

Sun City Summerlin Computer Club

Introduction to Virtual Machines

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Virtual Machines

Agenda

- Virtual Machines – What Are They?
- Virtual Machines – How Used?
- Popular Virtual Machine Choices
- Host System Hardware Requirements
- Demo 1 - Creating An Empty Virtual Machine
- Demo 2 - Installing Windows XP in a VM
- *Bio Break (during the install)*
- Demo 3 - Optimizing a Virtual Machine
- Compatibility Issues
- Web Links

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Virtual Machines - What Are They?

- **Software Program That *Emulates* a Hardware PC**
 - The virtual machine hardware is described in a configuration file.
 - The virtual machine's hard drive(s) are just files on the host computer.
 - Very easy to make copies for backup, cloning.
- **Once a virtual machine has been created ...**
 - You can install an operating system into it (e.g. Windows, LINUX or DOS).
- **A virtual machine is started like any other program ...**
 - Just click a shortcut icon on the desktop.
- **You can move between the virtual machine and the Host PC OS.**
 - Drag and drop files
 - Copy & Paste via the clipboard
 - Create drive maps between VM and Host

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Virtual Machines – How Used?

- **Backward Compatibility**
 - Old software can be run in VM on an older guest OS.
 - Running an older OS can ease learning curve for new OS.
- **Test Bed**
 - Keep a VM version of your Host OS (plus a backup).
 - Install new software, hot fixes, etc in the VM and test.
 - If VM gets corrupted, just replace it with the backup.
- **Easy backup**
 - A VM is just a set of files in a folder.
 - Very easy to copy them to / from a backup drive.
- **Hardware Consolidation**
 - Instead of two or three separate PCs, can re-create as separate VMs on a single large PC.
 - Saves power, desk space, clutter.

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Popular Virtual Machine Choices

- **Microsoft Virtual PC 2007 (Windows XP /Vista)**
 - Free download from microsoft.com
- **Innotek VirtualBox (Windows XP / Vista) (Linux)**
 - Free download from virtualbox.org
- **VMWare Workstation and VMWare Player**
 - \$189 download from VMWare, the player is free
- **Xen Virtual Machine Manager (Linux)**
 - Free, Open Source
- **Parallels Desktop (Mac)**
 - \$80 from parallels.com, may be cheaper elsewhere
- **VMWare Fusion (Mac)**
 - \$59 Download from VMWare.com

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Host PC System Requirements

- **Recommend 2 GB or more of RAM**
- **Reasonably high-end CPU**
 - 1.8 GHz+ Core 2 Duo or equivalent AMD
- **Adequate free hard drive space**
 - Depends on the size of your virtual drive
- **Operating System**
 - Windows XP or Vista
 - Windows 2003 server
 - Linux Desktop or server
 - Mac OS 10.3 or later

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Demo 1 - Create an Empty VM

- Start the Virtual Machine program
- Click “New Virtual Machine” (or similar)
- Follow the Step by step screens
 - Choose a name to use in saving the virtual machine
 - Specify the guest operating system (e.g. Win XP)
 - Configure memory size
 - Configure hard disk size
 - Finish

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Demo 2 – Installing Windows XP

- Place the Windows XP setup CD in the drive
- “Start” the [empty] virtual machine
- If the virtual BIOS doesn’t detect the CD, check the menus at the top. Enable the CD.
- Follow the step by step for the XP setup.
 - Format the empty virtual hard drive
 - Enter the product key.
 - Answer other setup questions
 - Finish the setup
- Final reboot into Windows XP
- Create a desktop shortcut on the Host OS desktop.

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BIO BREAK

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Demo 3 – Optimizing a VM

- Each Virtual Machine manager has an option to install an “additions” package in the guest OS.
 - Set of drivers that make the guest OS aware it’s running in a virtual machine.
 - Speeds up the guest OS
 - Allows the mouse to move transparently between host & guest
 - Allows clipboard operations between host & guest
 - Allows file copy operations between host & guest
- Run the setup for this from the Virtual Machine manager’s menu.
- Other configuration options:
 - Startup display (windowed, full screen), resolution
 - Network (native NIC or use VM’s NAT mode)
 - Virtual CDs and Floppys (can point to an image file)

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A Few Compatibility Issues

- **VPC 2007**
 - Doesn't access host's USB ports
 - Virtual CD drive is a CD-ROM (no burning)
 - Virtual video card (S3) doesn't support Vista Aero
- **VirtualBox**
 - Some issues with Caps lock (at least on HP keyboards)
 - Virtual CD drive is a CD-ROM (no burning)
- **VMWare 6**
 - Virtual CD drive is a CD-ROM (no burning)
- **Parallels Desktop**
 - Doesn't access host's USB ports

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Virtual Machine – Web Links

- <http://www.microsoft.com/windows/products/winfamily/virtualpc/default.mspx>
- <http://www.parallels.com/>
- <http://www.virtualbox.org/>
- <http://www.vmware.com/>
- <http://www.xensource.com/Pages/default.aspx>

- http://blogs.msdn.com/virtual_pc_guy/

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Questions And Answers

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