COMMVAULT

WHITEPAPER

Why now is the time to switch to software-defined storage

The future of data storage

Software-defined storage has rapidly become a key technology for enterprises looking to modernize their data centers. Software-defined storage (SDS) is a virtual delivery model for storage that's hardware agnostic and provides greater automation and provisioning. Deployed correctly, it can lower costs while simplifying your IT operations and improve your ability to scale. With Gartner predicting that by 2024, 50% of enterprise storage will be deployed as SDS, there's a compelling case to be made for your company to seriously consider migrating your storage architecture to SDS sooner rather than later.

Why change?

As more on-premises infrastructures move to private and public clouds, optimizing the management of hybrid cloud deployments becomes critical to the success of your digital business. Let's examine three major challenges traditional storage faces when operating in this new hybrid cloud environment.

1 Growing complexity

Many companies now run a host of different applications with different compute and storage needs. Traditionally, IT teams have purchased more server and/or storage hardware for each application(s) as the need arose. This may work in the short term, but over time the environment becomes cluttered with a myriad of hardware solutions requiring specialized teams to manage. As your data footprint and the number of applications you must manage grows, your costs can quickly spiral as you invest in new infrastructure and the talent needed to manage it. In fact, ESG Master Survey Results 2019 reported that 66% of executives noted their IT environments are more complex than they were two years ago,[1] and a white paper by Osterman Research stated that 44% of organizations add more disk to solve their capacity issues.[2] Adding more IT headcount and complexity is not a sustainable solution.

2 More silos, less visibility

Adding more hardware creates multiple data silos across different storage architectures, which means less visibility into your environment and more fragmentation of data. If you can't easily see what data resides where, this severely hampers your ability to move that data from on-premises to the cloud and back again. Portability of this data becomes critical as multi-cloud environments becomes the norm.

3 Less flexibility

As new application models come online, their workloads need to run across both on-premises and cloud environments. These workloads are often housed in containers that package applications for greater portability and use fewer resources. Traditional storage solutions can't offer this additional level of flexibility. With SDS, you abstract the application layer from the storage resources, de-coupling the dependencies between the application and underlying hardware. This makes the architecture more flexible and the data more portable, so that applications can be easily migrated across your multi-cloud environments.

1 ESG Master Survey Results, "2019 Technology Spending Intentions," March 2019.
2 White Paper by Osterman Research, Data Center Transformation Requires Software-Based Cloud Storage. Published December 2018.

Are you ready for SDS?

You've probably already seen the growing data challenges faced by your IT team and witnessed first-hand how traditional storage solutions just don't cut it for multi-cloud and modern application environments. By deploying SDS, you reduce the problems associated with traditional storage, optimize precious resources and enable your operations to more easily scale. However, as you consider a migration to SDS, consider the three major challenges you'll need to address before you make the switch.

Location, location, location

Location transparency becomes paramount as you consider your move to SDS. Ensuring application portability across all your locations from on-premises to public, private or hybrid clouds is a critical first step, as is making sure you have complete visibility to and seamless availability of your data no matter where it lives. Your end users shouldn't have to be concerned with where the data resides as long as they can access it.

Encryption, governance, and GDPR

It may go without saying, but as you introduce SDS, data integrity must be preserved. Your data should be encrypted both over the wire and at rest using an encryption system such as the key management interface protocol (KMIP). The European Union's General Data Protection Regulation (GDPR) that covers consumer data protection and privacy has been in effect since May 2018. In the past year, European regulators have begun levying large financial penalties for companies who are not compliant. Your company should have in place best practices for complying with international data sovereignty laws, including the ability to easily isolate and access specific data within country borders.

Fragmentation to consolidation

More than likely, your data is currently fragmented in storage silos across multiple hardware configurations spanning both on-premises and the cloud. SDS provides an opportunity to simplify this environment. With multi-storage protocol support across block, file and object storage, you can now consolidate your storage workloads and manage them as a single solution leveraging industry-standard servers. Once deployed, SDS will simplify your operations and reduce your costs.

84% of enterprises now have a multi-cloud strategy[3]

By 2022, more than **75%** of global enterprises will be running containerized applications in production[4]

Why change now?

We've laid out the reasons why you should consider migrating to software-defined storage. If you're still on the fence or think putting off the decision for another year or two is an option, let's lay out the reasons why the shift to SDS is more urgent than ever.

Staying ahead of the game

Seismic shifts are happening in IT. Hybrid and multi-cloud adoption is increasing rapidly. Cloud-native and containerized applications are becoming the new delivery model. In fact, 84% of enterprises now have a multi-cloud strategy,[3] and by 2022 more than 75% of global enterprises will be running containerized applications in production.[4] All this is a key indicator of where the future of storage is headed with Gartner predicting by 2024, 50% of all storage capacity will be deployed as SDS.[5] It's not a question of if the SDS train is coming, but when.

3 RightScale 2019 State of the Cloud Report.
4 Best Practices for Running Containers and Kubernetes in Production - Published 25 February 2019 – Gartner ID G00385131
5 Gartner The Future of Software-Defined Storage in Data Center, Edge and Hybrid Cloud - Published 3 May 2019 - ID G00354839

Software defined scale-out storage — a game changer

Hardware infrastructure decisions are time-bound, which means any infrastructure you purchase and manage requires constant updating or replacing, typically on a three-year refresh cycle. This maintenance renewal and refresh cycle is very expensive and typically locks you in to a specific vendor's technology. However, if you can separate the software purchase from the underlying hardware infrastructure, it gives you the flexibility to refresh software and hardware independently, providing you a truly flexible approach to storage. Software-defined storage offers a smarter, more flexible way to manage your storage and future-proof your business. As you take a deep-dive into what this shift could mean for your business, you should consider a solution that offers the following three capabilities.

1. **Predictable** Traditional scale-up storage solutions are expensive, typically requiring you to over-purchase capacity upfront, manage separate siloes of data based on application requirements, take systems offline for upgrades, and/or force you into forklift upgrades when it's time for hardware refreshes. Ideally, you want a scale-out solution that allows you to 'pay-as-you-go' with predictable performance and costs based on your capacity needs. Software-defined scale-out storage provides this flexibility and eliminates downtime with seamless upgrades. You also want a solution that will save time by offering automated and dynamic storage provisioning, while enabling you to easily migrate applications between your data center and the public cloud. And, because you're leveraging containers, SDS helps accelerate your app development, inspiring more innovation.
2. **Resilient** A good storage solution will help you manage your data, a great storage solution ensures your storage architecture is resilient in the event of a failure. If there's an outage, whether it's an individual disk, an entire server, or even a site, SDS makes recovery fast and easy through a distributed storage architecture that provides high availability across on-premises and cloud infrastructures. This significantly improves disaster recovery planning by ensuring data is always available.
3. **Simple** As discussed previously, data silos add complexity to your environment. SDS reduces this problem by supporting multiple storage protocols, including block, file, and object storage. This enables you to use industry-standard servers across your infrastructure, which simplifies your operations and lowers your costs.

With traditional storage solutions, it can be difficult to migrate data and application workloads across clouds because the different technologies may not integrate/talk to each other. But with SDS and support across multiple storage protocols and hypervisors, it's easy to move applications from on-premises to cloud and back to support hybrid cloud environments.

The rewards for forward thinkers

Every IT team has its own unique challenges when it comes to running a successful digital business. Storage management has become one of the industry's most urgent challenges to solve. Software-defined storage has rapidly become the solution of choice for companies looking to modernize their infrastructure. Your goal moving forward should be to ensure your distributed applications and business processes run smoothly and in harmony with each other. With a predictable, resilient and simple software-defined storage solution in place, your IT teams are less concerned with managing infrastructure and can focus instead on driving innovation and keeping your company competitive.

For additional information, please visit commvault.com/software-defined-storage >

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