ONTAP Data Management Software
Harness the power of the hybrid cloud

The Challenge

The need for digital transformation in the data center is putting pressure on many businesses to adapt. Distributed, dynamic, and diverse data require effective and efficient management. For today's data driven world, the data must be on-premises as well as in the cloud.

This demands a modern approach to data storage, because the old architectures no longer work. To make matters worse, this new paradigm must be integrated into the existing environment using existing IT staff and yet somehow reduce costs.

The Solution

Lenovo has partnered with NetApp to use ONTAP enterprise data management software on the new Lenovo ThinkSystem DM Series. ONTAP enables you to harness the full power of the hybrid cloud. This leading software is simple to use and highly flexible, offering efficient storage, powerful data management features, and seamless cloud integration.

The software makes it easy to manage the flow of your data so that it goes wherever you need it, precisely when you need it, to make timely decisions that help your organization. ONTAP helps you overcome the challenges facing your data center by:

- Simplifying the deployment and management of your data
- Future-ready your data infrastructure
- Turbocharging your enterprise applications

Premium and Fundamentals

There are two options for ONTAP for Lenovo customers:

- ONTAP Premium is ideal for customers who require systems with high availability, application aware snapshots and enhanced management capabilities.
- ONTAP Fundamentals will be a great option for someone who wants a unified storage solution with data efficiency features, snapshots and replication.

ONTAP Premium bundle is supported with all of our ThinkSystem DM Series offerings. In addition, DM3000H and DM5000H models also support ONTAP Fundamentals.

Simplify Deployment and Management

Simplifying your processes will increase the overall efficiency of your staff, both for adding new workloads and managing the existing environment. With ONTAP Premium's common set of features across deployment architectures, complex tasks become simple.

For example, you can have Oracle, SAP, Microsoft SQL Server, virtual desktop infrastructure (VDI), and VMware workloads up and running in less than 10 minutes from power-on to serving data. This allows your IT staff to spend more time focusing on business priorities. With ONTAP, when your data doubles in size, it no longer means significantly more work to manage.

Lenovo

Simple, Powerful Management

You get the flexibility to unify data management across your choice of storage architecture, whether DM Series systems or the cloud. You can add capacity seamlessly across both SAN and NAS environments as your business grows.

You also gain the ability to merge all-flash and hybrid flash storage nodes into a larger storage cluster and connect them to the cloud. From there you can nondisruptively move and access your data from whichever nodes deliver the best combination of performance, capacity, and cost efficiency.

The OnCommand software portfolio is designed to help you manage and optimize virtualized private and hybrid cloud environments. It enables you to centrally monitor capacity, availability, performance, and data protection. Storage service analytics supply the data you need to make informed decisions about your storage.

Future-Ready Your Data Infrastructure

ONTAP provides the flexibility you need to design and deploy the ideal storage architecture for your data center; one that matches your evolving business needs:

- All-flash and/or hybrid-flash systems
- Unified workloads
- Cloud Tiering: FabricPool
- In the cloud: ONTAP Cloud Volumes

You can consolidate NAS and/or SAN workloads in any ONTAP environment with no performance impact on data services. ThinkSystem DM Series can transparently scale SAN and NAS from a few terabytes up to 70PB. As your business grows, you can easily scale up or scale out as needed. To scale up, simply add SSD and HDD capacity. To scale out, add more storage controllers to expand your cluster up to 12 arrays seamlessly.

Also, ONTAP enables you to easily manage massive NAS containers. For example, you can use FlexGroup to expand a single namespace to 20PB and 400 billion files with consistent high performance and resiliency. You can also redeploy workloads dynamically to rebalance capacity, improve service levels, and avoid hot spots.

Infinite Storage Operations

Having to take down applications to perform critical tasks is disruptive and expensive. With ONTAP, you get the tools you need to dynamically assign, promote, and expand storage resources — without downtime — throughout an application's lifecycle.

The capability to seamlessly move data between controllers, to add controllers, and to mix generations gives customers unique investment protection. When combined with Lenovo service, customers can deploy storage with an infinite life.

Integrated Data Protection

ONTAP provides Integrated Data Protection (IDP) to safeguard your operations and keep them running smoothly. You get near-instant backup and recovery, as well as efficient data reduction via Snapshot and SnapVault technologies for leading-edge business continuity and disaster recovery. ONTAP Premium also provides MetroCluster and SnapMirror technologies for synchronous and asynchronous replication.

SnapLock software enables write once, read many (WORM) protected storage. This helps you meet stringent compliance and data retention policies. It also provides superior integration with popular applications and enterprise backup tools. Other IDP features include single processes for integrated and unified disk-to-disk backup and disaster recovery using VMware or Microsoft virtualization.

ONTAP's built-in Volume encryption feature offers simple and efficient protection for your at-rest data by encrypting any volume on the system. In addition, ThinkSystem servers provide industry-leading security features to block external security incursions at the hardware level.

Superior Storage Efficiency

ONTAP provides industry-leading storage efficiency. Inline data compression, deduplication, compaction, space-efficient snapshot copies, thin provisioning, replication, cloning technologies, all work together to reduce your storage costs and maximize your effective capacity. In addition, with FabricPool, cold data is automatically tiered across public and private clouds for better space-savings.

Maximized Shared Storage Investments

Even if you have workloads or tenants with different performance, capacity, and security requirements, they can share a consolidated infrastructure to save you time and money. Plus the activity in one tenant partition cannot affect another. With ONTAP multitenancy, you can subdivide a storage cluster into secure partitions; each is governed by the rights and permissions you set.

Adaptive quality of service (QoS) automatically adjusts storage resource levels to respond to changes in workloads, while delivering consistent performance. This enables you to maintain high customer satisfaction, despite the changes.

Make a Simple Transition to ONTAP

ONTAP can streamline your storage operation. It enables you to:

- Use straightforward import processes from third-party storage to ONTAP
- Start fresh with Lenovo servers and storage and ONTAP
- Combine Lenovo storage and third-party storage into seamless arrays using FlexArray

Our experts can help you plan and implement your transition to get the most from ONTAP right out of the box. You can use Lenovo Services or Certified Services Partners, or you can do it yourself by using proven ONTAP tools and processes.
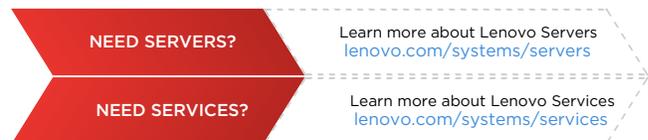
Why Lenovo

Lenovo is the leading provider of x86 systems for the data center. The portfolio includes rack, tower, blade, dense and hyperconverged systems, and supports enterprise class performance, reliability and security. Lenovo also offers a full range of networking, storage, software and solutions, and comprehensive services supporting business needs throughout the IT lifecycle. Consistently ranked #1 in reliability and customer satisfaction, the Lenovo enterprise server, storage, and networking portfolio provides the hardware for businesses that never stand still.

For More Information

To learn more about ONTAP software, contact your Lenovo representative or Business Partner or visit lenovo.com/storage.

To learn more about ThinkSystem DM Series unified storage systems, see the product guides at lenovopress.com/lp0941.

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Specifications

Feature	Function	Benefits
Data Reduction	Utilizes both 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
FlashPool Caching	Creates a mixed-media storage pool by using SSDs and HDDs	Increases the performance and efficiency of HDD pools with flash acceleration
FlexClone	Instantaneously creates file, LUN, and volume clones without requiring additional storage	Saves you time in testing and development and increases your storage capacity
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
MetroCluster	Combines array-based clustering with synchronous mirroring to deliver continuous availability	Maintains business continuity for critical enterprise applications and workloads
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 6 implementation that prevents data loss	Protect your 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 between Lenovo systems	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 recovers files, databases, and complete volumes from your backup
Volume Encryption	Provides FIPS 140-2 data-at-rest encryption that is built into ONTAP	Easily and efficiently protect your at-rest data by encrypting any volume on DM Series system