

PowerScribe[®] 360 Customer Cluster Configuration Information

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



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OVERVIEW

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:

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:

Application Cluster (Virtual)

Cluster Name:	
Cluster Account:	Cluster Password:
Cluster IP:	
Note: Use Name/IP for ClientAdmin int	egration
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 in	ntegration
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:

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:

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 Coordin	ator
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

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.



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.

MICROSOFT SOFTWARE LICENSE TERMS	
MICROSOFT WINDOWS SERVER 2008 SERVICE PACK 2, ENTER	PRISE
These license terms are an agreement between Microsoft Corpora where you live, one of its affiliates) and you. Please read them. Th software named above, which includes the media on which you re terms also apply to any Microsoft	ition (or based on ley apply to the ceived it, if any. The
· updates,	
· supplements,	
· Internet-based services, and	

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.

	Name	Total Size	Free Space	Туре
3	Disk 0 Unallocated Space	32.0 GB	32.0 GB	

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.

Installing Windows			
That's all the information we need ri installation.	ight now. Your computer will resta	rt several times during	
Copying files			
Expanding files Installing features			
V Installing updates			
Completing installation			
	Es.		
	-		



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



8. Click **OK**.

Administrator
······ 2
Create a password reset disk
Cancel Windows Server 2008 Enterorise

- 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.

Add Roles Wizard	×
Before You Be	gin
Before You Begin Server Roles Confirmation Progress Results	 This wizard helps you install roles on this server. You determine which roles to install based on the tasks you install this server up of the server. You determine which roles to install based on the tasks you. Edfore you continue, verify that: The Administrator account has a strong password Network settings, such as static IP addresses, are configured The latest security updates from Windows Update are installed The value to complete any of the preceding steps, cancel the wizard, complete the steps, and then run the wizard again. To continue, dick Next.
	< Brevious Next > Install Cancel

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

Add Roles Wizard	er Roles	X
Before You Begin Server Roles Confirmation Progress Results	Select one or more roles to install on this server. Roles: Active Directory Certificate Services Active Directory Pederation Services Active Directory Rights Management Services Active Directory Rights Management Services DHCP Server DHCP Server DHS Server DHS Server Pite Services Metwork Policy and Access Services Dirto Server (115) Windows Deployment Services Windows Server Update Services 	Description: Application Server provides central management and hosting of high- performance distributed business applications such as those built with Enterprise Services and .NET Framework 3.0.

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.

Add Roles Witz	ard Select Server R	oles			x
Before You Beg Server Roles Confirmation	gin	Select one or more roles to install o Roles:	n this server.	Description: Application Server p management and ho	rovides central isting of high-
Results	Add Roles Wizard Add fee You canno Features: Windo Pn .N Co	atures required for Applicat t install Application Server unless the requires ws Process Activation Service ocess Model ET Environment infiguration APIs	tion Server? ired features are also installed. Description: <u>Windows Process</u> generalizes the IIS the dependency or IIS that were previ HTTP applications	Activation Service process model, removing HTTP, All the features of ously available only to are now available to app	ET built with
-	(1) Why are these fe	atures required? More about server roles	Add Required	d Features Cancel	
			< Previous	ext > [ristal	Cancel

7. Click Add Required Features.

Add Roles Wizard		X
Select Serve	er Roles	
Before You Begin Server Roles Application Server Role Services Web Server (IIS) Role Services Confirmation Progress Results	Select one or more roles to install on this server. Roles: Active Directory Certificate Services Active Directory Federation Services Active Directory Lightweight Directory Services Active Directory Rights Management Services Active Directory Rights Management Services Application Server DHCP Server DHCP Server DHS Server Print Services Network Policy and Access Services Print Services UDDI Services Web Server (IIS) Windows Deployment Services Windows Server Update Services More about server roles	Description: Web Server (IIS) provides a reliable, manageable, and scalable Web application infrastructure. application infrastructure.

You are returned to the Select Server Roles window.

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

An information window displays.

Add Roles Wizard		x
Application	Server	
Before You Begin Server Roles Application Server Role Services Web Server (IIS) Role Services Confirmation Progress Results	 Introduction to Application Server Application Server hosts and centrally management services, security systems, and Web applications and services. Application Server also supports developing custom business applications through integrated services such as the .NET Framework 3.0, COM+, Web Server (IIS) Support, and Message Queuing. Things to Note Installing Application Server installs the .NET Framework 3.0 by default. We recommend that you install Web Server (IIS) Support if you plan to host distributed applications built using ASP.NET or Windows Communication Foundation (WCF). Deriview of Application Server Application Server Role Services Application Server Configurations 	
	< Previous Next > Instal Cancel	

10. Click Next.

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

Add Roles Wizard	the second s	×
Add Roles Wizard Select Role Before You Begin Server Roles Application Server Role Services Web Server (IIS) Role Services Confirmation Progress Results	Services Select the role services to install for Application Server: Role services: Image: Comparison of the role services of the role services Image: Comparison of the role service service service (IIS) Support Image: Comparison of the role service s	Description: Application ServerFoundation provides technologies for deploying and managing .NET Framework 3.0 applications. These technologies include Windows Presentation Foundation (WPF), Windows Communication Foundation (WCF), and Windows Workflow Foundation (WF). Application Server Foundation provides the means for delivering managed-code applications with seamless user experiences, secure communication, and the ability to
	Distributed Transactions Incoming Remote Transactions Outgoing Remote Transactions WS-Atomic Transactions More about role services	seamless user experiences, secure communication, and the ability to model a range of business processes.
	< Previous	Next > Instal Cancel

- 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.

Before You Begin	Role Services Select the role services to install for App	lication Server:
Application S Role Server Role Server Confirmation Progress Results	Add role services and features require You cannot install Web Server (IIS) Support unless the re- Role Services: Application Server Windows Process Activation Service Support Web Server Web Server Management Tools NET Framework 3.0 Features WCF Activation	Ted for Web Server (IIS) Support? quired role services and features are also installed. Description: Application Server provides central management and hosting of high- performance distributed business applications such as those built with Enterprise Services and .NET Framework 3.0.
(i) w	ty are these role services and features required?	Add Required Role Services Cancel

13. Click Add Required Role Services.

Add Roles Wizard		X
Select Role Servi	ces	
Before You Begin Server Roles Application Server Role Services Web Server (IIS) Role Services Confirmation Progress Results	Select the role services to install for Application Server: Role services: Application Server Foundation Web Server (IIS) Support OOM+ Network Access OOM+ Network Access OF Port Sharing Windows Process Activation Service Support Message Queuing Activation Orber Activation Orber Activation Orber Duted Transactions Outgoing Remote Transactions Outgoing Remote Transactions WS-Atomic Transactions WS-Atomic Transactions	Description: TCP Port. Sharing allows multiple net.tcp applications to share a single TCP port. Consequently, these applications can coexist on the same physical computer in separate, isolated processes, while sharing the network infrastructure required to send and receive traffic over a TCP port, such as port 808.
	< Previous Next	> Instal Cancel

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.

Before You Begin Server Roles	Select the role services to install for Application Se Role services:	ever: Description:
Application Server Role Services Web Server (IIS) Role Services	Application Server Foundation Web Server (IIS) Support COM+ Network Access TCP Port Sharing Windows Process Activation Service Supp	TCP Port Sharing allows multiple net.tcp applications to share a single TCP port. Consequently, these applications can coexist on the same physical computer in separate, isolated processes, while sharing the network infrastructure required to
onfirmation	Message Queuing Activation	send and receive traffic over a TCP nort, such as nort 808.
Confirmation Progress Add Rol Results	Add features required for TCP Activation You cannot instal TCP Activation unless the required feature	send and receive traffic over a TCP nort, such as nort 808.
Confirmation Progress Add Rol Results	Add features required for TCP Activation You cannot instal TCP Activation unless the required features Features: NET Framework 3.0 Features WCF Activation Non-HTTP Activation	send and receive traffic over a TCP nort, such as nort 208.
Confirmation Progress Results	HTTP Activation Message Queuing Activation Message Queuing Activation Add features required for TCP Activatio You cannot instal TCP Activation unless the required feature Features: NET Framework 30 Features WCF Activation Non-HTTP Activation	send and receive traffic over a TCP nort, such as nort 808. in? is are also installed. Description: <u>Microsoft, NET Framework 3.0</u> combines the power of the .NET Framework 2.0 APIs with new technologies for building applications t. Add Required Features Cancel

16. Click Add Required Features.

Add Roles Wizard Select Role	Services	x
Before You Begin Server Roles Application Server Role Services Web Server (IIS) Role Services Confirmation Progress Results	Select the role services to install for Application Server: Role services: Application Server Foundation Web Server (IIS) Support COM+ Network Access TCP Port Sharing Windows Process Activation Service Support HTTP Activation Message Queuing Activation TCP Activation Named Pipes Activation Named Pipes Activation Sistributed Transactions Incoming Remote Transactions NWS-Atomic Transactions	Description: Outgoing Remote Transactions provides distributed transaction support for propagating transactions that an application generates.
	More about role services	Next > Instal Cancel

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.

Add Roles Wizard Select Role Services		
Before You Begin Server Roles Application Server Role Services Web Server (IIS) Role Services Confirmation Progress Results	Select the role services to install for Web Server (IIS): Description:	
	< Previous Next > Install Cancel	

- 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.

Select Role	Services	
Before You Begin	Select the role services to install for Web Server (IIS):	
Server Roles Application Server Role Services Web Server (IIS) Role Services Confirmation Progress Results	Role services: Image: Construct of the service servic	Description: IIS 6. Management Compatibility provides forward compatibility for your applications and scripts that use the two IIS APIs, Admin Base Object (ABO) and Active Directory Service Interface (ADSI). You can use existing IIS 6 scripts to manage the IIS 7 Web server.

- 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.

Add Roles Wizard	
Installation P	rogress
Before You Begin	The following roles, role services, or features are being installed:
Server Roles	Application Server
Application Server	Web Server (IIS)
Role Services	.NET Framework 3.0 Features
Role Services	Windows Process Activation Service
Confirmation	
Progress	
Results	
	- Involuting installation
	< Previous Next > Install Cancel

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



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.
| Add Features Wizard | | × |
|-------------------------------------------------|---------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Select Features | | |
| Features
Confirmation
Progress
Results | Select one or more features to install on this server.
Eeatures: | Description:
Failover Clustering allows multiple
servers to work together to provide
high availability of services and
applications. Failover Clustering is
often used for file and print services,
database and mail applications. |
| | < <u>Previous</u> | > Install Cancel |

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.

Add Features Wizard		×
Select Features		
Features Confirmation Progress Results	Select one or more features to install on this server. Eeatures:	Description: Failover Clustering allows multiple servers to work together to provide high availability of services and applications. Failover Clustering is often used for file and print services, database and mail applications.
	< <u>P</u> revious <u>N</u> ext	> Install Cancel

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

Add Features Wizard	the second s	B	×
Confirm Installat	tion Selections		
Features Confirmation Progress	To install the following roles, role services, or features, click Install.		
Results	This server might need to be restarted after the installation completes. Failover Clustering		
	Print, e-mail, or save this information		
	< Previous <u>Next</u> > Install	Cancel	

The confirmation window displays for your choice.

8. Click Install.

Add Features Wizard	
Installation Pr	ogress
Features Confirmation	The following roles, role services, or features are being installed:
Progress	Failover Clustering
Results	
	Initializing installation
	€4
	< <u>Previous</u> <u>Mext</u> > <u>Instali</u> Cancel

The Installation Progress window displays and the installation progresses.

9. Allow the application to install the feature.

Add Features Wizard			×
	Results		
Features Confirmation Progress	One or more of the following roles, role	e services, or features require you to restart:	
Results	Failover Clustering	A Restart Pending	
	You must restart this server to	finish the installation process.	
	Multipath I/O	🔔 Restart Pending	
	Print, e-mail, or save the installation re	port	
		<previous next=""> Clase</previous>	Cancel

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 wil	l continue.
----------------------	-------------

Resume Configuration Wizard	
Installation Prog	ress
Resuming Configuration	The following roles, role services, or features are being installed:
Progress	Failover Clustering
Results	Multipath I/O
	Initializing installation
	<previous next=""> Install Cancel</previous>

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.

Resume Configuration Wizard			×
Installation Resu	lts		
Resuming Configuration	The following roles, role services, or	features were installed successfully:	
Results	Failover Clustering	🧭 Installation succeeded	
	Multipath I/O	🥑 Installation succeeded	
	Print, e-mail, or save the installation	report	
		< <u>Previous</u> <u>N</u> ext > Clgse	Cancel

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.

Uccal Area Connection Properties
Networking Sharing
Connect using:
Broadcom NetLink (TM) Gigabit Ethemet
Configure
This connection uses the following items:
 Client for Microsoft Networks QoS Packet Scheduler File and Printer Sharing for Microsoft Networks Auto Internet Protocol Internet Protocol Version 6 (TCP/IPv6) Internet Protocol Version 4 (TCP/IPv4) Internet Protocol Version 4 (TCP/IPv4) Link-Layer Topology Discovery Mapper I/O Driver Link-Layer Topology Discovery Responder
Description Allows your computer to access resources on a Microsoft network.
OK Cancel

- 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:

File Edit View Favo	rites Help		-	D /
Tableunputse		Name	Туре	Data
		ab] (Default)	REG_SZ	(value no
Tcoin		🐯 Dhcpv6DUID	REG_BINARY	00 01 00 0
и псрір				
Darame'				
	Expand			
tcoipreg	New	+	Key	
	Find		String Value	
TDPIPE	Delete		Binary Value	
⊳-🎍 tdx	Rename		DWORD (32-bit) Value	
🛛 - 🔐 TermDD	Export		QWORD (64-bit) Value	
D I TermServic	Demission		Multi-String Value	
D - Themes	Permissions	••••	Expandable String Valu	e
THREADOR	Copy Key N	ame	capendoore onling toto	
TrustedInstalle	er 🔻			
4 111		1		

HKEY_LOCAL_MACHINE/SYSTEM/CurrentControlSet/Services/TCPIP6/Parameters

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

TabletInputService	•	Name	Туре	Data
 - A TapiSrv - A TBS - A Tcpip - TCPIP6 - A Linkage - A Parameters 		(Default) Dhcpv6DUID New Value #1	REG_SZ REG_BINARY REG_DWORD	(value not 00 01 00 01 0x00000000
TCPIP6TUNNEL tcpipreg TCPIPTUNNEL TDPIPE TDTCP tdx TermDD TermService Themes THREADORDER THREADORDER TrikWks TrustedInstaller	Edit DW Value r New V Value c fffff	/ORD (32-bit) Value name: /alue #1 data: fff	Base Hexadecimal Decimal OK	Cancel

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**.

Chang	e sharing options for different network profiles
Windo	vs creates a separate network profile for each network you use. You can choose specific options for each profile.
Home	e or Work
Public	· 🔺
N	letwork discovery
	When network discovery is on, this computer can see other network computers and devices and is visible to other network computers. <u>What is network discovery?</u>
	Turn on network discovery
	C Turn off network discovery
F	ile and printer sharing
	When file and printer sharing is on, files and printers that you have shared from this computer can be accessed by people on the network.
	Turn on file and printer sharing

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.

Network and Sharing Center		N	
🕥 😫 🔹 Control Panel 🔹 N	etwork and Sharing Center	👻 🐖 Search	
Edit View Iools Help			
Tasks	Network and Sharing Center		
View computers and devices			View full map
Connect to a network			()) () () () () () () () () (
Set up a connection or network			- 🥪
Manage network connections	APPCLUSNODE1	Multiple networks	Internet
Diagnose and repair	(This computer)		
			1. 200 C 1. 10 C 1
	HCLab.Local (Domain netwo	rk)	Customize
	Access	Local and Internet	
	Connection	Local Area Connection	View status
	Unidentified network (Pub	lic network)	Customize
	Access	Local only	
	Connection	Local Area Connection 2	View status
	Sharing and Discovery		
	Network discovery	© Off	•
	File sharing	o On	•
See also	Public folder sharing	e off	•
Internet Options	Printer sharing	@ Off(on printers installed)	
Symantec LiveUpdate		a on the brind a listeledy	<u> </u>
Windows Firewall	Show me all the files and folders I	am sharing	
	Chow me all the chared network for	sidere on this computer	

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

The following displays.

Network and Sharing Center			_
y 🖓 🔹 🕈 Control Panel 🔹 N	etwork and Sharing Center	- 😭 Search	
e Edit View Tools Help			
Tasks View computers and devices Connect to a network Set up a connection or network	APPCLUSNODE1 (This computer)	Multiple networks	- O
Manage network connections	Bu HCLab.Local (Domain netwo	ri()	Customize
	Access Connection	Local and Internet Local Area Connection Nic network)	View status Customize
	Access Connection	Local only Local Area Connection 2	View status
	3 Sharing and Discovery		
	Network discovery When network discovery is or to other network computers. C Turn on network discovery	Off this computer can see other network computer What is network discovery?	rs and devices and is visible
See also	 Turn off network discover 	У	
Internet Options			Apply Apply
Symantec LiveUpdate	Domain: RAD.HCLab.Local	👸 Change settings	
Windows Firewall	File sharing	On On	

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.

🕥 🗟 👻 🔹 Control Panel 🔹 N	etwork and Sharing Center	🔻 😭 Search	
Edit View Tools Help Tasks View computers and devices Connect to a network Set up a connection or network Manage network connections Diagnese and conair	APPCLUSNODE1 (This computer)	Multiple networks	View full map
Diagnase and repair	Domain netwo	rk)	Customize
	Access Connection	Local and Internet Local Area Connection	View status
	💐 Unidentified network (Pub	blic network)	Customize
	Access	Local only	
	Connection	Local Area Connection 2	View status
	3 Sharing and Discovery		
	Network discovery	Custom	•
	File sharing	On On	•
See also	Public folder sharing	© Off	•
Internet Options	Printer sharing	Off(no printers installed)	*
Symantec LiveUpdate	Show me all the files and folders I	am sharing	

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.

Add Application Pool	? ×
Name:	
PS360AppPool	
.NET Framework version:	
.NET Framework v2.0.50727	•
Managed pipeline mode:	
Classic	Change to
Start application pool immedi	ately
OK	Cancel

- 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.

	(General)		-
	NET Framework Version	v2.0	
	Enable 32-Bit Applications	True	1
	Managed Pipeline Mode	Integrated	
ļ	Name	PS360AppPool	
1	Queue Length	1000	
3	Start Automatically	True	
	CPU		
	Limit	0	
1	Limit Action	NoAction	
Ĩ	Limit Interval (minutes)	5	
	Processor Affinity Enabled	False	
1	Processor Affinity Mask	4294967295	
	Process Model		
ł.	Identity	ApplicationPoolIdentity	
3	Idle Time-out (minutes)	20	
1	Load User Profile	True	
	Maximum Worker Processes	1	
	Ping Enabled	True	
	Ping Maximum Response Time (seconc	90	
	Ping Period (seconds)	30	
	Shutdown Time Limit (seconds)	90	
2 2	Startun Time Limit (seconds)	90	-

- 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:

lva	anced Settings		?
3	Shutdown Time Limit (seconds)	90	
	Startup Time Limit (seconds)	90	
	Process Orphaning		
	Enabled	False	
	Executable		
	Executable Parameters		
	Rapid-Fail Protection		
	"Service Unavailable" Response Type	HttpLevel	
	Enabled	True	
	Failure Interval (minutes)	5	
	Maximum Failures	5	
	Shutdown Executable		
	Shutdown Executable Parameters		
	Recycling		
	Disable Overlapped Recycle	True	•
	Disable Recycling for Configuration Ch	True	
ŧ	Generate Recycle Event Log Entry	False	
	Private Memory Limit (KB)	0	_
	Regular Time Interval (minutes)	1740	
	Request Limit	0	
Ŧ	Specific Times	TimeSpan[] Array	
100	Virtual Memory Limit (KB)	0	-
Di [d th Se	isable Overlapped Recycle lisallowOverlappingRotation] If true, th lat the existing worker process exits be et to true if the worker process loads a	e application pool recycle will happen su fore another worker process is created n application that does not support mul	uch J. tip

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

Microsoft Windows Installation

MICROSOFT SQL 2008

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



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



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.

SQL Server Installation Cent	er	
Planning Installation	taun an e	installation or add features to an existing installation. ch a wizard to install SQL Server 2008 R2 in a non-clustered environment or to add features to visting SQL Server 2008 R2 instance.
Maintenance Tools Resources Advanced Options	New Laun	SQL Server failover duster installation ch a wizard to install a single-node SQL Server 2008 R2 failover duster. node to a SQL Server failover duster ch a wizard to add a node to an existing SQL Server 2008 R2 failover duster. ade from SQL Server 2000, SQL Server 2005 or SQL Server 2008 ch a wizard to upgrade SQL Server 2000, SQL Server 2005 or SQL Server 2008 to SQL Server R2.
	Sear	ch Microsoft Update for SQL Server 2008 R2 product updates.
>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>	Server Manager	👔 en_sql_server_2008_r2 📸 SQL Server Installatio 🔗 🖏 4:48 PM

The Installation window displays.

3. Select New SQL Server failover cluster installation.

SQL Server 2008 R2 Setup	and the second se	-02
Setup Support Rules Setup Support Rules identify p corrected before Setup can co	roblems that might occur when you install SQL Server Setup support files. Failur tinue.	res must be
Setup Support Rules	Operation completed, Passed: 7. Failed 0. Warning 0. Skipped 0. Show details >> View detailed report.	Re-run
Start 3	Server Manager	OK Cancel

The Setup Support Rules window displays.

4. Click **OK**.

The Product Key window displays.

SQL Server 2008 R2 Setup	
Product Key Specify the edition of SQL 1	rver 2008 R2 to install.
Product Key Ucense Terms Setup Support Files	Validate this instance of SQL Server 2008 R2 by entering the 25-character key from the Microsoft certificate of authenticity or product packaging. You can also specify a free edition of SQL Server, such as Evaluation or Express. Evaluation has the largest set of SQL Server features, as documented in SQL Server Books Online, and is activated with a 180-day expiration. To upgrade from one edition to another, run the Edition upgrade Wizard.
Start a .	Server Manager

- 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.

roduct Key Icense Terms	MICROSOFT SOFTWARE LICENSE TERMS
etup Support Pies	MICROSOFT SQL SERVER 2008 R2 ENTERPRISE
	These license terms are an agreement between Microsoft Corporation (or based on where you live, one of its affiliates) and you. Please read them. They apply to the software named above, which includes the media on which you received it, if any. The terms also apply to any Microsoft updates, supplements,
	Internet-based services, and
	1
	-Cal C Copy Pr
	✓ I accept the license terms.
	Send feature usage data to Microsoft. Feature usage data includes information about your hardware configuration and how you use SQL Server and its components.
	Can the Missourch COL Canvas 2008 D3 Drivers Obtained for more information

The License Terms window displays.

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

髅 SQL Server 2008 R2 Setup			_ 🗆 ×
Setup Support Files Click Install to Install Setup Supp	oort files. To install or update SQL Ser	ver 2008 R2, these files are required.	
Product Key	The following components are	required for SQL Server Setup:	1. T. W. W. A. 1973.
License Terms	Feature Name	Status	
Setup Support Files	Setup Support Files		
			< Back Install Cancel

The Setup Support Files window displays.

9. Click Install.

The Setup Support Rules window displays.

骻 Install a SQL Server Failover C	luster	
Setup Support Rules		
Setup Support Rules identify p corrected before Setup can co	roblems that might occur when you install SQL Server Setup suppor ntinue.	rt files. Failures must be
Setup Support Rules Feature Selection	Rule check in progress	
Disk Space Requirements	the second se	
Error Reporting	Show details >>	Re-run
Cluster Installation Rules		
Ready to Install		
Complete		Þ
		~
	< Back	Next > Cancel Help

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

The	applicatio	on identifi	ies anv	problems.
Inc	application	/II Identiiii	ics uny	problems.

Setup Support Rules Setup Support Rules identify prob corrected before Setup can contin	er lems that might occur when you install SQL Server Setup support files. Failures ue.	mustbe
Setup Support Rules Feature Selection Disk Space Requirements Error Reporting Cluster Installation Rules	Operation completed. Passed: 20. Failed 0. Warning 4. Skipped 0. Hide details << <u>View detailed report</u>	Re-run
Ready to Install Installation Progress Complete	Rule Improvement Improvement <t< th=""><th>Status Passed Warning Warning Passed Passed</th></t<>	Status Passed Warning Warning Passed



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

11. Click Next.

Feature Selection	ster	k <u>-⊡</u> .
Select the Enterprise features to	install.	
Setup Support Rules Product Key License Terms Feature Selection Instance Configuration Disk Space Requirements Cluster Resource Group	Eeatures: Instance Features Database Engine Services SQL Server Replication Full-Text Search Analysis Services Reporting Services Shared Features	Description: Server features are instance-aware and have their own registry hives. They support multiple instances on a computer.
Cluster Disk Selection Cluster Network Configuration Cluster Security Policy Server Configuration Database Engine Configuration Reporting Services Configuration Error Reporting Cluster Installation Rules Ready to Install	Business Intelligence Development Studio Client Tools Connectivity Integration Services Client Tools Backwards Compatibility Client Tools SDK SQL Server Books Online Management Tools - Basic Management Tools - Complete SQL Client Connectivity SDK Microsoft Sync Framework Redistributable Features	
Complete	Select All Unselect All Shared feature directory: C:\Program Files\Wicrosoft SC	۵. Server\

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.

Install a SQL Server Failover Clus	ter				_10 ×
Instance Configuration Specify the name and instance ID	for the instance of SQL Server.	Instance ID become	is part of the instal	lation path.	R
Setup Support Rules Product Key License Terms	Specify a network name for failover cluster on the netw SQL Server Net <u>w</u> ork Name	r the new SQL Serve vork. : Comm360SQL	r fallover cluster. T	his will be the name	e used to identify your
Feature Selection Instance Configuration Disk Space Requirements Cluster Resource Group Cluster Disk Selection Cluster Network Configuration Cluster Security Policy Server Configuration Database Engine Configuration Reporting Services Configuration Error Reporting	⑦ Default instance ⑦ Named instance:	MISSQUEERVER			
	Instance ID: Instance goot directory:	MSSQLSERVER C:\Program Files	Wicrosoft SQL Servi	er)	
	SQL Server directory: Reporting Services directo Detected SQL Server insta	C:\Program Filer ry: C:\Program File nces and features o	s\Microsoft SQL Se s\Microsoft SQL Se on this computer:	rver/MSSQL10_50.A	MSSQLSERVER SSQLSERVER
Ready to Install Installation Progress	Instance Cluster	r Network Name	Features	Edition	Version
Complete	4				
			< Back	Next > Ca	ncel Help

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.

🖥 Install a SQL Server Failover Clu	ister.	_101 ×
Disk Space Requirement	ents y for the SQL Server features you selected.	
Setup Support Rules Product Key	Disk Usage Summary:	
License Terms Feature Selection Instance Configuration	System Drive (C:\): 1686 MB required Shared Install Directory (C:\Program Files\Microsoft SQL Server\): 917 MB required Instance Directory (C:\Program Files\Microsoft SQL Server\): 1267 MB required	
Disk Space Requirements Cluster Resource Group		
Cluster Disk Selection Cluster Network Configuration		
Server Configuration Database Engine Configuration		
Reporting Services Configuration Error Reporting		
Cluster Installation Rules Ready to Install Installation Progress		
Complete		
	< <u>B</u> ack <u>N</u> ext > Cancel	Help

19. Click Next.

The Cluster Resource	Group w	vindow	displays.
----------------------	---------	--------	-----------

Cluster Resource Grou	p			135
Create a new cluster resource gr	oup for your SQL	Server failover cluster.		
Setup Support Rules Feature Selection Instance Configuration Disk Space Requirements	Specify a n failover clu enter a nev SQL Ser	ame for the SQL Server d ister resources will be pla v cluster resource group r ver cluster resource group	uster resource group. The cluster resource group ced. You can choose to use an existing cluster reso name to be created. o name: SQL Server (MSSQLSERVER)	is where SQL Server purce group name or
Cluster Disk Selection	Qualified	Name	Messane	
Cluster Network Configuration		Available Storage	The duster group 'Available Storage' is reserv	ed by Windows F
Cluster Security Policy		Cluster Group The duster group 'Cluster Group' is reserved by Win		
Server Configuration		Comm 360SQLCIDtc	The duster group 'Comm360SQLCIDtc' contain	ns resource 'Comm
Database Engine Configuration Reporting Services Configuration Error Reporting Cluster Installation Rules Ready to Install Installation Progress Complete				
				Refresh
			< Back Next > Cano	el Help

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

Install a SQL Server Failover Clus	ster		
Cluster Disk Selection Select shared cluster disk resour	ces for your SQL :	Server failover clu	ster.
Setup Support Rules Feature Selection	Specify the as the defa configurati	shared disks to ult drive for all d on pages.	be included in the SQL Server resource cluster group. The first drive will be used atabases, but this can be changed on the Database Engine or Analysis Services
Instance Configuration Disk Space Requirements Cluster Resource Group Cluster Disk Selection Cluster Network Configuration	Cluster	Disk 1	
Cluster Security Policy	Availables	hared disks:	
Database Engine Configuration	Qualified	Disk	Message
Reporting Services Configuration	e	Cluster Disk 1	
Error Reporting	۲	Cluster Disk 2	The disk resource 'Cluster Disk 2' cannot be used because it is a duster quo
Cluster Installation Rules	۲	Cluster Disk 3	The disk resource 'Cluster Disk 3' is already in use by resource 'MSDTC-Com
Installation Progress Complete			Refresh
			< Back Next > Cancel Help

The Cluster Disk Selection window displays.

22. Click Next.
| Cluster Network Config
Select network resources for you | guration | ter. | | | | |
|-------------------------------------------------------------------------------------------------------|--------------------|------------------------|--------------------|---------------|-------------------|---------|
| Setup Support Rules | Specify the networ | k <u>s</u> ettings for | this failover clus | ster: | | |
| License Terms | I IP Type | DHCP | Address | Subnet Mask | Network | |
| Feature Selection | IPv4 | 9 | | 255.255.255.0 | Cluster Network 1 | |
| Instance Configuration
Disk Space Requirements
Cluster Resource Group
Cluster Disk Selection | | | | | | |
| Cluster Security Policy | | | | | | |
| Server Configuration | | | | | | |
| Database Engrie Configuration | | | | | | |
| Error Reporting | | | | | | |
| Cluster Installation Rules | | | | | | |
| Ready to Install | | | | | | |
| Installation Progress | | | | | | |
| Complete | | | | | | |
| | | | | | | Refresh |
| | | | | | | Tencer |

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.

🚼 Install a SQL Server Failover Clu	ster	
Cluster Security Policy Configure the security policy for	your SQL Server failover cluster.	
Setup Support Rules Product Key License Terms Feature Selection Instance Configuration Disk Space Requirements Cluster Resource Group Cluster Disk Selection Cluster Network Configuration Cluster Network Configuration Cluster Security Policy Server Configuration Database Engine Configuration Reporting Services Configuration Error Reporting Cluster Installation Rules Ready to Install Installation Progress Complete	Specify global or local security domain groups for the clustered services tha SQL Server failover cluster. All resource permissions are controlled by doma Server service accounts as members. (* Use service SIDs (recommended) (* Use domain group Database Engine domain group: SQL Server Agent domain group: SQL Server Agent domain group:	it will be installed as part of your in-level groups that include SQL
	< <u>B</u> ack <u>N</u> ext >	Cancel Help

The Cluster Security Policy window displays.

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

Setup Support Rules Feature Selection Instance Configuration	Service Accounts Collation	a separate account for e	ach SQL Server se	ervice.	
Disk Space Requirements	Service	Account Name	Password	Startup Type	
Cluster Resource Group	SQL Server Agent			Manual	-
Cluster Disk Selection	SQL Server Database Engine			Macaral	-
Cluster Network Configuration	SQL Server Reporting Services			Automatic	•
Cluster Security Policy Server Configuration	SQL Server Integration Services 1	NT AUTHORITY Wetwor.		Automatic	٠
	SQL Full-text Filter Daemon Launc	NT AUTHORITY LOCAL		Manual	
Jacabase Engrie Configuration	SQL Server Browser	NT AUTHORITY LOCAL .		Automatic	-
Error Reporting Cluster Installation Rules Ready to Install Installation Progress Complete	CHANG	Use the s	ame account for a	all SQL Server sen	vices

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.
	0			

Database Engine Config	uration	
Specify Database Engine authentice Setup Support Rules Product Key Jicense Terms Feature Selection Instance Configuration Disk Space Requirements Duster Resource Group Duster Disk Selection Duster Disk Selection Duster Network Configuration Duster Security Policy	Account Provisioning Data Directories FILESTREAM Specify the authentication mode and administrate Authentication Mode C Windows authentication mode Mixed Mode (SQL Server authentication and W Specify the password for the SQL Server system Enter password:	M ors for the Database Engine. Vindows authentication) administrator (sa) account.
Server Configuration Database Engine Configuration Reporting Services Configuration Error Reporting	Specify SQL Server administrators RAD\administrator (Administrator)	SQL Server administrators have unrestricted access to the Database Engine.
Cluster Installation Rules Ready to Install Installation Progress Complete	Add Current User Add Remove	

- 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.

🚼 Install a SQL Server Failover Clust	er		_ D ×
Database Engine Config Specify Database Engine authentice	juration ation security mode, administrators	and data directories.	
Setup Support Rules Product Key License Terms Feature Selection Instance Configuration Disk Space Requirements Cluster Resource Group Cluster Disk Selection Cluster Disk Selection Cluster Network Configuration Cluster Network Configuration Cluster Security Policy Server Configuration Database Engine Configuration Reporting Services Configuration Error Reporting Cluster Installation Rules Ready to Install Installation Progress Complete	Account Provisioning Data Dire Data root directory: System database directory: User database directory: User database log directory: Temp DB directory: Tgmp DB log directory: Backup directory:	ectories FILESTREAM	
		< <u>B</u> ack <u>N</u> ext > Cancel	Help

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.

Reporting Services Con	figuration
Specify the Reporting Services con	figuration mode.
Setup Support Rules Product Key License Terms Feature Selection Instance Configuration Disk Space Requirements Cluster Resource Group Cluster Disk Selection Cluster Disk Selection Cluster Network Configuration Cluster Security Policy Server Configuration Database Engine Configuration Reporting Services Configuration Error Reporting Cluster Installation Rules Ready to Install Installation Progress Complete	 Install the native mode default configuration. Setup will install the report server and configure it in Native mode to use the default values. The report server is usable as soon as Setup is finished. Install the SharePoint integrated mode default configuration. Setup will create the report server database in SharePoint integrated mode and configure the report server to use the default values. However, integrated operations will not be supported until a minimal installation of a SharePoint product or technology is deployed on the report server computer and the Reporting Services Add-in for SharePoint Technologies is installed and configured on the instance of the SharePoint product or technology you are using. Install, but do not configure the report server. Setup will install, but will not configure, the report server software. After installation is finished, you can use the Reporting Services Configuration tool to set options that are required to run the report server.



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.

🚼 Install a SQL Server Failover Clu	
Error Reporting	
Help Microsoft Improve SQL Serv	er features and services.
Setup Support Rules Product Key License Terms Feature Selection Instance Configuration Disk Space Requirements Cluster Resource Group	Specify the information that you would like to automatically send to Microsoft to improve future releases of SQL Server. These settings are optional. Microsoft treats this information as confidential. Microsoft may provide updates through Microsoft Update to modify feature usage data. These updates might be downloaded and installed on your machine automatically, depending on your Automatic Update settings. See the Microsoft SQL Server 2008 R2 Privacy Statement for more information. Read more about Microsoft Update and Automatic Update.
Cluster Disk Selection Cluster Network Configuration Cluster Security Policy Server Configuration Database Engine Configuration Reporting Services Configuration Error Reporting Cluster Installation Rules Ready to Install Installation Progress Complete	Send Windows and SQL Server Error Reports to Microsoft or your corporate report server. This setting only applies to services that run without user interaction.
	< <u>B</u> ack <u>N</u> ext > Cancel Help

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

Install a SQL Server Failover Clus	ter	×
Cluster Installation Ru	les	
Setup is running rules to determi	e if the failover cluster installation operation will be blocked. For more informatio	n, dick Help.
Setup Support Rules	Operation completed. Passed: 6. Failed 0. Warning 0. Skipped 3.	
Product Key		
East re Selection	Show details >>	Re-run
Testance Configuration	View detailed report	
Dick Shace Requirements	YICH OCONCOLOUR	
Cluster Resource Group		
Cluster Disk Selection		
Cluster Network Configuration		
Cluster Security Policy		
Server Configuration		
Database Engine Configuration		
Reporting Services Configuration		
Error Reporting		
Cluster Installation Rules		
Ready to Install		
Installation Progress	N	
Complete	45	
	< Back Next >	Cancel Help

The Cluster Installation Rules window displays.

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

Setup Support Rules Product Key License Terms Feature Selection Instance Configuration Disk Space Requirements Cluster Resource Group Cluster Network Configuration Disk Selection Cluster Network Configuration Cluster Network Configuration Disk Selection Cluster Network Configuration Database Engine Configuration Database Engine Configuration Database Engine Configuration Database Engine Configuration Particle Security Policy Service Configuration Database Engine Configuration Pror Reporting Conster Installation Rules Ready to Install Installetion Progress Completer Configuration Progress Completer	Ready to Install Verify the SQL Server 2008 R2 fe	atures to be installed.	
Complete Configuration file path:	Setup Support Rules Product Key License Terms Feature Selection Instance Configuration Disk Space Requirements Cluster Resource Group Cluster Disk Selection Cluster Disk Selection Cluster Network Configuration Cluster Network Configuration Cluster Security Policy Server Configuration Database Engine Configuration Reporting Services Configuration Error Reporting Cluster Installation Rules Ready to Install Installation Progress	Ready to install the SQL Server 2008 R2 failover cluster: Summary Edition: Enterprise Action: InstallFailoverCluster General Configuration Peatures Obtabase Engine Services SQL Server Replication Full-Text Search Reporting Services Integration Services Management Tools - Basic Management Tools - Complete Instance configuration Instance ID: MSSQLSERVER Instance ID: SQL Database Engine: MSSQL10_50.MSSQLSERVER Reporting Services: MSRS10_50.MSSQLSERVER Instance ID: SQL Database Engine: MSSQL10_50.MSSQLSERVER Instance ID: SQL Database Engine: MSSS10_50.MSSQLSERVER Instance ID: Subard component root directory	1
C:\Program Files\Microsoft SQL Server\100\Setup Bootstrap\Log\20110331_144740\ConfigurationFile.ini	Complete	Configuration file path: C:\Program Files\Microsoft SQL Server\100\Setup Bootstrap\Log\20110331_144740\ConfigurationFile	e.ini

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.

Install a SQL Server Failover Clust	r .	
Installation Progress		
Setup Support Rules Product Key		
License Terms Feature Selection Instance Configuration Disk Space Requirements Cluster Resource Group Cluster Disk Selection Cluster Disk Selection Cluster Network Configuration Cluster Security Policy Server Configuration Database Engine Configuration	ConfigEvent_MPT_AGENT_CORE_CNI_sql_engine_core_inst_Cpu3	82_Install_ShutdownNonInstance_premsi
Reporting Services Configuration Error Reporting Cluster Installation Rules Ready to Install Installation Progress Complete		ß
Complete		Next > Cancel Help



When the installation is complete, the Complete window displays.



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.





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



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.

Planning Installation Installation Maintenance Tools Resources Advanced New SQL Server falover duster installation Options Add node to a SQL Server falover duster Upgrade from SQL Server 2009, SQL Server 2009, R2 falover duster. Image: Server 2009, SQL Server 2009, R2 falover duster. Image: Server 2009, SQL Server 2009, R2 falover duster. Image: Server 2009, SQL Server 2009, SQL Server 2009, R2 falover duster. Image: Server 2009, SQL Server 2009, SQL Server 2009, R2 falover duster. Image: Server 2009, SQL S	
Search Pikrosoft update for Sigt Server 2008 K2 product updates.	tures to Server
	Server
Non-tr	

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.

Connect				
Server	Reporting Services Configurat	ion Connection	×	
🗟 Service Account	SQL Server 20 Reporting Service	008 R2		
과 Web Service URI	Please specify a server name, c	lick the Find button, and select a report server		
Database	instance to compute.	2		
	Server Name:	COMM360SQL	Find	
Report Manager	Report Server Instance:	MSSQLSERVER		
🖹 E-mail Settings				
Execution Accou	0	Connect	Cancel	

3. Click Connect.

The Report Server Status window displays for the Cluster.

Reporting Services Configuration M	anager: SQLCLUSNODE1\MSSQLSERVER		- 8
Reporting Services Confi	guration Manager		
Connect	Report Server Status		
SQLICLUSNODE TYMSSQLSERVER	Use the Reporting Services of settings for the Report Services in files-only mode, database, and the Report M	Configuration Manager tool to define or modify er and Report Manager. If you installed Reporting you must configure the Web service URL, the Janager URL.	2
2 Web Service URL	Current Report Server		
Uatabase	SQL Server Instance:	MSSQLSERVER	
	Instance ID:	MSRS10_50.MSSQLSERVER	
Report Manager URL	Edition:	ENTERPRISE EDITION	
	Product Version:	10.50.1600.1	
E-mail Settings	Report Server Database Name:		
	Report Server Mode:		3
Execution Account	Report Service Status:	Started	
R Encryption Keys	Results		
Scale-out Deployment			
		Сору	
		Apply	Đứt

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

Reporting Services Configuration M	anager: SQLCLUSNODE1\MSSQLSE	RVER	X
SQL Server 2008 R2 Reporting Services Confi	guration Manager		
2 Connect	Web Service URL		
SQLCLUSNODE 1/MSSQLSERVER	Configure a URL i Server instance, o	used to access the Report Server. Click Advanced to or to specify additional parameters on the URL.	o define multiple URLs
29 Web Service URL	Report Server Web Se press the Apply butto	rvice is not configured. Default values have been pr on, else change them and then press Apply.	rovided to you. To acc
1 Database	Report Server Web Service Virtual Directory:	Virtual Directory ReportServer	
Report Manager URL	Report Server Web Service	Site identification	
🚖 E-mail Settings	IP Address: TCP Port:	All Assigned (Recommended)	•
Execution Account	SSL Certificate:	(Not Selected)	
Recryption Keys	<u>•</u>		<u> </u>
≟ ⁹ ≟ Scale-out Deployment	Results		-
			Сору
w .		Apph	Bot

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

The following window displays.

under adecentationer handene	RVER	- 8
guration Manager		
Web Service URL		
Configure a URL u Server instance, o	used to access the Report Server. Click Advanced to define multiple r to specify additional parameters on the URL.	URLS
Report Server Web Service V Virtual Directory:	Virtual Directory ReportServer	
Report Server Web Service ?	Site identification	_
IP Address:	All Assigned (Recommended)	
SSL Certificate:	(Not Selected)	-
SSL Port:		
<u>.</u>		2
Results		
Reserving url http://+:80	Copy	1
	Web Service URL Web Service URL Configure a URL of Server instance, of Report Server Web Service of Virtual Directory: Report Server Web Service of IP Address: TCP Port: SSL Certificate: SSL Port: Results Results Results Results Results Results	Web Service URL Server a URL used to access the Report Server. Click Advanced to define multiple Server instance, or to specify additional parameters on the URL. Report Server Web Service Virtual Directory Virtual Directory: Report Server Web Service Site identification IP Address: All Assigned (Recommended) SSL Certificate: (Not Selected) SSL Port: Results

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.

eport Server Database C	onfiguration Wizard	x
Change Database Choose whether to create o	r configure a report server database.	
Action Database Server Database Credentials Summary Progress and Finish	Select one of the following options to create an empty report server database or select an existing report server database that has content you want to use. Select a task from the following list: Create a new report server database. Choose an existing report server database. 	
0	Previous Next Cano	el

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

The Database Server window displays for choices.

0		
base Server	Choose a local or remote instance of a credentials that have permission to cor	SQL Server Database Engine and specify nect to that server.
base		
entials	Connect to the Database Server:	
mary ress and Finish	Server Name:	COMM360SQL
	Authentication Type:	Current User - Integrated Security
	Username:	RAD\administrator
	Password:	Test Connection
	Authentication Type: Username: Password:	Current User - Integrated Security RAD\administrator Test Connect

- 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.

Change Database			
Choose whether to create o	r configure a report server database.		
Action Database Server	Enter a database name, select the whether to create the database in	language to use for running SQL scripts, and native or SharePoint mode.	I specify
Database Credentials	Database Name:	ReportServer	
Summary	Temp Database Name:	ReportServerTemp	
Progress and Finish	Language:	English (United States)	<u> </u>
	Report Server Mode:	Native Mode	
		C SharePoint integrated mode	

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

The Credentials window for Change Database displays.

change Database				
Choose whether to create o	r configure a report server database.			
Action Database Server Database	Specify the credentials of an existi the report server database. Permis automatically granted to the account	ng account that the rep ision to access the rep nt you specify.	ort server will use to co ort server database will	nnect to be
Credentials				
Summary Progress and Finish	Credentials:			
	Authentication Type:	Service Cred	entials	
	User name:	RAD\adminis	trator	
	Password:			
	1			
0		Previous	Next	Cancel

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

The Summary displays.

Choose whether to create o	r configure a report server database.	
Action Database Server Database	The following information will be use information is correct before you co	ed to create a new report server database. Verify this ntinue.
Credentials	SQL Server Instance:	COMM360SQL
Summary	Report Server Database:	ReportServer
Progress and Finish	Report Server Language:	English (United States)
	Report Server Mode:	Native
	Authentication Type:	Service Account
	Username:	RAD\administrator
	Password:	

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

The wizard configures the database and shows the progress.

hoose whether to create	or configure a report server database.	
lotion Database Server Database	Please wait while the Report Server Database database. This might take several minutes to	Configuration wizard configures the complete.
redentials		
Summary		
Progress and Finish		
	Verifying database sku	Success
	Generating database script	Success
	Running database script	Success
	Generating rights scripts	Success
	Applying connection rights	Success
	Setting DSN	Success

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.

ation Manager		
ation Manager		
Report Manager URL		
• Culture	10 mart Martin Children de de	an a Mala UDI a sata a
on the URL.	URL to access Report Manager. Click Advanced to den	nemulopie okus, ortos
The Report Mana that is provided,	ager virtual directory name is not configured. To config and then click Apply.	ure the directory, enter
Report Manager Site Id	Ientification	
Virtual Directory:	Reports	
URLs:	http://SQLCLUSNODE1:80/Reports	-
•		2
Results		
	200	Copy
	Configure a on the URL.	Keport Manager URL Configure a URL to access Report Manager. Click Advanced to defion the URL. Image: The Report Manager virtual directory name is not configured. To config that is provided, and then click Apply. Report Manager Site Identification Virtual Directory: Reports URLs: http://SQLCLUSNODE1:80/Reports Results App

24. Click **Apply**.

Reporting Services Configuration N	lanager: SQLCLUSNODE1\H5SQLSERVER	_ 6)
SQL Server 2008 R2 Reporting Services Conf	iguration Manager	
Connect SQLCLUSNODE 1\MSSQLSERVER Service Account Web Service URL Database Report Manager URL	Report Manager URL O Configure a URL to access Report Manager. Click Advanced to de parameters on the URL. Report Manager Site Identification Virtual Directory: Reports URLs: http://SQLCLUSNODE1:80/Reports	fine multiple URLs, or to spe
E-mail Settings Execution Account Encryption Keys Scale-out Deployment	Results Creating virtual directory keports Reserving url http://+:80 The url was successfully reserved.	
0	A	pply Exit

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:

E Home	- Report Manager - Windows Internet Explorer		_ 🗆 🗙				
00	Manager X Home - Report Manager X		♠ ☆ ☺				
		Home My Subscriptions	Site Settings Help 📩				
	SQL Server Reporting Services						
	Home	Search	P				
📴 Ne	w Folder 👘 涅 New Data Source 👘 🎬 Report Builder 👘 🕍 Folder Settings 👘 📍	Upload File	🔛 Details View				
There an	There are no items in Home. Click Help for more information about this page.						
. state.	Man Manager and Manager and Manager and Manager and	and the second s	and the second s				

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.

Reporting Services Configuration M	lanager: SQLCLUSNODE1\MSSQLSERVER	- 8
Reporting Services Conf	iguration Manager	
Connect SQLCLUSNODE 1/MSSQLSERVER Service Account Web Service URL Database Report Manager URL E-mail Settings	E-mail Settings To use report server e-mail, specify an existing SMTP serve from that server. SMTP Settings To edit, change the fields and click the Apply button. Sender Address: Current SMTP Delivery Method: Use SMTP set	er and an e-mail account that ca
Execution Account Encryption Keys Scale-out Deployment	Results	Сору
		Apply Exit

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.

Reporting Services Configuration M	anager: SQLCLUSNODE1\M5SQLSERVER	_ 5
Reporting Services Confi	guration Manager	
Connect	Execution Account	
Service Account	Specify this account to enable the use of report data sources that do connect to remote servers that store external images used in reports user account with minimal permissions for performing read-only oper that has more permissions than you actually need. The account you s the service account to ensure you do not compromise security on you	not require credentia Be sure to specify a rations. Avoid using a specify should be diffe ur report server instan
🔰 Database	Execution Account	
 Report Manager URL E-mail Settings 	Specify an execution account	
Execution Account	Results	
R Encryption Keys		
ੂ [™] a Scale-out Deployment		Сору
	Apply	Exit

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.

SQL Server (MSSQLSERVER) Properties	×				
General Failover					
SQL Server (MSSQLSERVER)					
Name:					
SQL Server (MSSQLSERVER)					
Select the <u>preferred owners</u> for this service or application. Use the buttons to list them in order from most preferred at the top to least preferred at the bottom. <u>P</u> referred owners:					
C360S1					
State: Online					
Node: C360S1					
OK Cancel Apply	,				

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

The Failover tab window displays.

50	QL Serve	er (MSSQLSERVER) Propertie	5	×	
ĺ	General	Failover			
	Failov	/er			
	Specify the number of times the Cluster service will attempt to restart or fail over the service or application in the specified period.				
	If the service or application fails more than the maximum in the specified period, it will be left in the failed state.				
	1	Maximum failures in the specified period:	2		
	Į	<u>P</u> eriod (hours):	6 🗧		
	Failback Specify whether the service or application will automatically fail back to the most preferred owner (which is set on the General tab).				
	(Prevent failback			
		🔿 Allow failback ————			
		Immediately			
		C Eailback between:	0 📫 and		
			0 hours		
	More about failover and failback				
		OK	Cancel Apply		

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

Verify you are at the following window.

👹 Failover Cluster Management					
Eile Action View Help					
♦ ♦ 2 00 00					
Failover Cluster Management	SQL Server (MSSQLSERVER	र)	Recent Cluster Events: 🔺 Error		
Cools of the services and Applications Cools of the services and Applications Cools of the services of the servic	Summary of SQL Serve	r (MSSQLSERVER)	4		
- 🏟 Nodes	Status: Online				
C36051 C36052	Alerts: <none></none>				
🔁 Storage	Preferred Owners: <none></none>		1		
Retworks	Wetworks Current Owner: C360S1				
Cluster Network 1					
	Name	Status			
	Server Name				
	🗩 🌺 Name: SQL360	🕥 Online			
	Disk Drives				
	🗉 🖙 Cluster Disk 3	💿 Online			
	Other Resources				
	🔅 Analysis Services	💿 Online			
	E SQL Server	💿 Online			
	C SQL Server Agent	💿 Online	1		
In the second second second	Las an a sound !!	and the second second	and the second second second second		

- 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:

Name: SQL360 Properties					
General Dependencies Policies Advanced Policies					
*	Resource <u>N</u> a Resource typ State:	me: e:	SQL Net Network Online	work Name (SQ Name	L360)
DN <u>S</u> N	ame:				
SQL36	D				
Full Na IP Addr	Full Name: SQL360.RAD.HCLab.Local IP Addresses:				
Netwo	Network		IP Address		
a , 10.	1.109.0/24		10.1.10	9.0	
		Add	<u> </u>	<u>E</u> dit	<u>R</u> emove
NetBIO:	S Status:	ок			
DNS St	atus:	ОК			
Kerbero	s Status:	ОК			
			OK	Cancel	Apply
Dependencies:

	sQ	L360 Prope	rties	x					
Gene	aeneral Dependencies Policies Advanced Policies								
Spe be t	Specify the resources that must be brought online before this resource can be brought online:								
		AND/OR Resource							
•			IP Address: 10.1.109.118						
*	С	ick here to ac	id a dependency						
			Insert Delete						
			<u>I</u> nsert <u>D</u> elete						
IP 4	Add	Iress: 10.1.10	<u>Insert</u> 9.118						
IPA	Add	ress: 10.1.10	<u>Insert</u> 9.118 <u>How resource dependencies work</u>						

Policies:

Name: SQL360 Properties	×
General Dependencies Policies Advanced Policies	1
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: 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):	
OK Cancel Apply	

Advanced Policies:

Name: SQL360 Properties	X
General Dependencies Policies Advanced Policies	_
Clear the check box if you do not want a node to host this resource or this clustered instance.	
Possible Owners:	
C360S1	
Basic resource health check interval	
Use standard time period for the resource type	
O Use this time period (mm:ss):	
Thorough resource health check interval	
 Use standard time period for the resource type 	
C Use this time period (mm:ss):	
<u>R</u> un this resource in a separate Resource Monitor Choose this option if the associated resource type DLL needs to be debugged or is likely to conflict with other resource type DLLs.	
OK Cancel Apply	

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:

 $\label{eq:linear} X:\Program Files\Microsoft SQL Server\MSRS10.<ServerInstance>\Reporting Services\ReportServer\rsreportserver.config$

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



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

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.



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

Microsoft iSCSI	×
The Microsoft iSCSI service is not running. The service is required to be started for iSCSI to function correctly. Do you want to start the service and have it run automatically each time you start your computer?	
<u>Y</u> es <u>N</u> o	



The following provides the steps for installing Network Attached Storage.

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



Favorite Targets	_1_	Volumes and Devices	RADIUS
General		Discovery	Targets
arget portals —			
Address	Port	Adapter	IP address
Add Portal	_ _	Remove	Refresh
Add <u>F</u> or tann		Nerriove	N <u>e</u> rrearr
NS servers			
SNS servers			
SNS servers			
SNS servers			
SNS servers			
SNS servers			
NS servers Name A <u>d</u> d		Remove	Refresh
SNS servers Name A <u>d</u> d		Remove	Refresh
SNS servers Name A <u>d</u> d		Remove	Re <u>f</u> resh

The iSCSI Initiator Properties window opens.

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

The Add Target Portal window displays.

iSCSI Initiator Properties			×
Add Target Portal			×
Type the IP address or DNS n to add. To select settings for Advanced.	ame and port nu the discovery se	umber of the port ession to the port.	al you want
IP address or DNS name: FreeNasJG	Port:	Ad	vanced
		ок	Cancel
Name			
A <u>d</u> d	Remove	Refr	esh
	ОК	Cancel	Apply

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



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

5. Click **OK**.



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

iSCSI Initiator Prope	erties	×
Favorite Targets General	Volumes and De Discovery	evices RADIUS Targets
_ <u>T</u> arget portals		
Address	Port Adapter	IP address
FreeNas	3260 Default	Default
Add Portal	<u>R</u> emove	Refresh
iSNS servers		
Name		
A <u>d</u> d	Remove	Refresh
	ОК	Cancel Apply

You are returned to the iSCSI Initiator Properties Discovery tab.

6. Click the Targets tab.

SI Initiator Propertie	25	
Favorite Targets	Volumes and Devices	RADIUS
General	Discovery	Targets
To access storage devic Log on. To see information abou click Details.	tes for a target, select the ta ut sessions, connections, and	arget and then click I devices for a target,
Targets: Name ign.2007-09.jp.ne.pe	ach.istgt:Data I	Status Inactive
iqn.2007-09.jp.ne.pe	ach.istgt:Quorum I	nactive
<u>D</u> etails	<u>L</u> og on	R <u>e</u> fresh
<u>D</u> etails	Log on	R <u>e</u> fresh

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.



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 <u>Direct Attached Storage</u> (<u>DAS</u>) 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.

iSCSI Initiator Properties	×
Log On to Target	۱ I
Target name:	
iqn.2007-09.jp.ne.peach.istgt:Data	
Automatically restore this connection when the computer starts	
Enable multi-path	
Only select this option if iSCSI multi-path software is already installed on your computer.	
Advanced OK Cancel	
iqn.2007-09.jp.ne.peach.istgt:Data Inactive	-
ign.2007-09.jp.ne.peach.istgt:Quorum Inactive	
Details Log on Refresh	1
OK Cancel Apply	

- 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.



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**.



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)



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.

🗢 🔿 🙎 📅 📓 🔂 🛛	e 23						
Computer Management (Local) System Tools Task Scheduler Event Viewer Coll Users and Groups Relability and Performanc Perice Manager Storage Storage Storage Services and Applications	Volume	Layout	Type	File System	Status	Actions	
	(C:)	Simple	Basic	NTFS	Healthy (System, Boot, Pag	Disk Management	*
	Ellisteren (b.)	Simple	Dasic	UPS -	nealthy (Primary Partuon)	More Actions	,
	<u>.</u>				<u>.</u>	1	
	Cal Disk 2 Unknown 7.81 GB Offine	7.81 GB Inaliocate	d				
	CD-RO CD-RO Help	<u>k</u>	d ENU (D:)			
	3.03 GB	.03 GB C	DFS	(artition)		0	
4	Unalocated Print	nary parti	ion	ar a source			

The pop-up window displays.

4. Select Online.

Computer Management - 🗆 × File Action View Help (= =) 🖄 📅 📓 📷 📓 🖆 😼 🛃 Computer Management (Local) Layout Type File System Status Actions Volume E 👔 System Tools (C:) Simple Basic NTFS Healthy (System, Boot, Page **Disk Management** . Task Scheduler
 Event Viewer SQLFULL_ENU (D:) Simple Basic CDFS Healthy (Primary Partition) More Actions ٠ Shared Folders
 Shared Folders
 Local Users and Groups E 🙆 Reliability and Performanc Device Manager 🖻 🚰 Storage Disk Management 🗉 🚠 Services and Applications • > . Disk 2 Unknown 7.81 GB Offline 7.81 GB Unallocated Disk 3 Unknown 768 MB-10.00 Initialize Disk Not Init ted 2 CD-ROI 3.03 GE Online Offine L_ENU (D:) Properties CDFS -(Primary Partition) Help Uhalluu 0100 ttion .

The pop-up window displays.

5. Select Initialize Disk.

Computer Hanagement									_ ×
File Action View Help									
	6 3								
Computer Management (Local)	Volume	Layout Type File System Status						Actions	
 System Tools Task Scheduler 	C:)	Simple	Basic Basic	NTFS CDFS	Healthy (S) Healthy (Pr	ystem, Boot, Pa imary Partition	age)	Disk Management	•
Event Viewer Shared Folders	Initialize Disk	Shipic			inconsily y i		×I	More Actions	•
E Local Users and Groups	You must initialize a	disk before	Logica	al Disk Manag	er can acces	st.			
Device Manager	Select disks:								
E Storage	Disk 3								
Disk Management Services and Applications									
	Use the following pa	rtition style	for the	selected disks	e.	De			
	MBR (Master Br GPT (GUID Part)	oot Record	0						
	GFT (GOID Par		9						
	Note: The GPT parti Windows. It is recom	tion style is mended fo	or disks	larger than 21	B, or disks ut	rsions of sed on			
	Itanium-based comp	uters.			ок	Carcel			
		19002010				Canodi			
	Not Initialized	Unallocate	d						
	CD-ROM 0					-			
	CD-ROM 3.03 G8	SQLFULL 3.03 GB CI	ENU OFS	(D:)					
	Unallocated Pr	Healthy (P mary partit	rimary ion	Partition)			-		
		, parts					-11		

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**.

Computer Management								<u>- 0 ×</u>
* * 2	e e							
Computer Management (Local)	Volume	Layout	Туре	File System	Status		Actions	
E System Tools	(C:)	Simple	Basic	NTES	Healthy (System, Boot, I	Page	Disk Management	
Event Viewer Shared Folders Shared Folders Device Manager Storage Disk Management Services and Applications	E SUPOLLENU (DI)	Smple	basic	UPS -	Healthy (Primary Partico	ev.	More Actions	
	•					•		
	Unknown 7.81 G8 Offine	7.81 G8 Unallocate	d			-		
	Lini Disk 3 Basic 767 MB Online	767 MB Jnallocate	d ///	New Sm	le Volume			
	CD-ROM 0 CD-ROM 3.03 G8 Online	5 QLFULL 3.03 GB CI Healthy (P	_ENU (DFS rimary F	New Strip New Mirri New RAD	ored Valume ored Valume D-5 Valume	-		
۲	Unallocated Prin	mary partit	ion	Propertie	5			
				Help				

The pop-up window displays.

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



The New Simple Volume Wizard opens.

9. Click Next.

A Computer Management			h.	_ 🗆 ×
File Action View Help			v	
🗢 🧼 🖄 📅 📓 🖬 😫 I	6 3			
Computer Management (Local) System Tools Task Scheduler E Event Viewer E Shared Folders Local Users and Groups E GR Relability and Performanc	Volume New Simple Vo Specify Vo Choose	Layout Type File Syst Solume Wizard Solume Size a volume size that is between	em Status	Actions
Device Manager Storage Disk Management Services and Applications	Maximu Minimun Simple v U 7 0	m disk space in MB: n disk space in MB: volume size in MB:	765 8 1115 -	
	L B. 7 O CD-ROM 3.03 GB	SQLFULL_ENU (D:)	< Back Next	> Cancel
<u></u>	Online Unallocated	Healthy (Primary Partition) Primary partition		

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.



Before choosing the drive letter, read the following important information

IMPORTANT

13. Click Next.

You	will	now	format	a	partition.
-----	------	-----	--------	---	------------

🕀 Computer Management				N	- OX
File Action View Help				12	
(n 🔿 🖄 📅 🖄 🖬	S 🗐				
Computer Management (Local) System Tools Task Scheduler Shared Folders Computer Viewer Relability and Performanc Device Manager Storage Disk Management Services and Applications	Volume New Simple Vo Format Pa To store Choose C I G I J J L B 7 0 L B 7 0	Layout Type File clume Wizard rtition e data on this partition, you whether you want to for Do not format this volume format this volume with the File system: Allocation unit size: Volume label: T Perform a quick for T Enable file and fold	e System Status ou must format it first. mat this volume, and if so, wh he following settings: [NTFS [Default [New Volume mat er compression < Back	Actions	
	CD-ROM 3.03 GB Online	SQLFULL_ENU (D:) 3.03 GB CDFS Healthy (Primary Part)	tion)	<u>_</u>	
		rimary partition			



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.



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. Storage Configuration

CLUSTER CONFIGURATION

5



.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.



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.

Failover Cluster Management		R	×
File Action View Help			
Falover Cluster Management	Failover Cluster Managemen	t 🗖	Actions
	Create failover clusters, validate hard configuration changes to your failove	ware for potential failover clusters, and perfor r clusters.	Failover Cluster Ma Validate a Confi Create a Cluster
	* Overview		Manage a Cluste
	A failover cluster is a set of independent of availability of services and applications. The	computers that work together to increase the	View •
	physical cables and by software. If one of services (a process known as failover).	the nodes fails, another node begins to pro-	👔 Help
	Clusters		
	* Management		
	To begin to use failover clustering, first va cluster. After these steps are complete, y include migrating settings to it from a clust	lidate your hardware configuration, then cre ou can manage the cluster. Managing a clu er running Windows Server 2003.	
	Validate a Configuration	Understanding cluster vals tests	
	Create a Ouster	Creating a failover cluster c- a cluster node	
	Manage a Cluster	Managing a failover cluster	
		Migrating settings from a cl running Windows Server 2	
	đ		1

The Failover Cluster Management window displays.

2. Click Create a Cluster.

The Create Cluster Wizard opens and displays an information window.

🚏 Create Cluster Wiz	ard	×
Before Yo	bu Begin	
Before You Begin Select Servers Validation Warning Access Point for Administering the Cluster Confirmation Creating New Cluster Summary	This wizard creates a cluster, which is a set of servers that work together to increase the availability of clustered services and applications. If one of the servers fails, another server begins hosting the clustered services and applications (a process known as failover). Before you run this wizard, we strongly recommend that you run the Validate a Configuration wizard to ensure that your hardware and hardware settings are compatible with failover clustering. Microsoft supports a cluster solution only if the complete configuration (servers, network, and storage) can pass all tests in the Validate a Configuration wizard. In addition, all hardware components in the cluster solution must be "Certified for Windows Server 2008". You must be a local administrator on each of the servers you want to include in the cluster. To continue, click Next. More about Microsoft support of cluster solutions that have passed validation tests More about the name and IP address information needed for a new cluster Qo not show this page again	1

3. Click Next.

	A data ta construction of all states		
Select Servers	Add the names of all t	ne servers that you want to have in the cluster. You must	add at least one server.
Access Point for Administering the Cluster	Enter server name:	bn-sqlclustrer2	Browse
Confirmation	Selected servers:	BN-SQLCLUSTER1.nuance.com	Add
Creating New Ouster			Remove
Summary			

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.

Before You Begin	Add the names of all t	he servers that you want to have in the cluster. You must a	dd at least one server.
Select Servers			
/alidation Warning		-	
Access Point for Administering the	Enter server name:		Browse
Juster	Selected servers:	BN-SQLCLUSTER1.nuance.com	Add
onfimation		bn-sqiciuster2.nuance.com	Remove
reating New Cluster			1000000
ummary			

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.

🚏 Create Cluster Wi	zard	×
Validatio	n Warning	
Before You Begin Select Servers Validation Warning	For the servers you selected for this cluster, the reports from cluster configuration validation tests appear to be missing or incomplete. Microsoft supports a cluster solution only if the complete configuration (servers, network and storage) can pass all the tests in the Validate a Configuration wizard.	
Access Point for Administering the Cluster	Do you want to run configuration validation tests before continuing?	
Confirmation	Very When I shall Meet an earlier reliance induction to the and then art on to the amount of another	
Summary	 Tes. When I click livext, run configuration validation tests, and then return to the process of creating the cluster. 	
	No. I do not require support from Microsoft for this cluster, and therefore do not want to run the validation tests. When I click Next, continue creating the cluster.	
	More about Microsoft support of cluster solutions that have passed validation tests	
	< Previous Next > Cancel	1

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

The following message dialog displays.

👹 Validate a Config	uration Wizard		×
Before Y	/ou Begin	R	
Before You Begin Testing Options Confirmation Validating Summary	This wizard runs validation tests to determine whether this configurat set up correctly to support failover. A cluster solution is supported by configuration (servers, network, and storage) passes all tests in this vi- components in the cluster solution must be "Certified for Windows Set if you want to validate a set of unclustered servers, you need to know important: the storage connected to the selected servers will be una- if you want to validate an existing failover cluster, you need to know nodes. You must be a local administrator on each of the servers you want to To continue, click Next. More about preparing your hardware for validation <u>More about cluster validation tests</u> Do not show this page again	ion of servers and attached storage is Microsoft only if the complete vizard. In addition, all hardware erver 2008". w the names of the servers. vailable during validation tests. the name of the cluster or one of its validate.	
		Next > Cancel]

8. Click Next.

The Testing Options window displays.

Validate a Config	Juration Wizard
resting	Options
Before You Begin Testing Options Confirmation Validating Summary	Choose between running all tests or running selected tests. The tests include Inventory tasks, Network tests, Storage tests, and System Configuration tests. Microsoft supports a cluster solution only if the complete configuration (servers, network, and storage) can pass all tests in this wizard. In addition, all hardware components in the cluster solution must be "Certified for Windows Server 2008".
	 Run all tests (recommended) Run only tests I select
	More about cluster validation tests
	< Previous Next > Cancel

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

Before You Begin	You are ready to start validation.		
Testing Options	- I lease constitute following settings are context.		
Confirmation	Servers to Test		•
/alidating	BN-SOLCLUSTER1.nuance.com		
Summary	bn-sqlcluster2.nuance.com		
	Tests Selected by the User	Category	
	List BIOS Information	Inventory	
	List Environment Variables	Inventory	
	List Fibre Channel Host Bus Adapters	Inventory	
	List iSCSI Host Bus Adapters	Inventory	
	List Memory Information	Inventory	
	List Operating System Information	Inventory	•

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.

re You Begin	The following v amount of time.	alidation tests are running. Depending on the test s	election, this may take a signific	ant
ing options	Progress	Test	Result	
mation	100 %	List Fibre Channel Host Bus Adapters	The test passed.	-
lating	100 %	List ISCSI Host Bus Adapters	The test passed.	
mary	100 %	List Memory Information	The test passed.	-
	100 %	List Operating System Information	The test passed.	
	100 %	List Plug and Play Devices	The test passed.	
	100 %	List Running Processes	The test passed.	
	100 %	List SAS Host Bus Adapters	The test passed.	
	100 %	List Services Information	The test passed.	
	50 %	List Software Updates	Gathering data abo	out i 🖕
	•			1
				_

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.
| Defens Ver Dereis | The the second to use the second s |
|-----------------------------|-----------------------------------------------------------------------------------------------------------------|
| Select Servers | Type the name you want to use when administening the cluster. |
| Access Point for | Cluster Name: |
| Administering the
Ouster | One or more DHCP IPv4 addresses were configured automatically. All networks were configured
automatically. |
| Confirmation | |
| Creating New Cluster | |
| Summary | |
| | |
| | |
| | |
| | |

The Access Point for Administering the Cluster window displays.

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

Our example uses **360SQLCluster**.



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.

🚏 Create Cluster Wi	zard		×
Access F	oint for Adminis	tering the Cluster	
Before You Begin	Type the name you v	want to use when administering the cluster.	
Select Servers	Cluster Name:	360SQLCLUSTER	
Access Point for Administering the Ouster	One or more DHCP II automatically.	Pv4 addresses were configured automatically. All networks were configured	
Confirmation			
Creating New Cluster			
Summary			
	More about the adm	inistrative Access Point for a cluster	
		< Previous Next > Cancel	



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.

	Networks		A	ddress			
•	10.193.48	8.0/20	Γ	10	193	49	209

15. Click Next.

Create Cluster W	izard Dtion	
Before You Begin Select Servers Access Point for Administering the Cluster Confirmation Creating New Cluster Summary	You are ready to create The wizard will create yo Cluster: Node: Node: IP Address:	a cluster. pur cluster with the following settings: 360SQLCLUSTER BN-SQLCLUSTER1.nuance.com bn-sqlcluster2.nuance.com DHCP address on 10.1.40.0/22
	To continue, click Next.	
		< <u>P</u> revious <u>N</u> ext > Cancel

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.

🖥 Failover Cluster Managem	ent	
File Action View Help		
🗢 🔿 🙎 📅 🛛 🖬		
Failover Cluster Management	Cluster C360SQL.RAD	D.HCLab.Local
Cool Sol Revices and Application Services and Application Cool Sol Cool Cool Cool Cool Cool Cool Cool	Configure a Service or Application View Validation Report	er C360SQL
SQL Server (MS	Add Node	s/services and 2 nodes
C36051	Close Connection	al Networks: Cluster Network 1
C36052	More Actions	Subnets: 1 IPv4 and 0 IPv6
Networks Orster Network	View	hd Disk Majority [Cluster Disk 1]
Cluster Events	Refresh	h the last 24 hours
	Properties	
	Help	
	Configure high availability for a resource group settings from a configure a Service or App	specific service or application, add one or more servers (nodes), or molecular running Windows Server 2003. <u>Services and applications you can configavailability</u>

2. Select Properties.

The Cluster Properties window displays.

C3605QL.RAD.HCLab.Local Properties	×
General Resource Types Cluster Permissions	
C360SQL	
Name:	
C360SQL	
Manage Core Cluster Resource Group	
OK Cancel Apply	

3. Click Manage Core Cluster Resource Group.

The Cluster Group Properties window displays.

Cluster Gro	up Properties				×
General	Failover				
	Cluster Group				
<u>N</u> ame:					
Cluster G	roup				
Select the the butto preferred	e <u>preferred own</u> ns to list them in at the bottom.	<u>ers</u> for the Core () order from most	Cluster Resource preferred at the	e Group. Use top to least	
Preferred	owners:				
□ C36 □ C36	:0S1 :0S2			Up Down	
State:	Online				
Node:	C360S2				
		OK	Cancel	Apply	

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

The following window displays.

Cluster Group Properties	×
General Failover	
Failover	
Specify the number of times the Cluster service will attempt to restart or fail over the Core Cluster Resource Group in the specified period.	
If the Core Cluster Resource Group fails more than the maximum in the specified period, it will be left in the failed state.	
Maximum failures in the specified 2	
Period (hours): 6 📑	
Failback Specify whether the Core Cluster Resource Group will automatically fail back to the most preferred owner (which is set on the General tab).	
Prevent failback	
C Allow failback	
Immediately	
C Eailback between: 0 🚔 and	
0 📩 hours	
More about failover and failback	
OK Cancel Apply	

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

You are returned to the following window.

A 2 55 17 55					
C360SOL.RAD.HCLab.Local	Cluster C360SQL.RAD	.HCLab.Local			
Services and Applications C3605QLDtc SQL Server (MSSQLSE	Summary of Cluster C360SQL C360SQL has 2 applications/services and 2 nodes				
Nodes Cosost	Name: C360SQL RAD.HCLab.Lo	cal Networks: Cluster Netwo	ak 1		
Costor Storage Networks Uuster Network 1	Current Host Server: C36052	Subnets: 1 IPv4 and 0 IF	∿6		
	Quorum Configuration: Node	and Disk Majority (Cluster Disk 1)			
	Application Alert: (none)				
	Recent Cluster Events: None	in the last 24 hours			
	* Configure				
	Configure high availability for a sp resource group settings from a cl <u>Configure a Service or Apple</u> <u>Migrate Services and Apple</u> <u>Navigate to Storage to add</u>	pecific service or application, add one or more server uster running Windows Server 2003. <u>ication</u> <u>Services and applications y</u> <u>availability</u> <u>ications</u> <u>Migrating a cluster from Windows</u>	s (nodes), or migrate <u>iou can configure for high</u> ndows Server 2003		
	* Navigate				
	Services and Applications Storage	Bring this resource online Take this resource offline			
	Charles Europh	Show the critical events for this resource			
	C SANSIEL CTEINS	Show Dependency Report			
	Cluster Core Resou	More Actions +			
	Name	Properties			
	Lluster Name	Help			
			1		
	E 12 Name: USBUSUL	Onine	2		
	P Address: 10.1.109.1	22	-		

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

Name: C30	50SQL Proper	ties				×
General	Dependencies	s Policies	Advanc	ed Policies		_,
*	Resource <u>N</u> ar Resource type State:	me: e:	Cluster Network Online	Name Name		
 DN <u>S</u> N	ame:					
C360S0	ΩL					
Full Na	ne: C360SQL.R	AD.HCLab.I	Local			
IP Addr	esses:					
Netwo	rk 1.100.0.104		IP Add			
<u>∎</u> .; 10.	1.109.0724		10.1.10	13.0		
		Add		<u>E</u> dit	<u>R</u> emove	
NetBIO:	6 Status:	ок				
DNS St	atus:	ОК				
Kerbero	s Status:	ОК				
		(DK	Cancel	Apply	

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

z	ame: C	3605QL Pi	operties	×
	Gener	al Depend	encies Policies Advanced Policies	
	Spec be bi	cify the resou rought online	rces that must be brought online before this resource can	
		AND/OF	Resource	
	•		IP Address: 10.1.109.122	
	*	Click here to	add a dependency	
			<u>I</u> nsert <u>D</u> elete	
	IP A	.ddress: 10.1	109.122	
			How resource dependencies work	
			OK Cancel Apply	

9. Set the window according to the Cluster setup and Customer requirements.

10. Click the **Policies** tab.

Name: C3605QL Properties	×
General Dependencies Policies Advanced Policies	
Response to resource failure C If resource fails, do <u>n</u> ot restart	
 If resource fails, attempt restart on current node Period for restarts (mm:ss): Maximum restarts in the specified period: 	
If restart is <u>unsuccessful</u> , fail over all resources in this service or application	
If all the restart attempts fail, begin restarting again after the specified period (hh:mm):	
More about restart policies	
Pending timeout	
between Online and Offline before the Cluster service puts the resource in the Failed state.	
Pending timeout (mm:ss):	
OK Cancel Apply	

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

Name: C3605QL Properties	×
General Dependencies Policies Advanced Policies	
Clear the check box if you do not want a node to host this resource or this clustered instance.	
Possible Owners:	
C360S1	
Basic resource health check interval	
Use standard time period for the resource type	
O Lise this time period (mm:ss):	
Thorough resource health check interval	
Use standard time period for the resource type	
O Use this time period (mm:ss):	
<u>Run this resource in a separate Resource Monitor</u> Choose this option if the associated resource type DLL needs to be debugged or is likely to conflict with other resource type DLLs.	
OK Cancel Apply	

- 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**.

Failov	er Cluster Managemer	nt				_10	×
File Act	High Availability V	Wizard			×		
Ξ 🕻 α	Before You Begin	Select the service or application that you want to confi	gure for hig	h avalability:		lus Ser	•
8 <mark>19</mark> 6	Application Client Access Point Select Storage Confirmation Configure High Availability Summary	DFS Namespace Server DHCP Server Distributed Transaction Coordinator (DTC) File Server Generic Application Generic Script Generic Service Fintemet Storage Name Service (SNS) Server Message Queuing		Description: DTC supports distributed applications that perform transactions. A transaction is a set of related tasks, such as updates to databases, that either succeed or fail as a unit.			,
.		More about services and applications you can confid	ure for hig < Pr	ih availability evious Next > Cancel			

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 **CIDtc** appended to it.



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.

🔹 🧼 🛃 High Availability	Wizard		×	
Before You Begin	Storage Select the storage volume that you want You can assign additional storage to this	to assign to this service or application. service or application after you complete this wizard.	lus. Ser.	
Application Client Access Point Select Storage Configure High Availability Summary	Name Cluster Disk 1 Volume: (G)	Status © Online File System: NTFS	ztion	n
	<u> </u>	< Previous Next > Canc	sel	

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.





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.



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**.

C3605QLDtc Properties	×
General Failover	
C360SQLDtc	
Name:	
C360SQLDtc	
Select the <u>preferred owners</u> for this service or application buttons to list them in order from most preferred at the to preferred at the bottom.	n. Use the op to least
Preferred owners:	·
	Цр
	<u>D</u> own
State: Online	
Node: C360S2	
OK Cance	Apply

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

The Failover tab window displays.

C3605QLDtc Properties	×
General Failover	
Failover	
Specify the number of times the Cluster service will attempt to restart or fail over the service or application in the specified period.	
If the service or application fails more than the maximum in the specified period, it will be left in the failed state.	
Maximum failures in the specified period:	
Period (hours): 6	
Failback Specify whether the service or application will automatically fail back to the most preferred owner (which is set on the General tab).	
Prevent failback	
C Allow failback	
Immediately	
C Eailback between: 0 🚔 and	
0 hours	
More about failover and failback	
OK Cancel Apply	

- 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**.

Falover Cluster Management	MSDTC Server C3503	OLDtc	Actions	
E C160SQL.RAD.HCLab.Local	C	C360SQLDtc		
2- C3605QLDtc	Summary of C3	JUSULDIC	Or this service or application online	
SQL Server (MSSQLSE		Take this service or application offline		
Storage	Status: Online	Show the critical events for this application		
Networks Ouster Events	Preferred Owners: (none)		Move this service or application to anothe	,
	Current Owner: C36052		🖓 Manage MSOTC	
			Manage shares and storage	
	Name	Statui	Add a shared folder	
	Server Maine		Add storage	
	P Addess 101.1	firing this resource online	Add a resource	٠
		Take this resource offline	Show Dependency Report	
	Microsoft Distributed Tr	Show the critical events for this resource	View	•
	G-+ MSDTC-C360SQLDM	Show Dependency Report	X Delete	
	Disk Drives	More Actions •	Ename Rename	
	🗵 🖙 Cluster Disk 2	Delete	C Refresh	
		Properties	Properties	
		Help	🚼 Help	

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:

Name: C3	ame: C3605QLDtc Properties				
General	Dependencies	Policies	Advanc	ed Policies	
*	Resource Name Resource type: State:	e:	C360S0 Network Online	QLDtc Name	
DNS N	ame:				
C360S0	QLDtc				
Full Na IP Addr	me: C360SQLDtc. esses:	.RAD.HCL	.ab.Local		
Netwo	ırk.		IP Add	ress	
<u>i</u> 10.	1.109.0/24		10.1.1(09.0	
		Ad		Edit	Remove
NetBIO:	S Status: C)K			
DNS St	DNS Status: OK				
Kerberos Status: OK					
			ОК	Cancel	Apply

Dependencies:

Name	Name: C3605QLDtc Properties			X		
Ger	General Dependencies Policies Advanced Policies					
Sp be	becify brou	y the resource ught online:	s that m	nust be brought (online before this	resource can
		AND/OR	Resou	lice		
•			IP Add	lress: 10.1.109.1	33	
*	: C	lick here to ad	dd a dep	pendency		
					Insert	Delete
IF	P.A.d	tress: 10.1.10	9 1 3 3			
	7.00		0.100			
				How	resource depen	dencies work
				OK	Cancel	Apply

Policies:

Name: C3605QLDtc Properties	x
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):	
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):	
OK Cancel Apply	

Advanced Policies:

Name: C3605QLDtc Properties	x
General Dependencies Policies Advanced Policies	
Clear the check box if you do not want a node to host this resource or this clustered instance.	
Possible Owners:	
C360S1 C360S2	
Basic resource health check interval	
Use standard time period for the resource type	
O Use this time period (mm:ss):	
Thorough resource health check interval	
Use standard time period for the resource type	
O Use this time period (mm:ss):	
Run this resource in a separate Resource Monitor Choose this option if the associated resource type DLL needs to be debugged or is likely to conflict with other resource type DLLs.	
OK Cancel Apply	

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.

Console Root	Name		
Component Services	Transaction List		
🖃 🧾 Computers	ransaction Statistics		
🖃 🌉 My Computer			
E COM+ Applications			
🖽 🧮 DCOM Config			
🕀 🧮 Running Processes			
🖃 🧮 Distributed Transaction Coordir	C360SQLDTC Properties		
🗉 💽 Local DTC			
🖂 🧰 Clustered DTCs	Tracing Logging Security		
E 💺 C360SQLDTC	- Casulty California		
Transaction List	Security Settings		
🖂 Transaction Statist	Cash and the initial in		
🛨 🛃 Event Viewer (Local)	Client and Administration		
E Gervices (Local)	T Allow Hemote Clients T Allow Hemote Administration		
	Transaction Manager Communication		
	Allow Inbound Allow Outbound		
	C Mutual Authentication Required		
	C Incoming Caller Authentication Required		
	No Authentication Required		
	Enable XA Transactions		
	PTCI		
	DTC Logon Account		
	Account: NT AUTHORITY/NetworkService Browse		
	Password		
	Confirm password		
	Commin passonia.		
	Learn more about setting these properties.		
	OK Cancel Apple		
	UN Canda Apply		

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.

🖉 Failover Cluster Management		
File Action View Help		
🗢 🔿 🞽 🖬		
Failover Cluster Management	Services and Applications	
Services and Application	Configure a Service or Application	
Nodes C360A1	More Actions	
I C360A2 C360A2 Storage ⊡ I Networks	View	
	Refresh	
Cluster Network 1	Help	

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

The following window displays.

Migh Availability Wizard		
to Before Y	ou Begin	
Before You Begin Select Service or Application	This wizard configures high availability for a service or application. After you successfully complete this wizard, if a clustered server fails while running the service or application, another clustered server automatically resumes the service or application (a process known as failover). If the service or application itself fails, it can be automatically restarted, either on the same server or on another server in the cluster, depending on options that you specify. If you want to cluster a complex application such as a mail server or database application, see that application's documentation for information about the correct way to install it.	
	More about how clients access a clustered service or application More about services and applications you can configure for high availability Do not show this page again	
	Next > Cancel	

3. Read the information and click **Next**.
The Select Service or Application window displays.

🙀 High Availability Wizard 🛛 🔀							
Select Service or Application							
Before You Begin Select Service or Application Client Access Point Select Storage Confirmation Configure High Availability Summary	Select the service or application that you want to configure for high availability: Image: DFS Namespace Server Image: Description Image: Descript Server Image: Descript Server						

4. Choose File Server and click Next.

High Availability	Wizard X
Before You Begin Select Service or Application Client Access Point Select Storage Confirmation Configure High Availability Summary	Type the name that clients will use when accessing this service or application: Name: C360ClusFS One or more DHCP IPv4 addresses were configured automatically. All networks were configured automatically.
	More about how clients access a clustered service or application < Previous

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.

🙀 High Availability Wizard 🛛 🔀					
Select St	orage				
Before You Begin Select Service or Application Client Access Point Select Storage Confirmation Configure High Availability Summary	Select only the storage volumes that you want You can assign additional storage to this servi	t to assign to this service or application. ce or application after you complete this wizard. Status ① Online ⑦ Online File System: NTFS			
		< Previous Next > Ca	ncel		

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

The Confirmation window displays.

🙀 High Availability Wizard 🛛 🔀							
Confirmation							
Before You Begin Select Service or Application	You are ready to configure F	high availability for a File Server.					
Client Access Point	Storage:	Cluster Disk 4	*				
Select Storage	Network Name:	C360ClusFS DHCR address on 10 1 109 0/24					
Confirmation	IF Address.	Difer address of 10.1.109.0/24					
Configure High Availability							
Summary			¥				
	To continue, click Next.						
		< <u>P</u> revious <u>N</u> ext >	Cancel				

9. Click Next.

🙀 High Availability Wizard 🛛 🔀					
tonfigure 🗞	e High Availability				
Before You Begin Select Service or Application Client Access Point Select Storage Configure High Availability Summary	Configuring the cluster storage device.				
	Cancel				

The Configure High Availability window displays.

10. Wait for the configuration to finish.

The Summary window displays.



11. Click Finish.



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

Now you will configure the Firewall.

12.	Open Server Manager.
-----	----------------------

Server Manager							- 0
Elle Action View Help							
** 2 🖬 🕃 🖬							
Server Manager (C360A1)	Inbound Rules	A1-2				Actions	
E Poles	Name	Group *	Profile	Enabled		Inbound Rules	
E Peatures	Symanitec Antivirus		Private	Yes		In the Date	
t Costine waters	Symantec Antivirus		Private	Yes		New Add	
Configuration	Symantec Email		Private	Yes		Filter by Profile	
E Windows Firewal with Adur	Symanites Email		Private	Yes		V Filter by Sale	
ET Inbound Rules	BITS Peercaching (Content-In)	BITS Peercaching	Arry	No			
Cutbound Rules	BITS Peercaching (RPC)	BITS Peercaching	Any	No		Y Filter by Group	
Connection Security Ru	BITS Peercaching (RPC-EPMAP)	BITS Peercaching	Any	No		View	
🗉 💺 Monitoring	BITS Peercaching (WSD-In)	BITS Peercaching	Any	No		Sec. 1	
Ch Services	COM+ Network Access (DCOM-In)	COM+ Network Access	Arry	No		G Refresh	
WMI Control	O Core Networking - Destination Unreachable (Core Networking	Any	Ves	10	Export List	
Local Users and Groups	O Core Networking - Destination Unreachable	Core Networking	Any	Yes		E 1114	
E Storage	Ocore Networking - Dynamic Host Configurati	Core Networking	Any	Yes		II nep	
Windows Server Backup	O Core Networking - Internet Group Managem	Core Networking	Any	Yes			
III' Disk Management	Ore Networking - IPv6 (IPv6-In)	Core Networking	Any	Yes		1	
	Core Networking - Multicast Listener Done (I	Core Networking	Any	Yes		1	
	O Core Networking - Multicast Listener Query (Core Networking	Any	Yes		1	
	Ocore Networking - Multicast Listener Report	Core Networking	Any	Yes			
	Ocore Networking - Multicest Listener Report	Core Networking	Any	Yes			
	O Core Networking - Neighbor Discovery Adve	Core Networking	Arry	Yes			
	O Core Networking - Neighbor Discovery Solicit	Core Networking	Any	Yes		1	
	Core Networking - Packet Too Big (ICMPv6-In)	Core Networking	Any	Yes		1	
	Core Networking - Parameter Problem (ICMP	Core Networking	Any	Yes			
	Ocore Networking - Router Advertisement (IC	Core Networking	Any	Yes			
	O Core Networking - Teredo (UDP-In)	Core Networking	Any	Yes			
	Core Networking - Time Exceeded (ICMPv6-In)	Core Networking	Any	Yes		1	
	O Networking - Router Solicitation (ICMPv6-In)	Core Networking	Any	Yes		1	
	O Distributed Transaction Coordinator (RPC)	Distributed Transaction Coordi	Any	Yes			
	O Distributed Transaction Coordinator (RPC-EP	Distributed Transaction Coordi	Any	Yes		1	
	Distributed Transaction Coordinator (TCP-In)	Distributed Transaction Coordi	Any	Yes			
	G Fallover Cluster Management (ICMP4-ER-In)	Falover Cluster Management	Any	Yes			
	G Fallover Cluster Management (ICMP6-ER-In)	Fallover Cluster Management	Any	Yes		1	
	G Failover Clusters - Cluster Cleanup (TCP-In)	Fallover Clusters	Any	Yes		1	
	Failover Ousters - Ouster Service (RPC)	Fallover Clusters	Any	Yes		1	
	Fallover Clusters - Cluster Service (TCP-In)	Falover Clusters	Any	Yes	-	1	
	G			19	•		

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.

💣 New Inbound Rule Wizard		×				
Protocol and Ports						
Specify the protocol and ports that	this rule matches.					
Steps:						
Rule Type	Does this rule apply to TCP or UDP?					
Protocol and Ports	© ICP					
 Action 	○ <u>U</u> DP					
 Profile 						
 Name 	Does this rule apply to all local ports or specific local ports?					
	C All local ports					
	Specific local ports: [138, 139, 443, 445]					
	Example: 80, 443, 8080					
	I any many short exclosed and each					
Learn more about protocol and ports						
	< <u>B</u> ack <u>N</u> ext> Cancel					

The Protocol and Ports window display.

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

The Action window displays.

🍻 New Inbound Rule Wizard	PNew Inbound Rule Wizard						
Action Specify the action that is taken when a connection matches the conditions specified in the rule.							
Steps:							
Rule Type What action should be taken when a connection matches the specified conditions?							
Protocol and Ports							
Action Allow the connection							
Profile	Allow connections that have been protected with IPsec as well as those that have not.						
Name	C Allow the connection if it is secure						
	Allow only connections that have been authenticated and integrity-protected through the use of IPsec. Connections will be secured using the settings in IPsec properties and rules in the Connection Security Rule node.						
< <u>Back</u>							

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

🝻 New Inbound Rule Wizard	×						
Profile							
Specify the profiles for which this rule applies.							
Steps:							
Rule Type	When does this rule apply?						
Protocol and Ports							
Action	☑ Domain						
 Profile 	Applies when a computer is connected to its corporate domain.						
 Name 	 Private Applies when a computer is connected to a private network location. Pyblic Applies when a computer is connected to a public network location. 						
	Learn more about profiles						
	< <u>B</u> ack <u>N</u> ext > Cancel						

The Profile window displays.

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

The Name window displays.

💣 New Inbound Rule Wizard	×
Name	
Specify the name and description	of this rule.
Steps:	
Rule Type	
Protocol and Ports	
Action	
Profile	Name:
 Name 	[rijesnare]
	< <u>B</u> ack <u>Finish</u> Cancel

24. Click Finish.

Configure the File Server Service Properties

Refer to the <u>Configure MS DTC Properties</u> section starting on <u>page 5-37</u> 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.

👹 Failover Cluster Management						
<u>File Action View H</u> elp						
(= -> 2 🖬 🛛 🖬						
Failover Cluster Management File Server C360ClusFS						
Summary of C360ClusFS						
🖃 📫 Nodes	Bring this	service or application online				
C360A1	Take this	service or application offline				
📄 C360A2 [] Storage	Show the	e critical events for this application				
Networks Move this service or application to another node						

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	45	Removed WebDav for Windows 2008 Standard. That version is not supported. Microsoft Windows 2008 R2 or 2008 Enterpries R2 must be used.	AFW
	3	All	Added Section 3 for installing Microsoft SQL 2008 on clusters. All sections below were incriminated by one section number.	
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