Embracing Enterprise Hybrid Cloud Storage

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IDC OPINION

Many businesses are embracing elements that make up the IDC 3rd Platform era, such as Internet of Things, real-time analytics, robotics, and cognitive computing. Many others are reinventing themselves and finding newer ways to save costs and maintain or regain their competitive edge when it comes to customer satisfaction, operational efficiency, and market intelligence. IT organizations at such businesses have to manage unprecedented demands on infrastructure. To effectively meet the needs of their constituents, IT organizations are increasingly adopting an agile infrastructure that includes newer opex-friendly approaches, such as hybrid cloud, to manage their asset footprint. In other words, hybrid cloud allows IT to superimpose on-premises constructs on as-a-service constructs. The backbone supporting this hybrid cloud approach is hybrid cloud storage. Hybrid cloud storage not only is one of the fastest-growing pieces of hybrid cloud but also has the lion's share of focus from an IT standpoint. Specifically, the hybrid cloud storage approach allows IT to:

- **Extend the cloud into the datacenter:** Hybrid cloud storage allows IT to connect the build-operate-maintain model to an as-a-service model without changing how applications access storage locally. In addition, public cloud storage can be leveraged for applications that search and analyze historical copies of data.

- **Leverage the cloud for data protection, cold storage, and disaster recovery (DR):** By adopting hybrid cloud storage, IT can implement crucial business continuity (BC) and operational functions at a fraction of the cost of implementing them in the traditional on-premises-based build-operate-maintain model. Adopting hybrid cloud storage also makes disaster recovery possible and allows IT to test DR processes to deliver a robust service that meets corporate policies and regulatory needs.

- **Maintain service levels:** IT can maintain hot or frequently accessed data on-premises while leveraging public cloud storage for cold/unused data sets as well as burst capacity and secondary copies. In doing so, expected performance and availability levels for applications should be preserved.

- **Adopt a pay-as-you-go model:** By leveraging cloud storage services, IT can minimize or in some cases avoid its datacenter expansion costs via a reduction in spending for traditional storage and the need to expand the datacenter in order to house additional hardware – which are the biggest components of most IT budgets.

Suppliers like Microsoft are making it easier for businesses to adopt hybrid cloud storage. Microsoft offers the ability to deploy tightly integrated hybrid cloud functionality into datacenter applications via cloud-enabled storage platforms like StorSimple (which is tightly integrated with Azure public cloud storage). Microsoft is also building cloud-based data protection and archiving mechanisms into its applications like SQL Server and Exchange. Virtual editions of the StorSimple appliance and SQL Backup to URL, for example, make it easier to provide data access and data mobility and leverage compute in the Azure cloud to support typical existing IT processes like development and testing and patching and new business needs like data analysis.

SITUATION OVERVIEW

Datacenters have formed the foundation on which IT organizations can deliver essential services to their business constituents. Since the inception of the datacenter, modern IT organizations have done a commendable job of orchestrating demand for services with the buildout of datacenter-based infrastructure. With a complex arsenal of tools at their disposal, IT teams can manage the demand and supply sides of storage and compute infrastructure in a reasonably consistent and predictable manner. They have been able to do so because, for the most part, most business units have been trained to make requests for additional capacity via a project-based procurement approach or by selecting from an IT service catalog, whose currency and supply is maintained by IT via a pre-determined budget cycle. Predictability is the operative word in the demand-supply relationship that business units have with IT.

Businesses on the other hand have been furiously undergoing a transformation. Their quest for business velocity, survival in the mobile and social era, and the ability to adapt to the pace of innovation requires IT to pave the way for these business needs by adopting an agile data-driven approach to doing business. This means that businesses need to:

- Collect, store, and analyze multiple and diverse sets of data – often at times from outside sources such as social media streams. Many of these data sets are also useful in post-process historical trend analysis.

- Quickly incorporate or drop additional data sets and associated applications, without much planning and/or pre-formatting.

- Analyze incoming data sets in a real-time or near-real-time manner, often for causality or correlation, and then leverage the information back into changing how they conduct business.

- Usher in a global collaboration and communications framework wherein their workforce can be geodispersed but be virtually together and share common project-related data sets.

This transformation means that IT can no longer operate in the traditional manner in which it can anticipate or seek infrastructure additions, specifically storage infrastructure. It has to seek a faster, highly scalable approach that is economical yet still works with the high availability of enterprise storage. This transformation by IT can help strengthen a business' approach to compliance, corporate policies, and data retention, which are all requirements that businesses often struggle to address with traditional methods.

The Dawn of a New Era — The Growth of Cloud

As traditional datacenters struggle to keep up in the modern mobile and social era, IT budgets have been stretched to the breaking point under traditional models. Businesses continue to look for IT solutions that provide agility, capacity, and cohesiveness with existing datacenters while remaining opex friendly. The primary solution that has emerged is cloud-enabled infrastructures, platforms, and services. Businesses are increasingly looking to adopt cloud for their IT needs because of the quick scalability and pay-as-you-grow model. IDC surveyed 1,109 businesses worldwide, asking what percentage of their IT budget would be allocated to traditional IT (in-house or outsourced) versus cloud-based IT architectures (public, private, or hybrid). Although traditional IT currently remains the majority of IT spend, within 24 months, cloud spending is expected to exceed traditional IT spending, and by 2020, this trend is further reinforced (see Figure 1).

FIGURE 1

Worldwide Allocation of Total IT Budget
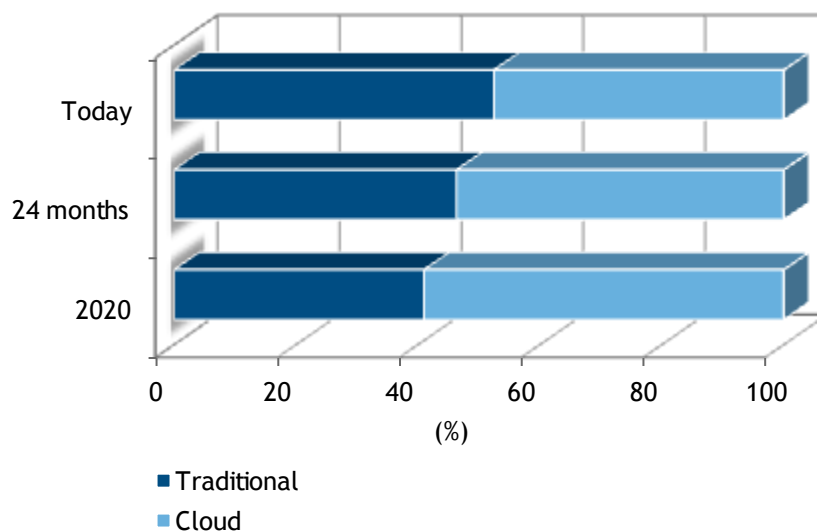
Source: IDC, 2013

Cloud is typically deployed in one of three general ways:

- **Public cloud:** Shared, on-demand IT and business services accessed over the public Internet, based on pay-as-you-go models for individuals and users from many unrelated companies

- **Private cloud:** Dedicated IT services (either located at a company site or hosted by a third-party offsite provider) where assets are virtualized and organized as a cloud and use is restricted for users in a single organization

- **Hybrid cloud:** Applications and workloads deployed across a mix of public cloud and on-premises resources and managed in a way that moves and scales workloads across the public cloud/on-premises boundary as needed

The midrange portion of the iSCSI storage systems market is particularly relevant to the hybrid cloud market, as hybrid cloud solutions, such as Microsoft's StorSimple, are iSCSI-based solutions that can target associated workloads for primary storage. Such a market, a significant portion of which is currently being served by traditional, on-premises storage systems, would then be part of the overall total addressable market for hybrid cloud solutions like StorSimple.

The shift from conventional storage deployments to a cloud-based model, whether public, private, or hybrid, is a continuing theme. Public and private cloud deployments are currently the largest and most well known. However, hybrid cloud is expected to garner greater interest going forward as it allows for the flexibility and agility of public cloud while offering the security of on-premises storage. Findings from our survey of 1,109 worldwide businesses reinforce this point. We asked survey participants what kind of cloud deployment they are currently using for storage versus what kind they expect to be using in 24 months, and their responses indicated growth for all forms of cloud-based storage. In the context of this survey, hybrid cloud implementations are deployed across a mix of public and private cloud resources. Hybrid cloud will benefit from the growth of both private and public cloud for storage use (see Figure 2).

FIGURE 2

Percentages of Storage Capacity Deployments in Businesses
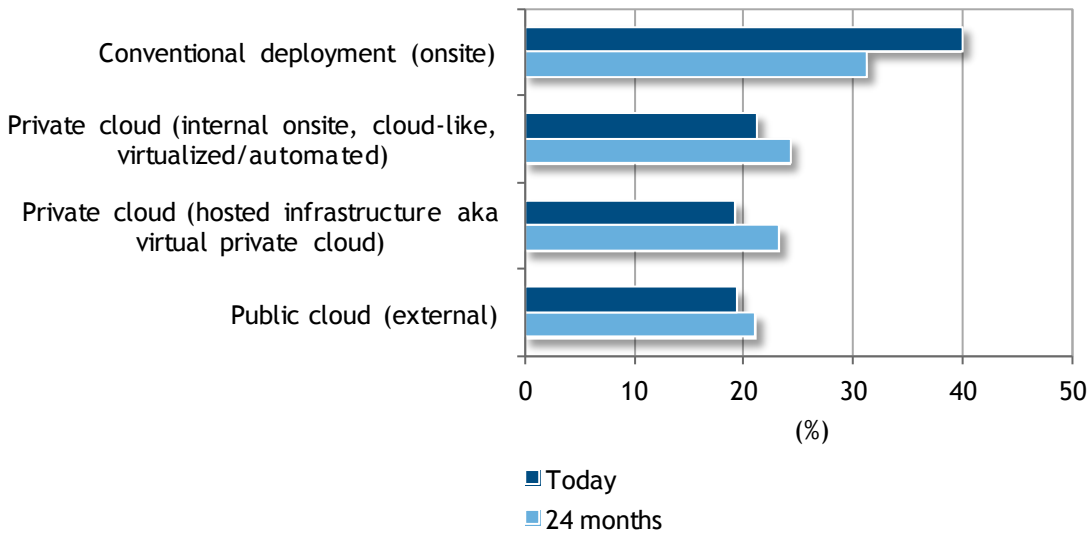
Source: IDC, 2013

In terms of revenue shift, *Worldwide Enterprise Storage for Public and Private Cloud 2013-2017 Forecast* (IDC #244924, December 2013) shows the combined public and private cloud deployment spending for storage hardware, software, and services growing at a 19.1% CAGR from $13.7 billion in 2013 to $27.6 billion by 2017. Public cloud was 54.0% of the total cloud revenue in 2013 and is expected to grow at a CAGR of 14.5% to $12.7 billion in 2017. Key drivers impacting the growth of cloud, specifically public cloud, include:

- **Lower datacenter cost:** As data is stored off-premise, the costs of power, cooling, and physical footprint are significantly lowered.

- **Ability to quickly scale:** Public cloud allows businesses to increase/decrease storage on-demand, quickly scaling to a company's needs without having to stand up additional nodes in a datacenter.

- **Disaster recovery:** Data stored at an offsite and (hopefully) geographically dispersed datacenter allows for business continuity in the case of a natural disaster or malicious attack.

- **Time to market:** Public cloud allows for quicker deployment of cloud storage, compute, services, and features as physical units do not need to be shipped or installed.

Embracing Hybrid Cloud Storage — Cloud-Enabled Storage Platforms

Cloud-enabled storage platforms (CESPs) are the primary manner in which businesses can deploy hybrid cloud storage. CESPs reside on the customer premises and leverage cloud storage (via SOAP- or REST-based interfaces) as a secondary or tertiary storage tier. From the host side, however, they function very much like primary storage arrays with standard datacenter storage interfaces such as block-based (iSCSI and Fibre Channel) or file-based (NFS and CIFS) interfaces. In other words, CESPs provide the same functionality as enterprise storage platforms while also providing a tiered storage architecture that spans datacenter and cloud storage. CESPs utilize the cloud as the persistent secondary or tertiary storage layer in conjunction with the primary and/or secondary tier of physical disk for persistent storage of active data sets. CESPs can be delivered as appliances, as software only, or as pre-packaged virtual appliances.

Hybrid cloud storage is gaining popularity because it allows IT to meet unpredictable demand and protect existing datacenter investments and do so while morphing into an agile service-driven entity. By embracing hybrid cloud storage, IT can truly enable its constituents to accelerate a data-driven transformation.

IT organizations should also take a more holistic approach to hybrid cloud storage. They can complement their hybrid cloud storage by integrating public cloud access directly into their applications. Newer database and email applications access cloud storage directly (via APIs) and use it as a tier for colder/inactive data sets or for snapshots, cloning, backup, or archiving purposes. In addition, as needed, businesses can rely on cloud-based email, collaboration, and productivity applications for providing their users with on-the-go access to their data from a variety of devices, including mobile phones.

In short, a holistic hybrid cloud storage approach allows IT to quickly scale its infrastructure to business demands and do so at a reduced capex overhead, because of reduced investments in additional on-premises primary storage, data protection, disaster recovery, and archiving infrastructure.

MICROSOFT STORSIMPLE HYBRID CLOUD STORAGE

A supplier like Microsoft that offers datacenter solutions, end-user solutions, and public cloud solutions is in a unique position to be a partner for businesses looking to embrace the cloud. The StorSimple technology that Microsoft acquired in 2012 serves as an ideal solution for IT organizations that want to deploy hybrid cloud storage.

At the very core, StorSimple is a cloud-enabled storage platform. From a host connectivity perspective, it functions like an on-premises enterprise disk storage system. However, from a persistent storage perspective, it is integrated with public cloud infrastructure-as-a-service (IaaS) offerings such as Microsoft Azure and leverages storage containers in such offerings for tiering, backup, archival, and disaster recovery purposes.

StorSimple is ideal for IT organizations that want to control their data via on-premises constructs while benefiting from the opex-centric economics of as-a-service constructs. With StorSimple, they can:

- **Operate applications in a "business as usual fashion":** Applications still reside on servers (physical or virtual) that are connected to on-premises storage platforms via a standard IP-based block protocol (iSCSI). Users accessing these applications therefore do not notice any difference, and business units do not have to change any operational processes as a result. StorSimple uses SSDs and HDDs in the same fashion as other enterprise arrays – for tiering purposes – and therefore StorSimple can be used for performance-optimized as well as capacity-optimized applications.

- **Minimize their datacenter expansion costs:** The StorSimple solution offers the same level of functionality as other leading enterprise storage solutions. IT can thus introduce it into the environment without any changes to the infrastructure and use standard tools to migrate applications to the platform. However, unlike traditional storage infrastructure, additional StorSimple capacity has a minimal impact on the datacenter footprint (because much of this capacity is actually being added to the cloud). Similarly, cloud-enabled data resiliency, availability, and protection capabilities mean that this additional capacity does not result in a net increase to adjunct infrastructure such as that used for data protection. Capacity management is now an opex-friendly activity.

- **Deliver minimal cloud footprint and download time:** The StorSimple appliance is fully integrated with the Microsoft Azure cloud, allowing for a seamless transition of data from on-premises to the cloud. Data is deduplicated, compressed, and encrypted prior to being moved to the Microsoft Azure cloud, ensuring minimal cloud footprint and efficient recovery. Backup data in Azure is stored in Azure buckets as metadata via incremental cloud snapshots. In the case of recovery (item level or due to disaster), a cloud snapshot date and time are selected, with only the metadata map being downloaded to the storage array in the recovery site. This feature allows for fast recovery with lower RPOs and shorter RTOs.

- **Economically implement crucial business continuity and disaster recovery:** For businesses struggling with burgeoning BC/DR costs, hybrid cloud via StorSimple provides an economical alternative. StorSimple leverages cloud storage not just for automated tiering and long-term storage of inactive data sets but also for archival and backup purposes. Cloud-based thin, deduped snapshots can be used for quick rollback of data on-premises or when full recovery of data at a primary or secondary site is needed. And should IT want to recover data in the cloud, StorSimple is also available in the form of a cloud-based virtual appliance instance. The need to visit a remote site to manage removable data protection media or upgrade storage capacity is also minimized because data protection and capacity expansion are done automatically by the array using cloud storage. Cloud-based snapshots also allow for DR testing, resulting in more robust adherence to corporate policies as well as increasingly stringent regulatory and compliance regulations.

- **Consolidate and improve storage management:** To simplify the management processes within IT, StorSimple, for its recently announced 8000 series, implements a central management portal through Azure that controls all storage functions across physical storage arrays and virtual appliances. The StorSimple Manager provides a single, consolidated management point that uses the Internet as a control plane to configure all parameters of StorSimple 8000 series arrays and for displaying up-to-the-minute status information in a unified dashboard. Data management tasks such as configuring data retention policies or provisioning storage are accomplished from the StorSimple Manager for all sites, enabling single-pane-of-glass management as well as centralized compliance with corporate standards. StorSimple Manager provides a conduit via which IT organizations can do more than just deploy hybrid cloud storage; they can also manage it centrally. This extends the economics of cloud storage to the infrastructure management side as well.

- **Secure data in the cloud:** To address security concerns with public cloud storage, StorSimple encrypts all data with AES-256 prior to data transfer, and the data remains encrypted while in motion and at rest in the cloud. All data in the cloud is stored with a private key that is known only to the end user. This level of security protects the data from view by all sources except the end user and keeps the data secure regardless of where it is stored. In addition, data stored in the Azure cloud via StorSimple contains Azure's multifactor authentication, which allows for a simple sign-in process but requires an additional verification — phone call, text message, or mobile app notification — to provide additional security measures for accessing stored data.

- **Mobilize enterprise data:** The cloud is not just an excellent medium for tiering of inactive data sets; data cloned in the cloud can also be used for off-host development/test, DR testing, analytics, and other compute-intensive activities, such as applications that can search and analyze historical copies of data. The ability to unlock and data mine historical data is economically significant because data has been traditionally tied up in tape, where tape is difficult/time consuming to retrieve let alone derive value from the data stored on it. However, data mining historical data spotlights the challenge with making additional long-term investment in a storage infastructure to solely support the workloads needed to derive value from these large data sets.

StorSimple offers excellent support for applications such as SQL Server as well as platforms such as Windows Server and Hyper-V. Since StorSimple is an enterprise SAN storage solution based on iSCSI, it provides deployment flexibility and is well suited for VMware and Linux environments as well.

Other Microsoft Hybrid Cloud Storage-Enabling Technologies/Services

Microsoft is also building direct public cloud access into its applications. Such applications use on-premises storage for primary data but also directly leverage cloud storage for application-aware backup or archiving purposes and stream data to and from the public cloud depending on the use case. In the case of backup or archiving, such applications eliminate or minimize the need for on-premises backups. These applications are also designed to make recovery easier in the cloud – data backed up to the cloud can be quickly made available to an instance of the application running inside a cloud-based virtual machine instance.

- **SQL Server Azure backups:** SQL Server is Microsoft's relational database platform. With the release of SQL Server 2014, Microsoft introduced a new hybrid disaster recovery and backup solution. By specifying a public cloud storage URL as the backup destination, end users can now back up their database directly to the Azure cloud. In addition, the backup files stored in the cloud are available to either an on-premises SQL instance or one hosted on a Microsoft Azure Virtual Machine, without the need for downloading/attaching the VHD or database attach/detach.

- **Exchange Online Archiving:** Exchange Online Archiving is cloud-based archiving of Microsoft's Exchange email server, allowing an organization to host a user's primary mailbox via on-premises servers while storing the user's historical email data in a cloud-based mailbox. This hybrid solution lets users keep their most recent or important email locally while addressing long-term retention requirements without the need to expand on-premises storage or datacenters. In addition, cloud-based archiving lets companies meet compliance and regulatory regulations while being able to perform seamless discovery searches across both on-premises mailboxes and cloud-based archives for eDiscovery and litigation.

- **Azure Site Recovery Services:** Azure Site Recovery helps businesses protect important applications by coordinating the replication and recovery of private clouds across sites. Azure Site Recovery includes the protection of virtual machines as well as databases and other applications. Businesses can protect applications in their own secondary site or in a collocated or hosted site. They can even use Azure as the disaster recovery site. Businesses can avoid the expense and complexity of building and maintaining secondary locations.

- **Azure Backup**: Azure Backup is a Windows Server feature that allows businesses to back up their on-premises data from Windows Server, Windows Server Essentials, and System Center Data Protection Manager directly to the Azure cloud. To ensure reliability and security, Azure Backup is secure over the wire and at rest, while backup data is stored in geo-replicated storage, which maintains six copies of the data across two Azure datacenters. IT efficiency is gained through encryption, through compression, and by backing up only incremental changes, at defined frequencies, to the cloud – once the initial data seeding is completed.

OPPORTUNITIES/CHALLENGES FOR MICROSOFT

As stated previously, a supplier like Microsoft is in a unique position to offer a full portfolio of solutions to enable businesses of all shapes and sizes to adopt hybrid cloud storage. By offering a full-service IaaS, Microsoft can cloud enable both its own and third-party applications and infrastructure solutions. Hybrid cloud storage presents a major opportunity for Microsoft because it offers:

- **A complete environment connected to Microsoft Azure:** Microsoft has the breadth of solutions to offer public, private, and hybrid cloud solutions for businesses of all sizes. It can offer customers a sense of continuity for their environment by allowing seamless mobility between their datacenter and the Azure public cloud. It can also provide comprehensive single tier 1 vendor support for all services related to the cloud.

- **A cloud solution without the security fears of public cloud:** One of the biggest fears, whether real or perceived, regarding public cloud is data security. In a public cloud environment, potential customers have a fear that mission-critical/sensitive data will be lost, stolen, or misused. Microsoft's hybrid cloud storage solutions can offer a middle-of-the-road approach to businesses that are apprehensive about embracing public cloud services fully. By having the choice of keeping mission-critical and/or sensitive data local and on-premises, businesses can mitigate security fears around public cloud storage while still availing themselves of the scalability, data resiliency, and economic benefits public cloud has to offer.

- **The ability to seamlessly run Microsoft services and applications:** Microsoft has a pantheon of various business software, services, and applications that are able to run on top of its cloud infrastructure. Its hybrid cloud storage solutions, specifically StorSimple, have the added benefit of being able to seamlessly integrate these various services/applications and offer them in a traditional on-premises manner or as a public cloud service. This allows end users to be creative in how and where they implement different Microsoft offerings.

- **Application-based on-ramp to cloud-based environments:** Microsoft's hybrid cloud solutions like SQL Server Azure Backup and Exchange Archiving serve as an excellent on-ramp for Microsoft's own public cloud services but also provide businesses the flexibility should they want to add or deploy storage in another public cloud service. StorSimple, on the other hand, can provide a gentle transition to the cloud by offering a private cloud-like environment while transparently leveraging the public cloud.

As Microsoft takes hybrid cloud storage to the next level, it will no doubt find itself competing with both traditional on-premises storage suppliers and other IaaS suppliers. These potential competitors are trying to cloud enable the datacenter in their own way — by offering flexibility and options. Microsoft needs to convince potential customers why its hybrid cloud storage strategy is the most efficient, economical, and flexible among other competitors. Microsoft has to be careful in the following areas:

- **Not forcing a hybrid cloud strategy that is tied only to Microsoft Azure:** Microsoft applications that are directly tied to the cloud will need to use Azure. Being required to use Azure could be a challenge when converting potential customers that already have data stored on another cloud platform. Microsoft must have a seamless data transfer plan in place to present to potential customers with this scenario as well as be able to point to the benefits of moving to Azure and the entire Microsoft environment.

- **Winning business from companies that lack familiarity with hybrid cloud operations:** A hybrid cloud format is different from a traditional datacenter and will require an IT staff that is willing to learn methodology. Although the fundamental premise of StorSimple is that it is easy and efficient to use, potential customers may be hesitant as hybrid cloud is different and unknown from the traditional datacenter. Microsoft can lessen the stress of the unknown by having extensive customer training in place for hybrid cloud environments as well as by educating the customer on the automated/managed features a hybrid cloud environment brings to help IT maximize its return on investment.

- **Helping businesses leapfrog to a pure cloud environment:** With any combination or hybrid environment, there is always the risk that in the future, potential or current customers could bypass the hybrid stage and move completely to one end of the spectrum. This is true with a hybrid cloud environment where end users could possibly migrate to a public cloud offering, negating the need for a hybrid solution. Although Microsoft does offer a public cloud environment with Azure, the hybrid cloud offerings could suffer a casualty as a result. It will be up to Microsoft to help customers choose the right type of cloud environment for their specific needs around performance, scale, and costs.

ESSENTIAL GUIDANCE

IDC expects most businesses to undertake a "hybrid cloud storage journey" as they seek to transform themselves into data-driven entities. IDC expects that hybrid cloud (and hybrid cloud storage) eventually will become the de facto model for businesses that want to maintain an on-premises infrastructure but, at the same time, heavily leverage an as-a-service model for additional infrastructure capacity. The extent to which they leverage cloud will vary. Larger enterprises tend to take a hybrid approach. They leverage private clouds for tier 1 or mission-critical data sets. For much of their tier 2/3 data sets, which can be sizable, they can benefit from a hybrid approach to storage that involves a solution like StorSimple. For SMEs and SMBs, a hybrid cloud approach involving a solution like StorSimple serves them well in cloud enabling their infrastructure without much change to how their applications are architected.

Using a combination of various hybrid cloud storage approaches, IT organizations can realize the combined benefits of on-premises storage and public cloud storage. The larger the enterprise, the more acute its storage management complexity. Hybrid cloud approaches seek to reduce that complexity and therefore operational costs. It is important to note that:

- There is and will be no one-size-fits-all approach, and there are no approaches that are better than others. An approach or a collection of approaches should be aligned with the overall different data governance, service-level, and budgetary requirements.

- IT organizations should focus on an overall reduction in datacenter infrastructure capex spend, a proportional increase in opex spend, and an overall reduction in storage infrastructure spend.

In addition, IT organizations should ensure that their hybrid cloud storage approach addresses the following factors:

- **Virtualization density and how data is accessed by virtual machines in the datacenter:** Hybrid cloud storage has to facilitate the connection and/or portability between the two locations so that the virtual instances can seamlessly coexist in both locations.

- **Data growth and hybrid cloud:** End users will assume that the data growth will be absorbed by the cloud provider and not in the on-premises datacenter. IT organizations have to educate their users on data locality.

- **Big Data and eDiscovery:** IT needs to ensure that the necessary data is uploaded into the cloud and can be easily accessed when necessary for adherence to governance, risk, and compliance policies.

APPENDIX

Customer Case Studies

Walbridge Construction

Walbridge is a large construction company based in Michigan. Typical projects undertaken by Walbridge include construction of airports, manufacturing plants, and large concrete structures such as bridges and parking lots. The nature of Walbridge's business means that the company's employees often generate and work with a large number of drawings and files. IDC recently spoke with Cynthia Weaver, AVP of IT at Walbridge. Weaver manages a lean IT organization of 23 employees who wear multiple hats. They are responsible for running/maintaining the IT infrastructure at headquarters and branch offices, managing mobile devices, maintaining unified communications equipment, evaluating new products and technologies, and, as necessary, doing development work.

Walbridge's quest for a hybrid cloud solution started with a sudden surge in the amount of data the company's IT team had to manage. Data went from 20% year-over-year growth to over 100% year over year in a span of two years. One of the reasons for this surge was the rapid growth in Walbridge's business, but more crucially, it was because of how employees from various groups — like marketing, business development, estimating, and operations — collaborated on projects. Each group wants to "own" its files, which caused over 50% duplication in the environment. Multiple versions of files meant additional operational overhead. Suddenly, the team found itself not only grappling with the cost of buying new storage equipment but also having to deal with upgrades of adjunct (but critical) infrastructure like data protection. These costs added more than $100,000 to an already stretched budget. Weaver chartered her team with examining ways to cut costs but more importantly to explore ways to change the model. The team noted that introducing cloud into the environment, without completing eliminating the infrastructure, was a good first step. This quest led the IT team to the StorSimple solution. StorSimple allowed Walbridge's virtual environment to access a cloud-enabled block-based storage array that provided all of the storage efficiency features and pushed inactive data into the cloud. With this model, Walbridge IT was able to reduce its datacenter footprint, and the company has not had to purchase any additional equipment for over 2.5 years. Today, Walbridge's hybrid cloud infrastructure has over 8TB of deduplicated data. All of the data connected to the StorSimple solution is protected via cloud-based snapshots, requiring no additional data protection on-premises.

This model allowed Walbridge to maintain its current infrastructure, including its data protection environment. It also allowed the company to maintain a file sharing solution for user home directories, network shares, and collaboration software (Prologue) – which allows employees and contractors to share project-specific documents with one another. Emboldened by the success of this model, Walbridge also adopted Office 365, Microsoft's cloud solution for email, calendar, mobile and end-user collaboration. Today, it has 11TB in SharePoint cloud and 5TB in Exchange cloud. It currently manages 850 accounts but can scale to 10,000 users. The Office 365 solution allowed Walbridge IT to reduce its footprint by removing P2P servers at construction sites (60 different locations). Instead, all file services are now offered via the SharePoint job site. With the hybrid cloud storage model, Walbridge IT can now maintain total control of its environment and do so in an efficient manner. Operational efficiencies are passed on to its users. This model has allowed Walbridge to improve service levels and keep tabs on its data consumption, which continues to grow. Instead of "micro-managing" the infrastructure, Walbridge IT can now focus on tracking service quality.

MulvannyG2 Architecture

MulvannyG2 Architecture is the third-largest retail architect in the world and among the 50 largest architecture firms worldwide. It designs retail, office, mixed-use, and hospitality facilities for global clients, including five of 2012's top 20 Fortune 500 retailers. MulvannyG2 has over 330 employees at offices in Washington; Oregon; California; Washington, D.C.; and China. IDC recently spoke with John Cuocci, IT Director at MulvannyG2 Architecture.

Like many architecture firms, MulvannyG2 was grappling with lots of paper-based IP such as drawings and blueprints. With over 42 years in business, MulvannyG2 relied on a leading offsite records storage company for handling hundreds of millions of pages of architectural drawings and related project documents, which cost it more than $50,000 annually. In addition to being expensive, offsite paper storage introduced delays in critical business functions. When an employee needed an archived document, he or she searched the online indexing system by job number and other identifying characteristics and placed a request – which took days for processing.

MulvannyG2 purchased the StorSimple solution and set it up the day it arrived with no problems. To solve the problem of indexing the data stored in Windows Azure, MulvannyG2 turned to Newforma Project Center, a software program that helps organizations index and manage project information. MulvannyG2 employees use Newforma to index all of their archived documents and store the indexed data on StorSimple. When employees want to access an archived document, they simply enter the related job number and other search criteria; digital documents are returned in minutes.

By deploying the hybrid cloud storage solution of StorSimple and Windows Azure, MulvannyG2 Architecture realized the following benefits:

- Avoid spending $140,000 on expensive SAN storage. The StorSimple hybrid cloud solution helped MulvannyG2 avoid the significant expense of investing in another SAN.

- Save $50,000 a year on offsite storage fees. When all of its documents are digitized, MulvannyG2 will also realize an annual savings of more than $50,000 for third-party archival fees.

- Extend the life of existing SAN. In addition, Cuocci estimates that the firm will extend the life of its existing SAN by at least two years by not using it for archive storage.

- Gain endless storage scalability without adding additional rack space in the datacenter.

- Achieve better disaster recovery. When MulvannyG2 uses the StorSimple solution for disaster recovery, it will gain geographically distinct data protection and no longer worry about physical backups.

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