



POWER SOLUTIONS

SEPTEMBER 2009

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10 COVER STORY

STORAGE EFFICIENCY: A VIRTUAL SNAP

An exclusive interview with Darren Thomas and Paula Long

Building on the strengths of a relationship with EMC since 2001, Dell took a significant stride forward with its US\$1.4 billion acquisition of Internet SCSI (iSCSI) pioneer EqualLogic in January 2008—resulting in a combined storage portfolio spanning Fibre Channel, iSCSI, and network attached storage (NAS) technologies. The visionaries behind this game-changing strategy recently spoke with *Dell Power Solutions* about the state of enterprise storage technology today and why storage virtualization plays such a pivotal role in data center optimization.

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STORAGE VIRTUALIZATION

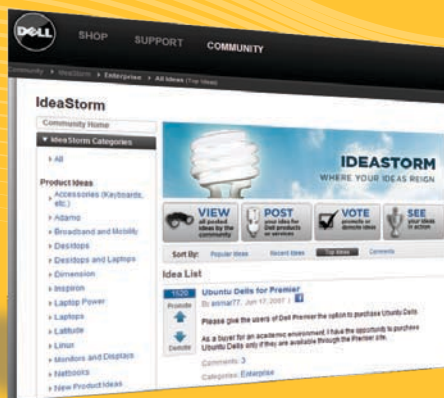
ALLOCATING STORAGE WITH VIRTUAL PROVISIONING ON DELL/EMC CX4 SERIES STORAGE ARRAYS

By Greg White, Annette Cormier, and Eric Cannell

Virtual provisioning on Dell/EMC CX4 Series storage arrays is designed to dramatically increase storage utilization, simplify storage management, and minimize power and space requirements. By taking advantage of this flexible, automated approach to storage allocation, administrators can help reduce total cost of ownership and enhance the energy efficiency of the data center.

The recent availability of 10 Gigabit Ethernet (10GbE) and the expected enhanced Ethernet standards such as Data Center Bridging (DCB) present an opportunity for administrators to transition to a consolidated Ethernet infrastructure. The reference architecture illustrated in this article shows how enterprises may make the transition to 10GbE for storage using Dell™ EqualLogic™ PS Series arrays and Dell PowerConnect™ switches.

BREW YOUR OWN IDEASTORM



Do you have an innovative idea for improving a Dell product, service, or solution? Or want to see new offerings? Share your ideas with like-minded community members at IdeaStorm, a collaborative community where customers share, discuss, and vote on ideas. Dell monitors IdeaStorm to gauge which ideas are most important and most relevant to you and then works to implement them. Join in the discussion at **ideastorm.com**.

By Tom Kolnowski

FEATURE SECTION

When deployed in Dell/EMC CX4 Series storage arrays, enterprise flash drives can dramatically boost storage performance for targeted data center workloads while helping increase resource utilization, enhance energy efficiency, and reduce total cost of ownership.

Dell EqualLogic PS Series iSCSI storage area network (SAN) arrays can provide a cost-effective, high-performance foundation for Oracle® Database 11g—helping enterprises create a highly flexible, scalable, and reliable clustered or single-instance database environment.

Dell EqualLogic PS Series iSCSI SAN arrays help organizations simply and cost-effectively meet growing storage demands of business applications with maximum efficiency.

For small and medium businesses as well as remote or branch offices in large enterprises, new Dell EqualLogic PS4000 iSCSI SAN arrays offer simplified management and powerful enterprise-class reliability and data protection at a cost-effective price point.

42 **10 Gigabit Ethernet: Unifying iSCSI and Fibre Channel in a Single Network Fabric**

By Achmad Chadran, Gaurav Chawla, and Ujjwal Rajbhandari

The advent of 10 Gigabit Ethernet (10GbE), Data Center Bridging (DCB), and Fibre Channel over Ethernet (FCoE) offers enhanced performance and throughput for connecting networked storage to servers—providing organizations with a clear path for unifying network fabrics.

46 **Streamlining Data Protection in VMware Environments Using CommVault Simpana**

By Brian Brockway and Zahid Ilkal

CommVault® Simpana® software offers next-generation data protection designed specifically for virtualization, helping streamline backup processes, reduce storage requirements, and support rapid data recovery.

50 **Simplifying IT: The Dell Intelligent Data Management Strategy**

By Sanjeet Singh

The Dell Intelligent Data Management approach incorporates a comprehensive strategy and a set of products and services to help organizations reduce costs and develop a simplified framework for managing enterprise information throughout its life cycle.



The 11th-generation Dell PowerEdge server family is optimized for VMware vSphere environments. See page 54.

54 **Building the Efficient Enterprise with Dell, Intel, and VMware vSphere 4**

By Andrew Gilman, Mike Monthei, and Andrew I. Fields

The next generation of virtualization solutions goes beyond just servers to include virtualized storage, networking, and I/O. When IT managers combine VMware® vSphere™ software, 11th-generation Dell PowerEdge™ servers with the Intel® Xeon® processor 5500 series, and advanced Dell EqualLogic storage arrays, they can create the ultimate in powerful, flexible computing models: an internal cloud.

60 **High-Availability Virtualization with Dell EqualLogic Arrays and Microsoft Windows Server 2008 R2 Hyper-V**

By Stanley L. Stevens, Darren W. Miller, and Jim Schwartz

The Microsoft® Windows Server® 2008 Release 2 (R2) Hyper-V™ platform introduces capabilities designed to deliver high availability for virtualized data centers. Integrating a Dell EqualLogic PS Series storage area network into Hyper-V virtualized environments helps organizations capitalize on new Hyper-V capabilities, including live migration, hot-add storage, and storage platform features that enhance usability and performance.

64 **High Value, High Performance: 11th-Generation Dell PowerEdge Servers for SMBs**

By Nick Jervis and Hariharan Ramalingam

The high-value, high-performance Dell PowerEdge R410 and PowerEdge T410 servers are designed to meet the electrical, mechanical, thermal, and acoustic standards of the 11th-generation PowerEdge server family while incorporating cost-effective components and features to help meet the needs of small and medium businesses.

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DELL POWER SOLUTIONS
ONLINE EXCLUSIVES

Virtualization: Taking the Fast Track to Business Efficiency

IT belt-tightening is geared toward saving money—but you can surpass that goal by boosting business efficiency. Virtualization is the secret to this strategy.

Forecast: Cloudy with a Chance of Virtualization

Is cloud computing or in-house virtualization the answer to your scalability challenges? Maybe both.

Mission Control

Why client virtualization is the key to supporting a distributed workforce—without sacrificing security, IT control, or end-user customization.

Build or Lease?

Do the benefits of software as a service (SaaS) outweigh the risks? The short answer: maybe.



NEXT-GENERATION IT

JOURNEY INTO THE CLOUD

Cloud computing promises to revolutionize enterprise IT and drive unprecedented levels of efficiency and flexibility. And there's nothing nebulous about the potential business benefits. To read about cloud computing alternatives in this *Dell Power Solutions* online exclusive, visit **DELL.COM/PowerSolutions**.

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The Texas Advanced Computing Center, a leading scientific computation facility at The University of Texas at Austin, tackles the research data explosion using high-performance Dell PowerEdge servers and massively scalable storage from DataDirect Networks.

92 A Model of Efficiency

Dell helps Brazilian IT consulting firm CPMBraxis build an SAP® environment running on Dell PowerEdge servers and supported by a Dell/EMC SAN and Dell PowerVault™ tape libraries—saving the company up to US\$1 million while providing a model solution for customers.

94 Setting the Pace

Southern Company, the premier energy company serving the southeastern United States, saves an estimated US\$1.3 million and sets an example for energy efficiency using virtualized Dell PowerEdge servers to consolidate its data centers.

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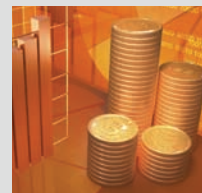
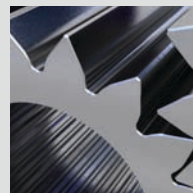
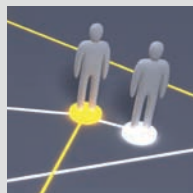
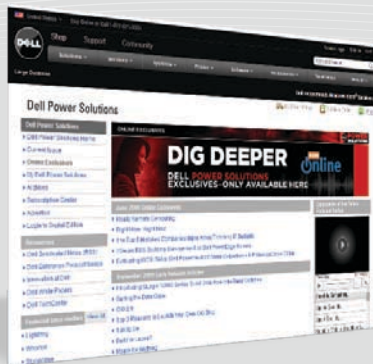
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ENTERPRISE INSIGHTS

Top 3 Reasons to Launch Your Own CIO Blog

Creating a culture of innovation and inclusion starts with you.

Top 5 Reasons to Consider VoIP

Voice over IP (VoIP) outstrips standard enterprise telephone service in several key ways. Is it time to make your move?

Top 5 Enterprise 2.0 Mistakes

Avoid the missteps that can make your social media initiatives less effective.

Surfing the Data Wave

You can't fight the rising tide of data. But you can keep it at bay with an opportune strategy for information life cycle management.

CIO 2.0

Social media is changing the rules of engagement for enterprise communication—and how CIOs go about business as usual.

Talk to Me

Best practices for a unified messaging strategy help ensure security, compliance, and employee productivity without hindering the free flow of communication.

Ready for Anything

An executive survival guide for calculating potential losses—and the cost of recovery after a disaster.

People Power

How talent management software is reshaping the way organizations evaluate, train, and develop employees.

Visualize This

Live video technologies are transforming the way companies communicate with their customers and their employees. Get the picture?

Social Security

Top four issues to consider when shaping social media security policies.

Smart Talk

By pushing the envelope on IP-based infrastructure, the telecom industry is opening up a whole new world of communication-enabled business processes.

Wanted: IT Business Visionaries

It's no longer enough for IT administrators to know their way around the data center. The true measure of success is the acumen to view the company as a whole and wield technology to strategic business advantage.

New Rules

How personal technologies drive upstream change to alter the way businesses operate.

Changing the Locks

Securing business information used to be as simple as locking the door to the data center at night. In the age of mobile computing, it's not such a straightforward proposition anymore.

Building a Better Business

How the manufacturing industry is using advanced technology for strategic advantage—and why it may benefit large enterprises across a range of industries to tear a page from their IT playbook.

Customers in the Palm of Your Hand

No matter how diverse your customer base, they all likely use mobile phones—and that gives you the chance to extend the reach of your business by developing mobile applications that become part of their daily routines.

INDUSTRY SOLUTIONS

Dell Digital Cinema: The Sequel

By Franklin Flint

Advances in media technology have enabled the Dell OEM Industry Solutions Group to develop and extend efficient digital cinema architectures—helping simplify deployment, reduce power and cooling requirements, and lower both up-front and operational costs.

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