# StarWind iSCSI SAN:

Providing HA Shared Storage for Scale-Out File Servers July 2012



#1 Storage for Business Continuity in Virtual Environments







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# **INTRODUCTION**

Scale-out File Server (SoFS) is a clustered file server that allows keeping server application data on file shares, making it accessible for end users. A SoFS provides SAN reliability and high availability of shared data.

StarWind iSCSI SAN ensures simple configuration of highly available shared storage for SoFS and delivers excellent performance and advanced data protection features.





# **CONFIGURING SHARED STORAGE**

1. Launch StarWind Management Console by clicking Start -> All Programs -> StarWind Software -> StarWind -> StarWind Management Console.

Note: The StarWind Console icon appears in the system tray, when the Console is running. To open StarWind Management Console, double-click the icon or right-click it. Then, select Start Management Console from the Shortcut menu.

2. From the Console tree, select the server you want to provide with the iSCSI target device.

3. Double-click the host to connect.

4. In the **Login** dialog that appears specify login and password in the corresponding text fields.

**Note:** The default login and password are "root" and "starwind", respectively. You can change them later.

| Login | Enter the use | er name and password to connect to this server. |
|-------|---------------|-------------------------------------------------|
|       | Login:        | root                                            |
|       | Password:     | ••••••                                          |
|       | I             | Save password OK Cancel                         |

Note: Select the Save password checkbox to save a password.

5. Click **OK** to continue.

6. Click Add Target on the toolbar.

7. **Add Device Wizard** appears. Please, follow the wizard's steps to complete creation of a new HA device.

8. Go to Hard Disk->Advanced Virtual->High Availability Device to select the HA device type.



| Add Device     | e Wizard                                                                                                           |
|----------------|--------------------------------------------------------------------------------------------------------------------|
| Device<br>Sele | creation method Set device creation method.                                                                        |
| 0              | Mirror (RAID-1) device                                                                                             |
|                | Allows creating a mirror (RAID-1) of two virtual disks. Replication to a remote iSCSI target<br>is also available. |
| 0              | Snapshot and CDP device                                                                                            |
|                | Allows creating a virtual disk with support for backup and snapshots. CDP (Continuous<br>Data Protection).         |
| œ              | High Availability device                                                                                           |
|                | Allows creating an Image File device with HA (high availability) support.                                          |
| 0              | Deduplicated disk device                                                                                           |
|                | Allows to create deduplicated virtual disk.                                                                        |
|                |                                                                                                                    |
|                |                                                                                                                    |
|                |                                                                                                                    |
|                |                                                                                                                    |
|                |                                                                                                                    |
|                | < Back Next > Cancel Help                                                                                          |

10. In the **Target Alias** and **Target Name** text fields, specify corresponding information. The name must be unique. Under this name the device is declared to the iSCSI initiators, connecting to the StarWind Service over an IP network.

11. Click **Next** to continue.

| Add Device Wizard                                                  | ×    |
|--------------------------------------------------------------------|------|
| Target parameters<br>Specify the target parameters for the device. | 0    |
| Target Alias:                                                      |      |
| HAforSOFS                                                          |      |
| Target Name:                                                       |      |
| iqn.2008-08.com.starwindsoftware: 172, 16.0.41-haforsofs           |      |
|                                                                    |      |
|                                                                    |      |
|                                                                    |      |
|                                                                    |      |
|                                                                    |      |
|                                                                    |      |
|                                                                    |      |
| < Back Next > Cancel                                               | Help |

12. Specify the partner server parameters. Enter the server IP-address in the **Host** text field, and specify username and password for the StarWind Service in the corresponding text fields.



| ×    |
|------|
| 0    |
| 3261 |
| •    |
|      |
|      |
|      |
|      |
|      |
|      |
|      |
|      |
| Help |
|      |

14. In the Partner Target Alias and Partner Target Name text fields specify corresponding information.

15. Click **Next** to continue.

| Add Device Wizard                                                                               | ×    |
|-------------------------------------------------------------------------------------------------|------|
| Partner server common target parameters<br>Specify partner server target alias and target name. | 0    |
| Partner Target Alias:                                                                           | 1    |
| HAforSOFSPartner                                                                                |      |
| Partner Target Name:                                                                            |      |
| ign.2008-08.com.starwindsoftware: 172.16.0.42-haforsofspartner                                  |      |
|                                                                                                 |      |
|                                                                                                 |      |
|                                                                                                 |      |
|                                                                                                 |      |
|                                                                                                 |      |
|                                                                                                 |      |
|                                                                                                 |      |
|                                                                                                 |      |
| < Back Next > Cancel                                                                            | Help |

16. In the Virtual disk parameters of the current server field and the Virtual disk parameters of the partner server field specify name and location of HA virtual disks on the current and partner hosts, respectively. If you want to create new virtual disks, select the **Create new** checkbox.



| Add Device Wizard                                           | ×        |
|-------------------------------------------------------------|----------|
| Virtual disk parameters<br>Specify virtual disk parameters. | 0        |
| Current server virtual disk parameters                      |          |
| My Computer \E \HAforSOFS.img                               | ▼        |
| ✓ Create new                                                |          |
| Partner server virtual disk parameters                      |          |
| My Computer\D\HAforSOFSpartner.img                          | <u> </u> |
| Create new                                                  |          |
| Size: 100 GB 💌                                              |          |
|                                                             |          |
| < Back Next > Cancel                                        | Help     |

18. Configure the data synchronization and heartbeat channels parameters of the current server. You can also specify primary or secondary node priority.

19. Click **Next** to continue.

| Device Wizard                               |                                                      |                               |                      |             |
|---------------------------------------------|------------------------------------------------------|-------------------------------|----------------------|-------------|
| Current server syr<br>Specify current s     | chronization channel p<br>erver synchronization char | oarameters<br>nel parameters. |                      | 0           |
| Current server pa                           | rameters                                             |                               |                      |             |
| Target Name:                                | ign.2008-08.com.starwin                              | ndsoftware: 172. 16.0.4       | 1-haforsofs          |             |
| Priority:                                   | Primary                                              | •                             |                      |             |
| Auto synchro                                | nization after failure                               |                               |                      |             |
| Interfaces                                  | Sync channel                                         | Heartbeat channel             | Port                 |             |
|                                             |                                                      |                               |                      |             |
| 172.16.0.41                                 |                                                      | <b>v</b>                      | 3260                 | -           |
| 172.16.0.41<br>172.16.11.41                 |                                                      |                               | 3260<br>3260         | -<br>^      |
| 172.16.0.41<br>172.16.11.41<br>172.16.10.41 |                                                      |                               | 3260<br>3260<br>3260 | 1           |
| 172.16.0.41<br>172.16.11.41<br>172.16.10.41 | <b>▽</b>                                             |                               | 3260<br>3260<br>3260 | -<br>1<br>4 |
| 172.16.0.41<br>172.16.11.41<br>172.16.10.41 | V<br>V                                               |                               | 3260<br>3260<br>3260 | Ŷ           |

20. Specify synchronization channel parameters of the partner server.



| Add Device Wizard                         |                                                    |                                       |                     | ×    |
|-------------------------------------------|----------------------------------------------------|---------------------------------------|---------------------|------|
| Synchronization cha<br>Specify synchroniz | annel parameters of p<br>ation channel parameters  | artner server<br>s of partner server. |                     | 0    |
| Partner server para<br>Target Name:       | ameters<br>iqn.2008-08.com.starwir                 | ndsoftware: 172. 16.0.4               | 12-haforsofspartner |      |
| Select a channel and                      | zation after failure<br>priority of the synchroniz | ation                                 |                     |      |
| Interfaces                                | Sync channel                                       | Heartbeat channel                     | 90rt                |      |
| 172.16.10.42                              |                                                    |                                       | 3260                | Î    |
| 172.16.11.42                              | <b>v</b>                                           |                                       | 3260                | Ť    |
|                                           |                                                    |                                       |                     |      |
|                                           |                                                    |                                       |                     |      |
|                                           |                                                    |                                       |                     |      |
|                                           |                                                    |                                       |                     |      |
|                                           | < <u>B</u> ack                                     | Next >                                | Cancel              | Help |

- 22. Specify number of iSCSI sessions in the synchronization channel.
- 23. Click **Next** to continue.

| Add Device Wizard                                                                             | × |
|-----------------------------------------------------------------------------------------------|---|
| High Availablity device parameters<br>Specify synchronization channel options                 | 0 |
| Use of multiple sessions increases speed of data transfer on fast Ethernet channels (10GigE). |   |
| Number of sessions 4                                                                          |   |
|                                                                                               |   |
|                                                                                               |   |
|                                                                                               |   |
| < Back Next > Cancel Held                                                                     |   |
|                                                                                               |   |

- 24. Select initialization method of the HA device.
- 25. Click **Next** to continue.





- 26. Specify cache parameters of the HA device.
- 27. Click **Next** to continue.

| Add Device Wizard                                            |                |                |        | ······ X |
|--------------------------------------------------------------|----------------|----------------|--------|----------|
| HA device cache parameters<br>Specify HA device cache parame | eters.         |                |        | 0        |
| Cache: Write-back caching                                    |                |                |        | •        |
| Maximum cache size (MB)                                      |                | 64 🕂           |        |          |
| Cache block expiry period in ms:                             |                | 5000           |        |          |
|                                                              | < <u>B</u> ack | <u>N</u> ext > | Cancel | Help     |

- 28. Check whether device parameters are correct. Click Back to make any changes.
- 29. Click Next to continue.





30. Click **Finish** to close the wizard.

| Add Device Wizard |                                                         | x |
|-------------------|---------------------------------------------------------|---|
| SAN               | Add Device Wizard                                       |   |
|                   | The following device was created:                       |   |
| iscs              | HAImage1                                                |   |
|                   | Target name:                                            |   |
| StarWind          | iqn.2008-08.com.starwindsoftware: 172.16.0.41-haforsofs |   |
| LOFTWARE          | i o ciose this wizard dick Hinish.                      |   |
|                   | < <u>Back</u> (Finish Gancel Help                       |   |

Follow the same procedure to create the second device that will be used as a quorum.



# **CONFIGURING CLUSTER SERVERS**

## **Installing Features and File Server Role**

To set up cluster servers, you must have configured Active Directory and two servers on the domain. Moreover, you have to previously enable the Failover Clustering, Multipath I/O features and the File Server role on the both servers.

These configurations can be made using Server Manager (in the Features and Roles sections).

1. Launch Server Manager, select the Manage item and click the Add Roles and Features option. Install the File Server role, Multipath I/O and Failover Clustering features by following the wizard's steps.

**Note:** Restart the server after installation is completed.

2. Select Role-based or feature-based installation as an installation type and click Next to continue.

| A                                                                       | Add Roles and Features Wizard                                                                                                                                                                                                                                               | _ <b>D</b> X                           |
|-------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|
| Select installatior                                                     | n type                                                                                                                                                                                                                                                                      | DESTINATION SERVER<br>WS8node1.sws.com |
| Before You Begin                                                        | Select the installation type. You can install roles and features on a ru<br>virtual machine, or on an offline virtual hard disk (VHD).                                                                                                                                      | inning physical computer or            |
| Server Selection<br>Server Roles<br>Features<br>Confirmation<br>Results | <ul> <li>Role-based or feature-based installation<br/>Configure a single server by adding roles, role services, and featu</li> <li>Remote Desktop Services scenario-based installation<br/>Deploy a Virtual Desktop Infrastructure scenario or a Session Virtual</li> </ul> | res.<br>ualization scenario.           |
|                                                                         | < <u>P</u> revious <u>Next</u> >                                                                                                                                                                                                                                            | Install Cancel                         |

3. Select a server from the server pool to install roles and features. Use a filter to find appropriate server.



| <b>B</b>                                     | Add Roles                                                                                                     | and Features W                                                       | fizard 📃 🗖 🗙                                                                                                                     |
|----------------------------------------------|---------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|
| Select destinati                             | on server                                                                                                     |                                                                      | DESTINATION SERVER<br>WS8node1.sws.com                                                                                           |
| Before You Begin<br>Installation Type        | Select a server or a virtue                                                                                   | al hard disk on which<br>the server pool                             | h to install roles and features.                                                                                                 |
| Server Selection<br>Server Roles<br>Features | SERVER POOL                                                                                                   | JISK                                                                 |                                                                                                                                  |
| Results                                      | Name<br>WS8node1.sws.com                                                                                      | IP Address<br>172.16.0.46                                            | Operating System<br>Microsoft Windows Server 8 Beta Datacenter (6.2.8                                                            |
|                                              | <<br>1 Computer(s) found<br>This page shows servers<br>using the Add Servers co<br>which data collection is s | that are running Wir<br>mmand in Server Mi<br>still incomplete are n | III ><br>ndows Server 8 Beta, and that have been added by<br>lanager. Offline servers and newly-added servers from<br>not shown. |
|                                              |                                                                                                               | < <u>P</u> reviou                                                    | us <u>N</u> ext > <u>I</u> nstall Cancel                                                                                         |

- 4. Click **Next** to continue.
- 5. In the **Roles** section, select the **File Services** and **File Server** checkboxes.
- 6. Click **Next** to continue.

| P                                                                                                                | Add Roles and Features Wizard                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | _ <b>D</b> X                           |
|------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|
| Before You Begin<br>Installation Type<br>Server Selection<br>Server Roles<br>Features<br>Confirmation<br>Results | Add Roles and Features Wizard Select one or more roles to install on the selected server. Roles Application Server DHCP Server DNS Server Fax Server File And Storage Services (Installed) File Services File Server BranchCache for Network Files Data Deduplication DFS Namespaces DFS Replication File Server F | DESTINATION SERVER<br>WS8node1.sws.com |
|                                                                                                                  | File Server Resoluce Manager         File Server VSS Agent Service         iSCSI Target Server         Server for NFS         <                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Install Cancel                         |



- 7. In the Features section select Failover Clustering and Multipath I/O checkboxes.
- 8. Click Next to continue.

| B                  | Add Roles and Features Wizard                                                                                                                                                                                                                                                                                                                                                                                                                          | _ <b>D</b> X                           |
|--------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|
| ESSENTING SERVICES | Add Roles and Features Wizard Select one or more features to install on the selected server. Features          Data Center Bridging         Enhanced Storage         Failover Clustering         Group Policy Management         Ink and Handwriting Services         Internet Printing Client         IP Address Management (IPAM) Server         iSCSI Target Storage Provider (VDS and VSS har         iSNS Server service         LPR Port Monitor | DESTINATION SERVER<br>WS8node1.sws.com |
|                    | <ul> <li>☐ Media Foundation</li> <li>▷ ☐ Message Queuing</li> <li>☑ Multipath I/O</li> <li>✓</li> </ul>                                                                                                                                                                                                                                                                                                                                                |                                        |
|                    | < <u>P</u> revious <u>N</u> ext >                                                                                                                                                                                                                                                                                                                                                                                                                      | <u>Install</u> Cancel                  |

9. Select the checkbox to restart server automatically and click **Install.** Otherwise, click **Install** and restart server manually after the installation is completed.



| è                                | Add Roles and Features Wizard                                                                                                                                                                                                                                                                                                                                                                    | _ <b>D</b> X                                       |
|----------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|
| Confirm installa                 | tion selections                                                                                                                                                                                                                                                                                                                                                                                  | DESTINATION SERVER<br>WS8node1.sws.com             |
| Before You Begin                 | To install the following roles, role services, or features on selected server, cli                                                                                                                                                                                                                                                                                                               | ck Install.                                        |
| Installation Type                | Restart the destination server automatically if required                                                                                                                                                                                                                                                                                                                                         |                                                    |
| Server Selection<br>Server Roles | Optional features (such as administration tools) might be displayed on this<br>been selected automatically. If you do not want to install these optional feat<br>clear their check boxes.                                                                                                                                                                                                        | page because they have<br>tures, click Previous to |
| Features                         |                                                                                                                                                                                                                                                                                                                                                                                                  |                                                    |
| <b>Confirmation</b><br>Results   | Failover Clustering<br>File And Storage Services<br>File Services<br>File Server<br>Multipath I/O<br>Remote Server Administration Tools<br>Feature Administration Tools<br>Feature Administration Tools<br>Failover Clustering Tools<br>Failover Cluster Management Tools<br>Failover Cluster Module for Windows PowerShell<br>Export configuration settings<br>Specify an alternate source path |                                                    |
|                                  | < <u>P</u> revious <u>N</u> ext > <u>I</u> n                                                                                                                                                                                                                                                                                                                                                     | Istall Cancel                                      |



## **Connecting Targets**

You will need to connect the previously created disks to all of the servers which will be added to the cluster.

- 1. Launch Microsoft iSCSI Initiator. The iSCSI Initiator Properties window appears.
- 2. Navigate to the **Discovery** tab.

| iSCSI Initiator Properties |                              |                     |                         |
|----------------------------|------------------------------|---------------------|-------------------------|
| rgets Discovery            | Favorite Targets             | Volumes and Devices | RADIUS Configuration    |
| Target portals             |                              |                     |                         |
| The system will loo        | ok for <u>T</u> argets on fo | ollowing portals:   | R <u>e</u> fresh        |
| Address                    | Port                         | Adapter             | IP address              |
| 172.16.0.41                | 3260                         | Default             | Default                 |
| 172.16.0.42                | 3260                         | Default             | Default                 |
| To add a target p          | ortal, click Discover        | Portal.             | Discover <u>P</u> ortal |
| then click Remove          | ,<br>,                       |                     | <u>R</u> emove          |

3. Click **Discover Portal.** Enter IP address of each StarWind server in the appropriate field of the **Discover Target Portal** dialog. Click **OK**.

|                             |                                                                 | iSC                                       | SI Initiator Pr                         | operties                 | 5                                     |            |   |
|-----------------------------|-----------------------------------------------------------------|-------------------------------------------|-----------------------------------------|--------------------------|---------------------------------------|------------|---|
| Targets                     | Discovery E                                                     | avorita Tar                               | gets Volumes as                         | d Devices                |                                       | figuration | 1 |
| rargets                     |                                                                 | avonice rar                               | yets   volumes ar                       | IU Devices               |                                       | Inguration |   |
| Targe                       | et portals                                                      |                                           |                                         |                          |                                       |            | , |
| The s                       | system will look                                                | for Targets                               | on following port                       | als:                     | Refre                                 | esh        |   |
| Addr                        | ress                                                            | Port                                      | Adapter                                 |                          | IP add                                | dress      |   |
| To ad                       | dd a target porl                                                | tal, click Dis                            | cover Portal.                           |                          | Discover                              | Portal     |   |
| To                          |                                                                 |                                           | т                                       | + D+-1                   |                                       | x          |   |
| the                         |                                                                 | DI                                        | scover Targe                            | t Portal                 |                                       |            |   |
| −iSNS<br>Thi<br>Na          | Enter the IP a<br>want to add.<br>To change the<br>the Advanced | address or [<br>e default se<br>  button. | DNS name and por<br>ttings of the disco | t number o<br>wery of th | of the portal you<br>e target portal, | click      |   |
|                             | IP address or                                                   | DNS name:                                 | :                                       | Port: (De                | ault is 3260.)                        |            |   |
|                             | 172.16.0.41                                                     |                                           |                                         | 3260                     |                                       |            |   |
|                             |                                                                 |                                           |                                         |                          |                                       | _          |   |
| То                          | Advanced                                                        |                                           |                                         | ОК                       | Cance                                 |            |   |
| To re<br>then<br><u>Mor</u> | emove an iSNS :<br>click Remove.<br>e about Discove             | erver, sele                               | ct the server abo                       | ve and                   | Remo                                  | JVE        |   |
|                             |                                                                 |                                           |                                         |                          |                                       |            |   |

4. Click the Targets tab. The previously created targets are listed in the Discovered Targets section.



**Note:** If created targets are not listed, check the firewall settings on the StarWind Server as well as the list of networks served by the StarWind Server. You can do this by clicking **StarWind Management Console** - >**Configuration -> Network**.

5. Select each of the targets and clicking **Connect** to add them.

| iSCSI Initiator Properties                                                                                                                                   |              |                     |                         |          |                 |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|---------------------|-------------------------|----------|-----------------|
| largets                                                                                                                                                      | Discovery    | Favorite Targets    | Volumes and Devices     | RADIUS   | Configuration   |
| Quick Connect<br>To discover and log on to a target using a basic connection, type the IP address or<br>DNS name of the target and then click Quick Connect. |              |                     |                         |          |                 |
| <u>T</u> arget:                                                                                                                                              |              |                     |                         | Qu       | uick Connect    |
| Discove                                                                                                                                                      | red targets  |                     |                         |          | <u>R</u> efresh |
| Name                                                                                                                                                         |              |                     |                         | Status   |                 |
| ign.20                                                                                                                                                       | 108-08.com.s | starwindsoftware:1  | 72.16.0.41-haforsofs    | Inactive |                 |
| iqn.20                                                                                                                                                       | 108-08.com.s | starwindsoftware:1  | 72.16.0.41-quorum       | Inactive |                 |
| iqn.20                                                                                                                                                       | 108-08.com.s | starwindsoftware:1  | 72.16.0.42-hafors       | Inactive |                 |
| iqn.20                                                                                                                                                       | U8-U8.com.:  | starwindsoftware:1  | 72.16.0.42-quorum       | Inactive |                 |
| To coni<br>click Co                                                                                                                                          | nect using a | dvanced options, se | elect a target and then |          | Connect         |

6. In the **Connect to Target** dialog that appears select **Add this connection to the list of Favorite Targets** and **Enable multi-path** check boxes. This is necessary to automatically reconnect to the targets upon client restart. Click **OK**.

| Connect To Ta                                                                                                                                     | rget        | x      |
|---------------------------------------------------------------------------------------------------------------------------------------------------|-------------|--------|
| Target name:<br>iqn.2008-08.com.starwindsoftware:172.16.0.4                                                                                       | 1-haforsofs | 7      |
| Add this connection to the list of Favorite Tar<br>This will make the system automatically attem<br>connection every time this computer restarts. | _           |        |
| Enable multi-path                                                                                                                                 |             |        |
| Advanced                                                                                                                                          | ОК          | Cancel |

7. Open the MPIO manager by clicking Start -> Administrative Tools -> MPIO.

8. Go to the Discover Multi-Paths tab. Select the Add support for iSCSI devices check box and click Add.



|                      | MPIO P                        | roperties     |                    | x    |
|----------------------|-------------------------------|---------------|--------------------|------|
| MPIO Devices         | Discover Multi-Paths          | DSM Install   | Configuration Snap | shot |
| - <u>S</u> PC-3 comp | liant                         |               |                    |      |
| Device Ha            | rdware Id                     |               |                    |      |
|                      |                               |               |                    |      |
|                      |                               |               |                    |      |
|                      | port for iSCSI devices        |               |                    |      |
| Add sup              | port for SAS d <u>e</u> vices |               |                    |      |
|                      |                               |               | <u>A</u> dd        |      |
| Others               |                               |               |                    |      |
| Device Ha            | rdware Id                     |               |                    |      |
|                      |                               |               |                    |      |
|                      |                               |               |                    |      |
|                      |                               |               | ٥dd                |      |
|                      |                               |               | MUU                | -    |
| More information     | tion on discovery of mu       | Itipathed dev | ices               |      |
|                      |                               |               | OK Cano            | :el  |

9. When prompted to restart the server, click **Yes** to proceed. After the server is restarted, initialize the disk and create partitions, as if it were physical hard drive.

**Note:** The procedures performed on the first server are automatically shown on the second one.



# **Initializing Disks**

The **StarWind** disks must be initialized and formatted, before they can be utilized as cluster disks.

To initialize disks and create partitions:

- 1. Launch the **Computer Management** console.
- 2. Select the Disk Management item.
- 3. Right-click each disk and select **Online Disk** to bring it online.
- 4. Right-click each disk and select **Initialize Disk** to initialize it. Follow the wizard to initialize disks.

Note: Select MBR (Master Boot Record) as a partition style.

| Initialize Disk 🛛 🗙                                                                                                   |
|-----------------------------------------------------------------------------------------------------------------------|
| You must initialize a disk before Logical Disk Manager can access it.<br><u>S</u> elect disks:                        |
| i Disk 1<br>☑ Disk 2                                                                                                  |
| Use the following partition style for the selected disks:<br>( MBR (Master Boot Record)<br>GPT (GUID Partition Table) |
| Note: The GPT partition style is not recognized by all previous versions of<br>Windows.                               |
| OK Cancel                                                                                                             |

5. Click **OK** to continue.

The **Computer Management** console will look as shown in the screenshot below.

# Providing HA Shared Storage for Scale-Out File Servers



| <u>₽</u>                               |                     | Computer Management                                                                                                                                                                     | _ 0 ×             |
|----------------------------------------|---------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|
| <u>File Action View H</u> elp          |                     |                                                                                                                                                                                         |                   |
| 🗢 🔿 🙋 🖬 🚺 🖬                            | e B                 |                                                                                                                                                                                         |                   |
| E Computer Management (Local           | Volume              | Layout Type File System Status Capacity Free Space % Free                                                                                                                               | Actions           |
| System Tools     P Task Scheduler      | Generation (C:)     | Simple Basic NTI-5 Healthy (Boot, Page File, Crash Dump, Pinnary Partition) 250 604 20,24 68 69 %<br>d Simple Basic NTF5 Healthy (System, Active, Pinnary Partition) 350 MB 119 MB 34 % | Disk Management 🔺 |
| Event Viewer                           |                     |                                                                                                                                                                                         | More Actions      |
| Shared Folders Marcel Users and Groups |                     |                                                                                                                                                                                         |                   |
| Performance                            |                     |                                                                                                                                                                                         |                   |
| Device Manager                         |                     |                                                                                                                                                                                         |                   |
| Windows Server Backup                  |                     |                                                                                                                                                                                         |                   |
| Disk Management                        |                     |                                                                                                                                                                                         |                   |
| p is services and Applications         |                     |                                                                                                                                                                                         |                   |
|                                        |                     |                                                                                                                                                                                         |                   |
|                                        |                     |                                                                                                                                                                                         |                   |
|                                        |                     |                                                                                                                                                                                         |                   |
|                                        | Disk 0              |                                                                                                                                                                                         |                   |
|                                        | Basic<br>30,00 GB   | System Reserved         IC:>           350 MB NTFS         29,66 GB NTFS                                                                                                                |                   |
|                                        | Online              | Healthy (System, Active, Primary Partition)         Healthy (Boot, Page File, Crash Dump, Primary Partition)                                                                            |                   |
|                                        |                     |                                                                                                                                                                                         |                   |
|                                        | Basic               |                                                                                                                                                                                         |                   |
|                                        | 2,00 GB             | 2,00.68                                                                                                                                                                                 |                   |
|                                        | Online              | Unallocated                                                                                                                                                                             |                   |
|                                        | CODiale 2           |                                                                                                                                                                                         |                   |
|                                        | Basic               |                                                                                                                                                                                         |                   |
|                                        | 100,00 GB<br>Online | 100,00 GB<br>Unallocated                                                                                                                                                                |                   |
|                                        |                     |                                                                                                                                                                                         |                   |
|                                        | CD-ROM 0            |                                                                                                                                                                                         |                   |
|                                        | DVD (D:)            |                                                                                                                                                                                         |                   |
|                                        | No Media            |                                                                                                                                                                                         |                   |
|                                        |                     |                                                                                                                                                                                         |                   |
|                                        |                     |                                                                                                                                                                                         |                   |
|                                        |                     |                                                                                                                                                                                         |                   |
|                                        |                     |                                                                                                                                                                                         |                   |
|                                        | Unallocated         | Primary partition                                                                                                                                                                       |                   |
|                                        | -                   |                                                                                                                                                                                         |                   |

To create partitions and format the new disks:

1. Right-click each of the disks in the **Computer Management** window, and then click **New Simple Volume**.

| æ                                                                                                                                                                                                                                                                                        |                                  |                                                                                                  | Computer Management                                                               | _ 0 ×             |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|--------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------|
| File Action View Help                                                                                                                                                                                                                                                                    |                                  |                                                                                                  |                                                                                   |                   |
| 🗢 🔿 🔰 📰 😰 🛛                                                                                                                                                                                                                                                                              | ef 😼                             |                                                                                                  |                                                                                   |                   |
| 🛃 Computer Management (Local                                                                                                                                                                                                                                                             | Volume                           | Layout Type File System Status                                                                   | Capacity Free Space % Free                                                        | Actions           |
|                                                                                                                                                                                                                                                                                          | C:)                              | Simple Basic NTFS Healthy (Boot, Page File, Co<br>red Simple Basic NTFS Healthy (System Active P | Crash Dump, Primary Partition) 29,66 GB 20,54 GB 69 %                             | Disk Management 🔺 |
| <ul> <li>O Task Scheduler</li> <li>Event Viewer</li> <li>Shared Folders</li> <li>Shared Folders</li> <li>Event Viewer</li> <li>Device Manager</li> <li>Every Mundows Server Backup</li> <li>Windows Server Backup</li> <li>Disk Management</li> <li>Services and Applications</li> </ul> | System Reserv                    | ed Simple Basic NTFS Healthy (System, Active, Pr                                                 | Primary Paritition) 350 MB 119 MB 34 %                                            | More Actions      |
|                                                                                                                                                                                                                                                                                          | Basic<br>30,00 GB<br>Online      | System Reserved<br>350 MB NTFS<br>Healthy (System, Active, Primary Partition)                    | (C3)<br>29,66 GB NTFS<br>Healthy (Boot, Page File, Crash Dump, Primary Partition) |                   |
|                                                                                                                                                                                                                                                                                          | Basic<br>2,00 GB<br>Online       | 2,00 GB<br>Unallocated                                                                           | New Simple Volume<br>New Spanned Volume                                           |                   |
|                                                                                                                                                                                                                                                                                          | Basic<br>100,00 GB<br>Online     | 100,00 GB<br>Unallocated                                                                         | New Striped Volume New Mirrored Volume New RAID-5 Volume Properties               |                   |
|                                                                                                                                                                                                                                                                                          | CD-ROM 0<br>DVD (D:)<br>No Media |                                                                                                  | Help                                                                              |                   |
| < III >                                                                                                                                                                                                                                                                                  | Unallocated                      | Primary partition                                                                                |                                                                                   |                   |

2. Follow the wizard's instructions to create partitions.



The **Computer Management** window will look as shown in the screenshot below.

| 45                                |                     |                         |                                         |                    |                                                 | Computer Mana                                 | aomont               |                      |               |      | - a x             |
|-----------------------------------|---------------------|-------------------------|-----------------------------------------|--------------------|-------------------------------------------------|-----------------------------------------------|----------------------|----------------------|---------------|------|-------------------|
| File Action View Help             |                     |                         |                                         |                    |                                                 | Computer Mana                                 | gement               |                      |               |      |                   |
|                                   | 10 R                |                         |                                         |                    |                                                 |                                               |                      |                      |               |      |                   |
|                                   |                     | , , ,                   |                                         |                    |                                                 |                                               |                      |                      | ,             | <br> |                   |
| Computer Management (Local        | Volume              | Layout                  | Type   File S                           | System   Statu     | 5                                               |                                               | Capacity             | Free Space           | % Free        |      | Actions           |
| System Loois     A Task Scheduler | HAforSOFS (Fr)      | Simple                  | Basic NTES<br>Basic NTES                | 5 Healt<br>5 Healt | hy (Boot, Page File, 9<br>by (Primary Partition | Crash Dump, Primary Partition;                | ) 29,66 GB<br>100.00 | 20,54 GB<br>99,89 GB | 69 %<br>100 % |      | Disk Management 🔺 |
| R Event Viewer                    | Quorum (E:)         | Simple                  | Basic NTFS                              | S Healt            | hy (Primary Partition                           | י)<br>1)                                      | 2,00 GB              | 1,95 GB              | 98 %          |      | More Actions 🕨    |
| Shared Folders                    | System Reserved     | d Simple                | Basic NTFS                              | S Healt            | hy (System, Active, F                           | Primary Partition)                            | 350 MB               | 119 MB               | 34 %          |      |                   |
| Local Users and Groups            |                     |                         |                                         |                    |                                                 |                                               |                      |                      |               |      |                   |
| Performance                       |                     |                         |                                         |                    |                                                 |                                               |                      |                      |               |      |                   |
| 4 Storage                         |                     |                         |                                         |                    |                                                 |                                               |                      |                      |               |      |                   |
| Windows Server Backup             |                     |                         |                                         |                    |                                                 |                                               |                      |                      |               |      |                   |
| 📑 Disk Management                 |                     |                         |                                         |                    |                                                 |                                               |                      |                      |               |      |                   |
| Services and Applications         |                     |                         |                                         |                    |                                                 |                                               |                      |                      |               |      |                   |
|                                   |                     |                         |                                         |                    |                                                 |                                               |                      |                      |               |      |                   |
|                                   |                     |                         |                                         |                    |                                                 |                                               |                      |                      |               |      |                   |
|                                   |                     |                         |                                         |                    |                                                 |                                               |                      |                      |               |      |                   |
|                                   |                     |                         |                                         |                    |                                                 |                                               |                      |                      |               |      |                   |
|                                   | Disk 0              |                         |                                         |                    |                                                 |                                               |                      |                      |               | 1    |                   |
|                                   | Basic               | System R                | eserved                                 |                    |                                                 | (C:)                                          |                      |                      |               |      |                   |
|                                   | 30,00 GB<br>Online  | 350 MB N<br>Healthy (S  | TFS<br>Activ                            | e Primary Par      | tition)                                         | 29,66 GB NTFS<br>Healthy (Boot, Page File, Ci | ash Dumn             | Primary Parti        | tion)         |      |                   |
|                                   |                     | l neanthy (a            | ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,, | c, 1 111101 y 1 01 |                                                 | including (book, rugerine, ei                 | asir o'anip,         |                      | ciony         |      |                   |
|                                   |                     |                         |                                         |                    |                                                 | P                                             |                      |                      |               | 4    |                   |
|                                   | Basic               | 0                       | (E.)                                    |                    |                                                 |                                               |                      |                      |               |      |                   |
|                                   | 2,00 GB             | 2,00 GB N               | TFS                                     |                    |                                                 |                                               |                      |                      |               |      |                   |
|                                   | Online              | Healthy (P              | rimary Partit                           | tion)              |                                                 |                                               |                      |                      |               |      |                   |
|                                   |                     |                         |                                         |                    |                                                 |                                               |                      |                      |               |      |                   |
|                                   | Disk 2              |                         |                                         |                    |                                                 |                                               |                      |                      |               |      |                   |
|                                   | Basic               | HAforSO                 | FS (F:)                                 |                    |                                                 |                                               |                      |                      |               |      |                   |
|                                   | 100,00 GB<br>Online | 100,00 GB<br>Healthy (P | NTFS<br>rimary Partit                   | tion)              |                                                 |                                               |                      |                      |               |      |                   |
|                                   |                     | i icultity (i           | initially i dicit                       | liony              |                                                 |                                               |                      |                      |               |      |                   |
|                                   | 0                   |                         |                                         |                    |                                                 |                                               |                      |                      |               |      |                   |
|                                   | DVD (D:)            |                         |                                         |                    |                                                 |                                               |                      |                      |               |      |                   |
|                                   |                     |                         |                                         |                    |                                                 |                                               |                      |                      |               |      |                   |
|                                   | No Media            |                         |                                         |                    |                                                 |                                               |                      |                      |               |      |                   |
|                                   |                     |                         |                                         |                    |                                                 |                                               |                      |                      |               |      |                   |
|                                   |                     |                         |                                         |                    |                                                 |                                               |                      |                      |               |      |                   |
|                                   |                     |                         |                                         |                    |                                                 |                                               |                      |                      |               |      |                   |
|                                   |                     |                         |                                         |                    |                                                 |                                               |                      |                      |               |      |                   |
|                                   |                     |                         |                                         |                    |                                                 |                                               |                      |                      |               |      |                   |
|                                   | Unallocated         | Primary par             | tition                                  |                    |                                                 |                                               |                      |                      |               |      |                   |
|                                   | - shanocated        |                         |                                         |                    |                                                 |                                               |                      |                      |               |      |                   |

The same actions need to be made on the other servers, except that creating partitions will no longer be necessary.

| æ                                    |                    |                                                                                           | Computer Management                                                             |             | _ 0 ×             |
|--------------------------------------|--------------------|-------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|-------------|-------------------|
| <u>File Action View H</u> elp        |                    |                                                                                           |                                                                                 |             |                   |
| 🗢 🔿 🙋 📰 😰 🖸                          | 19                 |                                                                                           |                                                                                 |             |                   |
| Somputer Management (Local           | Volume             | Layout Type File System Status                                                            | Capacity Free Space %                                                           | Free        | Actions           |
| ⊿ Vi System Lools ► P Task Scheduler | HAforSOES (E:)     | Simple Basic NTFS Healthy (Boot, Page File<br>Simple Basic NTFS Healthy (Primary Partitio | . Crash Dump, Primary Partition) 29,66 GB 20,65 GB 70<br>m) 100.00 99.89 GB 100 | 0 %<br>D0 % | Disk Management 🔶 |
| Event Viewer                         | @Quorum (E:)       | Simple Basic NTFS Healthy (Primary Partition                                              | n) 2,00 GB 1,95 GB 98                                                           | 8 %         | More Actions      |
| Shared Folders                       | System Reserved    | d Simple Basic NTFS Healthy (System, Active                                               | Primary Partition) 350 MB 119 MB 34                                             | 4 %         |                   |
| Deformance                           |                    |                                                                                           |                                                                                 |             |                   |
| A Device Manager                     |                    |                                                                                           |                                                                                 |             |                   |
| Storage Windows Server Backup        |                    |                                                                                           |                                                                                 |             |                   |
| Disk Management                      |                    |                                                                                           |                                                                                 |             |                   |
| Services and Applications            |                    |                                                                                           |                                                                                 |             |                   |
|                                      |                    |                                                                                           |                                                                                 |             |                   |
|                                      |                    |                                                                                           |                                                                                 |             |                   |
|                                      |                    |                                                                                           |                                                                                 |             |                   |
|                                      |                    |                                                                                           |                                                                                 |             |                   |
|                                      |                    |                                                                                           |                                                                                 |             |                   |
|                                      |                    |                                                                                           |                                                                                 |             |                   |
|                                      |                    |                                                                                           |                                                                                 |             |                   |
|                                      |                    |                                                                                           | 1                                                                               |             | 4                 |
|                                      | Basic              | System Reserved                                                                           | (C)                                                                             |             |                   |
|                                      | 30,00 GB           | 350 MB NTFS                                                                               | 29,66 GB NTFS                                                                   |             |                   |
|                                      | Online             | Healthy (System, Active, Primary Partition)                                               | Healthy (Boot, Page File, Crash Dump, Primary Partition)                        |             |                   |
|                                      |                    |                                                                                           | T                                                                               |             |                   |
|                                      | Basic              | Quorum (E:)                                                                               |                                                                                 | -           |                   |
|                                      | 2,00 GB<br>Online  | 2,00 GB NTFS<br>Healthy (Primary Partition)                                               |                                                                                 | =           |                   |
|                                      |                    |                                                                                           |                                                                                 |             |                   |
|                                      | Disk 2             |                                                                                           |                                                                                 |             |                   |
|                                      | Basic<br>100.00 CD | HAforSOFS (F:)                                                                            |                                                                                 |             |                   |
|                                      | Online             | Healthy (Primary Partition)                                                               |                                                                                 |             |                   |
|                                      |                    |                                                                                           |                                                                                 |             |                   |
|                                      | CD-ROM 0           |                                                                                           |                                                                                 |             |                   |
|                                      | DVD (D:)           |                                                                                           |                                                                                 |             |                   |
|                                      | No Media           |                                                                                           |                                                                                 | ·           |                   |
| < III >                              | Unallocated        | Primary partition                                                                         |                                                                                 |             |                   |



# **Creating a Cluster**

To validate a cluster:

1. Open Server Manager. Select the Failover Cluster Manager item in Tools menu.

| 龝                                             | Failover Cluster Manager                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                            |  |  |  |  |  |  |
|-----------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|--|--|--|--|--|--|
| <u>F</u> ile <u>A</u> ction ⊻iew <u>H</u> elp |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                            |  |  |  |  |  |  |
|                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                            |  |  |  |  |  |  |
| 🍓 Failover Cluster Manager                    | Failover Cluster Manager                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Actions                    |  |  |  |  |  |  |
|                                               | Create failover clusters, validate hardware for potential failover clusters, and perform configuration changes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Failover Cluster Manager 🔺 |  |  |  |  |  |  |
|                                               | to your failover clusters.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Validate Configuration     |  |  |  |  |  |  |
|                                               | ▲ Overview                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Create Cluster             |  |  |  |  |  |  |
|                                               | A failover cluster is a set of independent computers that work together to increase the availability of server                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | View                       |  |  |  |  |  |  |
|                                               | roles. The clustered servers (called nodes) are connected by physical cables and by software. If one of the<br>nodes fails, another node begins to provide services (a process known as failover).                                                                                                                                                                                                                                                                                                                                                                                               | Refresh                    |  |  |  |  |  |  |
|                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Properties                 |  |  |  |  |  |  |
|                                               | ▲ Clusters                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | I Help                     |  |  |  |  |  |  |
|                                               | ▲ Management                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                            |  |  |  |  |  |  |
|                                               | to begin to use lative doubled, its Validate jour induce configuration, and their cleake a cutter, interl     these lates are complete, you can manage the clutter. Managing a cluster can include mignating arrivate and     double configuration and substruming Windows Server 3 Bets, Windows Server 2000 R2, or Windows Server     2008     Validate Configuration     Validate Configuration     Context Cutter     Context Cutter     Managing a failower cluster or adding a cluster node     Context Cutter     Managing a failower cluster or adding a cluster node     Context Cutter |                            |  |  |  |  |  |  |
|                                               | Migrating services and applications from a cluster                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                            |  |  |  |  |  |  |
|                                               | More Information  Selever cluster topics on the Web  Selever cluster communities on the Web  Microsoft support page on the Web                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                            |  |  |  |  |  |  |
|                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                            |  |  |  |  |  |  |

2. Before creating a cluster, you will need to validate your configuration. In the **Actions** section, click **Validate Configuration** to verify whether your servers are suitable for building a cluster. After completion of validation process you will returned to the **Failover Cluster Manager** window.

## To create a cluster:

1. Click the Create a Cluster item in the Actions section of the Failover Cluster Manger.

2. Specify the servers that will be included into the cluster.



| <b>ii</b>                                                                                                                                 |                                                                                     | Create Cluster Wizard                                                                                                                 | ×                                                      |
|-------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------|
| Select Se                                                                                                                                 | ervers                                                                              |                                                                                                                                       |                                                        |
| Before You Begin<br>Select Servers<br>Access Point for<br>Administering the<br>Cluster<br>Confirmation<br>Creating New Cluster<br>Summary | Add the names of all the<br><u>E</u> nter server name:<br><u>S</u> elected servers: | servers that you want to have in the cluster. You must add at least           I           WS8node1.sws.com           WS8node2.sws.com | one server.          Browse         Add         Remove |
|                                                                                                                                           |                                                                                     | < <u>P</u> revious <u>N</u> ext >                                                                                                     | Cancel                                                 |

4. Specify the cluster name.

**Note:** If the cluster servers get IP addresses over DHCP, the cluster gets its IP address over DHCP as well. If the IP addresses are set statically, you need to set an IP address for the cluster as well.

5. Click **Next** to continue.

| - <b>4</b>                                                                                                                                |                                                                   | Create Cluster Wizard                                                                        |                     |                                                                |  |  |  |  |  |  |
|-------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------|----------------------------------------------------------------------------------------------|---------------------|----------------------------------------------------------------|--|--|--|--|--|--|
| Access Point for Administering the Cluster                                                                                                |                                                                   |                                                                                              |                     |                                                                |  |  |  |  |  |  |
| Before You Begin<br>Select Servers<br>Access Point for<br>Administering the<br>Cluster<br>Confirmation<br>Creating New Cluster<br>Summary | Type the name you<br>Cluster N <u>a</u> me:<br>(1) The NetBIOS na | want to use when adminis<br>Cluster<br>me is limited to 15 charact<br>Networks<br>I72.16.0.0 | tering the cluster. | figured automatically.<br>172.16.1.45<br><u>N</u> ext > Cancel |  |  |  |  |  |  |

6. Make sure that all of the previously defined options are correct. Click **Previous** to make any changes.



| <b>a</b>                                                                                            |                                                     | Create Cluster Wiza                                            | rd                                | x      |
|-----------------------------------------------------------------------------------------------------|-----------------------------------------------------|----------------------------------------------------------------|-----------------------------------|--------|
| Confirma                                                                                            | tion                                                |                                                                |                                   |        |
| Before You Begin<br>Select Servers                                                                  | You are ready to creat<br>The wizard will create g  | e a cluster.<br>your cluster with the following s              | ettings:                          |        |
| Access Point for<br>Administering the<br>Cluster<br>Confirmation<br>Creating New Cluster<br>Summary | Cluster:<br>Node:<br>Node:<br>IP Address:           | Cluster<br>WS8node2.sws.com<br>WS8node1.sws.com<br>172.16.1.45 |                                   | ×<br>× |
|                                                                                                     | ✓ Add all eligible stora<br>To continue, click Next | age to the cluster.                                            |                                   |        |
|                                                                                                     |                                                     |                                                                | < <u>P</u> revious <u>N</u> ext > | Cancel |

8. The process of creating the cluster begins. As creation of the cluster is completed, read the report.

| <b>a</b>                           |                                                      | Create Cluster Wizard                                                                                     | ×                     |  |
|------------------------------------|------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|-----------------------|--|
| Summary                            |                                                      |                                                                                                           |                       |  |
| Before You Begin<br>Select Servers | You have succ                                        | cessfully completed the Create Cluster Wizard.                                                            |                       |  |
| Administering the<br>Cluster       |                                                      | Create Cluster                                                                                            | ^                     |  |
| Confirmation                       |                                                      |                                                                                                           |                       |  |
| Creating New Cluster<br>Summary    | Cluster:<br>Node:<br>Node:<br>Quorum:<br>IP Address: | Cluster<br>WS8node2.sws.com<br>WS8node1.sws.com<br>Node and Disk Majority (Cluster Disk 1)<br>172.16.1.45 | ~                     |  |
|                                    | To view the report crea<br>To close this wizard, cl  | ated by the wizard, click View Report.<br>lick Finish.                                                    | ⊻iew Report<br>Einish |  |

9. Click **Finish** to close the wizard.



After these actions, the Failover Cluster Manager window appears.

| 234                      |                 |               |                                       | Foilower (             | Tustor Monogor   |             |                   |            |           | _                            | a x |
|--------------------------|-----------------|---------------|---------------------------------------|------------------------|------------------|-------------|-------------------|------------|-----------|------------------------------|-----|
| File Action View Help    |                 |               |                                       | Fallover (             | Liuster Manager  |             |                   |            |           |                              |     |
|                          |                 |               |                                       |                        |                  |             |                   |            |           |                              |     |
| Railover Cluster Manager | Starage (2)     |               |                                       |                        |                  |             | Pagent Cluster Fu | rosto: A M | Inmines 2 | Actions                      |     |
| ⊿ 🎲 Cluster.sws.com      | Storage (2)     |               |                                       |                        |                  |             |                   | unting w   |           | Storage                      |     |
| Roles                    | Jearun          |               |                                       |                        |                  |             | <i>P</i>          | uenes • [] |           | Add Disk                     |     |
| WS8node1                 | Name            | Status        | Assigned To<br>Disk Witness in Quorum | Owner Node<br>WS8node2 | Capacity<br>2 GB | Information |                   |            |           | Move Available Storage       | •   |
| WS8node2                 | Cluster Disk 2  | Online        | Available Storage                     | WS8node2               | 100 GB           |             |                   |            |           | View                         | •   |
| Storage<br>Networks      | 1               | <u> </u>      |                                       |                        |                  |             |                   |            |           | Q Refresh                    |     |
| Cluster Events           |                 |               |                                       |                        |                  |             |                   |            |           | Help                         |     |
|                          |                 |               |                                       |                        |                  |             |                   |            |           | Cluster Dick 2               |     |
|                          |                 |               |                                       |                        |                  |             |                   |            |           | Ring Online                  | _   |
|                          |                 |               |                                       |                        |                  |             |                   |            |           | Take Offline                 |     |
|                          |                 |               |                                       |                        |                  |             |                   |            |           | Add to Cluster Shared Volume | es  |
|                          |                 |               |                                       |                        |                  |             |                   |            |           | Information Details          |     |
|                          |                 |               |                                       |                        |                  |             |                   |            |           | More Actions                 | •   |
|                          |                 |               |                                       |                        |                  |             |                   |            |           | Remove                       |     |
|                          |                 |               |                                       |                        |                  |             |                   |            |           | Properties                   |     |
|                          |                 |               |                                       |                        |                  |             |                   |            |           | Help                         |     |
|                          |                 |               |                                       |                        |                  |             |                   |            |           |                              |     |
|                          |                 |               |                                       |                        |                  |             |                   |            |           |                              |     |
|                          |                 |               |                                       |                        |                  |             |                   |            |           |                              |     |
|                          |                 |               |                                       |                        |                  |             |                   |            |           |                              |     |
|                          |                 |               |                                       |                        |                  |             |                   |            |           |                              |     |
|                          |                 |               |                                       |                        |                  |             |                   |            |           |                              |     |
|                          | 12.             |               |                                       |                        |                  |             |                   |            |           |                              |     |
|                          | Cluster Disk 2  |               |                                       |                        |                  |             |                   |            | _         |                              |     |
|                          | Volumos (1)     |               |                                       |                        |                  |             |                   |            |           |                              |     |
|                          | Volunco (1)     |               |                                       |                        |                  |             |                   |            |           |                              |     |
|                          | HAforSOFS (F:)  |               |                                       |                        |                  |             |                   |            |           |                              |     |
|                          | NTFS 99,9 GB fr | ree of 100 GB |                                       |                        |                  |             |                   |            |           |                              |     |
|                          |                 |               |                                       |                        |                  |             |                   |            |           |                              |     |
|                          |                 |               |                                       |                        |                  |             |                   |            |           |                              |     |
|                          |                 |               |                                       |                        |                  |             |                   |            |           |                              |     |
|                          |                 |               |                                       |                        |                  |             |                   |            |           |                              |     |
|                          |                 |               |                                       |                        |                  |             |                   |            |           |                              |     |
|                          |                 |               |                                       |                        |                  |             |                   |            |           |                              |     |



# **CONFIGURING AND MANAGING SCALE-OUT FILE SERVERS**

## **Adding Disks to Cluster Shared Volumes**

1. Right-click the disk assigned to Available Storage (see the Assigned To column), and click Add to Cluster Shared Volumes.

| <u>u</u>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                |                |                        | Failover (   | Cluster Manage | r           |           |       | -                            | ۵ x |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|----------------|------------------------|--------------|----------------|-------------|-----------|-------|------------------------------|-----|
| <u>File Action View H</u> elp                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                |                |                        |              |                |             |           |       |                              |     |
| 🗢 🤿 🙍 📰 🚺 🖬                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                |                |                        |              |                |             |           |       |                              |     |
| Bile       Action       Yiew       Help         Image: Second Se |                |                | Recent Cluster Events: | A Warning: 3 | Actions        |             |           |       |                              |     |
| ⊿ Cluster.sws.com Roles                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Search         |                |                        |              |                |             | P Queries | • • • | Storage                      | -   |
| ⊿ 🏺 Nodes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Name           | Status         | Assigned To            | Owner Node   | Capacity       | Information |           |       | i Add Disk                   |     |
| WS8node1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Eluster Disk 1 | Online         | Disk Witness in Quorum | WS8node2     | 2 G            | B           |           |       | 🍰 Move Available Storage     | •   |
| WS8node2<br>Storage                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Cluster Disk 2 | ( Online       | Available Storage      | WS8node2     | 100 G          | В           |           |       | View                         | •   |
| Networks                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                | Bring Online   |                        |              |                |             |           |       | Q Refresh                    |     |
| Cluster Events                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                | Add to Cluster | Shared Volumes         |              |                |             |           |       | 👔 Help                       |     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                |                | staile                 |              |                |             |           |       | Cluster Disk 2               |     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                | Ners Astiens   |                        |              |                |             |           |       | 🙀 Bring Online               |     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                | More Actions   | · · ·                  |              |                |             |           |       | 🙀 Take Offline               |     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                | Kemove         |                        |              |                |             |           |       | dd to Cluster Shared Volumes |     |
| 0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                | Properties     |                        |              |                |             |           |       | 🚯 Information Details        |     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                |                |                        |              |                |             |           |       | More Actions                 | •   |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                |                |                        |              |                |             |           |       | 😋 Remove                     |     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                |                |                        |              |                |             |           |       | Properties                   |     |
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                |                |                        |              |                |             |           |       |                              |     |
| 0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                |                |                        |              |                |             |           |       |                              |     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                |                |                        |              |                |             |           |       |                              |     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                |                |                        |              |                |             |           |       |                              |     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                |                |                        |              |                |             |           |       |                              |     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                |                |                        |              |                |             |           |       |                              |     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | V Cluster Disk | 2              |                        |              |                |             |           |       |                              |     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                |                |                        |              |                |             |           |       |                              |     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Volumes (1)    |                |                        |              |                |             |           |       |                              |     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | HAforSOFS (F:) | )              |                        |              |                |             |           |       |                              |     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | NTFS 99,9 GB f | free of 100 GB |                        |              |                |             |           |       |                              |     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                |                |                        |              |                |             |           |       |                              |     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                |                |                        |              |                |             |           |       |                              |     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                |                |                        |              |                |             |           |       |                              |     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                |                |                        |              |                |             |           |       |                              |     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                |                |                        |              |                |             |           |       |                              |     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | ]]             |                |                        |              |                |             |           |       |                              |     |



2. The disk will be displayed as a CSV at the **Failover Cluster Manager** window as shown in the screenshot below.

| 575                                                  |                  |                         |                        | <b>5</b> 11 | <b>.</b>        |             |                     |                         |                             |            |
|------------------------------------------------------|------------------|-------------------------|------------------------|-------------|-----------------|-------------|---------------------|-------------------------|-----------------------------|------------|
| 🚳                                                    |                  |                         |                        | Fallover    | Cluster Manager |             |                     |                         | L                           | - 0 -      |
|                                                      |                  |                         |                        |             |                 |             |                     |                         |                             |            |
| V V La La La La                                      |                  |                         |                        | _           |                 |             |                     |                         |                             |            |
| Fallover Cluster Manager<br>Fallover Cluster.sws.com | Storage (2)      |                         |                        |             |                 |             | Recent Cluster Even | ts: 👍 <u>Warning: 3</u> | Actions                     |            |
| 🔚 Roles                                              | Search           |                         |                        |             |                 |             | P Quer              | ies 🔻 📊 🔻 🖌             | Storage                     | <b>^</b>   |
| ⊿ 🎬 Nodes                                            | Name             | Status                  | Assigned To            | Owner Node  | Capacity        | Information |                     |                         | Add Disk                    |            |
| WS8node1                                             | 📇 Cluster Disk 1 | () Online               | Disk Witness in Quorum | WS8node2    | 2 G B           |             |                     |                         | 🔮 Move Available Storage    | •          |
| þ 📇 Storage                                          | Cluster Disk 2   | Online                  | Cluster Shared Volume  | WS8node2    | 100 GB          |             |                     |                         | View                        | •          |
| Networks                                             |                  |                         |                        |             |                 |             |                     |                         | 🖸 Refresh                   |            |
| Cluster Events                                       |                  |                         |                        |             |                 |             |                     |                         | 👔 Help                      |            |
|                                                      |                  |                         |                        |             |                 |             |                     |                         | Cluster Disk 2              | <b>^</b>   |
|                                                      |                  |                         |                        |             |                 |             |                     |                         | 🙀 Bring Online              |            |
|                                                      |                  |                         |                        |             |                 |             |                     |                         | 🙀 Take Offline              |            |
|                                                      |                  |                         |                        |             |                 |             |                     |                         | 🚯 Information Details       |            |
|                                                      |                  |                         |                        |             |                 |             |                     |                         | 📝 Move                      | •          |
|                                                      |                  |                         |                        |             |                 |             |                     |                         | More Actions                | •          |
|                                                      |                  |                         |                        |             |                 |             |                     |                         | 🚭 Remove from Cluster Share | ed Volumes |
|                                                      |                  |                         |                        |             |                 |             |                     |                         | Properties                  |            |
|                                                      |                  |                         |                        |             |                 |             |                     |                         | 👔 Help                      |            |
|                                                      |                  |                         |                        |             |                 |             |                     |                         | <b>_</b> .                  |            |
|                                                      |                  |                         |                        |             |                 |             |                     |                         |                             |            |
|                                                      |                  |                         |                        |             |                 |             |                     |                         |                             |            |
|                                                      |                  |                         |                        |             |                 |             |                     |                         |                             |            |
|                                                      |                  |                         |                        |             |                 |             |                     |                         |                             |            |
|                                                      |                  |                         |                        |             |                 |             |                     |                         |                             |            |
|                                                      |                  |                         |                        |             |                 |             |                     |                         |                             |            |
|                                                      | 🗸 🧾 Cluster Disk | 2                       |                        |             |                 |             |                     |                         |                             |            |
|                                                      |                  |                         |                        |             |                 |             |                     |                         |                             |            |
|                                                      | Volumes (1)      |                         |                        |             |                 |             |                     |                         |                             |            |
|                                                      | HAforSOFS (C     | :\ClusterStorage\Volume | 1)                     |             |                 |             |                     |                         |                             |            |
|                                                      | CSVES 99 9 G     | B free of 100 GB        |                        |             |                 |             |                     |                         |                             |            |
|                                                      | 00000000         | blice of the db         |                        |             |                 |             |                     |                         |                             |            |
|                                                      |                  |                         |                        |             |                 |             |                     |                         |                             |            |
|                                                      |                  |                         |                        |             |                 |             |                     |                         |                             |            |
|                                                      |                  |                         |                        |             |                 |             |                     |                         |                             |            |
|                                                      |                  |                         |                        |             |                 |             |                     |                         |                             |            |
|                                                      |                  |                         |                        |             |                 |             |                     |                         |                             |            |
|                                                      |                  |                         |                        |             |                 |             |                     |                         |                             |            |



## **Configuring Scale-Out File Server Role**

To configure Scale-Out File Server role:

- 1. Launch Failover Cluster Manager.
- 2. Right-click the Role item and click Configure Role. High Availability Wizard appears.



This action enables you to select a role that you can compute for high availability.

#### 3. Read the Before You Begin page appears. Click Next.

| 80                              | High Availability Wizard                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | x |
|---------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|
| Before Y                        | ou Begin                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |   |
| Before You Begin<br>Select Role | This wizard configures high availability for a role. After you successfully complete this wizard, if a clustered server fails while running the role, another clustered server automatically begins running the role (a process known as failower). If the role 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 roles that you can configure for high availability         D not show this page again |   |
|                                 | Next > Cancel                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |   |



4. On the Select Role page, choose File Server and click Next.

| <b>8</b> 7                                                                                                             | High Availability Wizard                                                                                                                                                                                              | x |
|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|
| Select Ro                                                                                                              | ble                                                                                                                                                                                                                   |   |
| Before You Begin<br>Select Role                                                                                        | Select the role that you want to configure for high availability:                                                                                                                                                     |   |
| File Server Type<br>Client Access Point<br>Select Storage<br>Confirmation<br>Configure High<br>Availability<br>Summary | DFS Namespace Server     DHCP Server     Distributed Transaction Coordinator (DTC)     File Server     Generic Application     Generic Script     Generic Service     Hyper-V Replica Broker     SiSCSI Target Server |   |
|                                                                                                                        | More about roles that you can configure for high availability           < Previous                                                                                                                                    | ] |

5. Select File Server for scale-out application data and click Next.

| 80                                                                                                                      | High Availability Wizard                      |
|-------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|
| File Serve                                                                                                              | er Type                                       |
| Before You Begin<br>Select Role<br>File Server Type<br>Client Access Point<br>Configure High<br>Availability<br>Summary | Select an option for a clustered File Server: |



6. On the **Client Access Point** page, in the **Name** text field type a NETBIOS name that will be used to access Scale-Out File Server.

7. Click **Next** to continue.

| <b>3</b> 0                                                                       | High Availability Wizard                                                                                     |
|----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|
| Client Ac                                                                        | ccess Point                                                                                                  |
| Before You Begin<br>Select Role<br>File Server Type                              | Type the name that clients will use when accessing this clustered role:           Name:         Scale-out-FS |
| Client Access Point<br>Confirmation<br>Configure High<br>Availability<br>Summary | 1 The NetBIOS name is limited to 15 characters. All networks were configured automatically.                  |
|                                                                                  | < <u>P</u> revious <u>N</u> ext > Cancel                                                                     |

8. On the **Confirmation** page check the selected settings.

9. Click **Next** to continue or **Previous** to make any changes.

| <b>8</b> 0                                                                           | Hig                                     | h Availability Wizard                   | x |
|--------------------------------------------------------------------------------------|-----------------------------------------|-----------------------------------------|---|
| Confirma                                                                             | tion                                    |                                         |   |
| Before You Begin<br>Select Role                                                      | You are ready to configure hig          | h availability for a File Server.       |   |
| File Server Type<br>Client Access Point<br>Configure High<br>Availability<br>Summary | Distributed Network<br>Name:<br>Subnet: | Scale-out-FS<br>172.16.0.0              |   |
|                                                                                      | To continue, click Next.                | < <u>P</u> revious <u>N</u> ext > Cance |   |



10. Review the information on the **Summary** page and click **Finish**.

| ¢۵                              | High Availability Wizard                                                                                           |
|---------------------------------|--------------------------------------------------------------------------------------------------------------------|
| Summary                         |                                                                                                                    |
| Before You Begin<br>Select Role | High availability was successfully configured for the role.                                                        |
| File Server Type                |                                                                                                                    |
| Client Access Point             | File Server                                                                                                        |
| Configure High<br>Availability  | Distributed Network Scale-out-FS                                                                                   |
| Summary                         | Subnet: 172.16.0.0                                                                                                 |
|                                 |                                                                                                                    |
|                                 | To view the report created by the wizard, click View Report.<br>To close this wizard, click Finish.<br>⊻iew Report |
|                                 | <u> </u>                                                                                                           |

11. When you are finished, the **Failover Cluster Manager** window should look as shown in the screenshot below.

| 繊                             |              |         |                       | Failo      | over Cluster M | anager      |                                  |                     | - 0 × |
|-------------------------------|--------------|---------|-----------------------|------------|----------------|-------------|----------------------------------|---------------------|-------|
| Eile Action ⊻iew <u>H</u> elp |              |         |                       |            |                |             |                                  |                     |       |
| 🗢 🔿 🖄 📰 🚺                     |              |         |                       |            |                |             |                                  |                     |       |
| 📲 Failover Cluster Manager    | Roles (1)    |         |                       |            |                |             | ster Events: 🛕 <u>Warning: 4</u> | Actions             |       |
| ⊿ Cluster.sws.com             | Search       |         |                       |            |                |             | 🔎 Queries 🔻 🕁 👻 👽                | Roles               | •     |
| ⊿ 🎒 Nodes                     | Namo         | Status  | Tuno                  | Owner Nede | Priority       | Information |                                  | len Konfigure Role  |       |
| WS8node1                      | Scale-out-ES | Bunning | Scale-Out File Server | WS8node1   | Medium         | monitation  |                                  | Virtual Machines    | •     |
| WS8node2                      |              | 0       |                       |            |                |             |                                  | 📷 Create Empty Role |       |
| D I Storage                   |              |         |                       |            |                |             |                                  | View                | •     |
| 🔢 Cluster Events              |              |         |                       |            |                |             |                                  | a Refresh           |       |
|                               |              |         |                       |            |                |             |                                  | 👔 Help              |       |
|                               | •            |         |                       |            |                |             |                                  |                     |       |



# Creating a Continuously Available File Share on a Cluster Shared Volume

To create a continuously available file share on the cluster shared volume:

- 1. Launch the Failover Cluster Manager.
- 2. Select the **Roles** item.
- 3. Right-click a previously created file server role and select Add Shared Folder.

| 槛                             |                     |                    |                       | Failo      | ver Cluster M | lanager     |                                |                           | - 0 X |
|-------------------------------|---------------------|--------------------|-----------------------|------------|---------------|-------------|--------------------------------|---------------------------|-------|
| <u>File Action View H</u> elp |                     |                    |                       |            |               |             |                                |                           |       |
| 🗢 🏟 🖄 📰 📓 🖬                   |                     |                    |                       |            |               |             |                                |                           |       |
| Sailover Cluster Manager      | Roles (1)           |                    |                       |            |               |             | ter Events: 🔥 Warning: 4       | Actions                   |       |
| A Cluster.sws.com             | Search              |                    |                       |            |               |             | <br>👂 Queries 🔻 🔛 👻 👽          | Roles                     | -     |
| 🔺 🎒 Nodes                     | Name                | Status             | Type                  | Owner Node | Priority      | Information |                                | 🧑 Configure Role          |       |
| WS8node1                      | Scale-out-FS        | (a) Dunning        | Scale-Out File Server | WS8node1   | Medium        |             |                                | Virtual Machines          | •     |
| Storage                       |                     | Constant Role      |                       |            |               |             |                                | 📸 Create Empty Role       |       |
| Networks                      |                     | Stop Role          |                       |            |               |             |                                | View                      | +     |
| ા Cluster Events              |                     | Add Shared Fold    | er                    |            |               |             |                                | Q Refresh                 |       |
|                               |                     | Move Move          | •                     |            |               |             |                                | 🕜 Help                    |       |
|                               |                     | ( Change Startup F | Priority +            |            |               |             |                                | Scale-out-FS              | *     |
|                               |                     | Information Deta   | ils                   |            |               |             |                                | 🛟 Start Role              |       |
|                               |                     | Add Resource       | •                     |            |               |             |                                | 🛟 Stop Role               |       |
|                               |                     | More Actions       | •                     |            |               |             |                                | Add Shared Folder         |       |
|                               |                     | Remove             |                       |            |               |             |                                | 🔯 Move                    | •     |
|                               |                     | Properties         |                       |            |               |             |                                | 🔞 Change Startup Priority | •     |
|                               |                     |                    |                       |            |               |             |                                | 🚯 Information Details     |       |
|                               |                     |                    |                       |            |               |             |                                | Add Resource              | •     |
|                               |                     |                    |                       |            |               |             |                                | More Actions              | •     |
|                               |                     |                    |                       |            |               |             |                                | 😋 Remove                  |       |
|                               |                     |                    |                       |            |               |             |                                | Properties                |       |
|                               |                     |                    |                       |            |               |             |                                | 🕜 Help                    |       |
|                               |                     |                    |                       |            |               |             |                                |                           |       |
|                               |                     |                    |                       |            |               |             |                                |                           |       |
|                               |                     |                    |                       |            |               |             |                                |                           |       |
|                               | Scale-out-F         | 5                  |                       |            | _             |             | <br>Preterred Owners: Any node |                           |       |
|                               | Status:             | Bunning            |                       |            |               |             |                                |                           |       |
|                               | Priority:           | Medium             |                       |            |               |             |                                |                           |       |
|                               | Owner Node:         | WS8node1           |                       |            |               |             |                                |                           |       |
|                               | Distributed Network | Name: Scale-out-FS |                       |            |               |             |                                |                           |       |
|                               | Networks:           | 172.16.0.0/23      |                       |            |               |             |                                |                           |       |
|                               |                     |                    |                       |            |               |             |                                |                           |       |
|                               |                     |                    |                       |            |               |             |                                |                           |       |
|                               |                     |                    |                       |            |               |             |                                |                           |       |
|                               | Summary Resources   | Shares             |                       |            |               |             |                                |                           |       |
|                               |                     |                    |                       |            |               |             |                                |                           |       |



4. From the list of profiles select **SMB Share — Server Application**.

## 4. Click Next.

| <b>a</b>                                                                                 | New Share Wiz                                                                                                            | zard 📃 🗖                                                                             | x |
|------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|---|
| Select the profile                                                                       | for this share                                                                                                           |                                                                                      |   |
| Select Profile                                                                           | <u>P</u> rofile:                                                                                                         | Description:                                                                         |   |
| Share Location<br>Share Name<br>Other Settings<br>Permissions<br>Confirmation<br>Results | SMB Share - Basic<br>SMB Share - Advanced<br>NFS Share - Basic<br>NFS Share - Advanced<br>SMB Share - Server Application | Uses the SMB protocol to provide access to files and<br>data on server applications. |   |
|                                                                                          | <                                                                                                                        | Previous <u>N</u> ext > Create Cance                                                 | ! |

- 5. Select a CSV volume to host the share.
- 6. Click Next.

| -                   | Nev                                          | v Share Wizard                   |                 |                     | _ [                   | x    |
|---------------------|----------------------------------------------|----------------------------------|-----------------|---------------------|-----------------------|------|
| Select the server a | nd path for th                               | is share                         |                 |                     |                       |      |
| Select Profile      | Server:                                      |                                  |                 |                     |                       |      |
| Share Location      | Server Name                                  | Status                           | Cluster Role    | Owner Nod           | e                     |      |
| Share Name          | Scale-out-FS                                 | Online                           | Scale-Out C     | lus                 |                       |      |
| Other Settings      |                                              |                                  |                 |                     |                       |      |
| Permissions         |                                              |                                  |                 |                     |                       |      |
| Confirmation        |                                              |                                  |                 |                     |                       |      |
| Results             | Share location:<br>Select by <u>v</u> olume: |                                  |                 |                     |                       |      |
|                     | Volume                                       | Free Space                       | Capacity Fil    | e System            |                       |      |
|                     | ChClusterStorage                             | volume) 99'9 GB                  | 100.0 GB CS     | 5045                |                       |      |
|                     | The shared folder wil                        | ll be a new folder in the \<br>: | Shares director | y on the selected w | olume<br><u>B</u> row | /se  |
|                     |                                              | < <u>P</u> revious               | <u>N</u> ext >  | Create              | Car                   | ncel |



7. Enter a share name and verify the path to the share.

#### 8. Click Next.

| -<br>             | New Share Wizard                                                         | _ 🗆 X      |
|-------------------|--------------------------------------------------------------------------|------------|
| Specify share nam | ne                                                                       |            |
| Select Profile    | Share name: CA-Share                                                     |            |
| Share Location    |                                                                          |            |
| Share Name        | Share <u>d</u> escription:                                               |            |
| Other Settings    |                                                                          |            |
| Permissions       |                                                                          |            |
| Confirmation      | Local path to share:                                                     |            |
| Results           | C:\ClusterStorage\Volume1\Shares\CA-Share                                |            |
|                   | <ol> <li>If the folder does not exist, the folder is created.</li> </ol> |            |
|                   | <u>R</u> emote path to share:                                            |            |
|                   | \\Scale-out-FS\CA-Share                                                  |            |
|                   |                                                                          |            |
|                   |                                                                          |            |
|                   |                                                                          |            |
|                   |                                                                          |            |
|                   |                                                                          |            |
|                   |                                                                          |            |
|                   | < <u>P</u> revious <u>N</u> ext > Crea                                   | ite Cancel |

9. Ensure the Enable Continuous Availability checkbox is selected.

#### 10. Click Next.





11. On the **Specify permissions to control access** page, click **Customize permissions** and grant the following permissions:

- If you are using this Scale-Out File Server file share for Hyper-V, all Hyper-V computer accounts, the SYSTEM account, and all Hyper-V administrators must be granted full control on the share and the file system.
- If you are using Scale-Out File Server on Microsoft SQL Server, the SQL Server service account must be granted full control on the share and the file system.

| <b>.</b>           | New Share Wizard          |                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                 |  |  |  |
|--------------------|---------------------------|--------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|--|--|--|
| Specify permission | is to co                  | ontrol access                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                 |  |  |  |
| Select Profile     | If this shar<br>remote ma | e will be used for Hyper-V, you m<br>anagement of the Hyper-V host.            | ay need to enable consi                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | trained delegation to enable    |  |  |  |
| Share Location     | For more i                | information refer to the constraine                                            | d validation help topic.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                 |  |  |  |
| Other Settings     | Permissior<br>permissior  | ns to access the files on a share are<br>ns, and, optionally, a central access | e set using a combinations of the set using a combination of the set of the s | on of folder permissions, share |  |  |  |
| Confirmation       | Share perr<br>Folder per  | nissions: Everyone Full Control<br>missions:                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                 |  |  |  |
| Results            | Туре                      | Principal                                                                      | Access                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Applies To                      |  |  |  |
|                    | Allow                     | BUILTIN\Users                                                                  | Special                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | This folder and subfolders      |  |  |  |
|                    | Allow                     | BUILTIN\Users                                                                  | Read & execute                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | This folder, subfolders, and fi |  |  |  |
|                    | Allow                     | CREATOR OWNER                                                                  | Full Control                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Subfolders and files only       |  |  |  |
|                    | Allow                     | NT AUTHORITY\SYSTEM                                                            | Full Control                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | This folder, subfolders, and fi |  |  |  |
|                    | Allow                     | BUILTIN\Administrators                                                         | Full Control                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | This folder, subfolders, and fi |  |  |  |
|                    | Allow                     | BUILTIN\Administrators                                                         | Full Control                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | This folder only                |  |  |  |
|                    | ٢                         |                                                                                | ш                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | >                               |  |  |  |
|                    | Custom                    | nize <u>p</u> ermissions                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                 |  |  |  |
|                    |                           | < <u>Previo</u>                                                                | us <u>N</u> ext >                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Create Cancel                   |  |  |  |



13. On the **Confirm selections** page review the settings and click **Create**. To make any changes, click **Previous**.

| <b>-</b>                                                         | New Share                                                                                                                         | Wizard 📃 🗖                                                                            | x |
|------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---|
| Select Profile<br>Share Location<br>Share Name<br>Other Settings | S<br>Confirm that the following<br>SHARE LOCATION<br>Server:<br>Cluster role:                                                     | are the correct settings, and then click Create.<br>Scale-out-FS<br>Scale-Out Cluster |   |
| Permissions                                                      | Local path:                                                                                                                       | C:\ClusterStorage\Volume1\Shares\CA-Share                                             |   |
| <b>Confirmation</b><br>Results                                   | SHARE PROPERTIES<br>Share name:<br>Protocol:<br>Access based enumeration:<br>Caching:<br>BranchCache:<br>Continuous availability: | CA-Share<br>SMB<br>Disabled<br>Disabled<br>Enabled                                    |   |
|                                                                  |                                                                                                                                   | < Previous Next > Create Cancel                                                       |   |

14. Review results on the last page and click **Close**.

| New Share Wizard |                       |                                 |              |  |  |  |  |  |  |  |  |
|------------------|-----------------------|---------------------------------|--------------|--|--|--|--|--|--|--|--|
| View results     |                       |                                 |              |  |  |  |  |  |  |  |  |
| Select Profile   | The share was success | fully created.                  |              |  |  |  |  |  |  |  |  |
| Share Location   | Task                  | Progress                        | Status       |  |  |  |  |  |  |  |  |
| Share Name       | Create SMB share      |                                 | Completed    |  |  |  |  |  |  |  |  |
| Other Settings   | Set SMB permissions   |                                 | Completed    |  |  |  |  |  |  |  |  |
| Permissions      |                       |                                 |              |  |  |  |  |  |  |  |  |
| Confirmation     |                       |                                 |              |  |  |  |  |  |  |  |  |
|                  |                       |                                 |              |  |  |  |  |  |  |  |  |
|                  |                       | < <u>P</u> revious <u>N</u> ext | close Cancel |  |  |  |  |  |  |  |  |



The Failover Cluster Manager should look as shown in the screenshot below.

| 織                                                     |                       |                        |                       | Failove    | er Cluster Manager     |                                      |                            |                           | - 0 X |
|-------------------------------------------------------|-----------------------|------------------------|-----------------------|------------|------------------------|--------------------------------------|----------------------------|---------------------------|-------|
| Eile Action View Help                                 |                       |                        |                       |            |                        |                                      |                            | L                         |       |
| (+ +) 🖄 🖬 📔 🖬                                         |                       |                        |                       |            |                        |                                      |                            |                           |       |
| <ul> <li>Fallover Cluster Manager</li> <li></li></ul> | Roles (1)             | Actions                |                       |            |                        |                                      |                            |                           |       |
|                                                       | Search                |                        |                       |            |                        |                                      | 🔎 Queries 🔻 拱 👻 👽          | Roles                     | •     |
|                                                       | Name                  | Statue T               | ine.                  | Owner Node | Priority Informa       | tion                                 |                            | 🧑 Configure Role          |       |
|                                                       | Scale-out-FS          | Running                | Scale-Out File Server | WS8node1   | Medium                 |                                      |                            | Virtual Machines          | •     |
|                                                       |                       |                        |                       |            |                        |                                      |                            | 📷 Create Empty Role       |       |
|                                                       |                       |                        |                       |            |                        |                                      |                            | View                      | •     |
|                                                       |                       |                        |                       |            |                        |                                      |                            | Refresh                   |       |
|                                                       |                       |                        |                       |            |                        |                                      |                            | Help                      |       |
|                                                       |                       |                        |                       |            |                        |                                      |                            | Scale out ES              |       |
|                                                       |                       |                        |                       |            |                        |                                      |                            | Start Role                |       |
|                                                       |                       |                        |                       |            |                        |                                      |                            | A Ston Pole               |       |
|                                                       |                       |                        |                       |            |                        |                                      |                            | Add Shared Felder         |       |
|                                                       |                       |                        |                       |            |                        |                                      |                            | Add Shared Folder         |       |
|                                                       |                       |                        |                       |            |                        |                                      |                            |                           |       |
|                                                       |                       |                        |                       |            |                        |                                      |                            | S Change Startup Priority | •     |
|                                                       |                       |                        |                       |            |                        |                                      |                            | Information Details       |       |
|                                                       |                       |                        |                       |            |                        |                                      |                            | Add Resource              | •     |
|                                                       |                       |                        |                       |            |                        |                                      |                            | More Actions              | •     |
|                                                       |                       |                        |                       |            |                        |                                      |                            | 😋 Remove                  |       |
|                                                       |                       |                        |                       |            |                        |                                      |                            | Properties                |       |
|                                                       |                       |                        |                       |            |                        |                                      |                            | 👔 Help                    |       |
|                                                       |                       |                        |                       |            |                        |                                      |                            |                           |       |
|                                                       |                       |                        |                       |            |                        |                                      |                            |                           |       |
|                                                       | M Carls and FC        |                        |                       |            |                        |                                      | Proformad Owners: Any pade |                           |       |
|                                                       | Scale-out-PS          |                        |                       |            |                        |                                      | Trelefied Owners. And Tode |                           |       |
|                                                       | Shares (2)            |                        |                       |            |                        |                                      |                            |                           |       |
|                                                       | Name                  | Path                   |                       | Protocol   | Continuous Availabilit | y Remarks                            |                            |                           |       |
|                                                       | ClusterStorage\$      | C:\ClusterStorage      |                       | Smb        | No                     | Cluster Shared Volumes Default Share |                            |                           |       |
|                                                       | 🛃 CA-Share            | C:\ClusterStorage\Volu | ume1\Shares\CA-Share  | e Smb      | Yes                    |                                      |                            |                           |       |
|                                                       |                       |                        |                       |            |                        |                                      |                            |                           |       |
|                                                       |                       |                        |                       |            |                        |                                      |                            |                           |       |
|                                                       |                       |                        |                       |            |                        |                                      |                            |                           |       |
|                                                       |                       |                        |                       |            |                        |                                      |                            |                           |       |
|                                                       | Summary Resources Sha |                        |                       |            |                        |                                      |                            |                           |       |
|                                                       | JI                    |                        |                       |            |                        |                                      |                            | 1                         |       |
|                                                       |                       |                        |                       |            |                        |                                      |                            |                           |       |



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