

White Paper

Microsoft Azure StorSimple Delivers Enterprise Storage with True Hybrid Cloud Storage Capabilities

Customers Give Azure StorSimple High Marks for Doing What They Expected It to Do, While Providing Pleasant and Unexpected Bonuses

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February 2017

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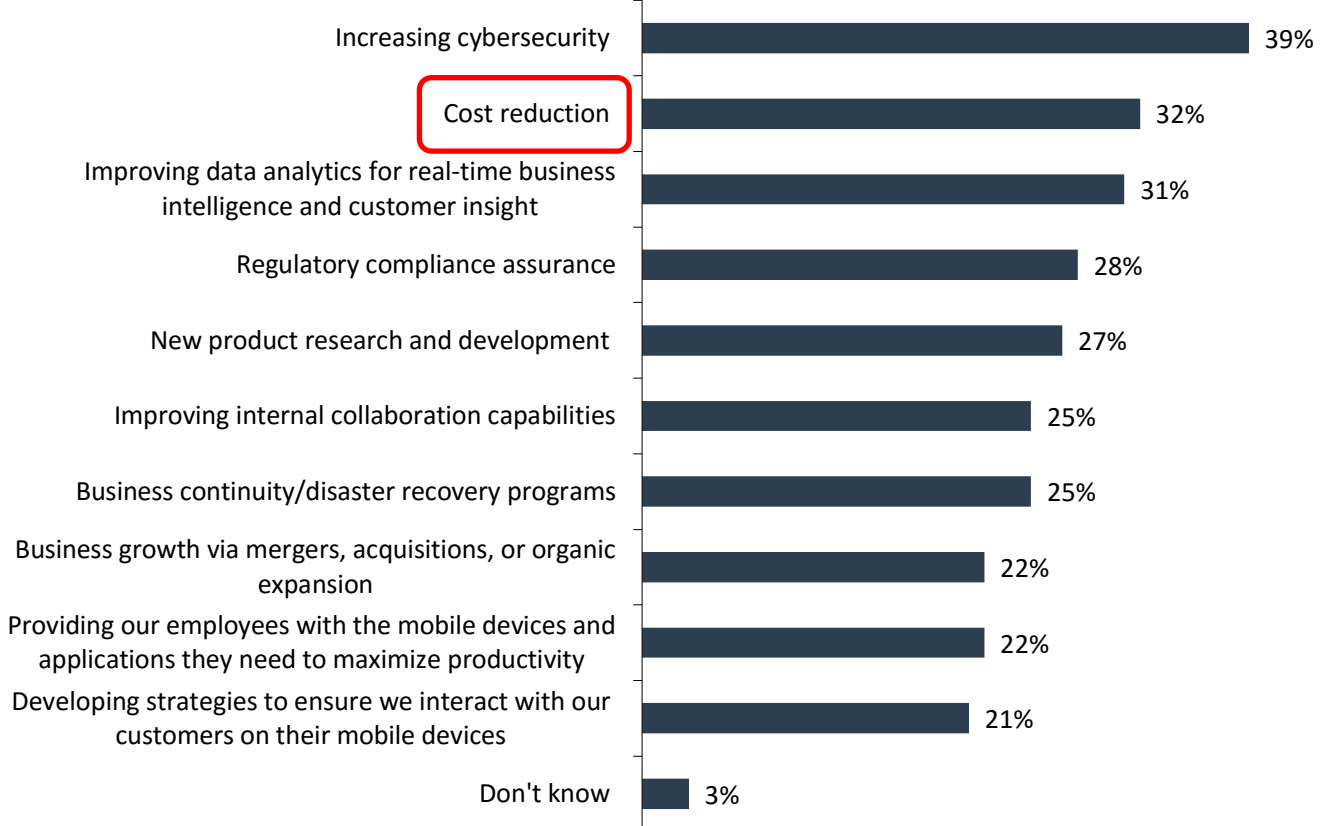
Introduction

The gradual transition of some IT services, resources, and applications to the public cloud is underway, and it's creating a highly dynamic IT space. IT decision makers are comparing the pros and cons of cloud and hybrid approaches to data management against traditional methods. To some extent, and for some workloads, the pros of cloud adoption clearly outweigh the cons as decision makers search for solutions to help their organizations become more agile and responsive.

According to ESG research, 93% of organizations plan to or already leverage some kind of public cloud service such as software-, platform-, or infrastructure-as-a-service.¹ And with organizations reporting that cost reduction is a top business initiative driving their IT spending this year (see Figure 1),² the use of the public cloud is not surprising.

Figure 1. Business Initiatives Driving IT Spending in 2017

Which of the following business initiatives do you believe will drive the most technology spending in your organization over the next 12 months? (Percent of respondents, N=641, five responses accepted)



Source: Enterprise Strategy Group, 2017

Some people, however, are still nervous. Taking a hybrid cloud approach, such as the one [Microsoft Azure StorSimple](#) offers, may be a good strategy for those with “cloud anxiety” because it provides a way to take advantage of the cloud without going all-in.

The value of StorSimple lies in the fact that it helps businesses manage data growth, lower storage costs, streamline storage infrastructure and management, increase IT responsiveness to business needs, and deliver robust disaster recovery (DR) and security. If users experience those outcomes, their stories could encourage others not to be afraid. To find out if

¹ Source: ESG Research Report, *2017 IT Spending Intentions Survey*, to be published.

² *ibid.*

that outcome is unfolding, ESG interviewed some Microsoft customers in late 2016. All interviewees reported being very pleased with their decision—and all of them reported unexpected, supplemental benefits as well.

Enterprise Storage with True Hybrid Cloud Capabilities

The Microsoft Azure StorSimple family includes hybrid local-plus-cloud arrays (StorSimple 8100 and 8600), StorSimple Cloud Appliances (StorSimple 8010 and 8020), StorSimple Virtual Array, and StorSimple Manager. The products offer true hybrid cloud capabilities: economical cloud storage for inactive data, and high performance with on-premises storage for mission-critical data.

The hybrid arrays provide three storage tiers—SDD, HDD, and cloud storage—so users can place data where it fits best based on their performance and cost considerations. Local volumes retain primary data on-premises, which is ideal for high-I/O, low-latency workloads. The Azure StorSimple Virtual Array manages storage tasks between an on-premises virtual array (file server or iSCSI server) running in an existing hypervisor and the Azure cloud. It's well suited for branch or remote offices because it enables local hypervisor storage, tiering to the cloud, cloud backup/restore, item-level recovery, and DR capabilities.

The StorSimple Cloud Appliances provide on-demand storage for accessing cloud snapshots in a cloud sandbox environment. Their best uses, therefore, are dev/test, DR testing, and implementations that won't affect production storage.

With StorSimple Manager (a cloud service), users can manage multiple StorSimple 8000 appliances centrally, leveraging real-time reports and status alerts. The Azure portal simplifies StorSimple management and provisioning of cloud-based resources such as networking, compute, and applications that use StorSimple Cloud Appliances.

Data that is on-premises or in the cloud is protected by cloud snapshots and is available for BC/DR for any location. Primary data on locally pinned volumes is not deduplicated or compressed, but snapshot data is deduplicated. Tiered volumes are deduplicated and compressed.

Microsoft's approach to deduplication improves the standard security measures that are built into Azure StorSimple because it contributes to data obfuscation. The gist is that storage blocks are turned into content-addressable data objects that are stored independently of their metadata, and the objects are scattered across many cloud data center physical disks.

ESG Lab tested the latest StorSimple products in 2016, validating the performance benefit claims. With that hands-on validation, which also encompassed StorSimple Manager, the ESG Lab remains a proponent of the efficacy and value of the StorSimple solution.³

Real-World Stories and Benefits of Azure StorSimple

To see how StorSimple performs in the real world, we talked to three organizations about their data management challenges and the outcomes they've seen with Azure StorSimple. Every organization's mileage varies, of course, but the scenarios provide valuable insights into different industries, business needs, and scale requirements.

Hybrid Cloud Storage Security

Cloud storage security is crucial. In fact, increasing cybersecurity is the business initiative most-cited by ESG research respondents as driving their IT spending in 2017 (see Figure 1). StorSimple offers four methods:

- User authentication to Windows Azure storage via user ID and password can be augmented with optional use of the Azure Multi-Factor Authentication.
- StorSimple system access to data via storage access keys involves two 512-bit keys. One must match one of the two keys loaded into the cloud configuration.
- Data in flight is encrypted between a StorSimple system and cloud storage using SSL, which supports up to AES 256 bit session encryption.
- Data at rest is encrypted in the cloud with a customer-provided encryption key using standard AES 256 encryption.

³ Source: ESG Lab Review, *Microsoft Azure StorSimple*, June 2016.

A Construction Company Finds a ‘Dramatically Better’ Way to Manage Data

ESG spoke with the Assistant VP of IT at a 100-year-old, full-service construction company with 2,500 employees. The firm designs and builds large structures such as automobile assembly plants, commercial office buildings, airports, and hospitals. The AVP manages a team of 23 people who are responsible for the network, industry-specific software, internally developed software, SaaS applications including Microsoft Office 365, and the company-wide infrastructure.

Challenges

The firm is experiencing massive data growth mainly because employees have been ramping up their use of electronic design tools and clients are increasingly requesting electronic copies of drawings. IT needed to store more than one copy of each job’s final files, along with multiple revisions, markups, and change documents.

Building plans and 3D modeling files were quickly consuming limited storage space. The IT team considered buying supplementary traditional onsite storage and backing up data to tape as it had been doing (deemed impractical in the long run) or going to the cloud, which could provide “burstable” and expandable storage.

StorSimple Implementation

The cloud was chosen for its extensibility and OpEx pricing model. StorSimple was an attractive option, in part because the firm had been a StorSimple user prior to that startup’s acquisition by Microsoft. The firm’s StorSimple solution enables data recovery directly to or from the cloud. Two StorSimple appliances supply nearly 30TB of storage. Data is backed up with multiple snapshots each day, plus a larger weekly backup. The price of the StorSimple solution is comparable to what the firm would have spent on traditional storage, but the company avoided capital expenditures.

“There is no longer any pervasive worry among our end-users that IT might not be able to get access to offsite data needing recovery for a day or more. IT now spends very little time routinely restoring data. We use that time for the many other tasks we want to accomplish as an IT department.”

—Construction Company

Outcomes

Backup and recovery are working so well with the StorSimple solution that the company is dismantling its disaster recovery site. The AVP reported these results:

- **File restoration**—Files can be restored in three minutes compared with two to three hours.
- **Large weekend backups**—The backup process completes in four to five hours instead of an entire weekend.
- **Increased versatility**—StorSimple is the SAN, so it assists with protection, production, and test/dev in addition to hosting applications.
- **Improved productivity**—The network no longer slows down during backups, which require far less babysitting.
- **Reduced offsite tape storage**—By backing up less data to tape, the tape vendor management fees decreased.

Also, the firm no longer needed two experienced data protection admins at all times (one primary and another for secondary coverage). According to the AVP, the StorSimple GUI is “so intuitive” that usually, any available admin can provide the secondary coverage.

StorSimple Meets All the Backup Goals of a Global Architectural Design Firm

This architectural firm has 1,400 employees and 26 offices worldwide. It has completed projects in 1,742 cities in 88 countries. Over time, it has implemented cloud IT, hosted IT, and Microsoft Exchange as well as outsourcing managed

services and the help desk. Nearly 70% of the firm's applications are hosted in the cloud. Local project files, which are large and graphic intensive, are stored on-premises at each office to avoid bandwidth bottlenecks. The firm operates a data center and a co-lo facility near its headquarters. It runs Dell servers and storage, a Cisco network, and a Dell Compellent SAN with approximately 300 TB of capacity. Currently, storage takes up 230 TB. Regional offices each have a Dell server with 8 to 10 TB of storage. ESG talked to the VP of IT Planning and Special Projects, who oversees IT operations.

Challenges

Backup to tape libraries was an inconsistent, unreliable process. Sometimes, backups sent over the WAN wouldn't complete overnight, yet employees were back at work the next morning, accessing files.

StorSimple Proof of Concept and Implementation

For the proof of concept, the firm connected five of its largest servers to a StorSimple unit to run backup tests using Peer Software as the management layer. StorSimple met all goals, namely:

- Maintaining 24 hourly, 90 daily, and 24 monthly backup and recovery images.
- Providing shorter recovery time for single-file requests.
- Backing up all office locations worldwide before users in all time zones began working the next day.

Outcomes

The firm acquired five StorSimple devices for backup purposes. However, the DevOps and infrastructure teams also use the Azure cloud—an unexpected benefit that pushed a long-term strategy forward.

The cloud saves the firm “a little bit of money,” but the most important advantage is tied to recouping the time of the IT staff and the architects. Also, StorSimple played a leading role in business continuity. When storms twice caused power outages, the IT team copied files backed up to the Azure cloud to another Azure file server in the cloud. Employees accessed the offsite server from their homes so they could keep working to accrue billable hours, meet project deadlines, and keep clients happy.

Further, by using the cloud, the firm doesn't have to manage the infrastructure or upgrade cycles. If a server goes down, the cloud vendor gets a call.

The VP said they would like to have a more integrated solution—Peer software is another layer to manage—and the status alerts could be more specific. But StorSimple receives high praise: “I don't think we would have been able to overcome the weather-related outages with any other solution we evaluated.”

“The admin who oversees our backups has worked with data protection solutions day in and day out for a long time. He says StorSimple is by far the best backup solution he has ever worked with, and far easier to use and manage than anything else he has even encountered.”

—Architectural Design Firm

A School District Reduces Its Total Amount of Storage and Saves \$90,000

This school district employs 7,800 full-time employees, serves 67,000 students, operates 67 schools, and has been a Microsoft customer for years. The Information Services staff consists of 65 employees who are assigned to teams supporting various aspects of IT. The district office has more than 350 physical and virtualized servers. Each school has a virtualized cluster of two physical nodes and four to nine virtual machines, bringing the total to approximately 1,000 servers. Total storage capacity is 300 to 350 TB. The district runs Microsoft Office 365, and all faculty and staff use OneDrive and SharePoint. ESG spoke with the supervisor of IS Operations.

Challenges

Budget issues limited IS to making only minimum, bare-bones upgrades. Yet the amount of data kept growing. Eventually, an administrative file server that relied on an aging SAN became a regular source of complaints about long timeouts when users tried to open files. The district looked into replacement SANs and additional storage capacity, but it didn't move forward due to cost.

The district backed up data to LTO tape libraries, but the administrative server took 24 to 36 hours to complete a backup. Restoring files was also difficult.

StorSimple Implementation

The StorSimple array with 15 TB of capacity and an Azure subscription allowed the district to buy a new, smaller (84 TB) NetApp SAN and move away from tape backup. A Microsoft integration partner assisted a staff member with the setup, which was "very easy"—a "set it and forget it" process of establishing an iSCSI connection to the server and connecting the Cisco switches. Azure StorSimple Manager provides for a dashboard-based interface that is simple to use.

"StorSimple came at a time when we needed a low-cost solution to accommodate our administrative file storage needs, and we had to do it fairly quickly, particularly to reinforce our DR capability. Being able to save on SAN expenditures allowed us to present a TCO-centered argument to our executive leadership team."

"We were able to reduce the total amount of storage that was required for our new enterprise SAN. We shaved \$90,000 off the cost of the combined solution."

—School District

Outcomes

The district has been using StorSimple and Azure for approximately two years with no gotchas. In fact, the district office recently purchased another StorSimple appliance to consolidate school-specific file shares. When ESG asked about results, the supervisor reported that:

- Nightly backups to Azure take an average of 2.5 hours instead of 24 to 36 hours.
- The district replaced its aging large SAN with a smaller, less expensive solution.
- "Impressive" power savings happened after the old equipment was turned off.
- The morale of the IS team improved when complaints were replaced with compliments.
- Data security increased with the built-in StorSimple AES 256 encryption.

Customer Commonalities

The primary concerns of the customers were backup and recovery—all neatly solved with StorSimple. Further, the stories reveal outcomes that do in fact support the StorSimple value proposition:

- **Peace of mind**—Backup and recovery happen in a fraction of the time the process previously required. Data is stored and protected offsite, providing assurance that mission-critical information and IP won't be lost. End-users no longer worry about losing access to data, and restore requests have diminished because workers trust the process.
- **Flexibility/versatility**—The system is granular, so it is easy to add capacity. Furthermore, in one case, StorSimple is the company's SAN, so it is hosting applications and supporting production and test/dev. In another case, Azure StorSimple enabled BC/DR during severe weather.
- **Ease of use**—StorSimple works as advertised with simple setup and management via the Azure portal.
- **Savings**—Users saved time and money, avoided capital expenses, reduced tape backup requirements, and reduced energy costs.

The Bigger Truth

When ESG first engaged with the standalone IT startup StorSimple—and even after that vendor became part of Microsoft and Azure—it seemed somewhat avant-garde. But now it's simply a good example of how things get done optimally these days.

As the customer stories show, the system is an easy on-ramp for getting comfortable with the cloud. It is versatile and granular, helping companies save money *and/or* make money, whether that's from providing data protection or supporting production, test/dev, or BC/DR. Both the range of use cases and capacities are expanding as StorSimple proves itself and users find unexpected capabilities beyond those for which they originally bought the solution.

The 2016 ESG Lab validation confirmed that the Azure StorSimple family offers ample ways to meet individual business needs while providing central control over storage management, including primary, backup, snapshot, archive, and offsite management. This hybrid cloud approach shows that Microsoft understands that organizations need uncomplicated ways to take advantage of the benefits of both on-premises storage systems and cloud storage.

StorSimple gained initial traction in the midmarket, which makes sense. Those companies typically have fewer people, relatively less depth of IT expertise, and very tight budgets. Hybrid cloud storage provides an OpEx-related strategic advantage, and it is easy to implement and use.

ESG believes that enterprises will find that StorSimple fits their needs, too, although they generally have more choice about what goes to the cloud. Volumes might be a lot higher than midmarket companies, but no worries there. The system is scalable, and Azure is, after all, a pretty big storage system. Another reassuring point to keep in mind is that Microsoft has deep coffers to support its commitment to Azure and all of its cloud solutions.

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