

## THE FACE OF STORAGE IS CHANGING

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Demands have evolved with key technology trends like virtualization and cloud computing; and at the same time data has literally exploded in terms of sheer volume as well as available formats. All of this has put tried-and-true storage strategies to the test—strategies that are unfortunately coming up short when it comes to efficiencies and agility requirements to address the wave of seemingly constant change that impacts storage.

A converged storage strategy, which forms a highly flexible pool of storage based on modular building blocks, is the key to eliminating the boundaries between storage and the rest of IT to bring greater levels of agility, simplicity and affordability to modern environments.

It is important to look at innovative architectural approaches to today's storage needs in the face of yesterday's strategies and the seemingly endless onslaught of future demands.

Four key trends go hand-in-hand with Converged Storage: Virtualization, Utility Storage, De-duplication and Big Data. These are trends that are impacting storage and are important to most IT leaders.

In this compact, electronic package, we give readers everything they need to better understand the challenges and opportunities that come with today's most pervasive technology trends. But we deliver that detailed content in digestible chunks so readers can quickly get to what they deem most relevant to their own storage goals. Each topic area features a host of relevant links to timely news items and solution information. The format allows readers to dive as deep as they want into the areas that matter most using the media they prefer most—whitepapers, videos, case studies, and more.

In today's hyper-connected world, with multiple mobile devices, ubiquitous Internet access and pervasive social media platforms, people expect immediate access to information and services. These expectations are increasingly felt in corporate IT departments, where business units demand instant applications and turn-on-a-dime services.

Virtualization and cloud computing can help corporate IT meet these demands by helping it become more flexible and agile. But the ultimate solution is to transform the way IT is delivered. Many companies have already started on the journey toward a full IT as a service (ITaaS) model.

As organizations travel this road, however, they often run into several walls, including those between the server, storage and networking functions. The traditional IT infrastructure is often too rigid to enable companies to fully utilize their IT resources. In many cases, servers, storage and networking have been



built and managed separately, creating functional silos. And within the storage architecture, an explosion in the amount and types of data, coupled with new demands from the virtualization of servers and clients, has made storage increasingly inflexible and complicated to manage.

These factors stand in the way of the kind of adaptability, agility and integrated management that the enterprises require. If organizations are to continue toward the goal of delivering ITaaS, they need to break down these barriers and lay the groundwork for a next-generation architecture.

## **LIMITS OF TRADITIONAL STORAGE**

The typical storage architecture was designed 20 years ago, when workloads were predictable and data was structured. But today companies are dealing with an unprecedented amount of information, including unstructured data such as audio and video, which requires massive capacities. Storage systems must accommodate many different types of workloads with different performance requirements. Add to the mix increasingly demanding applications, distributed data center environments, legacy business processes that must be supported and nonstandard infrastructure inherited through acquisitions, and you get a gerrymandered architecture comprising many discrete storage resources that must be managed individually. Such an architecture is disruptive to scale, expensive to own and operate and increasingly difficult and labor-intensive to manage.

ITaaS requires a pool of storage that's flexible and fungible. The IT staff must be able to quickly configure storage for a particular need and then just as quickly reconfigure it so it can be used again elsewhere. The storage must be malleable so that capacity can be quickly expanded, data and applications can be easily and securely migrated and workloads can be automatically rebalanced. Applications need to be online 24/7/365, so high availability is paramount. Finally, management of the entire storage pool, as well as coordination with virtualized servers and networking, should be streamlined and simplified.

## **IT AS A SERVICE**

Organizations need a strategy for re-architecting storage so that it enables, rather than constricts, the delivery of IT services. Converged Storage, which breaks through the barriers, reducing complexity so that IT can expand storage on a "pay as you grow" basis. It involves the creation a pool of storage based on modular building blocks that can be moved and reconfigured on the fly to support a range of needs. In fact, a leading technology company's approach to Converged Storage incorporates several core capabilities:

**MULTI-TENANCY:** the ability to securely host many different applications in a single pool of storage, delivering the appropriate level of resources and performance for each application.

**FEDERATION:** the ability to geographically distribute storage resources and move data among those resources without disrupting user access to that data.

**EFFICIENCY:** the ability to allocate resources in the most cost-effective manner through thin provisioning and other techniques.



## ONE STEP AT A TIME

Implementing Converged Storage is an evolution and does not require immediate wholesale replacement of current systems. But by putting a plan into place now, businesses can optimize their current storage investments while building toward a converged future and accruing concomitant benefits along the way. The plan should include three basic tenets:

**UPDATE, STANDARDIZE AND CONSOLIDATE PLATFORMS:** use standard hardware and operational processes as a base on which to build a data center infrastructure. This reduces sprawl, lowers costs and eases management.

**ADD SOFTWARE INNOVATIONS:** implement software that enables scaling without disrupting data or applications, to create and easily move storage modules and change configurations for growth. With scale-out storage, the physical form factor is no longer a limitation, allowing for more predictable operational costs while enabling flexibility.

**INTEGRATE MANAGEMENT:** Add tools that facilitate management across servers, storage and networks. This enables IT to operate as a utility, deploying new applications in minutes and provisioning resources on demand.

By using these concepts as a base, organizations can develop a storage platform that is ideal for supporting virtual and cloud computing.

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