Potent HP technology invigorates Englewood Hospital's IT environment

"The seamless integration of HP virtualized storage solutions, switches, drives, servers, services, and partner software helps us do more with IT and our scarce resources. Our HP solutions play a strong role in helping us support patient care and comply with government regulations."

– Diane Caesar, Chief Information Officer, Englewood Hospital and Medical Center

Organizational need:
Englewood Hospital and Medical Center competes with some of the largest university-affiliated medical centers in the Tri-State area of New York, New Jersey, and Connecticut. The non-profit, cost-focused hospital's IT team employs technology to work smarter and boost productivity for internal users. In keeping with these objectives, the staff wanted to implement new business systems and consolidate several databases to support U.S. data security rules; a future Picture Archiving and Communications System; financial, human resources and materials management; patient-related applications; clinical information; report archiving; and laser fiche optical imaging.

Solution overview:
To support the growing range of applications, systems, and databases, HP provided an extensible, manageable storage platform with virtualization capabilities. This solution leverages Englewood's investment in existing systems and staff skills. In late 2003, Englewood supplemented its original HP storage area network with a second SAN based on an HP StorageWorks 3000 Enterprise Virtual Array (EVA3000) and HP ProLiant servers. These systems let the staff dynamically pool and share resources, utilize capacity efficiently, and pace supply with the hospital's demand. In addition, ProLiant servers run a variety of hospital-specific applications, custom software, and business systems. Server software – VMware ESX Server and HP Systems Insight Manager – helps streamline IT administration and assists the staff in delivering high service levels to all areas of the hospital. Englewood expects to meet its projected return on investment in three years.

HP StorageWorks EVA3000 rejuvenates the IT platform
Not far from the George Washington Bridge in a New Jersey suburb is a community hospital that's big on healthcare. Since 1890, Englewood Hospital and Medical Center has cared for and cured the sick, taking pride in delivering comprehensive, state-of-the-art patient services. Today, Englewood fulfills its mission in a competitive environment where five other hospitals also serve patients. Englewood's world-class physicians, outstanding cardiac surgery program, and nationally recognized nurses compete against the nation's most renowned.

A small, skillful IT staff supports the medical facility, leveraging technology to bridge the gap between personnel resources and budgets. "We look for technology to make our jobs easier and help us work more efficiently," says Diane Caesar, Englewood Hospital's Chief Information Officer. "We also count on our HP account and services personnel, and they assist us above and beyond the call of duty."

Caesar knows that innovative technology and expertise are keys to meeting the hospital's myriad computing
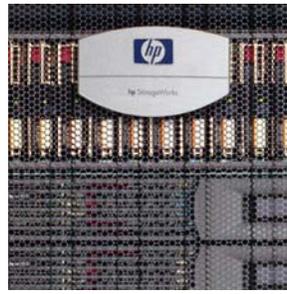
demands – and to supporting medical regulatory compliance. In connection with Englewood Hospital's compliance with the privacy and confidentiality rules of the Health Insurance Portability and Accountability Act (HIPAA), it is creating an electronic data exchange for billing purposes.

"To meet regulations, we archive a lot of the reports to networked storage, and we rely heavily on HP equipment to help keep our business operations going," Caesar acknowledges. "One of the ideas we implemented to gain greater efficiency is a storage area network combining the HP StorageWorks 3000 Enterprise Virtual Array, HP ProLiant servers, and VMware ESX Server."

Scalable, high-speed storage environment conquers data overdose

Prior to implementing its latest SAN, for several years Englewood relied on a SAN built with a 500 GB HP StorageWorks Modular Array 8000 (MA8000). However, after the staff selected the Microsoft® SQL Server as its preferred database, they realized the system couldn't accommodate the consolidation of several databases and new financial, human resources, and materials management systems. The hospital still uses the MA8000 SAN for file serving and plans to replicate data between it and the EVA3000 SAN. "Protecting the investment in our existing assets is very important, because our resources are scarce," says Caesar. "We took advantage of our investment in the StorageWorks MA8000 by redirecting it to new tasks."

The staff initially consulted with HP reseller Derive Technologies, which recommended the StorageWorks EVA3000 and helped arrange performance demonstrations in HP's New York City lab. "Derive Technologies put us in touch with the right people at HP and arranged everything from demos to pricing," comments Neville Lee, Infrastructure Engineer for Englewood Hospital. "The Derive representatives were onsite during the installation and are always available to assist us when we need their opinions about configuration concepts."

Englewood's systems must run 24x7 and deliver high performance. After testing how the EVA3000 performed with applications, the staff determined that the array – an HP virtualized storage solution – provided excellent features for supporting its systems at a reasonable price. "The HP StorageWorks EVA3000 fits our Microsoft SQL Server databases and other applications well because it is fast, resilient, and scalable to multiple terabytes of capacity," says Lee. "We've never had an outage or bottleneck – thanks to the array's enterprise-class, data protection features. Plus, HP Services updates our system with firmware, and the 'phone-home' feature we added alerts us before an impending problem, so we can address it."

Englewood stores patient radiology results in its main 10 GB SQL Server database, and archives these records on a non-HP library linked to the StorageWorks EVA3000. Soon the staff will migrate its PACS, patient-related applications, clinical information system, report archiving system, laser fiche optical imaging, and Microsoft Exchange Server to the EVA3000 SAN. "We've established capacity for our key applications and planned for future growth," Caesar notes.

The low-risk factor of unified, integrated technology

Englewood's 30-member IT staff, which provides support to approximately 1,000 computer users, values management ease. Caesar and her staff evaluated the management capabilities of the StorageWorks EVA3000 at length, stacking them against those of a comparable EMC array. "Compared to an EMC system, we found HP's management utility much easier to use, with a smaller learning curve," Lee maintains.

As a result, HP's fully integrated suite of centralized management tools sold the staff. "The HP OpenView Storage Management Appliance gives us the capabilities we need for reconfiguring and allocating storage," says Lee. "After setting up our configurations and provisioning drives, we spend little time managing our SAN. We even extended the Management Appliance to administer storage on our durable StorageWorks MA8000."

"Integrating HP ProLiant servers with our StorageWorks EVA3000 and HP switches helps us do our jobs without being concerned about compatibility."
– Diane Caesar, Chief Information Officer, Englewood Hospital and Medical Center

HP systems meld well with each other and with third-party products to lower complexity and economic risk, empowering a small staff to work smarter. For example, Englewood uses HP infrastructure solutions to thwart compatibility issues and accelerate deployment. Caesar says, "With HP, we have one-stop shopping and don't worry about how our SAN switches operate with other hardware. Everything works well together."

ProLiant servers and VMware extend virtualization to the server layer
The staff instituted ProLiant servers as its standard, and the platform runs a variety of hospital-specific applications, custom software, and business systems. "Our only servers are HP servers," Lee emphasizes. "We like the processing power of the ProLiant DL580 server and its internal storage capacity. From end to end, our HP platform serves us well."

Running on ProLiant servers, VMware ESX Server brings virtualization and enhanced utilization to the server layer. The software enables multiple applications to access processing power via virtual server partitions. Two ProLiant servers host six virtual servers on the SAN, and the staff allocates 70 percent of networked storage to them. "Using VMware virtualization software on HP ProLiant DL580 servers, we are able to dynamically allocate resources without interrupting users," Lee explains. "We also have the necessary redundancy, and we're well on our way to implementing our IT consolidation strategy. When we launch new systems we won't need to scale out servers with additional storage capacity."

In closing, Caesar believes that Englewood's IT systems help Englewood fulfill its healthcare mission. She concludes, "If our administrative staff and caregivers need data access for business or time-critical health reasons, it's available and easy to get to – thanks to our HP infrastructure."

About Englewood Hospital & Medical Center
A nonprofit, non-sectarian voluntary healthcare facility, Englewood Hospital and Medical Center (www.englewoodhospital.com) in New Jersey officially opened its doors on June 14, 1890, in a 12-bed wooden building on a three-acre tract of land. Today, Englewood's cardiac surgery program ranks number one in New Jersey, and the hospital is one of only 50 in the United States to hold Magnet Status awarded by the American Nurses Credentialing Center of the American Nurses Association. In 2004, Englewood dedicated a new 90,000-square-foot outpatient pavilion.
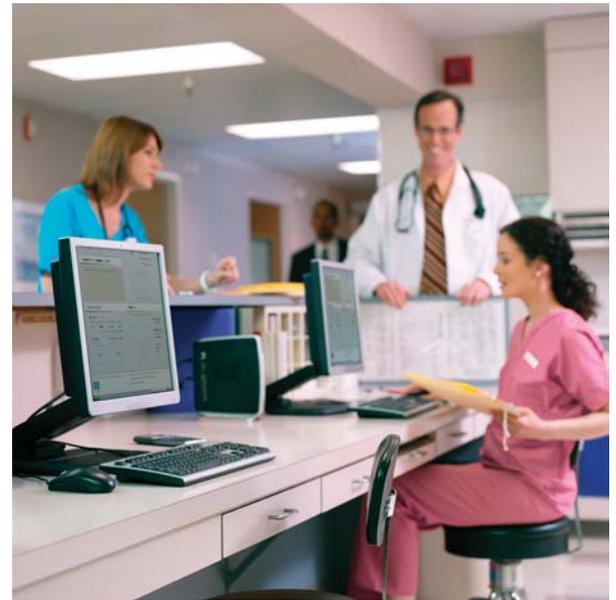
About Derive Technologies
New York-based Derive Technologies, LLC (www.derivetech.com) provides services and products that help build, manage, and enhance personal computer infrastructures. The firm's range of network expertise, combined with in-depth knowledge of today's business environment, has placed it at the forefront of the technology services marketplace.

Potent HP technology invigorates Englewood Hospital IT environment

At a glance

Hardware:
- HP StorageWorks 3000 Enterprise Virtual Array (EVA3000) with 1 TB of capacity
- 5 ProLiant DL580 G2 servers
- HP OpenView Storage Management Appliance
- HP StorageWorks Modular Array 8000 (MA8000) with 500 GB of capacity
- Advanced Digital Information Corporation (ADIC) FastStor tape library linked to the EVA3000-SAN

Software:
- HP OpenView Storage Management Appliance software
- Microsoft SQL Server 2000
- Microsoft Windows 2002 and Windows 2003 operating systems
- Microsoft Exchange Server 2000
- VMware ESX Server

HP Services:
- SAN design and installation
- Hardware warranty

Services from HP reseller Derive Technologies, LLC:
- Consultation

Challenges

- Deploy new business systems
- Consolidate server storage
- Deliver IT services within budget constraints and with limited staff
- Protect the hospital's investment in existing assets
- Satisfy mounting data-retention requirements

Solution

- Implementation of a second SAN using an HP StorageWorks virtualized storage solution
- Integration of HP ProLiant servers with VMware ESX Server virtualization software
- World-class installation services and support expertise from HP Services

Results

- Extensible storage and computing support for new business systems and patient-related applications
- Access to business and future patient-related data
- Centralized storage management tools, enabling administration of additional storage assets by existing staff and boosting productivity
- Increased utilization, consolidation, and resource sharing via storage and server virtualization
- Data retrieval and archiving capabilities for regulatory compliance

For more information on how working with HP can benefit you, contact your local HP representative, or visit us at www.hp.com.

Derive TECHNOLOGIES We make iT happen.

hp invent