Acer Altos® Server

Installation and Configuration Guide for Cluster Services running on Microsoft® Windows 2000 Advanced Server using Acer Altos Servers

This installation guide provides instructions for installing the Cluster Service on Acer Altos servers running Microsoft Windows® 2000 Advanced Server. The guide describes the process of installing and configuring Cluster Services on cluster nodes.

Microsoft Windows® 2000 Advanced Server supports two node per server cluster while Windows 2000 Datacenter Server supports four node per server clustering. This installation guide provides instructions for installing Cluster Services and configuring a two node server cluster under Microsoft Windows 2000 Advanced Server.

CONTENTS

INTRODUCTION

This installation guide provides information and procedures needed to install, configure, and test Cluster Services on Acer Altos Servers running Microsoft Windows® 2000 Advanced Server. This guide contains configuration and installation information only.

Who should read this Guide

This configuration guide is intended for:

- Acer field site engineers who are setting up and installing cluster services for the first time.
- Acer resellers who are providing technical support to customers

Contents of this Guide

This guide contains the following chapters:

1. System Requirements – presents a list of requirements you must meet before you can install the software.
2. Configuration – presents a list of tasks you must perform before you begin your installation.
3. Installation – presents step-by-step procedures for installing the cluster service on Windows 2000 Advanced Server
4. Post Configuration – presents a list of tasks you must perform to make sure the cluster works with the cluster nodes

What is Microsoft's Cluster Service?

A server cluster is a group of independent servers running a Cluster service and working collectively as a single system. Server clustering provides high-availability, scalability, and manageability of resources and applications by grouping multiple servers running Microsoft® Windows 2000 Advanced Server or Windows 2000 Datacenter Server.

While a Cluster service does not guarantee non-stop operation, it provides availability sufficient for most mission-critical applications. Cluster services can monitor applications and resources, automatically recognize and recover from disk failure or power outages. This provides greater flexibility in managing the workload within a cluster, and improves overall availability of the system.

SYSTEM REQUIREMENTS

Before installing the cluster service, the following minimum system requirements must be met:

Hardware

Two Acer Altos Servers acting as cluster nodes must be installed, meeting the following hardware requirements before configuration as cluster nodes:

- Host Bus Adapters – Fiber Channel or SCSI Interface
- Network Interface Cards - One or more Network Interface Card (two is recommended)
- HDD
- One Acer Altos Server to act as the domain controller. This server can meet any specifications within the Microsoft domain controller guideline.

Software

- Microsoft Windows 2000 Advanced Server
- Service Pack 2 (Available for download from Microsoft's website at http://www.microsoft.com/windows2000/downloads/servicepacks/sp2/)
- Cluster Service (on the Windows 2000 Advanced Server CD-ROM)

*Note: **This configuration has met the guidelines set for HCT***

Storage

If a storage server is used, it must meet the following minimum requirements:

- RAID controller (optional)
- Fibre Channel or SCSI Interface Storage
- Fibre Hub, GBICs, and Fibre Cables for Fibre Channel Access
- Hard Drive(s) for cluster applications

Topology

If using fiber storage is used, network topology must be capable of handling the technology. Ensure that the following basic requirements are met:

- Hub/Switch for the public network and domain controller
- A cross-over network cable or Hub/Switch for interconnection

Sizing Guidelines

Server memory requirements depend on the number of concurrent connections to the cluster. The following table provides the minimum recommended memory requirements for concurrent users connected to the server.

Number of concurrent users	RAM
Up to 5	96MB
Up to 25	128MB
Up to 50	160MB

Swap Space

Swap space should be equal to double the amount of system RAM

Disk Space

This section provides the minimum amount of disk space required by Windows 2000 Advanced Server. The actual amount depends on the size of the cluster. Use the guidelines below to plan for systems with a large number of concurrent users.

Component	Minimum Requirement (Suggested)
Windows 2000 Advanced Server	1.2GB
Service Pack 2	440MB
Cluster Service	2.5MB

HCT REQUIREMENTS

In order to meet Microsoft's certification and standards, Acer must qualify for the Hardware Compatibility Testing guidelines set by Microsoft. The following system configuration has met those standards and can be used as a benchmark for projects, tests, or customer support.

The first configuration highlights the *HCT version*, *Server Configuration*, and *Shared Storage* using the Acer *Altos 1200*.

Configuration 1

Acer Altos 1200 with FS710

HCT version	HCT 9.502 (HCT 9.5 upgrade to 9.502)
Server Configuration	
Model	2 * Acer Altos 1200
OS	Windows 2000 Advanced Server (Service Pack 1)
System BIOS	R04-C4
CPU	2 * PIII 866/133 MHZ w/ 256KB of L2 cache
Memory	4 * PC133 256MB of SDRAM
Internal Disk Controller	Adaptec AIC-7899 on board BIOS: v2.57 Driver: Microsoft Windows 2000 Driver
Fibre Channel Disk Controller	QLogic QLA2200/66 Fibre Channel Adapter BIOS v1.61, Driver: QLogic v.7.04.02
Network Adapter	1 * Intel 82559 onboard 1 * Intel 82559 NIC
Internal Hard Disk	1 * IBM UltraStar DDYS-T18350 (18.2GB, Ultra160, 10000RPM)
Share Storage Configuration	
Model	Acer Altos FS710
RAID Controller	none
Hard Disk	2 * Seagate ST318304FC Fibre Channel Disk
Others	
Network Switch	2 * Acer SOHO Switch 6008
Fibre Hub	1 * Vixel 1000 Hub
GBICs	3 * GBICs
Fibre Cable	3 * Fibre Cables
Note	
Use QLA2200(BIOS ver. 1.61) install driver ver. 7.04.02	

The second configuration highlights the *HCT version*, *Server Configuration*, and *Shared Storage* using the Acer *Altos 1200LP*

Configuration 2

Acer Altos 1200LP with FS710

HCT version	HCT 9.502 (HCT 9.5 upgrade to 9.502)
Server Configuration	
Model	2 × Acer Altos 1200LP
OS	Windows 2000 Advanced Server (Service Pack 1)
System BIOS	R01-C4
CPU	2 × PIII 800/133 MHZ w/ 256KB of L2 cache
Memory	1 × PC133 256MB of SDRAM
Internal Disk Controller	Adaptec AIC-7899 on board BIOS: v2.57 Driver: Microsoft Windows 2000 Driver
Fibre Channel Disk Controller	QLogic QLA2200/66 Fibre Channel Adapter BIOS v1.61, Driver: QLogic v.7.05.05
Network Adapter	2 × Intel 82559 onboard
Internal Hard Disk	1 × IBM UltraStar DDYS-T18350 (18.2GB, Ultra160, 10000RPM)
Share Storage Configuration	
Model	Acer Altos FS710
RAID Controller	None
Hard Disk	2 × Seagate ST318304FC Fibre Channel Disk
Others	
Network Switch	2 × Acer SOHO Switch 6008
Fibre Hub	1 × Vixel 1000 Hub
GBICs	3 × GBICs
Fibre Cable	3 × Fibre Cables
Note	
Use QLA2200 (BIOS version. 1.54). First install driver version 7.05.05 then upgrade to BIOS version 1.61. You cannot use BIOS version. 1.61 to install with driver version 7.05.05, this can only be done using driver version 7.04.02.	

The third configuration highlights the *HCT version*, *Server Configuration*, and *Shared Storage* using the Acer *Altos 22000*

Configuration 3

Acer Altos 22000 with FS710

HCT version	HCT 9.502 (HCT 9.5 upgrade to 9.502)
Server Configuration	
Model	2 × Acer Altos 22000
OS	Windows 2000 Advanced Server (Service Pack 1)
System BIOS	R01-B2
CPU	4 × PIII Xeon 700/100 MHZ w/ 1024KB of L2 cache
Memory	16 × PC100 128MB of SDRAM
Internal Disk Controller	Adaptec AIC-7899 on board BIOS: v2.57 Driver: Microsoft Windows 2000 Driver
Fibre Channel Disk Controller	QLogic QLA2200/66 Fibre Channel Adapter BIOS v1.54, Driver: QLogic v.7.05.05
Network Adapter	1 × Intel 82559 onboard 1 × Intel 82559 NIC
Internal Hard Disk	1 × IBM UltraStar DDYS-T18350 (18.2GB, Ultra160, 10000RPM)
Share Storage Configuration	
Model	Acer Altos FS710
RAID Controller	None
Hard Disk	2 × Seagate ST318304FC Fibre Channel Disk
Others	
Network Switch	2 × Acer SOHO Switch 6008
Fibre Hub	1 × Vixel 1000 Hub
GBICs	3 × GBICs
Fibre Cable	3 × Fibre Cables

The Fourth configuration highlights the *HCT version*, *Server Configuration*, and *Shared Storage* using the Acer *Altos 22000*

Configuration 4

Acer Altos 22000 RS710 with LSI MegaRAID Elite 1600

HCT version	HCT 9.502 (HCT 9.5 upgrade to 9.502)
Server Configuration	
Model	2 × Acer Altos 22000

OS	Windows 2000 Advanced Server (Service Pack 1)
System BIOS	R01-B2
CPU	4 × PIII Xeon 700/100 MHZ w/ 1024KB of L2 cache
Memory	16 × PC100 128MB of SDRAM
Internal Disk Controller	Adaptec AIC-7899 on board BIOS: v2.57 Driver: Microsoft Windows 2000 Driver
SCSI Channel Disk Controller	LSI MegaRAID Elite 1600 RAID controller BIOS:v3.11, Driver:v5.21.0, Firmware:v.L148
Network Adapter	1 × Intel 82559 onboard 1 × Intel 82559 NIC
Internal Hard Disk	1 × Seagate ST318404LC (18.2GB, Ultra160, 10000RPM)
Share Storage Configuration	
Model	Acer Altos RS710
RAID Controller	None (use PCI RAID controller)
Hard Disk	5 × Seagate ST318404LC 5 × IBM DPSS-318350 (18.2GB, Ultra160, 10000RPM) Use 10 HDD to create 3 logical drives (2 to RAID 1, 3 to RAID 5, and 5 to RAID 5)
SCSI Cable	2 × internal – external SCSI cables (orange) 1 × internal – internal SCSI cables (orange)
SAF-TE	Two
Others	
Network Switch	2 × Acer SOHO Switch 6008
SCSI Cable	2 × HVDCI 68pin – standard 68pin SCSI cables 2 × standard 68pin – standard 68pin SCSI cables
Terminator	Two LSI Terminator Box 437

The Fifth configuration highlights the *HCT version*, *Server Configuration*, and *Shared Storage* using the Acer *Altos 22000*

Configuration 5

Acer Altos 22000 RS710 with LSI MegaRAID Enterprise 1600

HCT version	HCT 9.502 (HCT 9.5 upgrade to 9.502)
Server Configuration	
Model	2 × Acer Altos 22000
OS	Windows 2000 Advanced Server (Service Pack 1)
System BIOS	R01-B2
CPU	4 × PIII Xeon 700/100 MHZ w/ 1024KB of L2 cache
Memory	16 × PC100 128MB of SDRAM
Internal Disk Controller	Adaptec AIC-7899 on board BIOS: v2.57 Driver: Microsoft Windows 2000 Driver
SCSI Channel Disk Controller	LSI MegaRAID Enterprise 1600 RAID controller BIOS:v3.09, Driver:v5.16.0, Firmware:v.J148
Network Adapter	1 × Intel 82559 onboard 1 × Intel 82559 NIC
Internal Hard Disk	1 × Seagate ST318404LC (18.2GB, Ultra160, 10000RPM)
Share Storage Configuration	
Model	Acer Altos RS710
RAID Controller	None (use PCI RAID controller)
Hard Disk	5 × Seagate ST318404LC (18.2GB, Ultra160, 10000RPM) Use 5 HDD to create 2 logical drives (2 to RAID 1, 3 to RAID 5)
SCSI Cable	2 × internal – external SCSI cables (orange) 1 × internal – internal SCSI cables (orange)
SAF-TE	Two
Others	
Network Switch	2 × Acer SOHO Switch 6008
SCSI Cable	2 × HVDCI 68pin – standard 68pin SCSI cables 2 × standard 68pin – standard 68pin SCSI cables
Terminator	Two LSI Terminator Box 437

The Sixth configuration highlights the *HCT version*, *Server Configuration*, and *Shared Storage* using the Acer *Altos 1200LP*

Configuration 6

Acer Altos 1200LP RS710 with LSI MegaRAID Elite 1600

HCT version	HCT 9.502 (HCT 9.5 upgrade to 9.502)
Server Configuration	
Model	2 × Acer Altos 1200LP
OS	Windows 2000 Advanced Server (Service Pack 1)
System BIOS	R01-C4
CPU	2 × PIII 800/133 MHZ w/ 256KB of L2 cache
Memory	1 × PC133 256MB of SDRAM
Internal Disk Controller	Adaptec AIC-7899 on board BIOS: v2.57 Driver: Microsoft Windows 2000 Driver
SCSI Channel Disk Controller	LSI MegaRAID Elite 1600 RAID controller BIOS:v3.11, Driver:v5.21.0, Firmware:v.L148
Network Adapter	2 × Intel 82559 onboard
Internal Hard Disk	1 × Seagate ST318404LC (18.2GB, Ultra160, 10000RPM)
Share Storage Configuration	
Model	Acer Altos RS710
RAID Controller	None (use PCI RAID controller)
Hard Disk	5 × Seagate ST318404LC (18.2GB, Ultra160, 10000RPM) Use 5 HDD to create 2 logical drives (2 to RAID 1, 3 to RAID 5)
SCSI Cable	2 × internal – external SCSI cables (orange) 1 × internal – internal SCSI cables (orange)
SAF-TE	Two
Others	
Network Switch	2 × Acer SOHO Switch 6008
SCSI Cable	2 × HVDCI 68pin – standard 68pin SCSI cables 2 × standard 68pin – standard 68pin SCSI cables
Terminator	Two LSI Terminator Box 437

The Seventh configuration highlights the *HCT version*, *Server Configuration*, and *Shared Storage* using the Acer *Altos 1200LP*

Configuration 7

Acer Altos 1200LP RS710 with LSI MegaRAID Enterprise 1600

HCT version	HCT 9.502 (HCT 9.5 upgrade to 9.502)
Server Configuration	
Model	2 × Acer Altos 1200LP
OS	Windows 2000 Advanced Server (Service Pack 1)
System BIOS	R01-C4
CPU	2 × PIII 800/133 MHZ w/ 256KB of L2 cache
Memory	1 × PC133 256MB of SDRAM
Internal Disk Controller	Adaptec AIC-7899 on board BIOS: v2.57 Driver: Microsoft Windows 2000 Driver
SCSI Channel Disk Controller	LSI MegaRAID Enterprise 1600 RAID controller BIOS:v3.09, Driver:v5.16.0, Firmware:v.J148
Network Adapter	2 × Intel 82559 onboard
Internal Hard Disk	1 × Seagate ST318404LC (18.2GB, Ultra160, 10000RPM)
Share Storage Configuration	
Model	Acer Altos RS710
RAID Controller	None (use PCI RAID controller)
Hard Disk	5 × Seagate ST318404LC (18.2GB, Ultra160, 10000RPM) Use 5 HDD to create 2 logical drives (2 to RAID 1, 3 to RAID 5)
SCSI Cable	2 × internal – external SCSI cables (orange) 1 × internal – internal SCSI cables (orange)
SAF-TE	Two
Others	
Network Switch	2 × Acer SOHO Switch 6008
SCSI Cable	2 × HVDCI 68pin – standard 68pin SCSI cables 2 × standard 68pin – standard 68pin SCSI cables
Terminator	Two LSI Terminator Box 437

The Eighth configuration highlights the *HCT version*, *Server Configuration*, and *Shared Storage* using the Acer *Altos 1200*

Configuration 8

Acer Altos 1200 RS710 with LSI MegaRAID Elite 1600

HCT version	HCT 9.502 (HCT 9.5 upgrade to 9.502)
Server Configuration	
Model	2 × Acer Altos 1200
OS	Windows 2000 Advanced Server (Service Pack 1)
System BIOS	R01-C4
CPU	2 × PIII 866/133 MHZ w/ 256KB of L2 cache
Memory	4 × PC133 256MB of SDRAM
Internal Disk Controller	Adaptec AIC-7899 on board BIOS: v2.57 Driver: Microsoft Windows 2000 Driver
SCSI Channel Disk Controller	LSI MegaRAID Elite 1600 RAID controller BIOS:v3.11, Driver:v5.21.0, Firmware:v.L148
Network Adapter	2 × Intel 82559 onboard
Internal Hard Disk	1 × Seagate ST318404LC (18.2GB, Ultra160, 10000RPM)
Share Storage Configuration	
Model	Acer Altos RS710
RAID Controller	None (use PCI RAID controller)
Hard Disk	5 × Seagate ST318404LC (18.2GB, Ultra160, 10000RPM) Use 5 HDD to create 2 logical drives (2 to RAID 1, 3 to RAID 5)
SCSI Cable	2 × internal – external SCSI cables (orange) 1 × internal – internal SCSI cables (orange)
SAF-TE	Two
Others	
Network Switch	2 × Acer SOHO Switch 6008
SCSI Cable	2 × HVDCI 68pin – standard 68pin SCSI cables 2 × standard 68pin – standard 68pin SCSI cables
Terminator	Two LSI Terminator Box 437

The Ninth configuration highlights the *HCT version*, *Server Configuration*, and *Shared Storage* using the Acer *Altos 1200*

Configuration 9

Acer Altos 1200 RS710 with LSI MegaRAID Enterprise 1600

HCT version	HCT 9.502 (HCT 9.5 upgrade to 9.502)
Server Configuration	
Model	2 × Acer Altos 1200
OS	Windows 2000 Advanced Server (Service Pack 1)
System BIOS	R01-E1
CPU	2 × PIII 866/133 MHZ w/ 256KB of L2 cache
Memory	4 × PC133 256MB of SDRAM
Internal Disk Controller	Adaptec AIC-7899 on board BIOS: v2.57 Driver: Microsoft Windows 2000 Driver
SCSI Channel Disk Controller	LSI MegaRAID Enterprise 1600 RAID controller BIOS:v3.11, Driver:v5.16.0, Firmware:v.J148
Network Adapter	2 × Intel 82559 onboard
Internal Hard Disk	1 × Seagate ST318404LC (18.2GB, Ultra160, 10000RPM)
Share Storage Configuration	
Model	Acer Altos RS710
RAID Controller	None (use PCI RAID controller)
Hard Disk	5 × Seagate ST318404LC (18.2GB, Ultra160, 10000RPM) Use 5 HDD to create 2 logical drives (2 to RAID 1, 3 to RAID 5)
SCSI Cable	2 × internal – external SCSI cables (orange) 1 × internal – internal SCSI cables (orange)
SAF-TE	Two
Others	
Network Switch	2 × Acer SOHO Switch 6008
SCSI Cable	2 × HVDCI 68pin – standard 68pin SCSI cables 2 × standard 68pin – standard 68pin SCSI cables
Terminator	Two LSI Terminator Box 437

The Tenth configuration highlights the *HCT version*, *Server Configuration*, and *Shared Storage* using the Acer *Altos R500*

Configuration 10

Altos R500 S300 with LSI MegaRAID Elite 1600

HCT version	HCT 9.502 (HCT 9.5 upgrade to 9.502)
Server Configuration	
Model	2 × Altos R500
OS	Windows 2000 Advanced Server (Service Pack 2)
System BIOS	R01-C4
CPU	2 × PIII 1GHz w/ 256KB of L2 cache
Memory	2 × PC133 256MB of SDRAM
Internal Disk Controller	Adaptec AIC-7899w on board BIOS: v3.1 Driver: Microsoft Windows 2000 Driver
SCSI Channel Disk Controller	LSI MegaRAID Elite 1600 RAID controller BIOS: v3.11, Driver: v5.22.0, Firmware: v. L148
Network Adapter	4 × Intel 82550 onboard
Internal Hard Disk	1 × Seagate ST318437LC (18GB, Ultra160, 7200RPM)
Share Storage Configuration	
Model	Altos S300
RAID Controller	None (use PCI RAID controller)
Hard Disk	10 × Seagate ST336605LC (36GB, Ultra160, 10000RPM) Use 10 HDDs to create 2 logical drives (5 to one RAID 5, 5 to the other RAID 5)
I/O Module	CSM+TSM
Others	
Network Switch	2 × Acer SOHO Switch 6008
SCSI Cable	2 × VHDCI-to-VHDCI 68pin SCSI cables

NODE CONFIGURATION

This chapter outlines the configuration phase and provides hints to help installation proceed smoothly.

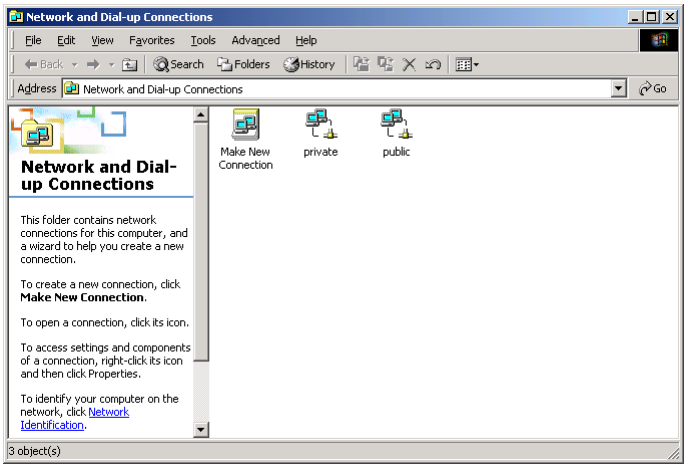
Note: ***You may require the assistance of support personnel to complete the configuration and installation procedures presented in this guide. Before moving on to the next section, take a few moments to compile the names of your customer's network administrators.***

Configuring Network Settings

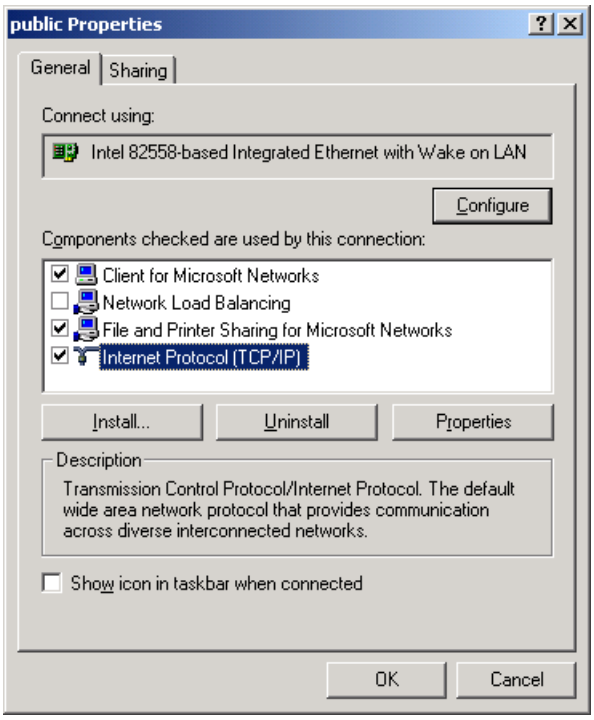
There are two network connections in the cluster. In order to distinguish between the two, it is best to rename these connections for future reference. An example is to name one "public" and the other "private". The following steps show how to configure the "public network" and the "private network".

First Node Network Configuration

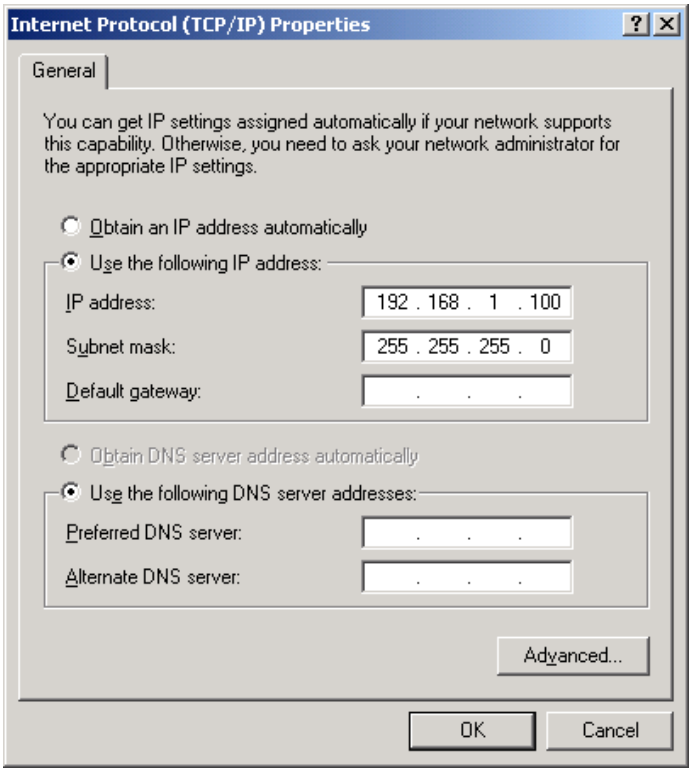
1. On the first node, click Start/Settings/Control Panel/Network and Dial-up Connections.



2. Rename one connection "*public*" and the other "*private*"
3. Right click the "*public*" connection

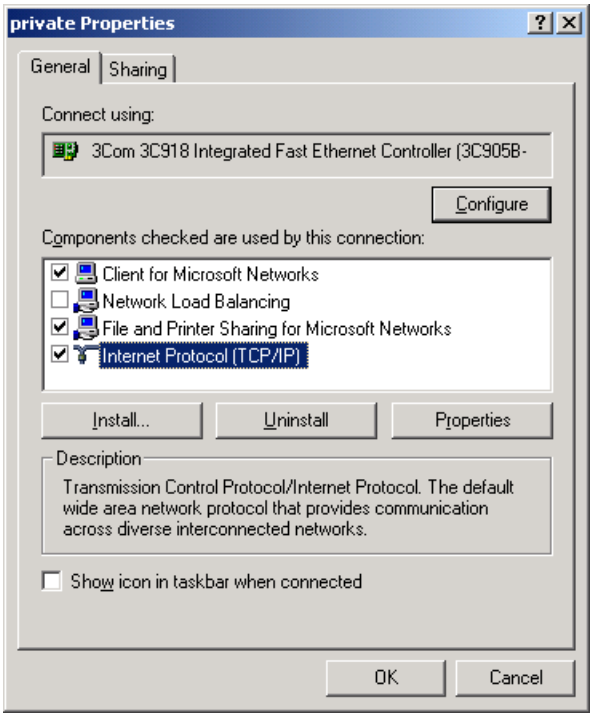


4. Click Internet Protocol (TCP/IP), and then click Properties.

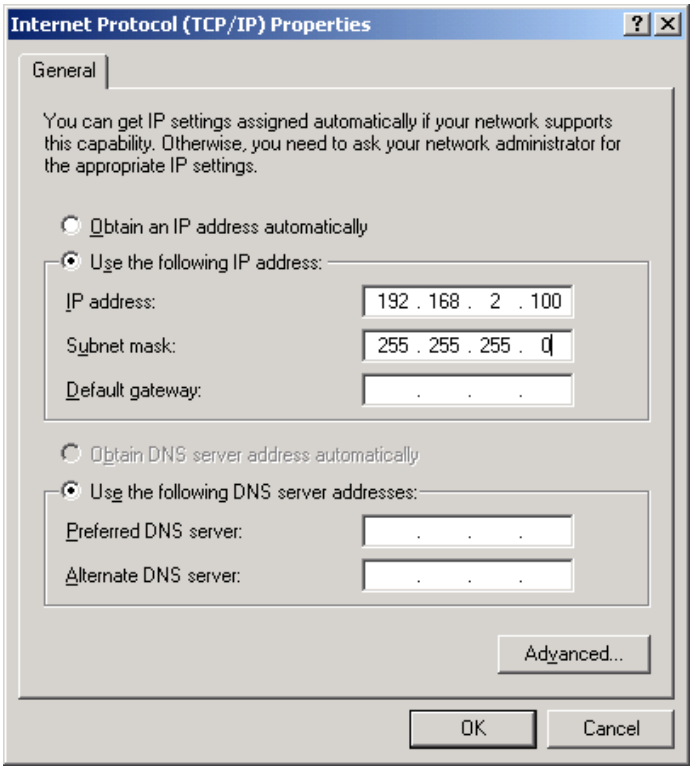


5. Select 'Use the following IP address' and enter the public network IP address and Subnet mask.

6. Right click the “private” connection



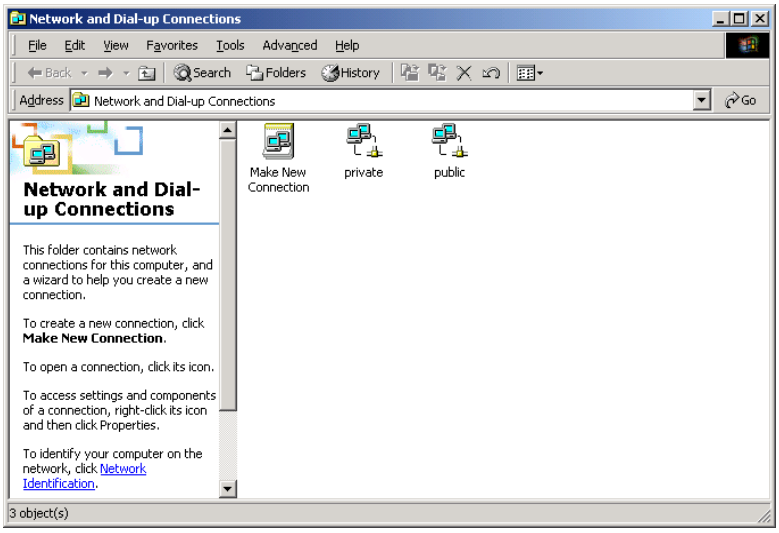
7. Click Internet Protocol (TCP/IP), and then click Properties.



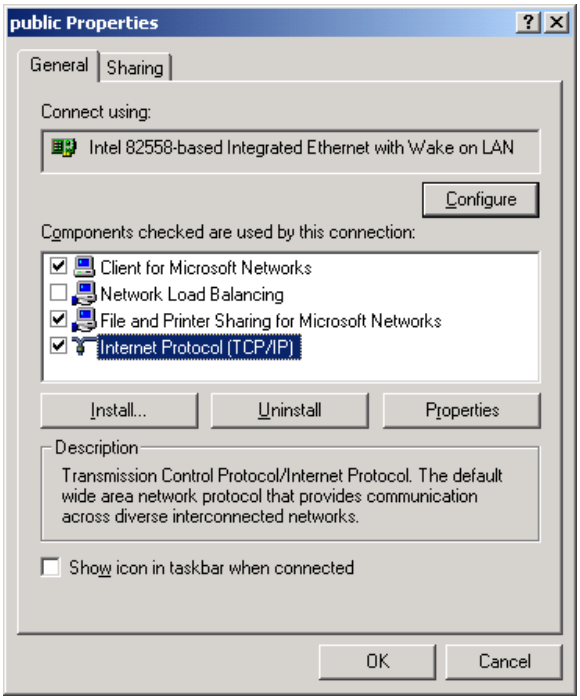
8. Select 'Use the following IP address' and enter the private network IP address and Subnet mask.

Second Node Network Configuration

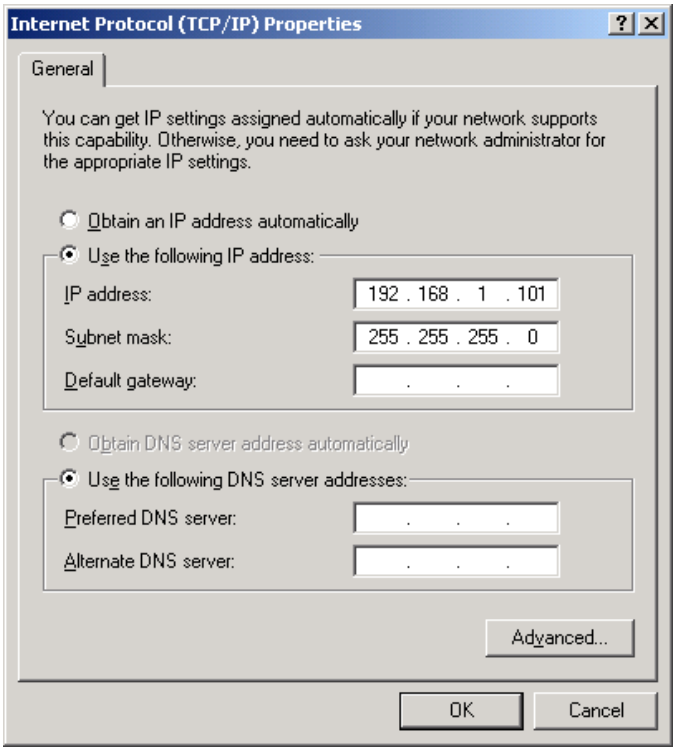
1. On the second node, click Start/Settings/Control Panel/Network and Dial-up Connections.



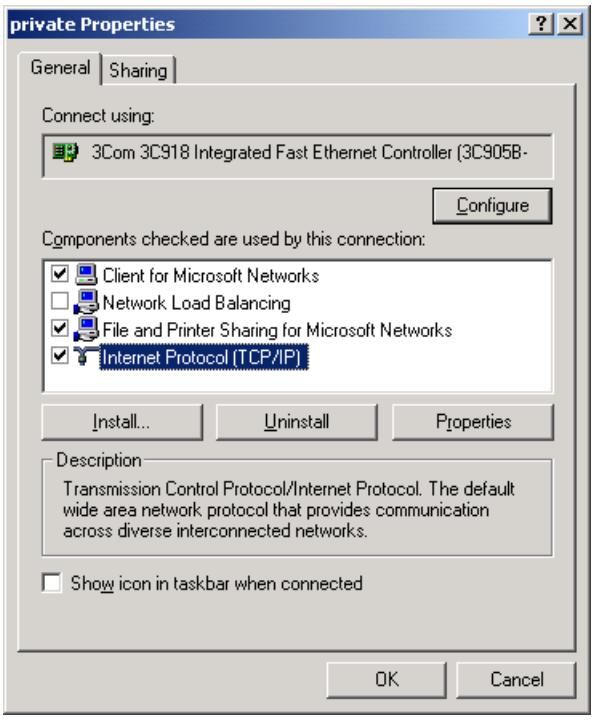
2. Rename one connection "*public*" and the other "*private*"
3. Right click the "*public*" connection



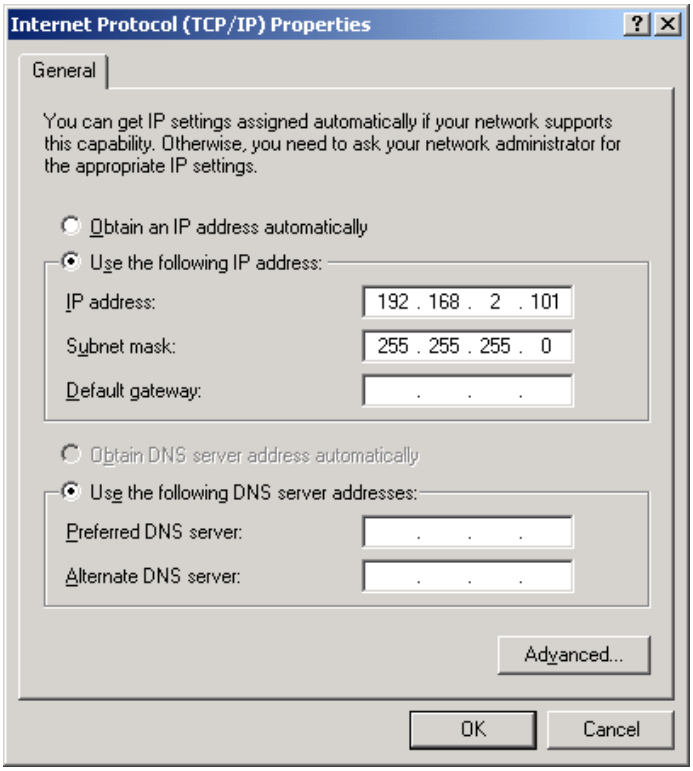
4. Click Internet Protocol (TCP/IP), and then click Properties



5. Select 'Use the following IP address' and enter the public network IP address and Subnet mask
6. Right click the "private" connection



7. Click Internet Protocol (TCP/IP), and then click Properties.

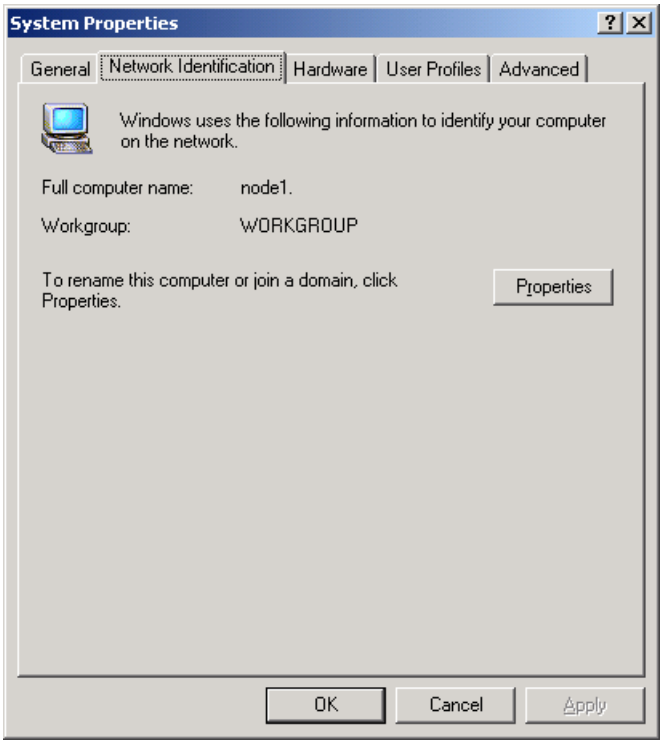


8. Select 'Use the following IP address' and enter the private network IP address and Subnet mask.

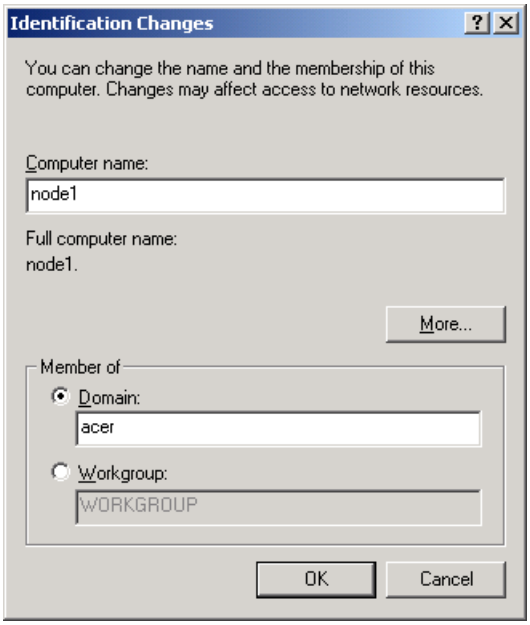
Joining the domain

The following steps allow both nodes to join the domain.

1. Right click My Computer/Properties.
2. Click the Network Identification tab.



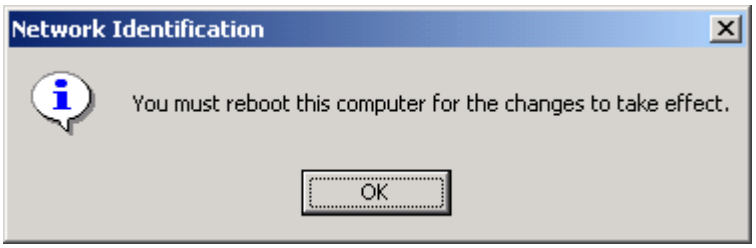
3. Click Properties.



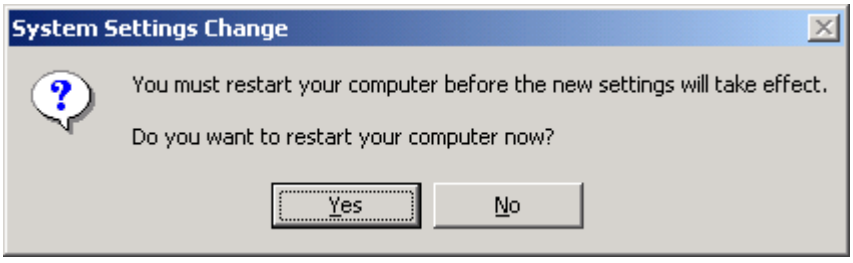
4. Select Domain and enter the name of the domain you want to join.

5. Type the username and password for the domain then click OK.

6. When the Network Identification box appears click OK.



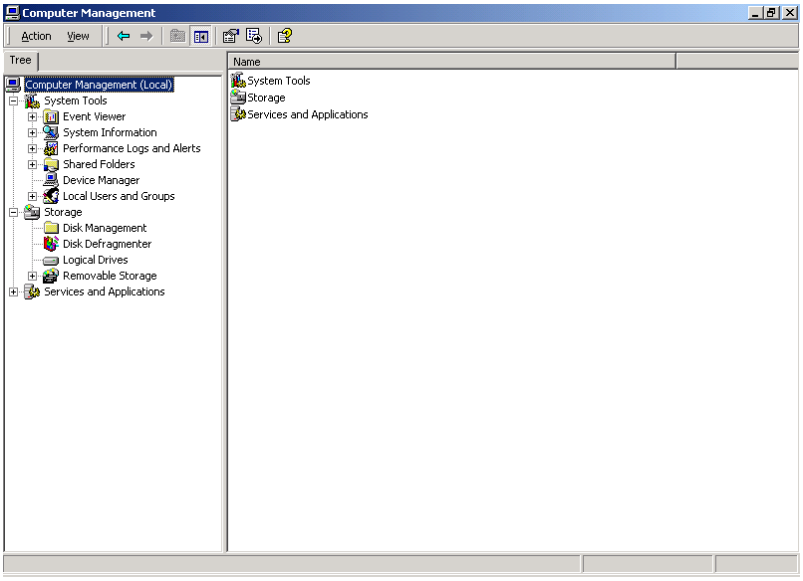
7. Another box appears. Click *OK* to reboot.



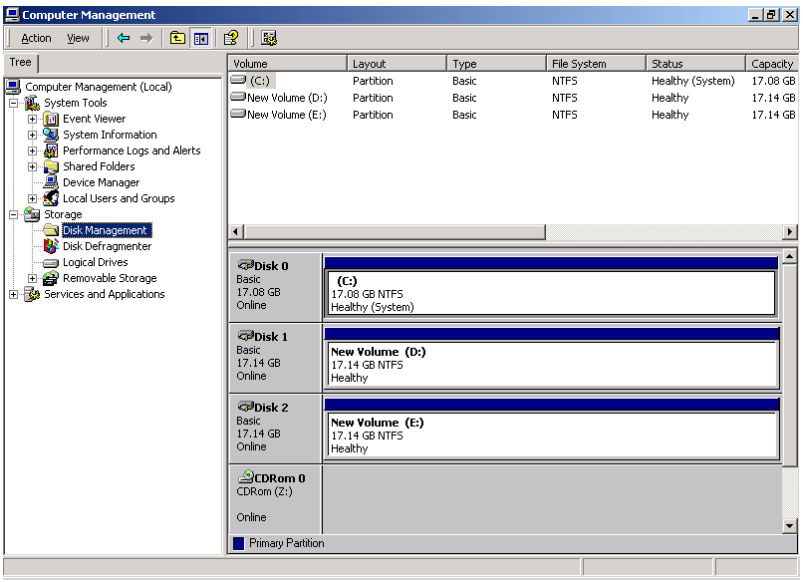
8. Click '*Yes*' to restart your computer.

Setting up Shared Storage

1. Click Start/Programs/Administrative Tools/Computer Management.



2. Click Disk Management under Storage.

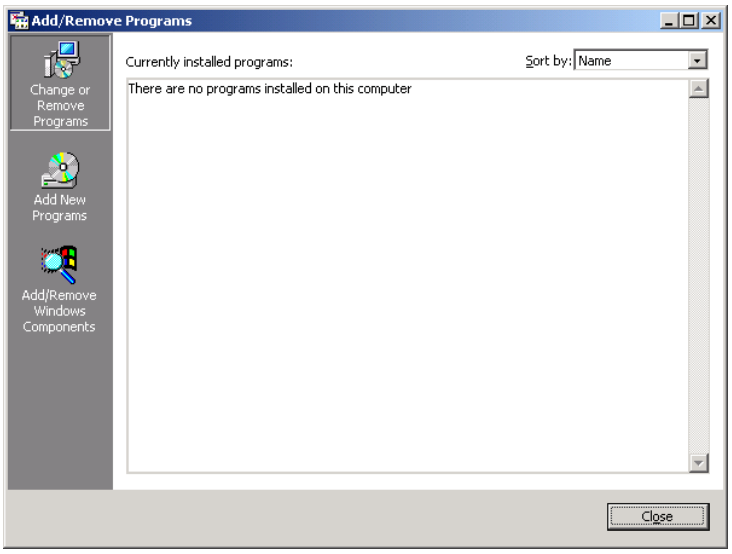


Note: ***Check to see that both nodes can access the hard disks on the RS710/S300 (shared storage), configure all shared disk partitions as "basic" not "dynamic" and format the partitions using NTFS.***

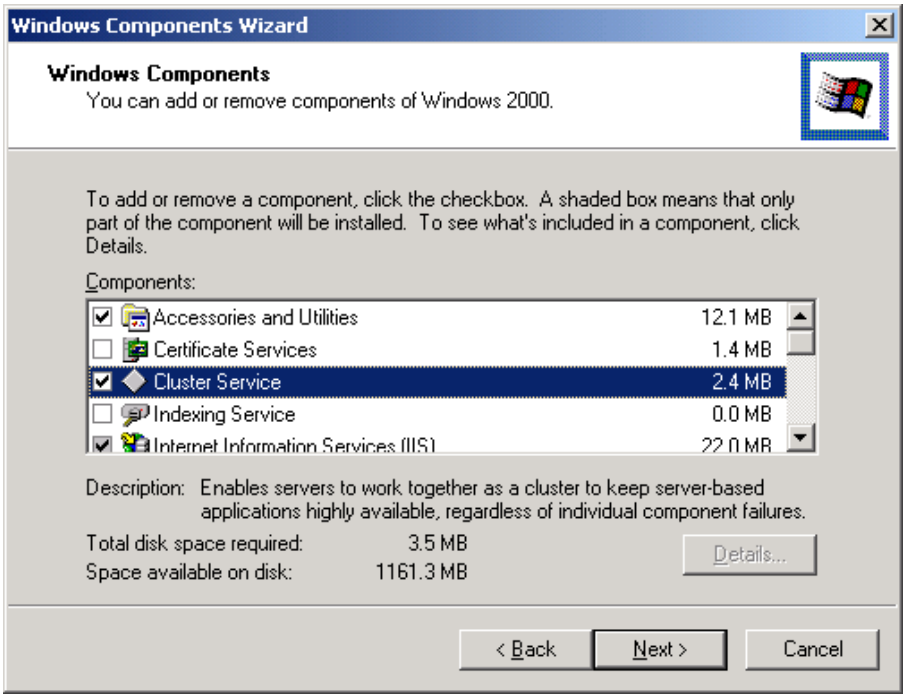
Installing the Cluster Service

To install the Cluster Service on both nodes, perform the following steps:

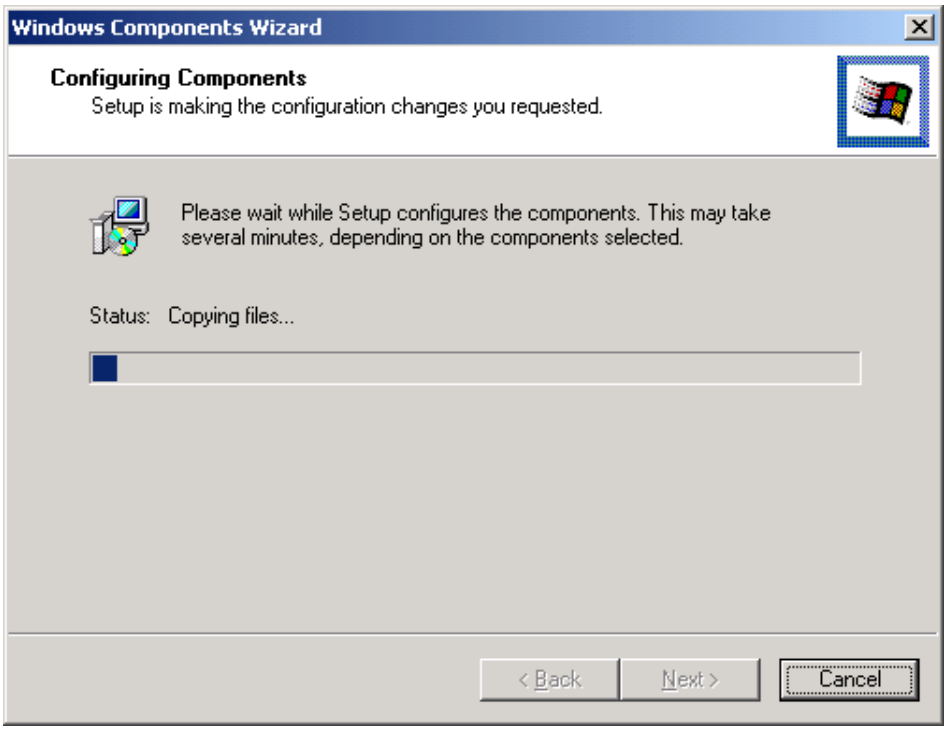
1. Insert the Windows 2000 Advanced Server CD.
2. Click Start, Settings, Control Panel.
3. Double-click Add/Remove Programs.



4. Click Add/Remove Windows Components.



5. Check the Cluster Service check box in the Windows Components Wizard, and click 'Next'.



6. Windows will start copying the files over to your system and make the configuration changes you requested.

Note: ***It is not necessary to configure the cluster server right away. It can be done at a later stage.***

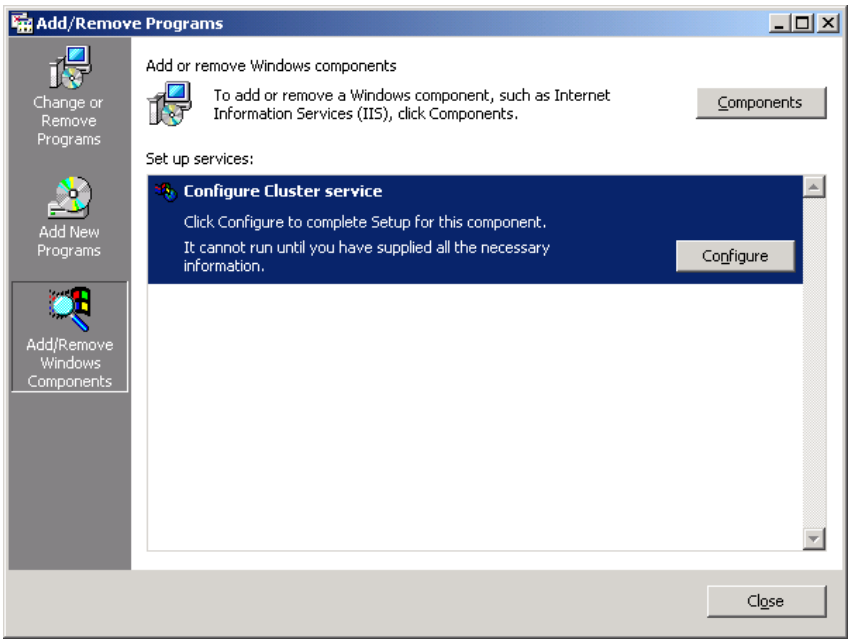
7. Click Finish to complete the installation process.

Configuring the First Node in the Cluster

Before configuring the first node make sure that the node is part of a domain and that the cluster service has already been installed on the machine.

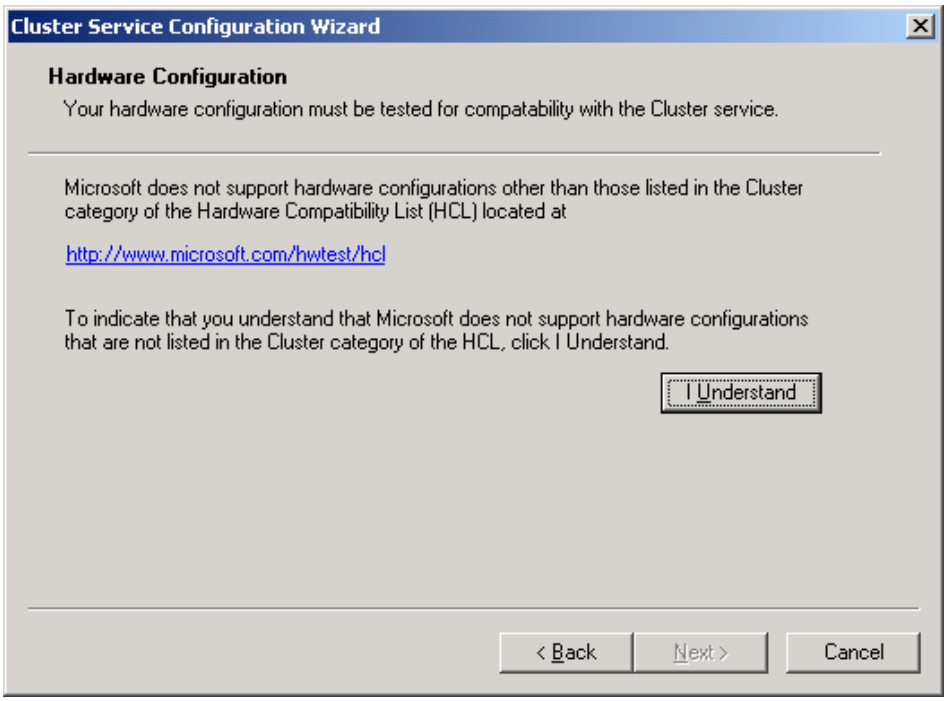
1. Click Start/Settings/Control Panel.

2. Double-click Add/Remove Programs.
3. Click Add/Remove Windows Components.

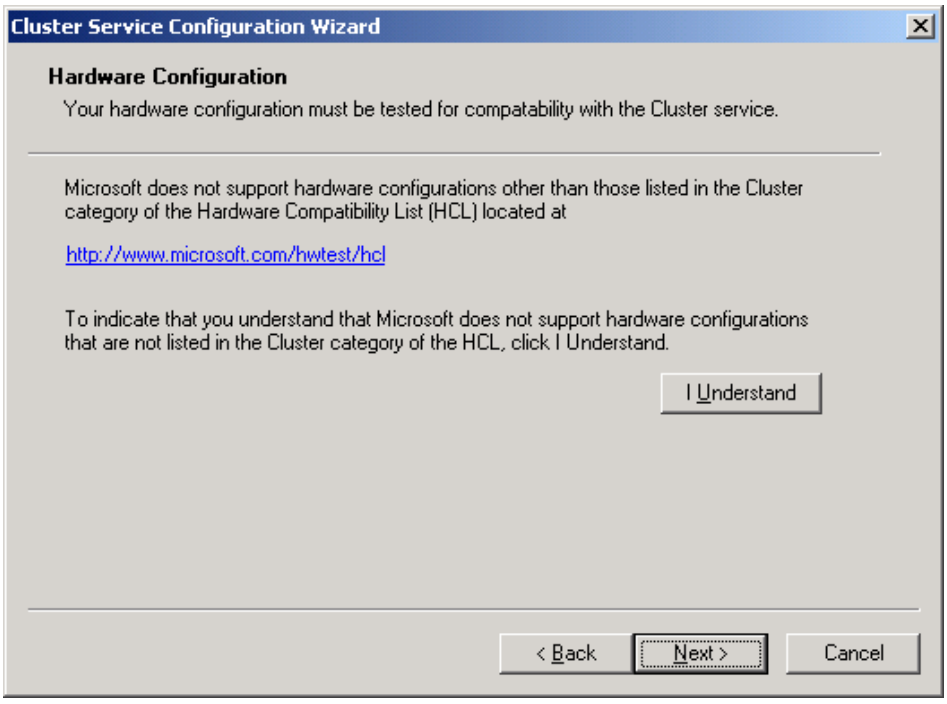


4. Click Configure under Configure Cluster Service.

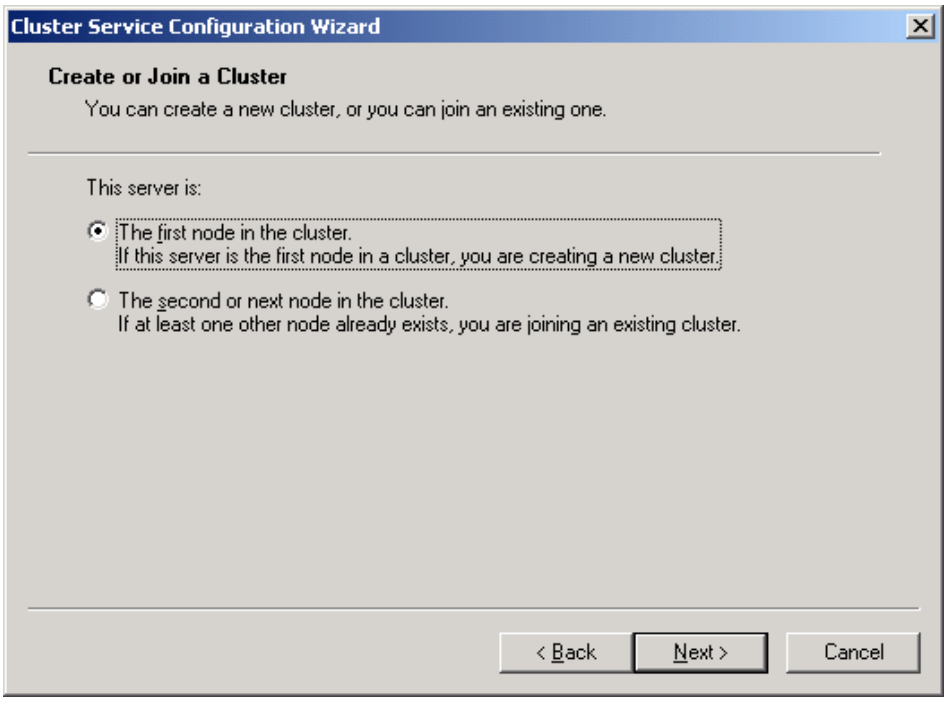
5. The "Welcome to the Cluster Service Configuration Wizard" dialog box appears. Click Next to follow the wizard steps.



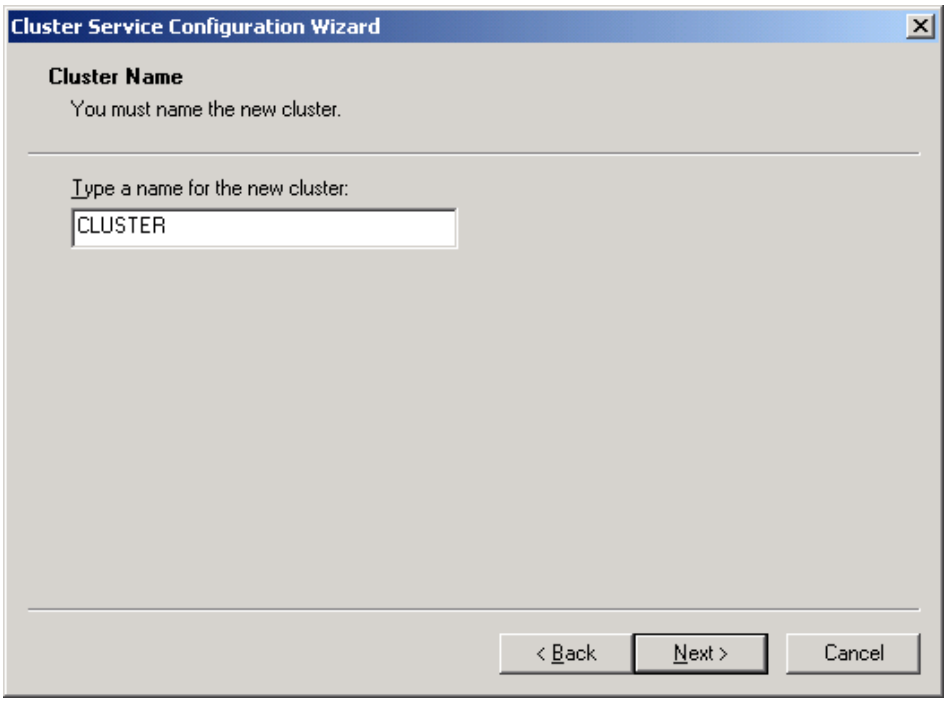
6. Click I Understand to enable the Next button.



7. Click Next.

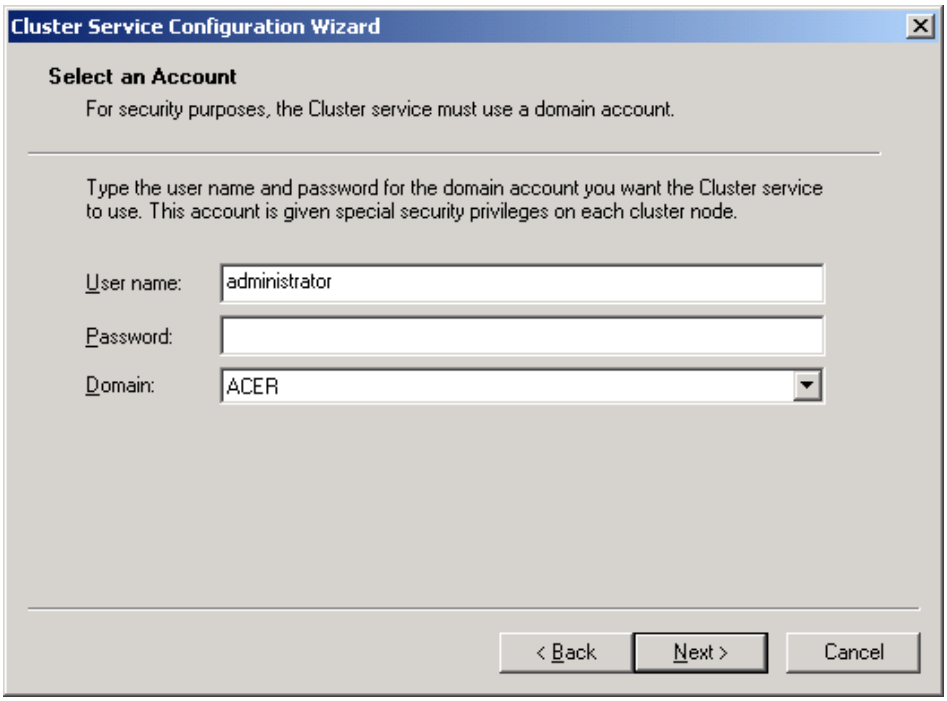


8. Select The first node in the cluster, and click Next.

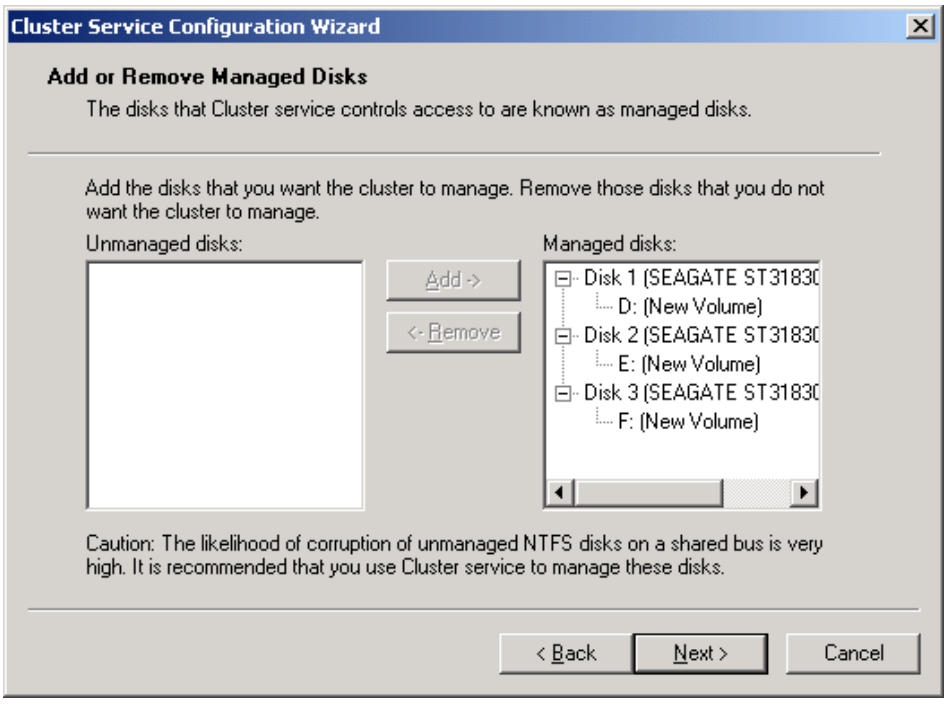


9. Type a name for the new cluster and then click Next.

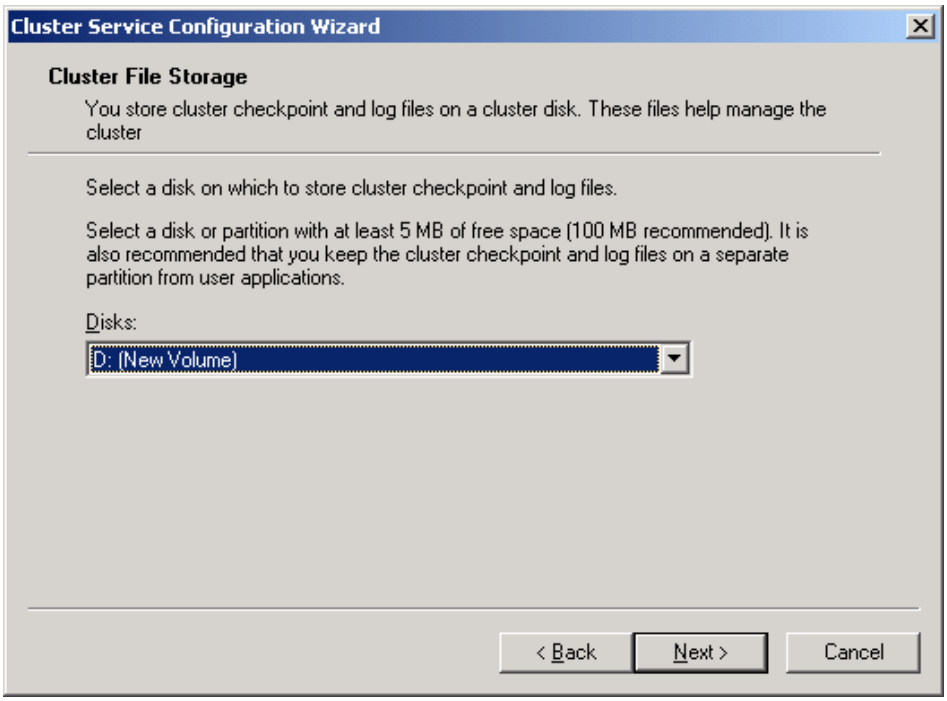
Note: ***For convenience, simply name it CLUSTER***



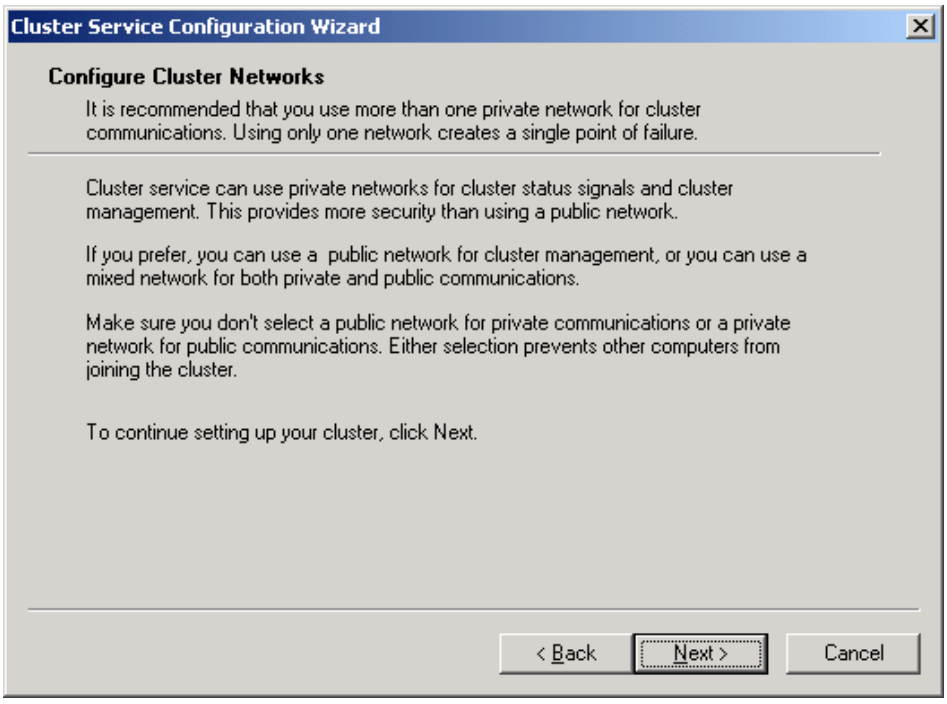
10. Enter a User name, Password, and Domain name, and click Next.



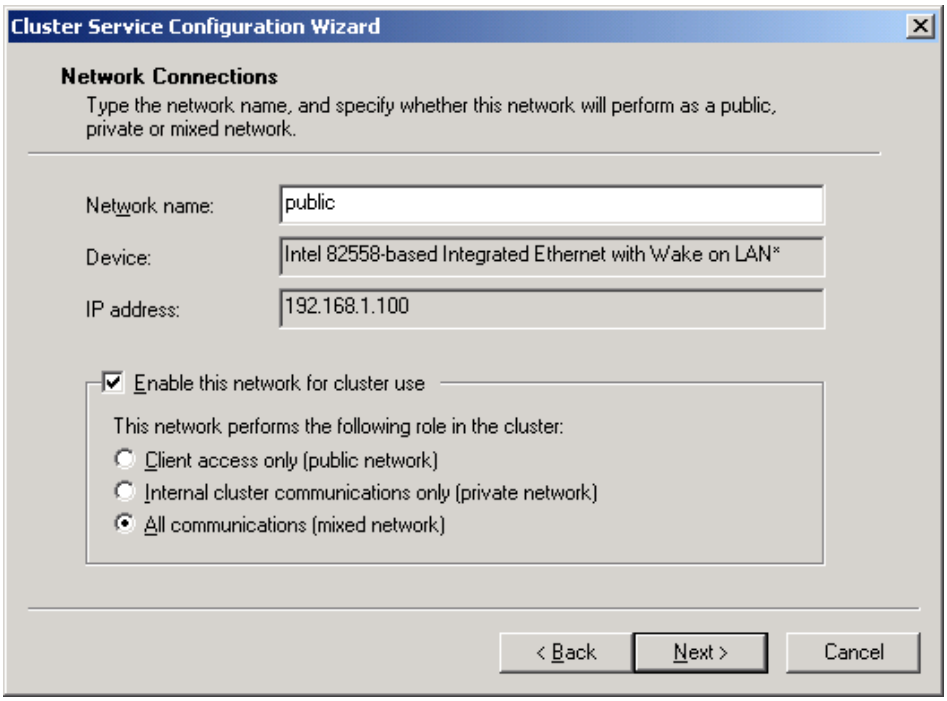
11. Select the disks you want to manage in the cluster, add it to the right pane, and click Next.



12. Select a disk to store the cluster checkpoint and log files and click Next.

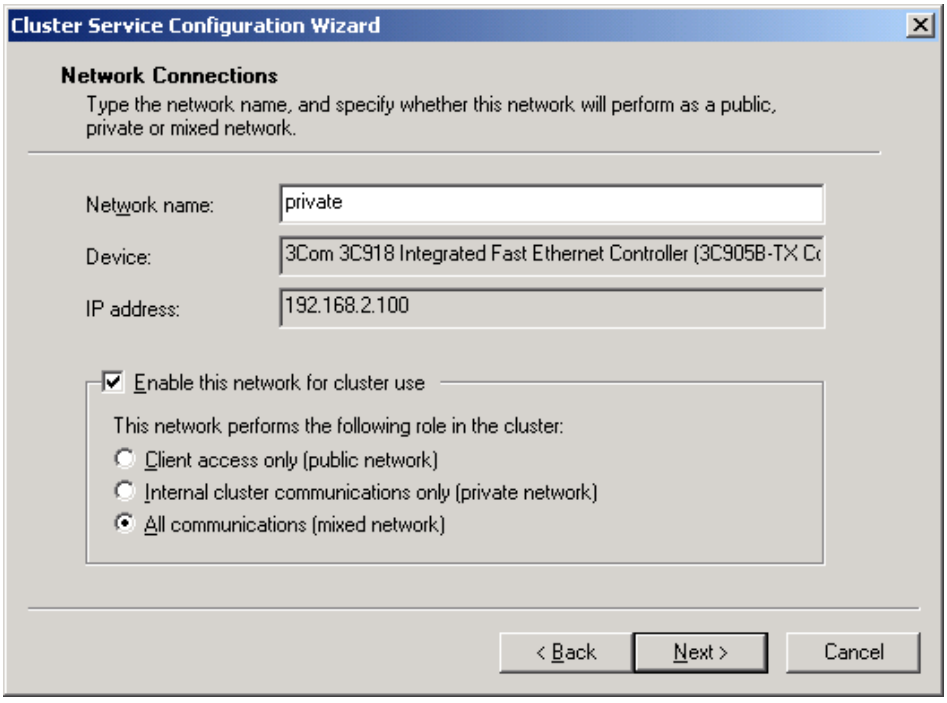


13. The wizard will give a short description and begin to set up the cluster.



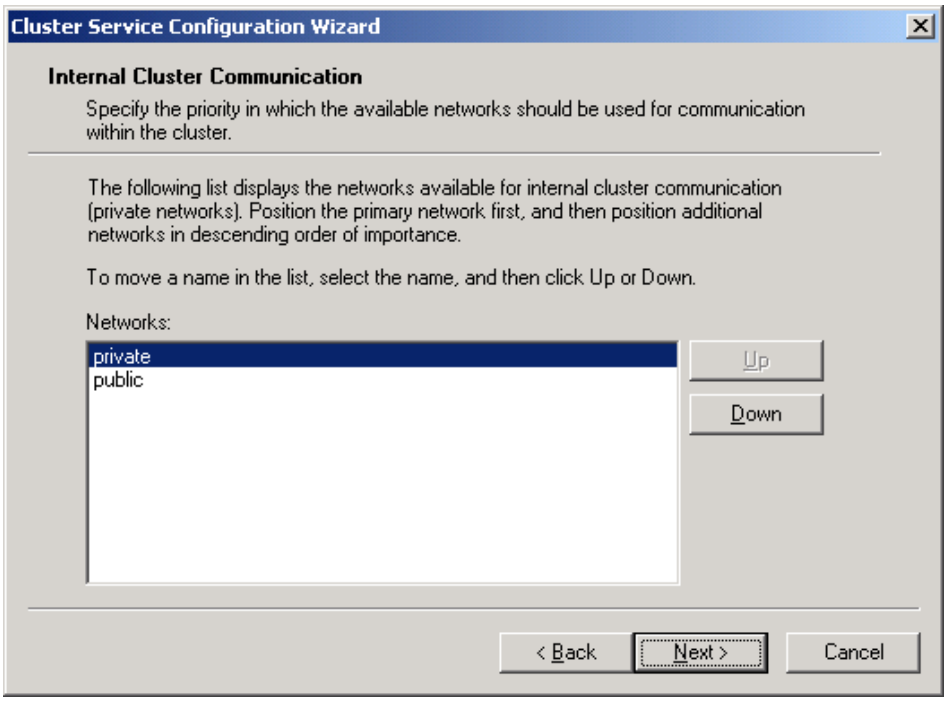
14. You will be prompted to configure the public network connection. Make sure the Network Name and IP address correspond with the network interface for the public network.

Note: ***Make sure to check Enable this network for cluster use and select All communications (mixed network)***

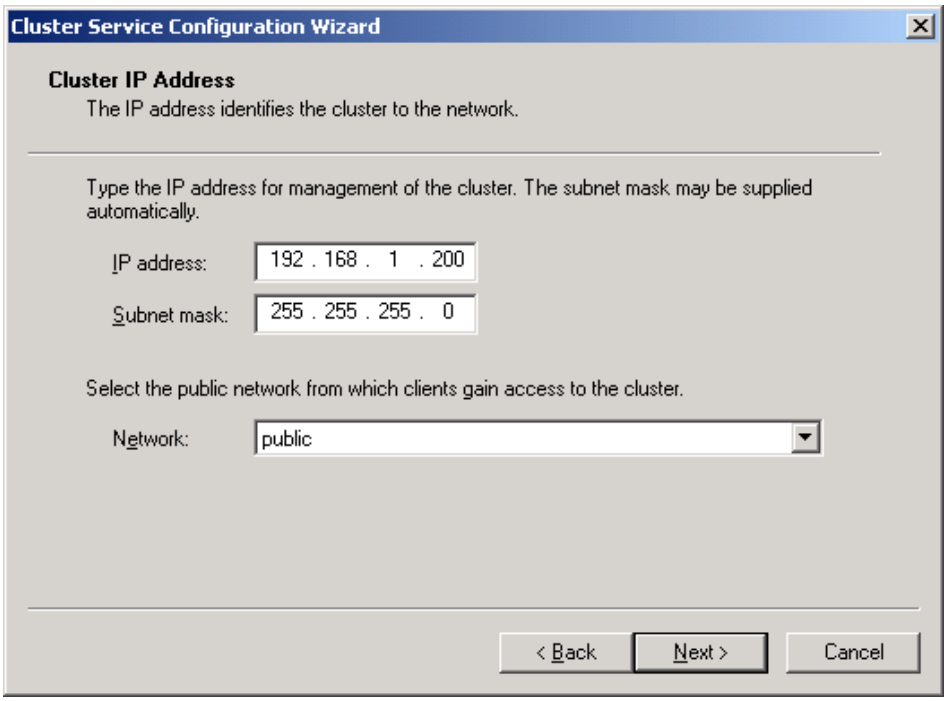


Configuring the private network connection.

1. Make sure the Network Name and IP address correspond with the network interface for the private network.
2. Select Internal Cluster Communication and click Next.

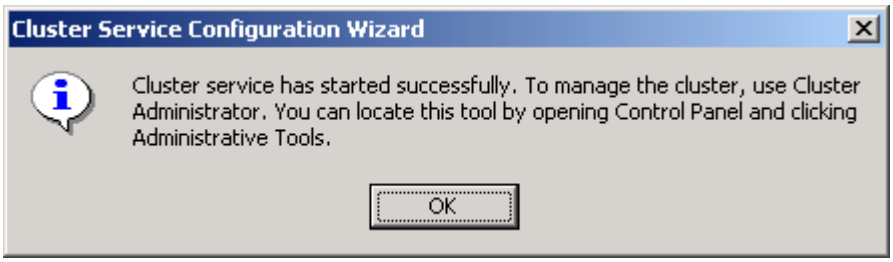


3. Toggle between private and public to choose which network to configure. Here, private is selected.

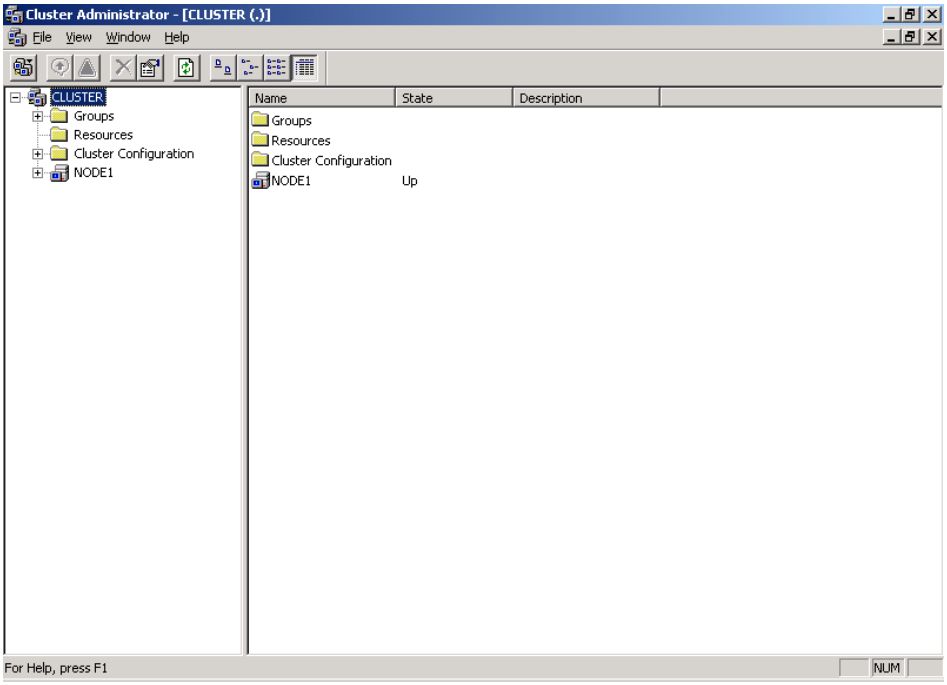


4. Type the cluster IP address and Subnet mask, choose the public network from Network, and click Next.

5. Click Finish to complete the cluster service configuration for the first node. A confirmation box will appear stating that the cluster service has started successfully



To verify that the cluster is indeed working click Start/Programs/Administrative Tools//Cluster Administrator.

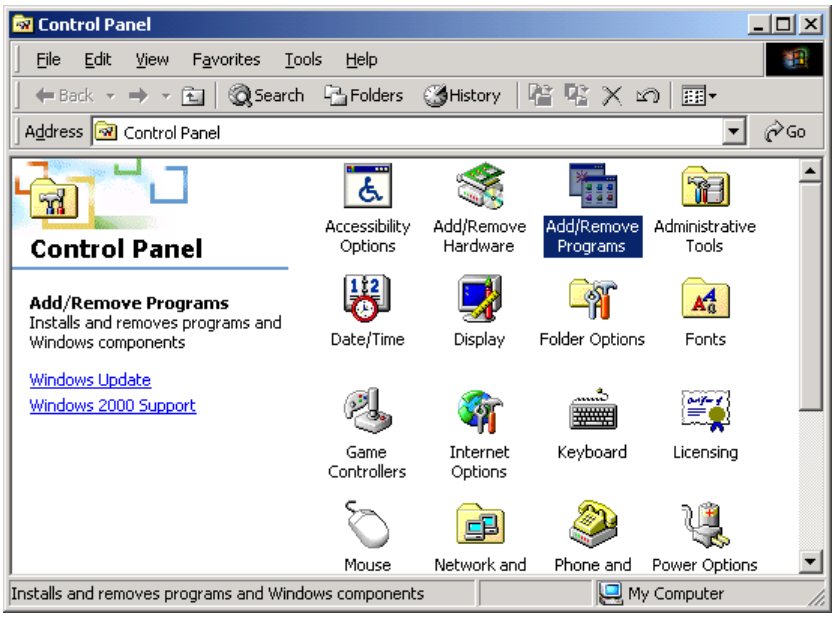


Here you can see node 1 running the cluster service.

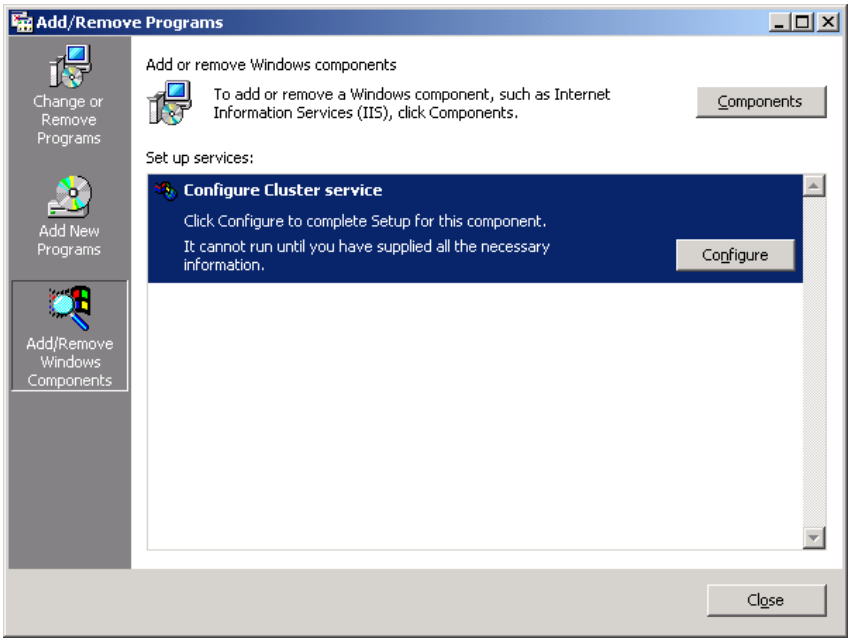
Configuring the Second Node in the Cluster

Before configuring the first node make sure that the node is part of a domain and that the cluster service has already been installed on the machine.

1. Click Start/Settings/Control Panel.

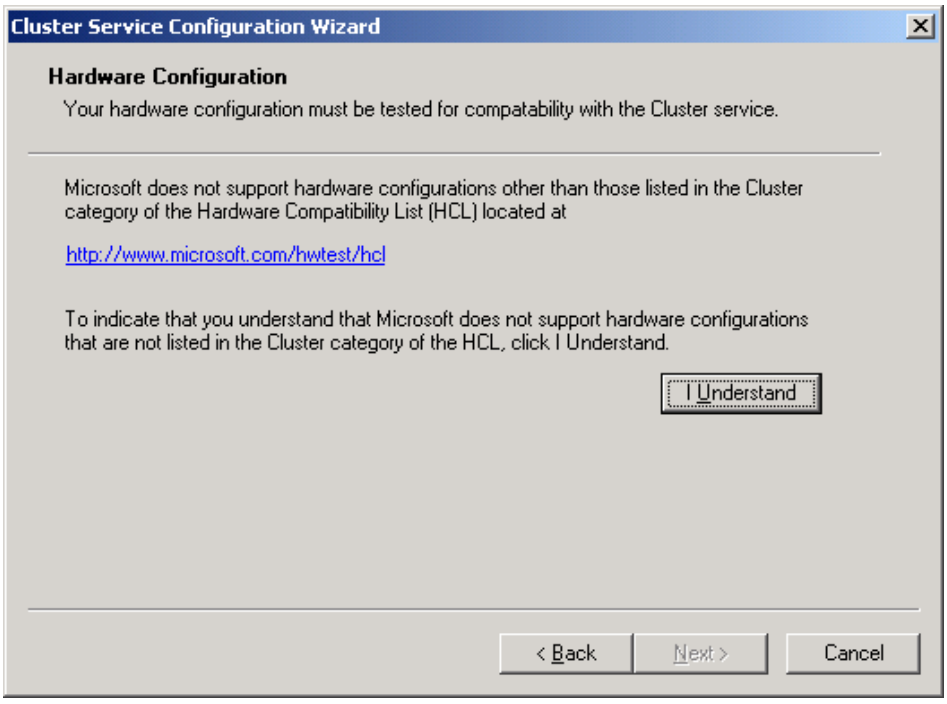


2. Double-click Add/Remove Programs.
3. Click Add/Remove Windows Components.

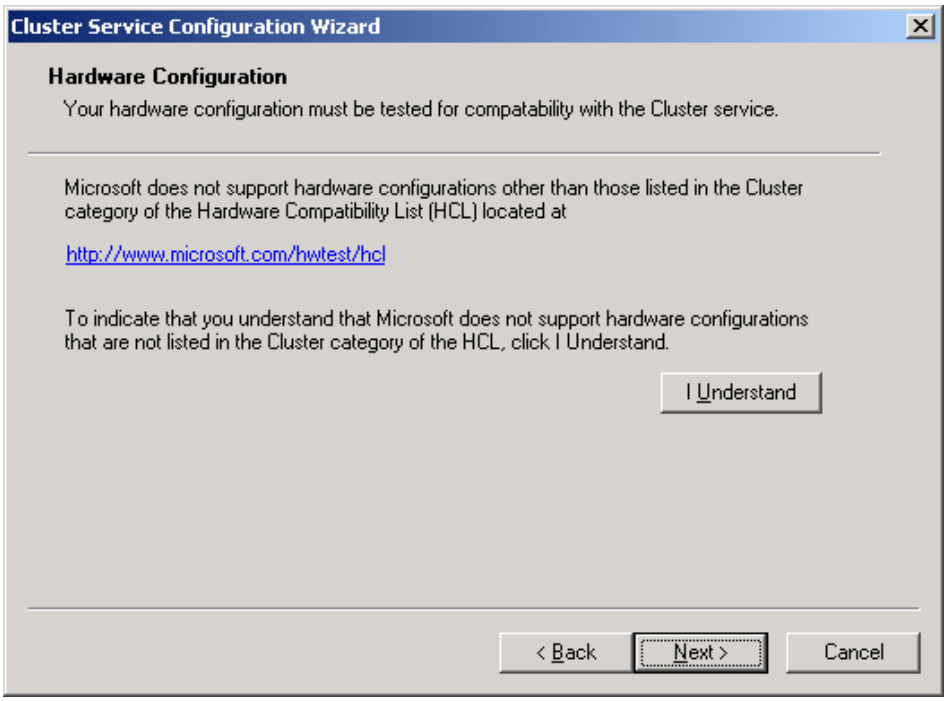


4. Click Configure under Configure Cluster Service

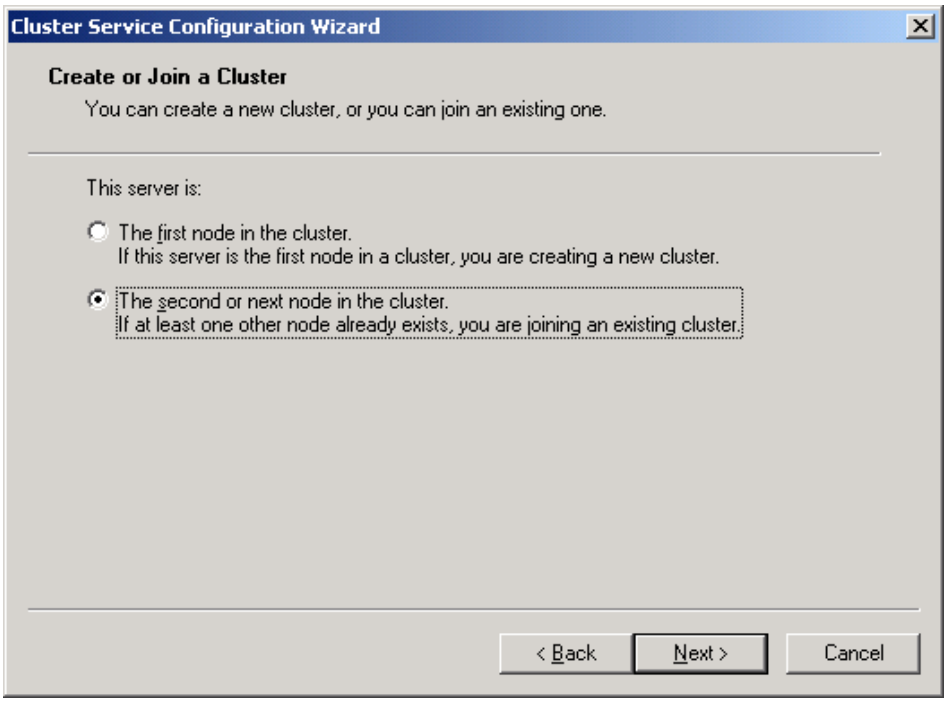
5. Click Next.



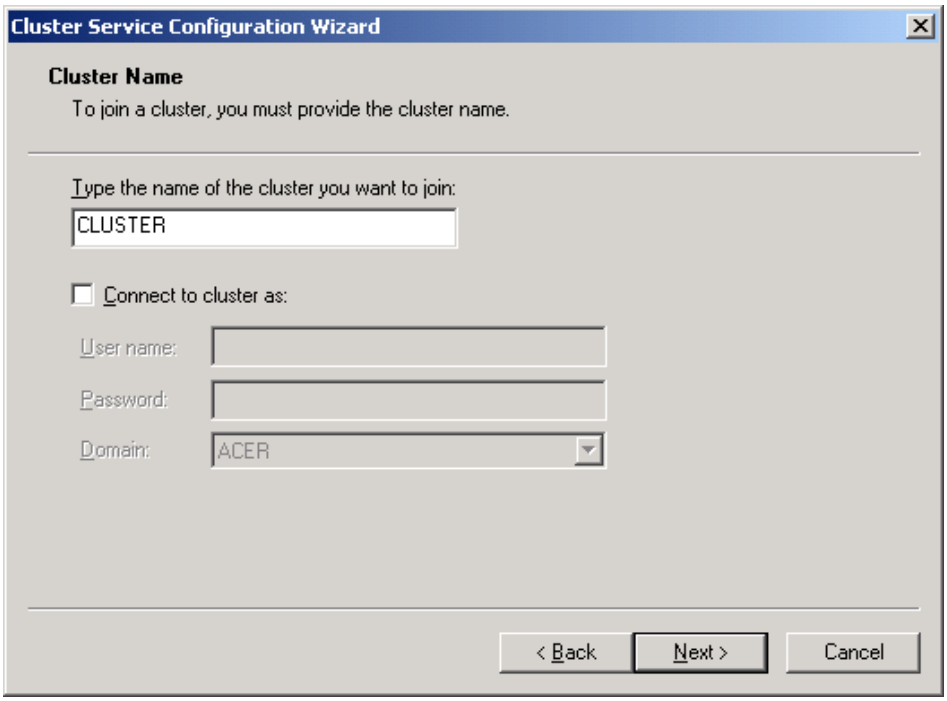
6. Click I Understand to enable the Next button.



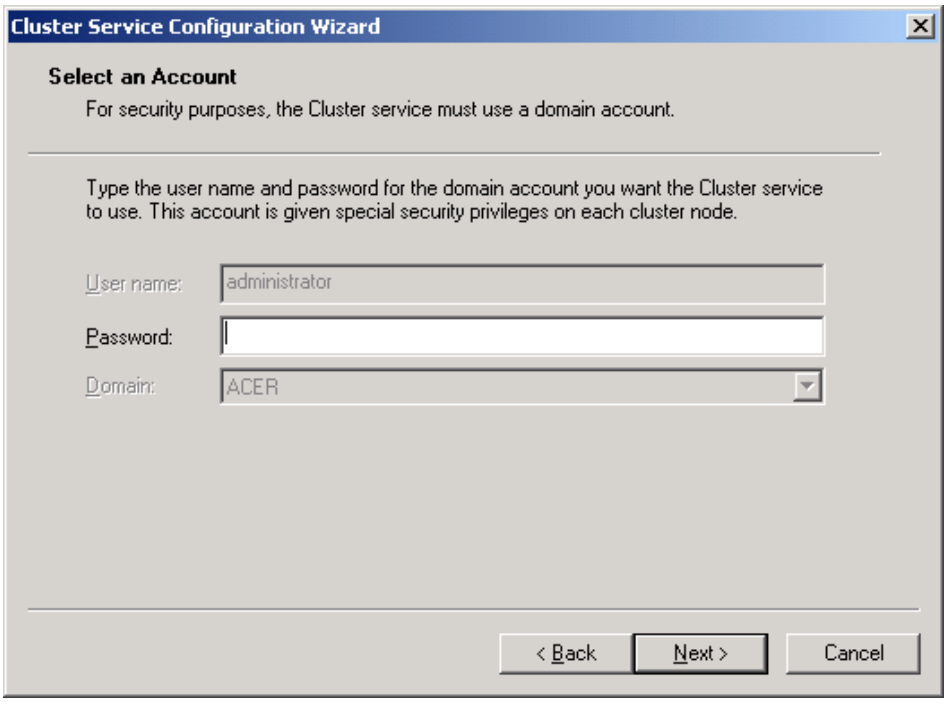
7. Click Next.



8. Select The second or next node in the cluster, and click Next.

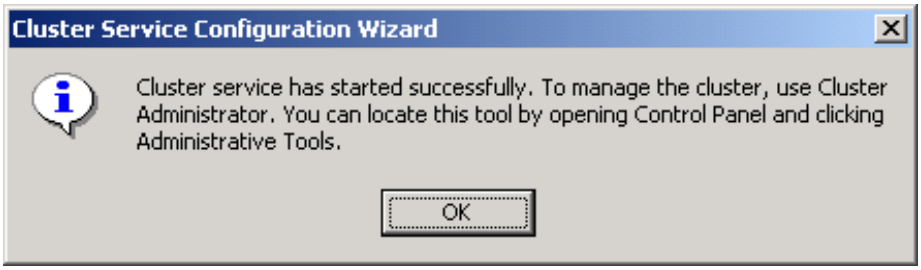


9. Enter the name of the cluster you created on node 1, and click Next.

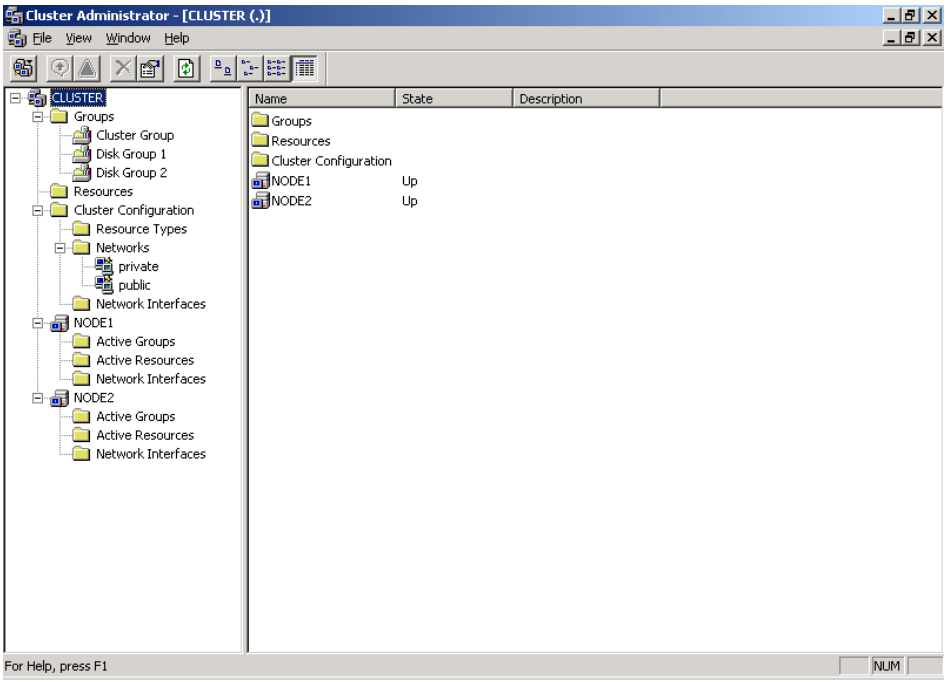


10. Enter a User name, Password, and Domain name, and click Next.

11. Click Finish to complete the cluster service configuration for the first node. A confirmation box will appear stating that the cluster service has started successfully



12. Click Start, Programs, Administrative Tools, and Cluster Administrator.

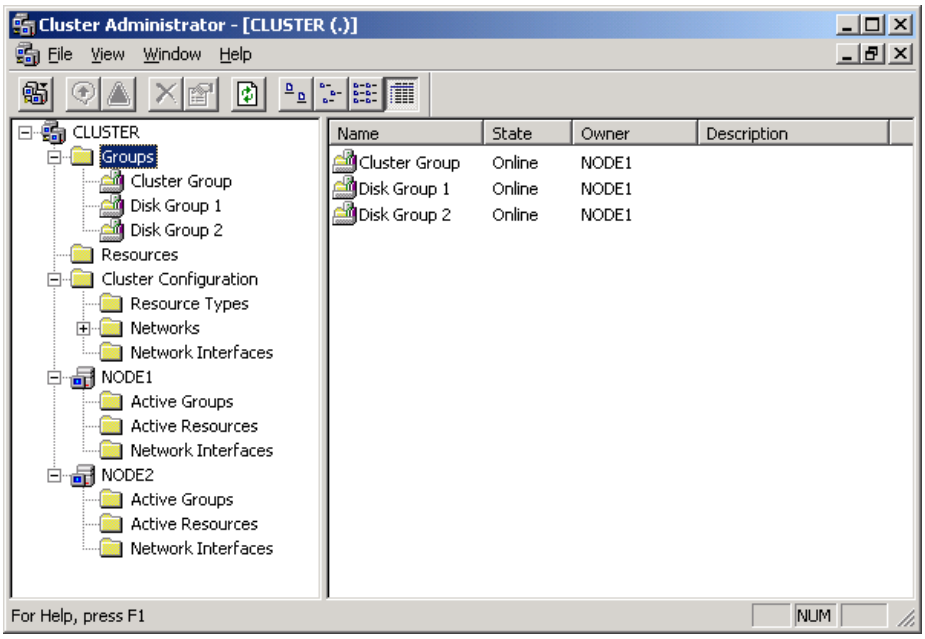


You can see that node 2 has joined node 1 to form the cluster.

Verifying the Installation

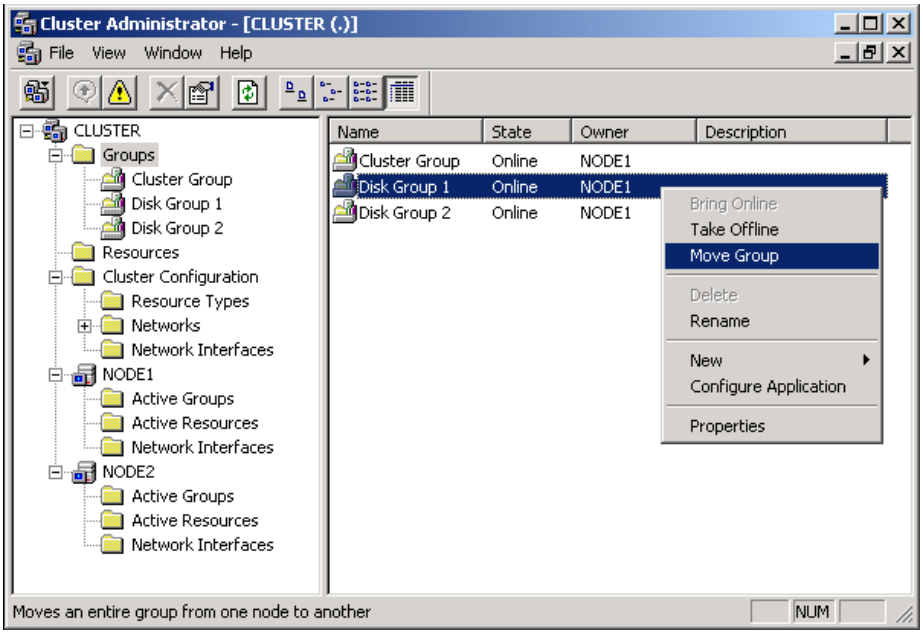
There are several ways to verify a successful Cluster Service installation. The following is a simple one.

1. Click Start, Programs, Administrative Tools, and Cluster Administrator.
2. Click Groups in the left pane.

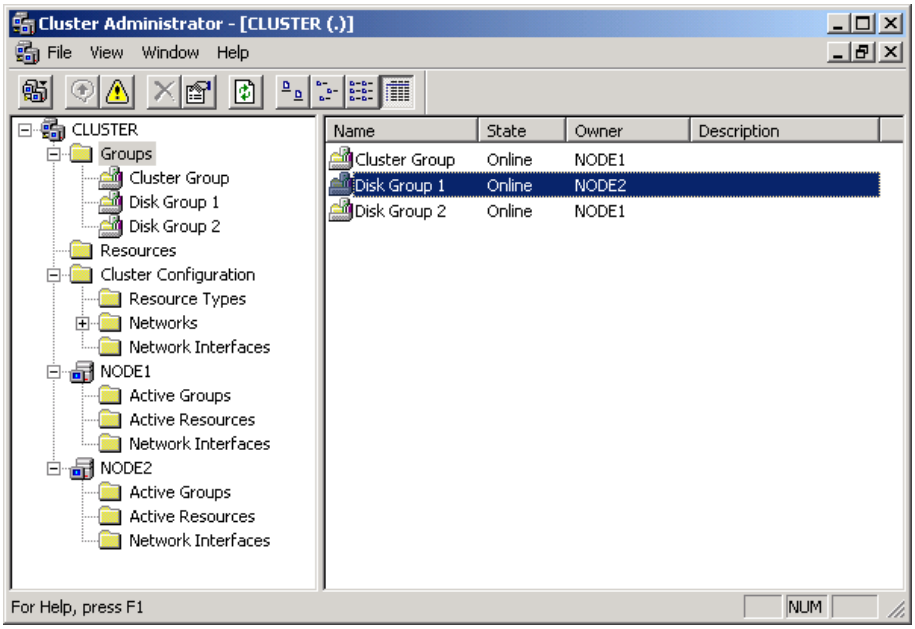


3. In the right pane you will see that NODE 1 is the owner of all groups.

4. Right click Disk Group 1 and click Move Group.



5. After a few seconds ownership will transfer to NODE 2.



You have completed the Cluster Service installation on all nodes.

FOR MORE INFORMATION

For more detailed information about Acer Altos servers, please refer to: http://www.globalacer.com

For the latest information on Windows® 2000 Advanced Server and Microsoft Cluster Service, check out Microsoft's web site at: http://www.microsoft.com/windows2000/library/technologies/cluster/default.asp.