

## Nexsan 10 Minute Case Study



# Ruwaard van Putten Ziekenhuis Hospital Implements Nexsan “Green Storage” for Virtualized Environments

## Quick Summary

The Ruwaard van Putten Hospital was experiencing excessive costs associated with the operation and management of its existing storage solution. The innovative healthcare organization wanted to optimize data center costs and space while ensuring 24x7 access to critical PACS data. After evaluating a number of storage solutions for their virtualized environment, the Dutch hospital selected highly efficient storage solutions from Nexsan due to their “green storage” technology, high-density and enterprise-class reliability. Furthermore, leveraging Nexsan’s tiered storage capabilities enabled the deployment of a SAS tier that ultimately provided a solution at one-third the purchase price of competitive Tier-1 storage solutions.



## ENVIRONMENT

- Two iSeries (400i) iSCSI SAN appliances and two Nexsan SASBeast tiered storage systems, dual controller with 28 x 600GB SAS drives and 14 x 2TB SATA drives per chassis.
- Nexsan storage systems are configured as a stretched cluster/metrocluster split between two server rooms across the hospital campus.
- Complete storage mirroring and active-active failover is provided by the Nexsan iSeries layer.
- 6 Dell servers are connected by iSCSI to the Nexsan storage environment.
- The Dell servers form a VMware ESX 4 cluster with three nodes per server room, currently running 60 Virtual machines
- VMware provides physical host, virtual machine/application failover
- The storage environment supports an open source Picture Archiving and Communications System (PACS)

## BENEFITS

- Purpose-built storage for virtualized environments
- Enterprise-class reliability and performance to meet the most stringent business requirements
- High-density storage with 42 disks per 4U of space
- AutoMAID® energy saving technology for up to 60% energy savings without compromising performance
- Easy installation and simplified management over Fibre Channel and iSCSI

“We needed a reliable data protection solution that would also deliver the advantages of energy efficiency and high-density to optimize our data center resources.”

*Alexander Gunnewegh, Director of IT,  
Hoofd Afdeling ICT, Ruwaard van Putten Ziekenhuis*

## CUSTOMER OVERVIEW

The Ruwaard van Putten Hospital is the regional hospital for the residents of the islands of Voorne - Putten Rozenburg, Hoogvliet and Albrandswaard in the Netherlands. The healthcare organization offers professional and customer-focused specialized medical and nursing care. Due to a growing demand for healthcare throughout the region, the hospital aims to appropriate care using outpatient programs whenever possible. The 288 bed hospital serves tens of thousands of patients each year with 51 medical specialists and 1,200 employees.

## BUSINESS CHALLENGE: REDUCE STORAGE COST AND COMPLEXITY WHILE ENSURING UPTIME

Ruwaard van Putten Hospital was using HP EVA 5000 systems to maintain its active data center. However, these systems were expensive to maintain and difficult to manage. Because their storage environment must be highly available to support around the clock hospital activities, the hospital could not accept the possibility of system downtime. Medical records need to be available on-demand to support quality patient care, no matter the time of day.

With increasing data center costs, it also became critical for the Dutch hospital to find ways to conserve energy and optimize data center space. The advanced IT organization uses an Open Source PACS solution which runs on virtualized Dell servers using VMware ESX 4 to manage patient images and records. To complement this solution Ruwaard van Putten Hospital wanted a “green storage” solution that could optimize energy usage without risking reliability or compromising performance.



## NEXSAN iSERIES ADVANTAGE

- **Full-featured iSCSI SAN.** Nexsan iSeries is a turn-key IP SAN solution with features like virtualization, snapshots, replication, mirroring, data migration and more
- **Storage Virtualization.** Optimize storage utilization and management by creating volumes to meet the specific needs of different applications within the same system
- **Easy-to-Use.** Automated management eliminates time consuming administrative tasks. Deploy a complete SAN in minutes instead of hours
- **Highly Available.** Multi-path, multi-access architecture provides continuous data access; fully redundant and hot swappable components
- **Energy Efficient.** Industry leading energy efficiency delivers up to 60% power savings without performance compromise with AutoMAID green technology
- **High Density.** With a storage subsystem that delivers 42 Disks in 4U of space, Nexsan iSeries optimizes data center space management

“Our storage environment must be available 24/7 as physicians and staff require on-demand access to patient records,” said Alexander Gunnewegh, Director of IT, Hoofd Afdeling ICT, Ruwaard van Putten Ziekenhuis. “We needed a reliable data protection solution that would also deliver the advantages of energy efficiency and high-density to optimize our data center resources.”

## SOLUTION: “GREEN” NEXSAN STORAGE SOLUTIONS DELIVER RELIABILITY WITH REDUCED COST AND COMPLEXITY

After evaluating a mountain of storage suppliers, the Ruwaard van Putten Hospital selected efficient storage solutions from Nexsan due to their “green” energy efficiency, high-density and reliability. The selected systems included Nexsan SASBeast tiered storage dual-controller storage system with 28 600 GB SAS drives and 14 2 TB SATA drives as well as two Nexsan iSeries appliances (400i) to meet the performance, scalability and redundancy requirements of their organization. The hospital found that energy efficiency could deliver dramatic cost savings for their data center. And with Nexsan’s ability to pack more capacity in a smaller footprint, they were able to eliminate the need to expand their data center. Finally, because the hospital prefers to acquire and use IT products for more than five years, the reliability of the Nexsan systems provides high value beyond the life of their maintenance contract.

“The ‘green’ Nexsan solution is an exceptional combination with our open source PACS solution,” said Gunnewegh. “We can achieve so much more at a fraction of the cost of customary solutions. It was an exceptional investment. The Nexsan systems were a third of the price of the other Tier-1 solutions we considered while delivering all the performance, reliability and energy efficiency we needed.”

The hospital has deployed a metroclustered Nexsan iSeries, which features tiered storage and active/active failover for optimized reliability. The hospital anticipates that it will save between 40,000 and 50,000 Euros within one year on its capital expenditures.



### **AUTOMAID® ENERGY SAVING TECHNOLOGY**

Nexsan's revolutionary AutoMAID (Automatic Massive Array of Idle Disks) energy saving technology transparently places disk drives into an idle state to vastly reduce power and cooling costs. AutoMAID delivers the cost-effective benefits of MAID 2.0 without the limitations of slow access times and special host software.

- AutoMAID reduces power and cooling costs
- Nexsan's AutoMAID delivers the benefits of MAID without the performance limitations
- Available on all Nexsan products

### **AUTOMAID® SAFETY FEATURES**

- In maximum power saving mode, drive spin up is sequenced to reduce power surges
- Drives automatically wake up for periodic surface scan to ensure data integrity (user configurable)
- AutoMAID can be used with data-intensive server applications by delivering energy savings without performance compromise

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### **RESULTS: NEXSAN “GREEN STORAGE” DELIVERS 80% REDUCTION IN OPERATING COSTS**

The underlying storage to the Nexsan iSeries, the Nexsan SASBeast, provided exceptional results in terms of lower energy costs, smaller footprint and higher density for the Dutch hospital. Using Nexsan's AutoMAID energy saving technology, the hospital has seen a remarkable savings of 60% in energy costs for its data center. Nexsan's high-density has placed 53 TB of storage in a very small footprint by delivering 42 disks in only 4U of space.

Key advantages of the Nexsan highly efficient storage systems for Ruwaard van Putten Hospital include:

- **Enterprise-Class Performance** – The Nexsan iSeries delivers high-performance RAID storage solutions built around the latest high-capacity disk drives.
- **High Reliability** – The Nexsan iSeries solution offers fully redundant and individually hot-swappable active components (RAID controllers, fans, power supplies and disks). It also offers industry-leading system reliability with innovative design in vibration reduction and cooling.
- **High-Density Storage** – Nexsan's highly efficient storage systems are designed from the ground-up to set new standards for high-capacity, delivering industry leading performance and cost effectiveness in a scalable disk solution. The Nexsan iSeries iSCSI SAN offers impressive density in a small 4U configuration to optimize space.

- **AutoMAID Energy Saving Technology** – AutoMAID (Automatic Massive Array of Idle Disks) places disk drives into deeper and deeper levels of sleep during inactivity. The user selectable solution allows users to determine the right ratio between response and energy savings so that critical applications can remain rapidly available while lower priority applications can be optimized for additional cost savings.
- **Ease-of-Use** – OS independent web GUI bypasses the need for special host drivers. Automated management eliminates time consuming administrative tasks. Tiered storage capabilities provide management of performance and capacity in a single solution. Inherent simplicity enables the deployment of a complete SAN in minutes instead of hours.

Nexsan has characterized itself as the low energy storage solution provider with a trademark on one of the most innovative 'green storage' technologies available: AutoMAID," said Gunnewegh. "We have been very pleased with the density, reliability and energy conservation that has been made possible with our Nexsan solution. Since our purchase, we have seen significant reduction in energy and operational expenses." □

Presented by Nexsan

## About Nexsan

**Nexsan Corporation** is a leading provider of energy-efficient, long-term storage systems. Nexsan delivers secure storage appliances and modular, capacity-optimized disk-storage systems for a broad range of applications including fixed content storage and archiving, email, medical imaging, compliance and litigation support, disk-based backup, digital video security, and rich media.

Nexsan's solutions are the choice of small and medium-sized companies as well as large global enterprises and major governmental agencies around the world that are seeking cost-correct, high-density storage solutions. Founded in 1999 and based in Thousand Oaks, California, Nexsan sells its products exclusively through a select global network of VARs, OEMs and system integrators. For more information, please see the company's website at [www.nexsan.com](http://www.nexsan.com).



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