

White Paper

How Re-architecting the File Storage Environment Can Help Reduce Risk and Cost, and Increase Operational Efficiency

Consolidate Data to Drive Efficiency and Increase Security Using an Enterprise File System

By Terri McClure, ESG Senior Analyst

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Executive Summary

Smart IT organizations have figured out how they can have a direct impact on the bottom line of the business, are aligning with overall business priorities, and are finding ways to help their companies achieve three key goals. The first is to *reduce business risk* by helping the business make faster, better informed decisions while ensuring data is properly governed (i.e., secured, managed, retained, and disposed of). The second is to *drive operational efficiency* through reduced cycle times—for example, in provisioning new applications, or quickly introducing new products or services. And the third is to be a good corporate citizen and find ways to *save money*.

Figure 1. The CIO Balancing Act



Source: Enterprise Strategy Group, 2016

Finding the right balance between these three goals is key to achieving business agility—cost-effectively taking advantage of new opportunities with as little risk as possible. And at the core of everything is data. Managing, unlocking, securing, and leveraging data is key to achieving these goals. But that is hard to do given the data sprawl associated with legacy data that has been retained across the organization since its inception, combined with ever-faster information growth. This is especially true of unstructured file data, which grows, sprawls, and overruns file storage infrastructure and protection at an alarming rate. Deploying an enterprise file system to centrally manage, protect, and leverage information can provide a foundation to achieve these goals.

Today's Enterprise File Data Landscape

IT organizations have been struggling with how to manage data growth since the advent of computing—from the physical world of filing cabinets and printed green-bar paper to the logical world of zeros and ones—and there is no sign of this growth slowing. Rather, growth is accelerating as the world becomes more connected.

Data Growth Continues to be a Challenge

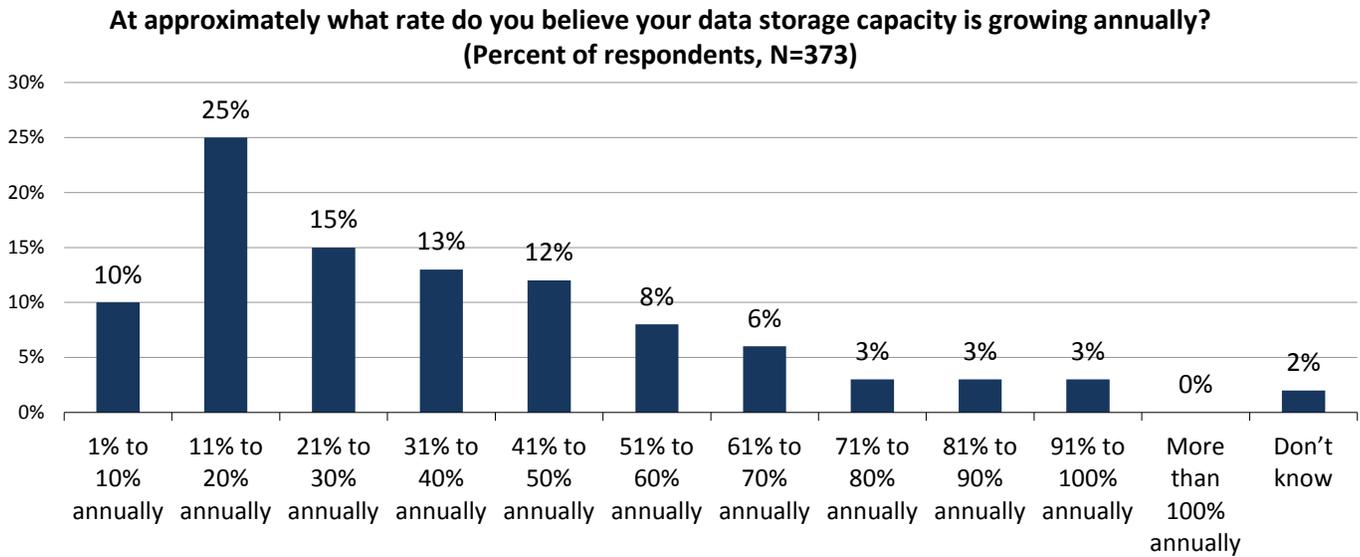
All in all, 63% of organizations report that data is growing in excess of 20% year over year.

Because of this, managing data growth appears perennially among the five most commonly cited overall IT priorities.¹ How fast is it growing? ESG research found that the multitude of respondents who participated in a recent survey (25%) cited overall annual storage

¹ Source: ESG Research Report, [2016 IT Spending Intentions Survey](#), February 2016.

capacity growth rates in the 11% to 20% range, with another 23% reporting that their data is growing in excess of 50% per year. All in all, 63% of organizations report that data is growing in excess of 20% year over year (see Figure 2).²

Figure 2. Annual Storage Growth Rates



Source: Enterprise Strategy Group, 2016

Legacy Data Complicates the Equation

Compounding the data management challenges associated with tremendous data creation velocity is the massive amount of preexisting unstructured data all companies must manage and secure. This corpus of data now includes volumes of unstructured file data that previously resided on individual PCs and laptops, removable USB devices, and shared departmental drives that users now wish to access via mobile devices. Much of this file data holds tremendous business value and must be easily accessed around the clock.

Furthermore, mobility and the cloud are accelerating data growth and creating new opportunities and challenges when it comes to securing, managing, and leveraging data. Mobile devices and applications are newer productivity and data creation and capture points. The ubiquity of mobile devices and easy access to applications via the cloud has resulted in the use of cloud applications without any involvement of the corporate IT or security team, a dynamic referred to as shadow IT. Prior to cloud and mobile device usage growth, lines of business wouldn't have dreamed of standing up applications with zero IT involvement. Now it is commonplace. In a recent survey of IT professionals regarding cloud security, only 8% of respondents reported that they were not aware of the existence of any shadow IT at their organizations, with 65% reporting a moderate to significant number of shadow IT applications in existence in their organization.³

There are many challenges associated with managing the combined new and existing data, such as ensuring files are protected, available from any device at any time, only available to those who should have access, shareable for collaboration, secure, and retained in relation to regulatory requirements. All this needs to be done in a cost-efficient manner.

² Source: ESG Research Report, [2015 Data Storage Market Trends](#), October 2015. All ESG research references and charts in this white paper have been taken from this research report unless otherwise noted.

³ Source: ESG Research Report, [The Visibility and Control Requirements of Cloud App Security](#), May 2016.

One of the greatest of these data management challenges is the securing of files, a challenge greatly compounded in recent years in light of cloud and shadow IT. Increasing data security is the business and IT priority most cited by organizations surveyed by ESG in our annual spending research.⁴

Think about how unabated unstructured data growth manifests itself in the enterprise, and the business and data security impact it could have:

- IT has largely purchased storage systems on an ad hoc, as-needed basis to support individual applications or to warehouse files for groups, departments, or applications.
- This creates disconnected silos of information. These disconnected silos make it nearly impossible to effectively manage data itself. Instead, storage systems are managed on a capacity basis—with overutilized and underutilized systems sprawled across the enterprise, and often time all classes of data being treated equally, stored on a higher tier of storage than required. This situation frequently leaves storage systems with stranded unused capacity, or oversubscribed and performing poorly.
- The combination of poor utilization management and single level tiering leads to excessive capital spending and operational expense for storage management.
- Groups, departments, and lines of business provision their own storage in the form of software-as-a-service, such as enterprise file sync and share applications, which creates another unmanaged, unprotected silo.
- Since data is fragmented across many silos and in shadow IT deployments, there are limited tools that provide visibility into what the data is and it is a huge manual effort to inventory that data, which makes it impossible to perform effective data governance.

One major issue is corporate risk. With files sprawled across the enterprise and the cloud (via both formal cloud programs and shadow IT), it becomes harder to know where business-critical or regulated information is and how to protect it. It is highly likely that this information is in multiple places, increasing the risk of unprotected data or a security breach. How can data encryption policies—critical when it comes to cloud adoption—be applied if the organization has no visibility into where data that should be encrypted resides? And when it comes to compliance, file sprawl has a number of ripple effects. Limited visibility into data assets makes it difficult to set proper data retention policies, cleanse data after project completion, and ensure e-discovery, legal hold, or other regulatory obligations are met.

Amidst all of this, the potential business agility, and the CapEx and OpEx savings associated with adopting cloud, mean that many organizations are dealing with a corporate mandate to figure out where they can leverage cloud in their business processes. There is an urgent need to optimize cost and infrastructure while increasing productivity.

Re-architecting for the Cloud with an Enterprise File System

Consolidation of data assets and cloud leverage can help drive savings, but IT organizations must consider the security implications, integration into their existing IT environments, performance impact, and ease of use and management when moving files to the cloud. What IT really needs is to centralize data assets into a consolidated whole that is managed and secured centrally. It needs an enterprise file system to contain sprawl, and to reduce risk of sensitive files being stored in an unprotected and unmanaged remote or departmental server. This global file system approach will help reduce the CapEx associated with disconnected silos of storage and redundant data, the excessive OpEx associated with file sprawl, the productivity impact of slow response times, risk associated with unprotected data, and risk of leakage of sensitive data.

⁴ Source: ESG Research Report, [2016 IT Spending Intentions Survey](#), February 2016.

An Enterprise File System Helps Reduce Cost

When storage pros were asked about their biggest challenges in terms of the storage environment, more than one in four cited hardware cost. When asked specifically about their primary storage challenge, hardware costs were among the top responses, along with the rapid data growth rate and data protection (see Figure 3).

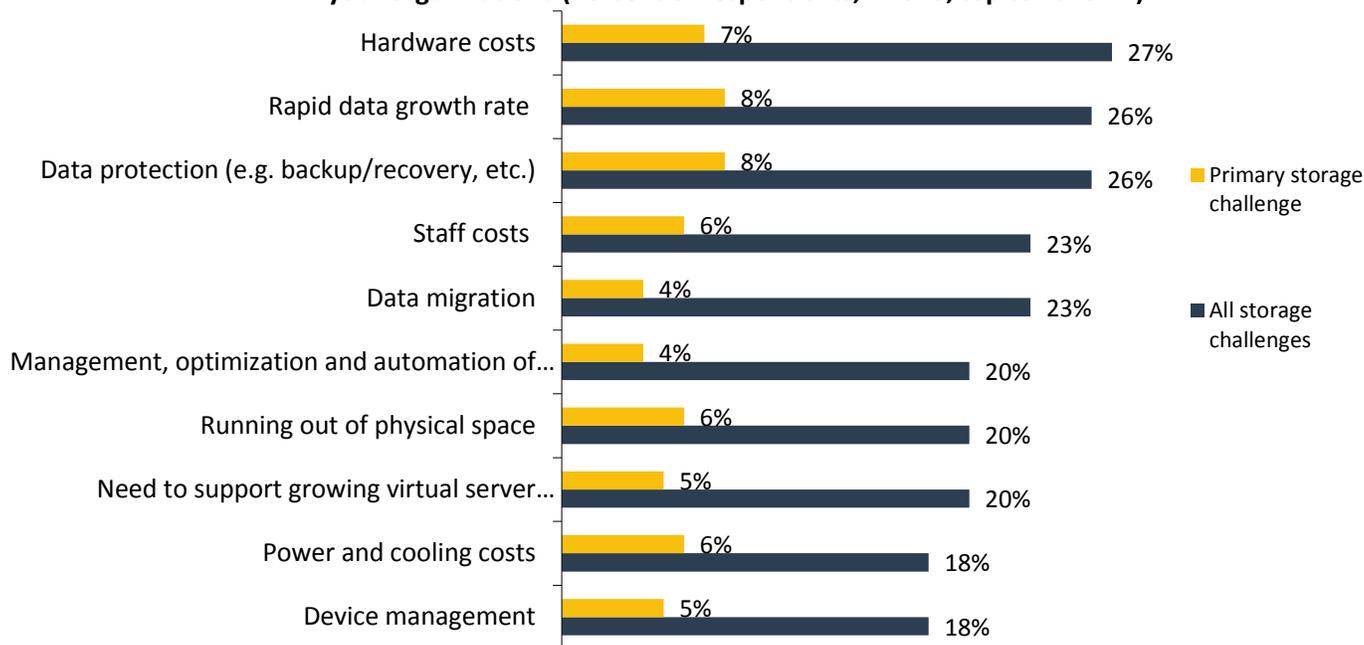
Let’s look at how an enterprise file system reduces cost and risk, and improves operational efficiency:

- **Eliminates disconnected silos.** This helps reduce stranded or wasted capacity, which has a direct CapEx savings impact. IT does not need to buy well ahead of needs because it can be managed on a “grow as you need it” basis.
- **Helps reduce OpEx,** since less time is spent on data management tasks such as capacity planning and managing data protection.
- **Improves deduplication and compression efficiency** through having a global view of the file data landscape, eliminating the storage overhead of duplicate files (which can be especially onerous in a siloed environment).
- **Enables faster and easier file access and collaboration,** while eliminating separate data protection silos.

Staffing costs were also among the challenges most often cited by ESG research respondents—every IT organization is looking at how it can help reduce staffing or reallocate staff to productive work rather than menial firefighting tasks. Managing data across silos is a tedious, menial task that, given the ability to consolidate and leverage the cloud, should no longer consume precious cycles.

Figure 3. Top Ten Biggest Storage Challenges

In general, what would you say are your organization’s biggest challenges in terms of its storage environment? Which would you characterize as the primary storage challenge for your organization? (Percent of respondents, N=373, top ten shown)



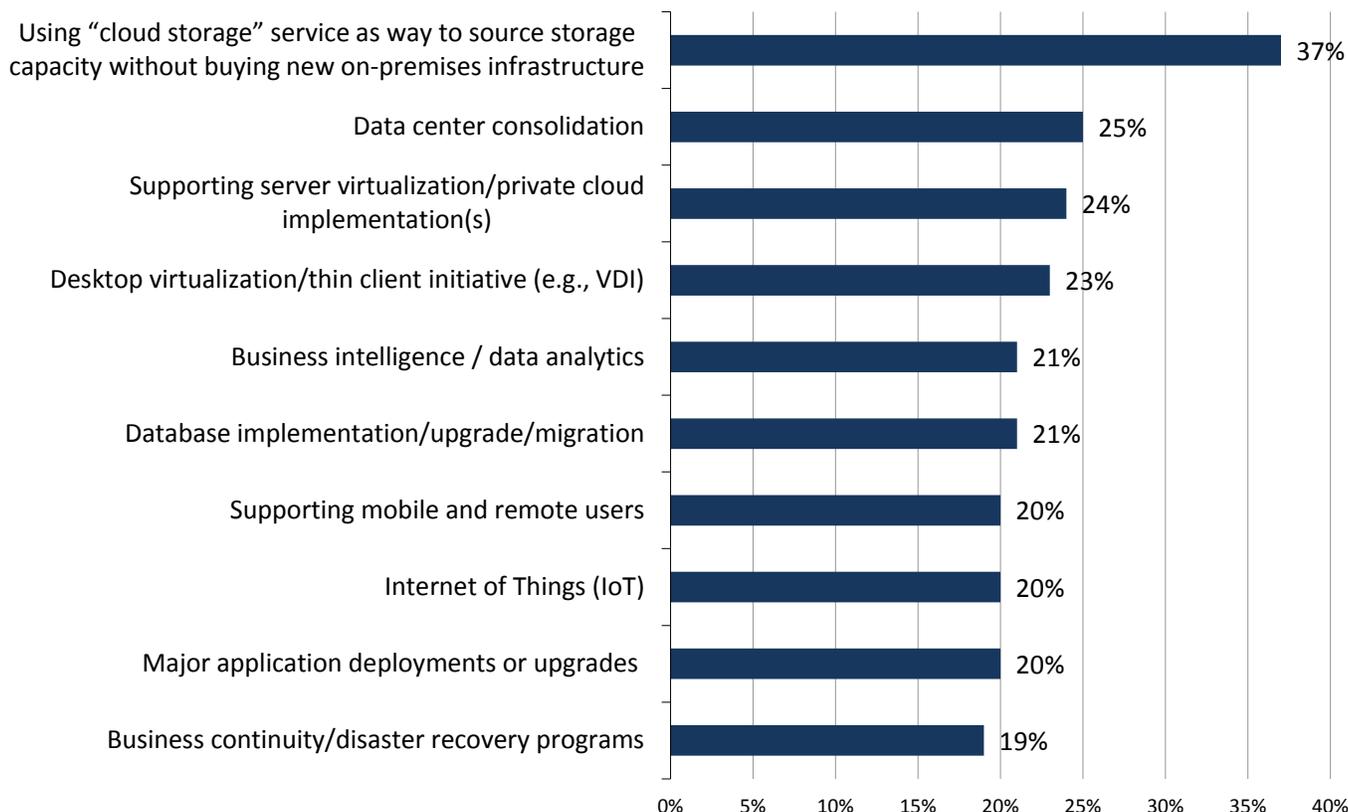
Source: Enterprise Strategy Group, 2016

Many IT organizations are under a mandate to examine how they can leverage the cloud to reduce spending. Indeed, this is directly reflected in the storage environment, as using a cloud storage service as a way to source capacity without buying

on-premises infrastructure was far and away the most cited answer when storage pros were asked which IT initiatives would significantly impact storage spending over the next 12-18 months (see Figure 4).

Figure 4. Top Ten IT Initiatives with the Biggest Storage Spending Impact

Which of the following IT initiatives do you believe will significantly impact your organization's storage spending over the next 12-18 months? (Percent of respondents, N=373, three responses accepted)



Source: Enterprise Strategy Group, 2016

Of course, introducing the cloud into the equation raises security concerns. So it is important to understand how leveraging an enterprise file system that incorporates the cloud can allow organizations to gain cloud cost savings, economies of scale, and flexibility, without sacrificing security. In fact, reducing stranded storage assets through consolidation can actually help improve security!

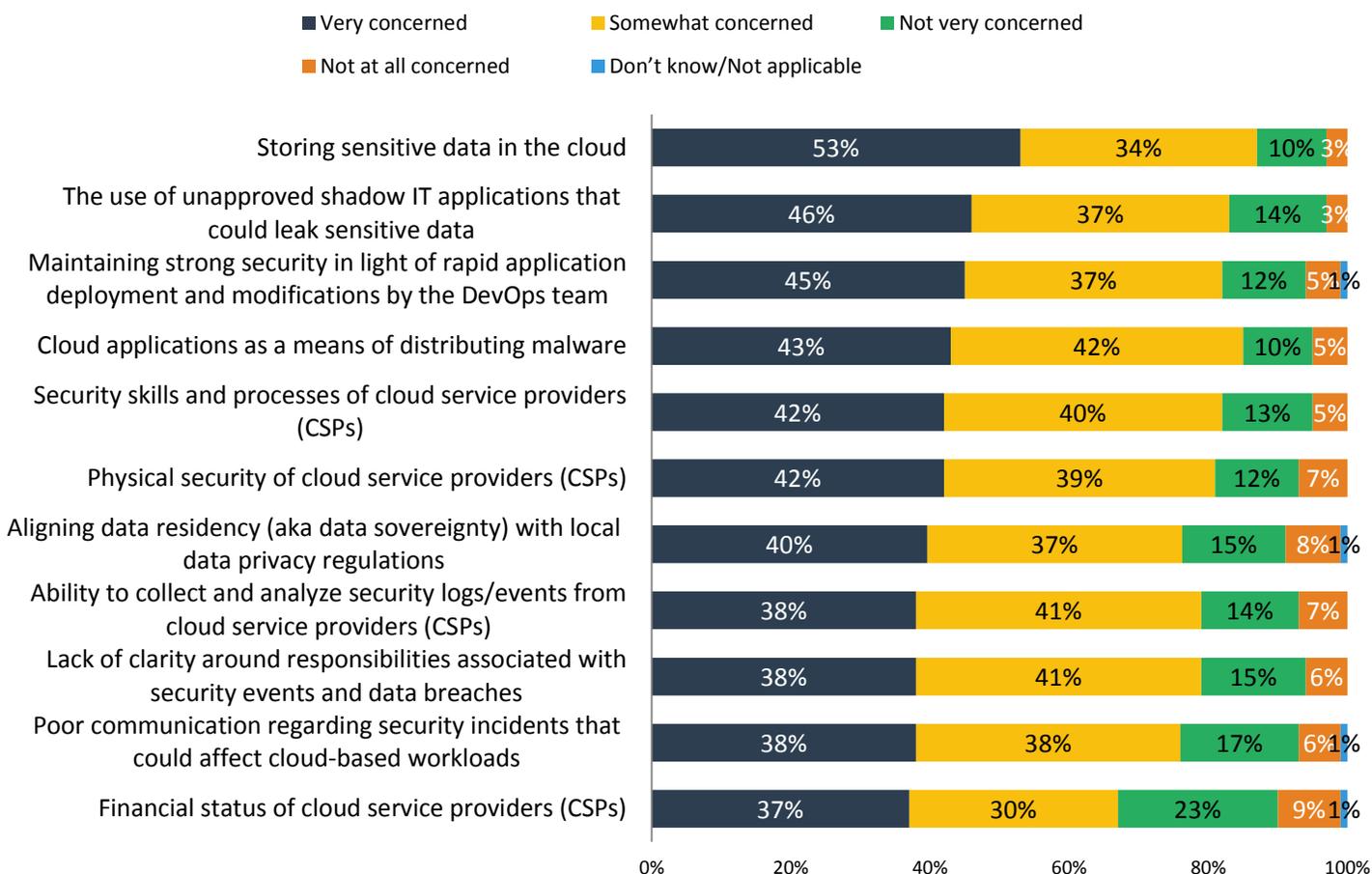
Reduce Risk: Securing Data in the Cloud

When it comes to using cloud, there is a heightened perceived risk. In fact, when security pros were asked about their concerns regarding using the cloud, sensitive data somehow making its way into the cloud was most often cited as the factor they were very concerned about (see Figure 5).⁵

⁵ Source: ESG Research Report, [The Visibility and Control Requirements of Cloud App Security](#), May 2016.

Figure 5. Cloud Security Concerns

When it comes to cloud security, please rate your level of concern for each of following:
(Percent of respondents, N=302)



Source: Enterprise Strategy Group, 2016

This is a valid concern. When data is stored in the cloud, it is important to know who can see the data. Even if data is encrypted, the cloud provider often holds the keys and can access the data. Leveraging an enterprise file system in which the actual controller (virtual or physical) sits inside the firewall can help with these concerns. An enterprise file system that incorporates mobile access goes the extra mile, securely enabling anywhere, anytime access to data. A global file system:

- Allows easy integration into existing security environments such as AD and LDAP.
- Enables the encryption keys to be held and managed on-premises by the enterprise.
- Ensures that the cloud provider never has clear text access and cannot read stored data (or respond to a subpoena with legible data).
- Ensures compliance with laws that require that metadata is also encrypted (for example, if using patient names or other PII to identify healthcare records, HIPAA requires encrypted metadata). Many solutions encrypt data but not metadata, providing an opening for hackers.
- Reduces the chance of shadow IT by supporting mobile users with easy access to corporate file shares.

- Caches active data locally to mitigate the latency associated with storing data in the cloud. Related to security is data governance.
- Allows for cloud choice so that users dictate where data is stored.

Data residency and safe harbor collapse are both a concern for global organizations or organizations based outside of the USA. Leveraging an enterprise file system that can integrate into a variety of cloud back-ends (private or public) can help mitigate these issues by letting users decide *exactly* where data is stored.

Increase Operational Efficiency

Once file data is centralized into an enterprise file system, employees are better able to collaborate because they have better access to their files, and through the elimination of multiple disparate file stores, they stop losing productivity by searching for the most recent version of a file. The efficiency of cloud can be leveraged without suffering the performance impacts associated with the latency of storing data at a distance from the consumer because data that requires fast access is cached locally. And with an enterprise file system that includes a mobile client, users can access data from any device, including on mobile devices, any time without introducing a separate silo of data in the form of another third party enterprise file sync and share solution to support mobile users.

There are further efficiencies to be gained: data is protected and available because it can be easily integrated into data protection and disaster recovery schemas. And IT organizations know how their data is protected, and where it is stored.

The Bigger Truth

In IT, we have always had a see-saw approach to data management; we centralize, then move to distributed, then go back to centralized. We keep flip-flopping between these approaches, trying to balance the benefits and drawbacks of cost, control, access, and speed. An enterprise file system helps meet the best of all worlds. It leaves the control plane inside the firewall, giving IT the peace of mind associated with securing and managing data in alignment with corporate policies and best practices; unlocks access to data because it is no longer spread across the enterprise in disparate silos; and provides easy access to data from inside the walls of the organization as well as anywhere, anytime via mobile devices. And it reduces cost by leveraging the cloud, eliminating waste by eradicating stranded capacity and redundancies. This all adds up to increased productivity for both IT and the employees who need easy access and sharing of data. A global file system is a win/win for IT and the enterprise, helping the business reduce cost and risk while driving operational efficiency.

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