

# PRESCRIPTION FOR GROWTH

Dell storage helps Navicure reduce disaster recovery site deployment time by 75 percent



## SOLUTIONS

- BACKUP/RECOVERY/ARCHIVING
- MANAGEMENT/UTILITIES
- VIRTUALIZATION



## CUSTOMER PROFILE

**COUNTRY:** United States

**INDUSTRY:** Healthcare

**FOUNDED:** 2001

**NUMBER OF EMPLOYEES:** 85

**WEB ADDRESS:** [www.navicure.com](http://www.navicure.com)

## CHALLENGE

Existing outsourced storage was too inflexible to keep up with Navicure's rapid growth and expanding Oracle database; the company also needed to automate disaster recovery to help ensure compliance with regulatory requirements.

## SOLUTION

Navicure implemented a scalable, in-house storage area network (SAN) using Dell EqualLogic™ PS Series Internet SCSI (iSCSI) arrays, and automated the planning, testing, and deployment of a disaster recovery solution using VMware® Site Recovery Manager (SRM) software and Dell EqualLogic SRM Adapters.

## BENEFITS

### Get IT Faster

- Integrated Dell and VMware solution enables Navicure to set up disaster recovery plan 75 percent faster than anticipated

### Run IT Better

- Built-in automation reduces recovery plan testing time from one day to 20 minutes
- iSCSI-based SAN infrastructure helps simplify deployment and ongoing management
- VMware SRM software can enable disaster recovery testing with no downtime for Navicure customers
- Dell EqualLogic PS Series arrays and VMware SRM help simplify Health Insurance Portability and Accountability Act (HIPAA) compliance

### Grow IT Smarter

- Virtualized storage makes it simple to add new capacity as needed
- Dell EqualLogic PS Series iSCSI systems provide flexible, affordable in-house storage

The Dell logo, consisting of the word "DELL" in a bold, white, sans-serif font, is centered within a circular graphic that has a blue and black gradient background.

Doctors want to spend more time with patients and less time on administrative tasks. To focus on patient care, they need relief from the business headaches of running a medical practice—managing accounts receivable, slow insurance claims, and cash-flow crunches. A growing number of doctors' offices are finding that relief with assistance from Navicure.

**“OTHER STORAGE VENDORS TOLD US THAT WE WOULD NEED TO ATTEND THREE OR FOUR DAYS OF CLASSES TO SET UP AND USE THEIR SYSTEMS, BUT WE COMPLETELY FAMILIARIZED OURSELVES WITH THE DELL EQUALLOGIC PS SERIES ARRAY IN ONLY 30 MINUTES.”**

**Donald Wilkins**, IT director, Navicure

Navicure handles claims transactions between the physician's office and insurance carriers to help speed claims processing, improve cash flow, and drive down the cost of billing. The company has developed an online application that simplifies claims processing and automatically edits claims data to help eliminate errors that can cause claims denials. Navicure's founders also decided to differentiate the company from competitors by offering advanced reporting tools and exceptional customer service—they pledged to answer every customer call by the third ring. The formula proved successful: Navicure was ranked number one in the first KLAS clearinghouse report in May 2008 ([www.KLASresearch.com](http://www.KLASresearch.com)), and was ranked number one among the 2007 *Georgia Deloitte Technology Fast 50* and 40th nationally among the 2007 *Deloitte Technology Fast 500*.

Keeping up with that growth required continual expansion of Navicure's core IT infrastructure. The Navicure IT team selected and deployed Oracle® RAC 10g as its core database infrastructure, enabling the team to quickly add more database processing capability as needed. In contrast, the company's outsourced Fibre Channel storage proved difficult and expensive to expand. “Our provider could not add new Fibre Channel storage quickly enough to meet our needs,” says Donald Wilkins, IT director at Navicure. “Expansion was also costly—we estimated at the time that adding 3 TB or 4 TB of useable redundant storage would cost us a quarter of a million dollars over the contract period.”

#### **NAVICURE CHOOSES DELL EQUALLOGIC PS SERIES ARRAYS TO VIRTUALIZE STORAGE**

Wilkins began looking for new storage options, and after considering several alternatives, he chose Dell

EqualLogic PS Series storage arrays because of their simplicity and the ease with which they could be integrated into Navicure's existing environment. “We could bring our storage in-house without adding a specialist to the IT staff,” says Wilkins. “The iSCSI SAN would allow us to use existing Ethernet and IP networks and capitalize on our familiarity with Ethernet technology.”

Wilkins was aware of the increasing use of iSCSI SANs in enterprise environments. He was also quick to recognize that the virtualized storage architecture and automatic load balancing of the Dell EqualLogic PS Series arrays would provide the performance and scalability to meet Navicure's ever-evolving storage growth needs. It would also be a perfect complement to their Oracle grid-based database architecture. “The virtualized architecture of the Dell EqualLogic PS Series array would give us that same flexibility for our storage, enabling us to quickly and inexpensively configure new capacity as we needed it,” says Wilkins.

#### **DELL EQUALLOGIC PS SERIES ARRAYS REDUCE STAFF TRAINING TIME FROM THREE DAYS TO 30 MINUTES**

Navicure initially deployed a 12 TB Dell EqualLogic PS Series SAN made up of four PS Series arrays for centralized storage and disk backup. Oracle data protection remained in place for the database, while the Dell arrays helped protect the rest of the IT infrastructure.

The Navicure IT team members were surprised by how quickly and easily they could set up the arrays on their own. “We had the Dell EqualLogic SAN up and running within just a few hours,” says Wilkins. “Other storage vendors told us that we would need

## **HOW IT WORKS**

### **HARDWARE**

- Dell EqualLogic™ PS100E, PS200E, PS300E, PS400E, PS3600X, and PS3700X storage arrays with bundled Auto-Replication
- Dell™ PowerEdge™ 2950 and 1950 servers with Intel® Xeon® processors

### **SOFTWARE**

- VMware® Infrastructure 3
- VMware Site Recovery Manager with Dell EqualLogic SRM Adapters
- Oracle® RAC 10g database with Automatic Storage Management (ASM) and Oracle Data Guard

# “WE ESPECIALLY LIKED THE FACT THAT VMWARE SRM WOULD WORK WITH THE AUTO-REPLICATION FEATURE IN OUR DELL EQUALLOGIC PS SERIES ARRAYS, LETTING US BUILD ON OUR ISCSI INVESTMENT.”

**Donald Wilkins**, IT director, Navicure

to attend three or four days of classes to set up and use their systems, but we completely familiarized ourselves with the Dell EqualLogic PS Series array in only 30 minutes. Since the initial deployment, we have continued to add PS Series arrays each year to accommodate growth, each time taking only minutes to deploy and integrate the new arrays with existing units.”

## **DELL EQUALLOGIC PS SERIES MANAGES MORE THAN 75 TB OF STORAGE ACROSS 14 ARRAYS**

Wilkins credits the Dell EqualLogic PS Series storage with helping to facilitate Navicure’s continued growth. Today, the company has standardized its entire IT infrastructure on Dell EqualLogic virtualized iSCSI SAN technology, managing more than 75 TB of storage across 15 Dell EqualLogic PS Series arrays, including 10 arrays at the production data center. “The peer architecture of the Dell EqualLogic PS Series makes it easy to add storage to our production environment without any downtime,” says Wilkins. “We just plug a new array into the storage pool, and iSCSI instantly redirects the network connections behind the scenes. Our Dell EqualLogic storage has proven to be very resilient as we have expanded.”

The more scalable storage architecture helps Navicure continue to add services for its customers. “Our company recently introduced a wide range of advanced analytic tools, including payment analysis and work lists, and we’re confident we’ll be able to handle the added processing and storage that these services require,” says Wilkins. “With Dell EqualLogic PS Series arrays, we have added flexibility to keep up with the demands of our job—helping doctors manage the business side of their practices so they can concentrate on delivering patient care.”

## **DELL TEAM HELPS NAVICURE EXTEND VIRTUALIZATION TO SERVERS**

By deploying Oracle RAC 10g and Dell EqualLogic, Navicure achieved greater scalability in the core processing and storage infrastructure tiers. However,

the IT team lacked an equally flexible approach for the front-end tier of Dell™ PowerEdge™ 2950 and 1950 servers, which managed more than 500,000 transactions to and from the database each day.

Working with Dell and a local Dell PartnerDirect reseller, Wilkins began considering options. The Dell team recommended that Navicure implement a virtualized environment for its front-end IT infrastructure using VMware Infrastructure 3 on the existing Dell EqualLogic storage and PowerEdge server infrastructure. “The Dell EqualLogic team not only had ideas for our storage, but also looked at how we could more easily expand our front-end infrastructure as the demands of our business increased,” says Wilkins. “Virtualization would enable us to quickly deploy new virtual servers to keep up with our business growth and provide a path for future server consolidation.”

## **HEALTHCARE INDUSTRY CERTIFICATIONS REQUIRE REMOTE REPLICATION AND RECOVERY**

The Navicure IT team was also concerned about meeting HIPAA regulations. “Most of the data we process contains patient health information, and HIPAA regulations require us to safeguard the privacy of that data,” explains Wilkins. “HIPAA also requires systems to be back online and available within a specified time after an interruption, so we needed the ability to recover quickly.”

Industry certification requirements and Hurricane Katrina soon prompted Navicure to expand its disaster recovery plans. “An alternate site facility was a requirement for some of the healthcare industry certifications we were seeking,” says Wilkins. “When Hurricane Katrina hit the Gulf Coast states, it reminded us that our location on the East Coast is also susceptible to hurricanes. It added urgency to finding a remote disaster recovery site away from our production data center.”

Wilkins evaluated outsourcing as a way to establish a remote disaster recovery site, but he was discouraged by the time and cost involved. “We didn’t have the budget to spend for a consultant to

set up the site and create a recovery plan for us,” explains Wilkins. “We also felt that the one-size-fits-all approach most providers offered would not fit our environment well or provide the fast recovery time we needed for our customers. In addition, the other providers’ disaster recovery testing would have required too much downtime.”

Navicure needed not only to establish a disaster recovery facility but also to find a method of automating disaster recovery for its front-end infrastructure. The Oracle environment would be protected by Oracle Data Guard writing transactions to a standby database instance at the disaster recovery site, which could quickly become the production database in the event of a site failure. The virtualized infrastructure was easy to replicate using the built-in Auto-Replication feature of the Dell EqualLogic SAN, but recovery of the virtualized infrastructure was not automated. As a result, it would be difficult for Navicure to ensure regulatory compliance.

## **AUTO-REPLICATION WITH VMWARE SRM ENABLES APPROXIMATELY FOUR TIMES FASTER DISASTER RECOVERY SETUP**

The Dell team recommended that Wilkins use VMware SRM software with the Dell EqualLogic PS Series arrays as a simple, affordable way to automate disaster recovery of the virtualized environment. VMware SRM is integrated with VMware Infrastructure 3, VMware VirtualCenter, and the Dell EqualLogic PS Series Auto-Replication feature. It guides users through the process of setting up and configuring recovery plans for their virtualized IT environment.

At the time of failover, VMware SRM automatically runs the recovery plan—starting virtual machines in the proper order with updated networking configurations. Testing disaster recovery plans is also made easy. The failover is executed in an isolated environment, and then the environment is cleaned up for nondisruptive testing. “It was clear that SRM would be a good fit for our limited staff,” says Wilkins. “We wouldn’t need any

special expertise, because SRM would automate the recovery process. We especially liked the fact that VMware SRM would work with the Auto-Replication feature in our Dell EqualLogic PS Series arrays, letting us build on our iSCSI investment.”

The Navicure IT team established a standby location 20 miles from its production data center and implemented a disaster recovery plan. The team is now in the process of automating disaster recovery for its front-end infrastructure using Dell EqualLogic SRM Adapter software that integrates VMware SRM with the Dell EqualLogic PS Series Auto-Replication software. The combined solution makes planning and deployment go quickly. “The Dell EqualLogic PS Series comes with tools that simplify setting up replication partners and protection groups for a quick deployment,” says Wilkins. “Also, the SRM software automated the process of creating a recovery script, which would have taken us at least a day to do manually. We’re able to implement a customized recovery plan approximately 75 percent faster than we estimate it would take us without the PS Series and SRM.”

#### **AUTOMATION REDUCES DISASTER RECOVERY TESTING TIME FROM ONE DAY TO 20 MINUTES**

The Auto-Replication feature of the Dell EqualLogic PS Series arrays and the automation provided by the VMware SRM software dramatically reduces the time required to test the recovery plan. “Typically, it takes a day or more to repeatedly adjust and retest a plan manually—and because the process involves both the production and recovery sites, the production environment has to be shut down,” says Wilkins. “Our customers can’t afford to have our services go offline for long periods. With SRM and the PS Series, it wasn’t an issue.”

Wilkins can now complete testing of Navicure’s recovery plan in approximately 20 minutes. “We can

initiate the test at the touch of a button, watch it run automatically, and easily make changes,” says Wilkins. “Disaster recovery testing involves zero downtime for our customers. The SRM software creates a test bubble to simulate recovery, so there is no impact on the production environment.”

#### **INTEGRATED DELL AND VMWARE SOLUTION HELPS SIMPLIFY HIPAA COMPLIANCE**

The automated testing made it easy and economical for Navicure to provide proof of an effective disaster recovery plan, both to facilitate HIPAA compliance and to earn key healthcare industry certifications. “Integrating SRM with the PS Series simplified my job as an IT director and saves the company money,” says Wilkins. “Instead of running multiple demonstrations, I can simply provide a report to the regulatory bodies and Navicure management showing that a complete test of the company’s disaster recovery plan has been conducted successfully. Because the process is automated, they can be assured it will run successfully in the future.”

“Our business depends on maintaining a highly reliable, scalable data center infrastructure that can support over half a million transactions per day,” Wilkins adds. “We started with storage consolidation onto a Dell EqualLogic PS Series SAN, added VMware Virtual Infrastructure 3, and now have SRM to complete our fully automated business continuity processes. With Dell EqualLogic and VMware, we can continue to service more customers more efficiently with ease and confidence.”

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