**Lab 4 – Creating a Virtual Machine**

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| Creating Hyper-V | | |
| Open Hyper V and start New Virtual Machine Wizard. | 1. From Server Manager, Open **Hyper-V manager (**Tools->Hyper-V Manager) 2. In actions pane choose **New ->Virtual Machine** 3. On the “Before you begin” page… Click **Next.** | |
| Specify Name and Location | 1. Give this new Machine a name (**WIN2016**), and create or choose a new folder to put it in. 2. Check the “Store the virtual machine in a different location”   **Note: Doing this will create a folder with the name of the machine and put all its information into it.**  **Hyper-V manager does NOT clean up after itself very well either.**  **See appendix A for examples.** |  | |
| Specify generation | 1. Choose Generation 1 or Generation 2 |  | |
| Assign Ram | 1. Change the Default at 2048MB, and then click on “Use Dynamic Memory for this virtual Machine.   **Note: Suggest putting startup memory to 2048 or higher for production machines.**  **I also recommend to NOT use dynamic Memory for Production machines.** |  | |
| Configure Networking. | 1. Choose a virtual Switch   Note: **Naming standards matter. It’s much easier to Move or Replicate a Machine to a different Hyper-V box if both machines have the Virtual Switches named the Same.** |  | |
| Connect a virtual Hard disk | 1. Create or Use a virtual Hard Drive. In this case we will create one with the defaults.   **Note: This lets you create a hard drive in the new version only. Changing the extension to vhd gets** you an error message. |  | |
| Installation Options | 1. Choose your installation options. Browse to your USB stick and choose the Windows Server 2016 ISO.   You can choose to boot to a physical hard drive or even a boot floppy image. |  | |
| Finish | 1. Click **next** to see a summary and then click on **finish** to complete the Wizard. |  | |

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| PowerShell |
| New-AzureRmResourceGroup -Name “WSUG-RG” -Location “EAST US”  # Create the VHD New-VHD -Path c:\Hyper-V\Win2016.vhdx -SizeBytes 40GB  # Create the new VM New-VM -Name ‘Win2016’ -MemoryStartupBytes 4GB `  -VHDPath ‘E:\Hyper-V\Win2016.vhdx’ -SwitchName ‘Wired’  # Set the bootable device Add-VMDvdDrive -VMName " Win2016’ -Path <USB Flash Drive path> |

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| Install Windows 10 in your virtual Machine | |
|  | 1. From Server Manager, Open Hyper-V manager (Tools->Hyper-V Manager) 2. Right click on the Virtual Machine Created above and choose Connect. 3. Then click on the Green Start button. When the machine starts. Press the spacebar to boot from the “CD or DVD” (actually our ISO) 4. On the Language and keyboard screen, Press Next 5. Click **Install now**   Shift F10 here will drop you to a command prompt |
|  | 1. On the Activate Windows Screen click **I don’t have a product key**. 2. On the license terms page, put a checkbox in from of “I accept the license terms” and press **Next** 3. On the Installation Type Screen, click on “**Custom: Install windows only (advanced)”** 4. On the Where to install windows page, Press **Next**. 5. Put in your password and then reenter it. When done press the **Finish** Button. |

**APPENDIX A**

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| **Created from Defaults** | Will put the VHDX into the default location and put VM information in a folder called **virtual machines**. All VM’s created by default will be put into the same locations. Usually leaves a **BIG mess** after a few machines get created. |
| **Deletion from Hyper-V** | When machine is deleted from Hyper-V manager. Leaves VHDX and an empty virtual machines folder |
| Specify Name and location has **Different location** checked. | Puts all the virtual Machine information and VHDX file in a directory specified in the Name field. |
| Deletion from Hyper-V Manager | When Virtual Machine is deleted, Hyper-V Manager leaves the folder, Virtual Hard Disks folder, Virtual Machines folder AND the VHDX file. |

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| **Different location checked and win2012 appended to the end.** | Creates the Virtual Machines directory from Name field IN the Win10 added to the end of the location puts VHDX file inside a virtual hard disks folder within the win10 folder |
| **When Virtual Machine is deleted from Hyper-V** | When Virtual Machine is Deleted leaves blank virtual machines directory and the Win10 folders and the Virtual Hard disks folder with a vhdx in it. |