

Configure high availability for Failover Cluster quorum using Storage Foundation for Windows



Microsoft Failover Cluster provides an option to configure a quorum for the cluster. During the cluster configuration you are required to assign a separate disk for configuring the quorum. The disk assigned for quorum stores a copy of cluster configuration data.

About the quorum configuration in a Microsoft Failover Cluster

A cluster uses the quorum for the following tasks:

- Define which cluster node should be active at any given time.
- Define on which cluster node the service group should be brought online, in the event of a split-brain.

For details on quorum types and the configuration steps, refer to Microsoft product documentation.

By default, the failover cluster uses a single physical disk resource and a basic disk volume resource for a quorum.

If the physical disk resource fails or becomes corrupted, the cluster becomes unusable. To avoid this failure you must use a dynamic disk group resource. Unlike a physical disk resource which contains a single disk, a dynamic disk group resource contains more than one disk. A dynamic disk group resource provides a high level of redundancy by allowing the mirroring of disks.

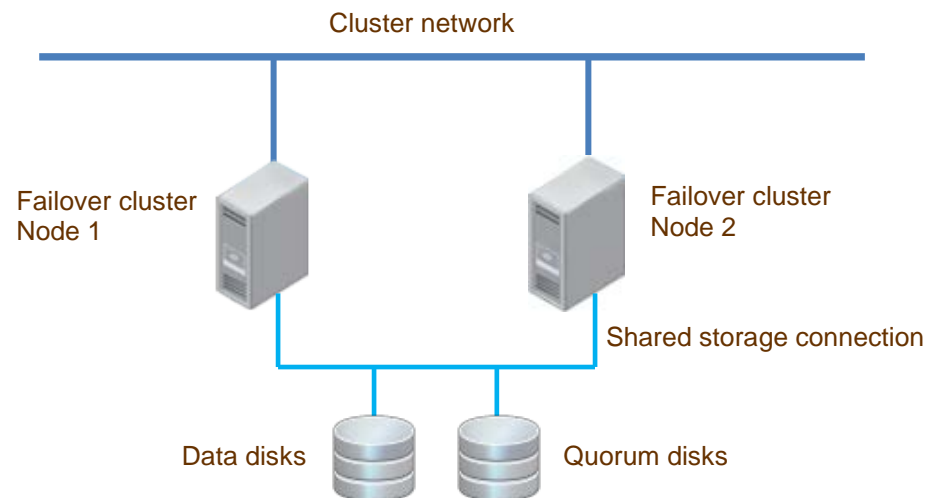
SFW support for dynamic quorum resource

Storage Foundation for Windows (SFW) allows Failover Cluster to use dynamic disks as quorum disk resource. This allows you to make your Failover Cluster quorum highly available using host-based mirroring.

Note: Symantec recommends the following:

- Use at least three disks for a dynamic quorum resource because a cluster disk resource cannot be brought online unless a majority of disks are available.
- In case of Cluster Volume Manager (CVM) clusters, use physical disks for configuring a quorum.

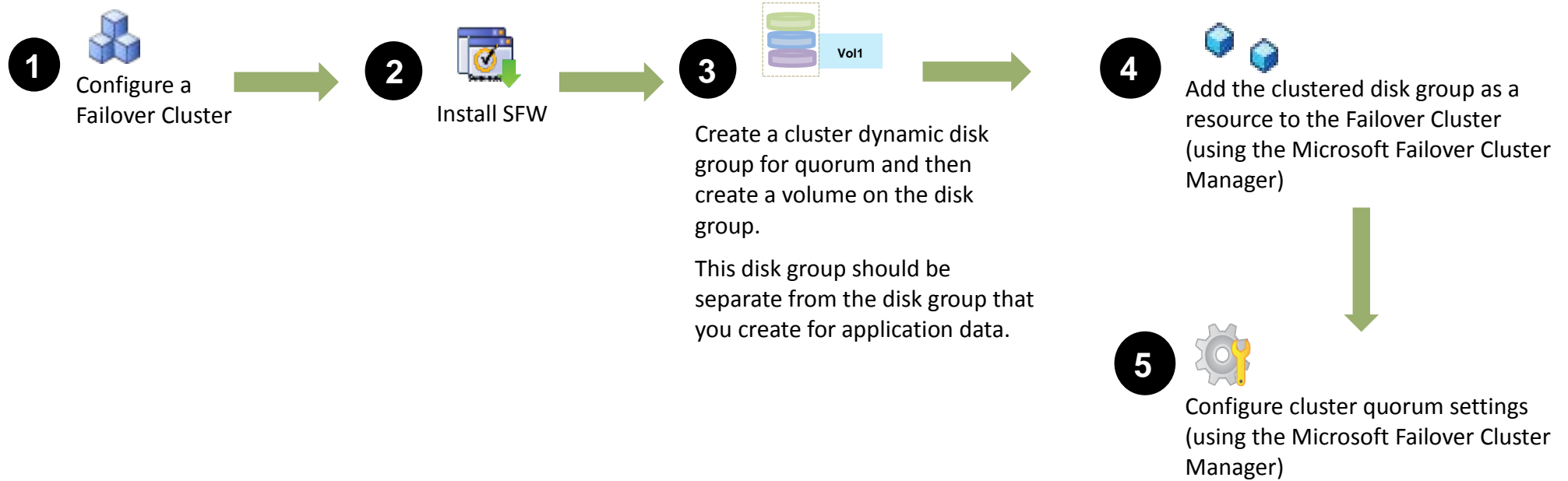
Typical Failover Cluster configuration with quorum disks



Configuring Failover Cluster quorum using SFW



To use SFW to configure Failover Cluster quorum, you must perform the following main tasks:



For details about configuring Failover Cluster, refer to Microsoft documentation.

For details about installing SFW, refer to the *Storage Foundation and High Availability Solution Installation and Upgrade Guide*.



This quick reference guide provides the steps to perform the following tasks:

- Create a cluster dynamic disk group and then create a volume on the clustered disk group
- Add the clustered disk group in a Failover Cluster as a resource
- Configure the cluster quorum settings

Creating a cluster dynamic disk group

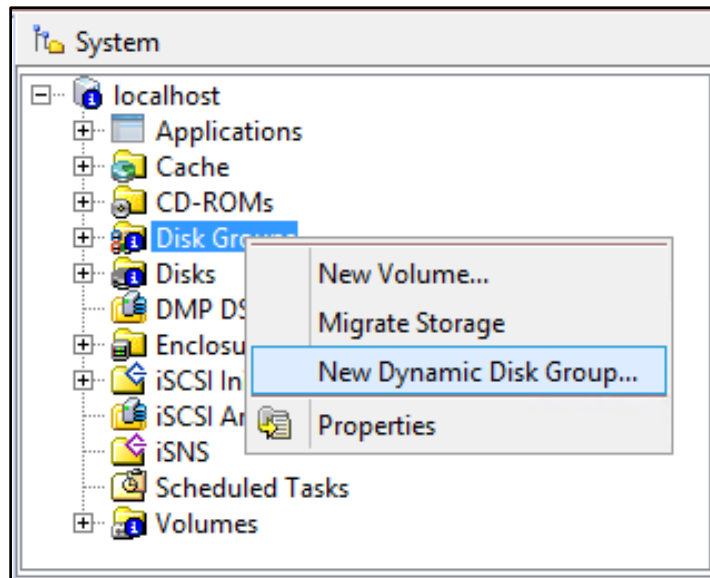


The following workflow represents the main tasks for creating a cluster dynamic disk group using VEA.

Note: Only the wizard panels that have considerable user actions are shown here. You must follow the wizard till the Finish page to complete the workflow.

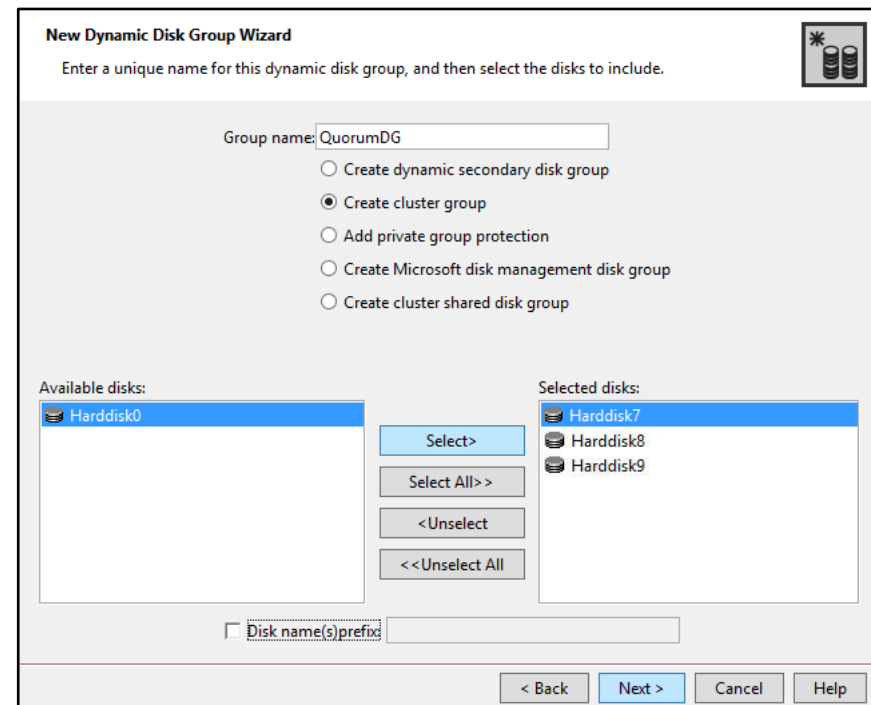
- 1 On a cluster node, launch VEA. In the tree-view, right-click **Disk Groups** and then select **New Dynamic Disk Group**.

- 2 On the New Dynamic Disk Group panel, perform the following steps:
 1. Specify a name for the disk group in the **Group name** text box.
 2. Select **Create cluster group**.
 3. Select the required disks from the Available disks box and click **Select**.
 4. Click **Next**.



The New Dynamic Disk Group Wizard appears.

On the Welcome panel, click **Next**.



Follow the wizard till the Finish page to complete the workflow.

Creating a volume on a cluster dynamic disk group

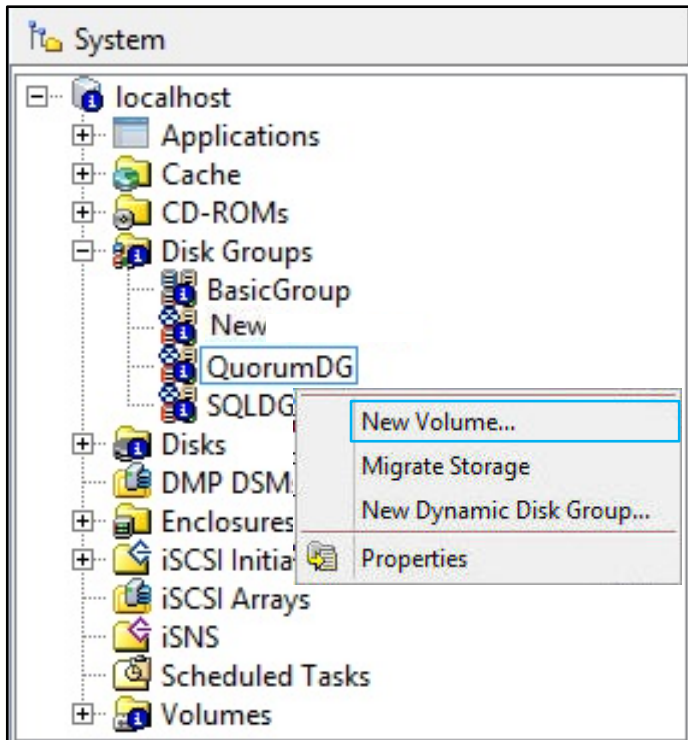


The following workflow represents the main tasks for creating volumes on a cluster dynamic disk group.

Note: Only the wizard panels that have considerable user actions are shown here. You must follow the wizard till the Finish page to complete the workflow.

1

On a cluster node, launch VEA.
In the tree-view, right-click the disk group you have created for the quorum and then select **New Volume**.



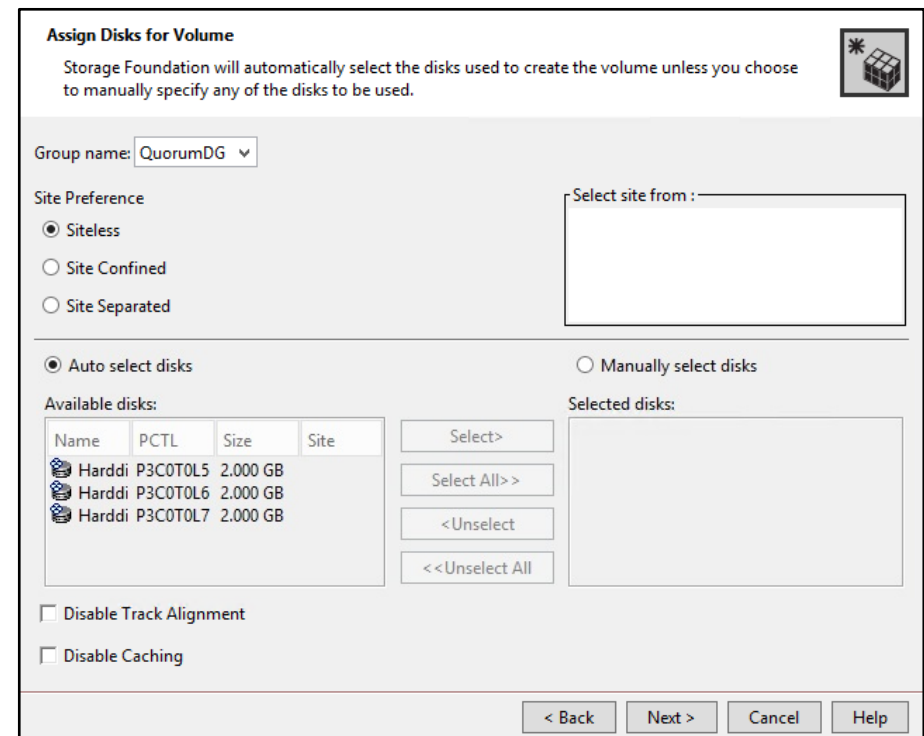
The New Volume Wizard appears.

On the Welcome panel, click **Next**.

2

On the Assign Disks for Volume panel, perform the following steps:

- Select the disk group from the **Group name** drop-down list.
- Select the appropriate site preference option.
- Select the required disks from the Available disks box and click **Select**.
- Click **Next**.



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- 3** On the New Volume panel, perform the following steps:
1. Specify a name for the volume in the **Volume name** text box.
 2. Specify the size for the volume to be created.
 3. From the Mirror Info section, select **Mirrored** and then specify the number of disks on which you want to mirror the volume data.
 4. Click **Next**.

- 4** On the Add Drive Letter and Path panel, select the drive letter and then click **Next**.

New Volume Wizard
Select the attributes for this volume.

Volume name:
Size: GB

Layout

Concatenated Columns:
 Striped Stripe unit size (Sectors):
 RAID-5 Stripe across:

Mirror Info

Mirrored
Total mirrors:
 Mirror across:
 Enable logging

i Concatenated: A simple volume with a single copy of data on one or more disks.

Add Drive Letter and Path
You can assign a drive letter to this volume.
An NTFS mount point can not be assigned if the host is remote.

Assign a drive letter:
 Do not assign a drive letter
 Mount as an empty NTFS folder:



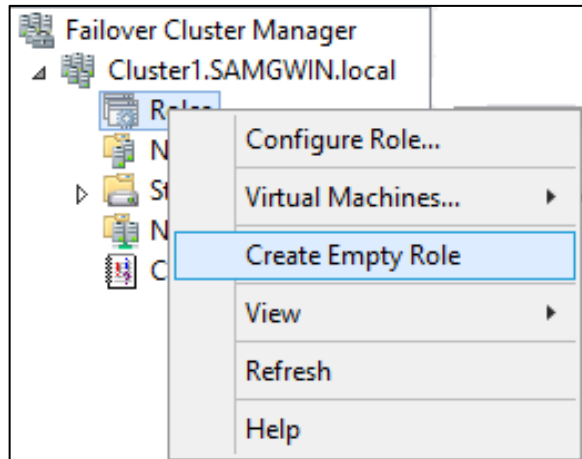
Follow the wizard till the Finish page to complete the workflow.

Adding a cluster dynamic disk group to the Failover Cluster

The following workflow represents the main tasks for adding a cluster dynamic disk group as a resource to the Failover Cluster.

Note: Only the wizard panels that have considerable user actions are shown here. You must follow the wizard till the Finish page to complete the workflow.

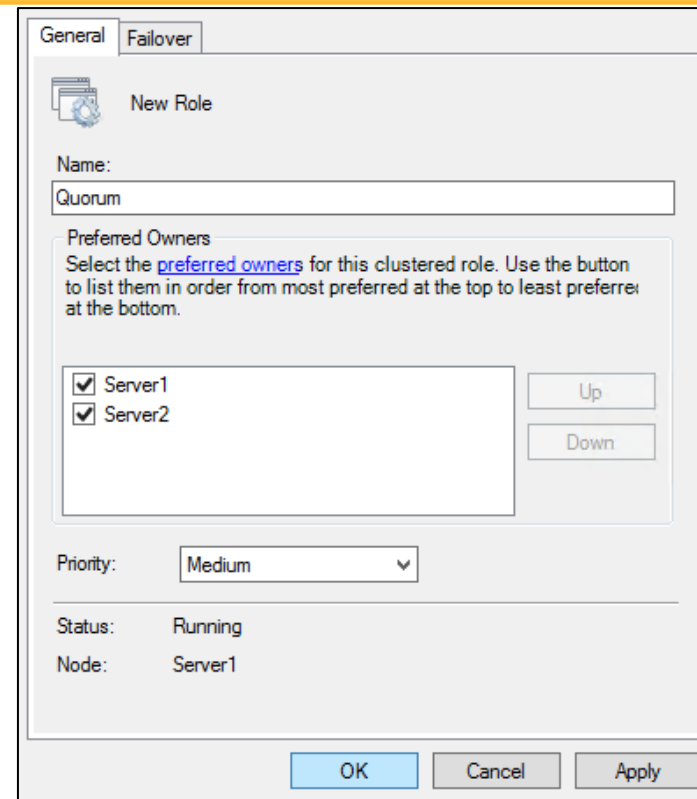
- 1 On a cluster node, launch Failover Cluster Manager. In the tree-view, right-click **Roles** and then select **Create Empty Role**.



The wizard creates an empty role.

In the right pane, right-click the empty role and click **Properties**.

- 2 On the New Role Properties panel, perform the following tasks:
 1. Specify a name for the role created in the **Name** text box.
 2. Select the desired cluster nodes.
 3. Select the desired priority.
 4. Click **OK**.



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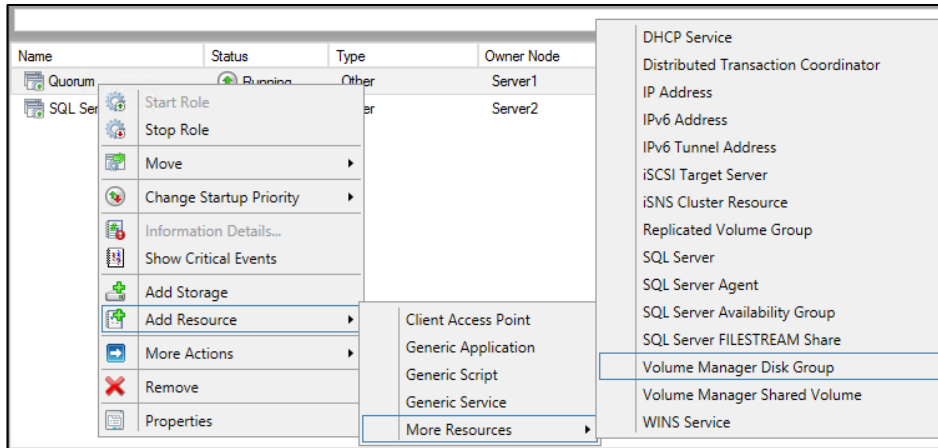
Adding a cluster dynamic disk group to the Failover Cluster

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3

In the right pane, right-click the role created and from the context menu, select **Add Resource > More Resources > Volume Manager Disk Group**.



4

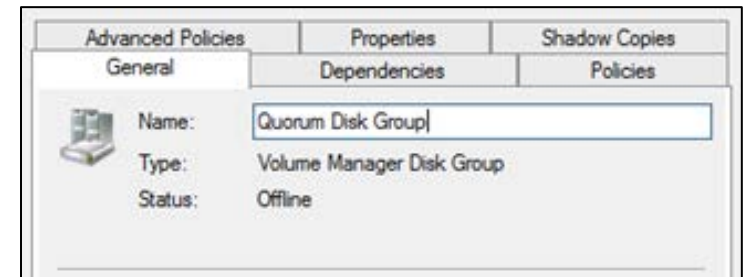
On the New Volume Manager Disk Group Properties panel, perform the following tasks:

1. On the **General** tab, specify the name for the resource.
2. On the **Properties** tab, for DiskGroupName attribute, specify the cluster dynamic disk group name that you created for the quorum earlier.
3. Click **OK**.

The wizard adds a VMDG type resource to the role.

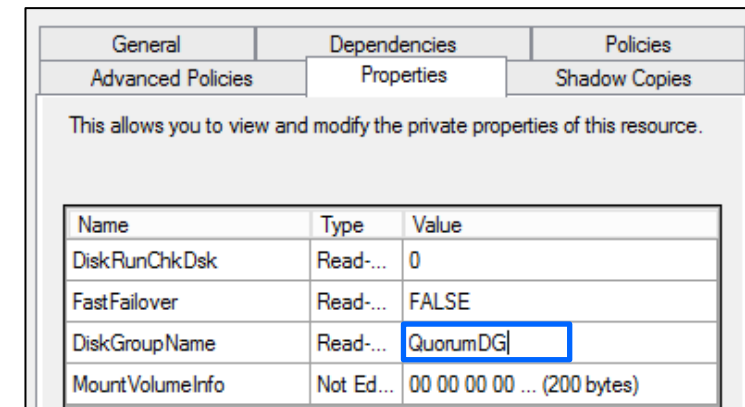
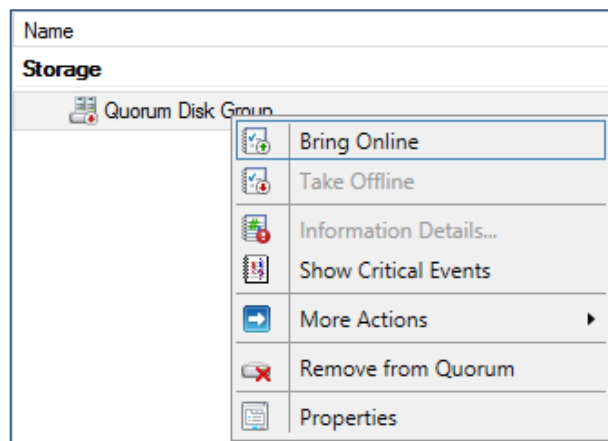
From the lower right pane, select the **Resources** tab and then right-click the resource added.

From the context menu click **Properties**.



5

In the Role view, select the Resources tab and right-click the resource added. From the context menu click **Bring Online**.



Configuring cluster quorum settings



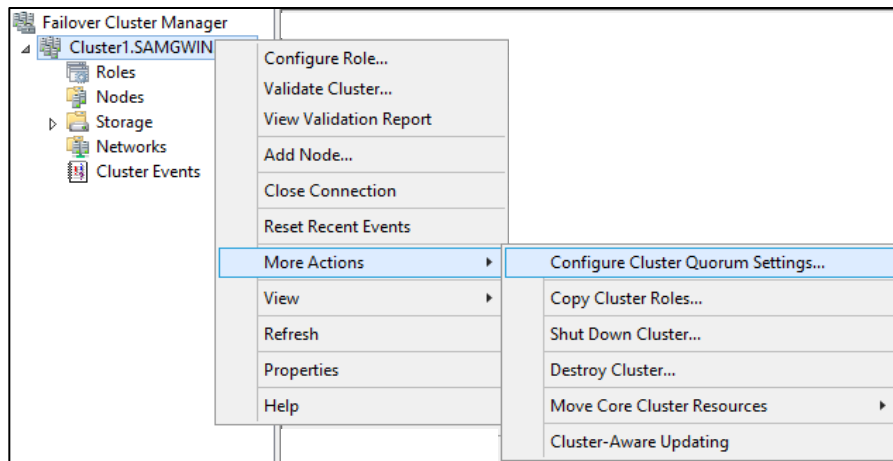
The following workflow represents the main tasks for configuring the Failover Cluster quorum settings.

Note: You must perform these tasks from a cluster node where all the cluster resources are online.

If the cluster dynamic quorum resource is online on a node other than the one where rest of the cluster resources are online, then you must move the cluster dynamic quorum resource to the other node and then perform these tasks.

To move the resource, right-click the resource and from the context menu select, **Move > Best Possible Node**.

- 1 In the Failover Cluster Manager tree-view, right-click the cluster and from the context menu select **More Actions > Configure Cluster Quorum Settings**.

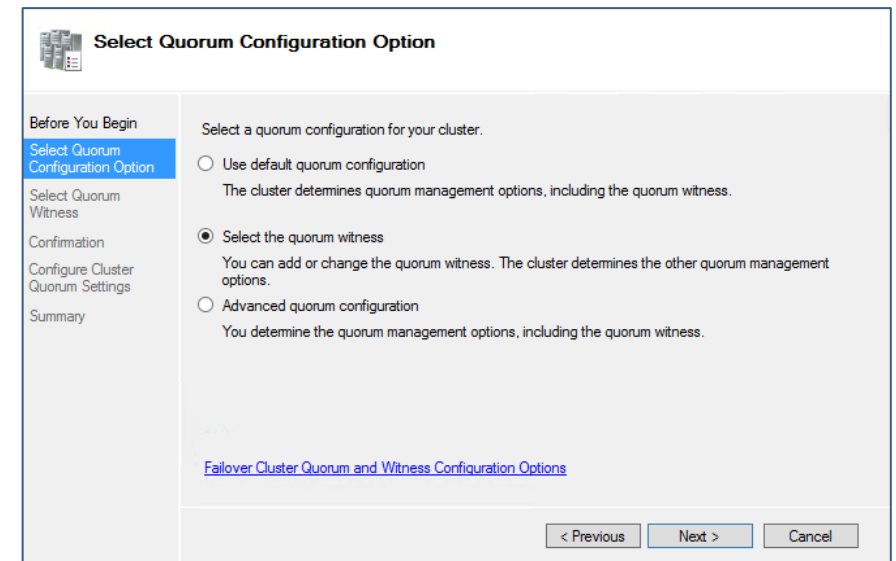


The Configure Cluster Quorum Wizard appears.



On the Before You Begin panel, click **Next**.

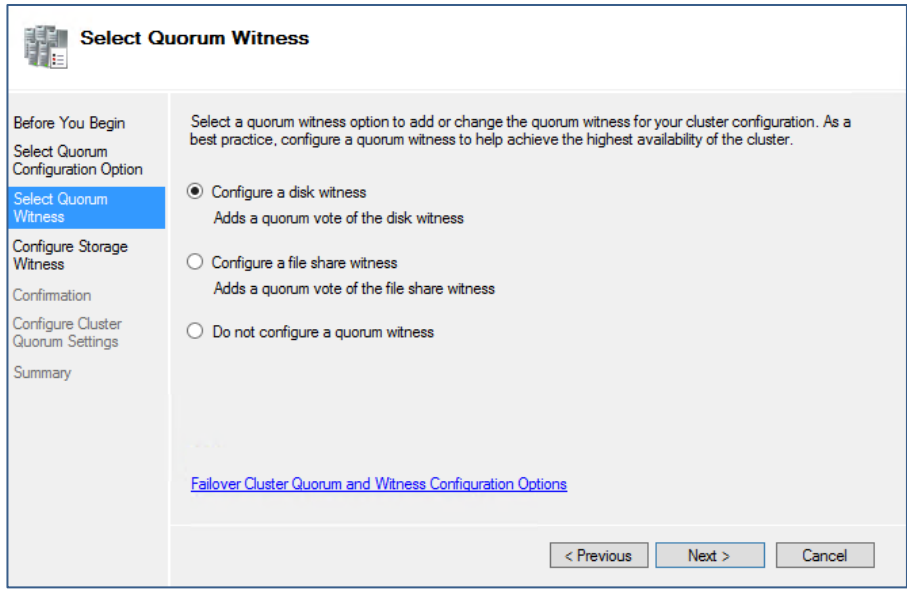
- 2 On the Select Quorum Configuration Option panel, select **Select the quorum witness**.



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3 On the Select Quorum Witness panel, select **Configure a disk witness** and then click **Next**.

4 On the Configure Storage Witness panel, select the disk group that is added for cluster quorum and then click **Next**.



The wizard configures the cluster quorum settings. The Volume Manager Disk Group that is created for cluster quorum is now added in the Failover Cluster as a quorum resource.

The quorum data is mirrored on all the disks that are part of the Volume Manager Disk Group. Even if any of the disks fail, the quorum data is available on the remaining disks.