



Desert Schools Federal Credit Union Finds Oasis with VMware Virtual Infrastructure

Virtual Infrastructure Saves Desert Schools \$50,000 in Hardware Costs, Increases IT Responsiveness and Application Availability

RESULTS

- Achieved 6:1 server consolidation ratio
- Saved \$50,000 in hardware costs, plus additional savings for hardware maintenance, heating, cooling and physical space
- Server deployment time reduced to less than 15 minutes, down from 1-2 days plus 1-2 weeks for server procurement
- Improved application availability with VMotion

The Need for Separate Sandboxes

Founded in 1939 by 15 teachers who pooled their money (just \$5.25 each), Desert Schools Federal Credit Union now has over \$2 billion in assets and over 40 locations. It is Arizona's largest credit union and a financial partner to over 270,000 members in Gila, Maricopa and Pinal Counties.

With 1,500 people to support from bank tellers to executives, Desert Schools needs a solid IT infrastructure to meet business needs. In the beginning of 2003, Desert Schools realized it would need to accommodate an increasing demand for new applications. "Whenever we needed a new application, the vendor would insist that it have its own sandbox to play in," says Doug Baer, systems engineer for the credit union.

"We had been bitten in the past by procurement issues," he says. "We needed hardware right away but couldn't get it for two weeks. We have a three-year cycle for refreshing hardware. Whenever we did a refresh, we'd have to rebuild boxes, which took a long time, not to mention the cost of a new server was \$4,000-\$6,000."

A Dry Run in the Lab

Because Desert Schools had been using VMware Workstation for test and development for several years, the IT group was familiar with virtualization technology – which allowed them to set up multiple virtual machines, each with its own operating system and software, on a single computer.

To test VMware server products, systems engineers installed an evaluation copy of GSX Server on one physical server in their lab. "We kicked the tires and it seemed to work," Baer says. "We moved our lab domain to GSX Server, built an infrastructure, added virtual machines and saw how it performed. It was impressive, so we decided to purchase the software."

Desert Schools started with an ESX Server installation in its IT department, and then purchased VirtualCenter and ESX Server licenses to support applications for the rest of the company. "As new projects and requirements would arise, we evaluated whether they would work on a virtual machine," Baer explains. "In most cases, they would – now we ask what makes a given application require a physical server, not whether it will work as a virtual machine."

"We are able to do much more in less time. Before, we would be waiting two weeks to get a server. With a virtual infrastructure, we can do it now!"

*Doug Baer
Systems Engineer
Desert Schools Federal Credit Union*



VMWARE VIRTUAL INFRASTRUCTURE AT WORK

- Workstation on 15 1-CPU Dell PCs
- GSX Server on 2-CPU HP ML530, 4GB RAM
- ESX server on 2-CPU HP DL360 G3s, 4GB RAM
- Host operating systems:
Workstation on Microsoft Windows 2000, Windows XP; GSX Server on Windows Server 2003
- Guest operating systems:
Windows XP, Windows 2000, Windows 2003, Fedora, FreeBSD on Workstation; Windows 2003 Server on GSX Server; Windows Server 2003, Windows 2000 Server, Windows XP, FreeBSD on ESX Server
- Production applications running in virtual machines: BlackBerry Enterprise Server, Microsoft LCS, MS IIS, NetIQ SAS, Summit Pathways, Citrix MetaFrame, UC4, HP Systems Insight Manager, Sharepoint portal server, Syslog on FreeBSD, VMP

Taking the Heat off IT

Desert Schools chose a virtual infrastructure to create an easily manageable farm of servers. With ESX Server, VirtualCenter and VMotion, Baer and his team realized a multitude of benefits including:

- **Cost savings.** Desert schools estimates a savings of \$50,000. "Twenty physical servers would cost about \$90,000," Baer says. "We spent a little over \$40,000 for our virtual infrastructure, including the hardware and software. We also save heating and cooling costs, and we've reduced our need for space and hardware maintenance. It helps free up our budget for other things."
- **Improved CPU utilization.** "Without VMware, we would have had 20 servers under 1 percent utilized," Baer says. "Now, we have four servers in production and they still aren't running at more than 10 percent utilization, so we have plenty of headroom for demand surges."
- **Faster, easier server deployment.** With VMware software, the IT team can deploy a new server in 15 minutes, a process that used to take more than a week to procure hardware, plus a day or two to set up. "We had to get the server racked, do the cabling, configure the operating system; now we can set up a new virtual machine in minutes," Baer says."
- **Improved application availability.** Using VMotion, the IT team can move virtual machines to another server while performing maintenance or upgrades so there is no downtime. "Its impressive technology," explains Baer. "You can give a good demo to a manager, move a server, instant message someone and check your email, all without service disruption."
- **Plans for disaster recovery.** Desert Schools just added a disaster recovery site and is looking forward to using VMware software to provide rapid data restoration in an emergency. "We could set everything up to have servers back up in minutes in the case of a disaster, instead of having to rebuild at our site or restore with tape."

Lessons Learned: Virtual Infrastructure Brings Increased Productivity

Desert Schools' virtual infrastructure provides a flexible, scalable IT platform and allows the credit union's IT team to work on more projects, including challenging or experimental tasks that would never have been attempted because of hardware costs or the time to set up servers. "In the append mode, we can generate a 'redo' log," explains Baer. "If something bad happens, we can just wipe it out. We can do more with our applications, like SQL, trying different things. If it doesn't work out, it's no big deal. Plus, it takes no time to rebuild a box."

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