

SOLUTION BRIEF

Storage Workload Consolidation

Data powers the world. Businesses rely on lightning-fast access to their data to run critical applications such as VMware, SAP HANA, and Oracle. Streamlining your IT infrastructure with the correct storage workload consolidation technologies that are reliable, flexible and that support high availability (HA) and data protection, is essential to delivering on business innovation, operations, and economics. Your storage workloads must handle demanding performance SLAs, scaling, and growth as users and data multiply.

Consolidation Types

When considering consolidation there are a number of types to think about.

Array Consolidation

Most IT organizations have a number of older arrays on their data center floor that can be combined into significantly less than they currently own and manage. With denser storage arrays available you can enable more efficient data sharing, easier storage management, higher productivity of your storage administrators, and fewer systems and storage vendors to manage. Imagine consolidating up to 17 petabytes into a single 42U rack replacing several legacy arrays. Array performance is always top of mind during consolidation, so we discuss that below.

Consolidating arrays can also lower costs due to increased infrastructure density in terms of performance and capacity. However, you need to be certain that your consolidation efforts bring cost benefits to the organization. In a recent IDC study, customers of Infinidat reduced their operational expenses by \$41.6K per petabyte.¹

Workload Consolidation

It's not uncommon for a specific workload to require its own storage system due to protocol support, access method, or response time requirements and IT has traditionally responded with a workload-centric storage solution. Usually there was a reason that a particular access method was chosen, and IT is not likely to want to move a workload to a different access method type to support consolidation. Block, file, and object-based access methods are popular among enterprise workloads. So, the more access methods a particular storage system supports, the more efficiently it can handle different workload types, and the more consolidation you can achieve. When consolidating workloads, let's not forget performance. Combined workloads should perform better with more certainty and be managed more easily and intuitively, overall. Infinidat's performance guarantee will map out exactly what can be expected when you consolidate workloads and the company will stand behind that in writing.

Server Consolidation

In the drive to make your IT infrastructure more efficient to support your ongoing business needs, you can consolidate data and workloads from different types of servers into a single, shared storage system. Industry-leading vSphere, VMware's virtualization platform, can consolidate server and desktop hardware to achieve 20-30% lower costs per application, along with reducing server and operating costs by as much as 50% and energy costs by as much as 80%.³

“With data growing at roughly 40% a year and IT budgets growing at 10% to 12% per year, CIOs should absolutely be pursuing intelligent workload consolidation strategies.”

– Eric Burgener, Research Vice President,
Infrastructure Systems, IDC²

Traditional storage solutions can't keep up with the virtual machines (VMs) demanding maximum IOPS along with high bandwidth at the lowest latency. IT pros need to consider modern storage systems that remove the storage bottleneck from VMware environments, without compromising TCO or availability.

Infinidat has made a considerable investment to efficiently enable vSphere Virtual Volumes (vVols) in their storage platforms. InfiniBox customers using vVols benefit from:

- Hundreds of thousands of vVols and up to 1,000 vVols storage containers per system for petabyte-scale multi-tenancy
- Native InfiniSnap integration as vVols managed snapshots
- VMware storage policy-based management (SPBM) integration
- Multiprotocol support with Fibre Channel and iSCSI
- Easy deployment using Infinidat's Host PowerTools for VMware

In addition, we added NVMe/TCP for VMware support to extend the capabilities of existing block and file protocols.

Benefits of Consolidation

One of the main reasons workload consolidation is so attractive is that you get to enjoy economies of scale. A single array that can support three petabytes of storage workload capacity is a lot more efficient than three or four smaller systems supporting the same workloads.

Consolidation also provides other compelling advantages:

Lower your DC's energy consumption (power and cooling) – More advanced storage technology requires less power creating a greener storage solution and affecting your TCO. With the update of InfiniBox in 2022, we enabled customers to dramatically increase capacity within the same footprint, reducing TCO by up to 36% and reducing power usage by 42%. In a recent IDC study, they found that Infinidat customers reduced their OpEx 48% over five years with InfiniBox.¹

Less floor space consumption – Imagine consolidating three or four arrays or more that are consuming DC floor tiles at a cost/month/tile and moving that to a significantly smaller footprint! One of our customers delayed moving to a bigger DC by consolidating.

Simplicity of management – Reducing the number of physical arrays to manage not only reduces your IT staff workload, but frees up resources for other projects. In a recent study conducted by IDC, storage teams found the streamlined and user-friendly storage management features of InfiniBox to work more efficiently, by 51%.¹

Removing cybersecurity vulnerabilities – Leveraging the InfiniSafe technology built into our platform helps secure and recover data quickly. As well, by consolidating a number of storage arrays down to a few, you fundamentally reduce the number of "entry points" for hackers to compromise your organization.

The Business Value Highlights of InfiniBox

Infinidat customers are realizing significant value by leveraging InfiniBox for their storage needs to support their IT and business operations. According to independent research by IDC¹, Infinidat customers see:

48% reduced total cost of operations over 5 years

51% more efficient overall storage management teams

Use Cases

To help emphasize the value of consolidating storage workloads, let's look at a few real-world examples.

vmware®

Over 50K VM's 12 PB
across 50 racks



10x InfiniBox

A large insurance company with a very large VMware farm of over 50,000 VMs was running 12 PB across 50 racks to support their users. Infinidat replaced this config with 10 x 6300 arrays, doubling the capacity in 1/5 the floor space. The customer remarked that they enjoyed a 60% reduction in TCO and have less of their team managing storage and instead doing more valuable IT work.

VMware, SQL,
Web apps, VDI,
custom workloads,
Commvault



30x InfiniBox across 7 sites >50 PB total

A leading financial services company had the typical "storage sprawl" with over 136 storage arrays in 61 racks. This was consolidated to 50 PB in 30 arrays clearing half their DC floor space and providing over \$5M in TCO reduction.

Consolidation Considerations

Besides the benefits of lower cost, ease of management, and lower energy and floorspace consumption, there are some other factors to consider when consolidating storage workloads.

Choose a platform for dense storage workload consolidation – Efficient workload consolidation on storage systems requires maximizing the capacity in a physical space, in this case, a DC floor tile. DC real estate is expensive. So, the larger the petabyte capacity in a floor tile the better! The InfiniBox combines SSDs and HDDs to provide up to seven petabytes raw (PBu) capacity in a 42U rack, without compromising performance.

Consolidation of mixed enterprise workloads – Make sure you can run the varied workloads that you require now and into the future without any performance degradation. Not all storage systems can adapt on-the-fly to multiple, complex I/O workloads. Infinidat's patented Neural Cache, with its deep-learning technology, enables higher, real-world application capacity and performance at scale, providing efficient mixed workload consolidation, cost-effectively.

Consolidate workloads, consolidate risk – Putting all your workloads on one storage system can be an issue if there is an outage. InfiniBox has a triple-redundant architecture that is software-defined, providing 100% availability. SLA-based guarantees are provided for performance, availability, and cyber resilience.

New architectures, technologies and capabilities make storage workload consolidation more feasible than in the past. IT organizations can dramatically reduce their OpEx if they can cost-effectively consolidate different types of workloads with different I/O profiles onto a single system, which is what Infinidat does best!

¹ IDC White Paper, Sponsored by Infinidat, The Business Value of Infinidat Storage, Doc. #US49976922, February 2023

² IDC Perspective: What to Look for When Considering Enterprise Storage Workload Consolidation, Doc # US48670822, January 2022

³ VMware. "VMware Server Virtualization and Consolidation." <https://www.vmware.com/solutions/consolidation.html>, Accessed March 9, 2023