



Anderson Center for Autism Case Study

NEC ADVANCED STORAGE PRODUCTS GROUP



Challenges

- Antiquated system of managing paper documents in tractor-trailers and basements
- Security and reliability issues with paper and electronic documents
- Backup and archive too slow and unreliable
- Lack of scalability and flexibility to meet persistent growth in organization and systems

Solution

- NEC HYDRAsTOR HS8-1010 grid storage platform optimized for backup and archive

Results

- Backup window reduced by 90%
- No failed backups or restores
- 44:1 data reduction minimized storage capacity
- Quickly layered into existing environment in under 68 minutes
- Seamless integration with existing infrastructure – no “rip n replace” needed
- One platform for both backup and archive data reduced complexity and maximized dedupe efficiency
- Enhanced resiliency protects deduplicated data

NEC HYDRAsTOR provides Anderson Center for Autism with unsurpassed speed and reliability for backup and archive

Customer Profile

Anderson Center for Autism is a non-profit organization for individuals who exhibit a wide range of functional levels, skills and abilities, with moderate to severe learning, communicative and behavioral disorders.

Neil Pollack, executive director and CEO explains, "The school is committed to enhancing the quality of each individual's life while encouraging a desire to learn. Anderson Center for Autism's individualized care and services address each student's diverse needs."

From the school's progressive curriculum and exceptional staff to the full array of services, comfortable residential homes

and classrooms, Anderson Center for Autism makes great strides to ensure that its outstanding facilities, supportive atmosphere and variety of activities make life at the school the best it can be.

At a Glance

- **Anderson Center for Autism**
- **Industry:** Non-profit organization
- **Headquarters:** Staatsburg, NY
- **Founded:** 1924
- **Employees:** 550
- **Clients:** developmentally challenged children and young adults
- **URL:** www.andersoncenterforautism.org/

■■■ “We wanted a solution that was cost-effective, highly reliable, fast and efficient. And, we wanted deduplication. HYDRAsstor met all of these needs.”

Gregg Paulk, Director of IT
Anderson Center for Autism

The Challenges – Efficient Document Management with Security, Reliability, and Scalability

As a non-profit organization with aggressive growth plans, Anderson Center for Autism needed solutions that were cost-effective, scalable, efficient, highly reliable, and easy to deploy and manage. These solutions also needed to seamlessly integrate with and improve existing backup and archive infrastructure.

The organization’s original backup system was antiquated and ineffective; backups were too slow and often failed; restoration was too slow; and the organization was not meeting compliance regulations. Add to these issues was the problem of exponential data growth, and it became clear to Anderson Center for Autism that its greatest infrastructure need was for a revolutionary storage architecture for backup and archive.

When Gregg Paulk, Director of Information Technologies, first came on board, Anderson Center for Autism had only three servers and no network. For years, documents were kept in tractor-trailers and numerous basements across its 100-acre campus. Employees hoping to retrieve documents sometimes trekked through 3-foot snow drifts and spent hours at a time to locate the right paperwork. Anderson Center for Autism was clearly dealing with an outdated infrastructure, which was not only unproductive but could also prove disastrous in light of the organization’s goals for growth.

Since 2003, Paulk built a Windows-based infrastructure from the ground up with 200 workstations and 20 servers, but the larger dilemma he faced was managing the mountain of documents that Anderson Center for Autism possessed. The lack of an appropriate infrastructure and document management system was a huge challenge for the school’s IT department. As one of the

oldest schools in the nation dedicated to education for autistic individuals, Anderson Center for Autism possesses nearly a million paper documents, including sensitive medical and financial records, in addition to a significant amount of computer data.

Prior to HYDRAsstor’s arrival on the scene, Anderson Center for Autism was witnessing a common phenomenon seen in other datacenters, namely that there is often 20 to 30 times more backup data than primary data. This issue was becoming increasingly problematic because their tape backup solution was time-consuming and unreliable. Anderson Center for Autism originally was using two digital linear tape (DLT) drives connected to direct-attached primary storage on file servers, with backups for 1TB of data taking 60 hours. The amount of time and management required for these backups put a significant strain on the network and greatly dropped productivity. Backups became too slow and unreliable, resulting in missed restore deadlines and lack of compliance with statutory regulations.

Anderson Center for Autism was also facing rapid expansion in both their organization and in the amount of data they had to store, further weighing down their datacenter’s ability to keep pace with the company’s business needs. It became critical that the school deploy a solution that was intelligent and reliable enough to store only new non-redundant information and efficient enough to provide an extremely cost-effective ROI.

As part of a non-profit organization, the school’s IT department also faced limited staffing and budget to support their requirements, so they needed an innovative system that enabled them to start small and grow for the future. Key among their considerations was to evaluate and select a disk-based backup and archive solution with deduplication as well as speed, reliability and cost-effectiveness that was also easy to

■■■ “As a non-profit organization with unrealistic expectations, having access to a product like HYDRAsstor seemed like a dream come true.”

Gregg Paulk, Director of IT
Anderson Center for Autism

manage and could seamlessly integrate with their existing backup and archive infrastructure.

“We are a premier school with a commitment to lifelong learning for our students with autistic disabilities,” said Paulk. “It was crucial for me as the director for IT to implement a more flexible, value-based storage service with reduced complexity and cost that would move the business forward and enable the company to focus on our core service mission.”

The Solution

To address challenges of system performance, reliability and costs, Anderson Center for Autism turned to the grid storage pioneer, NEC Corporation of America. They enlisted the help of NEC, first becoming a HYDRAsstor™ beta user in February 2007, and then a full-fledged HYDRAsstor customer after the product became generally available in Fall 2007.

When it was time to evaluate and select a new backup and archive solution, Anderson Center for Autism had the following requirements in mind:

- **Interoperability with existing backup and archive infrastructure**
- **Effortless management**
- **Disk-based for speed and reliability with deduplication for cost-effectiveness**
- **Scalability on a single system**
- **Enhanced performance, specifically for backup windows and meeting compliance**
- **Best total cost of ownership (TCO) due to limited staff and tight budgets**

Anderson Center for Autism’s requirements played directly into the strength of the NEC

HYDRAsstor grid architecture. Comprised of self-aware, self-healing, industry-standard servers with no single point of failure and no central resource bottleneck, HYDRAsstor features the ability to improve the flexibility of the storage environment while reducing infrastructure complexity and management overhead.

HYDRAsstor’s grid architecture features Accelerator Nodes (ANs) and Storage Nodes (SNs) that enable both performance and capacity to be independently scaled on a linear basis. Anderson Center for Autism’s base HYDRAsstor configuration shipped with two Accelerator Nodes and four Storage Nodes, and the team was able to roll the unit off the truck, install it into the network and fully configure it in 68 minutes from start to finish.

Anderson Center for Autism found tremendous value in the fact that HYDRAsstor’s Accelerator Nodes and Storage Nodes can be scaled independently so nodes of either or both types can be added as needed without disruption to the existing grid or its functionality. Furthermore, existing nodes can be taken offline for maintenance or upgraded to new nodes. This architectural configuration enables the flexibility to store as much data on the HYDRAsstor system as the school needs without running into performance or capacity limits or even requiring additional IT staff to manage. HYDRAsstor provides a company like Anderson Center for Autism the ability to start small and seamlessly scale up without any system downtime.

“I can personally attest to how well NEC holds up at the enterprise level with TBs of data being backed up. They provided the highest level of technical support service I have ever experienced,” said Paulk.

The Results

Leveraging NEC's HYDRAsTOR grid storage technology has provided measurable results.

Anderson Center for Autism first experienced unsurpassed reliability and high redundancy. By utilizing a grid storage architecture to unify its backup and archiving functions, efficiency and cost savings have been enhanced, and Anderson has easily and cost-effectively managed colossal data growth.

By storing backup and archive data on the same platform, Anderson Center for Autism has witnessed measurable operational benefits by enabling broader search access across multiple data types, including backup, email archives and file archives.

Deduplication now occurs across all data regardless of its origination, dramatically reducing the amount of storage capacity required and also reducing power and environmental costs. The combination of operational and storage efficiencies helps Anderson to achieve the best total cost of ownership.

Since deploying HYDRAsTOR, Anderson Center for Autism has been able to effectively manage their disk space and increase flexibility to set up one large backup or multiple granular jobs. In addition to this increased control, they now have a reliable and resilient backup and archive solution that gets the job done consistently, continually and with greater efficiency. The end result is that Anderson Center for Autism has saved valuable time and money while gaining peace of mind knowing their valuable and irreplaceable data is protected.

Anderson Center for Autism also realized benefits from the HYDRAsTOR browser-based GUI which allowed for quick and easy monitoring as well as robust reporting and graphing of deduplication ratios, capacity utilization and trending, and system status.

HYDRAsTOR's self-managing, self-tuning and self-healing system provides one management dashboard to reduce complexity and administrative costs while improving staff productivity. These benefits also played well with Anderson Center for Autism's budget and staffing limitations.

With HYDRAsTOR, Anderson Center for Autism experienced faster backup and restore performance. Since deploying HYDRAsTOR, the school has 90% faster backup windows with double the amount of data. Backup windows decreased from 60 hours to 6 hours with twice as many servers being backed up. With its grid storage architecture, HYDRAsTOR has enabled Anderson Center for Autism to fully address the manageability, scalability, availability, and affordability needs of its datacenter.

HYDRAsTOR ultimately allowed Anderson Center for Autism to step away from the archaic use of tape and into the next generation of backup and archive. Global deduplication at wire-speed has been the most prominent technology advantage of HYDRAsTOR for Anderson Center for Autism, which is now able to house both backup and archive data streams on a single platform and eliminate redundancy between them through unified global deduplication.

Over time, Anderson has documented data reduction ratios of 44:1, with HYDRAsTOR performance increasing as the deduplication ratio increases: backups which started at an average of 50-90 MB/min now run 600-2900 MB/min. As one example, for the school's Exchange public folder backup process, what previously took 10 hours to run now clocks in at about 50 minutes for this specific job.

The IT team can now conduct Microsoft® SQL & Outlook® backups at a granular level, while OS files, home directories, shared files, and other file types are handled in separate backups, providing enhanced flexibility to

■■■ “With HYDRAsTOR, Anderson Center for Autism can now manage information, instead of IT infrastructure, which enables us to provide better service to our clients.”

Neil Pollack
Executive Director and CEO
Anderson Center for Autism

quickly and easily perform restores down to a single message or document.

With HYDRAsTOR's 'community of smart nodes', Anderson Center for Autism is secure that they could lose Storage Nodes yet not lose mission-critical data. Anderson Center for Autism has found reassurance in having a reliable storage solution with no failed backups. Even as a skeptical systems administrator needing high performance backups online at all times, Paulk has confidence that HYDRAsTOR will continue to deliver backups even if drives go down.

Anderson Center for Autism has seen huge ROI benefits with HYDRAsTOR, including the ability to backup 100% of its infrastructure at less cost than its legacy DLT tape-based system which handled less than one third of its data. If Anderson Center for Autism had not purchased HYDRAsTOR, they would have purchased four additional DLT drives and replaced over 1,500 tape data cartridges (and 24 cleaning cartridges) per year at significant cost.

Factoring in much faster backup and restore times, no more failed backups, more granular recoverability, much easier administration and reduced downtime — not to mention no more maintenance nightmares, such as having to ship an entire DLT drive to the manufacturer to release a tape caught in the spindles — HYDRAsTOR has paid for itself in less than six months while continuing to deliver clear and significant ROI.

Primary HYDRAsTOR ROI benefits include:

- Eliminated purchase of additional DLT drives⁽¹⁾ = \$20,000
- Eliminated purchase of data tape cartridges⁽²⁾ = \$62,400/year
- Eliminated purchase of cleaning tape cartridges⁽³⁾ = \$1,920/year
- Avoided >\$1,000 downtime impact when HYDRAsTOR restored failed electronic timecard in <2 minutes.

Other HYDRAsTOR benefits include:

- More than 20x faster, with typical backups now taking less than three hours instead of over 60 hours
- No failed backups with HYDRAsTOR – Eliminated an average of one failure per month with DLT-based infrastructure
- Eliminated burdensome tasks such as two-hour tape cleaning cycles
- More granular backup/restore, enabling more flexible restorability

“Without hesitation, I recommend HYDRAsTOR,” remarked Paulk. “HYDRAsTOR has exceeded all of my expectations – it was easier and faster to setup and maintain backup and recovery jobs, and its wire-speed, inline deduplication has enabled my team to store a lot more data for a lot less cost.”

(1) Calculated at 4 more DLTs x \$5,000 per

(2) Calculated at 6 total DLTs x 5 cartridges per DLT per week x 52 weeks x \$40/cartridge

(3) Calculated at 6 total DLTs x 4 cartridges per DLT per year x \$80/cartridge

NEC CORPORATION OF AMERICA IT Platform Group

2880 Scott Boulevard
Santa Clara, CA 95050

www.hydrastor.com
hydrastor@necam.com
1 866 296 6236

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