SYDNEY ADVENTIST HOSPITAL

Sydney's busiest hospital supports diagnostics with agile, responsive storage

ESSENTIALS

Industry

Healthcare

Company Size

2,200 employees

Business Challenges

- Deliver archived images to specialists quickly
- Provide a flexible environment for integrating valuable new technologies
- Accommodate rapid increases in data without compromising performance

Solutions

- Dell EMC Isilon X-Series
- Dell EMC Isilon SyncIQ
- Dell EMC Isilon InsightIQ
- Dell EMC Isilon A100 Backup Accelerator
- Dell EMC VNX unified storage
- VMware vSphere
- VMware Horizon Suite

IMPROVING ACCESS WITH RAPID IMAGE RETRIEVAL

Sydney Adventist Hospital, commonly known as the San, is New South Wales' largest private hospital, averaging approximately 53,000 patients and 180,000 outpatients annually. The hospital employs more than 2,200 staff and provides several speciality services, such as radiology and ultrasound for women. As patient numbers continue to grow and new technology provides more comprehensive and accurate tools for diagnostics, the need for flexible data storage is increasing.

The hospital's patient archive and communication system (PACS) is an essential diagnostic tool. "By providing doctors with fast access to recent and historical images, they have critical diagnostic information at their fingertips," says John Hoang, Senior Systems Engineer at Sydney Adventist Hospital.

Since 2004, the average PACS study size at the San has doubled from approximately 32 megabytes per study to 76 megabytes per study. While this may not seem like a significant increase over a 10-year period, the number of studies in the San's image cache has also seen an increase – from 1,457 studies per year to over 64,000 studies per year, or 4,200 percent per annum.

Through collaboration with Dell EMC Gold Partner Infront Systems, the San initially deployed a Dell EMC® VNX® unified storage solution to manage its data effectively. Recently, to create an agile foundation for its AGFA IMPAX, the hospital deployed Dell EMC Isilon® scale-out storage. The Isilon platform provides the San with a solution that delivers excellent performance and is future-proof, as well. The solution can be upgraded without cumbersome data migration or disruption to the business.

As a result of the Isilon implementation, specialists can access recent and historical patient records quickly. The agile platform has also increased infrastructure flexibility, and supports IT to deploy new technologies without worrying about the impact on existing storage or performance. Hoang says, "As new advances in healthcare technology increase data volumes, with the Isilon solution, the hospital is well equipped to meet new requirements and maintain its focus on delivering the best outcomes for patients."

ENVIRONMENT

Dell EMC leveraged Infront Systems' technical expertise and its established relationship with the San. Through this partnership, Dell EMC and Infront deployed the San's PACS storage environment, comprising two Dell EMC Isilon X-Series clusters at two separate sites with 85 terabytes of storage. Dell EMC Isilon SyncIQ™ provides easy-to-manage replication of data between the two sites and is critical to the hospital's agile infrastructure, ensuring that all nodes in the Isilon cluster concurrently send and receive data during replication jobs.

Results

- Enabled rapid access to recent and archived medical imaging records
- Delivered consistent performance to PACS users despite data volume increases
- Deployed new tools with scalable and dynamic solution
- Simplified management with multi-node architecture

Dell EMC Isilon InsightIQ™ is also used to monitor and plan performance, and Dell EMC Isilon A100 Backup Accelerator is deployed at the same site as the PACS solution to scale backup performance to fit within required backup windows.

Isilon scale-out storage makes it easy to deploy new diagnostic tools while continuous replication avoids outages and downtime. The Isilon solution complements the continuously available storage platform, leveraging Dell EMC VPLEX® Metro to integrate two Dell EMC VNX-CAs virtualised with VMware® vSphere®.

SUPPORTING RAPID PATIENT DIAGNOSIS

All hospitals in New South Wales are required to keep patient records for seven years. For patients under 18 years old, records are kept for 25 years. Specialists often rely on historical images to monitor a condition's progress, so images kept over a period of time need to be rapidly accessible. With Isilon, the hospital can increase capacity and performance of archive storage without any disruption to services. Hoang says, "The Dell EMC Isilon X-Series is the foundation of our PACS system. By providing fast access to recent and historical images, we empower doctors to make informed diagnostics and decisions quickly."

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ESTABLISHING FOUNDATION FOR CARE

Hoang explains that one of the unique quirks of hospital-infrastructure planning is not knowing the impact of new technologies on data requirements. "It is difficult to assess future storage requirements in a hospital environment because we can't predict what diagnostic modalities will be brought on board," Hoang says. Specialist departments do their own research, attend conferences, and decide what tools will make a difference to patient outcomes. This means that the storage environment at the San needs to be able to scale to accommodate new tools as they are onboarded.

"It is our role to be agile and provide a flexible and efficient environment that meets business needs. With Dell EMC Isilon, we have a genuinely scalable and dynamic solution that allows us to deploy new modalities without worrying about disruption to patient care," says Hoang.

PROTECTING CRITICAL SERVICES

In the past, an upgrade project meant the San had to dedicate time to data migration and manage any outages that occurred. "With Isilon, we've simplified management by consolidating three management points into one," says Hoang. He explains, "The PACS system is more resilient because now storage is handled on a multi-node architecture. If we lose one node, we still have two nodes online so specialists can continue to retrieve images. In this sense the technology has paid for itself – we simply don't need to worry about outages or disruption to services due to storage limitations anymore."

As data volumes increase, the San can also scale capacity to ensure that performance is consistent. With the Isilon X-Series, a cluster can be brought online within 10 minutes, and a single cluster can scale from a few terabytes to more than 50 petabytes – and over 200 gigabytes per second of throughput.

Company Overview

Sydney Adventist Hospital is a private, acute-care hospital with capacity for over 550 licensed overnight beds. It is the largest private, not-for-profit hospital in New South Wales and prides itself on delivering cutting-edge acute-care facilities. It has capacity for up to 24 operating theatres and endoscopy suites, and houses Australia's first dual-source CT scanner.

Hoang says, "We don't necessarily have petabytes of data, but we have tens of terabytes of data. Depending on advances in healthcare technology, that can quickly change. We're confident that with Isilon, we can meet volume and performance demands."

PLANNING FOR THE FUTURE

Based on its success with Dell EMC solutions and the advice and support of Infront, the San is now evaluating further use of Dell EMC's flash storage solutions, such as using flash for the online file repository where the hospital keeps standard medical documents such as forms and referral letters.

The hospital also has plans to leverage the multi-use capabilities of Isilon beyond the PACS system, and to migrate its home directories and application file systems to the Isilon solution.

"Sydney Adventist Hospital is an organisation that will continually grow, but delivering expert patient care is our number one priority. It is important that we partner with businesses like Dell EMC and Infront, who can provide us with solid advice and solutions that support our IT requirements and help us deliver great care," concludes Hoang.

CONTACT US

To learn more, contact your local representative or authorized reseller.