

# DATA OVERFLOW

# ultima

With data growth typically running at between 20% and 40% per year, organisations are constantly having to expand existing arrays or look at new ways to reduce the impact on existing infrastructure as datasets expand, they become more complex, harder to manage and maintain, and present additional challenges around both backup and disaster recovery.

Data is now being generated from newer technologies, such as machine analytics and Internet of Things devices, resulting in massive increases and different data profile types.

All this new data requires additional capacity, new manipulation tools and retention and indexing capabilities, which many current platforms cannot provide. As a result, companies are having to scale, migrate and uplift their storage platform far too often.

Furthermore, the inability for IT to make sense of usage and behaviour means that workloads are often hosted on inappropriate storage tiers. In some cases they can end up being starved of resources - affecting performance - or are hosted on expensive all flash tiers when not required.

Finally, when storage devices reach the end of their natural life or are deemed no longer fit for purpose, outages and potential data loss can occur.

## Data Growth

Many older storage platforms do not have space saving technologies such as de-duplication, compression or thin provisioning, which results in rapid data growth. This, combined with huge backup sets, mean that the storage platform is ever expanding and taking up huge amounts of space and power inside your data centre. Modern storage solutions can provide up to 500 TB of usable storage in as little as 1U of rack space and can reduce storage usage by as much as 80%.

## Control and Agility

Managing the storage platform typically requires in-depth knowledge of both networking and virtualisation, presenting additional complexity and scaling issues. Moreover, traditional storage arrays have less granular visibility into virtualised estates. This means that predicting growth or understanding per virtual machine based performance requirements restricts the ability to accurately roadmap change and impacts the procurement cycle.

## TCO Reduction

While demands on IT increase and budgets are being pushed harder each and every year, data growth remains a constant threat to businesses. Complex storage platforms often require diverse skill sets to manage, which need maintaining and developing. Procurement and replacement cycles are elongated due to the rapid growth in the data platform, often with migrations taking many months to complete, during which time return on investment is not being realised.

## Backup and Disaster Recovery

As data grows, so to do backup windows and disaster recovery (DR) replication cycles, often becoming less reliable as a result. Replication to secondary sites for business continuity purposes not only requires additional storage and bandwidth, but the impact on the primary site storage in relation to IOPs increases. Without integration into backup and DR, storage platforms will continue to grow to unmanageable levels and present issues with on-going support and maintenance.

1

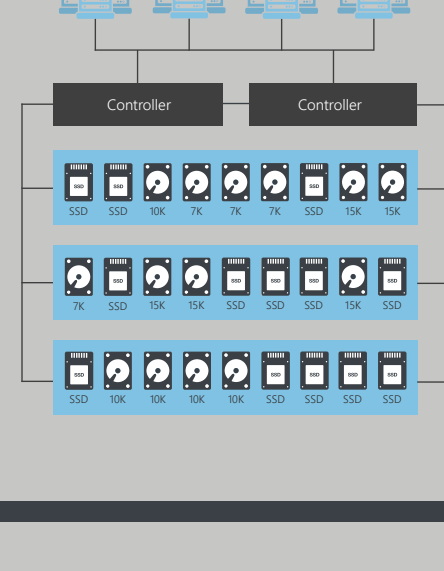
## Storage Options

When the expansion of data reaches a point whereby a decision is made to replace the existing infrastructure, there are four main on premise storage options which customers look to adopt. Just like any competing technology, each comes with its own pros and cons, alongside specific use cases which should be considered prior to selection.

### Traditional

Traditional storage vendors often have an extensive pedigree which means they benefit from greater integration with third party applications such as Oracle and SAP, and have direct hook-ins such as backup, archive and data analytics.

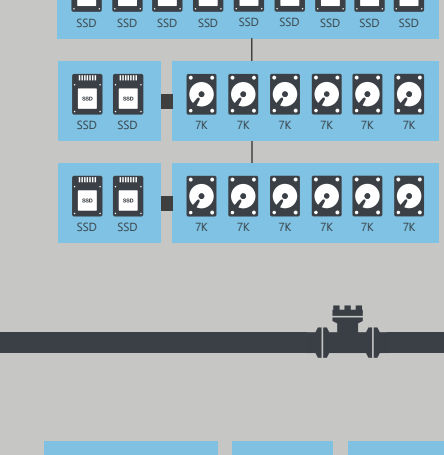
Systems usually scale both out and up, and with the scaling comes flexibility with disk setup, controller sizing, controller numbers and flash / disk ratios. Management of these systems can be more of an overhead, although customisation of the array is available which means more detailed configurations can be enabled, such as RAID types per volume and cache configurations.



### Disruptive

Several years ago the industry was dominated by EMC, IBM, HP and Hitachi. Recently however, there have been a number of start-ups that have brought innovative and highly disruptive products to market, delivering amongst other things, extremely simple administration, API-based management and custom hardware to accelerate the array.

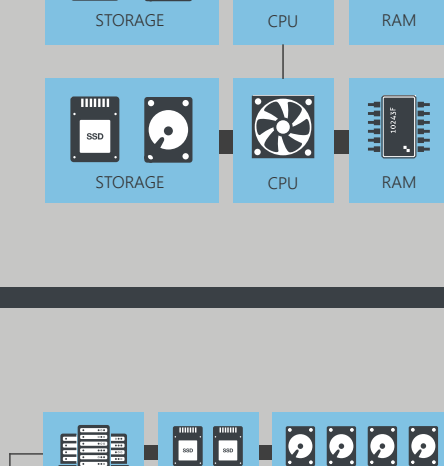
Products are designed to fit a niche requirement, often with virtualisation in mind, where the complexity of a traditional array is considered overkill. Customisations are very few and arrays come preconfigured, which reduces management skill sets and support requirements, but limits the ability to "tune" the array for specific uses.



### Hyper-converged

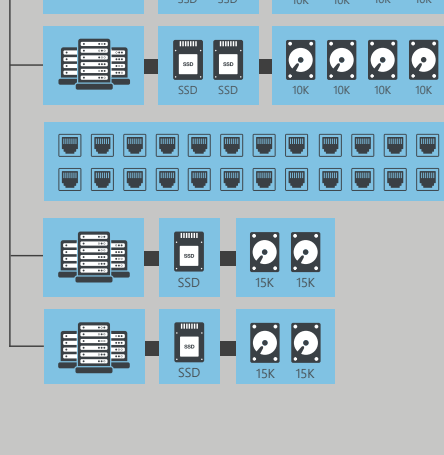
While the easiest to manage, hyper-converged is also the least configurable and often requires significant capital outlay. Vendors such as Nutanix aim their systems at customers that either want to reduce their technical IT management skills or have limited experience in managing complex storage and network devices.

Hyper-convergence allows for simplified deployment, management and support with the hypervisors, compute and storage platforms, all managed through a single vendor relationship. Although the ease of deployment and management helps to reduce operational expenditure, the product typically requires a higher capital investment.

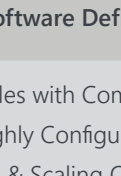


### Software Defined

Although this type of storage has been around for a number of years, it has only recently become a viable option, with production use now becoming commonplace. As flash and disk costs reduce and hardware becomes a commodity, vendors have emerged creating software to enable local storage within servers to be used as a storage area network for block storage via iSCSI, SMB and NFS. Software defined storage has many prerequisites, specifically around network and disk controller setup, that means that configuration can be difficult and support troublesome. While Microsoft have released Storage Spaces Direct and VMware vSAN, customers are slow to adopt, only leveraging this technology for Dev / Test or non-persistent workloads such as virtual desktops.



The following table provides a summary of the storage options above, alongside leading or emerging vendors for each type and the most common use cases.

	 Traditional	 Disruptive	 Hyper-converged	 Software Defined
Pros	Highly Configurable, Best Software Integration, Scales Out and Up, Independent Scaling	Reduced Costs, Simple Deployment, Evergreen Options, Easy to Manage	Scales with Compute, Simple to Manage, Simple to Scale, Automation Options	Scales with Compute, Highly Configurable, Build & Scaling Options, Enables Automation
Cons	Often More Expensive, Complicated to Support	Lacks Configurability, New to the Market	Higher CapEx, Scaling Options Constricted, Vendor Locked	Strict Prerequisites, Relatively New to Production Systems
Products	HPE 3PAR, NetApp FAS / AF	Nimble, Tegile and Pure	Nutanix, HPE SimpliVity, VMware VxRail (EVO)	Microsoft Storage Spaces Direct, VMware vSAN, HPE StorVirtual VSA
Use	Mixed Purpose, Application Integration	Capex Reduction, General Virtualisation, Storage Arrays	VDI, Test and Dev, Limited IT Skills	VDI, Test and Dev, DevOps

2

## Getting Started

When it comes to storage, we recognise that there typically isn't a single solution that suits every customer. Having a single general purpose array no longer presents the best total cost of ownership. Different workloads require different features and storage profiles and as such, multiple storage platforms can provide better return on investment.

Organisations often have competing requirements which result in there needing to be two or more platforms, each delivering point solutions for specific workloads (e.g. VDI or analytics).

Our role is to help you select a solution that will solve the business problems pertinent to your situation. Ultima's Modern Data Centre team offer expert guidance and support, using knowledge of the industry, historical storage engagements and customer experiences.

We maintain technical certifications and accreditations across all four storage types and once deployed, our UK-based 24x7 technical support centre can provide managed or extended support services for your new storage platform. Using discovery tools and analytical

reviews, we can understand your holistic storage requirements and help build a target design for your new platform.

Our specialists can then compare vendors and provide insight into the deployment and migration process, before going on to design, deliver, configure, test and move data across to your new infrastructure.



Tintri



NetApp



tegile

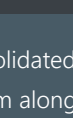


Hewlett Packard Enterprise

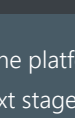


PURE STORAGE

NUTANIX



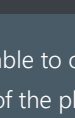
Microsoft



nimble storage



vmware



DELL EMC

### Storage Assessment

Firstly we generate a consolidated view of the current platform along with the business roadmap for requirements. With an independent view of the marketplace we'll guide you to be able to make the correct decision with strong business justification for your storage platform which will provide true value to your business.

### Implementation

Once the platform is selected, the next stage is to maximise the return on your investment. Ultima will design, deploy, configure and test your new storage platform, making sure everything runs smoothly and that your staff are trained to efficiently and effectively use the new platform.

### Management

To be able to optimise the lifecycle of the platform Ultima can offload the management. With our highly experienced, ITIL-aligned managed services based out of the UK, you that can be rest assured that your platform will be maintained, updated and configured optimally so you can focus on innovating.

3

## Who Are We?

As a leading provider of data centre consultancy services, Ultima maintain partnerships with many of the tier one technology vendors. Our team of certified specialists are able to deliver a broad range of traditional, disruptive, software defined and hyper-converged solutions, leveraging our design and integration expertise and associated experience around data migration, networking, servers, hypervisors, security cloud services, backup and recovery, and monitoring and management.

Ultima is committed to delivering solutions that are future proof and enable customers to grow and develop without the constraints typically associated with storage platforms. Whether you are looking at data analytics, VDI, archive, unstructured or a combination of different data requirements, we can connect you with the right solution and help design, deliver and support it.



### Certified Storage Experts

Services delivered by a dedicated Modern Data Centre practice, specialising in delivering tailored on premise and cloud solutions.



### Optimisation Approach

Ultima will look at the best way forward and will not always give you a like for like solution, if we think efficiencies can be gained.



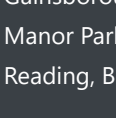
### Strength In Depth

Our specialists are experts in identifying designing, implementing and managing multi-vendor storage solutions.



### Vision and Leadership

Our architects and consultants are able to support strategic business imperatives and become a trusted technology advisor.



### Hybrid Data Centre

Ultima has capabilities to provide you with a full hybrid data centre, leveraging the public cloud where it makes sense.



### Connected Services

Gain access to the Ultima expertise, linking in associated strategic and tactical engagements from across the data centre and beyond.

Head Office  
Gainsborough House  
Manor Park, Basingstoke Road  
Reading, Berkshire, RG2 0NA

# ultima

0333 015 8000  
enquiries@ultima.com  
www.ultima.com  
© Ultima Business Solutions 2017