ThinkSystem DM Series Hybrid Flash

Hybrid Flash - fast, flexible, reliable, and secure

The Challenge

Enabling the data-driven business across flash, disk, and cloud

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 storage.

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

Unified scale-out hybrid storage with best-in-class data management

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.

DM Series Hybrid systems 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 systems are the perfect choice.

Lenovo

Scale and adapt to meet changing needs

Expand from a base of two nodes to a 6-array cluster containing up to 13.8PB (SAN) or a 12-array cluster containing up to 27.6PB(NAS).For flexible development as required by your organization, you can cluster DM Series all-flash models.

Adding and replacing storage systems and components is non-disruptive. This enables you to perform updates while running your usual workloads, without having to worry about maintenance windows.

Extreme availability, non-disruptive operations

Lenovo ThinkSystem DM Series 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, ThinkSystem DM Series 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.

MetroCluster expands your data protection to eliminate the risk of data loss by synchronously mirroring data between locations for nonstop availability of information. You can configure a MetroCluster storage array to mirror data within a single data center, or between two different locations up to 700 km away.

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.

Optimize hybrid cloud deployment

Many organizations today use cloud IT models as a service-oriented IT architecture to enhance return on investment and assets. For this reason, we optimized DM Series hybrid arrays running for private and hybrid cloud with secure multitenancy, quality of service (QoS), nondisruptive operations, and easily defined tiers of service.

Simplified data management and monitoring

Lenovo XClarity™ Administrator is a centralized resource management solution that is aimed at reducing complexity, speeding response, and enhancing the availability of Lenovo® server systems and storage solutions*. Lenovo XClarity™ Administrator allows users to reduce complexity, speed response times, and enhance the availability of Lenovo storage and server systems and solutions, providing automated agent-less discovery, inventory, monitoring, and additional platform-specific functions across multiple systems.

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. A single XClarity Administrator instance supports managing a maximum of 1,000 devices.

ThinkSystem Intelligent Monitoring is an intuitive digital advisor for storage solutions that helps to monitors and predicts capacity usage, helping to uncover risk factors and prevents issues before they affect your business. Identify trends to proactively optimize protection, efficiency, and upgrades through a single web-accessible platform. Intelligent capacity and performance monitoring will allow you to stay ahead of the curve and plan accordingly to meet your business's growth needs.

Specifications

Scale-Out	**DM7100H**	**DM5000H**	**DM3000H**	**DM3010H**
NAS Scale-out: 12 arrays				
Maximum Drives (HDD/SSD)	8640	1728	1728	1728
Maximum Raw Capacity	134PB	27.4PB	27.6PB	27.6PB
Maximum onboard Flash Cache Based on NVMe Technology	48TB	24TB	24TB	24TB
Maximum Flash Pool	288TB	288TB	288TB	288TB
Maximum Memory	3072GB	768GB	768GB	1536GB
SAN Scale-out: 6 Arrays				
Maximum Drives (HDD/SSD)	4320	864	864	864
Maximum Raw Capacity	67PB	13.7PB	13.8PB	13.8PB
Maximum Onboard Flash Cache Based on NVMe Technology	24TB	12TB	12TB	12TB
Maximum Flash Pool	144TB	144TB	144TB	144TB
Maximum Memory	1536GB	384GB	384GB	768GB
Cluster Interconnect	2x 100GbE	4x 10GbE	4x 10GbE	4x 25GbE
Per High Availability Pair Specifications	Active-Active Dual Controller			
Maximum Drives (HDD/SSD)	720	144	144	144
Maximum Raw Capacity	11.2PB	2.3PB	2.3PB	2.3PB
Maximum Onboard Flash Cache Based on NVMe Technology	4TB	2TB	2TB	2TB
Maximum Flash Pool	24TB	24TB	24TB	24TB
Controller Form Factor	4U	2U / 24 drives	2U / 12 drives	2U / 12 drives
ECC Memory	256GB	64GB	64GB	128GB
NVRAM	32GB	8GB	8GB	8GB
PCIe Expansion Slots	10	0	0	0
Onboard I/O: UTA 2 (8Gb/16Gb FC, 1GbE/10GbE/25GbE, or FCVI ports MetroCluster Only	0	8	8	0
FC Target Ports (32Gb autoranging, maximum)	32	Not Applicable	Not Applicable	8
FC Target Ports (16Gb autoranging, maximum)	8	Not Applicable	Not Applicable	Not Applicable
40GbE Ports (maximum)	Not Applicable	Not Applicable	Not Applicable	Not Applicable
25GbE Ports	24	Not Applicable	Not Applicable	8
10GbE Ports (maximum)	32	8	8	0
10GbE BASE-T Ports (1GbE autoranging) (maximum)	16	8	8	8
100GbE ports (40GbE autoranging)	16	Not Applicable	Not Applicable	Not Applicable
12Gb / 6Gb SAS Ports (maximum)	32	4	4	6

OS Version	9.7 and later	9.4 and 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		
DM Series Hybrid Software	The DM Series software bundle includes a set of products that delivers leading data management, storage efficiency, data protection, high performance, and advanced capabilities such as instant cloning, data replication, application-aware backup and recovery, and data retention.		

Software Features

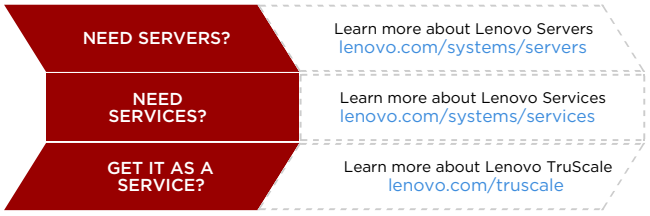
Feature	Function	Benefits
Ransomware Protection	Provides built-in, robust features that detect ransomware activity, prevent its spread, and enable quick recovery – including automatically taking snapshots and alerting administrators when abnormal file activity is detected.	Automatically protects against 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.



 Document number DS0048, published July 18, 2023. For the latest version, go to lenovopress.lenovo.com/ds0048.