

SMALL IS BEAUTIFUL

Claremont University Consortium prepares to reduce its data center footprint by approximately 75% with Dell blade servers and virtualization



- SOLUTIONS**
- CLUSTERING
 - CONSOLIDATION
 - GREEN COMPUTING
 - POWER & COOLING
 - VIRTUALIZATION



CUSTOMER PROFILE

COUNTRY: Claremont, CA (USA)

INDUSTRY: Education

FOUNDED: 2000

NUMBER OF EMPLOYEES: 350

WEB ADDRESS:

www.cuc.claremont.edu

CHALLENGE

Claremont University Consortium needed a scalable, highly available server and storage infrastructure that would make the most of limited space in its new data center and help support a green initiative by minimizing power and cooling requirements.

SOLUTION

After evaluating blade offerings from the competition, CUC decided to implement tenth-generation Dell blades in a redundant configuration with VMware® virtualization software and a Dell™ iSCSI SAN array.

BENEFITS

GET IT FASTER

- Quick, seamless remote installation of blade solution (less than 2 hours vs. 4-6 hours)

RUN IT BETTER

- Projected 99.9% availability for critical applications
- Good price-performance per watt compared to other server choices
- High availability and scalability without the cost of a Fibre Channel SAN

GROW IT SMARTER

- Estimated 75% reduction in data center footprint
- Scalable storage to accommodate data growth



With growing enrollments, constantly changing educational technology, and a host of academic and administrative agendas to balance, managing information technology (IT) for a university is a challenge. Managing IT for seven independent colleges at once is a tall task indeed—one that falls to Claremont University Consortium (CUC).

“WE EVALUATED THE C-CLASS HP BLADESYSTEM AND ALSO LOOKED AT OTHER SERVER PROVIDERS, AND WE FOUND THAT THE TENTH-GENERATION DELL BLADES OFFERED GOOD PERFORMANCE PER WATT.”

Rene Yang, IT director, Claremont University Consortium

Originally established in 1925, CUC is the central coordinating and support organization for a highly regarded cluster of colleges known as The Claremont Colleges located in Claremont, California. CUC incorporated as a freestanding tax-exempt organization in 2000, and is today a nationally recognized model for academic and institutional support services.

Among other responsibilities, the Consortium provides an IT infrastructure for 6,300 students and 2,300 faculty and staff. A broad cross section of services depend on these systems running smoothly, including the college system's central library and bookstore, health and counseling services, facilities support, payroll and accounting, and human resources. To provide the best possible service to the colleges, CUC relies on Dell hardware.

EQUIPPING A NEW DATA CENTER

The Consortium uses Dell OptiPlex 755 desktops and Dell Latitude D630 laptops running Microsoft Windows

XP Professional as its standard staff machines, and puts Dell PowerEdge 2950 and 2650 servers running Microsoft Windows Server 2003 to work in its data centers. When the organization decided to build a new administrative campus, a new data center was part of the bargain.

“We currently have three data centers, and they are all nearly full,” says Rene Yang, IT director for Claremont University Consortium. “When we move to the new data center, we’re going to demolish two of them, and keep the smallest one as a disaster recovery (DR) site.”

To equip the new data center—which will be approximately one-quarter the size of the combined area of the three existing data centers—CUC looked to Dell for a scalable solution that would help reduce power and cooling requirements. The Consortium purchased two Dell PowerEdge M1000e modular blade enclosures, one destined for the new data center and the other for the DR site.

HOW IT WORKS

HARDWARE

- Dell™ PowerEdge™ M1000e modular blade enclosures
- Dell PowerEdge M600 blade servers with Intel® Xeon® processors
- Dell PowerEdge 2950 and 2650 servers with Intel Xeon processors
- Dell PowerVault™ MD3000i SAN array
- Dell PowerVault MD1000 disk expansion enclosure
- Dell OptiPlex™ 755 desktop PCs
- Dell Latitude™ D630 laptop PCs

SOFTWARE

- Microsoft® Exchange Server 2007
- Microsoft Windows Server® 2003
- Microsoft Windows® XP Professional SP3
- VMware® Infrastructure 3

SERVICES

- Dell Support

“OUR DELL SERVICE REP IS REALLY ON THE BALL; HE IS ALWAYS AVAILABLE AND CONTACTS US ABOUT PRODUCT PREVIEWS AND PREPRODUCTION SAMPLES.”

Rene Yang, IT director, Claremont University Consortium

A SOLID PLATFORM FOR VIRTUALIZATION

With the exception of Microsoft Exchange Server 2007, which will be hosted on Dell PowerEdge 2950 servers, Yang hopes to consolidate all of CUC's applications onto Dell PowerEdge M600 blade servers and provide 99.9 percent availability for applications. VMware Infrastructure 3 software purchased through Dell will be key in accomplishing this goal, according to Yang.

“We have a total of about 45 standalone servers that we plan to migrate to virtual machines hosted on the Dell blades, which will reduce our data center footprint by more than 75 percent,” he says. “We'll begin with Web servers, print servers and smaller applications, and work our way up from there. We're currently investigating various clustering architectures, and we will continue to purchase the blades in pairs so we can add equal numbers of blades to each enclosure for full redundancy.”

By consolidating its standalone servers onto the Dell blades, CUC will be able to defer expanding its uninterruptable power supplies, and will simply move its existing units to the new data center.

KEEPING THE CAMPUS GREEN

The Dell blades fit in perfectly with the Consortium's green agenda, says Yang. “We have a strong green initiative, and we look at what's good for the environment,” he says. “We evaluated the c-Class HP BladeSystem and also looked at other server providers, and

we found that the tenth-generation Dell blades offered good performance per watt. The power consumption was much less.”

The Energy Star 4.0-certified Dell OptiPlex 755 desktops also help keep power consumption down, meeting the stringent EPEAT Gold environmental impact standard set by the U.S. Environmental Protection Agency.

Yang is hoping that improved power efficiency will allow CUC to gain a few points toward LEED certification—that's Leadership in Energy and Environmental Design, a ratings system established by the U.S. Green Building Council—for its new data center. “We'd like to get some recognition for our conservation efforts, and having energy-efficient Dell hardware should help our ratings,” he says.

EASY REMOTE INSTALLATION

To Yang's surprise, Dell was able to install the blades remotely, while walking his staff through the configuration details over the telephone. “It went much better than I expected,” says Yang. “It was really smooth. I'm kind of an old-fashioned IT guy, and I like to be able to put in a CD and know exactly what's going on. I've had some experiences with remote installations in the past where a firewall got in the way, or the domain was set up incorrectly, but nothing like that happened with Dell. It took less than two hours to confirm the blade configuration with the Dell remote installer. If we had not had this

capability, it would have taken us a couple days to read up and understand each of the configuration attributes, and probably another four to six hours to configure.”

Yang also appreciated Dell's urgency to complete the installation. “It's easy to put things off in IT, because there's always something else to do,” he says. “Dell kept calling and asking if we were ready. I like that kind of persistence. So we committed to a date and got it done.”

SCALABLE, AVAILABLE STORAGE

To provide storage for the Dell blades and to support a document imaging initiative, CUC purchased a Dell PowerVault MD3000i SAN array and a Dell PowerVault MD1000 disk expansion enclosure for additional capacity. Featuring automated drive failure detection and support for redundant components, the MD3000i attaches via iSCSI cables instead of Fibre Channel, which minimizes hardware and networking costs.

“The price point on the Dell MD3000i and expansion enclosure is very attractive,” says Yang. “It's preferable to spending a lot more for a Fibre Channel SAN, yet it's still scalable. We'll be able to grow into the new storage environment and add capacity as we need it, especially when we start our document imaging—our paperless initiative for administrative functions.

We're also using the MD3000i to provide email storage for our new Exchange 2007 implementation."

PARTNERING FOR SUCCESS

The Consortium's partnership with Dell is helping it prepare for the move to the new data center and select the technology that makes the most sense for the organization—even when that technology is not from Dell. One such instance is the recommendation of American Power Conversion Corp. (APC).

"Dell brought in APC to help us design the new data center from a power and cooling standpoint," says Yang. "Dell took the initiative and brought in an APC consultant because they knew other customers that had benefitted from APC's design input. And it gives me confidence that APC is a Dell partner, because if they recommend certain racks, for example, I can be sure

my Dell machines are going to fit—there won't be any of the finger-pointing that sometimes occurs when using multiple vendors."

According to Yang, this has been "the best year so far" in CUC's relationship with Dell, and he looks forward to expanding the partnership.

"Our Dell service rep is really on the ball; he is always available and contacts us about product previews and preproduction samples," says Yang. "So we're able to see all the new products and even be involved in product development, in a sense. That's really a plus."

**To read additional case studies, go to:
DELL.COM/casestudies**



Microsoft®

SIMPLIFY YOUR TOTAL SOLUTION AT DELL.COM/Simplify

January 2009

Intel and Intel Xeon are registered trademarks of Intel Corporation in the United States and other countries. Microsoft, Windows Server and Windows are either registered trademarks or trademarks of Microsoft Corporation in the United States and/or other countries. This case study is for informational purposes only. DELL MAKES NO WARRANTIES, EXPRESS OR IMPLIED, IN THIS CASE STUDY.

