Western Digital.

SOLUTION BRIEF

Push The Performance of Your vSphere Cluster With OpenFlex® NVMe®-oF Composable Infrastructure

Highlights

- Gives your business a boost by accelerating HCI applications with predictable performance
- Lowers Capex costs by providing optimal usage of HCI server software licenses
- Allows shareable high-performance storage to be scaled independent of compute

Challenges

- Growing storage requirements add cost and complexity
- Inflexible legacy solutions can't keep pace with growing volumes of unstructured data
- Public cloud options won't work for many businesses

Solution

- Running VMware vSphere clusters on Western Digital OpenFlex® NVMe®-oF Composable Infrastructure enables performance-hungry applications to thrive
- Disaggregation of storage delivers a cost-effective all-flash storage solution for vSphere clusters that provides extreme scalability across 100s of VMs
- Performance-sensitive applications thrive on NVMe-based vSphere clusters that can aggregate 100 GB/s from a single OpenFlex system

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Flash Is the Path to Higher Performance

Flash technology has become the default choice for organizations looking to improve performance for their most demanding workloads. But, while flash offers major improvements over legacy storage, without a modern shared storage infrastructure, you're getting only a fraction of the performance that flash is capable of.

NVMe-oF Unlocks The Full Potential Of Flash

NVMe-over-Fabrics (NVMe-oF) is a networked storage protocol that allows storage to be disaggregated from compute to make that storage widely available to multiple applications and servers and unlock the full potential of flash. By enabling applications to share a common pool of storage capacity, data can be easily shared between applications, or needed capacity can be allocated to an application regardless of location. Exploiting NVMe® device-level performance, NVMe-oF promises to deliver the lowest end-to-end latency from application to shared storage. NVMe-oF enables a composable storage infrastructure that can deliver the data locality benefits of directly attached NVMe storage (low latency, high performance) while providing the agility and flexibility of sharing storage and compute. From transaction processing to real-time analytics to machine learning and beyond, NVMe-oF can push your data strategy to the next level.

Predictability and High Performance for Diverse Workloads

To support the business needs of today and tomorrow, you need a digital infrastructure that can be upgraded and scaled to support any data-driven workload. You must also eliminate inefficient storage silos by implementing a storage infrastructure that can accelerate and consolidate multiple workloads of any type – from traditional (Oracle, SAP, Microsoft) to modern (containerized) and even to mainframe.

VMware® vSphere is an industry-leading compute virtualization platform. vSphere enables application modernization by allowing system architects to build private clouds with a hyperconverged, scale-out storage model. This model removes the need for a costly and high-latency external SAN, replacing it with a more flexible and easy-to-scale, software-based storage solution for VMware hyperconverged systems.

OpenFlex® Simplifies the Management of vSphere Storage

Integrating an OpenFlex NVMe-oF Composable Infrastructure with the VMware hypervisor provides a scalable, tunable storage subsystem for on-premises virtualized clusters. Each node provides storage to a shared pool, as well as CPU resources for running virtual machines. The hyperconverged aspect effectively moves the storage control from a traditional storage administrator and places it in the hands of the virtualization team. The virtualization team can easily tune storage performance and capacity independently to meet the variable performance requirements of different applications running on the cluster. The scalable host interfaces and easy-to-integrate, understand and manage storage configuration features make OpenFlex systems a natural choice for vSphere. The composable OpenFlex architecture allows storage to be disaggregated from compute, enabling applications to share a common pool of storage capacity. Data can easily be shared between applications and needed capacity can be allocated to an application regardless of location.

Cost-Effectively Scaling VM Storage Capacity

Data being generated each year continues to astound, and it shows no sign of slowing in the future. As data centers and organizations continue to expand their data collection capabilities, their storage needs will grow with them. Data centers provide an obvious solution for companies struggling to manage the vast amounts of data they're gathering on customers and user behavior. With more hyperscale facilities capable of storing the massive amounts of data being built around the world, the demand for storage is clearly driving data center market growth.

With an OpenFlex NVMe-oF Composable Infrastructure, scaling storage has never been so easy. The vSphere virtualization team can aggregate and share large pools of data center resources over distance, while also allowing for more granular resource management and automation at the stack level. Western Digital with VMware vSphere builds up an expansive system designed to dynamically maximize resource utilization in the VMs and performance wherever physical hardware resides, across Ethernet.

A Winning Partnership for Hyperconverged Infrastructures

VMware is an industry leader in implementing virtualization for hyperconverged infrastructures, but it needs a powerful storage platform to reach its full potential. OpenFlex NVMe-oF Composable Infrastructure provides the storage platform needed to get data insights and business outcomes faster. For the highest-performance applications, such as databases and big-data analytics workloads, consider an all-flash vSphere cluster powered built upon an OpenFlex Composable Infrastructure.

Get Started

For more information on how VMware vSphere combined with OpenFlex NVMe-oF Composable Infrastructure can turbo-charge your hyperconverged infrastructure and improve business operations, visit westerndigital.com/platforms.

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[1] One GB is equal to one billion bytes and one TB equals 1,000GB (one trillion bytes). Actual user capacity may be less due to operating environment.