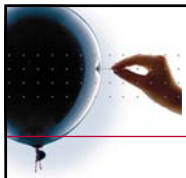




Virtual Test Environments: Making life easier

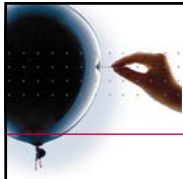
Robert Krouwel & Dave van Stein



Virtual Test Environment

- ✓ Introduction
- ✓ What is a VTE
- ✓ Possibilities
- ✓ Advantages & Disadvantages
- ✓ Small Demo
- ✓ Constructing a VTE
- ✓ Discussion



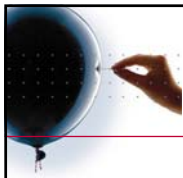


What is a VTE

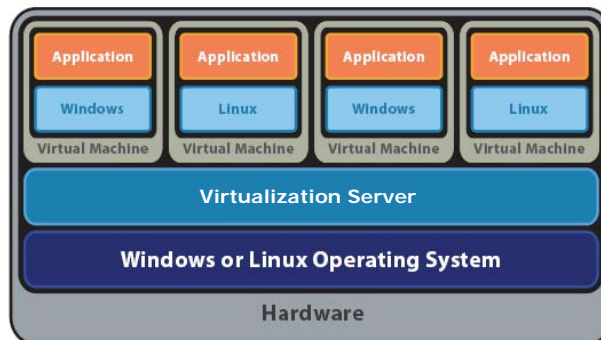
A VTE is a dynamic environment that :

- simulates and behaves as a real system.
- can be created with all advantages and disadvantages you want.
- can run parallel to other (virtual) environments
- can be rebuild and replicated in seconds.

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Schematic Overview



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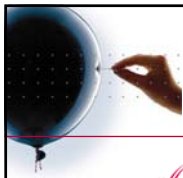
Possibilities of a VTE

- ✓ Learning Center
 - provide customers with skilled test engineer/consultants
- ✓ Training Center
 - internal/external tool training
- ✓ Demonstrations & Presentations
 - commercial or open source tools
- ✓ Test Center
 - commercial potential, remote testing for customers, outsourcing, etc



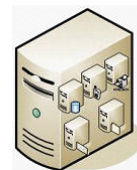
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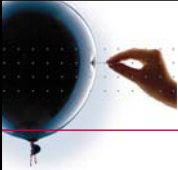
Learning & Training

- ✓ Centralized storing
 - No distribution, not limited to location, all-in-one package
- ✓ Central management
 - Updates & licenses easily managed
- ✓ Remote access
 - Testers can always access the (latest) tools





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Learning environment: an example




 **Consultant discovers a new tool**





1 month later....

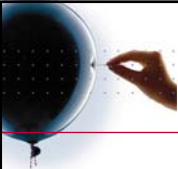

Will it work on

   **Does the new tool also work on?**

 **Is it only local or?**

 **Great it works**


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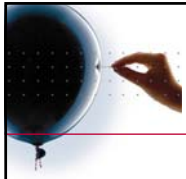


Other Examples

- ✓ Use performance test tool against server
- ✓ Try to hack a vulnerable server without risk
- ✓ Gain experience with Linux/Solaris/etc
- ✓ Gain experience with tool / application X
- ✓ Use your imagination !!

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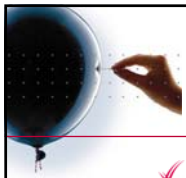




Added value of a VTE

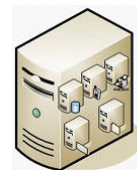
- ✓ A VTE will help to:
 - prevent frequently reinstalling computers
 - stay familiar with the latest tools
 - reduce hardware costs
 - reduce licensing fees

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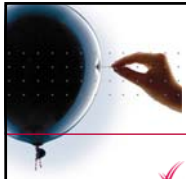
Demonstrations & Presentations

- ✓ Real-time, live environment
Dynamic interaction
- ✓ Low risk due to controlled baseline
No surprises during demo
- ✓ Interchangeable; not limited to 1 machine
VM's can be cloned
- ✓ Independent of available resources
Everything you need, you can virtualize



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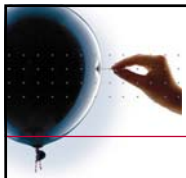
Testing Center

- ✓ Simulate a customer's environment
Controlled environment
- ✓ Outsourcing of testing easier
- ✓ Provide a customer with experienced testers
shorter start-up times



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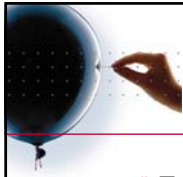


Advantages

- ✓ No installation (when VM is created)
- ✓ Multiple platforms simultaneously
- ✓ Host OS independent
- ✓ Prevents unwanted interaction
 - Databases, drivers, licenses
- ✓ Rebuilding and replication in seconds
- ✓ Can be 'read-only'
 - No risk of damaging
 - No pollution from other tests

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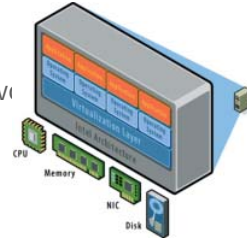


Disadvantages

- ✓ Each VM is a real machine
 - Memory, Disk space, CPU time, network
 - Limited by host hardware
 - 1 user at a time
 - Hardware dependent licenses

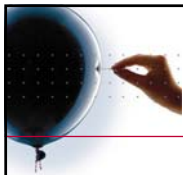
- ✓ Limited choice of virtualised hardware
 - SVGA, 100Mbit network, max 2 CPU
 - USB support limited

- ✓ Not 100% compatible (but 99+%)



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The added value for a tester

- ✓ Getting familiar with the latest tools.
- ✓ More opportunities to learn and train.
- ✓ Having a playground to open your mind.
- ✓ Tune up your CV with new knowledge.
- ✓ Be creative. Any added values you can think of?



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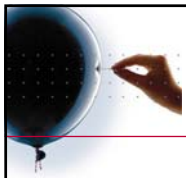
Business opportunities

✓ What are the results you want to achieve?

- Provide your customers with skilled consultants.
- Provide your customers a chance to test the latest tools and software without the need of buying new hardware and software.
- To be prepared for everything that is going to be new in your business. (one step ahead, means deal or no deal)



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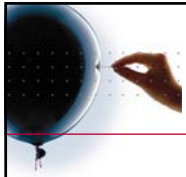
Small Demo

Hacking HacmeBank with Samurai



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Constructing a VTE

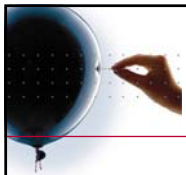
- ✓ Determine scope, opportunities, objectives

- ✓ Define requirements
 - Local or remote
 - Select tools
 - Identify additional software

- ✓ Create Project Plan & Budget

- ✓ Purchase hard-, software and licenses

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Modes of operation

- ✓ Completely remote:
 - Logon to VTE (local or VPN)
 - All VM's run on server

- ✓ Semi remote
 - Use local VM to access VTE

- ✓ Local
 - Run VM on laptop

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Common Virtualization Tools

VMware Fusion
 VMware Server
 ESX Server
 Virtual Infrastructure for the Enterprise
 VirtualBox
 Windows Server Hyper-V
 Xen.org
 Microsoft Virtual Server 2005 Standard Edition
 Microsoft Virtual PC
 QEMU open source processor emulator

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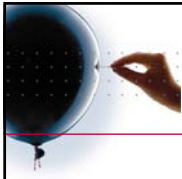
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Virtualised software

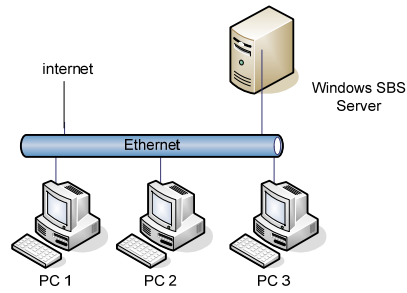
- ✓ Desktop virtualization and server virtualization:
 - ✓ Windows Server 2000, 2003, 2008
 - ✓ Windows Vista, XP, 2000, 98, 95
 - ✓ Linux, Unix, BSD, Solaris
- ✓ Various Databases
- ✓ Various Web servers
- ✓ Various Applications
- ✓ Various Tools
- ✓ Etc. Etc. etc

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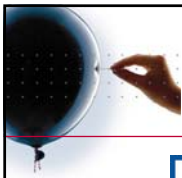


Example: Small Scale

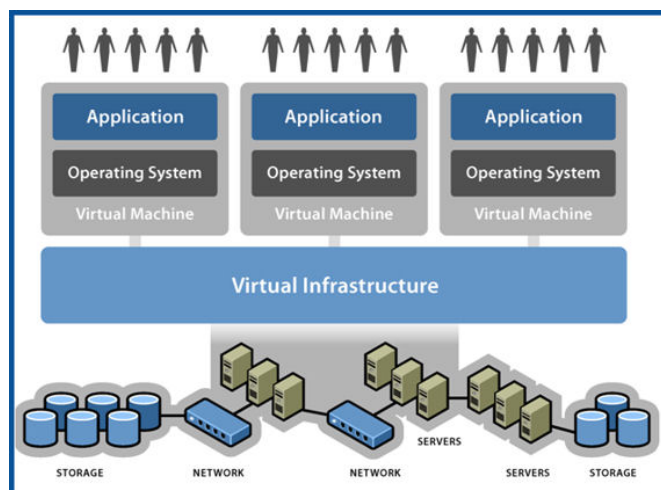


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Example: Large Scale



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Questions & Discussion

✓ Lets go for IT!!
The future is (Y)ours