

A CURE FOR ALL ILLS

Ochsner Health System eliminates unplanned outages and cuts power needs by 25% with Dell and Intel solution



SOLUTIONS

- POWER & COOLING
- VIRTUALIZATION



CUSTOMER PROFILE

COUNTRY: New Orleans, LA (USA)

INDUSTRY: Healthcare

FOUNDED: 1942

NUMBER OF EMPLOYEES: 11,000

WEB ADDRESS: www.ochsner.org

CHALLENGE

Ochsner Health System needed to implement a disaster recovery solution, support a rapidly growing user base, conserve energy to avoid a multi-million dollar power upgrade and meet high availability requirements befitting a medical facility.

SOLUTION

Dell™ PowerEdge™ blade servers with Intel processors, VMware and a Dell/EMC SAN provide a virtualized environment with low power requirements, simplified management, high availability and plenty of processing power for enterprise applications.

BENEFITS

RUN IT BETTER

- Unplanned downtime eliminated
- More time spent on proactive maintenance
- Able to create new virtual server in 15 minutes vs. 2 weeks for physical server
- 20 cables needed per rack vs. 400 previously

GROW IT SMARTER

- 25% reduction in power requirements
- Multimillion-dollar power upgrade avoided
- 91% decrease in cooling needs over physical server implementation
- 44% less data center space consumed



Virtual servers are not only an inexpensive substitute for physical hardware. Server virtualization is a catalyst for positive change in the face of natural disasters, exponential growth, insufficient space and power, hardware failures and maintenance complexities—to name just a few of the challenges facing data centers today.

“THE DELL POWEREDGE M600 BLADE SERVERS WITH DUAL INTEL XEON PROCESSORS PROVIDE PLENTY OF POWER AND MEMORY CAPACITY TO SUPPORT OCHSNER’S ENTERPRISE SYSTEMS.”

Kurt Induni, director of network services, Ochsner Health System

Ochsner Health Systems (Ochsner) in New Orleans, Louisiana, has experienced all these challenges and found an answer in server and storage virtualization. With 7 hospitals, more than 35 neighborhood health centers, 80 specialty areas and over 11,000 employees, the organization has experienced dramatic growth in recent years. When Hurricane Katrina struck, Ochsner was a single hospital with a number of neighborhood clinics.

ONE FLOOD AFTER ANOTHER

Katrina left a lesson behind for Ochsner, namely that its disaster recovery capabilities were not adequate for its rack-mount Microsoft Windows-based servers. The network services team barely had time to recover them when in November of the same year, Ochsner bought three other hospitals, and the team was suddenly deluged again.

“All of a sudden our model ended up changing very quickly,” says Kurt Induni, director of network services, Ochsner Health System. “The need for remote services to a 24x7 hospital became very apparent, but all we had time to do was respond to our challenges. Specifically, we had to

expand our Novell GroupWise 7 email system quickly to take in all the new people who were coming on board. Virtualization of the entire 22-server Groupwise environment allowed us to do that without buying a lot of hardware.”

Induni and his team proceeded to build approximately 50 virtual servers using Dell PowerEdge 1955 blade servers and VMware. “It was our first real understanding of the power of VMware on Dell hardware,” says Induni. “We were very happy with the performance. But more hospitals came into play, and suddenly we had to deal with their legacy systems, including Citrix Presentation Server and the hospitals’ health management systems. We had never dealt with these before. Virtualization became a very straightforward way for us to centralize a lot of these services and start building a truly integrated health system.”

About that time, the Dell PowerEdge M1000e modular blade enclosure was announced. Ochsner took delivery as soon as it became available. “The Dell PowerEdge M600 blade servers with dual Intel Xeon processors and

HOW IT WORKS

HARDWARE

- Dell™ PowerEdge™ M600 blade servers with dual Intel® Xeon® processors
- Dell PowerEdge M1000e modular blade enclosures
- Dell PowerEdge 1955 blade servers with dual Intel Xeon processors
- Dell/EMC CX3-80 networked storage system

SOFTWARE

- VMware Infrastructure 3.5, Update 3
- EMC RecoverPoint data protection software
- Citrix Presentation Server
- Microsoft® Windows Server® 2003
- Novell GroupWise 7

SERVICES

- Dell ProSupport for IT
- Dell Virtualization Readiness Assessment

“VMWARE, THE WONDERFUL DELL BLADE HARDWARE AND DELL’S SCALABLE SAN CAPABILITIES HAVE HELPED US DEVELOP A VERY STRATEGIC DIRECTION FOR THE DISASTER RECOVERY OF OUR WINDOWS ENVIRONMENT.”

Kurt Induni, director of network services, Ochsner Health System

32 gigabytes of RAM provide plenty of power and memory capacity to support Ochsner’s enterprise systems,” says Induni. “We saw the potential of virtualizing servers on the M1000e to bring together disparate application sets, not only providing adequate hardware capacity and a well managed environment to control it in, but also delivering physical redundancy.”

ENHANCING DISASTER RECOVERY

As Induni’s team began consolidating Ochsner’s healthcare applications on Dell PowerEdge M600 blade servers, they decided to consolidate storage on a Dell/EMC CX3-80 networked storage system. “We realized that we had a prime opportunity to start providing a better disaster recovery model for our Windows environment,” says Induni. “Our initial problem back in Katrina was ‘How do we do this with physical boxes?’ Now, using EMC RecoverPoint software, we are building a model which will allow us to replicate critical servers in real time. We will have auto-restarting capability using VMware’s Site Recovery Manager to failover about 110 critical servers. VMware, the wonderful Dell blade hardware and Dell’s scalable SAN capabilities have helped us develop a very strategic direction for the disaster recovery of our Windows environment.”

SAVING MILLIONS OF DOLLARS

Data center sprawl and a shortage of power and space became a challenge for Ochsner even as it was learning the benefits of virtualization with the Dell PowerEdge blade system.

As the health system began to support seven hospitals, Ochsner’s Windows server farm grew to 300 physical servers. Its power structure, implemented in the ‘70s and ‘80s, was taxed dramatically. The UPS systems were no longer redundant at over 50 percent utilization. A failure would have caused a blowout at the data center in the main hospital in New Orleans. A multimillion dollar power upgrade was required to remedy the problem if the data center remained in its current state.

Already using the Dell PowerEdge M600 blade servers, the network services team was aware of the low power requirements of the Intel Xeon processors, but they didn’t know how many servers they could virtualize to avoid the seven-figure expenditure. The team had only three months to work before a scheduled power component upgrade would have shut down one of the three UPS’s coming into the data center, overloading the others.

A Dell Virtualization Readiness Assessment concluded that Ochsner could virtualize 140 servers. The assessment provided a valuable starting point. “By using the Virtualization Readiness Assessment to guide us through the process, we were able to initiate this project and sell it to management,” says Induni.

25% DECREASE IN POWER REQUIREMENTS

The team virtualized 300 physical servers in three months at a ratio of 18 physical servers to 1 Dell blade. With

the Intel Xeon processors, power consumption fell by 50 kVA, or 25 percent, putting the power supply back into redundancy mode.

Cooling requirements decreased by 15.6 tons, or 91 percent with the blades as opposed to the physical servers. And space requirements dropped from 18 racks to 10, or 44 percent. Cabling was reduced from more than 400 cables per rack to less than 20, simplifying maintenance and decreasing the hazard to human safety.

“All of our growth since then has been virtualized as well, so we now have 390 virtual servers,” says Scott Fontenette, senior network developer. “We intend to have 95 percent of our server environment virtualized by the end of this year.”

A VMware Enterprise License Agreement from Dell has allowed Ochsner to grow as needed with ESX hosts as well as VMware View virtual desktop infrastructure.

NO UNPLANNED DOWNTIME

Maximum uptime is critical to a hospital because unexpected outages could put lives at stake. But managing 300 physical servers threatened this availability. “Any little hardware problem was complicated to identify, solve and monitor,” says Fontenette. “Virtualization gave us increased availability through VMotion. If we lose power to a blade, VMware High Availability powers off the VMs, moves them to another blade automatically,

and powers them on again. The result is that we've eliminated unscheduled downtime from our environment."

REDUCED MAINTENANCE TIME

When updates are necessary for an ESX host, the team uses VMware's vCenter Update Manager and runs it remotely with one click. "I'm able to provide back-end maintenance without affecting the availability of the hosts," says Fontenette. "And with vCenter, everything is managed from one central console. You can see the whole environment."

"Our team now has time to pay attention to more proactive maintenance now that we don't have to fight fires," says Induni. "We can schedule better and do what we're supposed to be doing more of the time."

AGILITY IMPROVES BY 99%

Responding to the hospitals' requests for new services is now almost instantaneous. "It takes 15 minutes to create a new ESX host, whereas it took two weeks to stand up a physical server," says Induni. "That's counting in purchasing, shipping, receiving and unpacking."

Another boost to Ochsner's agility is Dell ProSupport for IT with guaranteed four-hour response time. "Support from Dell has always been great," says Induni. "We never have to wait for a problem to be resolved."

DESKTOP VIRTUALIZATION NEXT

There are 9,000 desktop and laptop clients in the Ochsner environment. Induni's goal is to virtualize desktops to provide faster time to service, lower support costs and improve availability.

Once again, Dell will be the vendor, and virtualization will be the solution. "If possible, we're hoping to virtualize up to 60 PCs on one blade," says Induni. "Virtualization is the path we're on, and it's been very successful for us, thanks to Dell."

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May 2009

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