

Cost Effective All-Flash Ceph® Solution Powered by OpenFlex™ Data24 NVMe-oF™ Storage Platform



Challenges

- Increasing application demands are pushing Ceph environments past the performance capabilities of HDD or SSD storage capabilities

Highlights

- Hyper-accelerated Ceph enables more workloads to be migrated to scale-out storage
- Extends the high performance of NVMe™ flash to shared storage for Ceph
- Provides low-latency sharing of NVMe SSDs over a high-performance Ethernet fabric to deliver similar performance to locally attached NVMe SSDs
- Lowers OPEX costs with dramatic savings in power, cooling and management
- 24 NVMe SSDs provide up to 368TB¹ capacity in a 2U unit that allows up to six hosts to be attached without a switch

Solution

Western Digital's OpenFlex Data24 NVMe-oF Storage Platform is a performance-optimized Ceph storage solution that provides an all-flash scale-out solution that can meet the TCO requirements of even the strictest environments.

¹ One terabyte (TB) is equal to one trillion bytes. Actual user capacity may be less due to operating environment.

Ceph on OpenFlex Data24 NVMe-oF Storage Platform

Enterprises and cloud providers are using Ceph configurations as their preferred open-source, scale-out, software-defined storage architecture. Unfortunately, the very nature of a scale-out system involves the possibility of server sprawl and the associated infrastructure headaches of increased power, cooling, rack space and management.

Western Digital's OpenFlex Data24 NVMe-oF™ Storage Platform enables Ceph storage environments to address increasing end-user performance requirements and avoid the issues associated with server and storage sprawl by extending the high performance of NVMe flash to shared storage. Instead of placing storage in a single SAN with limited connectivity and high network latency, storage is instead distributed among industry standard servers connected to each other and the rest of the network with ultra-high-speed Ethernet.

Ceph Needs Flash Acceleration

Flash technology has revolutionized the performance of storage systems and NVMe-oF technology extends flash storage to its full potential. The OpenFlex Data24 NVMe-oF Storage Platform provides the flexibility to meet varying requirements depending on data workload and performance requirements and is built to deliver screaming performance in software-defined storage environments. With low latency and consistently high bandwidth, data is accelerated to the speed of flash and is shareable with up to six hosts without a switch.



OpenFlex Data24 NVMe-oF Storage Platform

Reducing Top-Line Costs

Many customers, leveraging contributions from Western Digital and the community, are increasingly migrating more workloads to Ceph, whose performance requirements cannot be met by traditional storage media. The OpenFlex Data24 is designed to provide customers with the performance needed to accelerate their business workloads by dramatically speeding up I/O operations. Faster I/O allows each server to handle more transactions resulting in the CPU spending less time waiting for data. The increased performance provided by all-flash NVMe storage enables higher workload volumes while using fewer CPU resources—resulting in a reduction of the number of servers needed in your data center. Server resource consolidation means cutting capital and operational costs with fewer servers to power, cool, license and maintain.



Ultrastar DC SN840 NVMe SSDs

Ultrastar® DC SN840 NVMe SSDs

At the core of the OpenFlex Data24 NVMe-oF Storage Platform are Western Digital Ultrastar DC SN840 NVMe SSDs. The Ultrastar DC SN840 is a performance NVMe SSD targeting cloud compute and enterprise workloads that require low latency to data and high availability of data. The DC SN840 is Western Digital's 3rd generation of performance NVMe SSD for data center and extends Western Digital's leadership in dual-port architecture by vertically integrating proven flash controllers. Utilizing 96-layer 3D TLC NAND, it is available in capacities from 1.6TB to 15.36TB in a standard, front-loading 2.5" U.2 form factor.

Conclusion

Running Ceph on OpenFlex Data24 NVMe-oF Storage Platforms provides immediate and obvious performance improvement while introducing a whole host of operational, management and data protection benefits. These allow you to reap the benefits of open source software-defined storage while maximizing the efficiency of your business by improving end-user experiences, increasing productivity and reducing storage costs across the environment.

For more information on how the OpenFlex Data24 NVMe-oF Storage Platform can turbo-charge Ceph environments and improve business operations, visit [westerndigital.com/platforms](https://www.westerndigital.com/platforms)

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