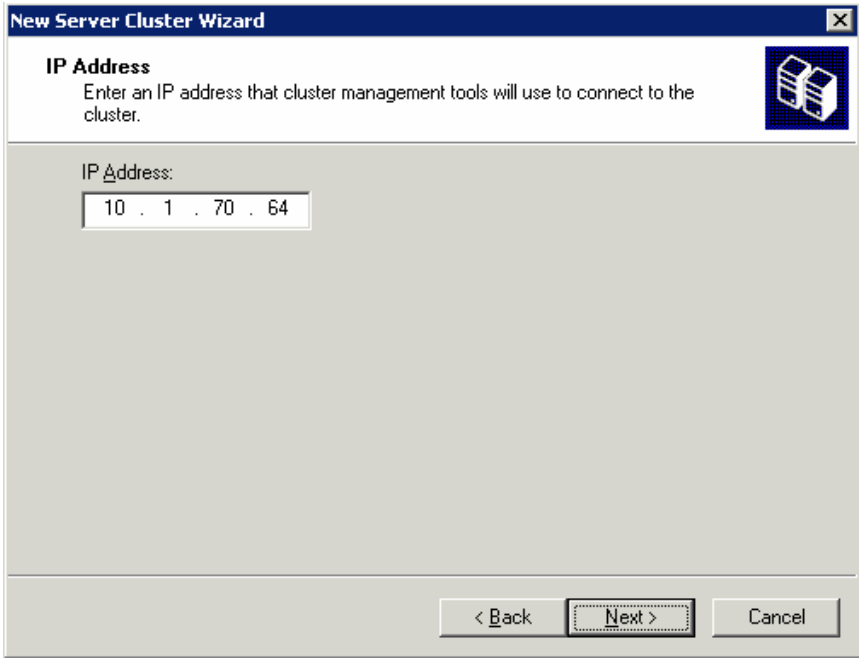


The Advanced option is not covered in this document. See the Windows Server 2003 clustering documentation for information on this option.

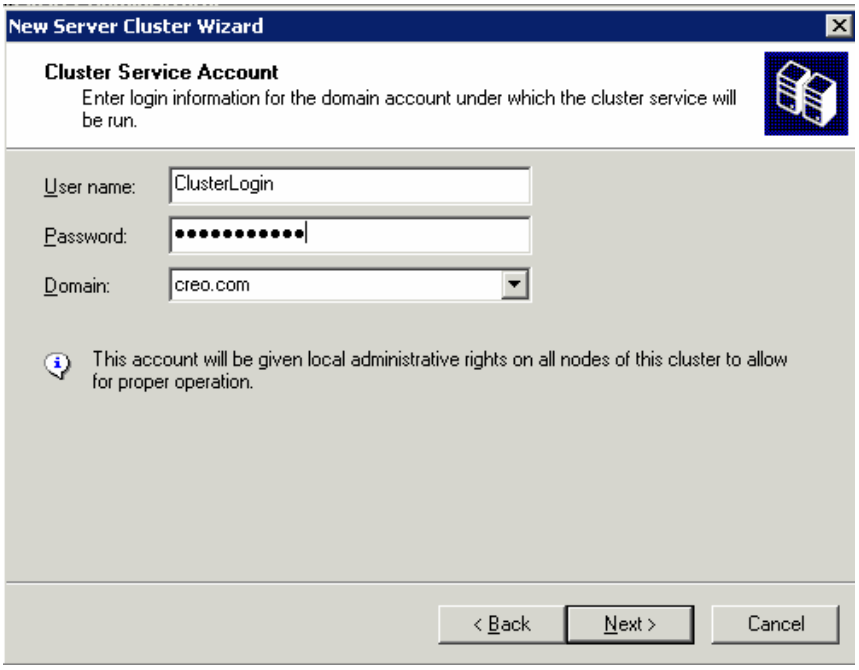
7. Click **Next**. The setup process will check the configuration for possible hardware or software problems. Review any warnings or error messages. If there are no errors, click **Next**.



8. Type a unique IP address that will be used for cluster management. This cluster IP address should be only used for administrative purposes and not for client connections. In the following example, 10.1.70.64 is used. Click **Next**.

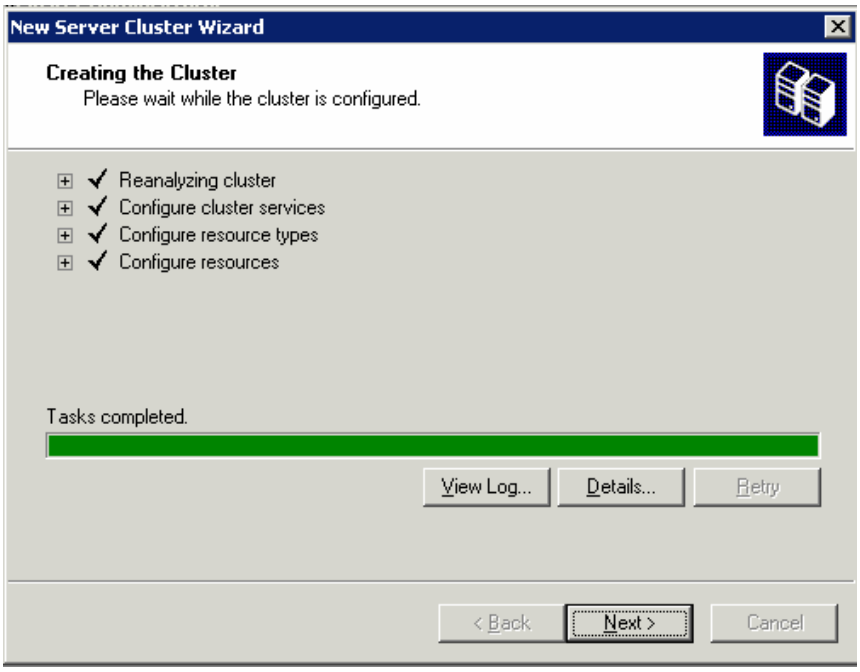


9. In the **User name** and **Password** boxes, type the user name and password of the cluster service account that you created for this cluster. In the **Domain** list, select the domain name. Click **Next**.



10. Review the proposed cluster configuration to verify that the information that will be used to create the cluster is correct. Click **Next**.

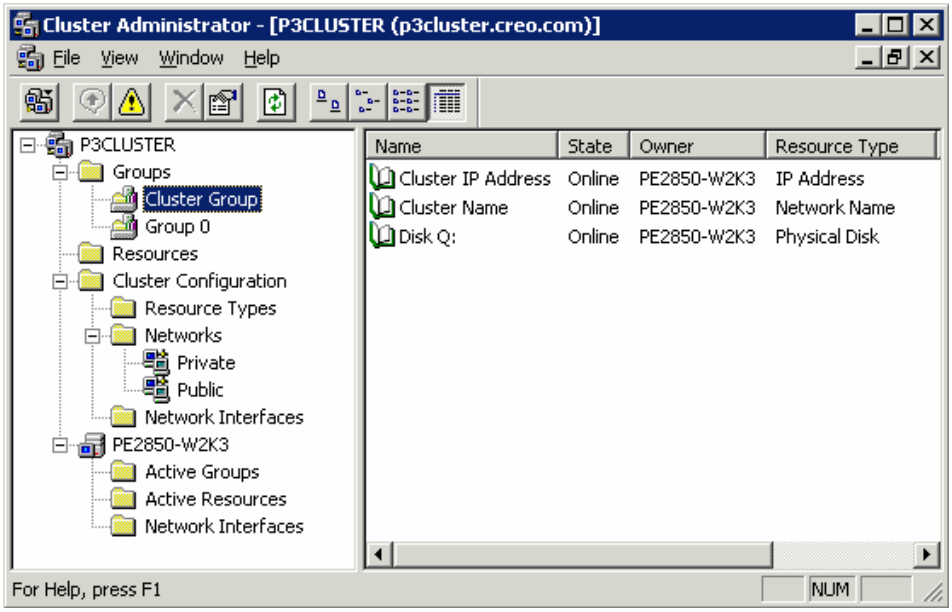
11. Verify that all the steps in the creation of the cluster are successful. Check any warning or error by clicking the plus sign beside it. If the cluster creation failed, correct the problem and retry cluster creation. If successful, click **Next**.



12. Click **Finish** to complete the cluster installation.



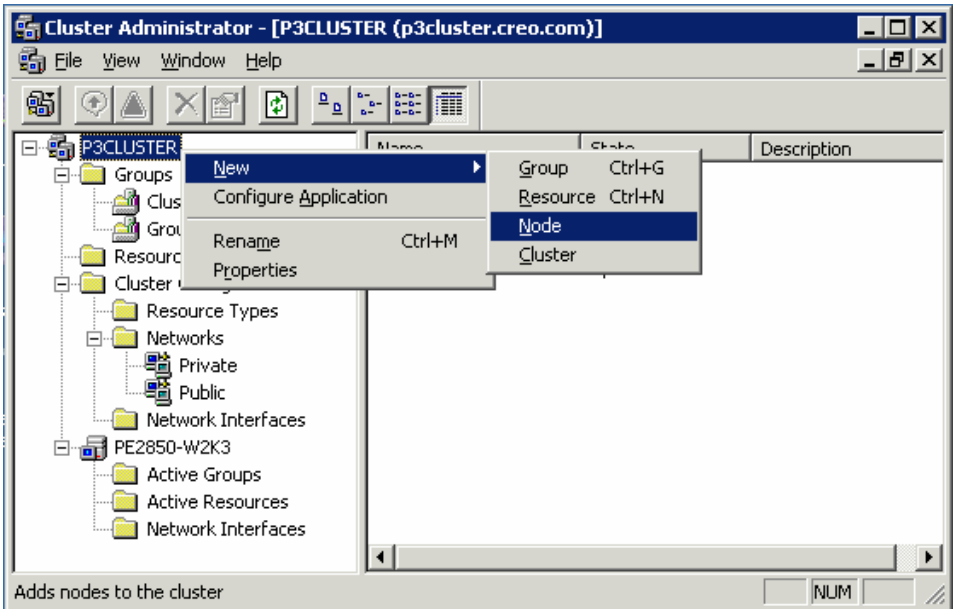
13. Verify that all cluster resources appear online successfully, as shown next.



Configuring the Second Node

When configuring the second node, turn on the first node and the shared storage.

1. Log on to node one with a domain account that has local administrative privileges on all nodes.
2. Open Cluster Administrator on node one.
3. Right-click the cluster and select **New > Node**.



4. The Add Nodes Wizard will start. Click **Next**.
5. On the Select Computer page, type the **Server name** of the second node. Click **Add**. Click **Next**.

6. The setup process will check the configuration for possible hardware or software problems. Review any warnings or error messages. If there are no errors, click **Next**.
7. Type the password for the cluster service account. Click **Next**.
8. Review the proposed cluster configuration to verify that the information that will be used to create the cluster is correct. Click **Next**.
9. Verify that all the steps in the configuration of the cluster are successful. Check any warning or error by clicking the plus sign beside it. If the cluster configuration failed, correct the problem and retry cluster creation. If successful, click **Next**.
10. Click **Finish** to complete the installation.

Configuring Clustered Storage

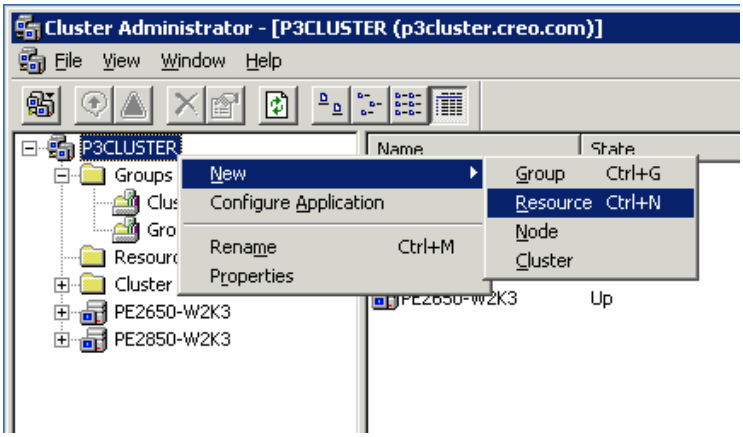
1. Start Cluster Administrator.
2. Check whether any disks are listed that won't be used as shared storage.
3. Remove these disks by right-clicking them and selecting **Delete**.

Adding Resources to the Cluster

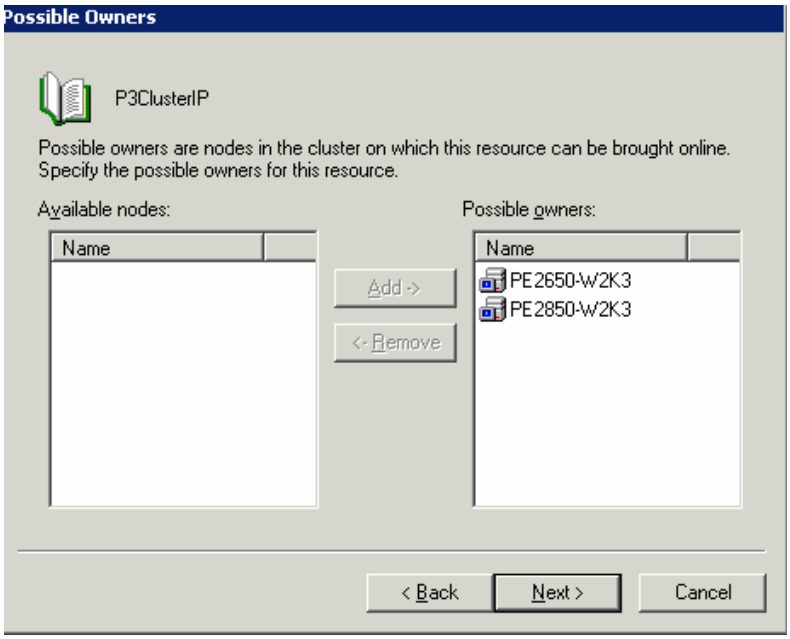
Adding an IP Address

You must add an IP address resource to which clients can connect.

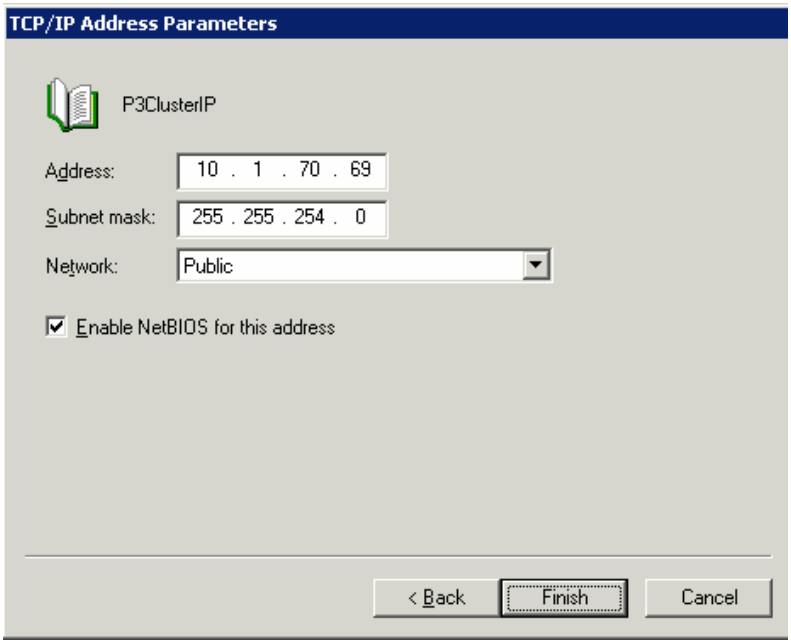
1. Start Cluster Administrator.
2. Right-click the cluster and select **New > Resource**.
3. Type a name and description for the IP address resource. In the **Resource** type list, select **IP address**. Select the group where this resource will belong (do not use Cluster Group). The shared storage that will be used as the job volume should be in the same group. Click **Next**.



4. Add both nodes as possible owners of the resource. Click **Next**.



5. On the Dependencies page, leave **Resource dependencies** empty. Click **Next**.
6. Type the TCP/IP **Address** and **Subnet mask**. Click **Finish**.



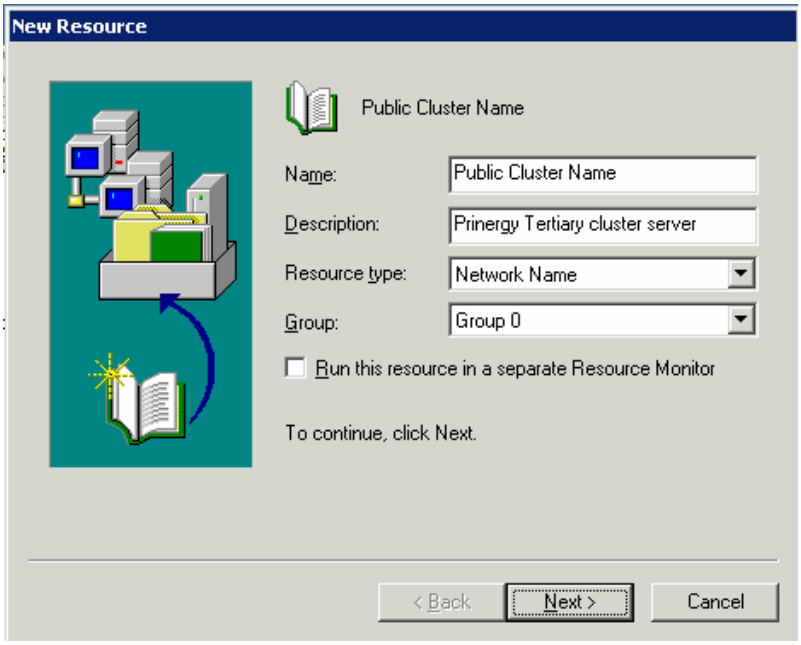
A dialog box should appear with the message that the resource was created successfully.

7. Bring the resource online by right-clicking it and selecting **Bring online**.

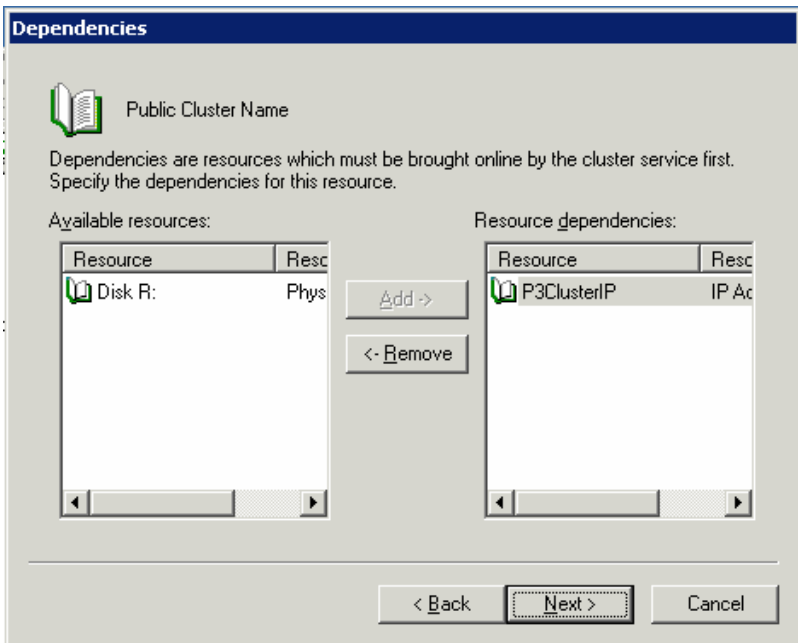
Adding a Network Name

You should configure a network name for the cluster group. This is the name that will be configured in Prinergy as the tertiary server name.

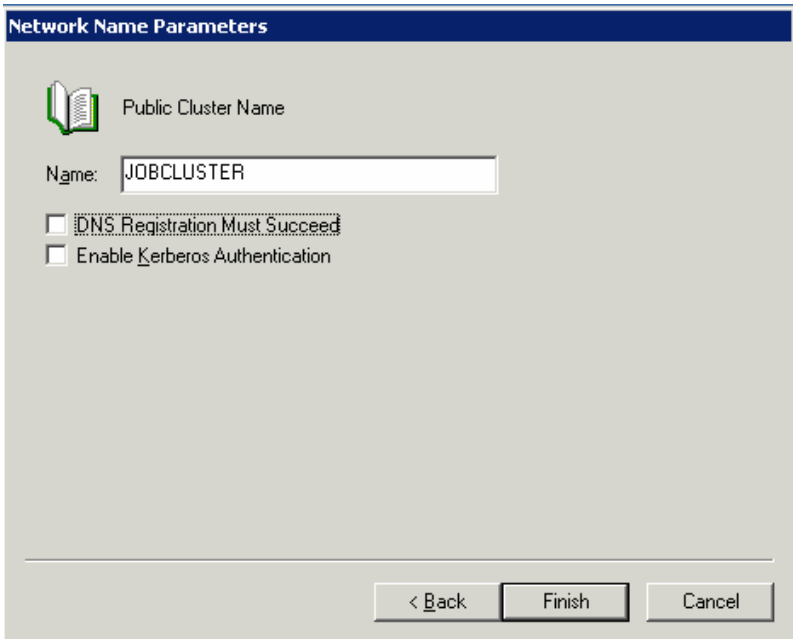
1. Right-click the **Group** where the resource will belong. Select **New > Resource**.
2. Type the resource **Name** and **Description**. In the **Resource type** list, select **Network Name**. Click **Next**.



3. Add both nodes as possible owners of the resource. Click **Next**.
4. On the **Dependencies** page, add the IP address resource that you created in the previous section. Click **Next**.



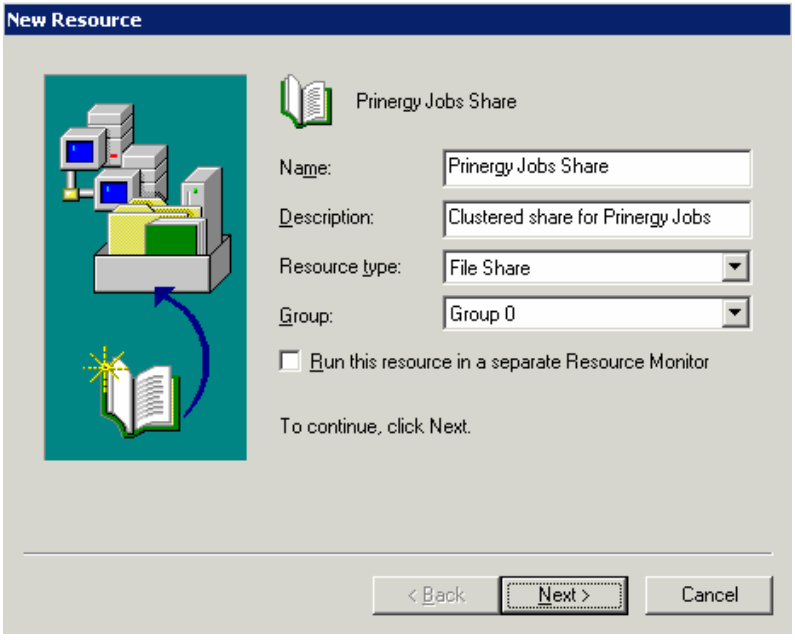
5. Type a unique NetBIOS name for the network name resource. The name can be up to 15 characters long. Click **Finish**.



6. A dialog box should appear with the message that the resource was created successfully.
7. Bring the resource online by right-clicking it and selecting **Bring online**.

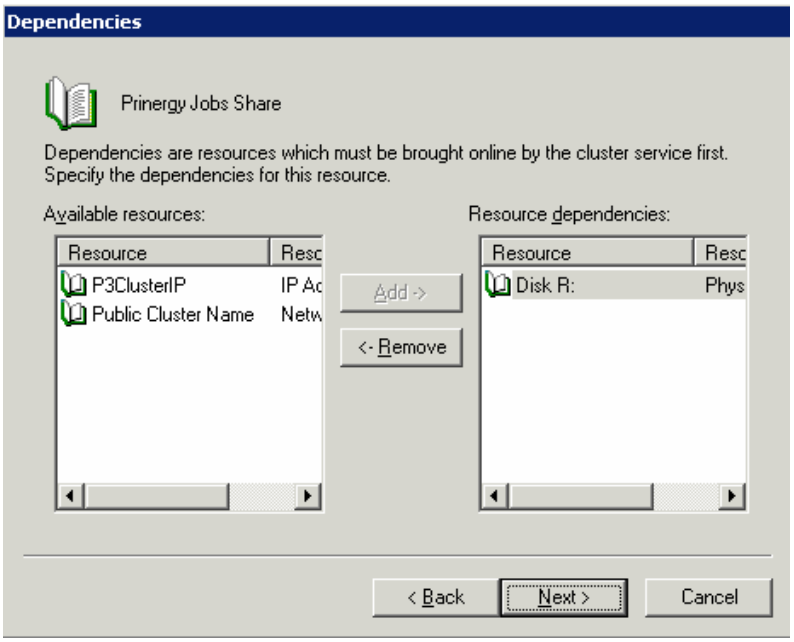
Adding a File Share Resource

1. Add new resource using **Resource type > File Share**.
2. Type the resource **Name** and **Description**. Click **Next**.

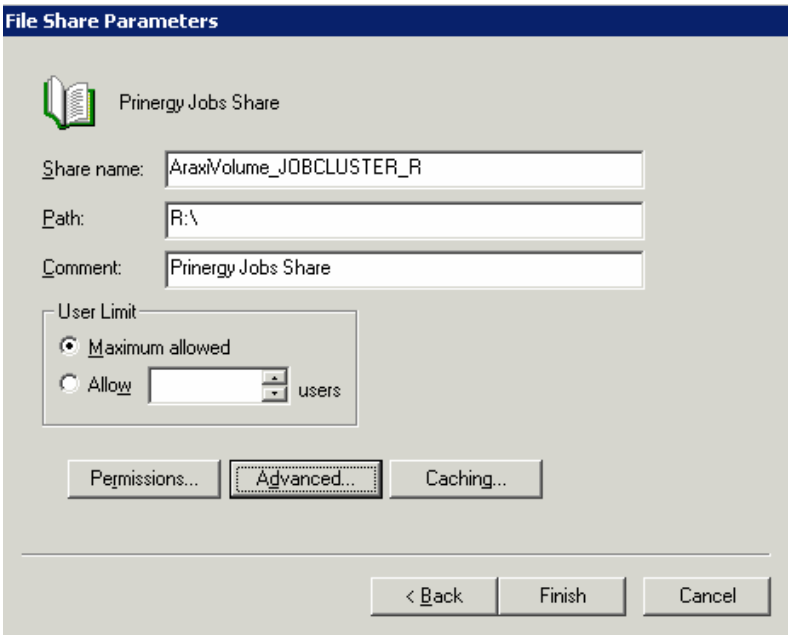


3. Add both nodes as possible owners of the resource. Click **Next**.

4. On the **Dependencies** page, add the shared physical disk resource that will host this share. Click **Next**.



5. Type the **Share name** (with a well-known Prinergy prefix—usually **AraxiVolume**), **Path**, and **Comment**. Click **Permissions** to modify permissions to allow full access to the Araxi service logon account. You may also need to modify permissions for other users. Click **Finish**.



A dialog box should appear with the message that the resource was created successfully.

6. Bring the resource online by right-clicking it and selecting **Bring online**.

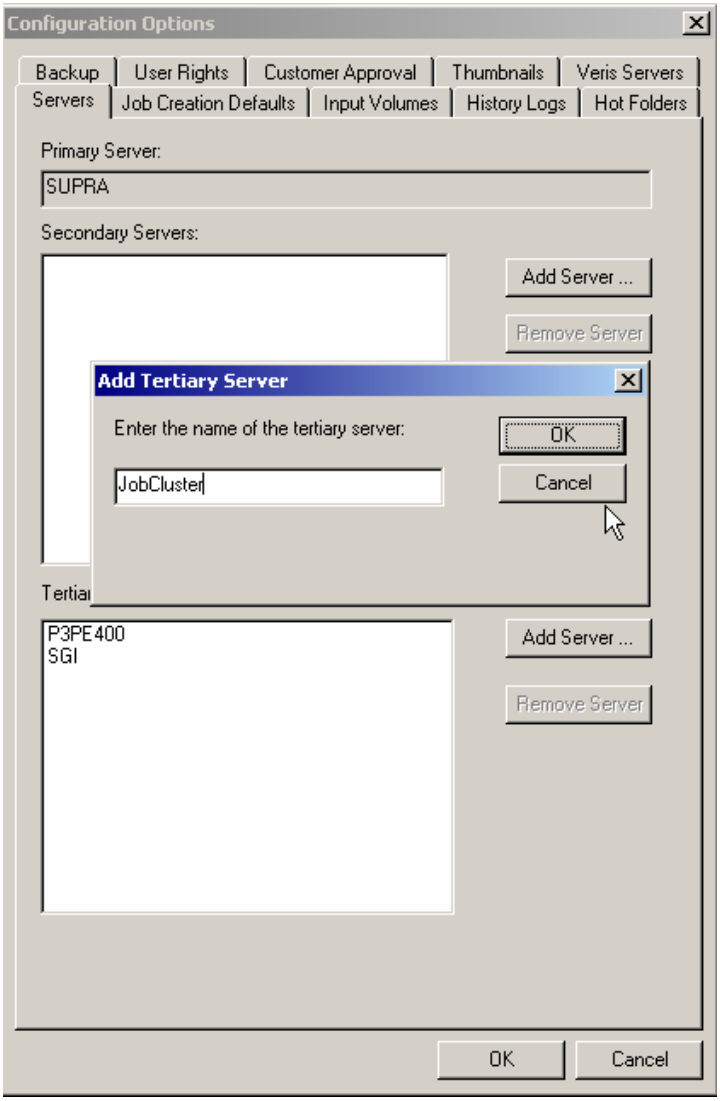
Configuring the Cluster as a Tertiary Server

Microsoft Server 2003 clustering does not support File Services for Macintosh. Mac OS X or Windows Workshop clients are required for this system.

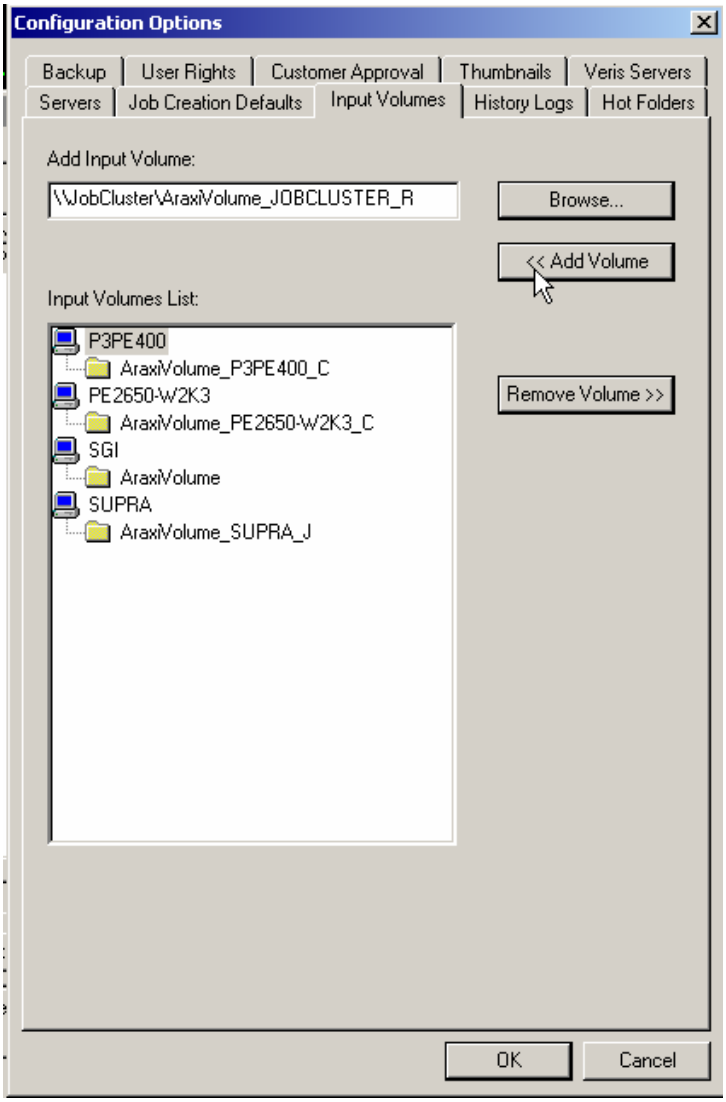
The Prinergy system must be configured with default connection for Mac OS X clients set to SMB instead of AFP. See the *Prinergy Administration Guide* for more information.

Use the following procedure to add the cluster to the Prinergy system as a tertiary server:

1. Add a **Jobs** folder in the cluster job share.
2. On the primary server, start Prinergy Administrator.
3. Select **Tools > Configure System**.
4. In **Configuration Options > Servers > Tertiary Servers**, select **Add Server**. Type the cluster network name. Click **OK**.



5. On the **Input Volumes** tab, in the **Add Input Volume** box, type the UNC path to the cluster share (**\\JobCluster\AraxiVolume_JOBCLUSTER_R** in this procedure). Click **Add Volume**.



6. Click **OK**.
7. Restart any running Prinergy Workshop clients to refresh their server and share list.
8. Test the tertiary server by running Prinergy jobs on it. The cluster server can be used for production after sufficient tests have been completed and confidence in the system has been established.

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