ThinkSystem DE Series Hybrid Flash Array

High-performance, scalable hybrid storage solutions for modern workloads

The Challenge

To differentiate your organization from the competition and speed time-to-market, you need quick and valuable insights from your core applications, despite a range of mixed workloads. These applications are your key to success, and for that, you need data storage systems with extreme application performance and nonstop data availability. And that's not all. You also need to consider factors like system capacity, simplicity, and efficiency.

The Solution

The Lenovo ThinkSystem DE Series Hybrid Flash Arrays are engineered for workloads ranging from high-IOPS or bandwidth-intensive streaming applications to high-performance storage consolidation.

ThinkSystem DE Series Hybrid storage systems combine high capacity with extreme performance, purpose-built for mixed workloads, and designed to achieve up to 99.9999% availability, Lenovo ThinkSystem DE Series systems deliver consistent performance, integrity, reliability, and security, providing a reliable foundation for your organization's data.

Simplicity

ThinkSystem DE Series consists of a family of systems that are defined by their controllers. Extensive configuration flexibility, custom performance tuning, and complete control over data placement enable administrators to maximize performance and ease of use. Key features include:

- Modular and flexible configuration options to support demanding performance and cost requirements
- Leverage flash in an affordable hybrid system for a wide range of mixed workloads
- Browser-based GUI enables you to get access to your data in under 10 minutes
- Simple, flexible administration
- Customize configurations to optimize performance and capacity requirements
- Multiple interface options designed for either direct server attach or network environments
- Enterprise-level redundancy, automated management, and high-availability

ThinkSystem DE Series Hybrid systems are perfectly suited for a wide range of modern enterprise workloads, such as big data analytics, artificial intelligence, technical computing, video surveillance, and backup and recovery.

ThinkSystem

Advanced Data Protection

With Dynamic Disk Pools (DDP) technology, there are no idle spares to manage, and you don't need to reconfigure RAID when you expand your system. It distributes data parity information and spare capacity across a pool of drives to simplify the management of traditional RAID groups.

It also enhances data protection by enabling faster rebuilds after a drive failure. DDP dynamic-rebuild technology reduces the likelihood of another failure by using every drive in the pool for faster rebuilds.

The capability to dynamically rebalance data across all drives in the pool when drives are added or removed is one of the key features of DDP technology. A traditional RAID volume group is limited to a fixed number of drives. DDP, on the other hand, lets you add or remove multiple drives in a single operation.

ThinkSystem DE Series Hybrid models offer advanced enterprise-class data protection, both locally and over long distance, including:

- Snapshot / Volume copy
- Asynchronous mirroring (select models)
- Synchronous mirroring (select models)

Secure Data, Secure Management

All drives get redeployed, retired, or serviced. When this happens, you don't want your sensitive data going out the door with them. Combining local key management with drive-level encryption gives you comprehensive security for data-at-rest with no impact to performance.

The ThinkSystem DE Series gives you the choice of how to manage the drive authentication keys: You can either do it yourself to reduce cost, or you can use a KMIP-compliant external key manager for easy centralized administration.

Simplified Monitoring and Management

ThinkSystem Intelligent Monitoring is a comprehensive, cloud-based digital advisor that simplifies managing and monitoring of performance, capacity, and health in Lenovo ThinkSystem DE, DG, & DM Series systems through features like events, alerts, performance troubleshooting, capacity reporting, and more.

Like any good advisor, ThinkSystem Intelligent Monitoring keeps you informed and highly efficient. It provides constant visibility into the health of your environment, lets you know when attention is required, and gives you clear guidance for any actions. ThinkSystem Intelligent Monitoring alerts, insights, and guidance are available in the web UI for full-featured visibility into system health, best next actions, upgrades, and more.

XClarity Support

Lenovo XClarity™ Administrator (LXCA) is a centralized resource management solution that is aimed at reducing complexity, speeding response, and enhancing the availability of Lenovo® server systems and solutions. Lenovo XClarity Administrator runs as a virtual appliance and provides agent-free hardware management that automates discovery, inventory, tracking, updates, monitoring, and provisioning for Lenovo® server systems, storage, network switches, hyperconverged and ThinkAgile solutions.

Specifications

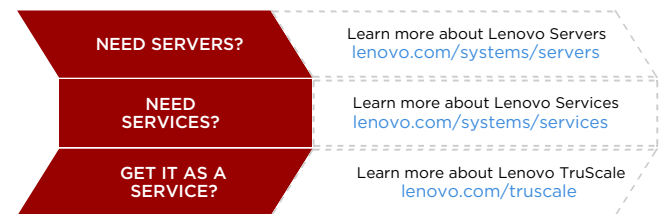|	DE2000H	DE6000H	DE4000H	DE6400H	DE6600H
Form Factor (Controller Enclosure)	2U24 2U12	4U60 2U24	2U24 2U12 4U60	2U24 (NVMe)	2U24 (NVMe)
Maximum Raw Capacity (PB)	1.47PB	8.64PB	3.456PB	4.68PB	7.92PB
Maximum Drives	48 HDDs/96 SSDs	480 HDDs*/120 SSDs *Requires FoD upgrade	192 HDDs/120 SSDs	264 (24 NVMe in Controller Enclosure + 240 NL-SAS HDDs)	444 (24 NVMe in Controller Enclosure + 420 NL-SAS HDDs)
Maximum Expansion	2U12, 2U24: Up to 3 expansions	2U12, 2U24: Up to 7 expansions 4U60: Up to 3 expansions	2U12, 2U24: Up to 7 expansions 4U60: Up to 3 expansions	2U12, 2U24, 4U60: Up to 4 expansions	2U12, 2U24, 4U60: Up to 7 expansions
IOPS	100,000 IOPS	1,000,000 IOPS	300,000 IOPS	670,000 IOPS	2,000,000 IOPS
Sustained Throughput (GBps)	Up to 3GBps	Up to 21GBps	Up to 10GBps	Up to 20GBps	Up to 44GBps
System Memory (GB)	16GB	32GB/128GB	16GB/64GB	16GB per controller	32GB or 128GB per controller
Optional I/O Ports (per system)	4x 12Gb SAS 8x 12Gb SAS 8x 10Gb/25Gb iSCSI 8x 16Gb/32Gb FC	8x 16Gb/32Gb FC 8x 10Gb/25Gb iSCSI 8x 12Gb SAS	8x 16Gb/32Gb FC 8x 10Gb/25Gb iSCSI 8x 12Gb SAS	4x 100Gb NVMe/IB, NVMe/RoCe, SRP/IB and iSER/IB 8x 32Gb FC (supports FC SCSI and NVMe/FC) 8x 25Gb iSCSI	8x 100Gb NVMe/IB, NVMe/RoCe, SRP/IB and iSER/IB 16x 32Gb FC (supports FC SCSI and NVMe/FC) 16x 25Gb iSCSI
System Maximums	Hosts: 256 Volumes: 512 Snapshot copies: 512 Mirrors: 32	Hosts/Partitions: 512 Volumes: 2,048 Snapshot copies: 2,048 Mirrors: 128	Hosts: 256 Volumes: 512 Snapshot copies: 512 Mirrors: 32	Max Hosts: 512 Max Partitions: 256 Volumes: 1,024 Max DDP volume size: 2PiB Max RAID volume size: 30 drives Snapshot copies: 1,024	Max Hosts: 1024 Max Partitions: 512 Volumes: 2,048 Max DDP volume size: 2PiB Max RAID volume size: 30 drives Snapshot copies: 2,048

Specifications

	DE4200H	**DE4800H**
Form Factor (Controller Enclosure)	2U12 2U24	2U12 2U24 4U60
Maximum Raw Capacity (PB)	2.1PB	7.2PB
Maximum Drives	96 HDDs/24 SSDs	300 HDDs/120 SSDs
Maximum Expansion	2U12, 2U24: Up to 3 expansions	2U12, 2U24: Up to 7 expansions 4U60: Up to 4 expansions
IOPS	300,000 IOPS	900,000 IOPS
Sustained Throughput (GBps)	Up to 4.8GBps	Up to 12GBps
System Memory (GB)	32GB	32GB/128GB
Base ports	4x 10/25G iSCSI	4x 10/25G iSCSI
Optional I/O Ports (per system)	8x 12Gb SAS 8x 1/10Gb iSCSI RJ-45 8x 16Gb/32Gb FC	8x 12Gb SAS 8x 1/10Gb iSCSI RJ-45 8x 16Gb/32Gb FC
System Maximums	Hosts/Partitions: 256 Volumes: 512 Maximum DDP Capacity per System: 12PB Maximum DDP Volume Size: 4PB Maximum RAID Volume Size: 4PB Snapshot Copies: 512 Async Mirror Pairs: 32	Hosts/Partitions: 256 Volumes: 512 Maximum DDP Capacity per System: 12PB Maximum DDP Volume Size: 4PB Maximum RAID Volume Size: 4PB Snapshot Copies: 512 Async Mirror Pairs: 32

About Lenovo

Lenovo (HKSE: 992) (ADR: LNVGY) is a US$62 billion revenue global technology powerhouse, ranked #171 in the Fortune Global 500, employing 77,000 people around the world, and serving millions of customers every day in 180 markets. Focused on a bold vision to deliver smarter technology for all, Lenovo is expanding into new growth areas of infrastructure, mobile, solutions and services. This transformation is building a more inclusive, trustworthy, and sustainable digital society for everyone, everywhere.

For More Information

To learn more more about the ThinkSystem DE Series Hybrid Flash Array, contact your Lenovo representative or Business Partner, or visit lenovo.com/storage.

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