



Virtualization

Microsoft Windows

Apple Mac OS X

Jose Francisco Medeiros
MCP + I, MCSE, MCT on NT v3.51 & 4.0



What is Virtualization and who are the Vendors?

Microsoft Windows Operating Systems:

- Microsoft Virtual PC (Formerly Connectix)
- VMware Workstation and Server
- Parallels WorkStation
- Sun Virtual Box

Apple Mac Operating Systems:

- Microsoft Virtual PC on Power Pc based Mac's
- VMware Fusion on Intel X86 based Mac's
- Parallels Desktop on Intel X86 based Mac's.
- Virtual Box on Intel X86 based Mac's.



What type of CPU do I need?

- **Microsoft Virtual PC 2007 and earlier release & VMware can install and run with CPU's that do not support the virtualization instruction set.**
- **To enable Hardware based acceleration your CPU must support Intel VT or AMD-V. This feature may be disabled in your bios and require that you enable it for better Virtual machine performance.**
- **Intel VT most core 2 duo CPU's and newer models have the VT instruction set.**
- **AMD-V Virtual Instruction set was added to the Athlon 64 x2 CPU's and newer models.**
- **The key to better performance is RAM.. Make sure you have enough installed RAM allocated to each VM, and enough for your host Operating System.**



Advantages to Virtualization

- **Microsoft and VMware provide free trials of prebuilt Virtual Machines which easily allow you to try a different operating system with out having to install it on your computer or dual boot.** <http://www.microsoft.com/events/vlabs/default.aspx>
- **VMware supports snapshots and clones.**
- **Microsoft Virtual PC supports undo disks which allows you to revert to the original settings of the VM should you download a Trojan or virus while browsing using your virtual machine.**
- **Microsoft and VMware both offer a free tool to convert a physical disk with an operating system to a Virtual machine which eases data and application migration should an application not be supported on new hardware and or on a new release of an Operating system.**
- **VMware Workstation supports USB external devices.**
- **Latest version of Microsoft PC in XP mode for Windows 7 now also supports USB external devices.**



Mac OS X x86 Virtualization Screen Shot

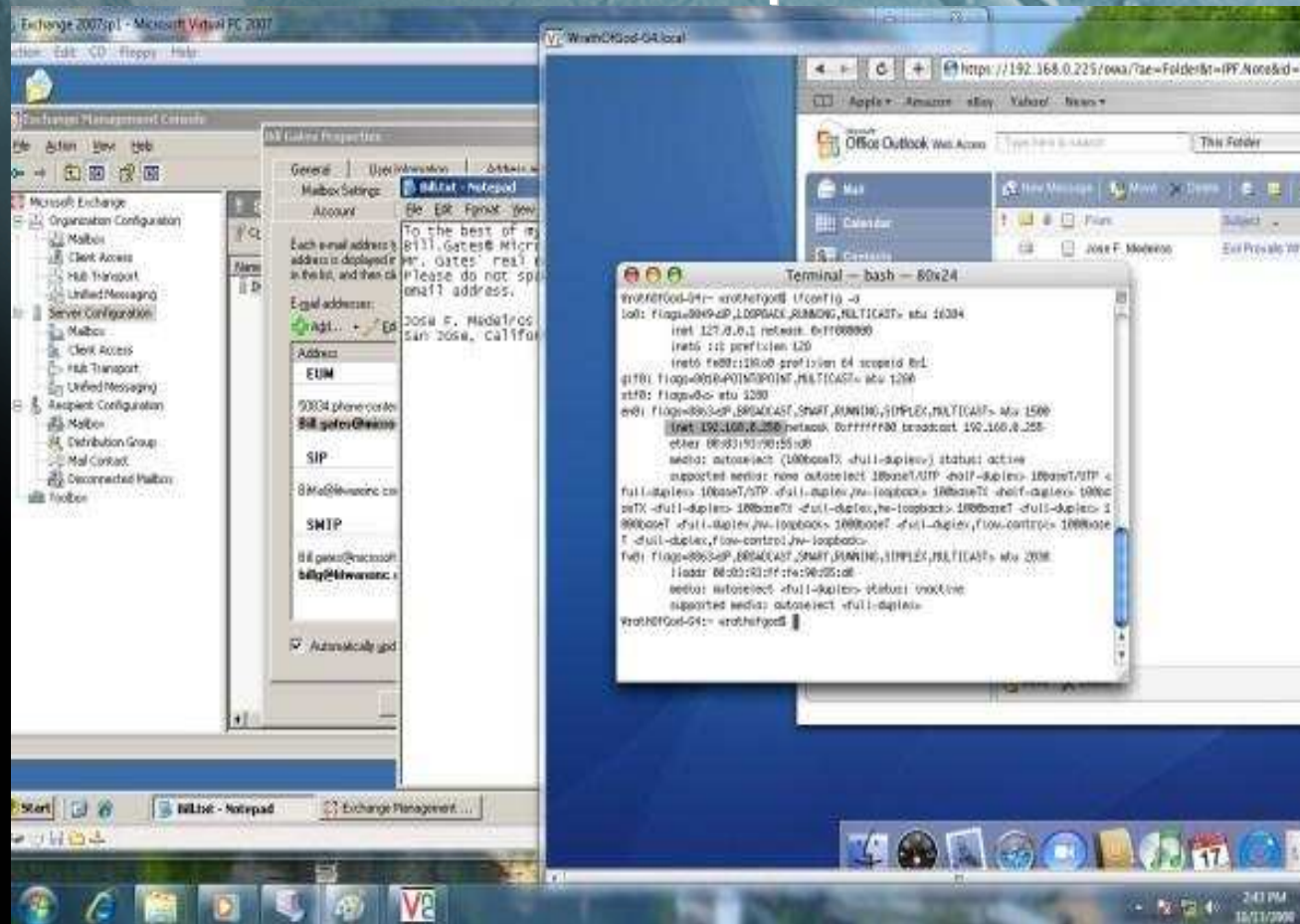
- In this screen capture I am running Mac OS X86 developer edition in VMware Workstation 5. I created this Virtual Machine as a proof of concept in October of 2005, prior to the Intel based Mac OS X release to the public in January of 2006 at Mac World.



IBM

Microsoft Exchange 2007 Virtualization Screen Shot

- **In this screen capture I am running Microsoft Exchange 2007 as a virtual machine and am testing Outlook Web access on my Mac using VNC to connect to the Mac OS X desktop.**



Suse Linux 10 server Virtualization Screen Shot

- **In this screen capture I am running SUSE Linux server 10 as a virtual machine on VMware Workstation.**



Virtualization Questions and Answers and Demo



Virtualization Resources

Microsoft Virtual PC: <http://www.microsoft.com/windows/virtual-pc>

VMware: www.vmware.com

Parallels: <http://www.parallels.com/>

Virtual Box: <http://www.virtualbox.org/>

Tools that I used to create VM's.

WinImage: <http://www.winimage.com/>

Floppy Image Creator: <http://www.tanontech.com>

Virtual CD Drive: <http://www.alcohol-soft.com/>

Magic Disc Virtual CD-Rom: <http://www.magiciso.com/tutorials/miso-magicdisc-overview.htm>

Virtual Floppy Drive (VFD): <http://chitchat.at.infoseek.co.jp/vmware/vfd.html>

