Growth in regional, remote and branch offices can leave IT leaders at a crossroads. To support the computing requirements of locations that have multiplied due to factors such as organic expansion, mergers and acquisitions, and entry into new markets, they may need to make a milestone decision. Should they add a data center to the remote site or add data center-like functionality to the remote site that is controlled from a central location?

Technology advances in such domains as healthcare, retail and education have created opportunities for expanding the contributions of remote office/branch office (ROBO) locations. To realize these opportunities, ROBO sites may need to increase processing power, as well as strengthen security, achieve enterprise-level availability and expand local storage capacity. At the same time, many of these locations have limited or no on-site IT administrators. As a result, centralized IT staff often must configure and manage a ROBO’s IT infrastructure remotely.

Moreover, ROBOs typically work and operate independently from headquarters. Although some organizations have controls in place to help ensure consistent infrastructure and applications to handle today’s computing demands, remote and branch offices need the power of a data center with the size and manageability of a desktop. Dell PowerEdge VRTX delivers exceptional performance, connectivity and storage in an easy-to-manage package.

Extending enterprise-class capabilities to remote office environments

By Michael Kimble and Achmad Chadran
Combining space-efficient, standards-based hardware with comprehensive, centralized management, Dell PowerEdge VRTX delivers enterprise-class capabilities to offices of any size. The PowerEdge VRTX shared infrastructure platform is designed expressly to help ROBOs and small-to-midsize businesses simplify IT while meeting operational, productivity and growth demands.

At its heart, the PowerEdge VRTX platform consolidates servers, storage, networking and management into a single chassis the size of a tower server. The PowerEdge VRTX platform supports up to four Dell PowerEdge M620 or PowerEdge M520 server nodes powered by the high-performance Intel® Xeon® processor E5 family, and up to 48 TB of integrated shared storage capacity. The VRTX platform also features an office-optimized form factor and acoustics, support for standard 100V AC – 240V AC power outlets, and a Gigabit Ethernet (GbE) internal switch module with 16 internal GbE ports and 8 external PCI Express (PCIe) ports.

PowerEdge VRTX is designed for rapid deployment and configuration, with all components pre-integrated and pretested. An integrated console facilitates both on-site and central management and monitoring. A range of Dell Services options, from feasibility studies to comprehensive installation services and remote assistance, accelerates deployment and helps improve operational effectiveness over the solution lifecycle.

The platform’s consolidation, scalability and ease-of-use features make it well suited for a variety of office use cases (see figure). In fact, McKesson Corporation is in the process of qualifying the PowerEdge VRTX platform for its medical imaging picture archiving and communication system (PACS) solutions. (For more information, see the sidebar, “A prescription for integration.”)

### Field-tested workload optimization
Optimizing the performance, reliability and efficiency of critical applications is a key aspect of maximizing value and productivity.

To help simplify and speed deployment, Dell has developed a set of PowerEdge VRTX reference architectures that have been designed, tested and validated for various environments and workloads, including desktop virtualization; Microsoft® Hyper-V® and VMware vSphere® virtualization; and Microsoft® Exchange, Microsoft® SQL Server®, Microsoft® SharePoint® and Microsoft® Lync® applications.

In benchmarks of common workloads, Principled Technologies found that PowerEdge VRTX outperformed a disparate hardware configuration that included legacy tower servers. The tests showed that PowerEdge VRTX delivered 64.3 percent better email response time, 9.5 percent better database performance, 10.4 percent better file performance and 19.8 percent less power usage than the legacy environment.


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### Features

**Type of organization** | **Use case** | **Benefits**
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Large, multistore retailers or service organizations | Support point-of-sale (POS), workforce management, supply chain optimization and mobile customer relationship management (CRM) applications | • System purchased centrally (from headquarters); deployed and managed on-site  
• High-performance, secure platform designed to handle high transaction volumes
Multiloclation healthcare providers, clinics and related services | Secure and manage on-site programs and records, as well as connect to healthcare systems, insurance companies, benefits providers and hospitals | • High-performance platform for advanced medical applications  
• Security for HIPAA compliance
Multilocational businesses | Run high-end, on-site business and technical applications with local storage | • Straightforward platform for IT to buy, customize and ship  
• Local expert technical support not required for installation  
• System managed from headquarters or on-site  
• Data center-caliber platform in a small chassis that fits under a desk or in a closet
Multicampus colleges, universities and schools | Provide a stand-alone, on-site data center solution for student, school and governing applications and reporting | • Enterprise-caliber performance and local storage for on-site applications and data  
• Security and performance controlled and managed centrally  
• System purchased and supported centrally and deployed on-site without the need for local expert IT services

**Suitability to task: Use cases for PowerEdge VRTX**
A prescription for integration

Headquartered in San Francisco, California, McKesson Corporation is a pharmaceutical distributor and healthcare information technology company that helps healthcare providers deliver high-quality patient services. The company’s medical imaging division was looking for alternative hardware platforms to accommodate healthcare providers of all sizes and complexities.

After careful evaluation, the company decided to adopt Dell PowerEdge VRTX as a platform option for its archive solution. The consolidated server, storage and networking available in the PowerEdge VRTX platform, integrated with McKesson picture archiving and communication system (PACS) software, enabled a turnkey solution for customers.

McKesson is excited with the performance of PowerEdge VRTX. “We pride ourselves in the technology solutions and services we provide to hospitals, physician offices, imaging centers and healthcare agencies, as this helps to improve patient safety, reduce the cost and variability of care, and improve healthcare efficiency,” says McKesson PACS infrastructure product manager Dirk De keersmaecker. “And that’s why it’s critical to leverage solutions such as Dell PowerEdge VRTX. VRTX offers an excellent platform for our customers because it provides all the critical technology in one package to run our applications in a virtualized environment, with the resiliency needed in critical diagnostic environments.”

Furthermore, Principled Technologies calculated that purchasing and running the PowerEdge VRTX platform could lead to a 26 percent lower five-year total cost of ownership (TCO) than continuing to use the legacy solution. The acquisition cost of PowerEdge VRTX is offset by savings in licensing, management and support costs.

To help IT leaders determine the optimum architectures for their organizations, Dell offers a range of services, including infrastructure consulting, data migration and logistics.

Versatile manageability

Because IT staff and expertise are often limited in ROBO environments, PowerEdge VRTX was engineered to be managed from any location. To that end, a range of configuration and management tools are available at no additional cost for PowerEdge VRTX, enabling organizations to leverage centralized IT expertise to streamline ROBO operations.

The Dell OpenManage Cluster Configurator tool provides centralized, streamlined failover cluster deployment and is designed to simplify the configuration of Hyper-V clusters. Two- or four-node Hyper-V clusters can typically be up and running in less than an hour, with up to 75 percent fewer steps compared to manual installation and configuration.2 Centralized administration enables deployment of virtual clusters across multiple remote offices.

The embedded Chassis Management Controller tool includes a single console interface that helps unify and simplify the management of PowerEdge VRTX hardware.

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1 Manually installing and configuring a four-node Microsoft® Windows Server® 2012 Hyper-V cluster can take up to 3:28. Installing and configuring a four-node Windows Server 2012 Hyper-V cluster using Dell OpenManage Cluster Configurator for Windows Server 2012 can take up to 48 minutes, providing up to a 76.9 percent improvement in deployment time.
2 Manually installing and configuring a four-node Windows Server 2012 Hyper-V cluster can take up to 92 steps. Installing and configuring a four-node Windows Server 2012 Hyper-V cluster using Dell OpenManage Cluster Configurator for Windows Server 2012 can take up to 23 steps, providing an improvement of up to 75 percent fewer steps.
components, including servers, storage, networking and power (see figure). Additionally, the Dell OpenManage Essentials console delivers simple, efficient element management and technical support for multiple remote systems. It supports Geographic View for rapid, at-a-glance identification and health status of remote PowerEdge VRTX platforms.

These centralized management capabilities help organizations take advantage of the expertise and efficiency of data center IT experts and reduce the burden on local IT staff. Moreover, standardized tools streamline management tasks, freeing centralized IT staff to pursue strategic initiatives.

Fine-tuned virtualization
Many remote offices require monitoring of the performance and availability of their virtual environments. The Foglight performance monitoring tool from Dell enables centralized or on-site IT staff to monitor, view and optimize the performance of virtual machines running on PowerEdge VRTX.

Foglight is designed to identify potential performance bottlenecks, such as too many virtual machines on a physical server or suboptimal load balancing among virtual machines. It also can automatically alert IT personnel so that they can resolve any problems from any location. In addition, Foglight supplies reports and aggregate data that can facilitate capacity planning and scalability.

Foglight complements the hardware health monitoring enabled by OpenManage Essentials to provide comprehensive visibility into and optimization of virtual and physical PowerEdge VRTX environments.

Integrated backup and recovery
Some data used by ROBOs, such as email, resides in a central data center. But a large amount of information is often stored on-site, such as retail sales data or patient records. This critical data must be protected and, in many cases, transmitted to the central data center in a secure and timely manner.

To help protect applications and data in remote office environments, PowerEdge VRTX is available with factory-installed, pretested and integrated backup, replication and recovery. This configuration leverages Dell AppAssure data

*Selling point*

Retailers need highly available point-of-sale systems, as well as video surveillance, digital signage and reporting to keep operations running smoothly and customers happy. Watch this video to discover how PowerEdge VRTX fits the bill.

[qrs.ly/933tmsu]
Dell AppAssure 5

Create hundreds of snapshots daily — data and applications

PROTECT

RECOVER

MOVE

Store, replicate and recover — virtual, physical or cloud

Protection for applications and data: Integrated backup and recovery through Dell AppAssure software

AppAssure is a powerful backup and recovery tool designed for rapid backup and recovery of both virtual and physical applications and servers. It creates application-aware snapshots for continuous data protection and integrates in-line deduplication and compression technology to minimize space requirements (see figure).

A key feature of AppAssure is anywhere-to-anywhere recovery. Through AppAssure, applications, systems, and data may be replicated to and restored from virtually any configuration, including physical to virtual, virtual to physical, virtual to virtual, and virtual to physical.

AppAssure can be accessed through a single web-based console, facilitating remote management. This flexibility extends the capabilities of centralized IT staff. With AppAssure, organizations can provide enterprise-class data protection and recoverability in remote offices, empowering ROBOs while minimizing risk.

Robust security

By design, remote offices are typically connected, in real time, to a central data center and other facilities through a core network. However, limited on-site staff and expertise make ROBOs a tempting target for cybercriminals, who may be able to exploit network vulnerabilities at the remote office to launch an attack on the central office. Network traffic containing sensitive data traveling between remote offices and central data centers also can be a target.

To help ensure security across the enterprise, Dell SonicWALL solutions provide powerful security capabilities that can be easily deployed and managed from a central location. Dell SonicWALL firewalls combine innovative technologies for advanced threat prevention, including network-based anti-malware protection, an intrusion prevention system with anti-evasion, and Secure Sockets Layer (SSL) decryption and inspection. These next-generation firewalls can be flexibly deployed as software, hardware, or a virtual appliance. For ease of management, Dell SonicWALL firewalls feature a universal dashboard, real-time alerts, centralized logging and offline management capabilities.

Dell SonicWALL solutions enable organizations to gain visibility into and control over security, not only at the central data center but also in far-flung offices and campuses — leading to a secure distributed enterprise.

Simple, efficient, versatile IT to empower ROBOs

Designed to fit under a desk or in a rack, PowerEdge VRTX can be located just about anywhere in the office while delivering enterprise-class hardware and availability. This flexibility helps centralized IT staff determine the most suitable deployment and placement of on-site resources.

For ROBOs with little or no on-site IT support, centralized IT teams can remotely configure and manage PowerEdge VRTX using integrated management tools. IT can also engage Dell ProSupport Plus services to optimize the performance of PowerEdge VRTX. The ProSupport Plus offering includes a dedicated technical account manager, immediate access to support engineers, remote monitoring with automatic case creation, proactive recommendations and health checks.

In addition to PowerEdge VRTX, Dell offers a wide variety of server, storage and network infrastructure solutions that help boost the productivity and efficiency of ROBOs at any scale.

Authors

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Learn more

Dell PowerEdge VRTX:
Dell.com/vrtx

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