

CRUTCHFIELD

EMC and Microsoft help electronics retailer tune into the private cloud



ESSENTIALS

Challenges

- Physical server sprawl
- Tightening budgets
- Data center almost out of cooling capacity

Solutions

- EMC CLARiiON CX networked storage
- EMC PowerPath multipathing software
- EMC Navisphere Management Suite
- Microsoft Windows Server 2008 R2 Hyper-V

Key benefits

- \$175,000 savings in server hardware costs
- Avoided \$70,000 HVAC upgrade
- Increased availability of critical development environment
- IT staff efficiency improved significantly
- Server provisioning time compressed from weeks to under an hour
- Total savings of \$500,000 driven by virtualization
- Driving applications to market 20 percent faster—a huge competitive advantage

When it comes to consumer electronics gear, audio and video enthusiasts rely on Crutchfield Corporation for excellent customer care and comprehensive product know-how. Crutchfield enables its information-based service with a wide range of powerful tools available to its website visitors and customers as well as its own customer service advisors.

To keep improving on great customer experience, the Charlottesville, Virginia, retailer develops most of its line-of-business applications internally. In recent years, an expanding set of applications led to rampant server growth in the data center.

Craig VanHuss, Crutchfield's Enterprise Systems Group team leader, says, "The recession hit and we had an aging infrastructure that was getting more costly to maintain as it grew. We had some older servers putting out 150,000 BTUs of heat on the hour, and we were running out of capacity to cool them.

"We needed to decide: do we replace our aging HVAC (heating, air conditioning, and ventilation) system or do we embrace server virtualization? Since budgets were tight and virtualization would provide better flexibility and reliability for a much lower cost than the HVAC replacement, the choice was obvious."

CRUTCHFIELD VIRTUALIZES ITS SERVER ENVIRONMENT WITH SUPPORT FROM EMC AND MICROSOFT

As a steady user of Microsoft products, Crutchfield decided to virtualize its server environment based on Microsoft Windows Server 2008 R2 Hyper-V with an EMC® CLARiiON® storage area network (SAN).

The CLARiiON SAN is part of Crutchfield's EMC tiered storage infrastructure that includes Fibre Channel supported by Microsoft Hyper-V for high-priority applications, such as Microsoft SQL Server, test and development, Visual Studio Team Foundation Services, and contact center management. Low-impact file shares are served by CLARiiON systems with lower-cost SATA drives.

EMC PowerPath® software performs load balancing and connects the CLARiiON SAN to Hyper-V host servers in a failover cluster that eliminates any single point of failure. Crutchfield's IT team uses EMC Navisphere® software to manage all of its CLARiiON unified storage. EMC SAN Copy™ software is used for creating copies of production data for data backup and server upgrades.

"EMC's support and knowledge of Hyper-V have been great," says VanHuss. "With EMC's support, we've been able to optimize the technologies so we get the best performance possible."

AVOIDING UPGRADE, GAINING HIGH AVAILABILITY

At this time, approximately 70 percent of Crutchfield's servers hosted in the corporate datacenter are virtualized. Crutchfield converted 60 physical servers to virtual servers, which

“We know what the EMC array can deliver. The beauty is that EMC just works—no matter what we throw it at.”

CRAIG VANHUSS
ENTERPRISE SYSTEMS GROUP TEAM LEADER

slashed cooling needs by half and server hardware costs by some \$245,000. Leveraging Hyper-V consolidation, Crutchfield directly avoided a \$70,000 HVAC replacement. Crutchfield conservatively estimates total savings of \$500,00 from virtualization.

VanHuss also noticed significant improvements in server and application availability. “Building a failover cluster with Hyper-V was another opportunity to virtualize some physical boxes that weren’t highly available. To get the redundancy, we needed back-end storage that’s addressable by both server nodes in the cluster. We were already an EMC customer, so we were very comfortable with CLARiiON and its five-9s data protection.”

Now Crutchfield’s critical test and development environment is highly available. “We perform maintenance on production server nodes without affecting our developers’ efficiency or delaying any projects. Before we had to plan for downtime,” VanHuss says.

DEPLOYING APPLICATIONS IN HOURS INSTEAD OF WEEKS

“We give top priority to any IT request with an impact on sales,” says VanHuss. “Traditionally, we needed to architect the system, acquire hardware, wait for delivery, build and implement. Now, we provision virtual machines in under an hour, shaving two weeks or more off the process. We’re driving applications to market 20 percent faster, which is a huge competitive advantage.”

Crutchfield has several upgrades on the way: Microsoft SQL Server 2005 to SQL Server 2008; Exchange 2003 to 2010; and SharePoint 2007 to 2010. “We expect Hyper-V and EMC will make these upgrades more efficient to spool up than before, and we’ll get high availability as well,” notes VanHuss.

VanHuss estimates IT administration is far more efficient than before. “Since moving to Hyper-V and our new CLARiiON, we’ve grown from 200 to 300 servers and 25 to 55 terabytes of storage. Yet, we didn’t need to expand our staffing resources to support the greater needs of our business.”

Following the project’s first round of success, plans call to virtualize additional applications. The IT team is confident that the CLARiiON is capable of providing the I/Os per second (IOPS) required.

HEADING TO PRIVATE CLOUD

Crutchfield has advanced toward private cloud as Hyper-V has developed. When upgrading to Windows Server R2 Hyper-V, Crutchfield gained access to live migration, which enables virtual machines to move between physical hosts without discernable downtime. “With live migrations, we’ll be getting even closer to private cloud,” explains VanHuss. “The live migrations are awesome because they’re so fast and easy to manage. With EMC tools like Navisphere, we’re able to optimize performance of the virtual machines across shared clusters of storage volumes.”

Crutchfield is now exploring EMC’s FAST Cache and CLARiiON Virtual Provisioning to enable more flexible, efficient storage tiering and allocation.

VanHuss concludes, “EMC’s technology is always right on par with what we need today and where we’re headed with initiatives like private cloud. Instead of being consumed with day-to-day tasks that just turn the wheel, we get to spend more time innovating for the business.”

CONTACT US

To learn how EMC products, services, and solutions can help solve your business and IT challenges, contact your local representative or authorized reseller, or visit us at www.EMC.com.

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