Testing Report: Simulated disaster recovery of a Hyper-V host and all Guest VMs to new hardware

Tests conducted by the BackupAssist Technical Support Team, August 2009

Executive Summary

This test simulates the disaster recovery of a Hyper-V host and all Guest VMs. In the event that the machine suffers a severe failure, we want to restore the machine (which includes Guest VMs) to new hardware. Here's the results of this experiment.

Successfully restored a virtualized SBS 2008 Premium environment from an image backup to dissimilar hardware.

Source: HP EliteBook 8530w laptop   **Destination**: Intel Quad Core desktop

Host needed reactivation and installation of new drivers - as expected.

Guests started up automatically and did not need reactivation or installation of new drivers.

Testing outline

We tested the ability of Windows Server 2008 Hyper-V host to be restored to dissimilar hardware. This simulated disaster recovery procedure was performed from a HP EliteBook 8530 laptop to an Intel based whitebox server*. This test was performed to see if hosted Hyper-V VMs on the HP laptop would be operational after being restored to the dissimilar hardware of the Intel Server.

*Specific hardware details follow this guide

Operating System setup

• **Hyper-V Host:** Windows Server 2008 Standard with Hyper-V Role (2nd server of SBS 2008 Premium).

• **Virtual Machine 1:** Small Business Server 2008 (1st server of SBS 2008 Premium).

• **Virtual Machine 2:** Windows Server 2008 Standard (2nd server of SBS 2008 Premium).

• **Virtual Machine 3:** Windows Vista.

Hardware setup

We purposefully chose extremely different hardware (laptop vs. desktop) to adequately test the hardware independent nature of the restore, and the effectiveness of Hyper-V hardware abstraction.

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Source machine

Our HP laptop was setup with Windows Server 2008 and three VMs, a Windows SBS 2008 guest, a Windows Server 2008 guest, and a Windows Vista guest. All of these guests had been activated and all drivers were installed and functioning. The HP laptop had a single 250GB hard drive which had been partitioned into a System partition, and a VM partition.

HP Laptop	
Model	HP EliteBook 8530
Processor	Core2 Duo T9400
Ram	8gb DDR II ram
Graphics card	nVidia 9600

Destination machine

The destination server was setup with a single 500GB hard disk. The general rule is that the destination machine must have a hard disk equal or bigger in size than the source machine.

Intel whitebox server	
Processor	Core2 Quad Q9550
Ram	8gb DDR II ram
Motherboard	ASUS P5Q
Graphics card	nVidia 9600

The backup and restore process

The process we followed to perform the backup and bare metal restore was as follows:

1. We started by taking an image backup to USB HDD of the HP laptop using the Windows Server backup wizard. The backup included all partitions used by Hyper-V as well as the system partition so we could perform a bare metal restore. This was done using BackupAssist.

2. We then booted the Intel server using the Server 2008 installation DVD and attached the USB HDD containing the image of the HP laptop. When prompted by the Windows Server installation process, we chose "Repair your computer" and then "Windows complete PC restore". From here we selected the backup of our HP laptop and began the restore process.

3. After completing the restore we booted the Intel server. Windows then prompted us to install drivers for the new hardware it had found as well as reactivate the Hyper-V host operating system.

4. The Hyper-V guest machines all started without issue, and did not require reactivation.

Test results

In this test, we successfully restored a Hyper-V image in a bare metal/disaster recovery situation. The hardware was markedly different between the imaged HP laptop and Intel server, yet all Hyper-V guests were able to run without additional configuration.

We also found that we did not have to reactivate the Hyper-V guest operating systems upon restoring them and no additional drivers needed to be installed. This allows for the disaster recovery of a Hyper-V server to alternate hardware, in the event of a total failure of the primary host server. Furthermore, it offers a simple migration path to new hardware if the Hyper-V server ever needs to be upgraded.

We strongly recommend that you repeat your own tests on your specific hardware to satisfy yourself of the validity and effectiveness of this procedure. While we can confirm that this procedure has worked flawlessly on our test hardware, we make no claims that this procedure will work on other systems.