5 Critical Features of a Long-Term Data Storage Infrastructure

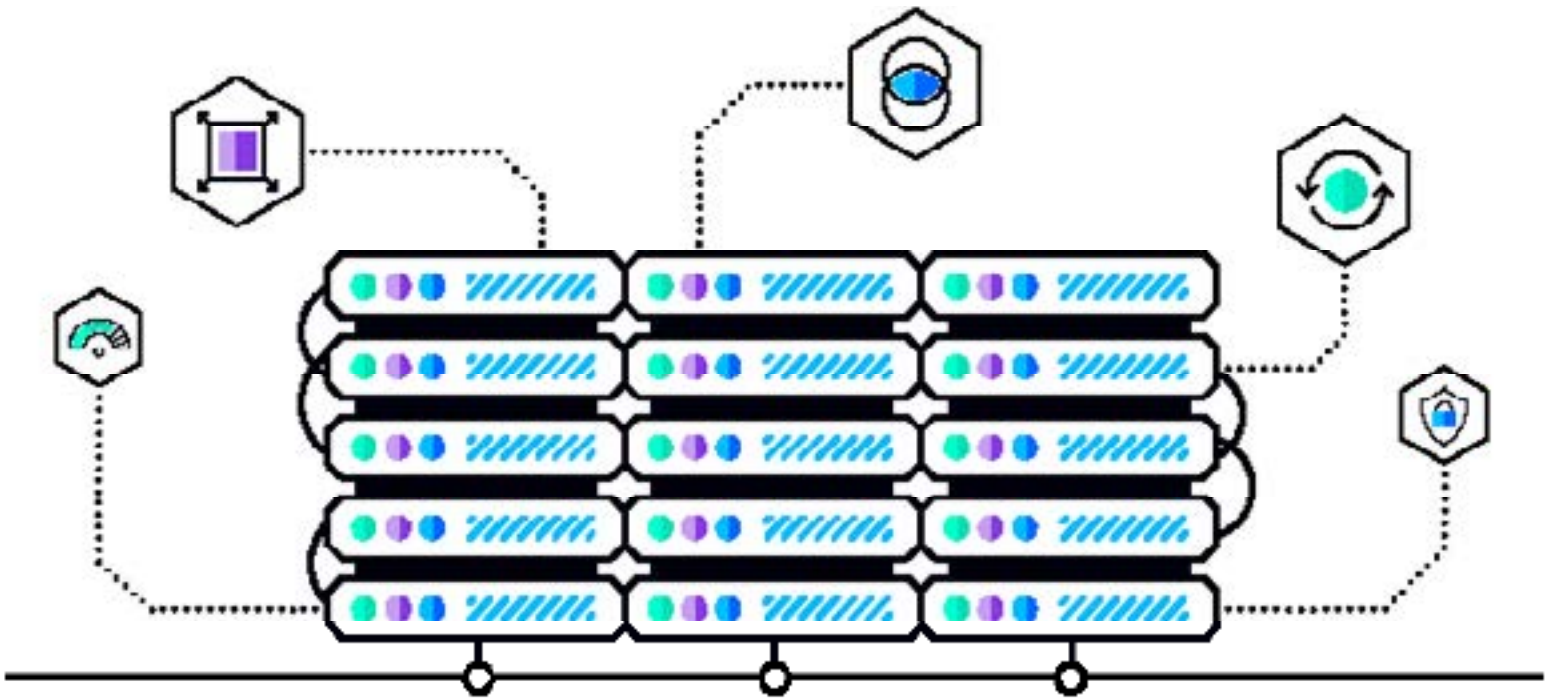
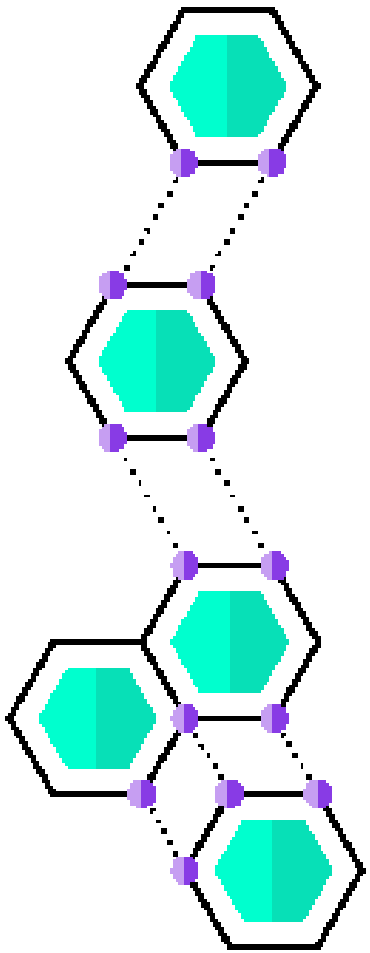


Table of Contents

Introduction



In the age of smart mobile devices, internet, mobile commerce, big data, and IoT, data emanates from a bewildering array of sources and applications—and it represents one of your business' most mission-critical commodities.

Managing that flow of data (and storing that data so your company can protect it and put it to profitable use) presents 5 increasingly complex challenges.

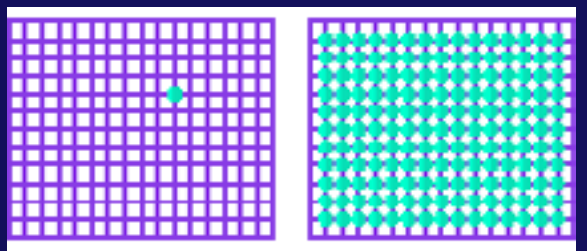
Scalability: Data storage at the scale you need now and as your company grows
Capacity: Seamless and non-disruptive growth
Performance: Fast, reliable backup, storage, and retrieval
Cost: A competitive solution that delivers value and leverages your ongoing investment
Security and compliance: Safeguarding critical data and ensuring that you meet regulatory requirements

Since 2007, NEC has set the standard in backup and archival storage with its HYDRAstor® disk storage solutions. This report examines 5 dimensions of the storage challenge and how NEC addressed them in designing a long-term solution to meet the requirements of companies like yours.

CHALLENGE

Scalability

“I don't want to choose a storage solution that meets our needs today and then find two years from now that we’ve outgrown it and have to start over from scratch.”



Grow seamlessly and non-disruptively from **1 to 165 nodes** in a single grid.

SOLUTION

As your company grows from small business to fully networked enterprise, your data storage requirements will evolve. You need to manage that growth without sacrificing performance in backups, replication, or recovery—and with high resiliency.

HYDRAstor has an extreme capacity for scale. Solutions range from a 1 TB Virtual Appliance to an appliance built specifically for SMBs to a grid-based, fully redundant solution scalable from 1 to 165 nodes without business disruption. Grid architecture allows the system to grow in step with your primary and secondary storage needs. Mix and match storage or performance nodes as your business needs it. And with global deduplication, data rolls out automatically, even to nodes from multiple generations of technology, enabling in-place refresh without requiring data migration.

Then, as you add capacity, an automated process recognizes new nodes and optimally distributes data and processing. Each node typically provides 960 TB storage capacity, with up to a 63 TB per-hour ingest rate. Your HYDRAstor solution can scale from small business to enterprise requirements without requiring forklift upgrades or a loss of service.

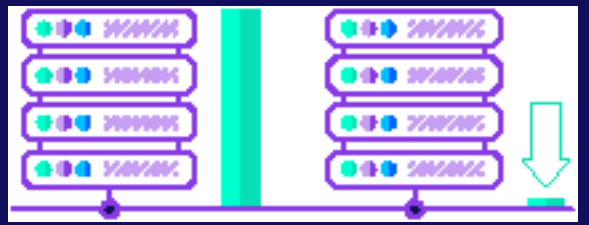
HYDRAstor for Scalability

- Scale-out grid architecture
- Online multi-generation platform built for expansion

CHALLENGE

Capacity

“Primary and long-term storage, backup, and recovery—they’re all aspects of the same basic problem. Why can’t I have one platform that optimizes for all these services?”



95% reduction in storage space consumption with inline deduplication

SOLUTION

Many conventional storage solutions are single-service platforms for backup/recovery or archiving. Your business requirements demand both. With a solution that provides both, not only can you allocate storage capacity on the fly, but it can also help reduce costs and ease the burden on expensive primary file storage arrays.

HYDRAstor is a multi-role platform for data recovery and long-term storage. It reduces storage capacity consumption by up to 95% with inline global deduplication, enabling high performance and low storage costs. It also frees up primary storage space by serving as the archive target. This can extend the life of the primary array, reducing its workload and maximizing its performance.

HYDRAstor enhances performance by using application-aware deduplication, recognizing and accounting for data layouts, caching, and other characteristics of different applications. It can increase space reduction by more than 130% by optimizing deduplication without impact from the corresponding application metadata. HYDRAstor’s DynamicStor™ technology virtualizes all available storage resources into a common shared pool, automatically allocating storage capacity on the fly and balancing incoming data across all nodes within the grid.

HYDRAstor for Capacity

- Dynamic auto-provisioning
- Application-aware inline global deduplication

CHALLENGE

Performance

“I can’t afford downtime or data loss. I need a system that’s online when I need it, one that backs up and recovers fast, so we can keep the business running.”

Ingest speeds **range from 10 TB to 6 PB per hour**—one of the fastest platforms on the market.

SOLUTION

Effectively architected storage can scale not just capacity, but performance in sync with your business needs. Today’s grid architecture ensures high availability and no single point of failure.

This approach ensures protection across your entire system. With HYDRAstor, you get the industry’s fastest ingest speeds for backup and recovery. And faster speed means faster recovery, reducing the impact in the event of a disaster.

NEC’s unique Distributed Resilient Data™ (DRD) erasure-coding offers stronger data protection than traditional Redundant Array of Independent Disks (RAID), with less capacity or processing overhead. DRD can tolerate up to 6 concurrent disk or node failures while maintaining normal I/O. And when data is lost, HYDRAstor automatically rebuilds only what’s missing using available free capacity on remaining disks. This leads to a faster data rebuild than with traditional RAID. With WAN-optimized replication, the system transmits only unique compressed data chunks and newer reference metadata. This functionality significantly reduces the network bandwidth requirements, sharing information with a separate HYDRAstor system via asynchronous replication.

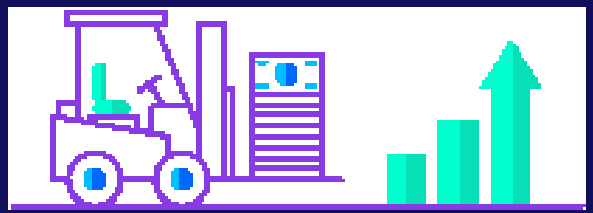
HYDRAstor for Performance

- Advanced erasure-coded data resiliency
- WAN-optimized replication for disaster recovery
- High availability and no single point of failure

CHALLENGE

Cost

“We don’t have budget for a total replacement each time we need to add capacity. I need a storage solution that grows gracefully and works with the software we’re committed to.”



Grows as your organization grows, eliminating the disruption and fees typically associated with forklift upgrades

SOLUTION

Your business should not have to replace your current storage ecosystem every time technology evolves. You need a system that evolves with you.

With HYDRAstor’s non-disruptive scalability, there is no need to overbuy. You can deploy the solution now and add performance or capacity when you need it. There is no need for spare disks; the system uses 100% of its capacity. And its architecture eliminates data migration costs. Bottom line: You can change your technology when your business needs change, not your vendors.

NEC draws on a rich ecosystem of partnerships to provide you with a scalable, software-agnostic platform. Via the Common Internet File System (CIFS), Network File System (NFS), or Express I/O connection, HYDRAstor works with applications from a wide range of partner vendors, including Veeam®, Veritas®, Oracle®, Net Backup®, and many more. The system supports all leading backup software vendors and is certified with archive software vendors, as well. And HYDRAstor is cloud-ready, with Amazon S3® and OpenStack Swift-compatible APIs.

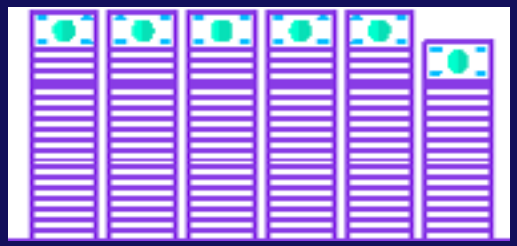
HYDRAstor for Cost

- Non-disruptive dynamic technology refreshes or amendments
- Software-agnostic platform with a rich partnership ecosystem

CHALLENGE

Security & Compliance

“I need to reassure clients that their corporate records are safe from hacks and ransomware attacks.”



Cybersecurity costs U.S. companies an average **$11.7 million** per year.*

SOLUTION

High-profile data breaches and new privacy and data security regulations have increased sensitivities around security and compliance. Data security should not only be priority number one for you and your clients—but also for your solutions provider.

With Advanced Data Management Services, HYDRAstor can encrypt end-user data both at rest and in flight. You can protect against unauthorized access to lost or stolen disks by encrypting data as it is written to disk with Encryption at Rest. With block-level deduplication, even if the data in flight is compromised, a hacker cannot rebuild the document without the hashing table, which is stored but never sent.

And when it comes to meeting regulatory and legal mandates, Write-Once, Read-Many (WORM) capability protects your corporate records. Filesystems with different resiliency levels or different protection attributes can be intermixed on the same system, including the ability to dynamically shred deleted data. What’s more, administrators can choose the level of resiliency based on the importance of the data.

HYDRAstor for Security & Compliance

- HYDRAstor Encryption at Rest
- Write-Once, Read-Many (WORM) capability

* “Cost of Cybercrime Study,” 2017, Ponemon Institute & Accenture

Case Study

QuisLex, Inc.

Corporate law departments and Top 100 law firms rely on QuisLex global legal services firm for high-volume work, including managed review of sensitive documents, in response to litigation, investigation, or regulatory requests. To meet the needs of its growing U.S. client base, QuisLex recently established a more than 20,000-square-foot operations center in New York City.

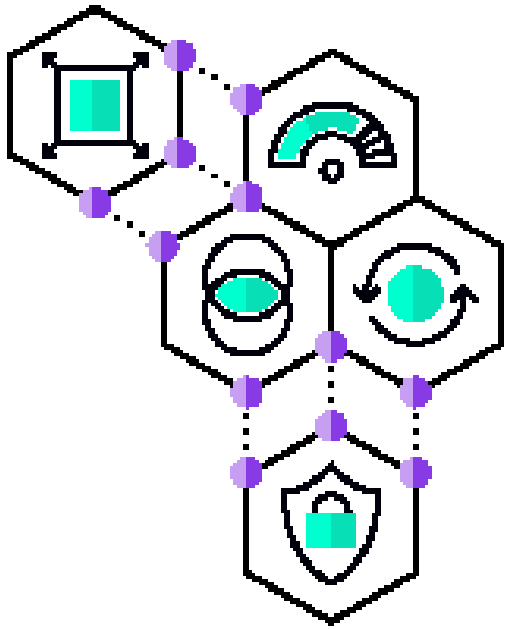
Client requirements include fast, secure electronic document storage, search, and retrieval—up to ISO 27001 standards. That said, QuisLex wanted a scalable, single-source solution that would grow organically as the new operations center took on an increase in transaction volume.

NEC delivered a complete solution, including server, virtualization, storage and backup, featuring the HYDRAstor HS8 storage backup system. The solution exceeded QuisLex's global infrastructure performance. Today, the New York infrastructure is much faster in encryption, storage, and backup, and it's poised to grow gracefully.

"NEC quickly understood our needs and concerns and didn't try to sell us everything, or products we didn't need, but instead a custom solution that exactly fit our needs."

—Michel Sahyoun, CTO, QuisLex

Conclusion



How you store, archive, and protect your company's data can determine its competitive value and integrity in an increasingly digitized business environment. The choice you make could have powerful, even strategic implications. HYDRAstor stands out as the preeminent choice in backup and archival storage through NEC's innovations in:

Scalability: Disruption-free expansion of nodes with automated data distribution and minimal downtime

Capacity: A versatile single platform for primary and secondary storage, with inline global deduplication

Performance: Erasure coding for maximum resiliency and WAN-optimized replication for rapid disaster recovery

Cost: Software-agnostic functionality that leverages your existing investment in backup and archiving systems

Security and compliance: Encryption at rest and in flight, and WORM capabilities to safeguard mission-critical data

HYDRAstor can provide the reliable, scalable, cost-effective, backup and archiving solution your business needs. To arrange a free, no-obligation HYDRAstor trial, visit our website or contact a sales representative at 1-866-632-3226.