



# Don't Sabotage Your AI Strategy by Storing Data in a Shoebox

Modernize your enterprise storage now

FROST & SULLIVAN VBOOK

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# Introduction

In today's business environment, data has become a critical currency—an asset that powers innovation, drives competitive advantage, and fuels operational efficiency. Whether enabling AI-driven insights, delivering personalized customer experiences, or optimizing productivity, data is at the heart of modern enterprise success. Yet many organizations continue to rely on traditional network-attached storage (NAS) systems to support their data-intensive applications. These systems may still function adequately, and their familiarity offers a sense of control and stability. So, the question arises: if it's working, why change?

The answer lies in the evolving demands of data itself. As businesses become more data-centric and increasingly adopt AI, the limitations of legacy storage systems begin to surface. If your storage infrastructure hasn't kept pace with how your organization uses data, you may be inadvertently putting your business at risk.

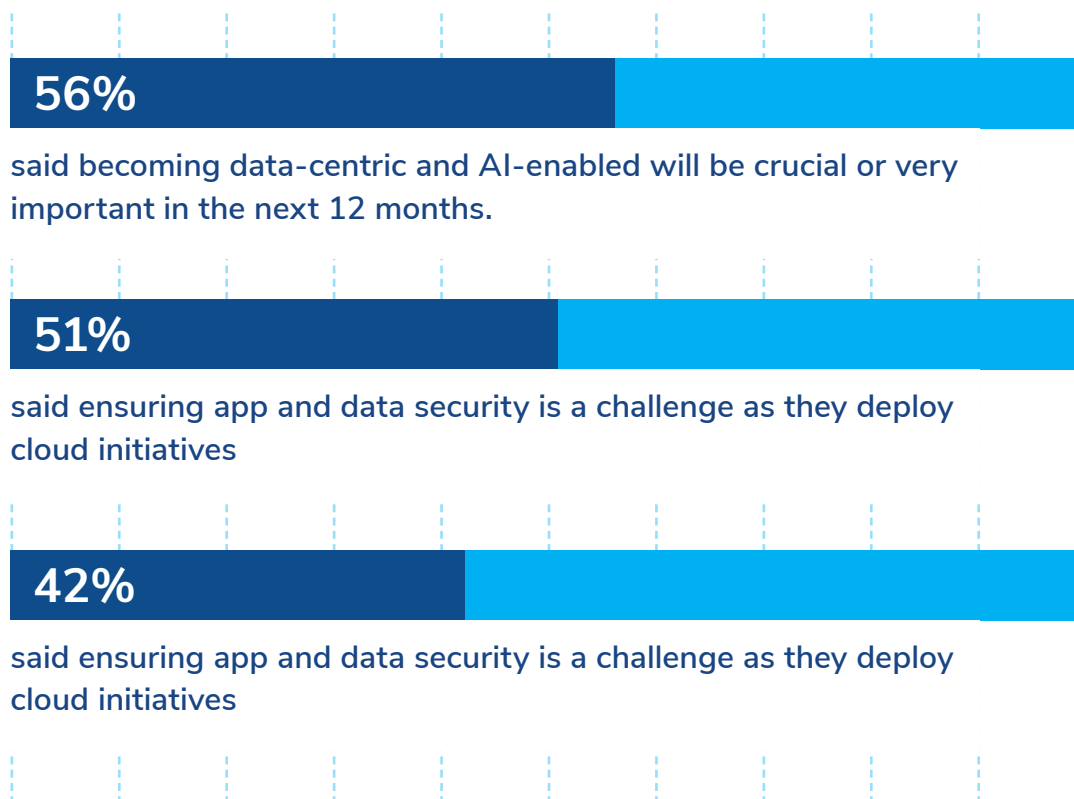
While NAS hardware may still be operational, storing data there is akin to keeping gold in a shoebox. It may feel secure because it's under your direct control, but it's not efficient, scalable, or inherently secure. This approach limits your ability to leverage the full potential of modern data solutions. Modern storage must do more than simply hold data. It must enable global availability, offer native security features, and provide robust protection against ransomware. Just as important, it must support the creation of a unified data lake—an environment where data can be seamlessly exposed to AI and analytics tools.





Unfortunately, most traditional and even many cloud-based storage solutions fall short of these requirements. They weren't designed to meet the dynamic, distributed needs of today's businesses. To truly future-proof your data strategy, you must embrace a new paradigm that aligns with the way modern enterprises operate. That paradigm is the global file system. It's built to support the scale, security, and intelligence that data-driven organizations require. For businesses aiming to lead in a digital-first world, transforming your data stores isn't just a technical upgrade; it's a strategic necessity. The time to act is now, before your competitors beat you to the bank.

### Data proof points<sup>1</sup>



<sup>1</sup> All data, unless otherwise noted, was taken from the Frost & Sullivan Global Cloud & AI User Survey, September 2024, which asked 2,117 IT and business leaders from around the world about their perceptions and use of cloud and AI technologies in their businesses.





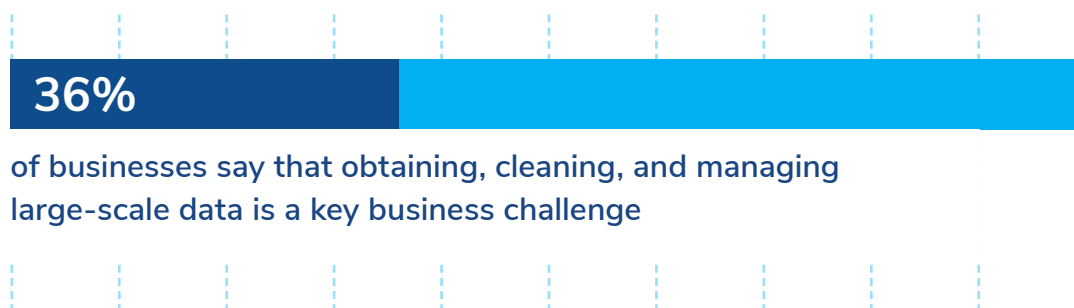
## “Gold in a Shoebox” is Inefficient

For decades, businesses have relied on NAS systems to manage their growing volumes of data. These systems are typically tied to a single location, network, or workload, which made sense when data was more centralized and collaboration was confined to local environments. But in today's distributed, fast-paced business landscape, this architecture creates significant bottlenecks. Sharing data across sites or workloads becomes slow, cumbersome, and, in many cases, unworkable.

The limitations of NAS are best illustrated by analogy: storing valuable data in NAS is like keeping gold in a shoebox under your bed. The gold still holds value, but its utility is severely restricted—only you can access it, and only from one place. It's not scalable, not secure, and certainly not optimized for a modern enterprise that depends on agility and global collaboration.

Beyond accessibility, NAS systems also fall short in how they manage and organize data. Their metadata capabilities are limited, and search functionality is often rudimentary. This makes it difficult to locate, categorize, or understand the data you have. Returning to the shoebox analogy, it's like knowing you have currency stored inside, but having no idea how much is there, what kind it is, or where it came from. You're left with a valuable asset that's poorly managed and underutilized. In a world where data is the foundation of innovation and competitive advantage, relying on outdated storage systems is not just inefficient; it's a strategic risk.

### Data proof points





## NAS Can Limit Scalability

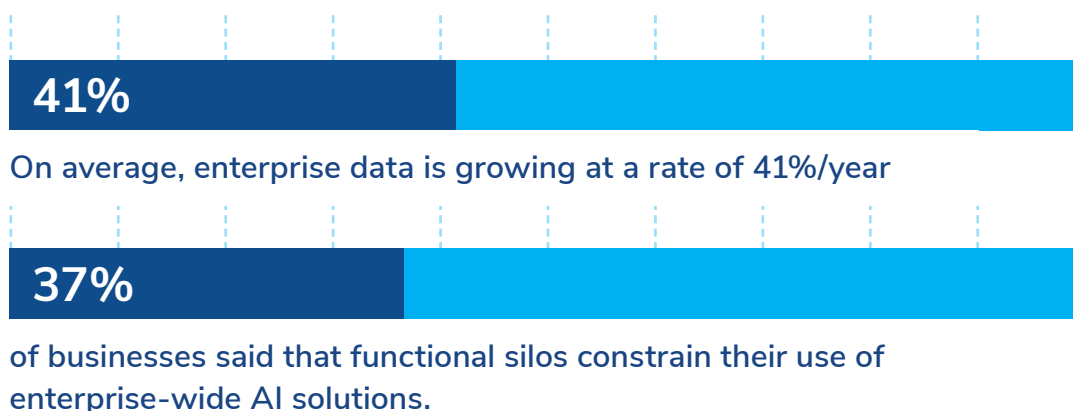
As data volumes continue to grow exponentially year over year, businesses face increasing pressure to adopt storage solutions that can scale seamlessly. The ideal system must not only accommodate expanding datasets but also maintain high performance and governance standards, without adding complexity, overhead, or management burden.

Traditional NAS systems were not built for this kind of growth. Their architecture scales in silos, requiring new hardware deployments tied to specific locations, workloads, or network segments. This fragmented approach creates inefficiencies and limits visibility. If we extend the earlier analogy, it's like having multiple shoeboxes scattered across different closets—each containing valuable currency, but with little insight into what's inside, how it's organized, or how it connects to the rest.

Scaling NAS infrastructure also comes at a cost. More hardware means more capital investment, more time spent on configuration and maintenance, and more resources diverted from strategic initiatives. You're not just buying bigger or more shoeboxes, you're also responsible for organizing them, securing them, and keeping track of what's inside. And despite all that effort, they still sit in a closet, disconnected from the broader enterprise and vulnerable to inefficiencies.

In a data-driven world, this model is unsustainable. Businesses need storage that scales intelligently without silos, friction, or hidden costs from legacy systems.

### Data proof points





## NAS Can Leave Data Vulnerable

In an era where cybercrime is a persistent and growing threat, protecting online data is no longer optional; it's essential. Businesses face increasing pressure to safeguard their digital assets not only from external attacks, such as ransomware, but also from internal risks, such as hardware failures and natural disasters. At the same time, regulatory requirements are becoming more stringent, and the penalties for non-compliance are more severe.

Despite this high-stakes environment, many organizations still rely on traditional NAS systems that offer limited protection. NAS security is typically confined to the network perimeter, leaving data exposed to breaches, ransomware attacks, and unauthorized access. These systems often lack robust identity and access management controls, making it difficult to enforce granular permissions or monitor who is accessing sensitive data. Without these safeguards, organizations are vulnerable to both external threats and insider risks.

The risks extend beyond cyber threats. Hardware failures remain a common cause of data loss, and unless backups are maintained—often on tapes or through third-party services—data can be permanently lost. Even when backups exist, restoration can be slow and disruptive, taking hours, days, or even weeks to complete. In today's fast-moving business landscape, that kind of downtime is unacceptable.

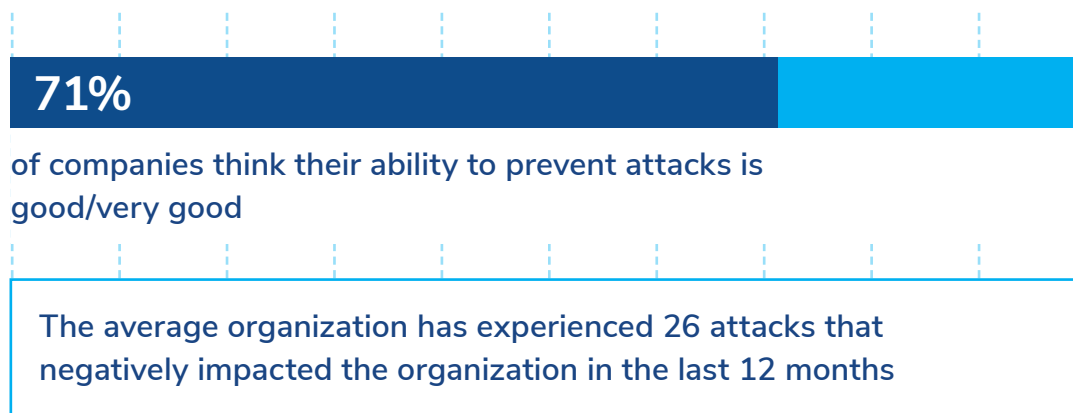




To return to the shoebox analogy: if someone grabs the shoebox, they've got your gold. There's no protection, no tracking, and no way to recover what's lost. It's a stark reminder that traditional NAS systems are ill-equipped to handle the demands of modern data security.

From security gaps to scalability ceilings, NAS has become a liability for the modern enterprise. The good news is that a new class of storage architecture is emerging—one designed for the scale, speed, and intelligence that today's businesses require. Global file systems are rewriting the rules, offering built-in security, seamless scalability, and the resilience needed to protect data in an increasingly hostile digital world.

### Data proof points







# Global File Systems: The New NAS Alternative

The limitations of traditional NAS systems have evolved from being inconveniences to becoming barriers to innovation and security. As businesses strive to adopt AI, enable global collaboration, and meet increasingly complex compliance requirements, NAS architectures often stand in the way. Their localized, siloed nature makes deploying AI difficult, restricts global data access, and forces organizations into manual, time-consuming security and governance processes.

In contrast, global file systems (GFS) represent a transformative shift in how enterprises manage and access data. These platforms unify data access across locations and workloads, enabling seamless collaboration and centralized control. At the heart of this transformation is the global namespace: a unified file system view that abstracts and consolidates multiple, geographically dispersed storage systems into a single, logical structure. This allows users and applications to access files through a consistent path, regardless of where the data physically resides.

With a global namespace, organizations gain location transparency, simplified data management, and the ability to build comprehensive data lakes that support AI and analytics. This unified approach eliminates the fragmentation that plagues NAS environments and lays the foundation for scalable, intelligent data operations.





## Built for Scale, Security, and Speed

Global file systems (GFS) are designed to scale effortlessly across sites, regions, and workloads. They support thousands of users and petabytes of data, making it easier to unify information for enterprise-wide analytics and AI initiatives. Unlike NAS, which requires incremental hardware and management overhead, GFS platforms grow without adding complexity or cost.

Centralized management is another key advantage. GFS platforms offer a single pane of glass for policy enforcement, monitoring, and auditing across all endpoints. This ensures consistent governance without the burden of managing disparate systems. It also strengthens compliance by applying uniform controls across the entire data estate.

Performance at the edge is also dramatically improved. Through intelligent caching, GFS platforms deliver LAN-speed access to cloud-hosted files, regardless of user location. This not only enhances application performance but also supports the demanding requirements of AI workloads.

Security is built into the GFS architecture. Immutable snapshots are distributed and replicated across the network, allowing near-real-time recovery if a node fails. Leading providers also offer native security features, compliance certifications (such as ISO and HIPAA), and ransomware detection and recovery capabilities that rival or exceed those of third-party data protection vendors. This enables organizations to consolidate their data protection strategies, reducing both cost and operational complexity.



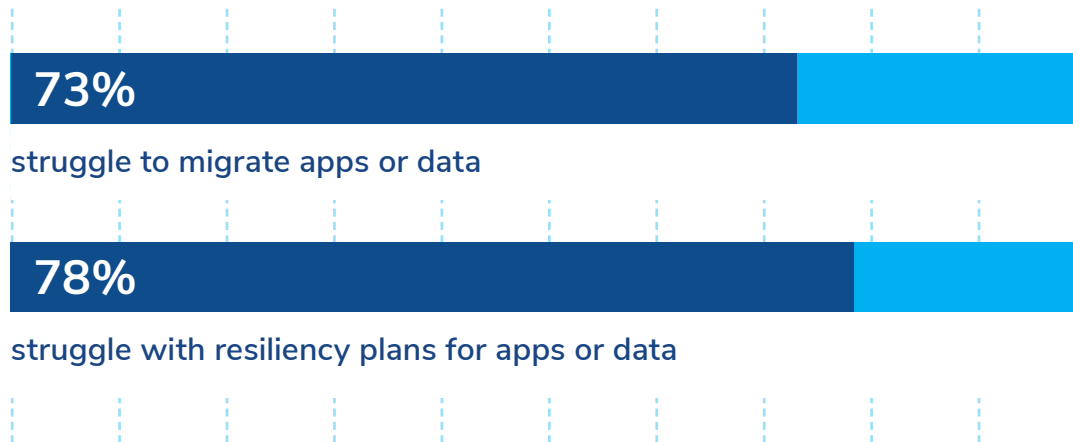




Finally, GFS platforms integrate seamlessly with major cloud providers and object storage services. This allows for intelligent tiering and archiving of infrequently accessed data, delivering additional cost efficiencies without compromising performance. Real-time file collaboration becomes easier, even for globally distributed teams, without the need to send files over the internet. Two colleagues can work on the same file with the same speed and reliability as if it were stored locally.

In short, global file systems empower organizations to build unified, accessible, secure, and high-performing data lakes that are ready for AI, analytics, and the demands of modern business.

### Data proof points







## Choosing the Right Global File System Provider

Despite the clear benefits of global file systems, transitioning corporate data stores can be a daunting task. Migrating or restructuring these environments introduces risks, such as downtime, data loss, and performance degradation, which can disrupt employee productivity and negatively impact customer experience.

Corporate data environments are often deeply intertwined with applications, workflows, compliance policies, and user access controls. Untangling and rearchitecting these systems requires more than just technical planning; it demands cross-functional coordination and often a cultural shift in how data is managed and accessed.

While many vendors offer global file system platforms, not all providers deliver the same level of capability. Choosing the right partner is critical to ensuring a smooth transition and long-term success. When choosing the best provider for your business, consider the following capabilities:







- **Unified global namespace:** Enables consistent access to files across locations, simplifying collaboration and eliminating data silos.
- **Intelligent edge caching and edge filers:** Improves performance by delivering cloud-hosted files at local speeds, enhancing user experience and application responsiveness.
- **Centralized management and policy deployment:** Allows IT teams to enforce governance, monitor activity, and apply policies uniformly across all endpoints from a single interface.
- **Built-in data protection, particularly against ransomware:** Ensures data resilience through features like immutable snapshots and rapid recovery, reducing reliance on third-party backup solutions.
- **Military-grade security capabilities:** Provides robust encryption and compliance with stringent security standards, protecting sensitive data from unauthorized access and breaches.
- **Seamless scalability across cloud, edge, and on-premises environments:** Supports growth without added complexity, enabling organizations to expand storage as needed without rearchitecting systems.
- **Multicloud capability with support for cloud object storage:** Offers flexibility to tier and archive data across multiple cloud platforms, optimizing cost and performance.
- **Strong API and ecosystem support:** Facilitates integration with existing tools and workflows, enabling automation and extending platform functionality.
- **Simple migration tools:** Provides seamless transition from legacy NAS to the cloud, preserving existing file system structure and permissions.
- **Ability to demonstrate TCO/ROI:** Helps justify investment by showing clear cost savings, operational efficiencies, and business impact.
- **Professional services and support:** Provides expert guidance and hands-on assistance throughout the migration and implementation process, reducing risk and accelerating time to value.



## The Last Word

A global file system isn't just a tactical upgrade; it's a strategic move that prepares your business for the realities of distributed work, hybrid cloud environments, and the data-driven innovation that AI demands. It's about more than storage; it's about positioning your organization to thrive in a landscape where agility, accessibility, and intelligence are non-negotiable.

But success doesn't come from technology alone. It hinges on choosing a provider that can deliver proven scalability, robust security, and enterprise-grade support. This isn't a decision to take lightly; it's the foundation of your future data strategy.

So make the move today. Take your gold out of the shoebox in the closet and put it in a vault—one that not only keeps it safe but helps you unlock its full value.

### About CTERA

CTERA is a global leader in the integrated data intelligence market enabling organizations of all sizes to efficiently and effectively manage, protect, store, and leverage their data across highly distributed environments. With a foundation built on security, scale, and seamless integration, the CTERA Intelligent Data Platform empowers organizations to align their data management strategies to continuously deliver against today's business needs and tomorrow's vision.


Learn more at [www.ctera.com](http://www.ctera.com)



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