Microsoft IT Camp

Hands-On Lab

Windows Server 2012: Continuously Available File Share

Lab version: 2.0.0

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This lab assumes that you have completed the prior installation and configuration lab found here:

Lab Guide – Windows 2012 RTM Install and Configure Windows and Hyper-V

Word Version: http://aka.ms/tplabguideword

PDF Version: http://aka.ms/tplabguidepdf

Lab Guide – Windows 2012 Storage

Word Version: http://aka.ms/tplabguide2word

PDF Version: http://aka.ms/tplabguide2pdf

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Overview

In this lab, you will see how the new, continuously available file server in Windows Server 2012 allows user sessions to move from one file server node to another without any downtime. This lab has you create the entire cluster environment starting with the configuration of the iSCSI storage and then the creation of the 2-node cluster. Once the cluster is complete, you will create the necessary cluster resources.

Objectives

In this series of exercises, you will explore the following:

- Configuring iSCSI Target software.
- Create a 2-node failover cluster.
- Moving file server traffic to a different cluster node, without interruption of network services.

Prerequisites

- Knowledge of Hyper-V.

Lab Deployment Guide

Lab Setup

This lab requires the following host computers and virtual machines.

Host Computers:

- Your Hyper-V Host machine
    - Host Name: [Various]
    - OS: Windows Server 2012
    - Primary Roles: Hyper-V Server

Virtual Machines:

- **DC**
    - OS: Windows Server 2012
    - Primary Roles: Domain Controller
    - Additional Roles: DNS
- **Storage**
    - OS: Windows Server 2012
    - Primary Roles: File and Storage Services
- **Cluster1**
    - OS: Windows Server 2012
    - Primary Role: Failover Clustering
    - Ensure that a Windows Server 2012 **.ISO** file is mounted on **Cluster1** as drive **D**:
- **Cluster2**
    - OS: Windows Server 2012
    - Primary Role: Failover Clustering

Lab

Tasks in this Lab Module

1) Add additional hardware to prepare for failover clustering.
2) Create a 2-node Failover Cluster (Part 1: Configure Storage).
3) Create a 2-node Failover Cluster (Part 2: Configure Cluster1 and Cluster2).
4) Connect to an existing failover cluster.
5) Configure Highly Available File Share.
6) Transfer file server traffic to a different cluster node, without interruption of network services.

1) **Add additional hardware to prepare for failover clustering.**

1. Log on to **Hyper-V host** as **Administrator**.
2. Start **Hyper-V Manager**
3. Apply original snapshots for **DC**, **Storage**, **Cluster1** and **Cluster2**.
4. In **Hyper-V Manager**, create a new Hard Disk.
   A. Format: **VHDX**
      Disk Type: **Dynamically Expanding**
      Name: **StorageDisk.vhdx**
      Location: **D:\Images\Storage**
      Size: **127 GB**
5. Go to settings for **Storage**
   A. Select **SCSI Controller** in left panel; Click **Hard Drive** in right pane and click **Add**.
   B. Browse to **StorageDisk.vhdx** and Add it in.
6. Go to settings for **Cluster1**
   A. Add Network Adapter and connect it to **IT Heartbeat**.
7. Go to settings for **Cluster2**
   A. Add Network Adapter and connect it to **IT Heartbeat**.

2) **Create a 2-node Failover Cluster (Part 1: Configure Storage).**

1. **Start** all four Virtual Machines.

2. Log onto **Storage** as a **Domain Administrator**.

3. From **Server Manager**, click **Tools** and then **Computer Management**.

4. Select **Disk Management**, right click **Disk 1** and select **Online**.

5. Right Click **Disk 1** and select **Initialize | Initialize as MBR**.

6. Create and format a new simple volume on **Disk 1**.

7. In **Server Manager Dashboard**, Select **Add roles and features**.

8. Add **iSCSI Target Server** (part of **File and Storage Services** | **File and iSCSI Services**)

9. From **Server Manager**, select **File and Storage Services** | **iSCSI**.

10. In the **iSCSI Virtual Disk** section, select **New iSCSI Virtual Disk** from the **Tasks** Drop down menu.

11. Create **iSCSI Virtual Disk** and **iSCSI Target** with the following parameters:

    A. Storage Location: **Volume E:**
    Name: **"Quorum"**
    Size: **1 GB**

    B. **New iSCSI Target**
    Name: **ClusterStorage**
    Add Initiator ID by IP Address Type: **192.168.1.21** and **192.168.1.22**

12. Create another **iSCSI Virtual Disk** and add to existing **iSCSI Target**

    A. Storage Location: **Volume E:**
    Name: "**Storage**"
    Size: **50 GB**
    Existing iSCSI Target: **ClusterStorage**

3) **Create a 2-node Failover Cluster (Part 2: Configure Cluster1 and Cluster2).**

1. Log onto **Cluster1** as Domain Administrator.

2. Configure IP Address for newly added adapter with the following IP v4 information:

    A. IP Address: **192.168.11.21**
    Subnet Mask: **255.255.255.0**
    DNS: **192.168.11.10**

3. In **Server Manager**, click **Tools** and then **iSCSI Initiator**.

    A. Click **Yes** to prompt.

4. Type **192.168.1.11** for **Target** and click **Quick Connect** and then **Done**.

5. From the **Volumes and Devices** Tab click **Auto Configure** and then click **OK**.

6. From **Computer Management | Disk Management**, Bring the two new disks online, initialize them and Create and format a simple volume on each of the two disks.

7. Install the **File Server** role, and the **Failover Clustering** feature (and default dependencies).

8. Log onto **Cluster2** as a **Domain Administrator**.

9. Configure IP Address for newly added adapter with the following IP v4 information:

    A. IP Address: **192.168.11.22**
    Subnet Mask: **255.255.255.0**
    DNS: **192.168.11.10**

10. In **Server Manager**, click **Tools** and then **iSCSI Initiator**.

    A. Click **Yes** to prompt.

11. Type **192.168.1.11** for **Target** and click **Quick Connect** and then **Done**.

12. From the **Volumes and Devices** Tab click **Auto Configure** and then click **OK**.

13. From **Computer Management** | **Disk Management**, Bring the two new disks online.

14. Install the **File Server** role, and the **Failover Clustering** feature (and default dependencies).

15. Switch to **Cluster1**.

16. Start Failover Cluster Manager

    A. In the Actions Pane, click **Create Cluster**.

    B. Add **Cluster1** and **Cluster2** to the cluster.

    C. Run the **Validation Wizard** and **run all tests**. (Be patient. It takes a while.)
    Click **Finished** when complete.

    D. Create the cluster with the following information:

        i. Cluster name: **MainCluster**
        IP Address: **192.168.1.50**
        Uncheck the 192.168.11.0/24 network
        Check **Add all available storage to the cluster**.

        ii. Expand **MainCluster** | **Storage** and click **Disks**.

iii. Right Click **Cluster Disk 2** (not the Quorum disk) and select **Add to Cluster Shared Volumes**

E. Close **Failover Cluster Manager**

4) **Connect to an existing failover cluster.**

1. If not already logged in, log into **Cluster1** as a **Domain Administrator**.
2. From the Taskbar, open **Server Manager**.
3. In Server Manager, click **Tools**, and then click **Failover Cluster Manager**.
4. Expand **MainCluster.[yourdomain]**, and expand all **Nodes**, **Storage** and **Networks**.
5. Take a few minutes and explore the environment (but don't make any changes).

4) Configure Highly Available File Share.

1. Mount Windows Server 2012 ISO image into VM
2. In **Failover Cluster Manager**, click **Roles**.
3. In **Actions** pane, click **Configure Role**.
4. Configure a Cluster resource with the following information:

   A. Server Role: **File Server**
   File Server Type: **Scale-Out File Server for application data**
   Name: **HAFileServer**

5. Right Click **HAFileServer** and select **Add File Share** with the following information:
   (NOTE: You may get a "The Client Access Point is not ready.." error. Wait a few minutes and try again.)

   A. Profile: **SMB Share – Applications**
   Share Location: **Volume E:**
   Share Name: **VMStore**
   Other Settings: **Accept Defaults**

5) Transfer file server traffic to a different cluster node, without interruption of network services.

1. Copy **Install.wim** from **D:\Sources** to **\\HAFileServer\VMStore**.
2. QUICK! In Failover Cluster Manager, right click **HAFileServer** and select **Move** | Select **Node**.

   A. Click **OK** to move to other Cluster Node.

3. Monitor copy process to see that it does not fail.

Follow Up Guide Can Be Found Here:

Lab Guide – Windows 2012 RTM Hyper-V Over SMB

Word Version: http://aka.ms/tplabguide4word

PDF Version: http://aka.ms/tplabguide4pdf

More Information

Tommy's Blog

http://virtuallycloud9.com

Windows Server Blogs

http://blogs.technet.com/b/windowsserver/

Windows Server 2012 Product Download

http://aka.ms/ws2012tp

Microsoft Virtual Academy

http://aka.ms/tpva

Windows Server 2012 Virtual Labs

http://technet.microsoft.com/en-us/windowsserver/hh968267.aspx

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