Efficient, High-Performance, and Reliable Data Storage for Virtual Infrastructures

Challenge Summary

VMware ESXi servers require high-performance data storage devices to store and run virtual machines. VMware is deployed in a variety of scenarios with different connectivity and capacity requirements.

Benefits Summary

- VMware certified storage for ESXi
- Efficient and dense—requires lower power and less rack space
- Low-cost storage platform to build on for VMware
- High performance and scalability along with built-in data protection

Seagate® storage systems combined with VMware ESXi create efficient, high-performance data solutions in a dense package to comply with modern data center space and power limitations.

Seagate storage systems have been certified by VMware as VMware Ready for use as primary data storage with their popular ESXi server software. These systems provide an efficient, low-cost storage platform to build on for VMware ESXi and deliver high performance and scalability along with built-in data protection.

Say Hello to Versatile VMware ESXi Storage

Seagate® is a VMware Technology Alliance Partner and offers a variety of SAN (Storage Area Network) and DAS (Direct Attached Storage) enterprise storage systems ideally suited for use as primary VMware ESXi storage. The Seagate Exos® X product line is comprised of a family of either 2U or 5U form-factor chassis using Seagate dual RAID controllers, delivering high performance, resilient, self-healing technology in Fibre Channel or iSCSI SAN solutions. The Seagate Exos E product line offers a family of either 2U or 5U form-factor chassis with 12Gb/s SAS interfaces to enable direct attached expansion to servers and data protection solutions. The Seagate Exos E and Exos X product lines support their capacity-leading nearline disk drives and can also be configured as hybrid storage by adding Seagate's high-performance enterprise SSDs. Seagate enterprise storage systems are available from selected distributors worldwide with a variety of pre-integrated Seagate enterprise nearline capacity-optimized disk drives and high-performance SSDs.

The Seagate Solution

Seagate offers a variety of SAN and DAS enterprise storage systems that are ideal solutions for VMware ESXi primary and archive storage, delivering high performance, scalability, and built-in data protection. Available from selected distributors worldwide, they feature a variety of Seagate pre-integrated enterprise nearline capacity-optimized hard drives and high-performance SSDs.

Seagate Exos Corvault™ A high performance, self-healing block storage system that delivers multi-petabyte capacity, five-nines reliability, and hyperscale efficiencies for a scale-out storage solution. Combining Seagate's ADAPT data protection with Autonomous Drive Regeneration (ADR) technology, hard drives can be automatically renewed, reducing human intervention and e-waste. Redundant active-active controllers with erasure coding ensure data durability and consistent performance.

Seagate Exos® X A full featured Storage systems provides petabyte-scalable, rack-mounted block storage with advanced data protection options and an abundance of storage features powered by VelosCT™ ASIC-driven controllers. A value-rich solution for applications that require massive capacity, high performance, low latency, and always-on resiliency—perfect mass storage for conventional data centers and cloud infrastructure applications.

Available in 2U, and 5U enclosures that are expandable for up to 336 drives, Seagate's Exos X storage controllers provide flexible connectivity options with iSCSI, Fibre Channel or SAS options. These capacity-optimized disk and hybrid disk/flash arrays combine HDD and SSD storage with integrated data protection options using Seagate's Advanced Distributed Autonomic Protection Technology (ADAPT) for erasure coding, ADR to automatically renew failed drives in place, or traditional RAID options.

Seagate Exos E Used as expansion units for Exos X systems, the Exos E is a high-performance SAS-based expansion array that supports both SSDs and HDDs and provides throughput of 28.8Gb/s with dual 12Gb/s SAS controllers for maximum throughput. Available in 2U and 5U form-factors and expandable to hold up to 240 drives (2U) or 336 drives (5U),

Certified by VMware as primary data storage solutions for their popular ESXi server software, offering an efficient, low-cost storage platform to build upon. All of Seagate's enterprise storage systems are built for demanding workflow. Systems include efficient deployment and administration, a comprehensive software stack, active-active redundant components (hot-standby spare) with automatic failover and redundant hot-swap of key components. Enterprise system management features ensure they're simple to maintain while Seagate's patented AcousticShield™ technology (available in certain models) enables maximum performance from every drive.

Seagate Drive and System Benefits

Seagate storage systems provide the following storage benefits to VMware ESXi servers:

- Certified for VMware features including VMware vSphere® Storage APIs–Array Integration (VAAI) compliant storage space reclamation with SCSI UNMAP support

- High-density performance and scalability that complies with the rack space and power constraints of modern data centers and server closets

- High-performance, flexible connectivity options for any VMware environment with SAS, iSCSI, and fibre channel

- Seagate ADAPT data protection with ADR technology where hard drives can be automatically renewed, reducing human intervention and e-waste

- High-density solutions built for the modern data center or server closet

- Unfettered data access with dual redundant controllers capable of achieving superior sequential read and write performance

- Seamless data center scalability with single add-on enclosures that host the newest drive technologies and capacities

- Thin provisioning saves on storage costs by dedicating storage only when needed

- Virtual storage pools streamline management

- Improved performance for read-intensive workloads while minimizing SSD cost

- SED- and FIPS-capable devices extend data security with array-based data-at-rest encryption

- Auto tiering (with optional software bundle) accelerates performance with SSDs while providing the cost and capacity benefits of HDDs

- Snapshots can be called through vCenter. Snapshots (with optional software bundle) reduce Recovery Point Objective (RPO) and Recovery Time Objective (RTO) with efficient, block-based hardware snapshots

- Asynchronous replication (with optional software bundle) replicates data between arrays for business continuity and disaster recovery

- Easy to setup, maintain, and expand

Why Seagate ADAPT data protection with ADR makes a difference with VMware

Seagate CORVAULT and Exos X series with ADAPT and ADR provide flexible, self-healing capable storage solutions for ESXi, delivering data protection innovation, performance, durability, and integration simplicity by:

- Automatically rebalancing of stripe health (REFT) allows more drive failure protection
- Avoiding idle spare drives (all drives provide performance and spare capacity is distributed evenly)
- Allowing mixed drive sizes and easy capacity expansion
- Supporting from 12 up to 128 drives per disk group
- Automatically renewing hard drives to reduce human intervention and e-waste

VMware ESXi Compatibility

Seagate systems have been tested and certified with the following VMware ESXi version:
8.0, 7.0, 6.7 U3, 6.7 U2, 6.7 U1, 6.7, 6.5 U3, 6.5 U2, 6.5 U1, 6.5, 6.0 U3, 6.0 U2, 6.0 U1, 6.0, 5.5 U3, 5.5 U2, 5.5 U1, 5.5

The following Seagate systems have been certified for use with VMware ESXi:

- Exos CORVAULT

- Exos X Systems with 4006 Controllers (ADAPT and ADR)

- Exos E Expansion Enclosures

For the most up to date listing and more detailed VMware version support, please consult the VMware compatibility database directly: **VMware compatibility guide.**

In Conclusion

The Seagate/VMware ESXi partnership allows Seagate to offer an extensive menu of high-density systems that act as primary VMware ESXi storage—enabling data centers to increase efficiency and reduce TCO while harnessing enormous capacity, performance, and security.

Ready to Learn More?

Visit us at **www.seagate.com**

For more information on Seagate Exos Systems, visit:
https://www.seagate.com/enterprise-storage/systems/exos/

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