

## CASE STUDY

**Innovative  
Process  
Administration, LLC**



### ORGANIZATION:

Benefits Administration

### INDUSTRY:

Managed Services

### HOST:

20 servers including 4 Oracle® Database 10g servers plus Microsoft® SQL Server and more

### CHALLENGES:

Highly available, highly scalable IP SAN for storage consolidation of 20 servers and a remote disk-to-disk backup and disaster recovery solution

### SOLUTION:

Deployment of a fully redundant unified IP storage and replication solution using Reldata 9200 bundled with Nexsan® SATABoy arrays as well as software iSCSI initiators for the host systems ensures no single point of failure

### BENEFIT:

Enterprise-class high availability of data allows IPA to attract more and larger clients, further driving its growth

*"RELDATA was able to offer an extremely versatile and configurable solution at an attractive price. Other solutions would not have given us the power to build such a highly fault tolerant SAN. Their offering was more than just a product, it was also the people behind the product and the knowledge that came with them."*

Jay Vocaire, IT Manager



## Innovative Process Administration Achieved High Data Availability With No Single Point of Failure

Innovative Process Administration, LLC. (IPA), Cleveland, OH provides fully automated employee self-service enrolment and related administration for employers and benefit administrators. Since 1994, the company has delivered hosted services to hundreds of major employer groups, making it one of the most experienced and successful managed services providers in the benefits administration outsourcing arena. With clients and their employees accessing IPA's services 24x7 through its website, high availability is critical.

### Background

Driven by steady growth and by ever larger clients demanding bullet-proof data availability, IPA planned a systems infrastructure upgrade, migrating from the Sun®/Solaris® platform to a Windows®/Intel® platform running Oracle® 10g for its critical database servers. In conjunction with this platform migration, IPA began developing for a SAN. Ultimately, it settled on a highly redundant systems and storage infrastructure involving as many as 60 servers, multiple RELDATA unified storage control heads, multiple Nexsan® SATABoy storage arrays, redundant QLogic® switches, and 21 TB of raw storage spread across its primary and remote data centers.

### Challenges

IPA faced the challenge of creating a fully-redundant, enterprise-class high availability solution on a budget a midsize organization could afford. "We're an ASP. Uptime is one of our key selling points. Our clients expect that their data will always be available. We build everything to enterprise-class high availability standards whenever we can," says Jay Vocaire, IPA's system administrator. That means no single point of failure.

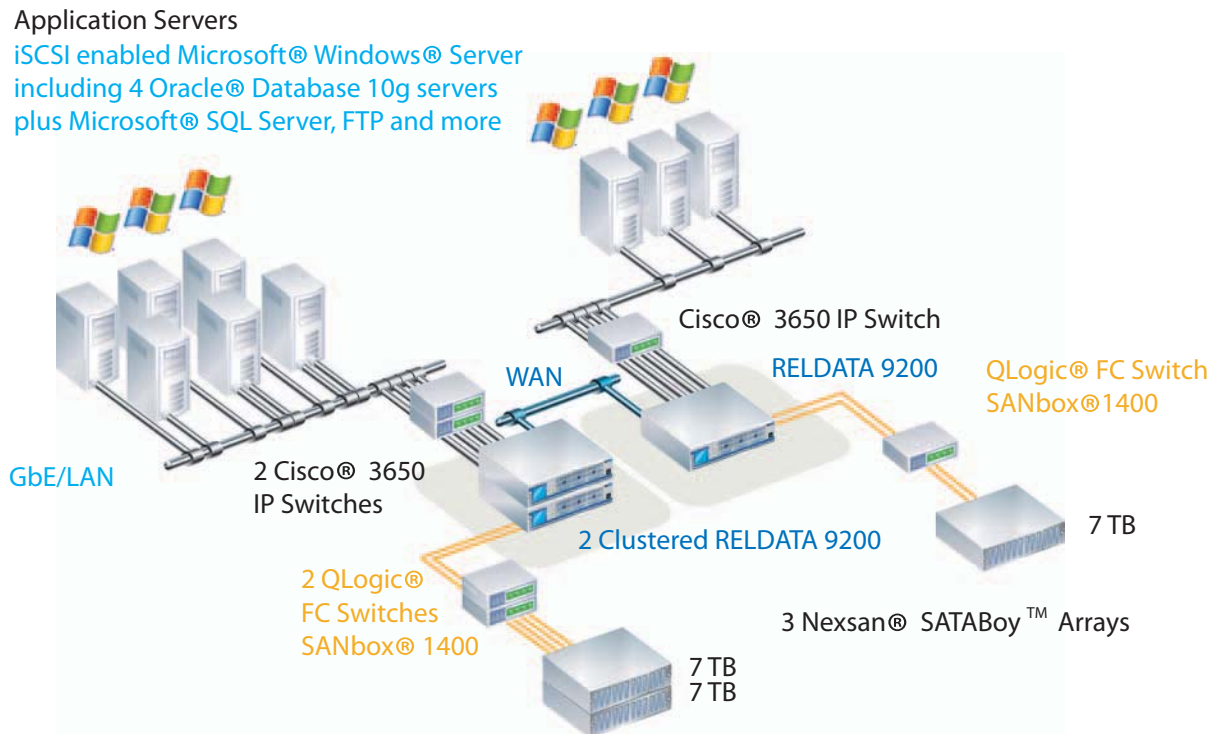
High availability was especially important with the new SAN. "We planned to have multiple servers running critical databases and storing our customers' data on the SAN," Vocaire continues. A failure anywhere in the backend SAN infrastructure would leave the data unavailable. To control costs, IPA opted for iSCSI SAN technology using Microsoft® initiators that come as part of Windows® Server. "Fibre Channel would have been nice for the performance, but it was cost prohibitive," says Vocaire. With iSCSI, IPA could avoid having to buy costly host bus adapters, enabling it instead to buy sufficient switch ports for high availability multipathing.

**RELDATA**

## Solution

Working with its reseller, ARKAY Storage Solutions Inc., Akron, OH, IPA aimed for full redundancy. It built out its primary data center with two RELDATA 9200 appliances that act as redundant storage heads. Two QLogic® SANbox 1400 switches connect the RELDATA appliances with two Nexsan® SATABoy arrays, each with 7TB of storage and RAID 10. The server hosts connect to the RELDATA appliances through two Cisco® 3650 IP switches, as independent networks. This approach ensures that each device connects to every other device through multiple paths. As a result “there is no single point of failure. There are redundant paths between hosts, RELDATA gateways, and switches,” Vocaire explains. In addition, IPA splits each Nexsan® into two logical volumes. Each RELDATA 9200 writes to one logical volume on one Nexsan® array and mirrors the data to a logical volume on the other. In this way, all the data is available even if an entire Nexsan® array is lost. In effect, IPA is using what amounts to RAID 1 over RAID 10.

The RELDATA 9200 also mirrors the data to another 9200 at IPA's remote site 20 miles away. There the 9200 connects through a pair of links to a single QLogic switch and a Nexsan array with 7TB of storage. This site is intended as the disaster recovery facility.



Key to the design was the availability of ports. Each server has two gigabit ports connected to the SAN side. Each Nexsan® controller has four ports and the each QLogic® switch has eight ports. This allowed for a fully redundant mesh topology. The 9200 handles the replication and mirroring, monitors for failure, and initiates the failover. ARKAY was able to deliver the components at a very attractive price, making the RELDATA-based high availability solution competitive with less reliable options that relied on virtual IP and untested clustering.

## Results

“The implementation began in April 2006 and by midsummer IPA had the high availability storage system functioning. Vocaire tested the availability by pulling cables from various components and watching for service interruptions. There were none. And “the performance is amazing, we are able to fully utilize both channels of the bonded ethernet ports on the server,” says Vocaire. He continues to work with RELDATA and ARKAY to further tweak some of the performance.

As a managed services provider and a leader in its market, IPA cannot risk a system failure that leaves its customers' data inaccessible. Using redundant RELDATA 9200 appliances as the centerpiece, it created a SAN with no single point of failure between the host and the data. With data availability assured, IPA can attract more and larger clients than ever before.

**RELDAPA**  
NETWORK STORAGE FOR EVERYONE

RELDAPA Inc.  
e-Mail: sales@reldata.com  
Phone: +1 (973) 644 2770

RELDAPA Europe GmbH  
e-Mail: sales.emea@reldata.com  
Phone: +49 (711) 2272020

[www.reldata.com](http://www.reldata.com)

Copyright © 2006 by RELDATA Inc. All rights reserved. RELDATA is a trademark of RELDATA Inc. All other brand or product names mentioned are the trademarks or registered trademarks owned by their respective companies or organizations.