

ACCELERATING THE PACE OF CHANGE

Dell helps Mahoning County reduce power and cooling by 35%, allocate storage in 1 hour and meet 2-week window for implementing ERP system



- SOLUTIONS**
- BACKUP/RECOVERY/ARCHIVING
 - CLUSTERING
 - POWER & COOLING
 - VIRTUALIZATION



CUSTOMER PROFILE

COUNTRY: United States

INDUSTRY: Government

FOUNDED: 1846

NUMBER OF EMPLOYEES: 1,800

WEB ADDRESS:

www.mahoningcountyoh.gov

CHALLENGE

Mahoning County needed to cool off its data center which, with 48 end-of-life servers, reached 85-90 degrees in summer. Its 5 technical administrators were hard-pressed to keep services available for 1,000 users due to frequent breakdowns and the need to monitor servers.

SOLUTION

The county virtualized 38 servers on 4 Dell™ PowerEdge™ servers based on Intel® Xeon® processors using VMware Infrastructure 3, also sourced from Dell. Dell ProConsult provided deployment assistance and skills transfer. Dell also delivered and implemented Dell EqualLogic™ iSCSI SANs for virtual machine storage.

BENEFITS

GET IT FASTER

- Dell allocated storage in 1 hour
- Dell met 2-week window for installation of MUNIS infrastructure with days to spare

RUN IT BETTER

- Higher availability of critical computer-aided dispatch system
- Smaller administrative burden on IT technicians
- Virtual dev/test environment accelerates deployment
- Single vendor simplifies procurement, limits number of images

GROW IT SMARTER

- 35% reduction in power and cooling costs
- Purchasing through capital budget eliminated costs for user organizations

Generations ago, Youngstown, Ohio and the Mahoning Valley became home to a remarkable group of ethnically diverse settlers. Their entrepreneurial spirit and determination to overcome obstacles built the steel industry in this region and can still be witnessed today as the area works to remake itself in a post-industrial economy. For the government, as for the citizens, the challenge lies in pursuing new opportunities using modern computer technologies.

“WE KNOW WE CAN GIVE BETTER SERVICE WITH DELL WHILE KEEPING DOWN THE TOTAL COST OF OWNERSHIP—A CRITICAL ASPECT DURING THESE UNQUESTIONABLY DIFFICULT ECONOMIC TIMES.”

Michael V. Sciortino, Auditor, Mahoning County

STRUGGLING WITH AGING SERVERS

Recently, the Mahoning County government needed to overcome the obstacles caused by 48 largely end-of-life servers running the county's enterprise applications: Microsoft SQL Server, Microsoft Exchange Server, PeopleSoft Financials and a mission-critical computer-aided dispatch (CAD) system for police and emergency medical teams ran on hardware that was subject to frequent breakdowns.

“We had an aging server population,” says Jacob Williams, director of IT, Mahoning County. “We were beginning to see the problems associated with server aging—hardware failures, performance issues and the need to keep up with the changes in the software industry. Managing and monitoring these systems were increasing our workload in the area of system administration, as was working around a downtime window and planning for equipment procurement

and associated budget constraints. The CAD system would go down periodically, and have to be rerouted to a different call center. For a period, agents would be working on paper, which increases human error and is less efficient.”

The five technical staff members had a difficult time keeping service running for 1,000 users. In addition, servers were drawing about 75 percent of capacity from the UPS. “During the summer months, inevitably, compressors would go bad and our server room would heat up to 85-90 degrees,” says Williams. “We would have had to purchase 38 new servers with each department paying for its servers out of its operating budget. These budgets have decreased, so they couldn't afford such expenses. We needed a different financial model for purchasing, and a new technology to bring down power, heat and cooling expenses, ensure availability and relieve the administrative burden on our staff.”

HOW IT WORKS

HARDWARE

- Dell™ PowerEdge™ 2950 servers with Intel® Xeon® 5300 series processors
- Dell EqualLogic™ PS5000E and PS5000X iSCSI SAN arrays
- Dell OptiPlex™ 755 and 760 desktops with Intel Core™ 2 Duo processors
- Dell Latitude™ E6400 and D-Series laptops with Intel® Core™ 2 Duo processors

SOFTWARE

- VMware Infrastructure 3
- Microsoft® Windows Server® 2008 and 2003
- Microsoft Exchange Server 2003
- Microsoft SQL Server® 2005 and 2000
- Tyler Technologies MUNIS enterprise resource planning and financial software
- PeopleSoft Financials
- EmergiTech Computer-Aided Dispatch system

SERVICES

- Dell ProConsult Services – Storage Consulting, Server Virtualization

“A KEY VIRTUE OF THE DELL EQUALLOGIC ISCSI SAN IS THE UTTER SIMPLICITY OF THE SET-UP.”

Jacob Williams, Director of IT, Mahoning County

SAVING 35% IN POWER AND COOLING COSTS

Based on its long-term relationship with Dell and Dell's recommendations, Mahoning County chose a server virtualization solution on four Dell PowerEdge 2950 servers with Intel Xeon 5300 Series processors. Dell also provided VMware Infrastructure 3 software and initially set up 28 virtual servers on the four physical hosts.

“We have since migrated 10 more physical servers to virtual, and we plan to migrate all but a few of our remaining servers,” says Williams. “Eventually we will be virtualizing all our applications, including Microsoft SQL Server, which we have already had success virtualizing, and Microsoft Exchange Server, because the results so far have been outstanding. The virtualized servers on the Dell PowerEdge 2950s are rock solid, so server outages are less of a worry, especially considering the migration options within VMware. And we're saving 35 percent of our power and cooling costs over our previous servers, thanks to the Intel® Xeon® processors in the 2950s. And without as many physical servers, the administrative burden on the IT staff is much less.” The CAD application is now running on a cluster of four servers instead of one, so if one server is having problems, the IT staff can move the application to another physical server using VMware VMotion, preventing any downtime.

Mahoning County users have another reason to be pleased. Since Mahoning County replaced all of its servers at once with virtual servers, the project was considered a capital expense and did not come out of the operating expenses of the departments. “This didn't cost our individual departments any operating expense at all,” says Michael V. Sciortino, Mahoning County auditor. “They are thrilled, and I'm thrilled that the overall cost of consolidating servers is much less than buying individual systems for each department.”

VIRTUAL DEV/TEST ACCELERATES DEPLOYMENT

Another major driver of the server virtualization implementation at Mahoning County was to provide a new infrastructure to support a migration from PeopleSoft Financials to MUNIS enterprise resource planning and financial management system. Six of the virtual servers are dedicated to running MUNIS.

Dell ProConsult Services (formerly Dell Infrastructure Consulting Services) installed the supporting infrastructure for MUNIS within a two-week window. “Dell did it faster than we could have done it on our own,” says Williams. “We had to have the VMware system up and running, with the networking piece done, the hardware piece done, as well as the six MUNIS servers up and running. We were able to hit our deadline with a couple days to spare. Dell did everything from open the boxes,

rack and stack the equipment, install VMware and set up the virtual machines. They also trained our staff while they were doing this so we would know how to maintain VMware going forward.”

One important enabler of the entire VMware implementation was the new dev/test environment that Mahoning County got with its new servers. “We saw this as a great opportunity to develop and test with great flexibility, which accelerated the deployment,” says Williams. “Being able to set up test servers and dispose of them rapidly enables us to test very broadly, deeply and quickly. The greater ease of management that comes with virtualization also helped. Once we set up our virtualized environment, it was a lot easier to install applications and manage them from the central VMware console. We can look at the apps and make sure that we are meeting the specs for memory and process allocation.”

ALLOCATING STORAGE IN 1 HOUR

To provide storage for its VMs, Mahoning County chose Dell EqualLogic PS5000E and PS5000X iSCSI SANs for its main data center. “A key virtue of the Dell EqualLogic iSCSI SAN is the utter simplicity of the set-up,” says Williams. “Dell helped us, but everything the Dell technician did was easily adapted to our existing knowledge of server storage. Once it was powered up and connected to our system with the networking piece, we had storage allocated within one hour.”



Mahoning County uses the built-in snapshotting capabilities of the EqualLogic arrays to backup critical data before patching servers. "Replication is a possibility down the road when the county has a hot backup site," says Williams. "We're already set up to replicate with the software feature built into the Dell EqualLogic SAN."

PEACE OF MIND FROM DELL

Mahoning County is now totally a Dell shop, from storage and servers to desktops and laptops. "We use the Dell OptiPlex 755 and 760 desktops with Intel Core 2 Duo E9400 Series processors," says Williams. For laptops the county has some Dell Latitude E6400 laptops with Intel Core 2 Duo T9400 processors. The rest are Dell Latitude D-series with Intel Core 2 Duo

T9000 processors. "Staying with one vendor greatly simplifies procurement and helps us minimize the number of images we use," says Sciortino. "Plus it gives us peace of mind. We know we can give better service with Dell while keeping down the total cost of ownership—a critical aspect during these unquestionably difficult economic times."

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