

Data Guard Systems

CHALLENGE	SOLUTION	BENEFIT
Reduce power consumption per server at Data Guard Systems so growth can continue without a million dollar revamp of utility services	Consolidate 45 backup database servers onto 4 Dell™ PowerEdge™ servers with dual-core Intel® Xeon® processors running VMware® ESX Server® software; consolidate storage from distributed storage devices onto a Dell/EMC CX500 storage area network (SAN); utilize Dell Services to design, implement, and support the company's new solution	Reduced power consumption helps Data Guard Systems continue to grow; utility costs are reduced by as much as US\$10,000 per month ¹ , paying back the cost of the new infrastructure in less than a year ¹ ; administrative productivity is improved through a simpler infrastructure; a more cost-effective approach to disaster recovery is possible with the ability to easily move applications among servers; Dell assessment, design, and implementation services help Data Guard realize the benefits of a virtualized server environment, including dramatic consolidation

Calling on Consolidation

Virtualized Dell servers help cut power costs for hosted POS service provider

In today's world, you are never out of range of a cell phone store. Like the mom-and-pop grocery shop of old, today's cellular phone retailers can be found on nearly every street corner. But selling cellular is not as simple as vending vegetables. Cellular store owners must navigate a complicated sales process that includes managing contracts, equipment, rebates, activations, and more. But because most cell phone stores are owned by independent contractors, these owners generally lack the financial means and IT expertise to implement the costly enterprise applications needed to support such a complex sales process.

That's where Data Guard Systems comes in. The company addresses the challenges facing cellular retail store owners through a comprehensive hosted online point-of-sale (POS) system. "When one of our users rings up a purchase for a customer at the point of sale," says Tim Maliyil, president of Data Guard Systems, "they're using our software." Data Guard Systems offers cellular retailers everything they need to manage cell phone sales, including account activation, commissions, inventory management, and customer relationship management. And because Data Guard Systems hosts the solution, retail stores have

no POS IT worries at all. "We offer small business owners a service they could never afford to build on their own," says Maliyil.



Data Guard Systems must be at the top of its game 24/7

With a customer base of over 3,000 retailers across the United States—many of whom require access to data 24 hours a day—it is essential that the Data Guard Systems service be always available. “If the POS system were to run slowly, our customers would essentially consider it down,” explains Maliyil. “That’s how demanding the point-of-sale environment is.”

Rapid growth puts a drain on power

As the result of tremendous growth since its founding five years ago, the company’s IT infrastructure was showing signs of strain. “New customers meant new servers and more storage. By the end of 2005, we had 45 primary database servers and 45 backup database servers,” explains Maliyil. These were a combination of Dell PowerEdge servers running the Microsoft® Windows® operating system and Microsoft® SQL Server 2000 database software. The company also had additional PowerEdge 2850 servers for applications and several Dell PowerEdge 1850 Web servers.

Commenting on the configuration, Maliyil says, “We needed that server redundancy to ensure always-there availability, but we were about to run out of power. Who would have thought that power would become a limiting factor to our growth? And with three data centers, the growth problems we had in one center were multiplied by three.” After investigation, Maliyil learned that adding power capacity to the data center would cost millions of dollars. There had to be a more elegant way to solve the problem. That’s when Maliyil called Dell.

Dell Services helps consolidate the infrastructure

After Maliyil explained the problem to his Dell representative, Dell Services brought in a technical team to study the problem and architect a solution. “The Dell Services team thoroughly analyzed our situation and came up with a comprehensive solution,” says Maliyil.

The Dell Services team showed Maliyil how multiple virtual servers could run on one physical server using VMware ESX Server software, how server consolidation onto more powerful servers using virtualization helps to dramatically reduce the number of physical servers in the data center, thus lessening power consumption, and how VMware systems management tools enable a virtual server to be moved from one physical server to another within seconds, helping to make automatic failover a breeze. Maliyil says, “We could get by with far fewer servers, yet our customers would still experience an always-there level of service from us.”

Based on the recommendations of Dell Services, Maliyil decided to consolidate all 45 backup database servers onto four Dell PowerEdge servers with dual-core processors. VMware ESX Server software would maintain multiple virtual machines on each

physical server running Microsoft® Windows® 2003 and Microsoft® SQL Server 2000 software—a great combination according to Maliyil. “We’ve seen zero downtime with our SQL on Dell solution, which is key since these servers are mission-critical. And by adding VMware to the Dell solution, we are getting 15 high-throughput virtual servers for every PowerEdge server,” explains Maliyil.

“The Dell team set it all up for me, got everything working, and tested it thoroughly. They really put it through the worst possible disaster scenarios and showed me that their solution worked flawlessly.”

—Tim Maliyil
President
Data Guard Systems

In addition, Maliyil also adopted Dell’s recommendation to consolidate the distributed storage devices on the backup servers onto a Dell/EMC CX500 SAN that would be shared by all the virtual machines. “With shared storage, if a backup database server goes down,” says Maliyil, “we can be back online in under a minute because all virtual machines have access to the SAN. And the Dell/EMC SAN also helped us to more easily replicate the machine configuration and user data to remote data centers in Denver.”

Dell Services leads a successful migration

Dell Services was an integral part of Data Guard Systems’ migration to a consolidated infrastructure. In addition to designing the new infrastructure, Dell Services deployed and tested the new systems. “The Dell team set it all up for me, got everything working, and tested it thoroughly. They really put it through the worst possible disaster scenarios and showed me that their solution worked flawlessly,” says Maliyil.

In addition, the Dell Services team trained the Data Guard Systems IT staff on how to manage the new system and explained how to best use its many features. “The Dell consultants went above and beyond the call of duty,” says Maliyil. “They really did a great job, and the whole process was seamless from beginning to end.”

For support, Data Guard Systems chose Dell Platinum Enterprise Support. Says Maliyil, "We've only had to use Dell support one time, and they really lived up to what we expected. That sole incident is a real testament to Dell's quality."

Consolidation lowers the power bill

Given that power limitations were the driving factor behind the consolidation effort, the reduction in power consumption was a striking success. Since migrating to the consolidated server infrastructure, Data Guard Systems is saving as much as US\$10,000 a month in power costs.¹ "Our new Dell and VMware solution is projected to reduce the power required by as much as 80 percent, and the resulting savings should be sufficient to pay for the new servers and software within a year. And with the knowledge that we had avoided spending millions on power improvements at three distinct data centers, everyone was pleased," explains Maliyil.

Furthermore, because the four new PowerEdge servers can collectively handle up to 60 virtual machines, Data Guard still has plenty of room to grow. "We can now add 15 more virtual servers without buying a thing," says Maliyil.

Virtualization increases administrative productivity

In addition to the power savings, virtualization has simplified server administration. Obviously, there are fewer servers to manage. With VMware VirtualCenter virtual infrastructure management software and VMotion™ technology, Data Guard Systems gained powerful tools to manage its new virtualized environment. VMotion allows administrators to move live, running

HOW IT WORKS

HARDWARE

- Dell™ PowerEdge™ servers with dual-core Intel® Xeon® processors
- Dell/EMC CX500 storage area network

SOFTWARE

- VMware® ESX Server® software
- VMware VirtualCenter virtual infrastructure management software with VMotion™ technology
- Microsoft® Windows® 2003 operating system
- Microsoft® SQL Server 2000 database software

SERVICES

- Dell Assessment, Design, and Implementation Services
 - Virtualization Services
 - Consolidation Services
 - Migration Services
 - SAN Installation Services
- Dell Training Services
- Dell Platinum Enterprise Support Service

virtual machines from one physical server to another without disruption of service. Additionally, VMotion helps administrators perform zero-downtime maintenance by moving virtual machines among physical servers, so the underlying hardware and storage can be serviced without impacting the applications or disrupting users. "Administrator productivity is up dramatically, so our people can spend more time on improving our systems instead of simply keeping things running," says Maliyil.

Data Guard Systems customers appreciate the call

The most important benefactors of the consolidated infrastructure are Data Guard Systems' customers. Says Maliyil, "Our customers expect quick response times and always-there availability. That's what Dell has helped us deliver. We've had zero downtime with the new configuration and the performance has

been stellar. With our POS service, a cell phone retailer has a distinct competitive advantage—fast order processing and checkout is a key determinant of customer satisfaction in their business."

¹ Results not typical.

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