

CloudByte ElastiStor Integration Guide for MSSQL

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Introduction

CloudByte integrates with Microsoft SQL and runs a number of databases on a single system and guarantees performance. This document explains the procedures to integrate MSSQL with CloudByte ElastiStor.

Prerequisites:

- One Windows Server 2012 configured as a Domain Server. For details, see <https://en.community.dell.com/techcenter/os-applications/w/wiki/681.how-to-configure-the-first-domain-controller-in-a-windows-server-2012-domain-incl-dns.aspx>
- Two Windows Server 2012s used as Cluster Nodes (named Node1 and Node2). The Cluster Nodes must use the Domain Server for name resolution.
- iSCSI Storage Volumes on CloudByte ElastiStor.

Procedures

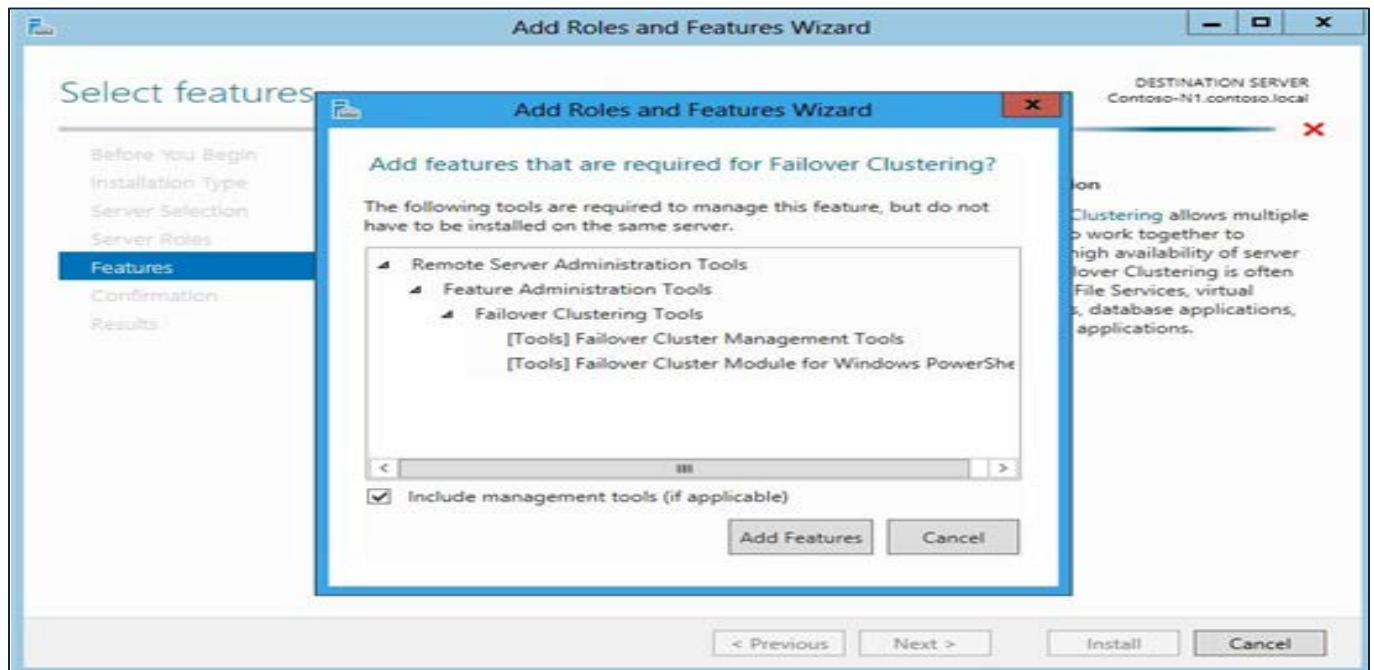
1. Install failover cluster feature and run cluster validation. For details, see [Install failover Cluster feature and Validate Cluster](#).
2. Map iSCSI LUNS to ClusterNode1. For details, see [Mapping iSCSI LUNs to Cluster Nodes](#).
3. Partition the mapped iSCSI LUNs on ClusterNode1. For details, see [Partitioning iSCSI LUNs](#).
4. Map the same iSCSI LUNs to ClusterNode2. For details, see [Mapping iSCSI LUNs to Cluster Nodes](#).
5. Create a Windows Cluster. For details, see [Create failover Cluster using failover Cluster manager](#).
6. Install MSSQL on ClusterNode1. For details, see [Build SQL 2012 Failover Cluster on ClusterNode1](#).
7. Install MSSQL on ClusterNode2. For details, see [Add ClusterNode2 to the existing SQL Server Clustered instance](#).

Install failover Cluster feature and Validate Cluster

Execute the following procedures on Node1:

1. In the Server Manager, click Local Server.
2. (At the top right section of the page), select Manage and then select Add Roles and Features.
3. In the Add Roles and Features wizard, select installation type as Role-based or feature-based installation and click Next.
4. In the following page, select Select a server from the server Pool and then click Next.
5. In the features screen, select Failover Clustering.

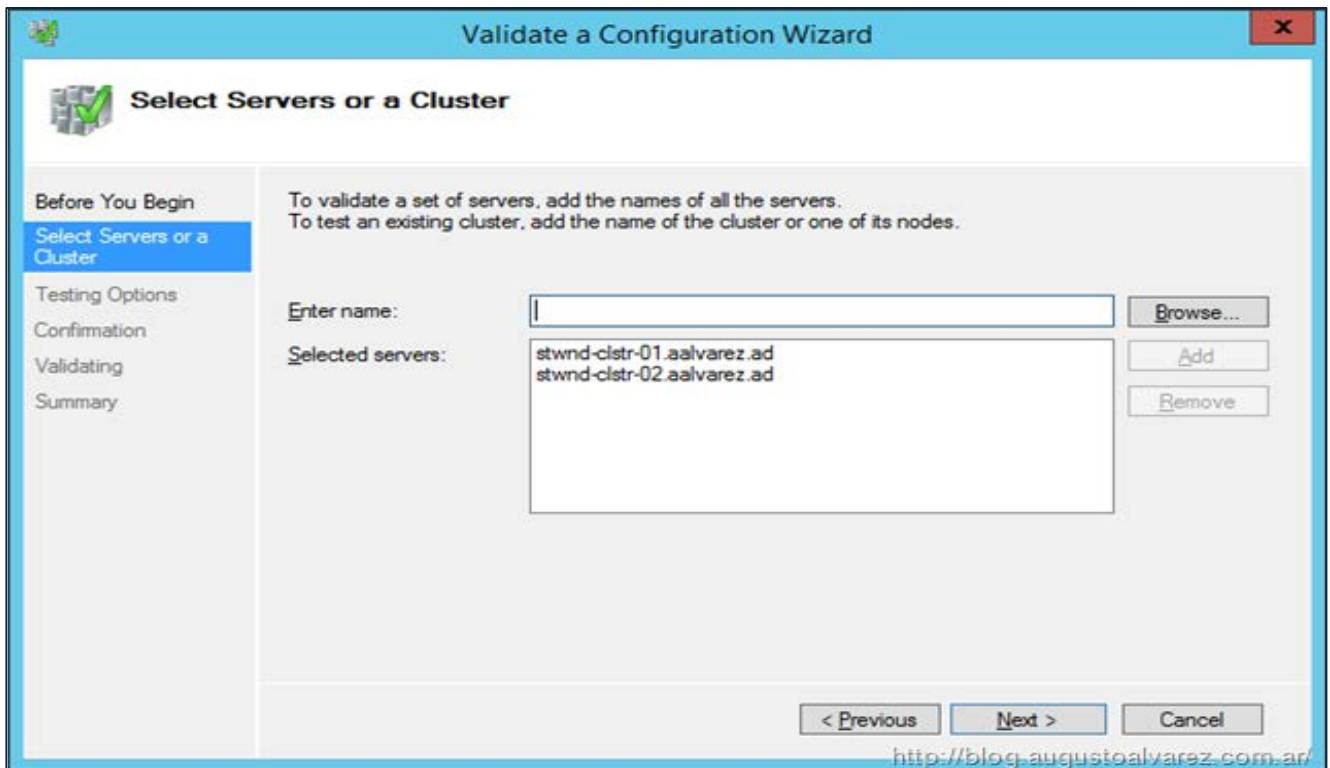
A pop-up screen appears listing additional requirements for the feature. If you wish to install the Failover Cluster PowerShell cmdlets, management tools, select Include management tools and then click Add Features.



6. Click Install.

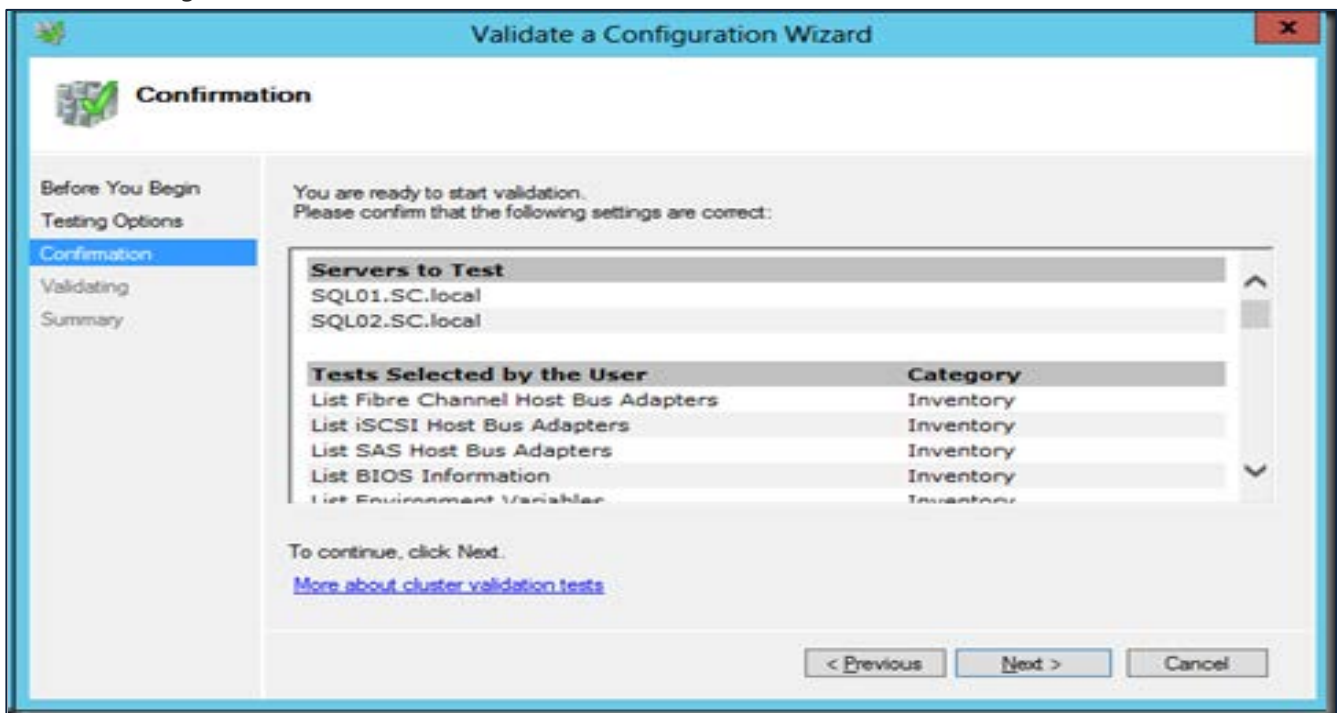
Once the Failover cluster feature is installed, the Failover Cluster Manager interface is available in the Tools category in the Menu bar.

7. In the console, click Validate Configuration.
8. In the new wizard, specify the server names or browse for their names and then click Next.



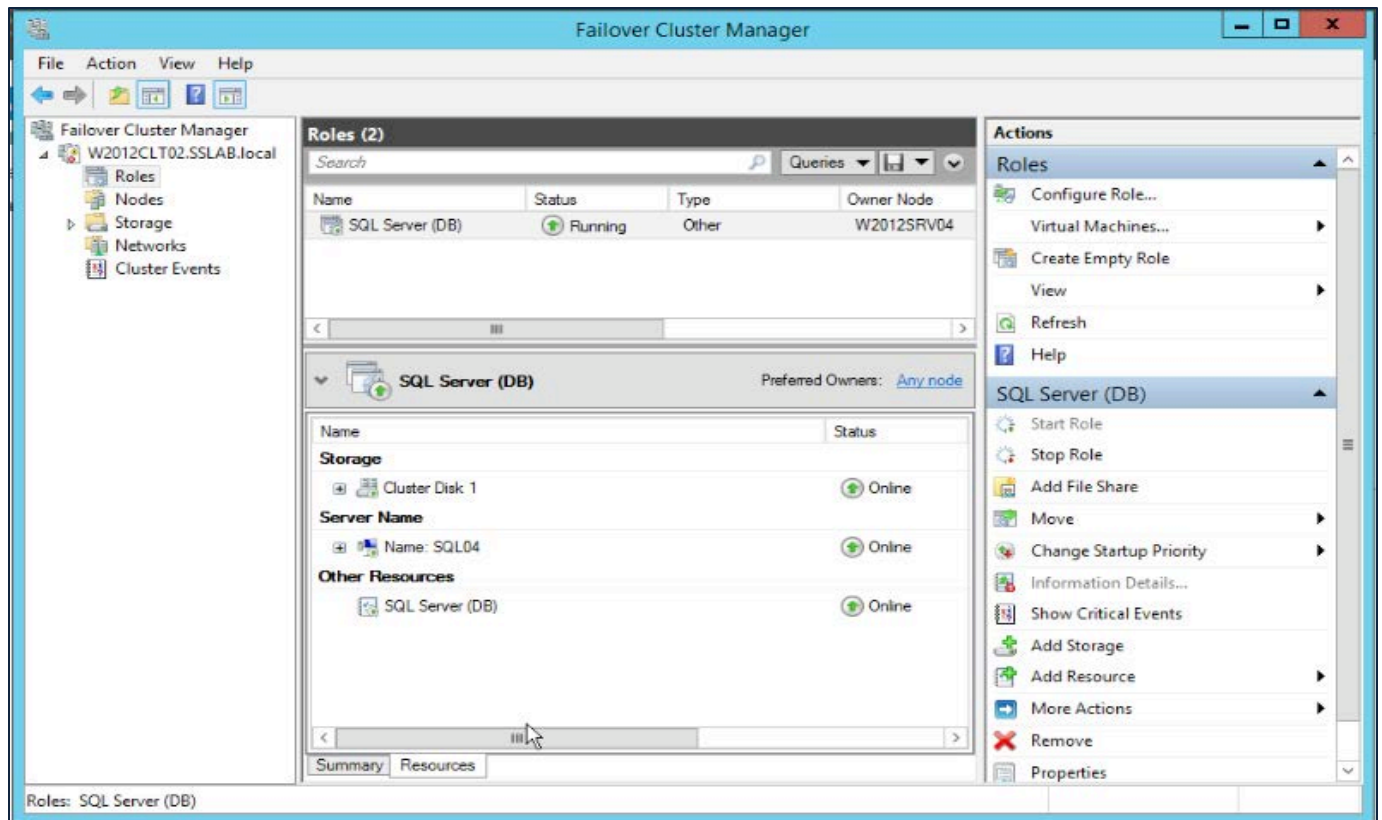
9. Select Run all tests (recommended) and click Next.

10. The following screen lists details of all the tests that will be executed. Click Next.



11. Click View Report to see the Failover Cluster Validation Report or click Finish.

Once Validation completes without any errors, the Create Cluster wizard appears.



Map iSCSI LUNs to Cluster Nodes

Map the iSCSI LUNs to Cluster Nodes using the following procedures:

1. In the Server Manager dashboard, select Tools and then select iSCSI initiator.
2. In the iSCSI initiator properties page, click Discovery and then select Discover Portal.
3. In the Discover Target Portal dialog box, specify the IP address of the iSCSI Target Server and then click OK.
4. From the list of targets, select the one you want to connect to and then click Connect.

Partition iSCSI LUNs

On Windows Server 2012 execute the following procedures after mapping the LUNs:

1. Go to Disk Management (Administrative Tools > Computer Management).
2. Right-click the unallocated space and then select New Simple Volume.
3. Click Next.
4. Specify a driver letter and then click Next.
5. Format the new partition as NTFS file system.
6. Specify the allocation unit size or leave the default setting as it is.
7. Enter a name for the partition under Volume label.
8. Select Perform a quick format and then click Next.

- Review the configuration and then click finish to complete the wizard.

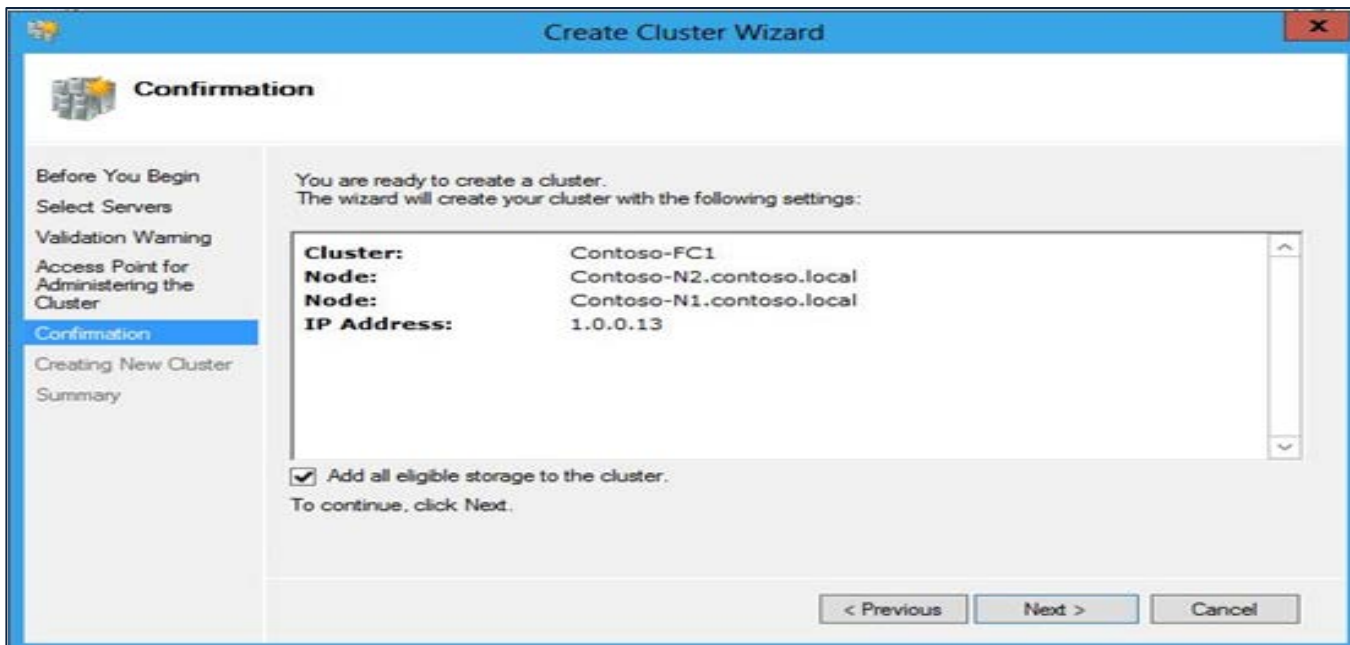
Create failover Cluster using failover Cluster manager

- In the Server Manager Dashboard, select Local Server.
- Select Tools and then select Launch Failover Cluster Manager.
- In the Actions pane, select Create Cluster (the Create Cluster Wizard initializes).
- In the Before You Begin page, review the information and then click Next.
- (In the following page) Specify a name for the Cluster and choose an IP address that will be associated with this name in DNS and then click Next.

The screenshot shows the 'Create Cluster Wizard' window with the title 'Create Cluster Wizard'. The main heading is 'Access Point for Administering the Cluster'. On the left, there is a navigation pane with the following items: 'Before You Begin', 'Access Point for Administering the Cluster' (highlighted), 'Confirmation', 'Creating New Cluster', and 'Summary'. The main area contains the following text: 'Type the name you want to use when administering the cluster.' Below this is a text box labeled 'Cluster Name:' containing the text 'mycluster'. An information icon (i) is followed by the text: 'The NetBIOS name is limited to 15 characters. One or more IPv4 addresses could not be configured automatically. For each network to be used, make sure the network is selected, and then type an address.' Below this is a table with two columns: 'Networks' and 'Address'. The table has one row with a checked checkbox in the 'Networks' column, the text '192.168.37.0/24' in the 'Networks' column, and the IP address '192 . 168 . 37 . 110' in the 'Address' column. At the bottom right, there are three buttons: '< Previous', 'Next >', and 'Cancel'.

Networks	Address
<input checked="" type="checkbox"/> 192.168.37.0/24	192 . 168 . 37 . 110

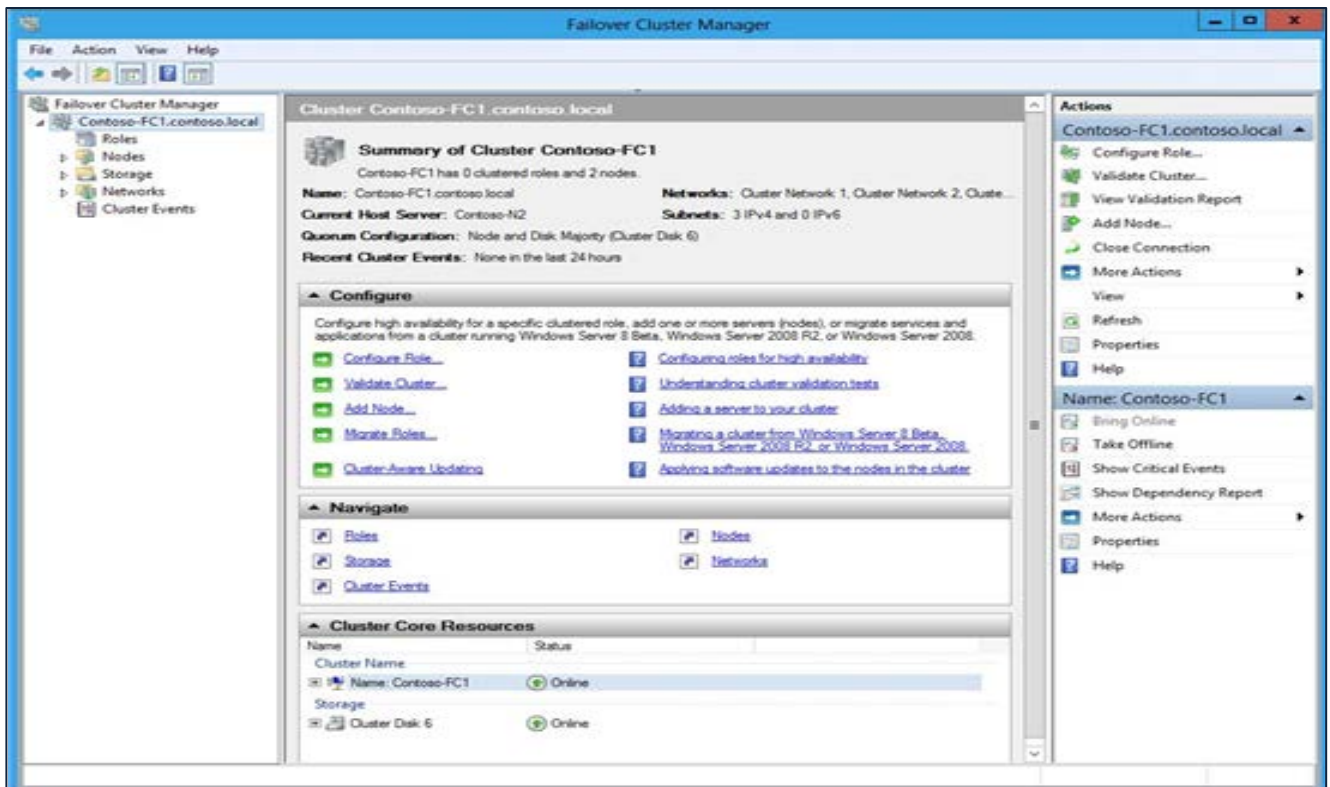
- Review the Confirmation screen. If all shared storage has to be added to the Cluster, select Add all eligible storage to the Cluster and then click Next (the Cluster should be successfully created).



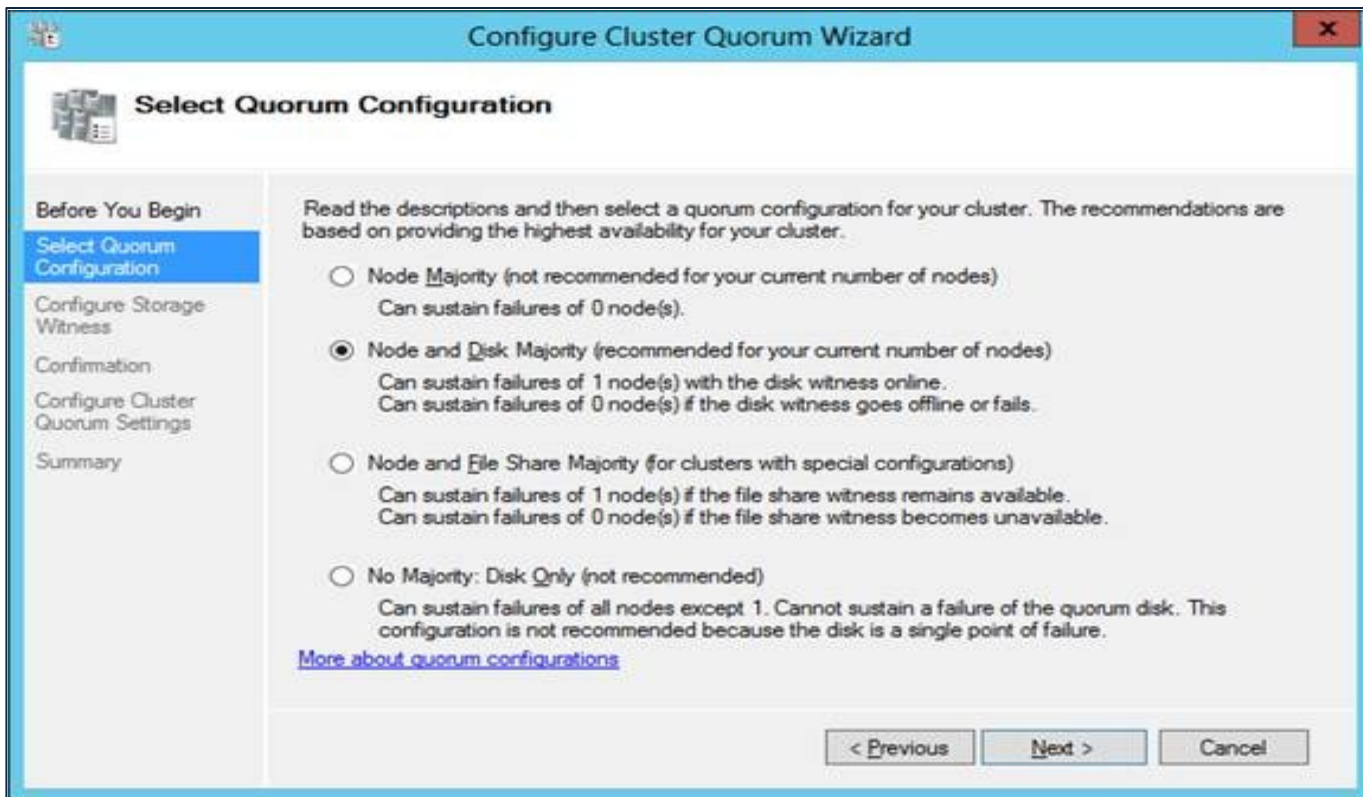
7. Review the **Summary** report if desired and then click **Finish**.



A Failover Cluster Manager will automatically connect to the cluster when the wizard finishes:

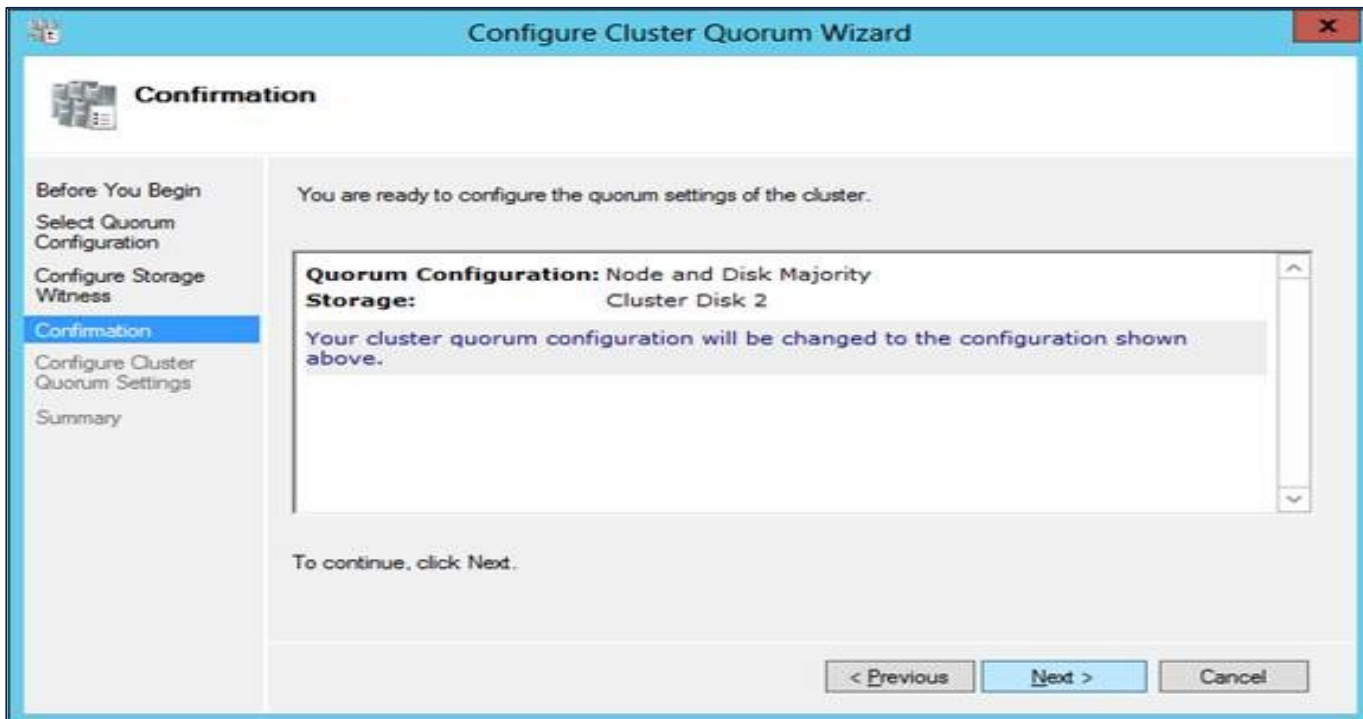


8. To add a disk to the Cluster, right-click Cluster name.
9. Select More Actions and then select Configure Cluster Quorum Settings.
10. Select Node and Disk Majority(recommended for your current number of nodes) and then click Next.



11. Select the Storage Volume that you want to assign as the disk witness and then click Next.

12. Review the confirmation screen and then click Next.



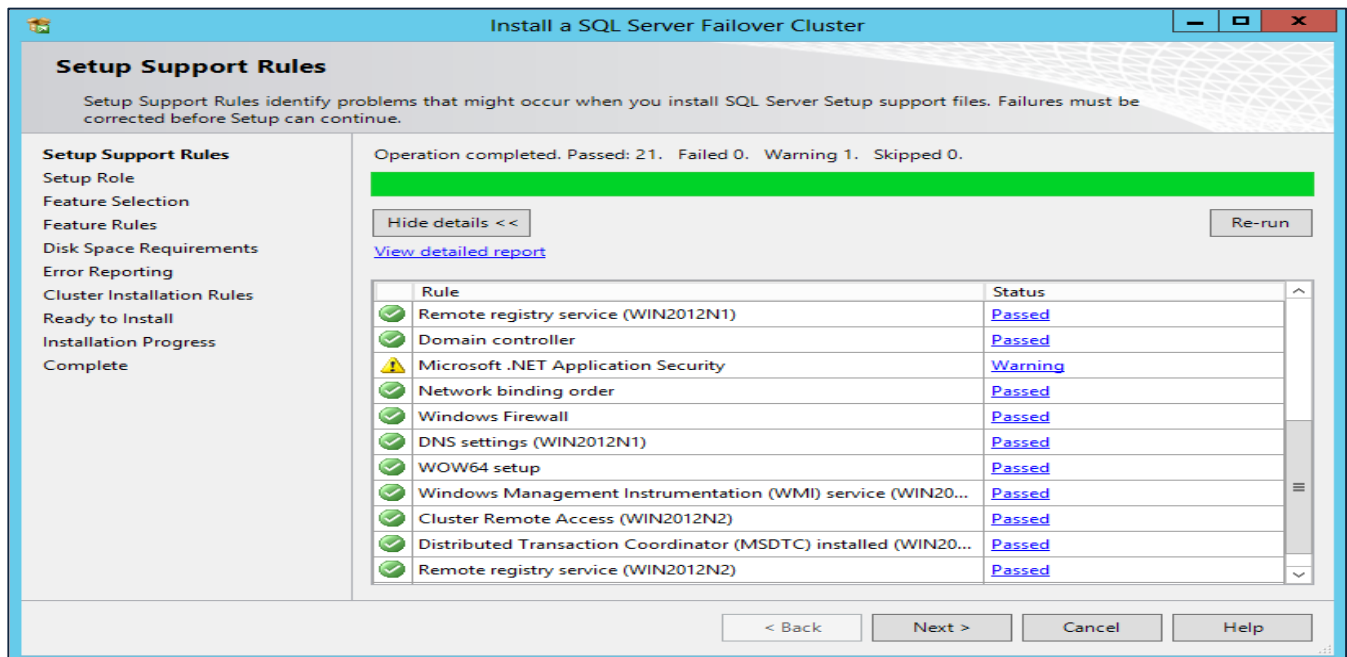
Install MSSQL 2012 Failover Cluster on ClusterNode1

Execute the following procedures on ClusterNode1

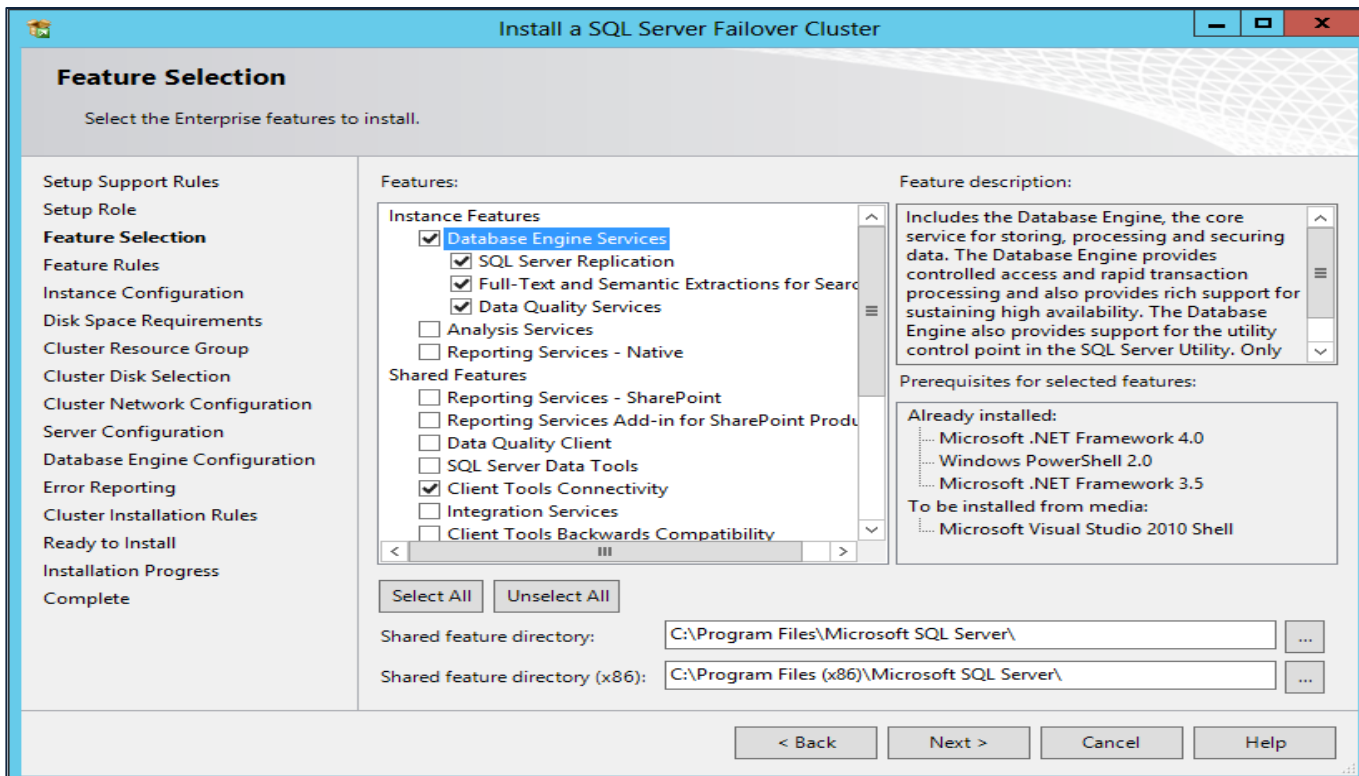
1. Launch SQL Server Installation Center and then click Installation (in the left pane).



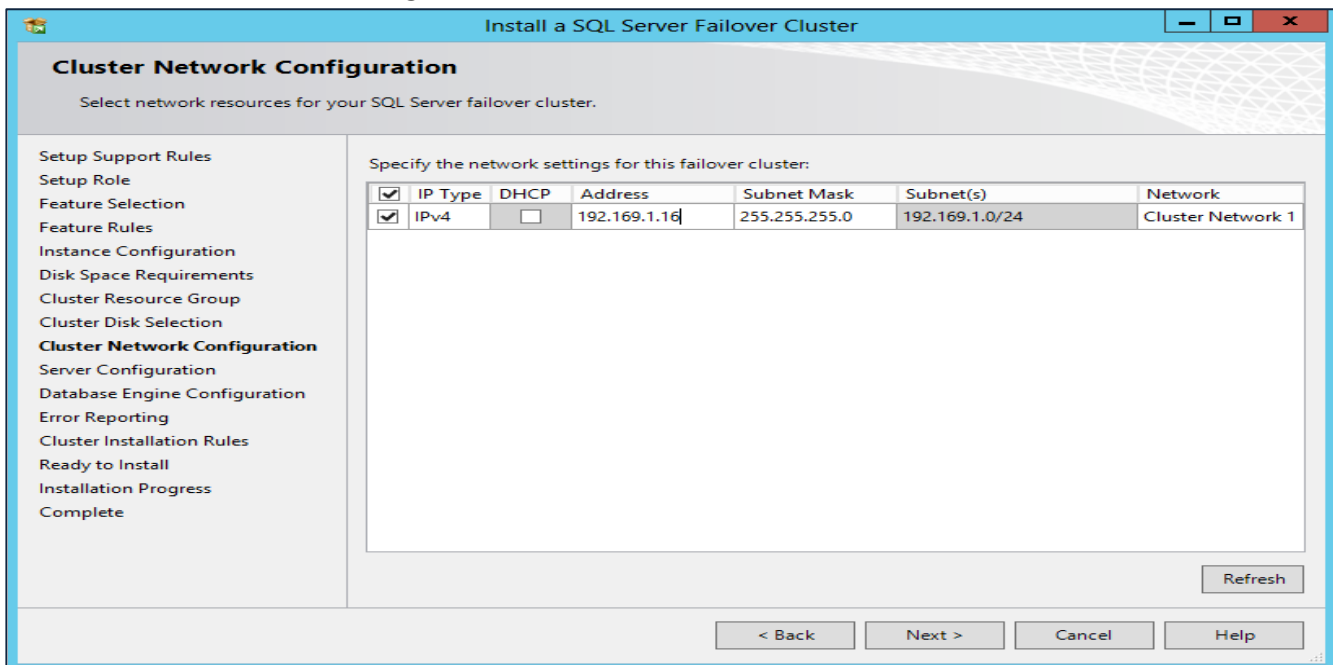
2. Click New SQL Server failover cluster installation.
3. Click OK.
4. Provide product key for your media and then click Next.
5. Accept License Agreement and then click Next.
6. Click Next.
7. Wait for rules check to complete. Once done, ensure that there are no failed tasks and then click Next.



8. Click Next.
9. Select features to install and then click Next.



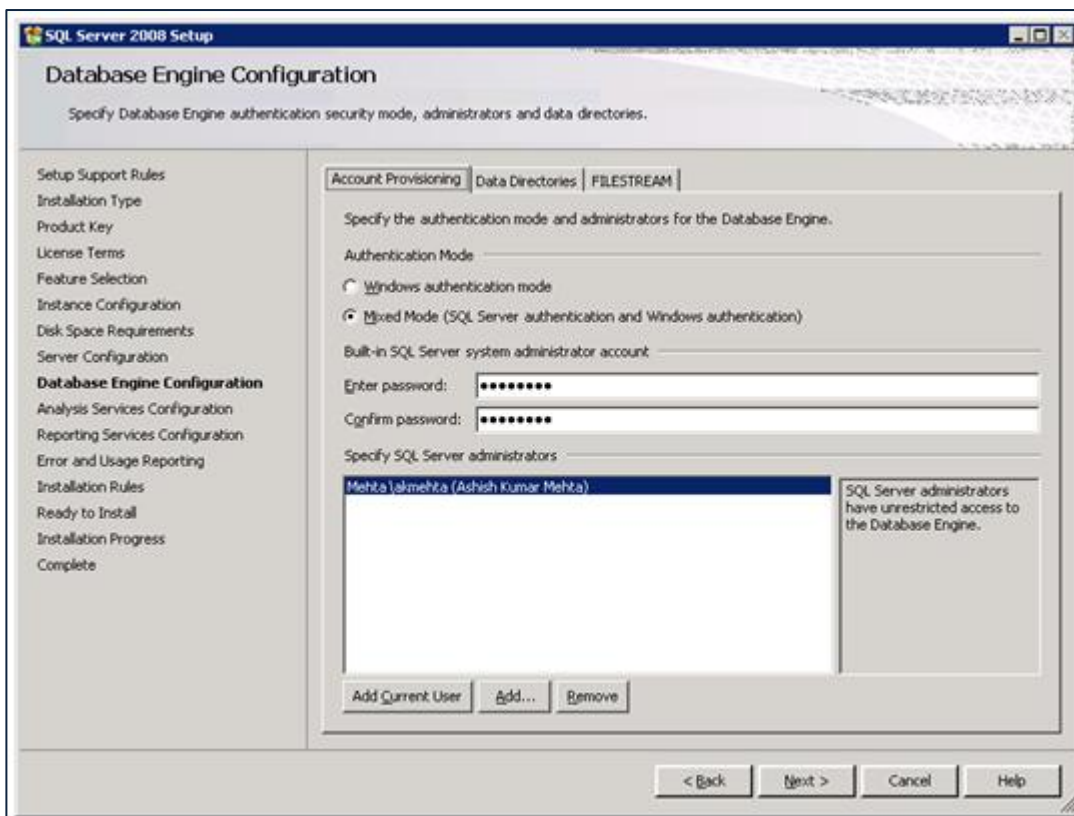
- Wait for features installation process to complete. Once done, ensure that there are no failed tasks and then click Next.
- Provide Network name and Instance name and then click Next and follow the wizard.
- In the Cluster Disk Selection screen, select the shared disk and then click Next.
- Select IPv4 and other network configuration details and then click Next.



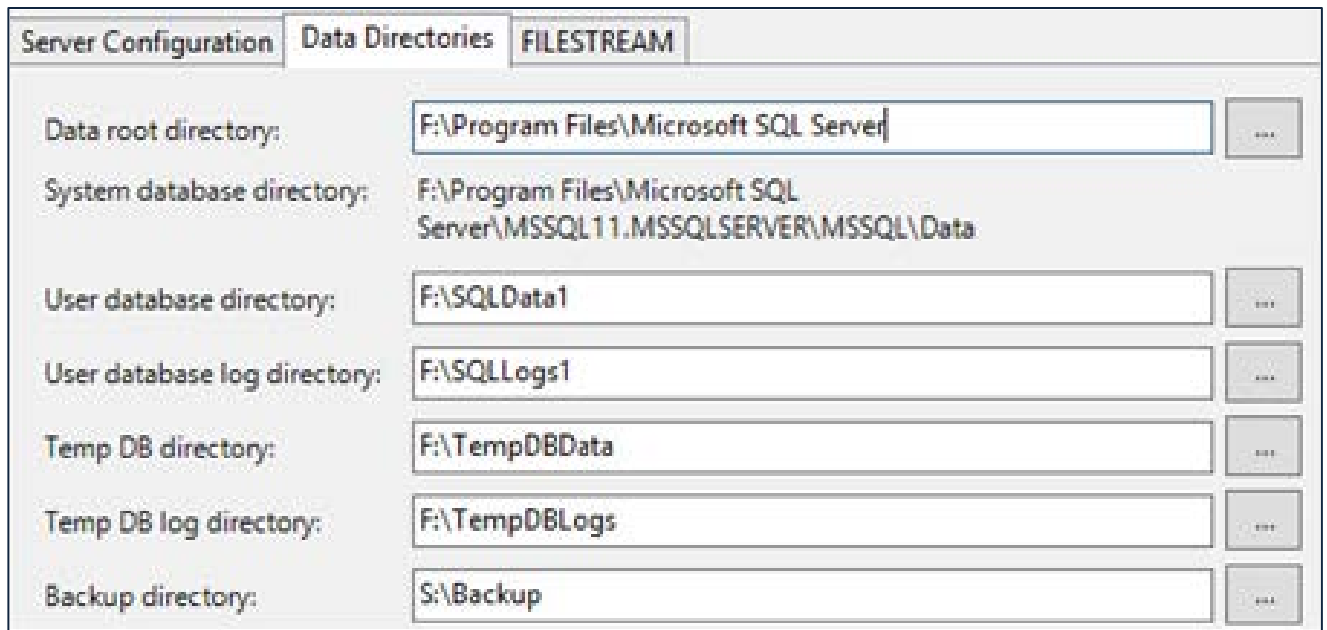
- Specify the service accounts as required for your environment and then click Next.

Service Accounts		Collation	
Microsoft recommends that you use a separate account for each SQL Server service.			
Service	Account Name	Password	Startup Type
SQL Server Agent	Domain\Administrator	●●●●●●...	Manual <input type="button" value="v"/>
SQL Server Database Engine	Domain\Administrator	●●●●●●...	Manual <input type="button" value="v"/>
SQL Full-text Filter Daemon ...	NT Service\MSSQLFDLauncher		Manual
SQL Server Browser	NT AUTHORITY\LOCAL SERVICE		Automatic <input type="button" value="v"/>

15. Click Add Current User.
16. Click Server Configuration tab and then
 1. Select Mixed Mode(SQL Server authentication and Windows authentication).
 2. Specify and confirm the password for the SQL Server administrator account.
 3. Click Add Current User.



17. Click Data Directories tab and configure in a way that all data directories must be located on shared LUNs and then click Next.



18. Wait for the failover cluster installation verification process to complete and then click Next.
19. Review your selections and then click Install.
20. Click Close to complete the process.

Install MSSQL on ClusterNode2

To perform this procedure, you should have at least one ClusterNode with MSSQL installed on it.

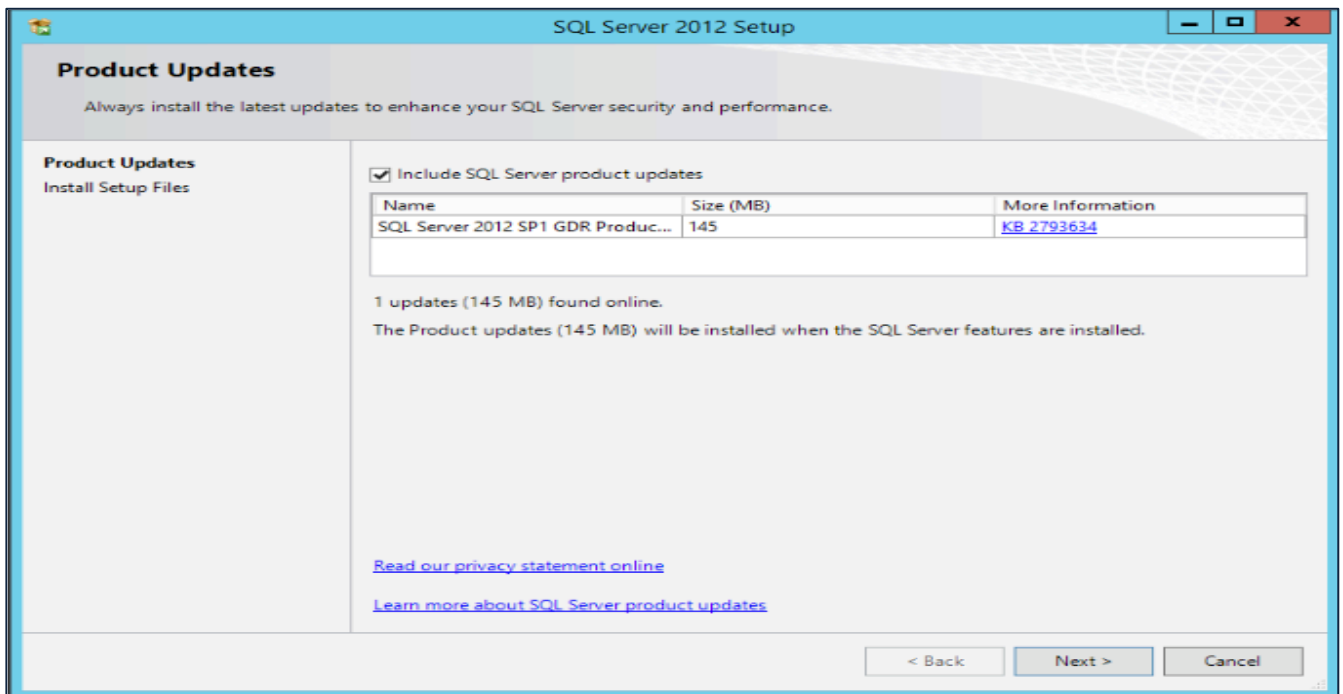
Then connect to ClusterNode2 and perform the following steps:

1. Launch SQL Server Installation Center and then select Installation in the left pane.
2. Select Add node to a SQL Server failover cluster.



3. Wait for the setup support rules verification process to complete. Once done, click OK.

4. Select Include SQL Server product updates and then click Next.



5. Follow the procedures in the section [Build SQL 2012 Failover Cluster on ClusterNode1](#) from step 4 and complete the wizard.