Western Digital.

Western Digital.
Ultrastar® DC ZN540
DATA CENTER NVMe™ ZNS SSD

ZONED STORAGE

2.5-inch U.2, 15mm, NVMe™ ZNS SSD

Features

- Western Digital dual-port NVMe 1.3c compliant controller; PCIe 3.1
- Western Digital 96-Layer 3D TLC NAND
- ZNS Command Set 1.0 specification (TP 4053, TP 4076)
- Up to 4x performance improvement and up to 2.5x Quality of Service (QoS) improvement over conventional SSDs
- Linux® library command set maintained at zonedstorage.io

Applications and Workloads

- Data bases and key-value storage
- Persistent storage for VMs and containers
- File and Object storage applications in multi-tenant systems
- Serialized data streams, i.e. video, event stream processing
- Cloud Services, IoT
- Artificial Intelligence/Machine Learning

Zoned Storage for the Zettabyte Era

Zettabytes of data generated by IoT, 5G, sensors, edge computing, and AI/ML are the fuel that drives the global economy. Traditional data center architecture presents a challenge, it does not scale effectively to store and extract value from these enormous quantities of data. Zoned Storage offers a solution – a method to help store the incredible growth of data in cloud and enterprise data centers. Zoned Storage enables cloud service providers and enterprise data center customers to architect more efficient, agile, and scalable data centers to address growing data demands while lowering total cost of ownership (TCO).

NVMe Zoned Namespaces (ZNS) is the new industry standard for Zoned Storage SSDs. NVMe ZNS enables the host to manage all internal data placement which reduces the Write Amplification Factor (WAF), and thus leads to significantly higher QoS for applications. ZNS defines the drive's capacity into multiple independent zones which are written sequentially with a standard command set. Zoned Storage is a standards-based architecture which takes a unified approach to storage, leveraging both Shingled Magnetic Recording (SMR) in HDDs and ZNS for SSDs.
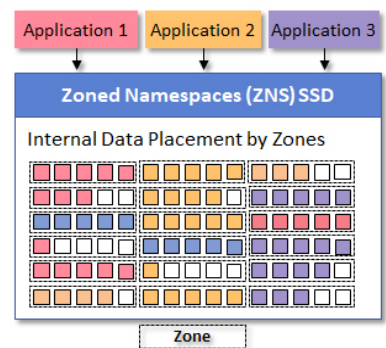
Zoned Storage for Cloud and Enterprise Data Center Customers

The Ultrastar® DC ZN540 ZNS NVMe SSD is Western Digital's zoned storage SSD for cloud and enterprise data center customers. It implements the ZNS command set as defined by the NVM Express™ (NVMe) organization. It is available with a vertically integrated dual-port controller for storage systems.

Ultrastar DC ZN540 offers these benefits:

- Up to 4x throughput and 2.5x QoS Improvement over conventional data center SSDs
  - Reduces Write Amplification Factor
- Maximizes Scale and Utilization
  - Improves drive utilization with multi-tenancy via zones
- Based on Industry Standards
  - NVMe ZNS leverages SMR HDDs software stack
- Reduces TCO
  - Reduced overprovisioning provides more usable capacity

Open Community and Ecosystem Backs ZNS SSDs

Western Digital is committed to maintain an open community and flourishing hardware and software ecosystem for ZNS SSDs at: http://zonedstorage.io/

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