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 Leader of Information Technology
 Saint Elizabeth*

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INDUSTRY Healthcare

SOLUTIONS **Modular Platform, Business Continuity and Replication**
Hardware — Hitachi Adaptable Modular Storage 2500
Software — Hitachi Dynamic Provisioning, Hitachi Replication Manager and Hitachi Dynamic Link Manager software; Hitachi In-System Replication bundle
Services — Professional services, implementation and data migration services provided by Hitachi Data Systems Global Solution Services

Saint Elizabeth Uses Hitachi Technologies and Services to Speed Data Migration and Mission-critical Performance

At Saint Elizabeth, anytime access to medical data is vital to supporting millions of home healthcare visits each year. Timed with network and virtualization upgrades, Saint Elizabeth engaged Hitachi Data Systems Global Solution Services (GSS) to deploy Hitachi Adaptable Modular Storage (AMS) 2500 for enhanced performance, dynamic provisioning and a swift return on investment.

Saint Elizabeth is a modern, dynamic and award-winning nonprofit organization providing home healthcare and support across Canada. Home healthcare has become indispensable to providing overall health services in Canada, especially to clients needing rehabilitation therapy, wound care, ongoing monitoring and other remedies that can be performed outside medical facilities. Saint Elizabeth employs almost 6,000 nurses, rehab therapists and personal support staff who work from the field in conducting almost 5 million healthcare visits annually.

Founded in 1908, Saint Elizabeth is focused on providing home and community health services, creating and disseminating knowledge and education, and enabling healthcare and support for First Nation, Inuit and Metis. The organization has a track record of social innovation and breakthrough clinical practices, including home chemotherapy, community-based care for people living with HIV/AIDS,

introduction of the Electronic Child Health Network and web-based solutions for delivering care and information to patients.

Saint Elizabeth is also a leader in incorporating technology to improve healthcare practices and make it easier for Canadians to receive treatment services. Today, many of the field staff use BlackBerry applications to post daily schedules, log details of each patient visit and track mileage. And while paper is still used in the field, the health records are entered electronically into a backend database, drastically reducing reliance on paper and fax. The IT department at Saint Elizabeth is responsible for safeguarding these records, and ensuring data compliance with the Ministry of Health and other long-term care requirements throughout the territories.

"Our data storage is mission critical. We have an overarching strategy to reduce our technology footprint while providing a consistent environment that supports all our applications, secures our data and

makes it available anywhere and anytime. We refresh our technology every 3 years to maintain performance, availability and reliability of the data we manage," says Leader of Information Technology for Saint Elizabeth, David Burne.

Data Center Plans Upgrade

A lot was happening in the Saint Elizabeth data center. The IT team manages 165 servers, 1/3 of which are virtualized using VMware vSphere 4.1. They also manage close to 7,000 Microsoft Exchange Server mailboxes, some over a gigabyte in size with 65,000 messages spanning 5 years. The mailboxes were connecting through the server to a 3-year-old IBM® System Storage® DS4800, the data center's only storage platform, which was in Burne's queue for the next storage refresh cycle. The box was just handling traditional provisioning, which involved creating a LUN and presenting it via Fibre Channel to a server. Whenever there was insufficient space available, IT had to back up the data, destroy the LUN, recreate the LUN to increase the space, add it back to the server and then put the data back on it. Also, daily backup of over 3TB of data was performed onsite, first to disk and then offloaded to tape.

Besides upgrading storage, Burne was planning to improve the network infrastructure to better handle Fibre Channel over Ethernet traffic and to reduce cabling, power and other footprint requirements. Moving live physical servers took the better part of an hour, and Burne wanted to be



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able to take advantage of high availability features in the VMware environments. Additionally, Saint Elizabeth was moving toward a Microsoft Windows 7 virtual desktop infrastructure (VDI) and Burne wanted the ability to pilot it off more agile storage.

Requirements for the replacement storage included thin provisioning, dynamic provisioning and load balancing capabilities, as well as outstanding reliability, flexibility and scalability to support Saint Elizabeth's Exchange, VMware and database environments. Burne was looking to reduce complexity so the storage architecture needed to be easy to manage and maintain. And he wanted to ensure that when retiring the IBM box, the data would be efficiently and securely migrated to new storage without risk or prolonged downtime.

To facilitate the search for the right storage technology partner, Burne engaged Metafore, a trusted value-added reseller (VAR). "We spent the better part of 7 months researching the latest storage technologies necessary to accomplish our data center vision. Our VAR took our criteria and presented 3 different storage vendors, including support services. We were impressed with what we saw, but only Hitachi Data Systems met all of Saint Elizabeth's criteria. The technology was there, the versatility and resilience were there, and Hitachi offers an extensive yet focused services complement. Hitachi Data Systems Global Solution Services was involved right from the beginning when we were discussing potential solutions. We were looking to implement storage and have a complete service package. The end result would be a fully migrated system, up and running, with all the production systems operating off the new storage," says Burne.

Solution Steps Up Performance and Data Migration

To resolve its database performance and data availability challenges, Saint Elizabeth selected a storage solution based on the Hitachi Adaptable Modular Storage 2500. Two key reasons Burne cites for choosing

AMS 2500 are effective bandwidth into its dual controllers, which enhance performance in storage to the servers, and the controller's unique ability to manage provisioning to the server. AMS 2500 was configured with 2 High Density Storage Expansion Trays populated with 50TB of SAS for client records and other mission-critical data, and with 16TB of SATA drives for cost-efficient email archiving.

To orchestrate deployment of the new storage, GSS helped scope and plan the migration from old storage, which would comprise a total of 25 host-based migrations and approximately 30TB of data. The GSS team expertly helped navigate Burne's staff through the project with installation services and knowledge transfer for software functionality, including Hitachi Dynamic Link Manager for robust multipath SAN connections between servers and storage and Hitachi Dynamic Provisioning for automated thin provisioning.

"Using Hitachi services helped us reduce risk and accelerate completion of the data migration. We call it nondestructive migration, which means that if anything were to go wrong, it would be a 30-second flip of a switch to go back to the data that was there prior to starting migration. It really put our team at ease to know we wouldn't have data loss. We were able to cut migration time by a third using Hitachi services. We've used services from other vendors before, but the team from Hitachi was the most professional. From the project manager to the engineers, everyone was exceedingly focused and well versed in the technology, which really enhanced the project outcome, helping it go smoothly and finish on time," Burne explains.

AMS 2500 was brought into the Saint Elizabeth IT environment in conjunction with infrastructure upgrades, including Brocade switches and single-pane administration for both Fibre Channel and Ethernet. The Brocade solution reduced cabling and power requirements, and the Hitachi storage reduced power consumption while boosting performance.

Data Center Moves Toward Faster Response Times and Return on Investment

According to Burne, Saint Elizabeth is one of the first organizations in Canada to run VMware on Fibre Channel over Ethernet into Hitachi storage. Since implementing the new network and storage infrastructure, he highlights numerous benefits for the end users and the bottom line. "For our ROI calculations, we included estimates on hardware, and power and footprint reduction. We saw, on the initial 50TB, an ROI that paid for itself in about a year. So, the hardware paid for itself quickly," he says.

The Saint Elizabeth data center has reduced its footprint and the size of managed data by terabytes since implementing the Hitachi system. "The ability to provision storage has gone from tedious and time-consuming to dynamically provisioning automatically in seconds. We've also really benefitted from the comprehensive dynamic load balancing across our high availability VMware environment. Now that we have the Fibre Channel over Ethernet and powerful Hitachi storage, we can now pilot VDI efforts, including tablet devices off the storage, and we can finally take advantage of VMware's high-availability features, so servers dynamically move between physical ESX hosts on the fly in about 4 minutes. That's fast," Burne extols.

He further cites visible improvements with the Exchange environment for end users and recognizes new opportunities. "Response times for navigation and email have gone from minutes to seconds. We've improved delivery of systems to the business by days. And we have new capabilities and functionality to extend storage beyond previous shelf life, and beyond our expectations," finishes Burne.



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