

Chapter 8

Implementing Disaster Recovery and High Availability

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The activities in this chapter are written to be performed using either VMware Server or Hyper-V. Since VMware Server is no longer a supported project, all activity notes in this chapter pertain to using Hyper-V.

A lot has changed with high-availability options since the original book was written. Currently both VMware vSphere and Hyper-V have built in options that support hot swapping virtual machines between hosts much more powerful. For example, implementing shared NAS storage with vSphere reduces the need to setup Windows Server clustering. Our new book edition will cover high-availability options in both vSphere and Hyper-V.

Activity 8-1: Installing Windows Server Backup

Perform the steps of Activity 8-1 as written except for the following changes:

In step 8, select both Windows Server Backup and Command-line Tools under the Windows Server Backup Features.

Activity 8-2: Performing a Windows Server 2008 Scheduled Backup

Perform the steps of Activity 8-2 as written except for the following changes:

The backup now includes a Specify Destination Type window following the Specify Backup Time window. Prior to step 7, verify that the destination type is set to **Back up to a hard disk that is dedicated for backups (recommended)** option is selected and then click **Next**.

Activity 8-3 and Activity 8-4: Backing up Virtual Machines from the Host

These activities assume you are using VMware Server on the host computer. Since VMware server is no longer supported by VMware, **we recommend skipping these activities**.

Activity 8-5: Planning the Cluster Configuration

Perform the steps of Activity 8-5 as written.

Activity 8-6: Installing Active Directory on the Domain Controller

Prior to performing this activity, you should make a snapshot of the virtual machine that Active Directory will be installed on. Making a snapshot will allow you to return the virtual machine to its original configuration if you make a mistake or experience problems during the activity.

Perform this activity as written except for the following changes:

In step 1 and 2, if you are installing Active Directory on Windows Server 2008 Child 1, select the Backbone network (No network access) and then set the DNS server to 127.0.0.1.

In step 5, after clicking on Active Directory Domain Services, you be requested to add .NET Framework 3.5.1 Features. Click **Add Required Features** button and then click **Next** to display the Active Directory Domain Services window.

In step 12, select **Windows Server 2008 R2**.

Activities 8-7 through 8-15: Clustering

Activities 8-6 through 8-15 give the student the opportunity to setup a cluster using the two virtual machines created in chapter 7 along with the host server. These activities can be a time consuming process largely consisting of working with Windows Server domains and the StarWind iSCSI simulator software. The StarWind iSCSI software used in this edition of the book is no longer supported, making these activities difficult to do unless you have a copy of the software. While clustering is an important way of creating high availability among virtual machines, it is a more advanced topic and you may wish to cover chapter 10 Virtual Machine Manager first if your class time is limited.

Implementing shared storage between hypervisors has matured a lot since our original book was written. Since the StarWind software products used in the book are no longer supported, we suggest skipping Activities 8-8 through 8-15 and using the class time to have students do a report on using shared SAN storage with Hyper-V to provide fault tolerant VMs.

StarWind Software provides a well written description of their latest Virtual SAN product at the following URL:

<https://www.starwindsoftware.com/whitepapers/starwind-virtual-san-free.pdf>