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## Virtualization with VMware Workstation

## **Installing Windows XP Guest OS**



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## Contents

This document will help you install **Windows XP** Guest Operating System under **Windows 7 32-bit** Host Operating System using **VMware Workstation** product. You would need a valid licence key of **Windows XP** in order to proceed.

Installing virtual operating system is very similar to installing an operating system on a physical PC / laptop. The only difference is that you are installing it in a virtualized environment of a Host Operating System where a particular virtualization product is mounted in order to create an environment for the system to host virtualized machines. So you would still need to have a separate licence for the Guest Operating System. For example, the following document described installing **Windows XP** Guest Operating System on a **Windows 7 32-bit** Host Operating System. Therefore, a valid licence is required for the Host Operating System which is installed on a physical machine, and another valid licence is also required for Guest Operating System which would be installed in a virtualized environment. Usually, the PC / laptop you have purchased would already come with an OEM licence of Windows 7 unless you are building your own machine from parts bought separately rather than buying a branded systems from Dell, Toshiba, etc. You would also require a valid licence of the virtualization product you will be using. We will be using 30 days evaluation licence of **VMware Workstation** product.

- 1. Please make sure that you have inserted the Windows XP installation CD in your CD / DVD Drive and note the CD / DVD Drive letter. In the following example, the CD / DVD drive letter is **E**:
- 2. Run "VMware Workstation" application by clicking Start -> All Programs -> VMware -> VMware Workstation as shown below:



Alternatively, you could also run "VMware Workstation" application by double-clicking on the desktop icon:



3. If you are running the application for the first time, you will be presented with the following:



Select "Yes, I accept the terms in the licence agreement", and then click "OK"

4. Click "<u>C</u>lose" when you are presented with the following:

VMware Workstation Activation	EF.	×
	Thank you for evaluating VMware Workstation! Your evaluation period ends in 28 days.	
	30     28 days left     0       Step 1: Buy VMware Workstation       Purchase a license key online at the VMware Store.	Buy Now
VMware*	Step 2: Enter license key Enter your license key to activate VMware Workstation.	Enter License Key
Workstation 9	Step 3: Register your version of VMware Workstation Receive the latest information and announcements about VMware, Inc. products and services, and the opportunity to receive 30 days of complimentary Web-based support.	Register
		Close

If you have a full licence product and would like to register for update, you could do so. We will not be covering that option in our demonstration.

 You will then be presented with the following and ready to begin the installation of the Windows XP Guest Operating System:



6. Click "Create a New Virtual Machine"



Select "<u>Typical (recommended)</u>" option, and then click "<u>Next</u> >" when you are presented with the following:



8. Click "<u>Next</u> >" when you are presented with the following:

Guest Operating 9 A virtual machin system. How wi	System Installation ne is like a physical computer; it needs an operating ill you install the quest operating system?
install from:	
() Installer <u>d</u> isc:	
DVD RW Drive	re (E:) 🔻
This operating     Installer disc image	ig system will use Easy Install. <u>(What's this?)</u> je file (iso):
	▼ Browse
© I will install the op	✓ Browse  Perating system later.  ne will be created with a blank hard disk.
○ I will install the op The virtual maching	✓ Browse  Derating system later.  ne will be created with a blank hard disk.

9. Please enter a valid Windows XP licence key. Then enter a user name and a secure password of your choice. You could also select the option "Log on <u>a</u>utomatically (requires a password)" if you would like to avoid having to type in the password in order to log in and use your Guest Operating System. After you have completed all the information required, click "<u>Next</u> >" when you are presented with the following:

This is	used to install Windows 7.	
/indows produ	uct <u>k</u> ey	
ersonalize Wir	ndows	
Eull name:	Test	1
Password:	•••••	(optional)
<u>C</u> onfirm:	•••••	
V Log on a	utomatically (requires a password)	

10. Give the name of the virtual machine to be created and the location where it is going to reside on your

PC / laptop, then click "<u>N</u>ext >" when you are presented with the following:

Name the Virtual Machine What name would you like to use for this virtual machine	?
/irtual machine name:	
Windows XP Professional	
ocation:	
C:\Users\Test\Documents\Virtual Machines\Windows XP Profe	ss Browse
The default location can be changed at Edit > Preferences.	

11. Select the option "Store virtual disk as a single file", and then click "Next >" when you are presented with the following:

	Specify Disk Capacity How large do you want this disk to be?
1	The virtual machine's hard disk is stored as one or more files on the host computer's physical disk. These file(s) start small and become larger as you add applications, files, and data to your virtual machine.
1	Maximum disk size (GB): 40.0 🚔
F	Recommended size for Windows XP Professional: 40 GB
1	Store virtual disk as a single file
5	Split virtual disk into <u>m</u> ultiple files
	Splitting the disk makes it easier to move the virtual machine to anothe computer but may reduce performance with very large disks.

12. Click "Customize Hardware..." when you are presented with the following:

The virtual machine v	will be created with the following settings:	_	
Name:	Windows XP Professional		
Location:	C:\Users\Test\Documents\Virtual Machines\Windo.		
Version:	Workstation 9.0		
Operating Syst	Windows XP Professional		
Hard Disk:	40 GB		
Memory:	256 MB	2	
*			
Customize Hardw	are		

13. The purpose of this demonstration is to virtualize **Windows XP** so that it would give us legacy resources. Therefore, click "<u>Add...</u>" when you are presented with the following:

Device	Summary	Memory
Memory Processors New CD/DVD ( Floppy Network Adapter USB Controller Sound Card Printer Display	256 MB 1 Using drive E: Auto detect NAT Present Auto detect Present Auto detect	Specify the amount of memory allocated to this virtual machine. The memory size must be a multiple of 4 MB. Memory for this virtual machine: 256 MB 4 GB - 2 GB - 16 GB - 8 GB - 16 GB - 128 MB - 16 MB - 128 MB - 16 MB - 128 MB - 16 MB - 128 MB - 128 MB - 128 MB - 16 MB - 128 MB - 12
	Add	ove

14. Under the section "Hardware", select and highlight "Serial Port", and then click "Next >" when you are

presented with the following:

What type of hardware do y	ou want to install?
Hardware CD/DVD Drive Floppy Drive Network Adapter USB Controller Sound Card Parallel Port Serial Port Printer Capazie SCSI Device	Explanation Add a serial port.

15. Select the option "Use <u>physical serial port on the host</u>", and then click "<u>Next</u> >" when you are presented with the following:

Serial Port Type What media should the	nis serial port access?	
Serial port		
Use physical serial port o	n the host	
🔘 Output to <u>f</u> ile		
Output to named pipe		

16. Select the serial port of the add-in / add-on card installed in your Host Operating System from the "<u>P</u>hysical serial port" drop down list, select the option "Connect at power <u>o</u>n", then click "Finish" when you are presented with the following:

What physical device	should this serie	al port connect to?	
Physical serial port		200	
COM4		•	
Device status			
Connect at power on			

Please note that for this demonstration, the Host Operating System has an ExpressCard product **XC-475** installed with one Serial Port which is loaded as **COM4**, and one Parallel Port which is loaded as **LPT3**. They are installed as **"COM4**" and **"LPT3**" in my machine as shown below:

Ports (COM & LPT)
 Brainboxes ECP Parallel Port (XC-475) (LPT3)
 Brainboxes RS-232 Serial Port (COM4)

You might have a different COM Port label **COM3**, **COM4** and so on. Please select the correct COM Port label to map accordingly by checking the "**Ports (COM & LPT)**" section under **Device Manager**. For example, if you have installed the Serial Port of **XC-475** as **COM5** on your machine, you will have to select "**COM5"** from "**Physical serial port**" drop-down list.

17. Click "Add..." when you're presented with the following:

Device	Summary	Device status
Memory	256 MB	
Processors	1	Connect at power on
New CD/DVD (IDE)	Using drive E:	Connection
Floppy	Auto detect	Use physical serial port:
Network Adapter	NAI	Se prysical serial por c.
Sound Card	Present Auto dotoct	COM4 👻
Printer	Present	O Use output file:
Serial Port 2	Using port COM4	Browse
Jisplay Aut	Auto detect	© Use named pipe:
		This end is the server. $\checkmark$
		The other end is a virtual machine.
		I/O mode
		Yield CPU on poll
		Allow the guest operating system to use this serial port in polled mode (as opposed to interrupt mode).
	Add Remo	ve

18. Under the section "Hardware", select and highlight on "Parallel Port" and then click "<u>Next</u> >" when you are presented with the following:

d Hardware Wizard	
Hardware Type What type of hardware do y	ou want to install?
Hardware	Explanation
CD/DVD Drive Floppy Drive USB Controller Sound Card Parallel Port Serial Port Printer	Add a parallel port.
Generic SCSI Device	< Back Next > Cancel

19. Select the option "Use physical parallel port on the host", and click "Next >" when you are presented

with the following:

Parallel Port Type What media should t	nis parallel port acc	ess?	
Parallel port			
Use physical parallel port	on the host		
Output to file			

20. Select the parallel port of the add-in / add-on card installed in your Host Operating System from the "Physical parallel port" drop down list, select the option "Connect at power on", then click "Finish" when you are presented with the following:

What physical devic	e should this	parallel port	connect to?	
Physical parallel port	N 100 100 100 100 100 100 100 100 100 10	<u></u>		
LPT3		•		
Device status				
Connect at power on				

You might have a different LPT Port label LPT4, LPT5 and so on. Please select the correct LPT Port label to map accordingly by checking the "Ports (COM & LPT)" section under Device Manager as described in Step 16. For example, if you have installed the Serial Port of XC-475 as LPT4 on your machine, you will have to select "LPT4" from "Physical parallel port" drop-down list.

21. Click "Close" when you are presented with the following:

Device	Summary	Device status
Memory	256 MB	Connected
New CD/DVD (TDE)	1 Using drive Et	
Floppy	Auto detect	Connection
Network Adapter	NAT	Ose physical parallel port:
USB Controller	Present	LPT3 👻
Sound Card	Auto detect	O Use output file:
Parallel Port	Using port LP13	Revers
Serial Port 2	Using port COM4	Di OWSE
Display	Auto detect	
	Add <u>R</u> emove	

- 22. Please note that the label "Serial Port 2" under the "Device" column indicates that you would have to use "COM2" in the Guest Operating System in order to access the add-in / add-on serial port "COM4" of the Host Operating System. Remember to use "COM2" when you are running your own application inside the Guest Operating System. If what you see on Step 21 says "Serial Port 1", then you would have to use "COM1", for "Serial Port 3" use "COM3", and for "Serial Port 4" use "COM4" inside the virtual machine and so on.
- 23. Click "Finish" when you are presented with the following:

Professional a	nd then VMware Tools. will be created with the following settings:	
Name:	Windows XP Professional	
Location:	C:\Users\Test\Documents\Virtual Machines\Windo	.[
Version:	Workstation 9.0	
Operatin <mark>g</mark> Syst	Windows XP Professional	
Hard Disk:	40 GB	ł
Memory:	256 MB	
2	m •	

24. VMware Workstation application will start the Windows XP Guest Operating System installation

process, and you will be presented with the following:

Windows XP Professional - VMware Workstation
ile Edit View VM Iabs Help ▶ -
brary     ×       Q. Type here to search     Image: Windows XP Professional       Image: Windows XP Profession     Image: Windows XP Profession
vmware <sup>®</sup>
к ) ) (

Please wait patiently for the whole installation process to finish as this could take a while depending on the performance of your PC / laptop. What you see will be different from the screen shot shown above as the installation of the Guest Operating System progresses through different stages.

25. Please click "OK" if you are presented with something similar to the following and also select the option "Do not show this hint again" so you will not be prompted again about Removable Devices which are plugged in to your PC / laptop:





26. Finally, you would be presented with the following after the end of the long installation process:

- 27. Next, we will discuss how to start and shutdown the Windows XP Guest Operating System.
- 28. In order to shut down the Guest Operating System, the user could press "Start -> Turn Off Computer" inside the Windows XP Guest Operating System as shown below:



29. Alternatively, the user could also click "VM -> Power -> Shut Down Guest" option as shown in the following to shut down the "Windows XP" Guest Operating System:

<u>Eile E</u> dit <u>V</u> iew	٧ <u>M</u>	<u>I</u> abs <u>H</u> elp				
II •   &   *	C	Power	,		Power On	Ctrl+B
ibrary Q. Type here to s	۲	Removable Devices Pause	► Ctrl+Shift+P		Power Off Suspend	Ctrl+E Ctrl+J
⊟ I My Comput Window	品	Send Ctrl+Alt+Del Grab Input	Ctrl+G	G	Reset Start Up Guest	Ctrl+R
🖞 Shared VMs	0	Snapshot Capture Screen Capture Movie	► Ctrl+Alt+PrtScn		Shut Down Guest Suspend Guest Restart Guest	
	P	Manage Reinstall VMware Tools	*		Power On to BIOS	
	5P	Settings	Ctrl+D			

Click "Shut Down" when you are presented with the following:

VMware	Workstation	×
?	Are you sure you want to shut down operating system for "Windows XP Pr	the guest ofessional"?
	Do not show this message again	Cancel

Select the option "**Do not <u>show</u> this message again**" if you do not want to be prompt again to confirm the shutdown process of the **Windows XP** Guest Operating System:

VMware	VMware Workstation				
?	Are you sure you want to shut down the guest operating system for "Windows XP Professional"?				
	☑ Do not show this message again				
	Shut Down Cancel				

30. To start **Windows XP** Guest Operating System, select and highlight on the virtual machine name on the left, and then click "**Power on this virtual machine**" as shown below:



## Version History

Version	Date	Author	Checked By	Comments
1	12/06/2013	Seng Seng Du	R&D	