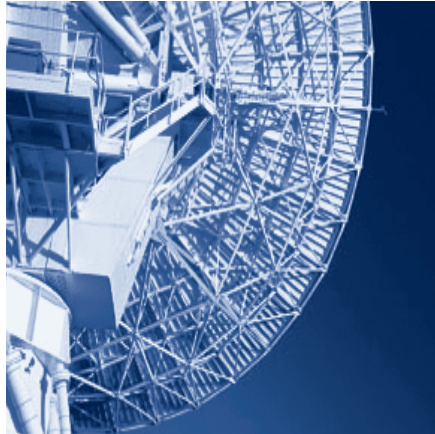




VMware Helps Global Telecom Provider* Increase Performance and Utilization While Phasing Out Old Hardware

Telecom Giant Reaps Benefits of Hardware Cost Reduction, Higher CPU Utilization and Faster Provisioning with VMware Virtual Infrastructure



KEY HIGHLIGHTS

INDUSTRY: TELECOMMUNICATION

RESULTS

- Saved \$35,000 in hardware costs
- Increased average CPU utilization from less than 2 percent to 10 to 15 percent
- Achieved 12:1 server consolidation ratio
- Slashed server provisioning time from two weeks to 30 minutes
- Reduced number of server racks from 73 to 8

"My company has 15 or 20 sites, and not all of them are using VMware software yet. I'm trying to communicate my successes internally to make the other sites aware of my experiences with VMware and to encourage broader adoption."

Tim Cheatwood, IT Administrator, Global Telecom Company

With Server Warranties Expiring, Customer Calls on VMware to Provide the Solution

Manufacturing cutting-edge wireless devices and providing services that connect people and information, this world leader in mobile communications is poised to stay on top with continuous innovation.

In 2003, the company faced the task of gradually replacing aging hardware with a more cost-effective solution while hanging on to viable components whose warranties had not yet expired. "Our problem was two-fold," says Tim Cheatwood, IT administrator for the company's Texas field office, which implemented the VMware strategy. "The first issue was that half of my servers were beyond their warranty period—one SQL production server even died on us. We knew we had to replace the equipment, so I wanted to leverage the consolidation capabilities of VMware software.

"The second issue was performance and utilization. Our physical servers were averaging 1.25 to 1.5 percent CPU utilization. This was an opportunity to have one system hosting several machines, and it could really increase our utilization."

After looking into the capabilities of VMware products, Cheatwood elected to use the solution. "VMware came up initially because someone in another department had looked at it already and told my manager about it," he says. "In the end I didn't consider other solutions because I didn't see any that were remotely equivalent to VMware."

To evaluate VMware software, Cheatwood created as close to a real-world scenario as he could. He needed to ensure that one virtual machine didn't affect the performance of another because he has several applications that do not co-exist peacefully. He ran critical applications such as print services and DHCP in virtual machines, deploying them to a select group of power users. "We didn't have any challenges during the testing period," he says. "All the feedback I received was, 'We can't tell the difference between the new system and the old one.'"

After the successful testing phase, Cheatwood developed and deployed a project to migrate physical servers gradually to VMware virtual infrastructure. He was able to use VMware® P2V Assistant for the larger machines.

The Telling Evidence: Lower Costs and Higher Performance Using VMware Software

With the implementation of VMware virtual infrastructure, Cheatwood has achieved the following benefits:

- **Reduced costs.** So far, the company has avoided \$35,000 in hardware expenditures, with more savings to come as Cheatwood continues to replace old servers with virtual machines.
- **Increased CPU utilization.** Since implementing VMware virtual infrastructure, CPU utilization has increased from an average of less than 2 percent to 10 to 15 percent. "Right now we have 5 machines averaging 10 to 15 percent utilization," says Cheatwood, adding that he expects this number to climb as more physical servers are retired and migrated to virtual machines.
- **Server consolidation.** Cheatwood has so far achieved a 12:1 server consolidation ratio on 4-CPU HP ProLiant 580 G2 machines.
- **Less rack space.** Cheatwood has been able to reduce the amount of rack space necessary to house his servers from 73 units to 8. He says this reduction also resulted in lower cooling and power costs because the servers occupy less space.
- **Faster server provisioning.** With preconfigured virtual machine templates, Cheatwood can have a new machine up and running in about an hour instead of enduring the two-week process of ordering new equipment, waiting for it to arrive, setting it up and rolling it out into production.
- **Remote server management.** With VMware software, Cheatwood saves time with the ability to activate downed servers remotely, rather than make on-site service calls.

VMware Connects Customer with New Equipment and Operating Systems

Moving to a virtual infrastructure allowed Cheatwood to invest in better hardware. "A lot of the older processors were quite slow, like 500 to 733MHz," Cheatwood says. "Now, the new servers that have virtual machines on them are 2.8GHz each, so it's as if all the virtual machines were given upgrades, making the applications that migrated more efficient." The new hardware also allowed him to upgrade his systems from Windows NT to Windows 2000 and XP and Windows Server 2003 operating systems.

Cheatwood's new virtual layout includes 10 Workstation licenses on IBM desktops, with ESX Server running on five HP ProLiant servers. For failover support, he currently uses a quick and easy approach that allows him to minimize downtime whether failure occurs on a virtual or physical machine. "I have copies of the .vmx configuration files, and if I have a failure on one ESX Server-enabled system, I can quickly re-configure it and start it on another." Cheatwood also changed his SAN configuration. "Before deploying VMware software, we were using an archaic and unstable storage array system," Cheatwood says. "Now we use an IBM storage array, which is more reliable and stable."

To evaluate a VMware solution, Cheatwood recommends that users create a real-world environment and buy upgraded hardware to deploy it on. Cheatwood also suggests they take advantage of the training available from VMware: "I had to struggle to figure out some things on my own that I might have learned more easily with some formal training."

VMWARE VIRTUAL INFRASTRUCTURE AT WORK

- VirtualCenter and VMotion on HP ProLiant ML 570s
- ESX Server licenses on HP ProLiant DL 580 G2s, with 2.8 GHz processors
- VMware Workstation on IBM desktops
- Host operating system on Workstation: Microsoft® Windows® XP and 2000
- Guest operating system on Workstation: Microsoft® Windows® XP and 2000
- Guest operating system on ESX Server: Microsoft® Windows® Server 2003, Windows 2000 Server, Linux
- Applications running in virtual machines: MS SQL, Oracle, Exchange 2000 Server, NetIQ, Altiris

To evaluate a VMware solution, Cheatwood recommends that users create a real-world environment and buy upgraded hardware to deploy it on. Cheatwood also suggests they take advantage of the training available from VMware: "I had to struggle to figure out some things on my own that I might have learned more easily with some formal training."

Staying on the Line with Virtualization

Looking ahead, Cheatwood says he plans to utilize new features in the next release of VirtualCenter to achieve automatic failover for all his servers, which will result in even better disaster recovery and reduce, if not eliminate, downtime. In addition, he plans to roll out more virtual machines as warranties expire, as well as to persuade other sites within his company to adopt VMware virtual infrastructure. "Right now our ratio at this location is close to 50:50, virtual-to-physical," he says. "In the future I'd like to see more virtual and less physical. Also, my company has 15 or 20 sites, and not all of them are using VMware software yet. I'm trying to communicate my successes internally to make the other sites aware of my experiences with VMware and to encourage broader adoption."

**VMware, Inc. 3145 Porter Drive Palo Alto CA
94304 USA Tel 650-475-5000 Fax 650-475-5001**

© 1998-2007 VMware, Inc. All rights reserved. Protected by one or more of U.S. Patent Nos. 6,397,242, 6,496,847, 6,704,925, 6,711,672, 6,725,289, 6,735,601, 6,785,886, 6,789,156, 6,795,966, 6,880,022, 6,961,941, 6,961,806 and 6,944,699; patents pending. VMware, the VMware "boxes" logo and design, Virtual SMP and VMotion are trademarks or registered trademarks of VMware, Inc. in the United States and/or other jurisdictions. All other marks and names mentioned herein may be trademarks of their respective companies.

Item No: 07Q1_cs_vmw_Global_Telecom_english

