FEBRUARY 2008

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10 COVER STORY

THE ENERGY SMART DATA CENTER

By John Pflueger, Ph.D., and Albert Esser, Ph.D.

Going green can be the secret to significant cost savings as well as aggressive performance growth. Dell offers a comprehensive strategy that includes virtualization and consolidation onto energy-efficient systems, best practices for power and cooling optimization, and expert services that can help businesses achieve immediate benefits.

16 BEST PRACTICES

UNLOCKING YOUR HIDDEN DATA CENTER

Dr. Albert Esser, vice president of data center infrastructure at Dell, shares his perspective on the momentum that is building behind green data center design. Plus: How IT organizations can put unused capacity to work and leverage tactics for fast, flexible growth that helps maximize the bottom line.

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EQUALLOGIC iSCSI PEER STORAGE

36 **Inside the EqualLogic PS Series iSCSI Storage Arrays**

By John Joseph, Eric Schott, and Kevin Wittmer

Built on a patented peer storage architecture, the EqualLogic PS Series of Internet SCSI (iSCSI) storage arrays offers high performance, reliability, intelligent automation, and seamless virtualization of a single pool of storage to enable simplified enterprise storage deployment, ease of management, and comprehensive data protection.

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By integrating server virtualization with the storage virtualization of EqualLogic PS Series iSCSI arrays, any size organization can create a powerful, highly flexible virtualized infrastructure to enhance data center capabilities and benefits.

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By Kevin Wittmer

EqualLogic PS Series iSCSI storage arrays enable organizations of all sizes to deploy an enterprise-level storage infrastructure offering comprehensive data and application protection.

JOIN THE REGENERATION

The ReGeneration is a global movement dedicated to sustaining the world's natural environment, with a focus on community dialogue and participation. To read the ReGeneration blog, watch videos, get tips and downloads, or get involved by joining up yourself, visit **ReGeneration.org**. For more about Dell's commitment to improving the environment, visit **DELL.COM/Earth**.

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DELL POWER SOLUTIONS ONLINE EXCLUSIVES

GREENING THE DATA CENTER

Best Practices for Increasing Data Center Energy Efficiency

By Paul Rad, Max Thoene, and Tim Webb

By consolidating systems using virtualization and Dell PowerEdge Energy Smart servers, organizations can retire legacy hardware to help significantly reduce power and cooling requirements.

High-Efficiency Cooling Through Computational Fluid Dynamics

By Paul Rad; Kailash Karki, Ph.D.; and Tim Webb

Predictive modeling based on computational fluid dynamics enables enterprises to configure their data centers for optimal cooling, helping maximize efficiency, reduce costs, and meet both current and future IT requirements.

Evaluating Energy Efficiency in InfiniBand-Based Dell PowerEdge Energy Smart Clusters

By Ramesh Radhakrishnan, Ph.D.; Rizwan Ali; and Vishvesh Sahasrabudhe

By building HPC clusters using the InfiniBand interconnect and Dell PowerEdge Energy Smart servers, organizations can help reduce power consumption without compromising performance.

Building Highly Available HPC Clusters with IBRIX Fusion and the Dell PowerVault MD3000

By Amina Saify, Aziz Gulbeden, and Onur Celebioglu

Qualified high-performance computing (HPC) cluster configurations based on the IBRIX Fusion file system and Dell PowerVault MD3000 storage can provide a robust, cost-effective, high-performance architecture.

Securing iSCSI Storage Networks

By Surendra Bhat, Lokesh Singh, and Santosh Bhadri

Following best practices can help administrators secure their networks when deploying iSCSI in enterprise environments.

Disabling Local Configuration and Remote Virtual KVM in the DRAC 5

By Sriranjan Bose and Abhay Salunke

Dell Remote Access Controller 5 (DRAC 5) firmware version 1.30 enables administrators to easily disable local configuration and remote vKVM (virtual keyboard, video, mouse) to help increase data center flexibility and security.

Smart Card Logon in the DRAC 5

By Sriranjan Bose and Abhay Salunke

DRAC 5 firmware version 1.30 introduces the smart card logon feature, which is designed to provide secure two-factor authentication on Microsoft Windows platforms.

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INSIDE DELL IT

Optimizing Call Center Efficiency with Automated Verification and Intelligent Routing

By Glen Curry, Ralph Hilliard, and Carthikeyan Shanmuganathan

The Dell IT group is working to automate parts of customer interaction to enhance both agent productivity and customer experience, and potentially simplify Dell call center activities.

How Dell Simplified IT Management by Designing a Business Service Management Dashboard

By Joshua David, Tom Painter, and Frank Tang

The innovative Dell Business Service Management Dashboard helps enhance IT efficiency, increase uptime, and provide executive-level visibility into the Dell IT environment.

Advanced Web Technologies Help Save Customer and Developer Time at Site Checkout

By Jun Yang

In a recent site upgrade, Dell IT identified Web technologies that help increase flexibility and streamline site development.

Dell EarthWatch Application Offers a Global View of Web Customer Engagement

By Shawn Fielding and Christos Pattichis

EarthWatch combines hourly traffic on the Dell Web site with Google Earth images to provide a near-real-time view into Web customer engagement worldwide.

How Dell Centralized Worldwide Server Management Using Microsoft Operations Manager 2005

By deploying Microsoft Operations Manager 2005, the Dell IT group was able to centralize and consolidate management of its Microsoft systems worldwide.

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CREATING A HYPER-EFFICIENT HYPER-SCALE DATA CENTER

By Jimmy Pike, Ty Schmitt, Frank Frankovsky, and Todd Brannon

Hyper-scale computing "clouds" can deliver critical network-centric applications and flexible access to powerful compute and storage resources. The Dell Data Center Solutions team offers a wide range of services to help create integrated solutions designed to minimize acquisition and operating costs, maximize energy efficiency, and enable rapid scalability.

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