

SQL Server 2017 on Windows Server 2016

2024

TECHNICAL PAPERS



Trademarks

“StarWind”, “StarWind Software” and the StarWind and the StarWind Software logos are registered trademarks of StarWind Software. “StarWind LSFS” is a trademark of StarWind Software which may be registered in some jurisdictions. All other trademarks are owned by their respective owners.

Changes

The material in this document is for information only and is subject to change without notice. While reasonable efforts have been made in the preparation of this document to assure its accuracy, StarWind Software assumes no liability resulting from errors or omissions in this document, or from the use of the information contained herein. StarWind Software reserves the right to make changes in the product design without reservation and without notification to its users.

Technical Support and Services

If you have questions about installing or using this software, check this and other documents first - you will find answers to most of your questions on the [Technical Papers](#) webpage or in [StarWind Forum](#). If you need further assistance, please [contact us](#) .

About StarWind

StarWind is a pioneer in virtualization and a company that participated in the development of this technology from its earliest days. Now the company is among the leading vendors of software and hardware hyper-converged solutions. The company's core product is the years-proven StarWind Virtual SAN, which allows SMB and ROBO to benefit from cost-efficient hyperconverged IT infrastructure. Having earned a reputation of reliability, StarWind created a hardware product line and is actively tapping into hyperconverged and storage appliances market. In 2016, Gartner named StarWind “Cool Vendor for Compute Platforms” following the success and popularity of StarWind HyperConverged Appliance. StarWind partners with world-known companies: Microsoft, VMware, Veeam, Intel, Dell, Mellanox, Citrix, Western Digital, etc.

Copyright ©2009-2018 StarWind Software Inc.

No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording or otherwise, without the prior written consent of StarWind Software.

Installing Sql Server 2017 On The Failover Cluster

This configuration part assumes that the Windows Server 2016 hosts are configured and Failover Cluster is created on top of StarWind HA storage.

Note: The installation process will be performed on the first node of the cluster, SQLNODE1.

1. Run setup.exe from the SQL Server 2017 installation media to launch SQL Server Installation Center.
2. Click on the New SQL Server failover cluster installation link to run the SQL Server 2017 Setup Wizard.

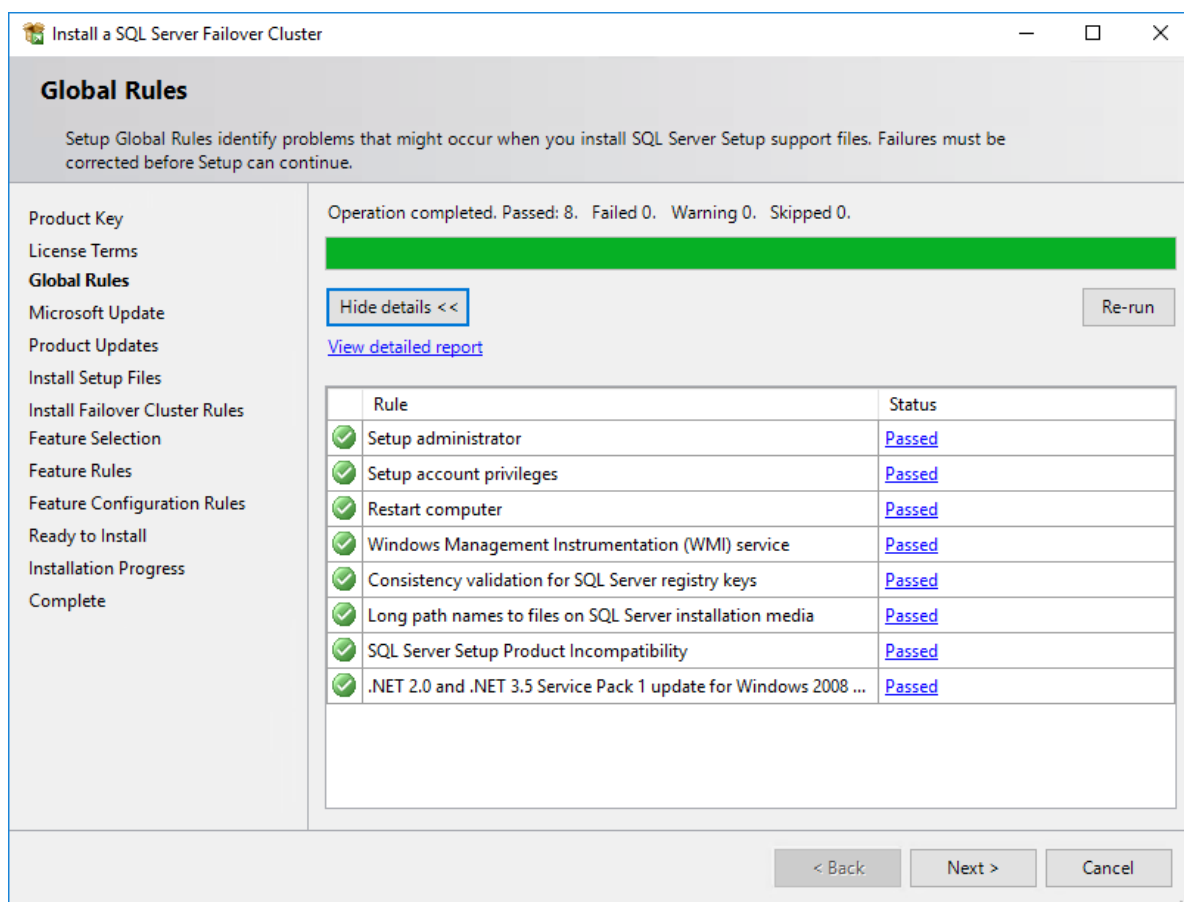


3. In the Product Key dialog box, enter the product key that came with the installation media and click Next.

The screenshot shows the 'Product Key' step in the 'Install a SQL Server Failover Cluster' wizard. The window title is 'Install a SQL Server Failover Cluster'. The left sidebar lists the following steps: Product Key (selected), License Terms, Global Rules, Microsoft Update, Product Updates, Install Setup Files, Install Failover Cluster Rules, Feature Selection, Feature Rules, Feature Configuration Rules, Ready to Install, Installation Progress, and Complete. The main area contains the following text: 'Specify the edition of SQL Server 2017 to install.' Below this, it says: 'Validate this instance of SQL Server 2017 by entering the 25-character key from the Microsoft certificate of authenticity or product packaging. You can also specify a free edition of SQL Server: Developer, Evaluation, or Express. Evaluation has the largest set of SQL Server features, as documented in SQL Server Books Online, and is activated with a 180-day expiration. Developer edition does not have an expiration, has the same set of features found in Evaluation, but is licensed for non-production database application development only. To upgrade from one installed edition to another, run the Edition Upgrade Wizard.' There are two radio button options: 'Specify a free edition:' (selected) and 'Enter the product key:'. Under 'Specify a free edition:', there is a dropdown menu showing 'Evaluation'. Under 'Enter the product key:', there is a text input field with a placeholder '____-____-____-____-____'. At the bottom right, there are three buttons: '< Back', 'Next >' (highlighted with a blue border), and 'Cancel'.

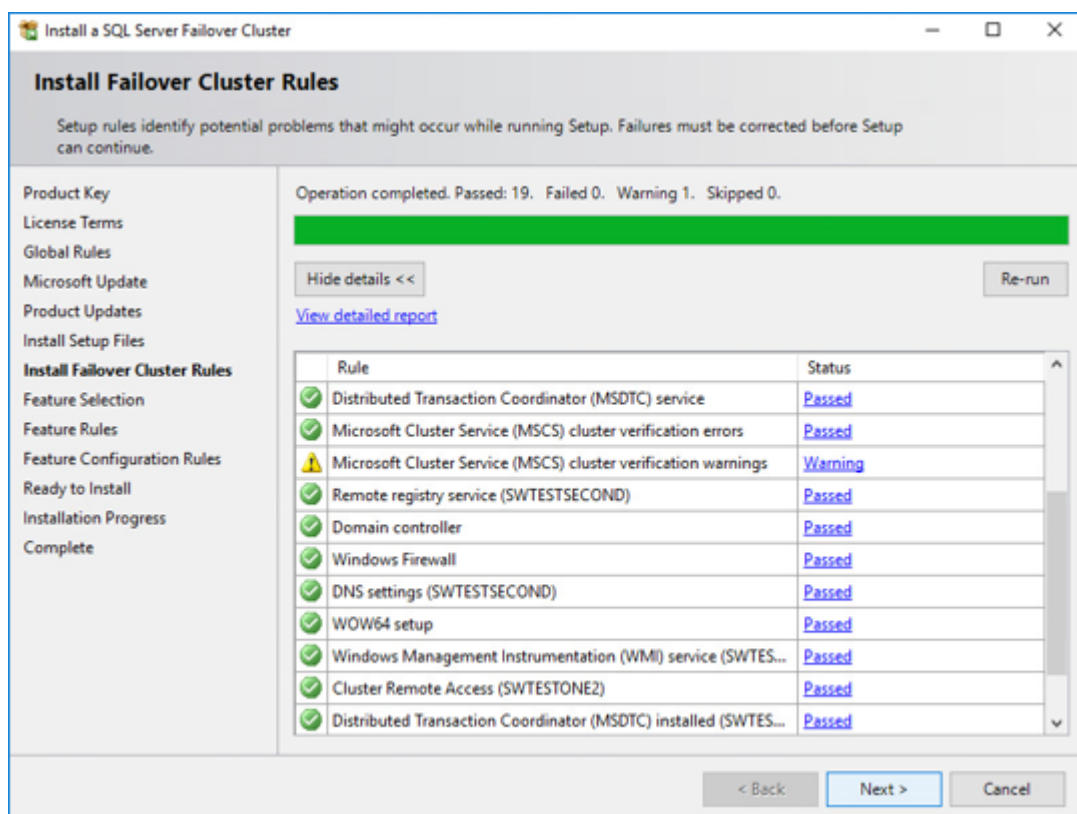
4. Read the License Terms dialog box and enable the I accept the license terms. Click Next.

5. In the Global Rules dialog box, validate that the tests return successful results and click Next.

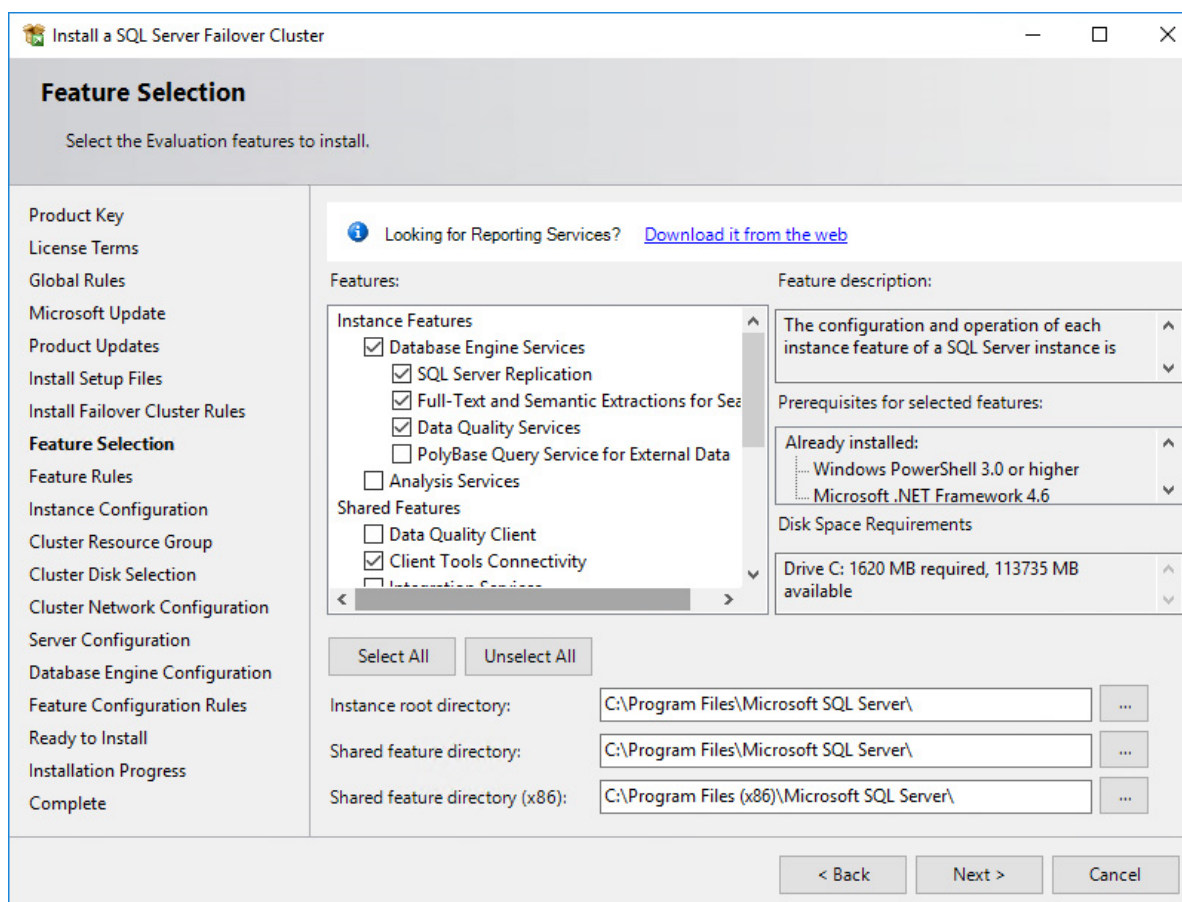


6. In the Microsoft Update dialog box, click Next.

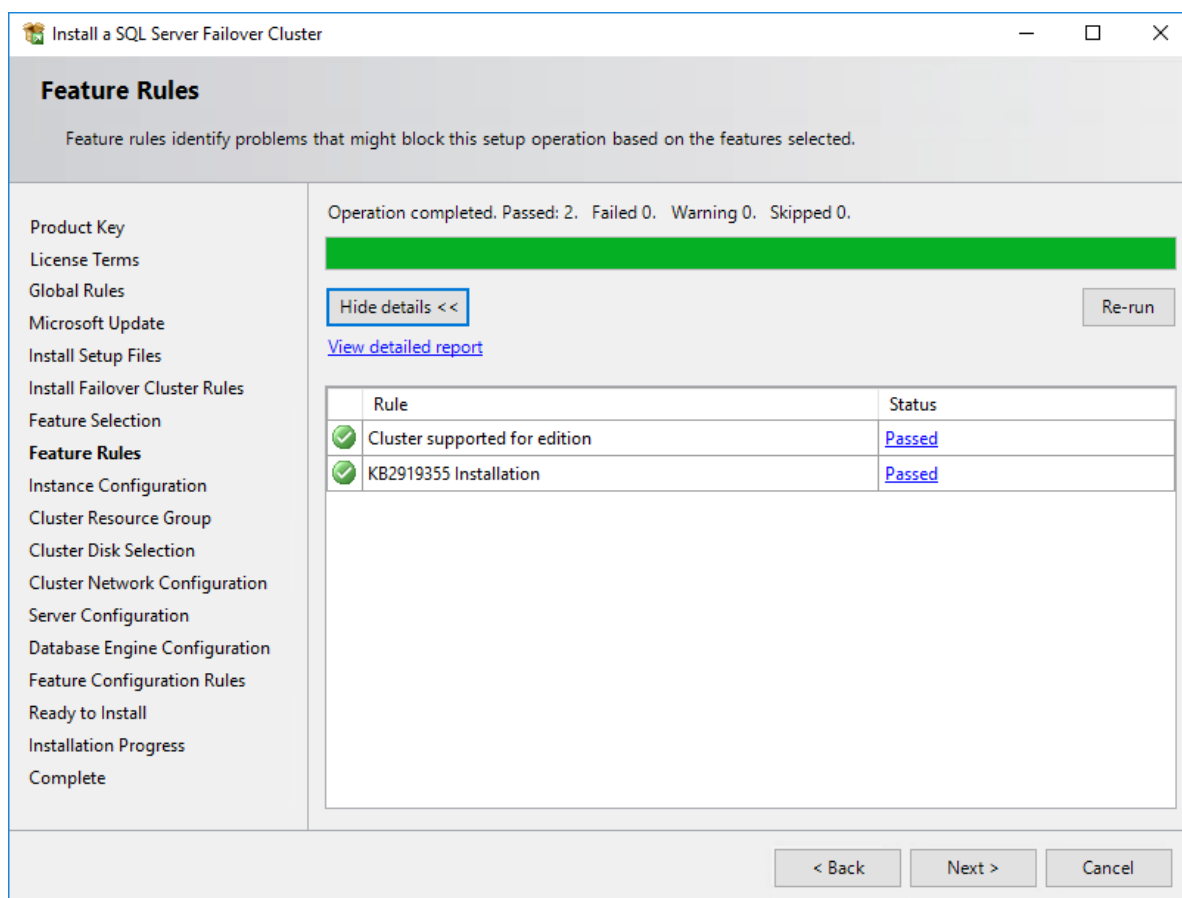
7. In the Install Failover Cluster Rules dialog box, validate that the tests return successful results. If the tests return warnings, make sure they are fixed before proceeding with the installation. Click Next.



8. In the Feature Selection dialog box, select Database Engine Services and Management Tools. Click Next.



9. In the Feature Rules dialog box, verify that all the rules have passed. If the rules return warnings, make sure they are fixed before proceeding with the installation. Click Next.



10. In the Instance Configuration dialog box, enter the following details:

SQL Server Network Name: type the name of the cluster

Instance ID: MSSQLSERVER

Install a SQL Server Failover Cluster

Instance Configuration

Specify the name and instance ID for the instance of SQL Server. Instance ID becomes part of the installation path.

Product Key
License Terms
Global Rules
Microsoft Update
Install Setup Files
Install Failover Cluster Rules
Feature Selection
Feature Rules
Instance Configuration
Cluster Resource Group
Cluster Disk Selection
Cluster Network Configuration
Server Configuration
Database Engine Configuration
Feature Configuration Rules
Ready to Install
Installation Progress
Complete

Specify a network name for the new SQL Server failover cluster. This will be the name used to identify your failover cluster on the network.

SQL Server Network Name:

☒ Default instance
☐ Named instance:

Instance ID:

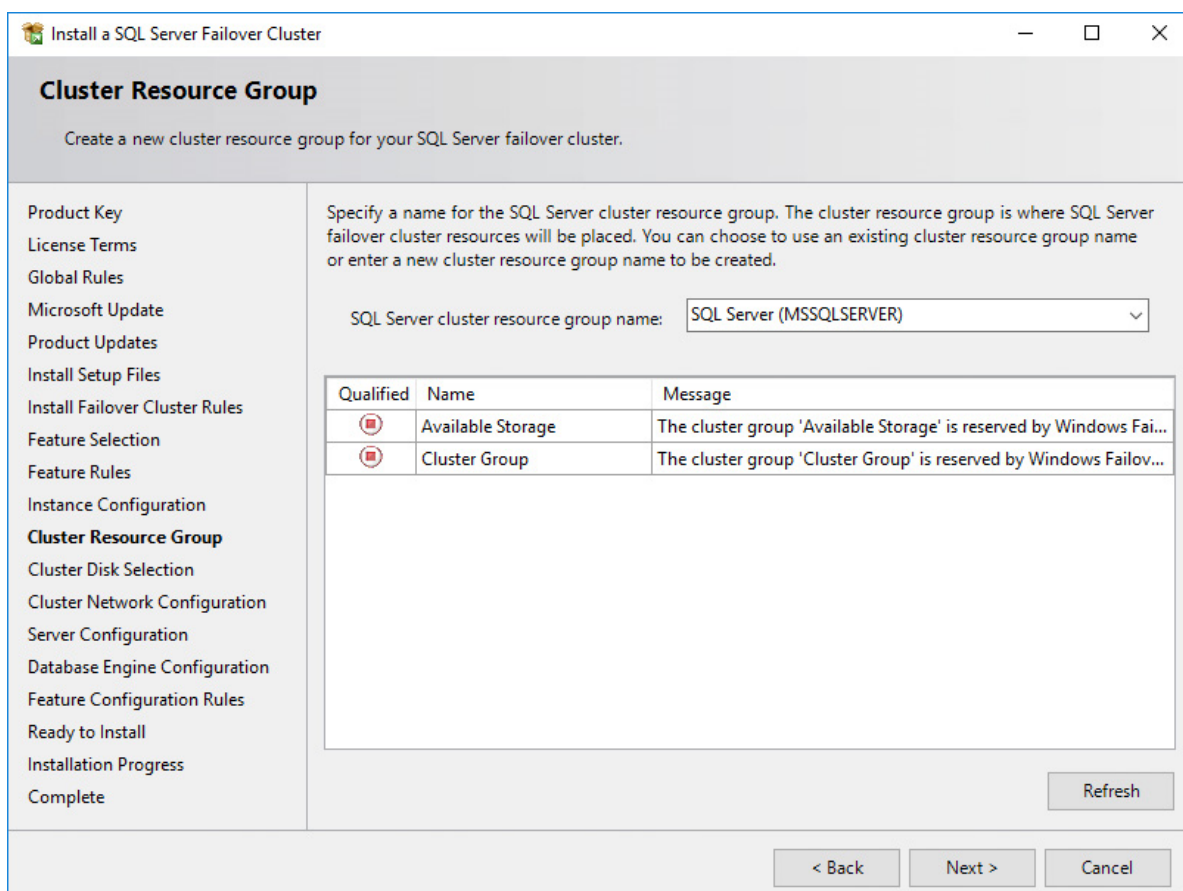
SQL Server directory: C:\Program Files\Microsoft SQL Server\MSSQL15.MSSQLSERVER

Detected SQL Server instances and features on this computer:

Instance	Cluster Network Name	Features	Edition	Version	Inst
MSSQLSERVER		SQLEngine	Evaluation	14.0.1000.169	MSS

< Back Next > Cancel

11. To make sure that a new Resource Group for the SQL Server Failover Cluster Instance can be created, check the resources availability in the Cluster Resource Group dialog box. To specify an existing SQL Server cluster resource group name, use the drop-down list or type the name of a new group to create it. Accept all the defaults and click Next.



12. In the Cluster Disk Selection dialog box, select the available disk groups that are to be used in the cluster for SQL Server 2017.

Install a SQL Server Failover Cluster

Cluster Disk Selection

Select shared cluster disk resources for your SQL Server failover cluster.

Product Key
License Terms
Global Rules
Microsoft Update
Product Updates
Install Setup Files
Install Failover Cluster Rules
Feature Selection
Feature Rules
Instance Configuration
Cluster Resource Group
Cluster Disk Selection
Cluster Network Configuration
Server Configuration
Database Engine Configuration
Feature Configuration Rules
Ready to Install
Installation Progress
Complete

Specify the shared disks to be included in the SQL Server resource cluster group. The first drive will be used as the default drive for all databases, but this can be changed on the Database Engine or Analysis Services configuration pages.

☒ Cluster Disk 1

Available shared disks:

Qualified	Disk	Message
	Cluster Disk 1	

Refresh

< Back Next > Cancel

13. In the Cluster Network Configuration dialog box, enter the virtual IP address that the SQL Server 2017 Failover Cluster Instance will use. The checkbox next to the IPv4 column will be used as a static IP address instead of the DHCP-assigned one. Click Next.

14. Type the IP address: 10.4.0.15 (similar to the virtual IP address for the virtual host name/client access point, the IP address could be any within the range of the Production subnet as long as it is available).

Install a SQL Server Failover Cluster

Cluster Network Configuration

Select network resources for your SQL Server failover cluster.

Product Key
License Terms
Global Rules
Microsoft Update
Product Updates
Install Setup Files
Install Failover Cluster Rules
Feature Selection
Feature Rules
Instance Configuration
Cluster Resource Group
Cluster Disk Selection
Cluster Network Configuration
Server Configuration
Database Engine Configuration
Feature Configuration Rules
Ready to Install
Installation Progress
Complete

Specify the network settings for this failover cluster:

<input checked="" type="checkbox"/>	IP Ty...	DHCP	Address	Subnet Mask	Subnet(s)	Network
<input checked="" type="checkbox"/>	IPv4	<input type="checkbox"/>	10.4.0.15	255.255.255.0	10.4.0.0/24	Cluster Network 1

Refresh

< Back Next > Cancel

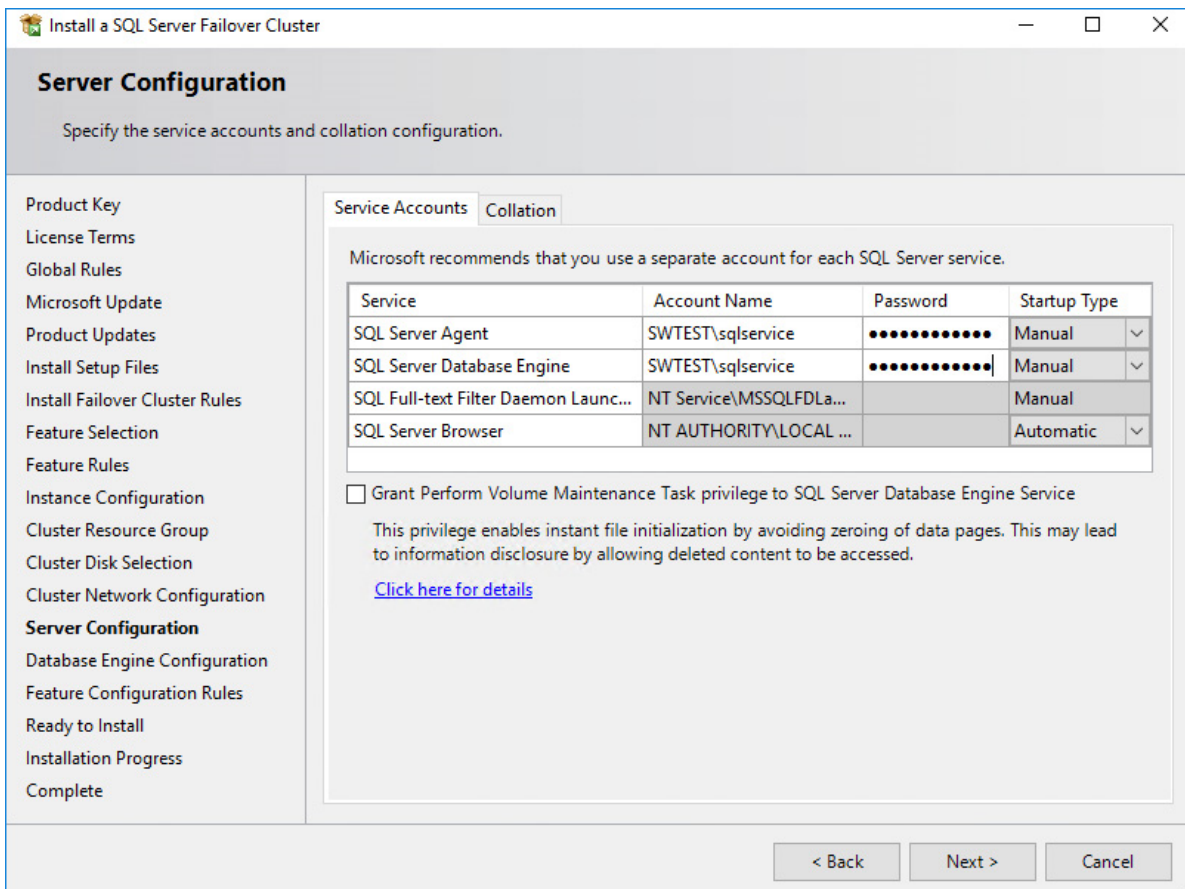
NOTE: The network adapter settings that will be displayed in this dialog box will depend on how the cluster network adapters are configured. Make sure to configure the Heartbeat-iSCSI network adapters with the Do not allow cluster network communication on this network option.

15. In the Server Configuration dialog box, use the following credentials for the SQL Server service accounts in the Service Accounts tab:

SQL Server Agent: SWTEST\sqlservice

SQL Server Database Engine: SWTEST\sqlservice

Note: Make sure that both SQL Server Agent and SQL Server Database Engine services have the Manual Startup Type. The Windows Server Failover Cluster will take care of stopping and starting the service. Also, set the Collation property for the instance according to the application requirement.



16. In the Database Engine Configuration dialog box, select the appropriate Authentication Mode in the Server Configuration tab. To add the currently logged on user to the SQL Server administrators group, click the Add Current User button. Otherwise, add the appropriate domain accounts or security groups.

The screenshot shows the 'Install a SQL Server Failover Cluster' wizard, specifically the 'Database Engine Configuration' step. The left sidebar lists various installation steps, with 'Database Engine Configuration' currently selected. The main area has four tabs: 'Server Configuration', 'Data Directories', 'TempDB', and 'FILESTREAM'. The 'Server Configuration' tab is active, showing options for authentication mode and administrators. The 'Authentication Mode' section has two radio buttons: 'Windows authentication mode' (selected) and 'Mixed Mode (SQL Server authentication and Windows authentication)'. Below this, there are fields for 'Enter password:' and 'Confirm password:' for the SQL Server system administrator (sa) account. The 'Specify SQL Server administrators' section has a list box for adding users and three buttons: 'Add Current User', 'Add...', and 'Remove'. A warning box on the right states: 'SQL Server administrators have unrestricted access to the Database Engine.' At the bottom right, there are three buttons: '< Back', 'Next >', and 'Cancel'.

17. In the Data Directories tab, enter the following data (based on the available cluster disks):

Data root directory: J:\

User database directory: J:\MSSQL12.MSSQLSERVER\MSSQL\Data

User database log directory: L:\MSSQL12.MSSQLSERVER\MSSQL\Data

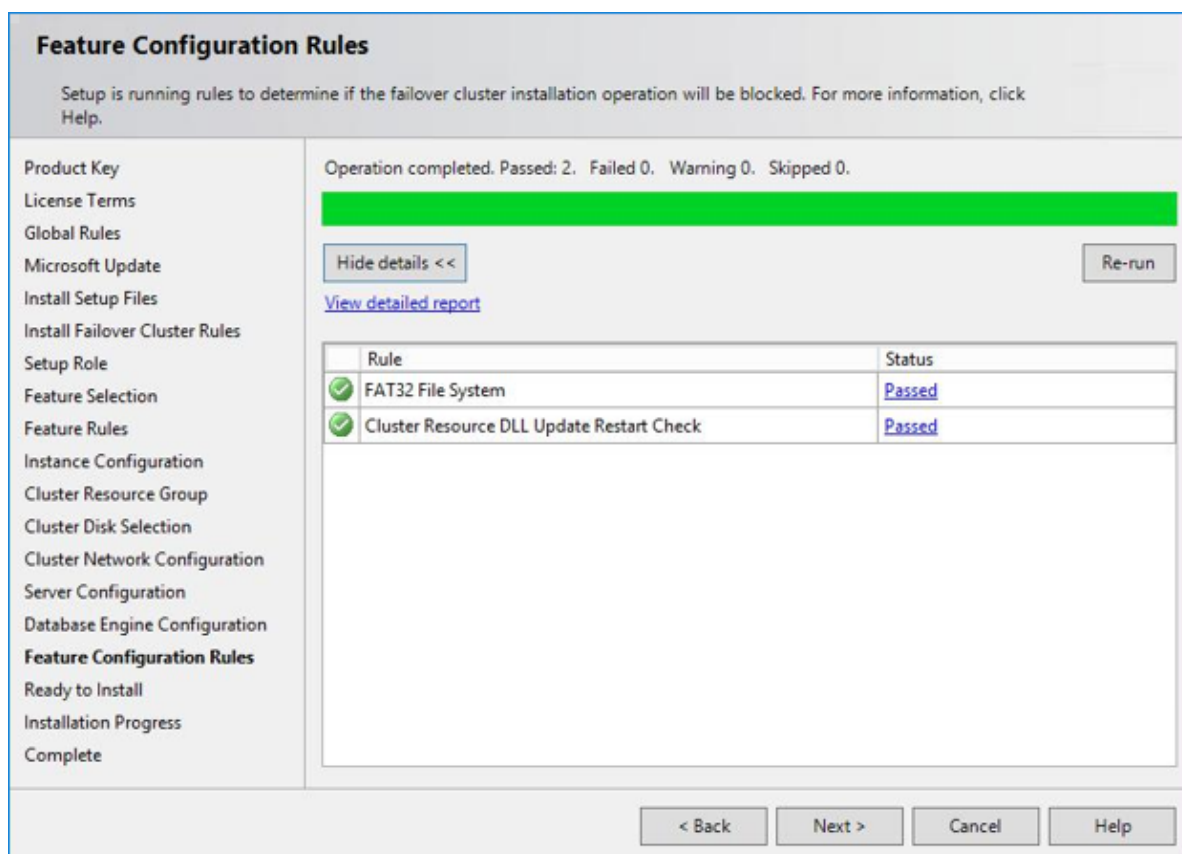
Temp DB directory: J:\MSSQL12.MSSQLSERVER\MSSQL\Data

Temp DB log directory: L:\MSSQL12.MSSQLSERVER\MSSQL\Data

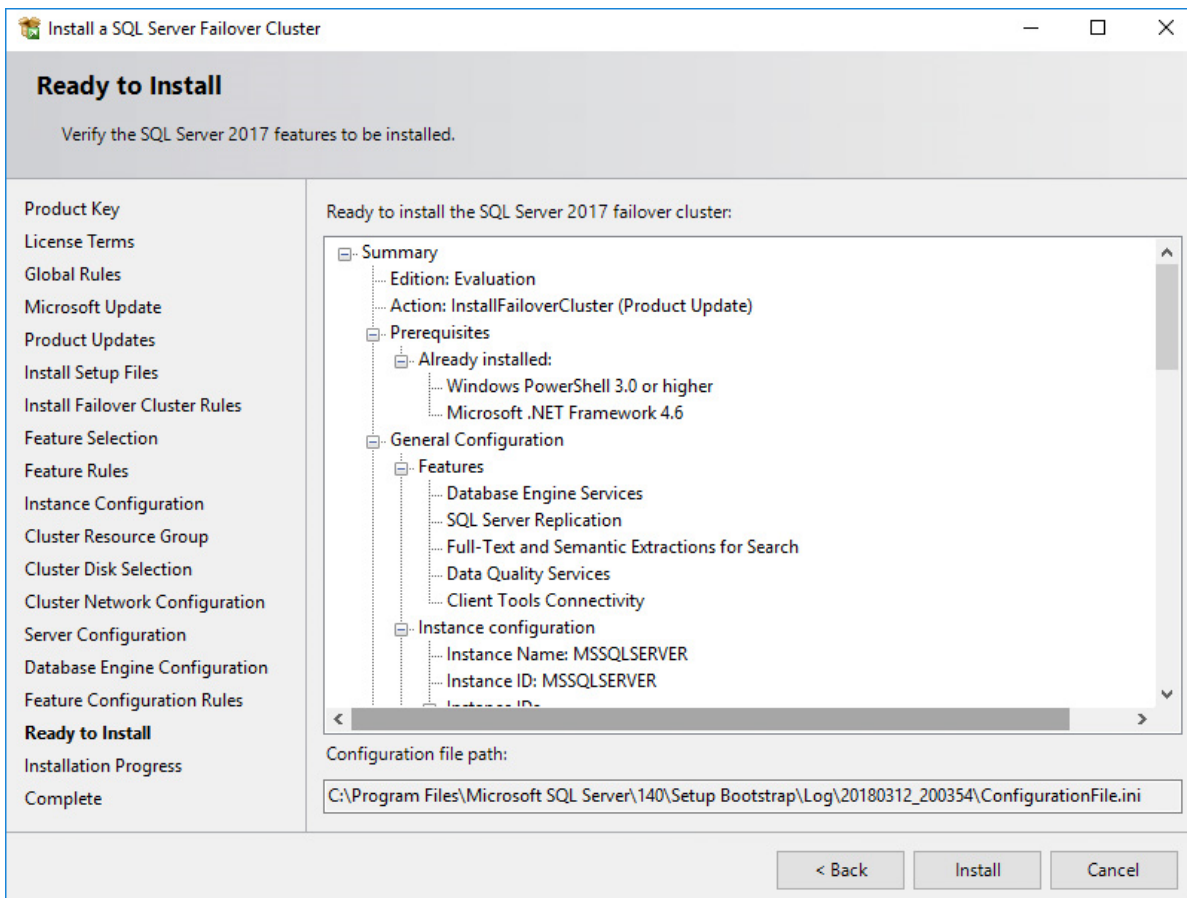
Backup directory: J:\MSSQL12.MSSQLSERVER\MSSQL\Backup

NOTE: For WSFC, it is recommended to store the tempdb database on a local drive instead of the replicated storage. Make sure that all the nodes in the cluster contain the same directory structure and that the SQL Server service account has Read/Write permissions for those folders.

18. In the Feature Configuration Rules dialog box, verify that validation tests have passed successfully.



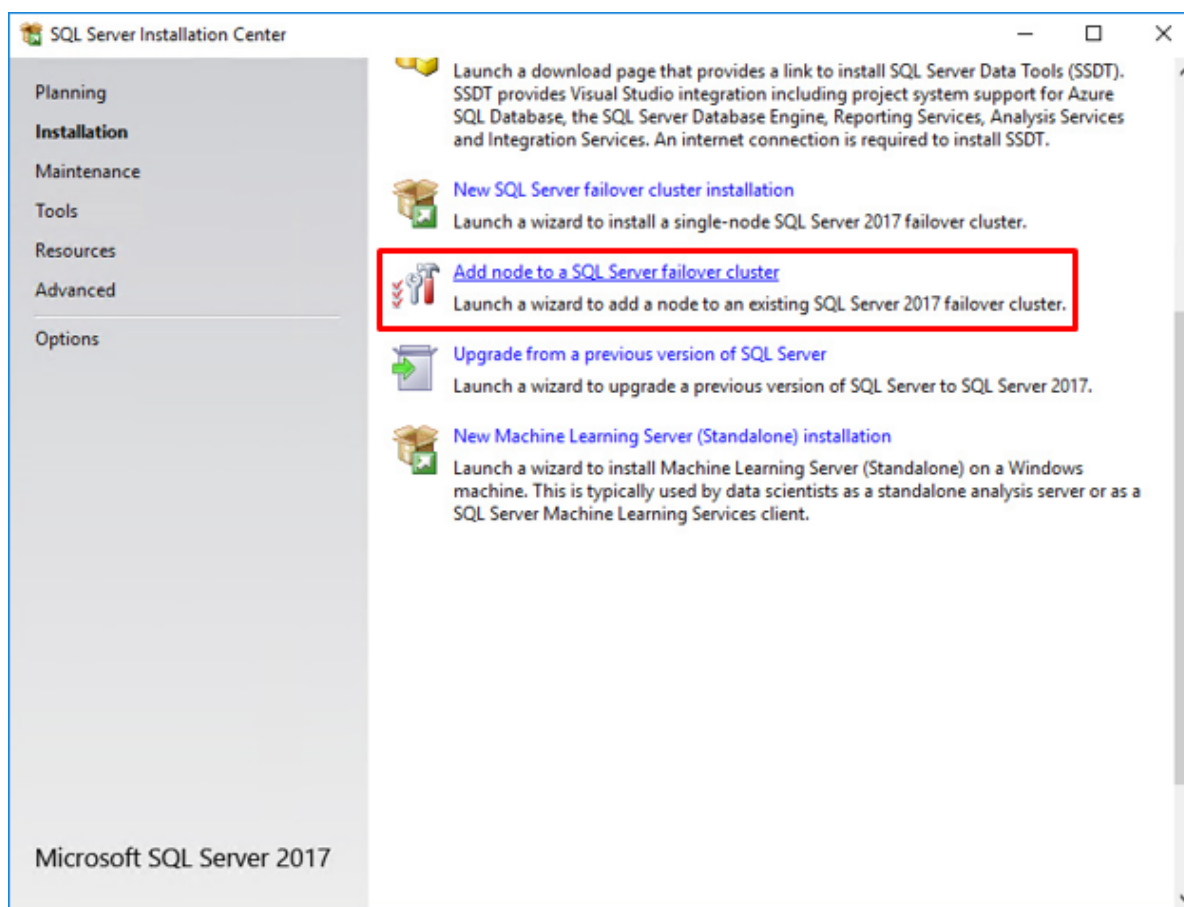
19. In the Ready to Install dialog box, verify that all configurations are correct and click Install.



20. Once the installation is finished, in the Complete dialog box, click Close.

Adding Node To Sql Server 2017 Failover Cluster

1. Run setup.exe from the installation media to launch SQL Server Installation Center.
2. Click the Add node to a SQL Server failover cluster link to run the SQL Server 2017 Setup wizard.



3. In the Product Key dialog box, enter the product key that came with the installation media.
4. Read and accept the License Terms.
5. In the Global Rules dialog box, validate that the tests return successful results.
6. In the Microsoft Update dialog box, click Next.
7. In the Add Node Rules dialog box, validate that the tests return successful results. If the tests return warnings, make sure to fix them before proceeding with the installation.
8. In the Cluster Node Configuration dialog box, verify that the information for the existing SQL Server 2017 Failover Cluster Instance is correct.

Add a Failover Cluster Node

Cluster Node Configuration

Add a node to an existing SQL Server failover cluster.

Product Key
License Terms
Global Rules
Microsoft Update
Product Updates
Install Setup Files
Add Node Rules
Cluster Node Configuration
Cluster Network Configuration
Service Accounts
Feature Rules
Ready to Add Node
Add Node Progress
Complete

SQL Server instance name: MSSQLSERVER

Name of this node: SWTESTONE2

Disk Space Requirements: Drive C: 1620 MB required, 113917 MB available

Instance Name	Cluster Network Name	Features	Nodes
MSSQLSERVER	SQLCLUSTER	SQLEngine, SQ...	SWTESTSECOND

< Back Next > Cancel

9. In the Cluster Network Configuration dialog box, review the configuration of the SQL Server Failover Cluster Instance.

10. In the Service Accounts dialog box, verify that the information of the configuration is the same as was used to configure the first node. Provide the appropriate password for the SQL Server service accounts.

Add a Failover Cluster Node

Service Accounts
Specify the service accounts and collation configuration.

Product Key
License Terms
Global Rules
Microsoft Update
Product Updates
Install Setup Files
Add Node Rules
Cluster Node Configuration
Cluster Network Configuration
Service Accounts
Feature Rules
Ready to Add Node
Add Node Progress
Complete

Microsoft recommends that you use a separate account for each SQL Server service.

Service	Account Name	Password	Startup Type
SQL Full-text Filter Daemon Launcher	NT Service\MSSQLFDLauncher		Manual
SQL Server Database Engine	SWTEST\sqlservice	*****	Manual
SQL Server Browser	NT AUTHORITY\LOCAL SERVICE		Automatic
SQL Server Agent	SWTEST\sqlservice	*****	Manual

☐ Grant Perform Volume Maintenance Task privilege to SQL Server Database Engine Service
This privilege enables instant file initialization by avoiding zeroing of data pages. This may lead to information disclosure by allowing deleted content to be accessed.
[Click here for details](#)

< Back Next > Cancel








11. In the Feature Rules dialog box, verify that all the rules have passed. If the rules return warnings, make sure they are fixed before proceeding with the installation. Click Next.

12. In the Ready to Add Node dialog box, verify that all settings are correct and click Install.

13. Once the installation is finished, click Close in the Complete dialog box.

14. Repeat the steps 1-13 to add other nodes to the existing SQL Server 2017 Failover Cluster.

Contacts

US Headquarters	EMEA and APAC
 +1 617 829 44 95	 +44 2037 691 857 (United Kingdom)
 +1 617 507 58 45	 +49 800 100 68 26 (Germany)
 +1 866 790 26 46	 +34 629 03 07 17 (Spain and Portugal)
	 +33 788 60 30 06 (France)

Customer Support Portal: <https://www.starwind.com/support>

Support Forum: <https://www.starwind.com/forums>

Sales: sales@starwind.com

General Information: info@starwind.com



StarWind Software, Inc. 100 Cummings Center Suite 224-C Beverly MA 01915, USA
www.starwind.com ©2024, StarWind Software Inc. All rights reserved.