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# POWER SOLUTIONS

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## COVER STORY

10

# Virtualization Enters the Mainstream

By Jeanne Feldkamp, Deb McDonald, and Tom Kolnowski

Once an isolated island reserved for test and development, virtualization is unlocking untapped server, storage, and networking resources. Today, standards-based server virtualization is changing the tides with efficient cost-benefit models enabled by reduced IT infrastructure costs, simplified management, and unprecedented business response.

## 17 STEP BY STEP

### Upgrading to VMware Infrastructure 3 on Dell PowerEdge Servers

By Todd Muirhead

VMware Infrastructure 3 can offer significant performance enhancements on ninth-generation Dell PowerEdge servers. The Dell Enterprise Technology Center demonstrates how administrators can leverage the portability of virtual machines to perform a rolling upgrade to VMware Infrastructure 3, helping minimize downtime during the transition.





DELL INFRASTRUCTURE  
CONSULTING SERVICES • page 64

## Achieving Balance-Sheet Business Value with Server Virtualization

Transforming administration-intensive physical data centers into cost-effective virtualized infrastructures is not something most organizations do every day. By drawing on best practices culled from successful customer engagements around the world, Dell Infrastructure Consulting Services can help organizations optimize IT resources, simplify server management, and sustain value across the overall IT infrastructure.

## Now Playing: Dell Datacenter of the Future Podcast Series



When planning a virtualized server environment, many businesses don't realize how complex it can be to address the storage component. Why? Because there is so much data in so many places. "Improving Storage in a Virtualized Server Environment" explores how iSCSI factors into the equation with cost-effective, easy-to-manage connections that enhance virtual machine mobility. For more information, visit [www.dell.com/podcast](http://www.dell.com/podcast).

## EDITOR'S COMMENTS

### 8 Virtual Tools of the Trade

By Tom Kolnowski

## FEATURE SECTION: VIRTUALIZATION IN THE MAINSTREAM

### 22 Using VMware Cluster Features on Dell PowerEdge Servers

By Scott Hanson

Using the VMware High Availability and Distributed Resource Scheduler features on Dell PowerEdge servers helps mitigate the risk of host failure while optimizing resource utilization in virtualized clusters.

### 28 Deploying Dell iSCSI Storage with VMware Infrastructure 3

By Dave Jaffe, Ph.D.

Dell Internet SCSI (iSCSI) storage arrays offer cost-effective, easy-to-deploy shared storage for software like the VMware Infrastructure 3 server virtualization suite.

### 34 Using XenSource XenEnterprise with Dell Servers and Dell OpenManage

By Victor Mashayekhi, Ph.D.; Puneet Dhawan; Simon Crosby; and Roger B. A. Klorese

Combining XenSource XenEnterprise software with Dell PowerEdge servers provides a scalable, cost-efficient way to streamline management of virtualized data center environments.

### 40 Virtualization Management Using Microsoft System Center and Dell OpenManage

By Balasubramanian Chandrasekaran, Ranjith Purush, Brent Douglas, and David Schmidt

Microsoft System Center Virtual Machine Manager 2007, Microsoft System Center Operations Manager 2007, and the Dell OpenManage suite can help simplify administrative tasks and enhance operational efficiency in virtualized data centers.

### 46 Enhancing Resiliency of VMware Virtual Infrastructures with EMC Layered Applications

By Eric Pan, Josh Donelson, and Mark Clifton

Integrating VMware Infrastructure 3 with EMC layered applications enables powerful high-availability, business continuity, and disaster recovery capabilities that can help organizations create resilient IT infrastructures.

# SEE IT HERE FIRST ▶



## Virtualization in the Mainstream



### Microsoft Exchange Server 2003 Performance on VMware ESX Server 3

By Kong L. Yang and Aravind Pavuluri

Before virtualizing critical systems such as Microsoft Exchange servers, enterprises should understand how those virtual machines might perform compared with a dedicated physical server.



### Running Microsoft Virtual Server 2005 R2 on Microsoft Cluster Service

By Mike Kosacek

Running Microsoft Virtual Server 2005 Release 2 (R2) on a Microsoft Cluster Service platform can help mitigate hardware failures by providing high-availability features for virtualized clusters.



### Simplifying DRAC 5 Deployment with the Dell OpenManage Deployment Toolkit

By Zain Kazim and Alan Daughetee

The Dell OpenManage Deployment Toolkit includes utilities for the Microsoft Windows Preinstallation Environment and Linux OS to help simplify Dell Remote Access Controller 5 (DRAC 5) deployment.



### Configuring the DRAC 5 to Use the Microsoft Active Directory Standard Schema

By Raghavendra Babu and Deepak Panambur

DRAC 5 firmware version 1.20 supports the standard Microsoft Active Directory schema, without requiring the schema extension necessary for previous firmware versions.



### Optimizing RAID Storage Performance with the SAS-based Dell PERC 5

By Dustin Sorenson and Leticia Olivarez

The Serial Attached SCSI (SAS)-based Dell PowerEdge Expandable RAID Controller 5 (PERC 5) is designed to significantly increase performance over previous-generation SCSI-based PERCs.



### Simplifying Dell Systems Management with Dell OpenManage Connection Plug-ins

By Sanjeev Kumar Singh and Neeraj Sharma

Dell OpenManage Connection plug-ins are designed to simplify the monitoring and management of Dell hardware by integrating Dell systems data and applications into third-party management software.



### Updating Microsoft Windows Server 2003 on Dell PowerEdge Servers

By Bhushan Gavankar

Deploying Service Pack 2 for Microsoft Windows Server 2003 R2 on Dell PowerEdge servers can enhance data center security, reliability, and productivity.



### An Introduction to DDR InfiniBand

By Rinku Gupta, Vishvesh Sahasrabudhe, Toby Sebastian, and Rizwan Ali

The increasingly popular InfiniBand high-speed interconnect now supports both single data rate (SDR) and double data rate (DDR) transmission, with DDR providing significantly increased speeds.



### Minimizing Downtime During Large Database Migrations with Oracle Data Guard

By Kai Yu and David Bryan Mar

By using Oracle Data Guard and Oracle Recovery Manager, administrators can minimize downtime and help maintain application availability during database migrations.



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## 52 **How Vizioncore Deploys Its Own esxRanger Professional Software for Disaster Recovery**

Vizioncore implemented esxRanger *Professional* software along with VMware Infrastructure 3 to create a reliable, easy-to-maintain disaster recovery system running on Dell and Dell/EMC hardware.

## 55 **Business Continuity and Disaster Recovery with Virtualization and Double-Take**

*By Kristine Lindely and Bob Roudebush*

Combining a virtualized environment with Double-Take data protection software can help dramatically increase the manageability and flexibility of data recovery for critical systems.

## 58 **Using Dell/EMC Storage Software in a VMware Virtual Environment**

*By Andrew Gilman*

The advanced software functionality available with Dell/EMC CX3 UltraScale series storage arrays can provide the resource flexibility necessary to create an integrated, highly available virtualized infrastructure.

## 61 **How Streaming the OS and Applications Changes the Rules for Server Provisioning**

*By Pete Downing*

Streaming server operating systems and applications from network storage with Arcence Data Center Edition can help reduce operating costs, ensure server-build consistency, and increase data center flexibility.

## 67 **The Tangible Value of Virtualization**

Virtualization is more than just a concept—it is a concrete business strategy that can provide tangible value for companies in virtually any industry.

# DEPARTMENTS

## STORAGE

### 71 **iSCSI: Changing the Economics of Storage Part 2—Deploying iSCSI in Virtualized Data Centers**

*By Matt Baker and Travis Vigil*

### 78 **Advanced System Protection with Symantec Backup Exec System Recovery 7.0**

*By Charles Butler, Carolina Martinez, and Kyon Holman*

### 82 **Optimizing iSCSI SANs with Intel PRO Server Adapters and iSCSI Remote Boot**

*By Jordan Plawner*

### 86 **Protecting Data Archives with Drive-Level Encryption in the Dell PowerVault LTO-4 Tape Family**

*By Curt Krempin*

## PRODUCT SHOWCASE: STORAGE SOLUTIONS

### 90 **Fast, Flexible, and Secure: LTO Ultrium 4 Tape Technology Clinches Dell PowerVault Lineup**

## MICROSOFT EXCHANGE SERVER

### 94 **High-Availability Features in Microsoft Exchange Server 2007**

*By Ananda Sankaran, Mahmoud Ahmadian, and Farrukh Noman*

## SYSTEMS MANAGEMENT

### 98 **Integrating MOM into the BMC Software-based Dell Enterprise Management Framework**

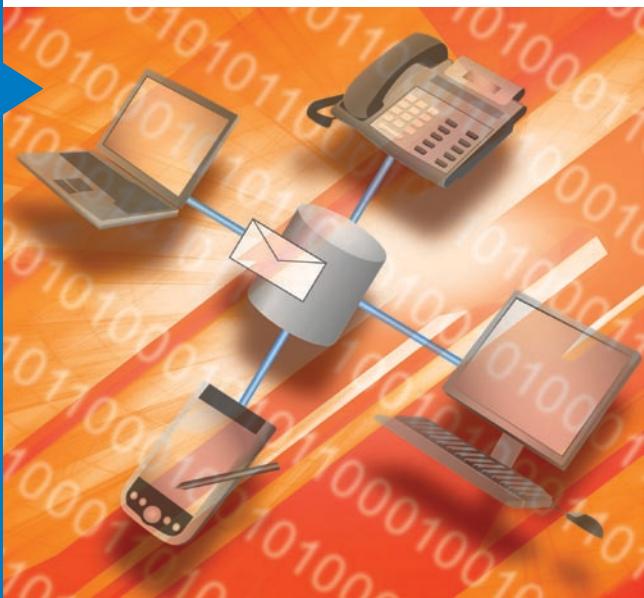
*By David Rubio, Lon Alonso, and Nathaniel Alfaro*

## GUIDED TOUR • page 91

# Unified Messaging with Microsoft Exchange Server 2007

*By Farrukh Noman and Suman Kumar Singh*

Implementing the Microsoft Exchange Server 2007 Unified Messaging feature to integrate e-mail, voice mail, and fax messages requires configuring and coordinating multiple systems. This article discusses the basic components of Unified Messaging infrastructures and explains how administrators can deploy them in their own data centers.



## TALK BACK

We welcome your questions, comments, and suggestions. Please send your feedback to the *Dell Power Solutions* editorial team at [us\\_power\\_solutions@dell.com](mailto:us_power_solutions@dell.com).

## 102 Procuring, Provisioning, and Updating Servers with LANDesk Management Solutions

By Lisa Baker

### SPECIAL SECTION: MAXIMIZING WORKSTATION PRODUCTIVITY

## 106 ATI FireGL Accelerators from AMD Make Workstation Graphics a Snap to Manage

By Daniel Shapiro

### SPECIAL SECTION: PARALLEL APPLICATION DEVELOPMENT SOLUTIONS

## 108 How Intel C++ and Intel Fortran Compilers Help Increase Application Performance and Accelerate Multi-threaded Program Development

### EDS WORKPLACE SERVICES

## 110 Streamlining Technology Management to Increase Workplace Productivity

By Matt Trevororow

### ADVERTISER INDEX

Acronis Inc. ....	109
Advanced Micro Devices, Inc. ....	25, 37
Avocent Corporation. ....	7
Dell Inc. ....	5, 51, 81
EMC Corporation ....	73
Intel Corporation. ....	C2, 15, 77
Microsoft Corporation. ....	C3
MultiLing Corporation. ....	21
Oracle Corporation. ....	C4
SAP AG. ....	45
Symantec Corporation. ....	9
Vizioncore Inc. ....	27, 93
VMware, Inc. ....	32a, 33

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