

Implementing Failover Clustering with Windows Server 2016 Hyper-V

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Lab Summary

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### Implementing Failover Clustering with Windows Server 2016 Hyper-V

Since the deployment of VMs on Hyper-V is successful for the company, the management wants to make the services and applications highly available with VMs. The admin should consider the plan for the VM and storage configuration and the implementation of the VMs on the failover cluster. The nested virtualization should be enabled to test the failover clustering.

There are several components to implement the cluster, which are cluster nodes, cluster networks, virtual networks, shared storage, and VMs. Unlike the other type of clustering, the shared storage does not need to be iSCSI because they are using the virtual hard disks, instead. Also, the virtual networks are connected as private networks because each node communicates with each other.

The nested virtualization hosts should have Hyper-V to create a cluster via Hyper-V Manager in LON-HOST2. The hosts are the second layer of virtualization so that they get controlled by the host in the first layer of virtualization. Since the nested virtualization does not require any physical hardware, it is a great tool to use for any testing purposes. When the cluster nodes are created, the networking between nodes should be configured by setting a virtual switch. The switch allows communication between the virtual machines. There are different types of virtual switch: External switch, Internal switch, and Private switch. Each node only is communicating with each other so that the private switch is used in this case.

Most of the components for a failover cluster are set up, and the shared storage is the task to be configured. Microsoft iSCSI target is a beneficial technology to perform these kinds of functions, including shared storage for Hyper-V, storage consolidation for application servers, and hosting on a failover cluster. In this case, the iSCSI target can be used as shared storage and

entertaining on a failover cluster. The two nested virtualization hosts connect to the iSCSI target and start acting as a virtual hard disk or shared storage for the failover clustering.

Once all the components for the implementation are installed and configured, the next task is to set the disks in the storage from the VM cluster. One of the disks will behave as a quorum server. It means that the disk will give out votes to other nodes so that they could have a balance of loads. The VM storage should move to the iSCSI target because if the assigned nested virtualization host as Cluster Shared Volume fails, then the shared volume will also fail, which results in the corruption of the cluster. Instead, if the storage is in the iSCSI target, it can be protected from corruption if the nested virtualization host failed.

After the failover cluster is created, the verification is essential by creating a testing cluster VM. The default owner node is LON-NVHOST 3, and if live migration begins, the owner node changes to LON-NVHOST4. This result gives the failover cluster is working correctly. Lastly, the admin should configure the drain-on-shutdown feature, which means to turn off the live migration properly so that LON-NVHOST 4 migrates back to LON-NVHOST3

Module 09: Implementing failover clustering with Windows Server 2016 Hyper-V - Microsoft Edge

https://labclient.labondemand.com/LabClient/a2f4f056-6292-40ea-a260-7c305735f097?rc=10

20740C-LON-NVHOST3 on LON-HOST2 - Virtual Machine Connection

File Action Media Clipboard View Help

Failover Cluster Manager

File Action View Help

Failover Cluster Manager

VMCluster.Adatum.com

Roles

Nodes

Storage

Disks

Pools

Enclosures

Networks

Cluster Events

Roles (1)

Name	Status	Type	Owner Node	Priority
TestClusterVM	Off	Virtual Machine	LON-NVHOST3	Medium

Status: Running

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2 Hr 13 Min Remaining

Instructions Resources Help 100%

This should return a value of "1".

- 3. On **LON-NVHOST3**, restore **Failover Cluster Manager**.  
[Screenshot](#)
- 4. Select **Roles** in **Failover Cluster Manager**.  
[Screenshot](#)
- 5. On **LON-NVHOST4**, click on **Windows Start**, select **Power**, and then select **Shut down**.
- 6. On the pop-up dialog box, select **Continue**.
- 7. Observe **TestClusterVM** live migrate to **LON-NVHOST3** from **LON-NVHOST4** before shutting down.  
[Screenshot](#)

Results

After completing this exercise, you should have successfully configured the VM as highly available.

Congratulations!

100% Tasks Complete

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