


WAVV 2004
Chattanooga, TN

Linux for zSeries and VSE

User Experiences



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Agenda

- User Experience
 - Current Infrastructure
 - Machines and Applications
 - Challenges
- Future plans




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Current Infrastructure

- Multiprise 3000 H50
 - Standard Engine and IFL
 - 2 LPARs
 - z/VM 4.3 and VSE/ESA (4)
 - z/VM 4.3 and Linux for S/390
- Enterprise Storage Server F20
 - 420GB of S/390 storage




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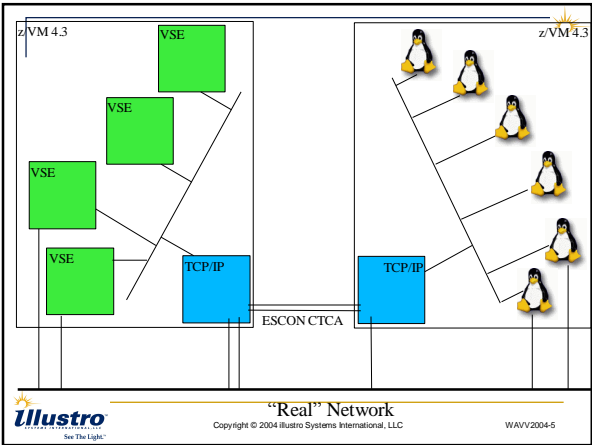
Current Infrastructure

- Communications
 - Mixture of Token Ring and Ethernet
 - Bustech NetShuttle provides network connectivity
 - Guest LAN in each VM system
 - VSE systems in LPAR1
 - Linux systems in LPAR2
 - TCP/IP for VM is the gateway
 - ESCON Channel to Channel between LPARs
 - Allows fast, private communications between VSE and Linux images
 - Connected via TCP/IP for VM




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Current Infrastructure

- Software
 - z/VM 4.3 (z/VM 4.4 upgrade in progress)
 - ESAMON from Velocity Software
 - VSE/ESA 2.6 (VSE/ESA 2.7.2 upgrade planned)
 - CICS Transaction Server (with CICS/VSE)
 - DB2 for VSE
 - ADABAS/Natural
 - Barnard Software's TCP/IP Tools
 - SuSE Linux Enterprise Server Version 8
 - Latest kernel levels (2.4.21)



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Linux Machines and Applications

■ Websphere

- Production (2)
- Test
- Development

■ IBM HTTP Server


- Front End for two production websphere machines

■ DB2

- Production
- Test and Development

■ Other

- DNS
- Big Brother
- FTP
- CVS
- SMTP
- Template

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Linux Machines and Applications

■ Websphere

- Corporate Web Site
- Internal Application development
- Two production Websphere servers
 - Failover

■ IBM HTTP Server

- Used to front end Websphere
- Can be swapped between backend Websphere machines

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Linux Machines and Applications


■ DB2

- Production
- Test and Development
- LVM used to create large disk devices
- Challenge: How to get users access to corporate data
 - ADABAS Tools
 - DB2 for VSE
 - Replication from ADABAS to DB2 UDB

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Linux Machines and Applications

- Bind
 - Domain Name Server for Linux and VSE systems
 - Configured as Slave DNS server
- CVS
 - Used as source code repository for Websphere programs




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Linux Machines and Applications

- FTP
 - Internet facing FTP Server
 - Used for customers to send drawings and specifications
- SMTP
 - Sendmail
 - Used to provide outbound email services for VSE




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Linux Machines and Applications

- Big Brother
 - Open source network monitor
 - Monitors well known protocols
 - FTP, Telnet, HTTP, DNS, etc
 - Monitors and displays state data
 - CPU, Processes, Messages
 - Monitors machines via any TCP based service
 - if a port is assigned, it can be monitored
 - External tests are available and can be written
 - Shell script to monitor DB2 databases
 - Client code available for Unix, NT, AS/400, z/VM
 - z/VM client written entirely in REXX
 - Email and pager notification



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Linux Machines and Applications

- Template
 - ❑ Used for replication of Linux machines
 - ❑ A standardized Linux starting point
 - ❑ 1/3 of a 3390 Model 3 volume
 - ❑ Common A-disk
 - ❑ CLONE EXEC used to copy template system
 - ❑ After first boot shell script asks for IP configuration
 - ❑ Provides an easy, efficient cloning mechanism




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Challenges

- Performance
 - ❑ Processor speed
 - ❑ Workload
 - ❑ I/O
 - ❑ Virtual Machine share
 - ❑ Offload work




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Challenges

- Performance
 - ❑ Allocate plenty of VM paging space
 - ❑ Allocate expanded storage
 - ❑ Keep virtual machine sizes small
 - ❑ Use Vdisk paging
 - ❑ Allocate shares wisely
 - ❑ Minimize the number of apps per instance
 - ❑ Use Guest LAN/VSwitch and HiperSockets
 - ❑ Use striped LVM for disk performance
 - ❑ ...or the new PAV support




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Challenges

- Performance (did I say the p-word?)
 - Monitor, monitor, monitor
 - Understand performance metrics
 - Modify attributes/values accordingly
 - Return to step 1



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Future Plans

- VSE Redirector Server
- SOAP Client for VSE
- z/890
- FICON (for the Shark)
- More WebSphere capable apps
- Lotus Domino



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Questions?

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