ThinkSystem DM Series Hybrid Flash

Unified hybrid flash storage with best-in-class data management

The Challenge

Storage has evolved from an IT afterthought to a crucial component within a company's infrastructure. Businesses are feeling the pressure to keep up with the explosive data growth. Standard hard disks are no longer an acceptable medium to keep up with the always adapting needs a company has when it comes to data management.

Shrinking budgets, overextended staff, and the never-ending growth of data that must be stored and accessed efficiently dictate the need for a new approach.

You still must consider storage uptime, scalability, and cost efficiency, but now you also need to take advantage of flash acceleration, cloud integration, unified support for SAN and NAS, and simplified data mining for competitive advantage.

For those data centers hampered by structural limitations in legacy storage and data architectures, this can be problematic. Traditional storage arrays tend to consist of isolated data silos and cannot meet today's service-level requirements or easily leverage public or private clouds.

The Solution

A new approach to storage is needed that combines high-performance hardware and adaptive, scalable storage software into an integrated solution. It must support current workloads, yet also take advantage of the new applications and evolving IT models.

Lenovo ThinkSystem DM Series Hybrid Flash arrays support a broad range of unified workloads and can seamlessly scale performance and capacity, simplifying the task of managing growth and complexity. This flexibility enables you to place your data in the precise storage environment that delivers the ideal combination of performance, capacity, and cost-effectiveness so you can keep up with changing business needs while meeting your core IT requirements.

For growing organizations that are concerned about budgets and meeting challenging IT needs, Lenovo ThinkSystem DM Series Hybrid Flash systems are the perfect choice.

Lenovo

Extreme availability, non-disruptive operations

Lenovo ThinkSystem DM Series Hybrid Flash arrays are designed to meet high availability requirements for mission critical operations. Through redundant hardware design and advanced software availability features, including snapshotting, replication, and advanced ransomware protection, Lenovo ThinkSystem DM Series Hybrid Flash arrays can be implemented to deliver high application availability. Software and firmware updates, hardware repair and replacement, and load balancing are performed in real-time, with no need for planned downtime. Integrated data protection technologies protect your data, accelerate recovery, and integrate with leading backup applications for easier management.

Reduce your TCO and improve your ROI with technologies such as deduplication, compression, compaction, thin provisioning, and space-efficient snapshot copies — all leading to a lower cost per effective gigabyte of storage.

Integrated Data Protection

Lenovo ThinkSystem DM Series Hybrid Flash arrays include a suite of powerful integrated data protection software to help protect your competitive advantage. Key benefits include:

- Autonomous ransomware protection against cyberattacks and enhanced recovery, based on machine learning.
- Deduplication, compression, and compaction paired with cloning and Snapshot copies to reduce storage costs and minimize performance impact.
- Application-consistent backup and recovery to simplify application management with SnapCenter.
- Flexibility and efficiency to support backup, data distribution, and disaster recovery with SnapMirror.
- Zero data loss and transparent application failover with SnapMirror active sync leveraging simple administration and platform flexibility to retain high performance and business resiliency.
- Synchronous replication with MetroCluster software — an industry leading capability for all-flash arrays that delivers zero recovery point objective (possible data loss) and near-zero recovery time objective for mission-critical workloads.
- The ability to meet all your data compliance and retention requirements via SnapLock.

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, and 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

A high-availability (HA) pair consists of two nodes in a single ThinkSystem DM Series system

Scale-Out	**DM7100H**	**DM5000H**	**DM5200H**	**DM3010H**
NAS Scale-out	12 HA Pairs/Systems	12 HA Pairs/Systems	4 HA Pairs/Systems	12 HA Pairs/Systems
SAN Scale-out	6 HA Pairs/Systems	6 HA Pairs/Systems	4 HA Pairs/Systems	6 HA Pairs/Systems
Per-system specifications (high-availability dual controller HA Pair)				
Maximum Drives (HDD/SSD)	720	144	480	144
Maximum Raw Capacity (PB)	11.2PB	2.3PB	11.5PB	2.3PB
Maximum Onboard Flash Cache Based on NVMe Technology (TB)	4TB	2TB	4TB	2TB
Maximum Flash Pool (TB)	24TB	24TB	TBD	24TB
Controller Form Factor	4U+2U Enclosure	2U24	2U24 + 2U12 or 4U60 Enclosure	2U12
PCIe Expansion Slots	10	0	8	0
Onboard I/O: UTA 2 (8Gb/16Gb FC, 1GbE/10GbE/25GbE, or FCVI ports MetroCluster Only	0	8	Not Applicable	0
FC Target Ports (64Gb autoranging)	32	Not Applicable	16	8
FC Target Ports (32Gb autoranging)	32	Not Applicable	16	8
FC Target Ports (16Gb autoranging)	8	Not Applicable	16	8
25GbE Ports (10GbE autoranging)	24	Not Applicable	16	8
10GbE Ports (maximum)	32	8	16	0
10GbE BASE-T Ports (1GbE autoranging)	16	8	16	8
100GbE ports (40GbE autoranging)	16	Not Applicable	12	Not Applicable
12Gb / 6Gb SAS Ports (maximum)	32	4	16	6
OS Version	9.7 and later	9.4 and later	9.16.1 or later	9.13.1
Expansion Shelves	DM240S, DM120S, DM600S			
Protocols Supported	FC, iSCSI, NFS, pNFS, CIFS/SMB, S3			
Host/Client Operating Systems Supported	Microsoft Windows, Linux, VMware ESXi			

Some ports are reserved for Cluster Interconnect. Disk Expansion will reduce host ports.

Software Features

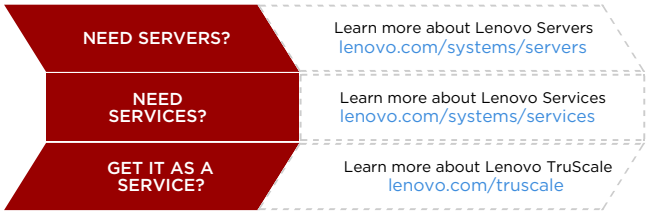
Feature	Function	Benefits
Autonomous Ransomware Protection	Provides built-in, robust features that detect ransomware activity, prevent its spread, and enable quick recovery – including automatically taking snapshots and alerting administrators when abnormal file activity is detected.	Automatically protects against ransomware attacks and enables quick recovery to avoid paying the ransom.
Data Reduction	Utilizes data compaction, compression, and deduplication to reduce the storage space needed for your data.	Reduces the amount of storage that you need to purchase and maintain.
Unified Data Management	Onboard management of Block, File, and Object data.	Flexibility to manage and store every type of data on one system and one management interface.
FlexClone®	Instantaneously creates a file, LUN, and volume clones without requiring additional storage.	Saves time in testing and development and minimizes storage use.
FlexGroup™	Enables a single namespace to scale up to 20PB and 400 billion files.	Maintains consistent high performance and resiliency for compute-intensive workloads.
FlexVol®	Creates flexibly sized volumes across a large pool of disks and one or more RAID groups.	Enables storage systems to be used at maximum efficiency and reduces hardware investment.
QoS (adaptive)	Easy setup of QoS policies; automatically adjusts storage resources based on work-load changes.	Simplifies operations and maintains consistent workload performance within IOPS boundaries.
RAID-TEC and RAID DP Technologies	Provides triple parity or double-parity RAID implementation to protect against data loss.	Protect data without the performance impact of other RAID implementations.
SnapCenter®	Provides host-based data management of Lenovo storage for databases and business applications.	Offers application-aware backup and clone management; automates error-free data restores.
SnapMirror®	Enables automatic, incremental asynchronous, and synchronous data replication.	Provides flexibility and efficiency to support backup, data distribution, and disaster recovery.
SnapRestore®	Rapidly restores single files, directories, or entire LUNs and volumes from any Snapshot copy backup.	Instantaneously recover files, and complete volumes from your backup with SnapCenter and supported database plugins.
SnapLock®	Provides WORM file-level locking, preventing changes and deletion of the file.	Supports regulatory compliance and organizational data retention requirements. Enables air-gap separation of Snapshot copies for enhanced ransomware protection and quick recovery from an attack.
Volume and Aggregate Encryption	Provides built-in FIPS 140-2 data-at-rest encryption.	Easily and efficiently protect at-rest data by encrypting any volume or aggregate on DM Series system.

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 about the Lenovo DM Series Hybrid Flash, contact your Lenovo representative or Business Partner, or visit lenovo.com/storage. Or for detailed specifications, read the Product Guides.



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