

The Imperative of Hybrid Cloud Solutions for Storage

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Introduction

Developing and executing a hybrid cloud strategy has become necessary for companies that are thriving in today's fast pace of business. The debate is over.

Hybrid cloud services—seamlessly blending on-premises infrastructure with on public and private cloud infrastructure—are firmly established as the engine of growth and transformation for companies across the globe. Mobile and social technologies are dramatically changing the way companies interact with their customers and suppliers. Customer sites are seeing increasing amounts of data and analytics because of new applications that are emerging. To be successful, businesses need to be able to manage the way information is stored in this hybrid cloud environment. In this paper we discuss hybrid cloud storage, requirements for a hybrid cloud storage environment, and IBM's approach to hybrid cloud storage.

Hybrid clouds emerged partly because business units were frustrated at the slow pace of change enabled by traditional IT organizations. By integrating low-cost, easy-to-implement public-cloud services with existing internal IT systems, and private clouds, business leaders saw that they could react more rapidly to market changes and customer expectations. However, as they looked to do more – especially in the area of Big Data and analytics, the relationship between the business and IT is changing. Business leaders are recognizing that they need to collaborate with IT in order to gain support for a new generation of storage capabilities to ensure scalability, security and service levels in the hybrid cloud.

The requirement for a hybrid cloud environment is to ensure that all of the workloads including compute, applications and storage are effectively orchestrated so that they act as though they are a unified system. Without carefully planned coordination of both on premises and cloud resources, organizations cannot gain the full value of a hybrid storage environment.

Defining a hybrid cloud

Hybrid cloud is a combination of on-premises and public cloud services intended to work in unison to deliver value to customers, suppliers, employees, and partners. The hybrid environment provides customers with the flexibility to select the most appropriate service for specific workloads based on critical factors such as cost, security and performance. Enterprises that need to support a variety of workloads can leverage the flexibility of a hybrid cloud approach to ensure that they have the ability to scale up and scale down, as needed. The hybrid cloud is the way that business provides revenue-generating services to customers and suppliers.

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Hybrid Cloud Storage and the Surge of Data

To be successful, organizations have to manage and store an increasingly expanding amount of data. Successful organizations are able to deliver the right data into the hands of the employees and customers in a timely manner. Hybrid clouds change the way companies do capacity planning, because they no longer have to over-provision enterprise data centers for those peak periods.

Traditionally, businesses have purchased more storage capacity to keep up with demand. Continually acquiring additional on-premises storage cannot affordably scale with the rapid increase of storage demand. That is especially true when trying to meet the demands of peak processing periods, for example at the end of a quarter or during a holiday season. To cope with these changes, businesses have begun adding new storage technologies in addition to traditional block-based storage. These organizations have added file- and object-based storage to support new unstructured data types and the applications that are built on them.

While all of these technologies have helped, they can be disjointed and difficult to manage. Therefore, many organizations are rethinking their storage environments. They want to unify their approach to storing and managing data—no matter where it is physically stored: on-premises, in a private cloud, or on a public cloud service. Therefore, a hybrid storage strategy is becoming an imperative in order to provide the appropriate level of both financial and technical flexibility. A hybrid cloud storage approach offers three key benefits:

- Supporting the ability to scale resources up or down, based on changing storage needs.
- Allowing organizations to continue to use their existing storage investment while also purchasing cloud resources, on an as-needed, pay as-you-go basis.
- Providing a mechanism to manage a variety of storage resources in a unified and cost effective manner.

A Customer's Journey to Hybrid Cloud Storage

A large retailer, faced with growing competition from emerging online startups dramatically changed its strategy.

It began focusing its customer outreach with new mobile and social applications. These new applications had to be tied directly to the company's transactional systems. To support an exploding amount of data, the company began to increase its investment in on-premises storage resources. The IT organization could not take the chance that there wasn't enough storage to support new applications using unstructured data.

It also became clear that the trend of over-purchasing storage systems without a plan had to change. The storage team needed a strategy and

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plan for a comprehensive and consistent storage approach that was cost effective. The end result was a hybrid storage approach.

IT leadership worked with the business to determine the service level required to support customers. The team determined how to best secure and protect both customer and company data. This resulted in a plan that supported the use of public cloud storage to support business peaks.

Having a consistent way to manage all storage elements meant that the company could gain insights into all of its storage resources in a meaningful way. Therefore, for the first time, IT operations management was able to put together an effective capacity plan for storage. This new strategy meant that IT could more effectively predict storage requirements and keep costs under control. Storage was no longer isolated from the overall hybrid cloud approach that was at the center of the company's IT strategy. A unified approach to computing has meant that the company is now prepared for changing IT and business needs.

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Requirements of a Hybrid Storage Environment

Organizations must anticipate the oncoming rush of data that is being generated by a new generation of cloud-ready applications. They must feel secure about using the cloud to gain storage capacity and to respond to peaks in storage demand. Here are the three most important considerations when planning for a hybrid cloud storage strategy:

- Plan for changes in storage requirements based on where data needs to be placed because of performance, efficiency, and security. This planning must be based on the service level demanded by the business.
- Understand how to use public cloud services while retaining the appropriate level of control and protection of your data.
- Provide a policy that dictates which data should be stored on the cloud and which data should remain on premises.
- Have an effective way to manage all of your storage resources based on a combination of business and IT requirements.

By following this strategy, you will gain the ability to have a well-executed hybrid storage strategy. What do you gain from a hybrid cloud storage strategy?

- Predictability of storage usage
- The ability to control and understand costs
- The ability to leverage existing storage investments
- Prevention of business disruption
- Managing hybrid cloud resources as a unified environment.



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IBM's Approach to Managing Hybrid Storage

In 2015, IBM combined its IBM Spectrum Storage product offerings into a portfolio of products that address storing and managing data across a hybrid cloud environment.

IBM's approach is to address storage management, storage performance and data protection in its IBM Spectrum storage-management software suite. The portfolio of Spectrum software products provides the software tools to access, store, coordinate and manage data throughout hybrid cloud computing environments.

Each Spectrum Storage product centers on a specific storage need for management and control of a business-wide storage environment, as follows:

- **IBM Spectrum Virtualize** provides storage and virtualization other software-defined storage to simplify and automate storage provisioning. Spectrum Virtualize gives customers the ability to store data snapshots or to archive copies in the cloud for economical storage and quick retrieval. It delivers a flexible, available, and efficient storage environment for the virtualized storage found in enterprise data centers and in cloud environments. IBM Spectrum Virtualize allows teams to make copies from approximately 400 supported storage systems from IBM and other vendors.
- **IBM Spectrum Accelerate** offers grid-scale block storage with rapid deployment that helps speed delivery of data across an enterprise and adds flexibility to cloud deployments. Spectrum Accelerate adds storage capacity, as needed, while improving performance for block-based storage resources. It can be deployed on-premises in the data center or off-premises in scale-out public clouds. Spectrum Accelerate can also be used in software-defined storage deployments, and in hybrid clouds, including the IBM SoftLayer public cloud.
- **IBM Spectrum Scale** provides flash-accelerated, highly scalable management and access to file and object data with extreme scalability and agility for cloud and analytics. It supports policy-based movement of data from on-premises storage to cloud storage. Spectrum Scale ensures that the correct data-set is sent to the cloud, and allows organizations to create customized data-protection policies to keep other data on premises.
- **IBM Spectrum Control** provides efficient infrastructure optimization and management for hybrid cloud and on-premises virtualized and software-defined storage. It simplifies and automates provisioning, capacity management, automated monitoring and reporting. This capability is also available as a Software as a Service (SaaS) offering.
- **IBM Spectrum Protect** improves efficiency of data protection and resiliency for software-defined, virtual, physical and cloud environments. It is able to use cloud storage pools for backup purposes – and to archive data for later retrieval and use. Comprehensive data protection throughout the hybrid cloud environment is critical to successful deployments that tap storage resources in the cloud.
- **IBM Cloud Object Storage** offers the flexibility, scalability and simplicity required to store, manage and access rapidly growing unstructured data in a hybrid cloud environment with on-premises, dedicated cloud or shared service options.

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Together, these products are designed to offer on-premises functionality coupled with hybrid cloud capability. The benefit of this approach to storage management is a software-defined architecture that supports all data types in combination with all kinds of storage.

Looking Ahead

Software that coordinates and manages storage is integral to ensuring successful hybrid cloud deployments. Although hybrid cloud resources expand your organization's storage capacity, you must also extend your approach to data protection, data security and data access when implementing a hybrid storage strategy. These are important aspects of enterprise computing that must be maintained in the cloud environment.

Adopting a hybrid cloud storage strategy is the best way to address the data explosion, which might otherwise outstrip the capacity of your on-site data-center storage resources or drive costs to unsustainable levels. By planning now, you will be able to store and manage more data, more effectively, while taking a comprehensive approach to managing hybrid cloud resources.

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