



## Buyers Guide IT Professionals



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# Evaluating the potential of hyper-converged storage

What to consider when planning for  
modern IT and the hybrid cloud era

# The business need for simpler storage

The 21st century business demands a lot from its IT resources. And no element of the organization can operate in isolation, ignoring the motivations and needs of the others. So it's vital for IT to ensure that the operational benefits of infrastructure modernization are also recognized by, and useful to, the business. But how does IT improve business competitiveness and efficiency, rapidly meet new business needs, and create an agile platform or foundation for business transformation?



One area where the pressures are intense is storage. In the late 1990s the storage industry developed SANs (storage area networks) to break open silos, share storage resources, and minimize the escalating growth in storage costs. However, SANs required significant investments in both infrastructure and skills.

Now that has changed. Huge advances in virtualization and networking technologies, and the shift from purpose-built hardware to software-defined and hyper-converged infrastructure, have made the SAN's benefits much more readily accessible. Meet the virtual SAN, in the form of hyper-converged storage.

## Business transformation

In the search for agility, organizations have moved more and more processes and work online. This means their software tools need to be able to **quickly and efficiently share data**.

## Cloud-ready, cloud-enabled

Most modern organizations have - or want - systems and data both on-site and in the cloud. The ability to **seamlessly interoperate and move between them** is important.

## Becoming data-driven

A data-driven business exploits data at every level to achieve strategic and operational advantage. **Modern data storage platforms, tools and policies are essential** to this.

## Simplifying IT operations

As IT infrastructure grows ever more capable and complex, it becomes harder to manage it manually. We therefore need to **virtualize, abstract and automate** wherever feasible.

## Meeting external and as-yet-unknown future demands

In modern business, effective data management and governance is essential for a range of internal and external reasons, including regulatory and legal compliance, the reduction of cost, the ability to gain business insight, and of course data protection and IT recovery. This can be more difficult when you have disparate silo'd storage systems.

Virtualized and software-defined infrastructure is also more agile, flexible and adaptable. Not only can it support new services, but virtualization decouples the hardware from the software, potentially allowing more variety and choice at the hardware level. With that in mind, here's a few questions to consider.

## Data management and governance

Can you see how much data you have, what kind it is, who's using it, how it's secured and how fast it's growing? And can you find it quickly when it's needed?


## Future-tolerant systems

Will your choice of storage hardware and services limit your future software and hardware choices? Will your storage systems grow and adapt as your needs grow?

# The fundamentals of modern storage

Virtualization, combined with cloud, commodity hardware and of course the performance of SSD, brings innovation and opportunity. That's a big part of why the IT world is becoming virtual and software-defined at such a rapid rate. Key to this is the abstraction process, where 'hard' resources are converted into logical 'soft' representations that can be subdivided and recombined in new ways under software control.

For storage, this means taking all the physical blocks from the connected drives, giving each a logical identity, and then putting them into a common pool. Storage can then be drawn from the pool, combined into logical units and allocated rapidly to software-defined storage services, such as NAS or object storage.





**STORAGE VIRTUALIZATION**

Virtualizing physical storage capacity into a pool of logical blocks can add considerable flexibility, scalability and agility. For example, logical volumes can be larger than the largest physical device, or be thin-provisioned, occupying only the data space they currently need.

Traditional enterprise SANs offer performance and consolidation advantages, but can be complex to build and maintain. A popular way to simplify and cost-reduce the process is to virtualize all the elements of the SAN, including storage, building a virtual SAN in software.

**VIRTUAL SAN**




**HYPER-CONVERGED STORAGE**

A popular way to create a virtual SAN is to run it all on a single server or scalable cluster. The resulting hyper-converged storage combines the SAN's advantages with the flexibility of virtualized storage and the simplicity and automation of software-defined infrastructure.

Most cloud services are also based on virtualized and automated infrastructure. The ability to also run the same hyper-converged storage services in a public cloud enables the creation of hybrid clouds with cross-platform data access and movement.

**HYBRID CLOUD**



**FUTURE NEEDS**

Because it is virtualized and software-defined, hyper-converged storage is not application-specific or silo'd. This can simplify both scalability and the provisioning of storage to new applications, workloads and storage services, for example Kubernetes Persistent Volumes.

As well as helping to improve service delivery and reduce IT complexity and cost, by consolidating storage and simplifying its management, modern hyper-converged storage technologies can also support a range of other initiatives. These include significantly improving data management and governance, as well as supporting hybrid cloud and hybrid IT strategies and adapting to new software and application models.

# Bringing it all together and building a cost model

When it comes to building a business case and a cost model for storage modernization, there's clearly many factors to consider, both positive and negative. On this page, we discuss some key aspects, and include ideas for how to convert what might at first appear negative into a neutral or positive factor.

One way to begin this process is to list the costs and benefits that feed into your TCO, then consider how each one would change in the event of a) simply updating your storage systems, and b) updating your overall strategy to adopt hyper-converged storage. The reason is that the big benefits only accrue when you make that leap to hyper-converged. The 'real cost', on the other hand, is rarely the hyper-converged storage - it's how much **extra** that would cost over what you'd need to spend anyway on routine upgrades.

Of course, the magnitude of the potential savings and opportunities can vary considerably. Your IT partner or storage supplier may well be able to provide examples for you to use as a starting point.

## Hybrid IT: present many platforms as one

Building a hybrid IT platform can enable you to integrate your traditional and modern application platforms into a single seamless 'hybrid' whole with unified management. Hyper-converged storage is well suited to use cases such as this because its architectural design allows it to support multiple application platforms of differing types, both on-site and in public clouds.

## Re-focus staff skills on business agility

Your IT staff should spend as little time as possible on mundane or repetitive tasks. Instead, focus their skills on adding business value, e.g. by enabling business transformation, developing and integrating new platforms, and of course meeting future needs, both the known and the as-yet unforeseen.

## Packages and partners for easier adoption

SAN uptake has been limited not just by cost but also by the scarcity of storage skills. Fortunately, hyper-converged storage is packaged and automated, and needs those skills less often. IT departments can call on qualified channel partners when that expertise is needed, e.g. during installation, data migration or an upgrade, or even to provide hyper-converged storage as a fully managed service.

OPPORTUNITY & GROWTH

## Hyper-converged Storage

## Simplify infrastructure, eliminate technology silos

Moving to an infrastructure based on hyper-converged storage solutions can eliminate waste and reduce cost. For example, business applications may have their own separate storage silos, each with its own maintenance costs and administration needs, and its own 'room for growth' held in reserve. These silos can also make it hard to find, protect, extract and share data when needed.

SAVINGS & EFFICIENCY

## Lower TCO

Storage consolidation and hyper-convergence offers several potential cost benefits. The need for less hardware may also translate to savings on data center rack space, power and cooling, a need for less physical networking hardware, and lower software licensing and system administration costs.

## Streamline administration and management

Tasks such as server and storage provisioning are essential, but there is much to be saved by simplifying and automating them wherever possible. For example, a public cloud offers a menu of standard options, and your choice is automatically configured and provisioned. Modern software-defined systems now allow this approach to also be cost-effective on-site, and at a smaller scale.

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