2009 System x and BladeCenter Technical Conference

July 27 – July 31, 2009 – Chicago, Illinois

Run “vSphere in a box” on your laptop, to learn, demonstrate, and test vCenter, ESX4/ESXi4, VMotion, HA, and DRS.

Session ID: XVI50

Paul Braren, IBM Systems Lab Services & Training

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Does the idea of having a self-contained VMware infrastructure, complete with shared LAN and SAN resources, sound appealing to you? The potential for demonstration and training is enormous, and has been field tested by IBM Systems Lab Services. Imagine being able to explain and demonstrate the differences between ESX and ESXi to customers considering IBM servers bundled with VMware software, without reliance on lab or internet connectivity.

Prepare for pre-sales meetings, production deployments, or even VMware certification exams, at minimal cost, using just your laptop. VMware Workstation with iSCSI shared storage will be featured. Come see the configuration walk-thru and live demonstration!

Having taught about a half-dozen VMware JumpStarts and performed hundreds of VMware converter migrations, I've met many individuals who get excited about learning more about VMware products and features. I've been asked about how to run ESX based products right on a laptop or desktop, since most don't have fibre channel equipped labs at their disposal.

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Attended VMworld 2007, where a USB key was given to all attendees with a beta of ESXi. A few VMware forum members and I used “creative” imaging of the USB key, and found ways to share it, and run it as a VM.

This got significant attention in the VMware community forums, even though it couldn’t yet run a “nested” VM yet. Just booting ESX was a big deal in a VM then.

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Attended VMworld 2008, inspiring me to get active in the forums again. Discovered some posts I made about how to get ESX 3.5 working in a VM were getting attention, including a Camtasia video “how to” I created.

Now, this summer, with vSphere just out and its ESX 4.0 and ESXi 4.0 pieces, I figured it was time to look carefully again at capabilities to run it all “in a box,” and take it to the next level by integrating shared storage to test vMotion, etc.

I really wanted to know how viable a solution this is for self-training for example, and to share just how to do it. The emphasis is on convenience, not on raw speed or power. I would like to do a step-by-step document as well, time-permitting.

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First off, credit is due here for the excellent, just in time, step-by-step documentation provided by xtravirt.com's Paul Buckle, first published in late June 2009, only about a month after vSphere was released.

Tips to follow:

How to Install VMware ESX 4.0 on Workstation 6.5.2 as a VM

http://xtravirt.com/xd10089

How to Install VMware ESXi 4.0 on Workstation 6.5.2 as a VM

http://xtravirt.com/xd10090

Above directions have a pdf that will give you an issue with cut and paste:

monitor_control.restrict_backdoor = "TRUE"

should instead be:

monitor_control.restrict_backdoor = "TRUE"

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Tips:

use private networking, allows use in any situation, even when physical wired or wireless network isn't attached, such as my demo rig during this demonstration

the VM for vCenter can have a 2nd routable NIC to the internet, allowing additional flexibility, easy updates, and even NTP time source and serving

reduce the ESX and ESXi memory footprint

2GB required during install, but can be reduced afterward with this trick

http://www.yellow-bricks.com/2009/05/08/running-vsphere-within-workstation-will-take-up-a-lot-of-memory

How to configure OpenFiler iSCSI Storage for use with VMware ESX

http://www.vladan.fr/how-to-configure-openfiler-iscsi-storage-for-use-with-vmware-esx

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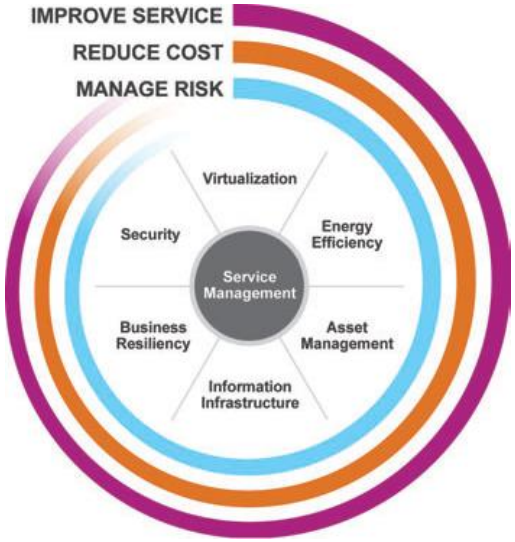
IBM's smarter planet –

Dynamic Infrastructure



Where does vSphere in a box fit?

- Improve Service
- Reduce Cost
- Manage Risk

Seven primary initiatives:

- Service Management
- Asset Management
- Virtualization
- Energy efficiency
- Business Resiliency
- Security
- Information Infrastructure

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So you may have noticed this title I created for this talk months ago was purposely a bit vague:

“Run your VMware datacenter on a laptop, to demonstrate and test VirtualCenter, ESX/ESXi, VMotion, HA, and DRS”

Luckily, I’m now able to demonstrate a largely fully functioning set of 4 VMs, that work in concert to demonstrate successful VMotion of “nested VMs.”

So the focus is on the planned live demonstration of this all actually working, and of course plenty of time planned for questions.

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Here's the system requirements to run all 4 below VMs concurrently:

Intel VT-d capable machine, 8GB RAM, 64 bit operating system

ESX Server 4.0

The following software is required:

- VMware Workstation 6.5.2 (Build 156735) – presumed to already be installed
- VMware ESX Server 4.0 (Build 164009) ISO image

This installation was tested on a Lenovo T60 laptop computer with the following specification:

- Intel Mobile Core 2 Duo T5600 1.83GHz CPU
- 2GB RAM
- Intel PRO/1000PL Ethernet NIC
- Windows XP Professional with SP3
- VMware Workstation 6.5.2 (Build 156735)

Note: The VMware ESX 4.0 installer will abort if it detects less than 2GB RAM, so the machine running VMware Workstation must have a minimum of this amount of RAM installed. If, as in this example, 2GB RAM is all that is installed, it will also be necessary to configure VMware Workstation to allow most of the VM's RAM requirements to be swapped out to disk. See section 2.1 below.

*above info is from xtravirt.com

2GB of RAM assigned to VM for install, 1GB afterward

ESXi Server 4.0

The following software is required:

- VMware Workstation 6.5.2 (Build 156735)
- VMware ESXI 4.0 (Build 164009) ISO Image

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2GB of RAM assigned to VM for install, 1GB afterward

VMware vCenter Server 4

Build 162902 21 May 2009

Windows 2008 Standard, SP1 x64

1GB of RAM for VM

OpenFiler iSCSI Storage for use with VMware

Linux-based 32 bit VMware Virtual Appliance (largely preconfigured)

1/2GB (512MB) of RAM for VM

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Configuration Overview

ESX Server 4.0
1GB RAM
192.168.152.3
esx40.xtravirt.lab

ESXi Server 4.0
1GB RAM
192.168.152.4
esxi40.xtravirt.lab

OpenFiler iSCSI
shared storage
512MB RAM
192.168.152.5
openfiler.xtravirt.lab

VMware vCenter Server 4
2GB RAM
192.168.152.2
vcenter.xtravirt.lab

Lenovo ThinkPad W700

Intel Core 2 Extreme Q9300 (Quad) 2.53GHz
8GB RAM with Vista Ultimate SP2 x64
Intel X-25M SSD 80GB C:
RAID0 2x500GB 7200.4 D:
Intel VT-d BIOS feature on

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Configuration Overview

ESX Server 4.0
1GB RAM
192.168.152.3
esx40.xtravirt.lab

ESXi Server 4.0
1GB RAM
192.168.152.4
esxi40.xtravirt.lab

OpenFiler iSCSI
shared storage
512MB RAM
192.168.152.5
openfiler.xtravirt.lab

VMware vCenter Server 4
2GB RAM
192.168.152.2
vcenter.xtravirt.lab

Lenovo ThinkPad T61p

Intel Core 2 Duo T7500 (Dual) 2.20GHz
4GB RAM with Vista Ultimate SP2 x64
Internal C: drive 320GB 7200 rpm
External D: drive 200GB (USB 2.0)
Intel VT-d BIOS feature on

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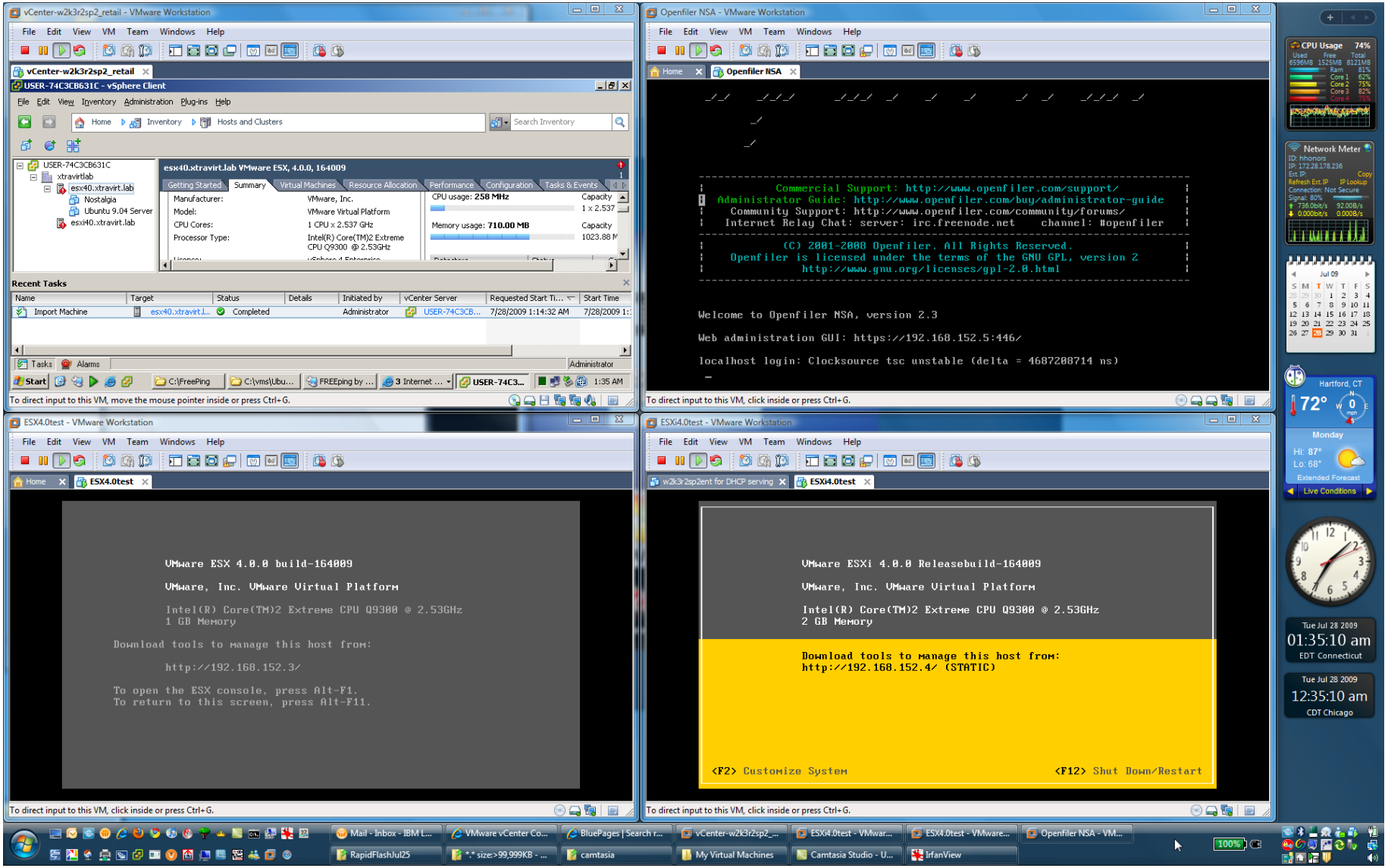
Finally, it's Demo Time!



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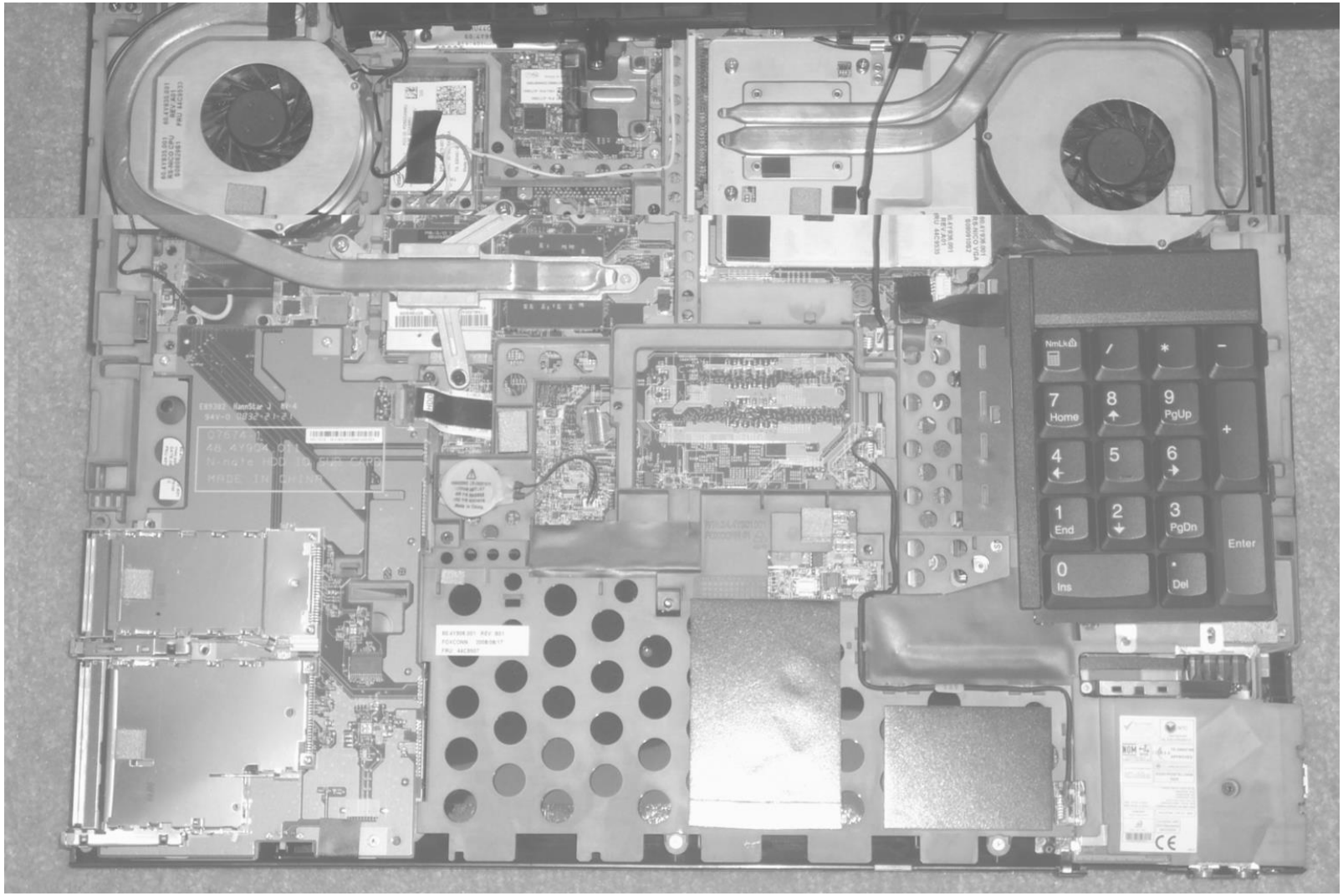
Questions?



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