

ThinkSystem DM Series All-Flash Array

Unified, all-flash storage for the
AI-driven world



The Challenge

From today's essential business applications to tomorrow's AI and GenAI workloads, organizations must continually improve the speed and responsiveness of key business operations if they are to drive innovation, reduce time to market, and increase customer satisfaction. One key ingredient of this effort is unified all-flash storage, which greatly accelerates critical workloads and boosts productivity.

Data-driven organizations need flexible, efficient hybrid IT infrastructure to ensure secure, fast, continuous data access across the hybrid cloud. However, as all-flash becomes prevalent throughout the data center, it soon becomes apparent that enterprise-grade data management capabilities are critical in a shared environment.

To deliver the ultimate solution, all-flash storage needs to offer robust data management, integrated data protection, and seamless scalability for hybrid cloud environments.

The Solution

Lenovo ThinkSystem DM Series All-Flash arrays are built to handle the most demanding workloads, from crucial business applications to emerging AI and GenAI tasks that drive innovation.

Featuring advanced unified data management, leading ransomware protection, and seamless cloud integration, Lenovo ThinkSystem DM Series systems provide storage designed for the future.

The Lenovo ThinkSystem DM Series delivers trusted reliability and simplicity that enterprises worldwide rely on. With trusted technology from major public clouds, Lenovo's intelligent, secure storage eliminates silos and complexity to effortlessly power your business forward.

Accelerate Your Data at Scale

The Lenovo ThinkSystem DM Series All-Flash arrays support a diverse set of data types and workloads across environments within a single operating system. This unified approach enhances efficiency, eliminates silos, reduces bottlenecks, and delivers unmatched simplicity at scale.

Accelerate the speed of business while increasing operational efficiency:

- Reduce latency by 50% when using end to end NVMe over FC infrastructure.
- Leverage Ethernet infrastructure to reduce latency and lower TCO with NVMe over TCP.
- Tier cold data off your SSDs to lower cost object storage to optimize your flash performance.

Lenovo

Simplify IT operations while transforming data center economics:

- All-flash arrays can slash support and performance-tuning costs by up to two-thirds versus hybrid systems.
- Maximize effective capacity with integrated storage efficiency features, like compression and deduplication.
- Onboard volume encryption, software-based data-at-rest encryption, and multi-factor authentication capabilities.

Deploy flash everywhere with maximum flexibility while retaining the control and security of your data:

- Move data and applications to wherever they run best: on a Lenovo ThinkSystem DM Series system or in the cloud.
- Get the broadest application ecosystem integration for enterprise applications, VDI, database, AI, and server virtualization.
- Integrate flash into your infrastructure non-disruptively, eliminating silos, and scale out as requirements grow.

Lenovo ThinkSystem DM Series All-Flash arrays are ideal for performance critical applications such as Oracle, Microsoft SQL Server, MongoDB databases, VDI, and server virtualization, to data-intensive AI training, tuning, inferencing, and retrieval-augmented generation (RAG) workloads.

Integrated Data Protection

Lenovo ThinkSystem DM Series All-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 with 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 replication, including cloud-native S3 backup.
- 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.

Optimize Your Data with Flexible Design

The Lenovo ThinkSystem DM Series systems provides a wide range of industry-leading storage efficiency features to maximize the effective capacity of your storage investment:

- **Inline data compaction** technology uses an innovative approach to place multiple logical data blocks from the same volume into a single 4KB block. It frees up substantial space for database workloads that have relatively small I/O sizes.
- **Inline compression** has a near-zero performance impact. Detection of incompressible data eliminates wasted cycles.
- **Enhanced inline deduplication** maximizes space savings by eliminating redundant blocks. Some workloads, such as VDI can achieve significant reduction rates.

Whether your performance and capacity needs change or your cloud strategy evolves, your investment is protected:

- DM Series has proven cloud connectivity. Easily tier data between the cloud and on-premises storage for maximum performance and return on your investment.
- Replicate your critical data to the cloud to enhance data protection, security, and compliance.
- Data can be tiered or replicated to multiple cloud vendors, ensuring the best value and cloud features with no vendor lock-in.
- All-flash systems seamlessly cluster with DM Series hybrid systems, enabling you to transparently move workloads between high-performance tiers and low-cost capacity tiers — eliminating any performance silos.
- DM Series enables you to grow and adapt as your business changes. It enables you to intermix different controllers, SSD sizes, and next-generation technologies so your investment is protected.

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.

	DM7200F	DM5200F	DM3200F
NAS Scale-out	12 HA Pairs/Systems	4 HA Pairs/Systems	3 HA Pairs/Systems
SAN Scale-out	6 HA Pairs/Systems	4 HA Pairs/Systems	3 HA Pairs/Systems
Per High Availability Array Specifications	Per-system specifications (high-availability dual controller HA pair)		
Maximum SSDs	120 NVMe	72 NVMe	48 NVMe
Maximum Raw Capacity (PB and TB)	1.8PB	1.1PB	737TB
Maximum Effective Capacity (PiB) (based on 5:1)	6.8PiB	4 PiB	2.8PiB
Controller Form Factor	2U24 NVMe	2U24 NVMe	2U24 NVMe
PCIe Expansion Slots	8	8	8
FC Target Ports (64Gb autoranging)	24	24	24
FC Target Ports (32Gb autoranging)	24	24	24
FC Target Ports (16Gb autoranging)	24	24	24
25 GbE Ports (10GbE autoranging)	24	24	32
10GbE Ports	24	24	24
100GbE ports (40GbE autoranging)	16	16	12
10GbE BASE-T Ports (1GbE autoranging)	24	24	24
Cluster Interconnect	2x 100GbE	2x 100GbE	2x 25GbE
Storage Networking Supported	FC, iSCSI, NFS, pNFS, SMB, NVMe/FC, S3		
Software Version	9.16.1 or later		
Shelves and Media	DM240N, DM242N		
Host/Client OS Supported	Microsoft Windows, Linux, VMware ESXi		

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

Specifications

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

	DM7100F	DM5100F DM5100F SAN	DM5000F DM5000F SAN
NAS Scale-out**	12 HA Pairs/Systems		
SAN Scale-out	6 HA Pairs/Systems		
Per High Availability Array Specifications	Per-system specifications (high-availability dual controller HA pair)		
Maximum SSDs	480 (96 NVMe + 384 SAS)	48 NVMe	144 SAS
Maximum Raw Capacity (PB and TB)	7.34PB	734.4TB	2.2PB
Maximum Effective Capacity (PiB) (based on 5:1)	28PiB	2.9PiB	9.6PiB
Controller Form Factor	4U+2U Expansion (NVMe and SAS supported)	2U24 NVMe	2U24 SAS
PCIe Expansion Slots	10	4	Not applicable
FC Target Ports (64Gb autoranging)	Not applicable	Not applicable	Not applicable
FC Target Ports (32Gb autoranging)	24	16	Not applicable
FC Target Ports (16Gb autoranging)	8	Not applicable	8
25 GbE Ports	20	16	Not applicable
10GbE Ports	32	Not applicable	8
100GbE ports (40GbE autoranging)	12	4	Not applicable
10GbE BASE-T Ports (1GbE autoranging)	16	4	8
12Gb / 6Gb SAS Ports	24	Not applicable	4
Cluster Interconnect	2x 100GbE	2x 25GbE	2x 10GbE
Storage Networking Supported	FC, iSCSI, NFS, pNFS, SMB, NVMe/FC, S3	FC, iSCSI, NFS, pNFS, SMB, NVMe/FC, S3 DM5100F SAN** : FC, iSCSI, NVMe/FC	FC, iSCSI, NFS, pNFS, SMB, S3 DM5000F SAN** : FC, iSCSI
Software Version	9.7 or later	9.8 or later	9.4 or later
Shelves and Media	DM240N, DM240S	DM240N	DM240S
Host/Client OS Supported	Microsoft Windows, Linux, VMware ESXi		

** An optional software license upgrade is available for the DM5100F SAN and DM5000F SAN models to enable NAS support (NFS, pNFS, SMB file and S3 object storage connectivity).

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

Software Features

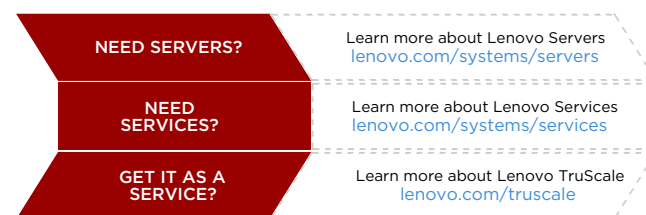
Feature	Function	Benefits
Autonomous Ransomware Protection	Provides built-in, robust features that detect ransomware activity, prevent its spread, and enable quick recovery - including automatically taking snapshots and alerting administrators when abnormal file activity is detected.	Automatically protects 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 All-Flash Array, contact your Lenovo representative or Business Partner, or visit lenovo.com/storage. Or for detailed specifications, read the [Product Guides](#).



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