

Introduction to Hyper-V

Boot into Windows Server 2008, DataCenter Edition to learn about Hyper-V. You can start Hyper-V from “Start menu → All programs → Administrative Tools → Hyper-V Manager”.

0.1 A. Basic operations

0.1.1 Managing VM

You can use menu option “Action → New → Virtual Machine” and create a new Virtual Machine. Try to store virtual machines in drive where there is sufficient space (>20GB). Try to create first virtual machine with Windows XP as guest OS. Do not boot/start the VM after creating. Right click on VM name and go to settings and browse through the extensive set of options provided by Hyper-V. After seeing all options you can start and connect to VM. Note that to come out of Hyper-V VM shortcut is ‘**Clt + Alt + Left arrow key**’.

If Windows installation start successfully then try to install 64-bit CentOS on another VM in parallel. Try all operations like reset, poweroff etc. on virtual machine. Also try to take screen-shot of guest and paste in paint application in base machine.

0.1.2 Managing snapshots

Try creating snapshots and revert to them. Notice like VMware, Hyper-V also provides tree like interface to show parent-child relationships among snapshots. This information also allows one to store snapshots efficiently using diff files. Also virtual machine need not be stopped while taking snapshots and hence process is transparent.

0.1.3 Adding devices

Try adding and removing virtual harddisks, CD Drives etc. Try to find how to connect USB drives to virtual machines. Most probably the option is not present. (Why?)

0.1.4 Virtual network manager

Start virtual network manager and create one internal (host-only) and one private (not_even_host) networks.

Notice that:

1. Mouse works pretty well compared to xen in Hyper-V VMs among various Operating Systems without any manual configuration.
2. We do not have to connect to VM to know what is going on. We can just click on VMs name and we can see screenshot of current items displayed on VM in Hyper-V Manager. Hence we do not have to remain connected to VMs if some OS installation is going on to know the progress of installation. We can close the connection and just click on VMs name in Hyper-V whenever we want to see the status of installation.

0.2 Integration services

Like VMWare tools can improve the performance of guest by installing drivers for Hyper-V we have something called integration services. For Windows XP guest use menu option “Action → Insert integration services setup disk” to install integration services for Windows XP guest OS.

0.3 Lab queries

1. Why option of adding USB devices to base machine was not considered important / not implemented in Hyper-V which comes with Windows Server 2008, Data center edition OS?
2. What happens to running VMS, if we reboot/shutdown Hyper-V server? Is this same as Xen? (First write answer as you have done 4 labs on Xen, then go ahead and actually try and see if your answer was correct.). Explain what happens when we try to reboot base machine with Xen VMs running, in as much detail as possible.
3. Mention difference between VMware tools output/effect on VM and output / effect of Integration services. (Hint: Try full screen-mode or resize of VM display area after installing integration services. Try drag-drop of file from base machine to VM). Also mention what changes happen after installing integration services on guest machine.
4. When we are connected to Hyper-V VM we get a clipboard menu which has option “Type clipboard text”. Try that option for Windows guest and then for Linux guest and then explain the difference? Does this difference has anything to do with integration services?
5. Compare ease of use of CentOS guest on Hyper-V wrt to Windows XP guest with Integration services. (Do you like Ctrl+Alt+Left arrow

combination which requires two hands over Ctrl+Alt combination used by vnc, virt-viewer, VMWare etc. which can be done with one hand? There is a Hyper-V settings option dialog where we can set mouse release key, default vm store path, etc.. It provides four different key combinations for releasing mouse from VM.)

6. Try shutdown option on CentOS guest. What can you tell about how shutdown option works in Hyper-V after trying to use shutdown option for CentOS guest?