

MONDRIAAN FOR MENTAL HEALTH

EMC solutions accelerate patient application performance and enable compliance



ESSENTIALS

Industry

Healthcare

Company Size

2,300 staff; 54 clinics

Business Challenges

- I/O demand spikes from new healthcare application required high performance storage with automated tiering
- Backups took 24 hours, impeding health application workflows
- Existing backup, recovery, and replication processes did not meet new regulatory requirements

Solutions

- EMC VNX unified storage
- EMC FAST Suite
- EMC RecoverPoint
- EMC Avamar
- VMware vSphere
- VMware vCenter Site Recovery Manager
- VMware VAAI
- Microsoft Exchange, Microsoft SQL Server, Microsoft SharePoint

CUSTOMER PROFILE

OVERVIEW

Mondriaan for Mental Health serves the mental health needs of more than 15,000 patients per year through 54 clinics located throughout the southern Netherlands. The institution employs 2,300 staff and is an accredited training institute for psychiatrists, psychologists, and nursing specialists.

BUSINESS CHALLENGES

In early 2012, Mondriaan for Mental Health's electronic patient database (EPD) supplier released a new version that exceeded the capabilities of the organization's existing EMC and VMware infrastructure.

Happy with its existing infrastructure, Mondriaan for Mental Health considered extending it, but found that the infrastructure could not provide the necessary performance to handle I/O demand spikes from its EPD application.

In addition, Mondriaan for Mental Health's backup window was 24 hours, impeding health application workflows. And when the government updated its regulations regarding data availability, uptime, and data recovery for patient care data, the organization's backup, recovery, and replication processes had great difficulty meeting these requirements.

As a result, Mondriaan for Mental Health decided to replace its storage systems, backup and recovery, and replication solutions. The organization chose EMC.

SOLUTIONS

Mondriaan for Mental Health deployed two EMC® VNX® unified storage systems—one each at its primary and secondary data centers. Each VNX is deployed with the EMC FAST™ Suite (including FAST VP and FAST Cache) and Flash drives—a FLASH 1st strategy. VNX stores the organization's EPD application, Microsoft Exchange, Microsoft SQL Server, Microsoft SharePoint, and other patient-centric and business systems.

VMware® vSphere™ supports the organization's 95 percent virtualized environment. Mondriaan for Mental Health uses the VMware vStorage API for Array Integration (VAAI), a standardized API. VAAI offloads burdensome storage processing from ESXi hosts to the storage architecture, releasing the hosts for their intended purpose—running virtual applications—and enabling more efficient use of server resources.

For disaster recovery, EMC RecoverPoint™, as part of the EMC Total Efficiency Pack, and VMware vCenter™ Site Recovery Manager (SRM) replicate the organization's virtual infrastructure across the two data centers located 40 km apart. EMC Avamar® deduplication backup software and system, with its optimized integration to vSphere API for Data Protection and vCenter, handles the organization's backup and recovery requirements.

Results

- Delivered 50 percent of total IOPS with only one percent Flash drives
- Reduced CAPEX—18 times fewer drives required to meet IOPS needs
- Reduced OPEX through innovative 2.5 inch drives
- Increased bandwidth with 8G/s port technology
- Enabled regulatory compliance via continuous replication, near zero RPO and RTO, and 99.5 percent uptime
- Shortened backup windows—from 24 hours to only minutes

INTELLIGENT HIGH PERFORMANCE

VNX and FLASH 1st ensure high performance in the face of EPD demand spikes. When the EPD application demands additional IO, FAST Cache automatically moves data to Flash drives for high IOPS performance. When demand cools, FAST VP moves data to less expensive drives.

"EPD is our most critical application because it drives patient care excellence. High performance is always required," says Roy Mikes, Infrastructure and Data Center Architect, Mondriaan for Mental Health. "Before we decided on VNX and FLASH 1st, our question was, 'How do we manage IOPS when not even our software provider knows how many IOPS will be required?' VNX and FLASH 1st solve the unknowable because they provide the intelligent flexibility to automatically allocate required IOPS to our EPD."

At Mondriaan for Mental Health, a little bit of Flash goes a long way. Its Flash drives, while encompassing less than one percent of total storage capacity, deliver almost 50 percent of total IOPS.

REDUCING CAPEX AND OPEX

Flash drives and VNX also minimize capital and operating costs.

"Without Flash drives, we would have needed 18 times as many disks to achieve the same performance," Mikes states.

VNX, incorporating innovative 2.5 inch disks, also significantly decreases OPEX.

"When we migrated data from our older systems to VNX, we were able to consolidate the same amount of data on just 62 percent of our older system's storage capacity. That's a savings of more than 37 percent," explains Mikes.

"EMC VNX and FLASH 1st solve the unknowable because they provide the intelligent flexibility to automatically allocate required IOPS to our EPD."

Roy Mikes
Infrastructure and Data Center Architect at Mondriaan for Mental Health

The smaller storage footprint has resulted in less required space and significant savings in cooling and power.

Increased efficiency and lower costs are also achieved through the seamless integration of VNX and VMware. Mondriaan for Mental Health uses the VAAI to offload storage operations from ESX to VNX.

"With VAAI things go faster. Testing and reporting are easier, and provisioning is even quicker," says Mikes.

ENABLING COMPLIANCE WITH AUTOMATED REPLICATION

RecoverPoint and vCenter SRM enable Mondriaan for Mental Health to meet new regulatory requirements. RecoverPoint and SRM automatically and continuously replicate all data, including 200 VMs, between primary and secondary VNX solutions located 40 km apart.

RecoverPoint compression and deduplication technologies help to fully utilize existing bandwidth. RecoverPoint can roll back to any point in time and provides 100 percent

data protection. VNX also contributes to bandwidth utilization. Mikes was able to increase port bandwidth from 2 GB/s on his old system to 8 GB/s with VNX.

Data can be recovered with the click of a mouse. The integrated solution automatically fails over to provide continuous data availability.

"Our recovery point objectives (RPOs) and recovery time objectives (RTOs) are now approaching zero. This provides us with 99.5 percent uptime, which exceeds our compliance target," Mikes states.

Mikes explains that RecoverPoint and SRM have also allowed the organization to discard a multi-page DR manual. "DR manuals age over time," he says. "RecoverPoint automation ensures that DR practices are kept continuously up to date and removes manual processes. RecoverPoint is a huge enabler."

BACKUP IN ONLY MINUTES

Before implementing Avamar, Mondriaan for Mental Health's backup window was 24 hours, which could impede vital EPD workflows. But with Avamar, the organization has reduced its backup window to only minutes. Avamar client-side, variable-length deduplication has enabled Mondriaan for Mental Health to achieve a deduplication rate of up to 90 percent, depending on the size of databases or VMs. Furthermore, recoveries are extremely fast because Avamar leverages Changed Block Tracking for restores as well as file-level recovery, which enables continued productivity.

"With Avamar, we efficiently and fully protect 15 terabytes of critical patient data as well as Microsoft SQL Server databases, Microsoft Exchange, and Microsoft SharePoint files to meet regulatory requirements," Mikes states. "Our data is completely secure."

QUICK DEPLOYMENT

Mondriaan for Mental Health required its new VNX system to be up and running in just two months. By working closely with local EMC Partner, Telindus-Isit, and EMC migration support services, Mikes and his team met the deadline.

"Telindus-Isit and EMC personnel worked on a 24/7 basis to get the job done," Mikes states. "That hard work sums up our relationship with EMC. Its solutions and people are efficient, powerful, and fast. If I'm happy, they're happy. And they don't stop until I'm happy."

CONTACT US

To learn more about how EMC products, services, and solutions can help solve your business and IT challenges, [contact](#) your local representative or authorized reseller—or visit us at www.EMC.com.

EMC², EMC, the EMC logo, Avamar, EMC RecoverPoint, FAST, and VNX are registered trademarks or trademarks of EMC Corporation in the United States and other countries. VMware, vCenter, and VMware are registered trademarks or trademarks of VMware, Inc., in the United States and other jurisdictions. © Copyright 2011, 2013 EMC Corporation. All rights reserved. Published in the USA. 02/13 Customer Profile H8701.1

www.EMC.com

EMC believes the information in this document is accurate as of its publication date. The information is subject to change without notice.

The EMC logo, featuring the letters "EMC" in a bold, serif font with a superscript "2" to the right, all in white against a blue background.