PROTECTING THE TROOPS

Dell servers enable systems integrator MTCSC to design a reliable, energy-efficient solution for military intelligence that takes up 80 percent less space than the previous solution

In the highly competitive market for providing technology solutions to government agencies, systems integrator MTCSC succeeds by delivering quality without compromise. "We hire the best engineers, provide the best training and certification, and use highly secure facilities for designing, testing, and hosting solutions," says Ron Dalton, vice president of operations at MTCSC. That approach has enabled MTCSC to win bids and help its customers solve some of their most challenging problems.

When the U.S. military solicited proposals for a new intelligence solution that could help combat the use of improvised explosive devices (IEDs), the MTCSC team saw an opportunity. "The military had been using a collection of proprietary hardware and software that was expensive to acquire and maintain," says Dalton. "We realized that we could design a reliable and more cost-effective solution using industry-standard components."

The solution would include multiple servers supported by a storage area network (SAN) and a software environment that could host a search engine plus additional military applications. To win the bid to supply this solution (whose precise functions must remain classified), MTCSC had to meet several requirements. First and foremost, the environment had to be reliable. "We had to design a fault-tolerant environment and use hardware that could withstand highly variable operating conditions in a combat zone," says Chris Morgan, senior scientist at MTCSC.

The solution's hardware also had to be energy-efficient and compact. "The military planned to operate these solutions in small tactical command centers, where power is limited," says Morgan. "And because users might need to move all of the equipment fast, we needed to create a compact environment with a small physical footprint."

In addition, the solution's hardware had to be backed by a strong global support program. "We needed to work with a hardware vendor that could ship a new hard drive or motherboard to a desert location quickly," says Morgan.

MTCSC WINS WITH A DELL-BASED SOLUTION

MTCSC won the bid by proposing a reliable, cost-effective solution based on Dell hardware. "We had worked with Dell in the past, and we knew we could count on the company to deliver reliable servers with the specifications we needed, in a timely manner, so we could meet our deadline," says Morgan. "We also knew that Dell could provide the strong global support required."

By proposing a Dell-based solution, the MTCSC team was able to soundly beat the competition on price. "By using industry-standard Dell PowerEdge servers and

mtcsc

CUSTOMER PROFILE

COUNTRY: United States
INDUSTRY: Technology
FOUNDED: 1997
NUMBER OF EMPLOYEES: 340
WEB ADDRESS: *www.mtcsc.com*

CHALLENGE

Win new business by designing, configuring, and deploying a cost-effective solution to help U.S. armed forces reduce the threat of improvised explosive devices (IEDs); create a dense server cluster with reliable, energy-efficient, easy-to-manage hardware that is backed by outstanding global support.

SOLUTION

MTCSC created a solution that includes a virtualized server environment with VMware® Infrastructure 3 virtualization software running on Dell™ PowerEdge™ servers plus a Google Search Appliance that is based on a Dell PowerEdge server.

BENEFITS

Get IT Faster

- Met the military's tight deadline, delivering more than 50 systems in just four months

Run IT Better

- Minimized downtime for mission-critical applications by using reliable servers in a redundant and virtualized environment
- Facilitated fast hardware support, even for remote global locations
- Reduced customer training from weeks to days compared to the previous solution by designing a solution that is easy to manage

Grow IT Smarter

- Won the military contract by designing a reliable, dense, and energy-efficient solution that costs 14 times less than a competing solution
- Accommodated potential equipment moves, reducing the hardware footprint by more than 80 percent compared with the previous solution
- Decreased power consumption by at least 275 percent, enabling the military to operate in remote locations

DELL

“THE PREVIOUS PROPRIETARY SOLUTION TOOK UP THREE FULL RACKS OF SPACE. BY USING DELL POWEREDGE SERVERS EQUIPPED WITH QUAD-CORE AMD OPTERON PROCESSORS, OUR SOLUTION USES LESS THAN HALF OF ONE RACK—MORE THAN 80 PERCENT LESS SPACE THAN THE PREVIOUS SOLUTION.”

Chris Morgan, senior scientist/R&D, MTCSC

off-the-shelf software, we were able to cut costs significantly,” says Dalton. “Our solution cost approximately 14 times less to buy and maintain than our competitor’s proprietary solution.”

DELL HELPS MTCSC SHIP MORE THAN 50 CLUSTERS IN FOUR MONTHS

The solution that MTCSC designed includes two Dell PowerEdge servers (for redundancy) running VMware Infrastructure 3 software to create a virtualized environment. Customized military applications run on the Microsoft® Windows Server® 2003 operating system. The solution also includes a Google Search Appliance that is based on a PowerEdge server. All three servers are connected to a Fibre Channel SAN and a deduplication backup device.

The solution had to be deployed rapidly. “When we won the bid, we had just four months to acquire the hardware and software components needed, configure more than 50 of these solutions, and ship them to multiple locations,” says Morgan.

The MTCSC team worked with Dell to arrange a staggered delivery of servers, so that MTCSC could implement an internal assembly line during the build process at its secure facilities. “The Dell team was able to guarantee that we would receive all the servers we needed within our tight schedule,” says Dalton. “But more importantly, they were able to deliver those servers in batches so that we could develop an assembly line in-house. With help from Dell, we created a very efficient production workflow that enabled us to optimize our personnel resources, avoid interfering with our other customer orders, and deliver these products to our customer on time.”

DELL SERVERS AND VIRTUALIZATION SOFTWARE HELP ENSURE HIGH AVAILABILITY

The Dell servers provide the reliability that the military needs in the remote locations where the solutions are deployed. “Dell servers include multiple redundant components to help ensure continued operation even in the event of a component failure. We also designed the solution with two servers to build in extra redundancy,” says Morgan. “Virtualization adds yet another layer of protection against downtime. If a component fails on one physical server, administrators can quickly and easily move a virtual machine to the other server and keep operations on track until a new part arrives or repairs can be made.”

MTCSC HELPS THE MILITARY USE 80 PERCENT LESS SPACE AND POWER

By designing the solution using Dell PowerEdge servers equipped with two Quad-Core AMD Opteron™ 2350 processors, the MTCSC team was able to achieve a very dense, energy-efficient infrastructure. “The previous proprietary solution took up three full racks of space. By using Dell PowerEdge servers equipped with Quad-Core AMD Opteron processors, our solution uses less than half of one rack—more than 80 percent less space than the previous solution,” says Morgan.

The MTCSC solution also consumes significantly less power than the old solution. “The AMD Opteron processors are vital in achieving the maximum performance per watt,” says Morgan. “We estimate that this solution uses 275 percent less power than the previous one.”

HOW IT WORKS

HARDWARE

- Dell™ PowerEdge™ 2970 servers with Quad-Core AMD Opteron™ 2350 processors
- Google Search Appliance based on the Dell PowerEdge 2950 server

SOFTWARE

- Microsoft® Windows Server® 2003
- VMware® Infrastructure 3 Enterprise
- Oracle 9i

SERVICES

- Dell ProSupport

“BY USING INDUSTRY-STANDARD DELL POWEREDGE SERVERS AND OFF-THE-SHELF SOFTWARE, WE WERE ABLE TO CUT COSTS SIGNIFICANTLY. OUR SOLUTION COST APPROXIMATELY 14 TIMES LESS TO BUY AND MAINTAIN THAN OUR COMPETITOR’S PROPRIETARY SOLUTION.”

Ron Dalton, vice president of operations, MTCSC

DELL SOLUTION OFFERS SIMPLIFIED MANAGEMENT AND GLOBAL SUPPORT

Using industry-standard components greatly reduced the learning curve for managing the environment. “We were able to train the IT administrators in just a few days compared with the weeks it might take to learn a proprietary system,” says Morgan.

Should hardware issues arise, the military can get replacement parts fast, even in the somewhat remote areas where those solutions are deployed. “Dell ProSupport offers a strong global support presence and can be very responsive if issues arise,” says Morgan. “Dell ProSupport can send out replacement parts fast, even into combat zones.”

DELL REMAINS AN INTELLIGENT CHOICE FOR FUTURE PROJECTS

As the MTCSC team looks ahead to future projects, they know they will continue to count on Dell. “The Dell team has shown that they can integrate with our enterprise to deliver reliable products in a timely manner and back them with strong support,” says Dalton. “Whether we are designing new solutions for government organizations, hosting solutions in our secure facilities, or deploying new hardware for our own infrastructure, we will continue to look to Dell—it’s the intelligent choice.”

For more information on this case study or to read additional case studies, go to DELL.COM/CaseStudies.

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