

RELIABLE COMMUNICATION

Texas A&M-Kingsville upgrades its e-mail infrastructure in just four days and reduces backup time from six hours to one



Texas A&M University-Kingsville offers more academic programs and degrees than any other school in south Texas. For the school, technology is vital for facilitating communication among faculty, staff, and the 6,200 students. "Professors use an array of technologies to enhance communication, from smart boards in classrooms to video conferencing technology for distance learning," says Danny Ramirez, security analyst at Texas A&M-Kingsville. "Of course, e-mail has become the primary communication tool for teachers, students, and staff members."

SOLUTIONS

- BACKUP/RECOVERY/ARCHIVING
- MESSAGING



TEXAS A&M
UNIVERSITY
KINGSVILLE

CUSTOMER PROFILE

COUNTRY: United States

INDUSTRY: Education

FOUNDED: 1925

NUMBER OF EMPLOYEES: 739 staff
and 393 faculty

WEB ADDRESS: www.tamuk.edu

CHALLENGE

To improve e-mail availability and scale for growth, Texas A&M-Kingsville needed to replace its aging e-mail infrastructure.

SOLUTION

Texas A&M-Kingsville worked with Dell Global Infrastructure Consulting Services to design and implement a new environment with Microsoft® Exchange Server software on clustered Dell™ PowerEdge™ servers, Dell/EMC storage area networks (SANs), and a modular Dell PowerVault™ tape library.

BENEFITS

Get IT Faster

- Dell Global Infrastructure Consulting Services deployed the new environment in just four days

Run IT Better

- Eliminated e-mail downtime
- Reduced backup time from six hours to one
- Simplified ongoing management

Grow IT Smarter

- Improved system scalability
- Avoided the costs of having to upgrade the previous system

The Dell logo, consisting of the word "DELL" in a stylized font with a diagonal slash through the "E", set against a dark circular background with a blue border.



HOW IT WORKS

HARDWARE

- Dell™ PowerEdge™ 2950 servers with Intel® Xeon® processors
- Dell/EMC CX3-20 SAN array
- Dell PowerVault™ ML6010 tape library

SOFTWARE

- Dell/EMC SAN Copy™
- Dell OpenManage™ software
- Microsoft® Exchange Server
- Microsoft Windows Server®
- VMware® Infrastructure 3 virtualization software

SERVICES

- Dell Global Infrastructure Consulting Services
- Dell Support Services

“THE DELL TEAM INSTALLED THE EQUIPMENT FAST, BUT MORE IMPORTANTLY, THEY HAD THE EXPERIENCE AND EXPERTISE TO MAKE SURE IT WAS INSTALLED CORRECTLY FROM THE OUTSET.”

Danny Ramirez, security analyst, Texas A&M-Kingsville

Given the increasing reliance on e-mail at the university, the IT group was determined to overhaul the aging e-mail system infrastructure. “The e-mail system could not deliver the availability that our users required,” says Ramirez. “We were using an old Sun Solaris system—just one server with four CPUs. Any time we had a hardware problem, the school’s e-mail would be down until we could fix it. As the system aged, those problems became more frequent.”

Even routine management tasks, such as backing up or restoring data, threatened system availability. “We ran backups to tape at night, but it took up to six hours to complete the process. During that time, performance was reduced and any mailbox in use was not backed up,” says Ramirez. “We needed a redundant system with a faster, more transparent backup process.”

The IT group also needed to increase each user’s mailbox size. “When we first deployed the Sun system, 20 MB mailboxes were sufficient for most people,” says Ramirez. “But today, people are sending and storing more e-mail, and e-mail attachments

are much larger. We needed a storage system that could accommodate larger mailbox sizes today while offering the scalability for future growth.”

TEXAS A&M-KINGSVILLE CHOOSES A DELL EXCHANGE SERVER SOLUTION

To minimize administrative responsibilities, the IT group moved student e-mail services off the old system and onto Hotmail. For faculty and staff e-mail, the IT group decided to work with Dell to deploy a new Microsoft Exchange Server environment. “We had used Dell desktops and some individual servers for several years, and we had very positive experiences,” says Ramirez. “Dell offered not only the hardware we wanted but also the design, deployment, and support services we needed to create a more robust e-mail environment.”

The Dell Global Infrastructure Consulting Services team began the project by assessing the school’s needs. “Dell sent an engineer to evaluate our requirements and help design the best solution,” says Ramirez. “The Dell team then invited us to

visit a Dell lab so we could see the configuration they were recommending. It was helpful to see the system in person and discuss our options with experts.”

DELL POWEREDGE SERVERS OFFER EXCELLENT PERFORMANCE AND REDUNDANCY

The new e-mail environment runs Microsoft Exchange Server on two Dell PowerEdge 2950 servers with dual-core Intel® Xeon® processors. The servers are configured in an active/passive cluster configuration for redundancy. If a problem develops with one server, the IT group can easily pass the services to the other machine.

The Dell PowerEdge servers deliver the performance the school needs to handle the near-constant use of the new environment. “When the teachers or staff use Exchange, there is an active, ongoing connection to the server. At any given moment, 1,000 users might access their e-mail simultaneously. The Dell PowerEdge servers give us the performance we need to accommodate all of those simultaneous connections,” says Ramirez.

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Danny Ramirez, security analyst, Texas A&M-Kingsville

DELL/EMC SAN AND DELL TAPE LIBRARY PROVIDE SCALABILITY AND FAST BACKUPS

The IT group uses a Dell/EMC CX3-20 SAN to store the data for the Exchange environment. With up to 48 TB of raw capacity using Fibre Channel drives or 111 TB with SATA II drives, the SAN provides significant scalability for years of growth. A RAID configuration helps to ensure redundancy within the array.

“We currently have three terabytes of capacity on the SAN, with one terabyte allotted for the Exchange environment,” says Ramirez. “If we ever need to expand storage—to create more mailboxes or increase mailbox size—we can just add more drives to the SAN. The Dell/EMC SAN gives us plenty of room for future growth.”

For disaster recovery, the school purchased a second SAN, deployed at a remote location. “Every night we create an exact duplicate of the Exchange data on the remote SAN using Dell/EMC SAN Copy software,” says Ramirez. “If there is a disaster at our primary data center, we can quickly restore mailboxes from the remote site.”

The IT group uses a Dell PowerVault ML6010 tape library with Symantec Backup Exec for backup and archiving. “Previously we had a tape library that held a single tape. We backed up data to tape daily, and we had to replace that tape every day—it was labor-intensive,” explains Ramirez. “The Dell PowerVault tape library can hold up to 18 tapes, so we can conduct backups every day without having to change tapes every time. It has dramatically decreased the time we spend managing backups.”

DELL GLOBAL INFRASTRUCTURE CONSULTING DEPLOYS THE NEW ENVIRONMENT IN JUST FOUR DAYS

Once the Dell consultants and the school’s IT group designed the new system, the Dell team helped to deploy the components rapidly. “Dell assigned a technician to set up the servers, configure the SAN, and install the Exchange software. The installation took just three days. The technician stayed for a fourth day to provide our staff with the knowledge transfer for ongoing management,” says Ramirez.

“If we had performed the installation ourselves, it would have taken much longer,” says Ramirez. “The Dell team installed the equipment fast, but more importantly, they had the experience and expertise to make sure it was installed correctly from the outset.”

The Dell team was also able to address some potential obstacles that came up during the installation. “We discovered a problem with a router during the deployment of the remote SAN,” says Ramirez. “Even though it wasn’t a Dell router, the Dell team contacted the manufacturer to help resolve the issue. They made the whole process easy.”

THE NEW DELL INFRASTRUCTURE ELIMINATES DOWNTIME

The new e-mail infrastructure’s redundant server and SAN configuration has helped dramatically improve system availability. “In the past, hardware failures would cause up to four hours of downtime,” says Ramirez. “Since installing the new system a year and a half ago, we have not experienced any downtime whatsoever. We can perform routine hardware or software maintenance without any outages. If a problem develops in the primary server, we can just transfer services to the other server and keep running. Our users do not notice the server change at all.”

THE IT GROUP REDUCES BACKUPS FROM SIX HOURS TO ONE

With the new e-mail environment, backing up data takes significantly less time and does not affect system availability. “Previously a full system backup took approximately six hours, and users could not access the system during that time,” says Ramirez. “Today, we can perform the full backup—1,000 mailboxes with an exact copy to remote SAN and tape—in less than one hour. And with the current system, we’re backing up more data per mailbox than before. Because of the way the infrastructure is configured, the backup process does not affect availability at all.”

THE NEW E-MAIL ENVIRONMENT SIMPLIFIES MANAGEMENT

The school’s IT group is finding the management of the Exchange system much simpler than the previous infrastructure. “The command-line management interface for the previous system was difficult to use and prone to crashing. Even standard tasks were time-consuming,” says Ramirez. “Significant system changes also required specialized skills that we did not have in-house. We changed from one software version to another, and we had to pay a consultant nearly US\$9,000 for three days of work.”

“With the new environment, Dell OpenManage offers a simple way to monitor the health of the Dell hardware,” continues Ramirez. “We use standard Microsoft Windows tools for everything else. Because our administrators are trained with Windows, it’s an easy environment to manage.”

With fewer system outages, the IT group can focus its resources on other areas. “Previously, addressing problems required several technicians,” says Ramirez. “Now we can manage our current infrastructure with just a single administrator.”

“IF WE EVER NEED TO EXPAND STORAGE— TO CREATE MORE MAILBOXES OR INCREASE MAILBOX SIZE—WE CAN JUST ADD MORE DRIVES TO THE SAN. THE DELL/EMC SAN GIVES US PLENTY OF ROOM FOR FUTURE GROWTH.”

Danny Ramirez, security analyst, Texas A&M-Kingsville

DELL SUPPORT PROVIDES A SINGLE POINT OF CONTACT FOR THE EXCHANGE ENVIRONMENT

If problems arise with the new e-mail environment, Ramirez knows that help is just a single phone call away. “Whether there is a hardware or software issue, I just call Dell Support, and they can find the resources I need to solve the problem. Having a single point of contact is a tremendous help for a small IT department,” says Ramirez. “Dell Support has been outstanding. When we needed a drive replaced for the SAN, Dell sent a technician right away and replaced the drive, all within four hours.”

TEXAS A&M-KINGSVILLE TURNS TO DELL AGAIN TO VIRTUALIZE SERVERS

Based on the positive experience of deploying the Exchange environment, the IT group decided to work with Dell again to install a virtualized server environment with Dell PowerEdge servers and VMware® Infrastructure 3 virtualization software. “We virtualized our Web server, SQL servers, and a number of application servers,” says Ramirez. “With the virtualized environment, we have increased the speed of offering new services, created a cost-effective test environment, and improved the availability of those existing applications. Dell consultants once again helped us to deploy the new system and migrate the existing servers to the new virtualized environment. The migration was smooth and rapid.”

TEXAS A&M-KINGSVILLE SAVES THOUSANDS BY SELECTING DELL HARDWARE

The IT group was able to save the university thousands of dollars by installing a new Microsoft Exchange environment on Dell hardware rather than upgrading the old system. But the value of the new infrastructure is much greater. “The new Dell infrastructure cost significantly less than upgrading the old system,” says Ramirez. “In addition to saving money, we have a system with superior performance and availability, easier management, and great support.”

Most important, the school now has a robust foundation for facilitating communication. “As our faculty and staff increasingly use e-mail to do their work and communicate with students, our new Dell solution will provide excellent reliability and scalability,” says Ramirez. “Dell hardware and Dell services helped us to build a system that works well today and is ready for the future.”

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