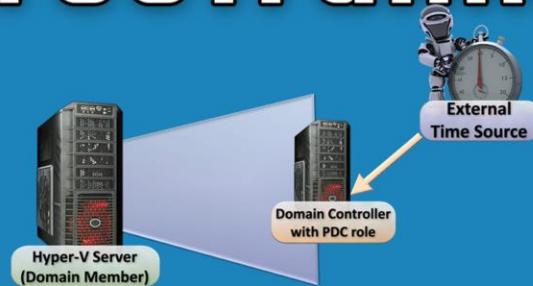


# ITFreeTraining



## Installing Hyper-V Integration Services on Windows

For the free video please see  
<http://itfreetraining.com/hyperv#/is-windows>

This video will look at installing integration services on Windows. Integration Services is a suite of software that, when installed on a virtual machine, improves the performance of the virtual machine.

# Windows Demonstration

00:23 To access Hyper-V Manager, launch server Manager by clicking the Server Manager icon in the quick launch bar.

00:30 From Server Manager, select the pull down menu tools and select “Hyper-V Manager”.

00:34 The newer operating systems will have integrated services installed. This may not be the latest version so you should check which version is installed and upgrade as required.

00:42 to get a better understanding of the services that integration services provides, I will open an operating system running Windows XP by double clicking the virtual machine. The virtual machine that is being used is a clean version of Windows XP in which nothing has been added. The older operating systems like Windows XP do not come with any pre-install version of integration services.

01:01 When the desktop of the Windows XP computer is selected, notice that the mouse is captured. When it is moved it will not be able to move outside the Windows XP desktop.

01:12 To release the mouse from the virtual machine, hold down the keys ctrl and alt and then press the left arrow key. When this done, there will be two mouse pointers. One in the Windows XP virtual machine desktop and another in the host operating system. Essentially what happens is that the virtual machine captures the mouse for use with only that virtual machine until it is released.

01:48 The Windows XP virtual machine will be closed and a virtual machine running Windows Server 2012 will be opened. Since Windows Server 2012 comes with integration services pre-installed, notice that the mouse can move freely between the virtual machine and the host desktop.

02:16 To install or upgrade integration services, select the action pull down menu and then select the option “Insert Integration Services Setup Disk”. This will mount the integration services setup image to the virtual optical drive running on the virtual machine.

02:35 To install integration services, open the optical drive on the virtual machine which will run the autorun and launch the setup. Since integration services is pre-installed on the operating system, a message will appear indicating a previous version exists and would you like to upgrade it.

03:03 If you move a virtual machine from one server to another server, it is worth taking the time to check to make sure the virtual machine has the latest version of integration services installed.

03:19 The install is quite simple, press o.k. to upgrade and the setup will do the rest. A number of device drivers will be upgraded and setup will prompt for a reboot when it is completed. Integration services is supported on Windows XP and Windows Server 2003 and above. Some older operating systems like Windows XP will require a service pack to be installed before you can install integration services.

03:54 To look at the setting that can be configured for integrated services in a virtual machine, I will right click one of the virtual machines and select settings.

04:10 To see what integrations services settings are available, select the option “Integration Services” under management. Five integration services are listed which can be switched on or off. Not all integration services are listed because some integration services do not need to be configured.

04:40 The option “Operating system shutdown” allows Hyper-V Management to issue a shutdown command to the virtual machine. This is the same effect as selecting the shutdown option in the start menu. Without this option, Hyper-V management would only be able to physically shut down the computer, the same effect as pulling the power plug out of the computer.

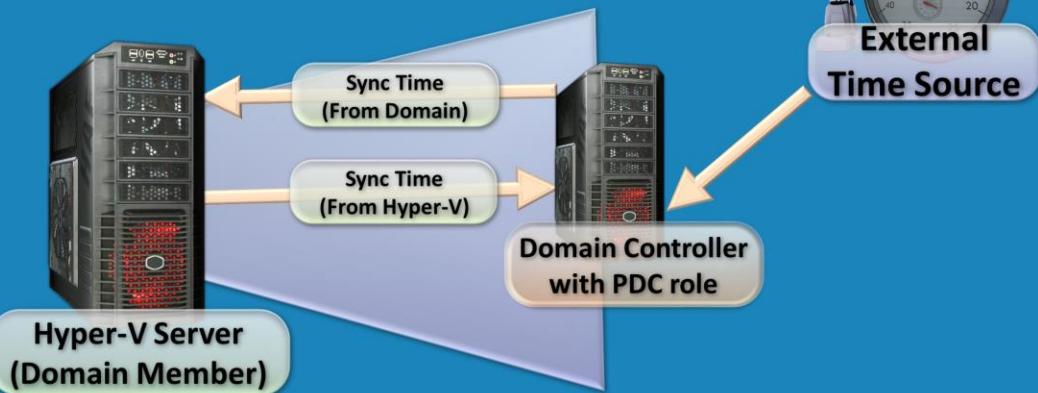
04:52 The option “Time synchronization” will sync the local computer’s time with the virtual machine’s time. In most cases this is a good idea as it prevents the virtual machine’s time from being inaccurate.

06:38 The option “Data Exchange” allows Hyper-V to obtain information about the operating system from the registry. Using this information allows Hyper-V to know what operating systems are being used and if any service packs have been applied. This allows Hyper-V to manage the virtual machine better.

07:02 The option “Heartbeat” allows Hyper-V to send a message to the virtual machine. The virtual machine in turn will send a message back to Hyper-V. If Hyper-V does not get this message back, it knows the virtual machine is unresponsive or has crashed.

07:26 The option “Backup (volume snapshot)” allows Hyper-V and the virtual machine to perform better when a snapshot is performed. A snapshot saves the current system state allowing it to be restored to that state at a later time. This includes all drive, memory and devices. Having this option ticked will mean there is less interruption to the virtual machine when a snap shot is performed.

# Time Sync Problems



05:08 If you run a domain controller in a virtual machine and allocate it the PDC role, this domain controller will sync its time to other domain members. In most cases, the domain controller will sync its time with an external time source. If the server running Hyper-V Server that is running the virtual machine is also in the domain this is where the problems come in. The domain controller will attempt to sync the members' servers time with its time which it is synced from an external time source. The problem occurs when the integration services attempt to sync the time in the virtual machine with the time on the Hyper-V server. If the times are pretty close, this may not cause too many problems unless you are running very time sensitive applications. However, if there is too much difference in the times, this can cause a large time skew as both servers fight with each other to change the time to what the other server thinks it should be.

See <http://YouTube.com/ITFreeTraining> or <http://itfreetraining.com> for our always free training videos. This is only one video from the many free courses available on YouTube.

## References

"Installing and Configuring Windows Server 2012 R2 Exam Ref 70-410" pg 147 - 148  
"Microsoft Hyper-V Integration Services"

<http://searchservervirtualization.techtarget.com/definition/Microsoft-Hyper-V-Integration-Services>

“Understanding and Installing Hyper-V Integration Services”

[http://www.virtuatopia.com/index.php/Understanding\\_and\\_Installing\\_Hyper-V\\_Integration\\_Services](http://www.virtuatopia.com/index.php/Understanding_and_Installing_Hyper-V_Integration_Services)

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