

IBM *@server*® and IBM TotalStorage systems

Providing the foundation for business transformation and innovation



Today, businesses of all sizes are reengineering their IT infrastructures to strengthen their competitive positions. Increasingly, they are discovering that IBM can deliver the systems, software and services that help enable the enterprise-wide integration of core processes and intelligence—and can result in elegant and effective business transformation.

Supported by newly flexible and scalable IT foundations, these businesses are moving with greater agility in the marketplace. Take, for example, the medical centers that have chosen IBM® TotalStorage® systems to support their digital x-ray and electronic medical records environments: Today, their doctors have improved, reliable access to the patient information they need to provide superior care—even when working with patients in remote locations. Or the Victoria Partnership for Academic Computing, a high-performance computing service provider that now has the capacity to help build out the national computing grid in Australia.

IBM customers are discovering that IBM systems and technology are transformative, inspiring innovation. One such customer is the State University of New York Center of Excellence in Bioinformatics, an organization that uses computing power to push the envelope in its quest to find answers to the diseases that plague humankind. Even customers launching new businesses are choosing IBM: Using open standards-based IBM systems, ambitious startup YeePay delivers their state-of-the-art electronic payment systems to a rapidly growing customer base in a highly competitive market in China.

IBM can help customers achieve results. Streamlined business processes to help improve decision-making, market responsiveness and customer satisfaction are just a few examples. And all of these benefits can contribute to attracting new customers while often substantially reducing costs. Why IBM? Our customers will tell you the decision to go with IBM is a win-win—both for them and for their customers.

YeePay chooses IBM platform for launch into exploding Chinese electronic payment systems market

■ **The Challenge**

Compete as a startup in an extremely competitive Chinese market, delivering electronic payment systems for business customers and online and mobile users. Support the rapid addition of new business customers and consumers.

■ **The Solution**

Built an IBM open standards-based infrastructure to support core business processes and integrate with customer payment systems for flexible scalability and greater market responsiveness.

■ **The Benefit**

Put in place the capacity to add new customers and handle more transactions through secure integration of electronic payment systems with customers' and banks' systems. Gained peace of mind with the internationally trusted IBM brand and world-class IBM support that allows YeePay to focus on the business rather than IT.



Each year, millions of new computer users in China log onto the Internet, bombarding e-commerce sites—particularly digital media and online gaming sites—with skyrocketing demand for online payment options. Since launching its payment service in March 2005, YeePay has become one of the fastest growing e-commerce companies in China, offering businesses and individual consumers an easy-to-use payment system with innovative features, such as interactive voice response for transferring funds by telephone and person-to-person payment through e-mail.

To do business and keep pace with the explosive growth of China's Internet-based commerce, YeePay needed a secure and scalable IT infrastructure to support its business processes; integrate its applications with business customers and banks; support a rapidly growing customer base; and support an ever-increasing volume of transactions. IT infrastructure is at the heart of this company's business, so IT vendor selection was critical to the success of the entire venture. YeePay needed a systems vendor that could provide all the support and maintenance the company might need so that employees could focus on running the growing business rather than maintaining IT systems.

IBM is on the money for performance and reliability

After evaluating systems from IBM, HP, Sun Microsystems and Dell, YeePay chose an open standards-based IBM OpenPower™ 720 server, two IBM BladeCenter® JS20 servers and IBM WebSphere® Application Server software as the foundation for the reliable, secure and flexible infrastructure the company required. Bin Tang, chief executive officer of YeePay, explains, “IBM stood out from the competition during our evaluation. They gave us all the information we needed to make a sound business decision—most importantly, the fact that they are committed to supporting the Linux® operating system and open standards-based systems. IBM representatives provided us with in-depth product demonstrations and excellent pre-sales technical support for the hardware and the operating system. We were impressed with the performance and scalability of IBM products. And the price/performance ratio of IBM was extremely favorable.”

OpenPower servers help ease the cost of rapid growth

The IBM system has enabled YeePay to process a steadily increasing volume of payment transactions quickly and efficiently, easily supporting growth and high performance. The OpenPower system provides a strong return on investment with a configuration that can start out small and expand as YeePay continues to grow. With the sleek BladeCenter design, YeePay can add blade servers as needed, without going through a complicated and costly process to increase capacity. “Other systems required a lot of investment for capacity up front,” Tang says. “But the BladeCenter design allows us to start out at a low price point and then pay as we grow.”

The YeePay system uses the flexibility of the Linux operating system to integrate the custom applications at the core of YeePay’s business with the systems of businesses, banks, financial services agencies and communications carriers, forming a complex—yet highly secure—payment network. YeePay management is very happy with the performance of

the company’s applications on the OpenPower 720 server, which provides the highly scalable, 64-bit IBM POWER5™ platform for Linux. “We wanted to take advantage of the security, value and choice Linux offers,” Tang says. “IBM is committed to supporting open standards, and the IBM OpenPower server and Linux deliver enhanced virtualization and advanced processing capabilities for a flexible and reliable foundation to support our expanding business.”

IBM support and reputation pays off for YeePay

With IBM, YeePay has a single point of contact for support, maintenance and post-sales service, which saves the ambitious startup valuable IT management time. In fact, YeePay management was so impressed with the ease of integrating IBM software that they decided to switch from BEA middleware and Oracle database software to WebSphere Application Server and IBM DB2 Universal Database™ software. “The IBM team showed us how to configure DB2 Universal Database and WebSphere to maximize the value of our data and applications,” Tang explains. “Now the whole system is much more manageable. With this level of integration of hardware, middleware and applications, we’ve been able to streamline all of our processes for greater efficiency while lowering our IT management costs. Backed by IBM systems and support, we’re free to put all of our energy into responding to the rapid growth and huge demand of the market here in China.”

In addition to the technical advantages of IBM servers, software and support, YeePay has gained a significant marketing advantage. Putting the IBM logo on its Web site has enhanced the company’s credibility and helped attract a major mobile telephone carrier and several leading software distributors as some of the first YeePay customers. Says Tang, “Payment is all about trust, and IBM is a well-trusted brand. Our customers recognize that.”

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Bin Tang
CEO
YeePay

SUNY Center of Excellence in Bioinformatics boosts research with supercomputer built on IBM *@server* BladeCenter

■ **The Challenge**

Increase the center's computational speed and storage capacity, improve system reliability and find a cost-effective supercomputing vendor with a reputation for great support and reliable system integration.

■ **The Solution**

*Switched from Dell servers and EMC storage systems to IBM, installing an IBM *@server* BladeCenter chassis containing 266 BladeCenter HS20 blade servers and seven IBM *@server* xSeries 345 servers running Red Hat Linux 9.0, backed by five terabytes of storage.*

■ **The Benefit**

Significantly improved computation speeds, enabling scientists to improve research productivity. Reduced downtime and IT administrative costs and improved resource allocation with easy-to-use system management tools. Lowered costs for power and cooling with a substantial increase in power efficiency.



The University at Buffalo Center of Excellence in Bioinformatics, the State University of New York, researches genomics, proteomics, bio-imaging and pharmaceutical sciences using high-performance computing techniques that model biological data at the molecular level. Scientists require powerful supercomputers to process complex mathematical equations and help them understand what substances such as proteins and DNA do and how they interact, and how to design drugs to treat specific diseases, such as cancer and multiple sclerosis.

In 2002, the center installed 2,000 Dell servers to process the massive data sets inherent in genetic research. While this supercomputing cluster seemed extremely cost-effective at first, center director Professor Jeffrey Skolnick decided to explore other infrastructure options to support a growing workload and increase the system's efficiency.

Skolnick and his evaluation team solicited proposals from seven vendors besides Dell, including IBM, Sun and HP. Although the center had a limited budget, the focus wasn't

primarily cost. Reliability and vendor responsiveness were also key considerations. “We wanted a vendor who would take responsibility for fixing any problems with the cluster,” Skolnick explains. “IBM gave us a single point of contact and delivered what they promised.”

IBM helps reduce critical research time

After extensive benchmarking and testing, the center chose an IBM **@server** BladeCenter chassis with a cluster of 266 BladeCenter HS20 storage servers running Red Hat Linux. What separated IBM from the competition was the team's flawless execution during the evaluation.

IBM had a test system up and running in three weeks. It included seven standalone xSeries 345 servers connected to five terabytes of storage, supported by a general parallel file system and Extreme Cluster Administration Toolkit (xCAT) system management software.

The new IBM supercomputer cluster reliably handles the center's home-grown applications and intensive computations with peak performance of more than 1.32 teraflops. The new system is much faster than the previous one. “The IBM supercomputer is delivering the performance we need to make significant strides in protein structure and function prediction. The greatly improved manageability and simplified infrastructure lets us focus on finding the causes of deadly diseases and developing new drugs to treat them,” Skolnick says.

Management tools accelerate system diagnosis

Since the IBM supercomputer was deployed, the center has experienced fewer system failures, enabling scientists to conduct more computation and visual modeling. The IBM supercomputer has also simplified IT system support. Previously, when a hard drive failed, diagnosing the problem involved inspecting the numerous racks for red lights or plugging a monitor into 2,000 nodes, one at a time—a frustrating and time-consuming task. With built-in BladeCenter management tools, IT staff can diagnose problems with system software and administer the cluster remotely, reducing downtime and increasing IT efficiency. “We're getting more science done per unit of time because more of the cluster is up,” says Skolnick.

Blade configuration helps lower costs and scales for future growth

The IBM BladeCenter cluster uses substantially less power and cooling than the previous system, which helps reduce the center's operating costs. With limited floor space, the blade configuration enables more servers to be deployed in the same area while simplifying system infrastructure and leaving room for growth. Skolnick concludes, “At this point, it is my hope that soon we'll be expanding again, and my bet is that we'll go with an expanded BladeCenter system.”

“The IBM supercomputer is delivering the performance we need to make significant strides in protein structure and function prediction.”

Professor Jeffrey Skolnick
Director
SUNY Center of Excellence in Bioinformatics

VPAC lends power to Australian HPC with highly reliable high-performance IBM systems

■ **The Challenge**

Meet growing demand for outsourced and grid high-performance computing services in the Asia-Pacific theatre. Create a resilient, highly secure infrastructure that can integrate flexibly with clients' systems to support a growing roster of corporate, academic and government clients.

■ **The Solution**

Replace an Compaq AlphaSC super-computer with a high-performance Linux cluster solution, leveraging the flexibility, reliability and performance of IBM open standards-based computing systems for greater market responsiveness.

■ **The Benefit**

Significantly increased computing power, with large workloads running at 80 to 90 percent capacity with virtually no downtime. Gained the capacity to support new clients and participate in building a national computing grid. Lowered power costs, contributing to return on investment within four years.



In 2000, a consortium of seven universities in the Australian state of Victoria established the Victoria Partnership for Advanced Computing (VPAC), a nonprofit agency that provides high-performance computing (HPC) services in the fields of computational engineering, computational software development, geospatial sciences, grid computing and life science. Clients include local research hospitals, government agencies and automotive giant General Motors. VPAC computing projects range from aggregating colorectal cancer databases and checking large datasets for marine research to analyzing oil slosh and profiling consumer buying habits.

Additionally, VPAC recently received government funding from the Australian Partnership for Advanced Computing (APAC) to help establish a national computational grid.

Administrators search for a system to handle anticipated workload growth

In 2004, VPAC aggregated high-performance computers around Australia, adopting international middleware standards and deploying grid portals to support applications of local interest. Although the overall grid project is in its infancy, the company expects demand for its applications to increase significantly over the next year. Because the risk of service interruption increases with more servers connecting to the grid, high availability is a critical priority for VPAC.

“With a large computer network running huge jobs, downtime can be catastrophic,” says David Bannon, VPAC systems manager. “We run some very long jobs—if a server goes down, it can mean months of wasted compute time even if that server is only down for a few minutes.”

Initially, the demands of grid processing heavily taxed VPAC's infrastructure performance. The company's aging Compaq

AlphaSC supercomputer was expensive to maintain and operate, and it was performing well below current industry standards. VPAC management decided it would be less expensive to purchase a new supercomputer with optimal price/performance than to continue operating their current AlphaSC machine.

IBM server offers outstanding performance and flexibility through open standards

After considering solutions from a number of competitors, including Sun Microsystems and HP, VPAC replaced its AlphaSC supercomputer with a high-performance IBM Linux cluster solution. Because of the organization's commitment to open standards, most of the systems in the VPAC infrastructure already ran the Linux operating system, leading the company's IT team to seek a new system that would also run Linux. "We wanted the flexibility of open standards-based computing, and we had an existing Linux skill set that we wanted to maximize," says Bannon.

VPAC purchased 37 IBM **@server** OpenPower 720 servers, which feature the SUSE LINUX Enterprise Server (SLES) V9 for PowerPC operating system. 36 of the OpenPower 720 servers are clustered into computing nodes to support VPAC's HPC workload, and one server is partitioned separately for head and management nodes. The new IBM Linux cluster augments the client's two existing IBM **@server** Cluster 1350 servers, giving VPAC three IBM Linux cluster environments. "We liked how the OpenPower system is tuned for Linux," says Bannon. "The system easily supports our existing applications, which gives us high performance at a price point that can help us reduce our acquisition costs, lower our total cost of ownership and simplify our IT infrastructure."

Linux-tuned OpenPower systems help enhance performance and uptime

Built on the IBM Power Architecture™ instruction set featuring flexible, stable IBM POWER5 technology, the OpenPower system is designed and engineered for reliability, availability and serviceability (RAS) from the ground up. Advanced OpenPower RAS capabilities such as First Failure Data Capture and Dynamic Processor Deallocation help keep systems running, while the Linux kernel leverages IBM POWER performance features to help improve uptime and scalability. Leveraging OpenPower system features, VPAC

has achieved 80 to 90 percent processor utilization. Also, according to Bannon, the system has had minimal downtime in the eight months since VPAC starting running it. "This is great performance—the kind of performance we require to support our customers and to establish a reliable portal in a grid computing environment," he says.

With the OpenPower 720 systems at the center of its IT infrastructure, VPAC has improved its client responsiveness and boosted availability for clients' demanding workloads, providing users with a significant increase in computing power over its previous Compaq AlphaSC solution. Says Professor Bill Appelbe, founder of VPAC, "As a result of these performance gains, we've been able to improve overall client service levels. Jobs run much more quickly, and we have much shorter user queues. Our new system is giving us outstanding scalability as well, allowing us to add more concurrent users without affecting performance."

Low energy costs contribute to lower total cost of ownership

In addition to generating impressive performance figures, the OpenPower 720 Linux cluster has been extremely dependable and energy efficient compared to the Compaq AlphaSC. "This OpenPower system is yielding substantial savings in energy costs. Because of the POWER5 architecture's lower power consumption, we enjoy lower peripheral costs, such as the cost of air conditioning," says Bannon. "Over a few years' time, these can add up to substantial savings."

World-class IBM support helps ensure client satisfaction

Appelbe is particularly impressed with IBM support and service, which enables his organization to focus on meeting the needs of its growing client base. "Obviously, IT is intrinsic to our business and the services we offer clients. However, with IBM support, we can feel confident about delivering the level of service users require. For example, often IBM detects hardware issues before our clients experience a problem, so we can continue running work on the specific node until the job is complete, and then shut down the node and reroute other jobs. The transition between nodes is completely transparent to users, so it helps us minimize downtime. We always knew we could count on IBM technology and support, and our choice has been validated by our growing number of satisfied clients."

Catholic Medical Center prescribes IBM TotalStorage for PACS

■ **The Challenge**

Replace siloed department-specific storage systems with a high-capacity enterprise storage system to support system-wide clinical information and digital imaging needs.

■ **The Solution**

A high-capacity, easy-to-manage storage area network (SAN) based on the IBM TotalStorage Enterprise Storage Server® (ESS) storage system supporting the GE Healthcare Centricity Clinical Information and Imaging Information systems.

■ **The Benefit**

Provided on demand access to complete patient data, which can help doctors make fast, accurate diagnoses and help improve patient care. High-capacity, reliable storage can also help doctors cost-effectively manage patient information throughout the entire relationship.



The Catholic Medical Center (CMC), a private, non-profit 330-bed hospital in Manchester, New Hampshire, is home to the New England Heart Institute, one of the premier cardiac clinics on the East Coast. Practicing state-of-the-art patient care, the hospital's healthcare providers have been among the earliest adopters of digital x-ray and cardiac imaging systems available since the late 1990s.

CMC is in the process of replacing siloed departmental digital information and imaging systems with the GE Healthcare Centricity software suite, expanding a Picture Archiving and Communications (PACS) environment across the entire hospital and offsite provider network. By doing so, the hospital will gain a centralized digital medical image repository that can be easily accessed and managed. Then, with the ability

to retrieve and share patient images, healthcare providers can collaborate in real time to provide diagnoses and treatment.

Accommodating the large image files generated in an enterprise-wide PACS environment requires terabytes of storage. What's more, storage speed is essential so that doctors have timely access to the records and images that can help them make accurate, informed diagnoses. To meet both of these requirements, CMC needed a high-capacity enterprise storage system to replace the dedicated systems used by various departments. "An enterprise-wide PACS environment can revolutionize how our doctors practice medicine," says Kevin Irish, director of IT. "It puts vital, comprehensive information right at doctors' fingertips. But we needed a high-performance storage system to make it work."

CMC chooses IBM for highly secure, scalable storage of critical PACS images and information

Irish called in ITS, Inc., an IBM Premier Business Partner, to help replace the departmental HP, DEC and Compaq direct-attached storage systems with a centralized storage system that could support the new GE Healthcare PACS applications. Although GE Healthcare's applications are validated on EMC and IBM storage systems, after evaluating

products from both companies, Irish and Rob Connary, ITS consultant and president, decided that the IBM TotalStorage Enterprise Storage Server 800 was secure, scalable and fast enough to meet CMC's PACS needs over the next three to five years. "In particular, we liked the IBM features—including the Hierarchical Storage Manager and SAN Volume Controller—that would help us manage patient information throughout its lifecycle," says Irish.

ITS designed a cost-effective two-tier storage architecture. Fast online storage serves digital images and data to healthcare providers and hospital administrators. A low-cost tape library houses archived data. The IBM Hierarchical Storage Management (HSM) application, integrated with CMC's existing IBM Tivoli® Storage Manager (TSM) software, automates the migration of data from online disk storage to offline tape storage. HSM moves less frequently accessed images off the SAN to an IBM model 3584 linear tape-open (LTO) storage library to help keep storage costs low. TSM enables centralized storage management, including automated backup and restore functions.

The centralized SAN system can help reduce IT costs for individual departments while providing more storage and simplifying IT. Says Connary, "Today, individual departments don't have to worry about making sure siloed storage and applications have enough capacity for growth, and they don't have to pay for capacity they don't use and can't share."

Improved storage utilization can help lower storage costs, and centralized management of the SAN can help lower overall IT administration costs and protect critical information. Observes Irish, "The backup of one SAN is much more manageable than backing up multiple systems—with only one system to watch, an administrator can easily ensure that backups are going well, so patient data is better protected."

"With IBM TotalStorage, we have created a complete, centralized repository of our patients' medical images and clinical data."

Kevin King
Director of Diagnostic Imaging
Catholic Medical Center

IBM ESS helps improve physician collaboration and patient care

The new IBM ESS has improved information sharing and collaboration throughout the Catholic Medical Center and its extended network. On demand access to patient information allows CMC's healthcare workers to deliver better patient care. "Today, with the SAN in place, we can securely access digital images and other patient information, no matter where we are, using the Internet," says Kevin King, director of diagnostic imaging. "We have several remote practice sites, and doctors at those locations can now review patients' images at the click of a mouse. Gone are the delays of shipping film and the potential for it being mishandled or misplaced."

With the GE system, there is no need for special viewing stations. "Doctors can view images anywhere using a Web browser," says Rich Torossian, director of cardiac diagnostics. "We can collaborate in real time with specialists located just about anywhere to make sure patients receive the best healthcare possible."

IBM ESS simplifies storage and management of patient information

CMC users like the manageability and searchability of digital patient records stored on the central IBM SAN. "Now, patient images and records are backed up regularly, eliminating the chance of them being lost. Plus, we are able to comply with evolving regulations for data retention and privacy," says Irish. "With IBM TotalStorage, we have created a complete, centralized repository of our patients' medical images and clinical data," says King.

"We're very pleased with the outcome since we installed the IBM ESS six months ago. It has performed flawlessly," says Irish. "Almost daily I hear that the IBM SAN has changed the way we are working by making relevant patient data more accessible than ever. And now that the SAN is in place, the workload is growing. We're adding up to 100 gigabytes of data per month, but the scalability of ESS means that we can simply add storage volumes to increase capacity."

St. Joseph's Hospital Health Center looks to IBM for a healthy, stable storage platform

■ **The Challenge**

Support the data management needs of a growing, innovative hospital with a highly reliable, economical storage solution.

■ **The Solution**

Implemented centralized, manageable storage based on the flexible, scalable IBM TotalStorage Enterprise Storage Server and IBM Tivoli Storage Manager software.

■ **The Benefit**

Simplified the hospital's storage infrastructure while increasing its capacity and reliability and reducing costs and IT administrative overhead.



Diagnosing a broken infrastructure

Transformed from a dance hall in 1869, New York's St. Joseph's Hospital Health Center cares for more than 23,000 inpatients and 400,000 outpatients annually. Employing more than 3,500 healthcare professionals, the Catholic institution delivers general medical care and specialty services ranging from mental health programs to renowned cardiac care. In 2002, St. Joseph's was one of three U.S. hospitals to be both awarded the prestigious Magnet Recognition for Excellence in Nursing and listed as one of Solucient's top hospitals in the country.

The main role of St. Joseph's IT department is to help ensure that its healthcare professionals have around-the-clock access to essential clinical systems and data. But the hospital's existing storage solution, which housed its patient information, had failover procedures that could inhibit access during a power outage. The hospital also wanted to transfer its paper-based records and X-ray film to an online environment, which would require four times its existing storage capacity and considerable software fees. Even maintenance costs were out of control. St. Joseph's operated 117 servers, each with its own storage and tape drives. Internal teams spent much of their time managing disparate disk and backup routines, while the organization spent many resources servicing underutilized systems.

"Every technology dollar we spend needs to apply toward a solution that will support us over the long term," explains Chris Ryan, manager of IT at St. Joseph's. "Our previous solution couldn't grow at the rate—or cost—we required."

A robust IBM storage solution—the prescription for success

St. Joseph's looked to IBM Global Services for a highly scalable and highly secure storage infrastructure designed to lower costs. The team implemented an IBM TotalStorage Enterprise Storage Server Model 800 system featuring IBM Tivoli Storage Manager software to automate routine backups.

All of St. Joseph's patient-critical systems are currently using the new storage environment. Today, the hospital uses 2.5TB capacity, but anticipates requiring 15TB once it launches its new online data systems. The hospital also plans to expand the environment, adding a redundant storage component for rapid data recovery and more secured business continuity.

Receiving a clean bill of health

The new storage solution has allowed St. Joseph's to maintain its commitment to delivering superior patient care. Since

implementing the system, the hospital has avoided storage downtimes—even during the power outages that crippled the Northeastern United States in August 2003.

St. Joseph's new environment has five times more capacity than its previous platform. The hospital has cut storage costs in half by eliminating its disparate devices and the associated maintenance expense. Plus, the new consolidated storage makes the most of the hospital's limited IT staff and offers a way to add capacity in real time without taking systems offline.

Moreover, the relationship between St. Joseph's and IBM has been invaluable. Ryan notes, "We have immediate access to IBM expertise when faced with technical challenges. I personally consider IBM a phenomenal partner—a great asset to this organization."

“Our TotalStorage solution gives us peace of mind. It takes care of core storage and backup management capabilities, and doesn't demand the hands-on involvement that other solutions require.”


Chris Ryan
Manager of IT
St. Joseph's Hospital Health Center

Priority Healthcare migrates Oracle CRM solution to IBM xSeries and Linux

■ **The Challenge**

Efficiently and effectively anticipate and meet the needs of healthcare patients requiring specialized pharmaceuticals for life-or-death situations.

■ **The Solution**

Implemented an integrated customer relationship management solution, including Oracle[®]i RAC and Oracle E-Business Suite for multiple call centers, on an IBM  xSeries infrastructure.

■ **The Benefit**

Substantially improved performance of core applications, enhancing customer responsiveness and order fulfillment with an IBM infrastructure that now supports business 24/7.



For millions of healthcare consumers, the local pharmacy represents the most efficient distribution method for the drugs that treat the most common medical conditions. A small percentage of patients, however, need specialty pharmaceuticals for life-or-death situations such as cancer, hepatitis and infertility. Chemotherapy drugs, hepatitis treatments and fertility drugs are often too specialized for retail pharmacies to sell. Based in Lake Mary, Florida, Priority Healthcare Corporation (Priority Healthcare) fills this gap by selling such medications to patients upon referral from their doctors. With its 1,450 employees, Priority Healthcare also

supplies specialty drugs and medical equipment to hospitals, clinics and other healthcare institutions.

Just like traditional drug stores, Priority Healthcare prides itself on excellent customer service, whether the customer is an individual patient or a doctor's office, clinic or hospital buying because of the ease of ordering. For this reason, Priority Healthcare decided to standardize call centers from a number of separate business divisions onto a common IT platform including a single customer relationship management (CRM) solution as well as common servers, databases and applications. Using the CRM system, the company could better track its customers, anticipate their needs and present them with services that would make it easier to obtain medications and equipment.

Seeking rock-solid server platform

To create the solution, Priority Healthcare chose Oracle[®]i database, Oracle Real Application Clusters (RAC) and Oracle E-Business Suite, which includes Oracle CRM, Distribution

and Financials software. Priority Healthcare then worked with Oracle to design and jointly build custom pharmacy and medical billing applications. For the database servers, the company chose a Dell solution running Red Hat Enterprise Linux Advanced Server. The two production database servers at the Florida data center were backed up by two Dell disaster recovery servers at the company's Byfield, Massachusetts, site.

Unsatisfied with Dell servers

The company was not satisfied with the performance of its Dell database servers. At the end of 2003, Priority Healthcare went shopping for another hardware platform.

"We researched the market for commodity servers to replace our Dell solution and decided that IBM **@server** xSeries 445 systems were the way to go because of their outstanding engineering," says Javier Muniz, director of technology integration and architecture at Priority Healthcare. "IBM pretested its SCSI adaptors with Linux, so we could depend upon them to work. We were also impressed with IBM's support for Linux."

In the course of a visit to IBM, Priority Healthcare was referred to IBM Business Partner Agilysys, Inc., an IBM reseller based in Cleveland, Ohio. Agilysys tapped the IBM Oracle International Competency Center in San Mateo, California, and performed a study of the performance requirements of Priority Healthcare's Oracle applications. Together with Oracle specialists from IBM Global Services, Agilysys tested, configured and implemented the new hardware solution. IBM also provided responsive technical support for Red Hat Enterprise Linux.

Pretested Linux solution from IBM

Priority Healthcare is now rolling out end-to-end production on all four IBM xSeries database servers and experiencing twice the I/O throughput compared to its Dell servers. The scalability of the new servers is also outstanding, and the company finds it can do more with the same real estate. To meet the 24/7 availability needs of the application servers for this and other solutions, the company has decided to deploy IBM xSeries 346 systems.

"Throughout our experience with IBM and Agilysys, we have been very impressed and pleased with the level of knowledge, products, professionalism and support we have received," says Bill Elliott, senior vice president of information management and technology at Priority Healthcare. "IBM has designed xSeries servers from the ground up to support multiple environments—not just the Microsoft® Windows® operating system. This is why they run extremely well on Linux. It's also the reason we're standardizing on IBM xSeries for our Oracle applications in the future."

And not only is Priority Healthcare standardizing on IBM servers, it is also moving its storage management software from VERITAS storage management software to IBM Tivoli Storage Manager. "We trust Tivoli Storage Manager to back up the Oracle E-Business Suite application and data, as well as the Linux operating system," says Muniz. "Tivoli integrates with the Recovery Manager utility built into the Oracle solution to help ensure that the complete application tier is backed up. With IBM, we have had no issues at all supporting Linux. The breadth of the IBM product line and the company's resources are truly outstanding."

"We researched the market for commodity servers to replace our Dell solution and decided that IBM xSeries systems were the way to go because of their unequalled engineering."

Javier Muniz
Director of Technology Integration and Architecture
Priority Healthcare



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