

Lenovo Solution for SAP HANA with ThinkSystem DM/DE Series Storage

Scalable SAN solution for SAP HANA environments

Enabling the Digital Enterprise

Enabling the digital enterprise and developing business analytic solutions are the key to understanding challenges and responding to them proactively. To develop successful strategies in today's challenging environment, you need more access to critical enterprise insights than ever before. That fact is validated by a 2018 Gartner CIO Agenda survey which revealed BI/analytics as the top CIO priority.¹ In addition, Forrester estimate that 70% of data in the enterprise goes unused.²

And because data volumes are growing exponentially, your technology solutions must scale easily, manage huge volumes efficiently and operate reliably. At the same time, your solutions must enable greater application performance. These are complex demands. But breakthrough technologies can help you meet all these difficult demands now, while still accommodating for future growth. Powered by mission critical servers with next generation Intel® Xeon® processors and enterprise class SAN storage, the Lenovo Solution for SAP® HANA® with ThinkSystem DM/DE Series storage provides outstanding capability to drive enterprise-critical insights in real time.

When combined with Lenovo ThinkSystem servers, the Lenovo Solution for SAP HANA with ThinkSystem DM/DE Series storage is designed to be agile, scalable, and more resilient helping your SAP HANA based applications operate more efficiently to improve your data foundation and help lower total cost of ownership.

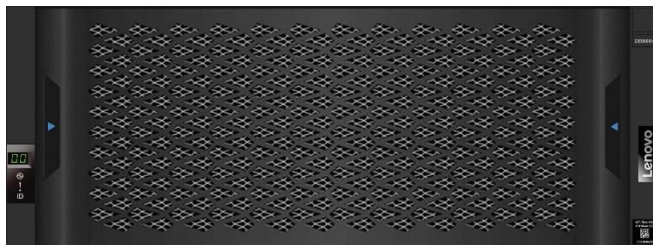
Highlights

- Provides a high performance, cost effective solution to extract strategic insights from your fast-growing data
- Supports entry through high-end configurations and the ability to easily scale as the use of data grows
- Accelerates deployment of SAP HANA with SAP-certified Lenovo ThinkSystem infrastructure
- Lowers TCO with a scalable server and storage platform for your SAP HANA landscape





Lenovo ThinkSystem DM Series Storage



Lenovo ThinkSystem DE Series Storage

Simple, Seamless and Scalable Architecture

To compete in today's dynamic markets, you require a deep understanding of your operational processes, personnel resources, company financials, corporate services and more. As the volume of information expands dramatically, so does the opportunity to gain valuable business insights and to predict challenges before they arrive. Yet meeting continually growing needs requires greater SAP HANA application performance than ever.

The Lenovo Solution for SAP HANA with ThinkSystem DM/DE storage helps you make faster more informed decisions, even with escalating data loads. The solution is designed to maximize your system performance to provide a smarter, more efficient approach to resource management. This results in excellent SAP HANA application value.

Running on fast and powerful ThinkSystem servers with ThinkSystem DM or DE Series storage, SAP HANA software can play a critical role in providing the business insights you need from your SAP Business Warehouse (BW), SAP ERP, SAP S/4HANA® and other SAP application data.

Lenovo ThinkSystem DM and DE Series storage can be deployed as part of a SAP HANA tailored data center integration (TDI). TDI provides SAP HANA customers with greater flexibility to select the server, storage and networking hardware components.

The Lenovo ThinkSystem DM and DE Series storage arrays are well equipped for demanding SAP HANA environments. These elite storage systems deliver on the customer requirements for an SAP HANA deployment, which include: Lower TCO, Fast Time to Value, High Service Levels and Efficient Disaster Recovery capabilities. They also offer superior reliability through their six 9's of availability and serviceability features.

DM Series: Strong Data Management with Block and File Support

The ThinkSystem DM Series improves customers TCO and time to value with their advanced data management features offered through ONTAP. The Unified Architecture of block and file workloads allows customers to reduce their hardware requirements and utilize one management system for both NAS and SAN deployments.

The inline data reduction technologies built into DM Series provide an average of 3x space savings, and the following benefits:

- 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.
- Detection of incompressible data eliminates wasted cycles.
- Enhanced inline deduplication maximizes the space savings by eliminating redundant blocks.

Deploying SAP HANA on DM Series All Flash systems provides customers with additional features that develop and enhance the built in data protection and disaster recovery capabilities that SAP HANA offers.

Users will benefit from backup and recovery based on storage Snapshot copies using ONTAP SnapCenter. The built-in Asynchronous and Synchronous replication provide storage-based Disaster Recovery capabilities. When running SAP HANA on the DM Series All Flash Arrays, customers are protected from unexpected events by simply utilizing the included features on DM Series.

DM Series enables you to grow and adapt as your business changes. It offers the flexibility to scale up as your performance needs grow or scale out if you require additional storage. Customers can effortlessly intermix different controllers, SSD sizes, and next-generation technologies so your investment is protected.

SAP users running development projects frequently receive requests to provision additional test or sandbox systems. Previously, this required provisioning those systems using resources in the customer's data center. Now, you can leverage the DM Series FlexClone feature which creates thin, instantaneous clones of data, so development/test doesn't need additional storage for a test environment.

“Running SAP HANA on Lenovo systems gives us a strong competitive edge in both domestic and foreign markets.”



— David Bevc, Head of Cloud Services, Unistar PRO³

DE Series: Maximum Performance for Block Storage at an Affordable Price

It's critical that key business applications run with maximum efficiency, because they directly affect time-to-market, revenue, and customer satisfaction. ThinkSystem DE Series storage arrays maximize efficiency by combining high performance with industry-leading, enterprise-proven availability features.

DE Series deliver up to 1.0M sustained IOPS and response times measured in mere microseconds. They also generate up to 21GBps of read throughput, enough for even your most bandwidth-intensive workloads. Surprisingly, this incredible performance comes at an affordable price, making the DE Series the ideal solution for cost-conscious businesses.

The DE Series also sport the following availability features:

- Fully redundant architecture with automated failover
- Intuitive storage management with comprehensive tuning functions
- Advanced monitoring and diagnostics with proactive repair
- Snapshot copy creation, volume copy, and asynchronous mirroring for data protection.
- Data assurance for data integrity and protection against silent data corruption

DE Series supports dynamic drive pool (DDP) technology, allowing storage administrators to simplify RAID management, improve data protection, and maintain predictable performance under all conditions. This innovative technology minimizes the performance impact of a drive failure and can return the system to optimal condition up to eight times faster than with traditional RAID.

With DE Series, all management tasks can be performed while the storage remains online with complete read/write data access. Storage administrators can expand the storage capacity, make configuration changes, or conduct maintenance without disrupting I/O to attached hosts.

Complementary Hardware

The Lenovo Solution for SAP HANA with ThinkSystem DM/DE Series Storage can be deployed with older, existing Lenovo HANA systems or with any TDI server listed on the [Certified and Supported SAP HANA Hardware Directory](#). That list includes a wide range of Lenovo ThinkSystem servers, including the ThinkSystem SR950 and SR650.

The powerful 8-socket SR950 mission critical server is ideal for your most demanding SAP HANA deployments, providing superior capability and greater business value. The SR950 provides maximum performance, regularly holding SAP BWoH (SAP Business Warehouse edition for SAP HANA) world performance benchmarks⁴, which include data load, query throughput and query runtime.

Smaller SAP HANA deployments can be run on the 2U, 2-socket SR650, which provides extensive flexibility to fit almost any customer environment.

Used by SAP for next generation SAP HANA development, Lenovo ThinkSystem servers are high performance systems, consistently holding numerous world performance benchmarks. Engineered for always-on productivity, ThinkSystem servers are consistently ranked #1 in x86 server customer satisfaction⁵ and #1 in x86 server reliability⁶.

Connecting the servers to the storage in this solution can be easily accomplished with network switches from the Lenovo RackSwitch portfolio. The recommended offering for this solution is the NE1032, a 32 port 10GbE switch combining intelligent features with low TCO.

Complementary Software

The Lenovo Solution for SAP HANA with ThinkSystem DM and DE Series Storage offers a choice of operating system support allowing you to choose the operating system that best fits your datacenter requirements. You can choose SUSE Linux Enterprise Server for SAP Applications or Red Hat Enterprise Linux for SAP HANA, and the appropriate subscription and support.

System management is achieved through Lenovo XClarity Administrator, 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 provides agent-free hardware management for Lenovo servers, storage, and network switches.



Lenovo ThinkSystem SR950,
ThinkSystem SR650, and
ThinkSystem NE1032 RackSwitch

Tying It All Together

In today's rapidly-changing technology environment, empowering your data center transformation isn't just a necessity—it's also a journey. Regardless of your current environment, Lenovo Services is a true business partner that will take you from where you are, to where you want to be. At every stage, you'll get our expertise and services to help you:

- **Drive Digital Transformation.** You'll get the best architectures suited to your unique needs, along with our industry insights, expert guidance, and hands-on experience.
- **Foster Innovation.** Free up your internal resources to focus on initiatives that grow your business.
- **Simplify Your Support Experience.** Gain a trusted partner who understands your systems and solutions to fully support and optimize your data center.

Lenovo Professional Services can help you discover opportunities in your storage environments through a white-boarding workshop. They can diagnose your business problem through a data-dependent, tools-based assessments, then develop a high-level architecture, execution strategies and timelines for delivering the right solutions.

“Lenovo offered deep expertise in designing and supporting systems based on SAP HANA, which helped us to complete a successful migration from Oracle database to SAP HANA.”

SAMIRODEH

AUTOMOTIVE & INDUSTRIAL PARTS

— Hamza Al Bakri, IT Manager, Gulf Ocean Trading Co.⁷

In addition, Lenovo can provide remote Managed Services.⁸ This offering includes:

- Integrated solution support
- Continuous monitoring of key SAP HANA solution components
- On-going maintenance and system updates
- Simplified support processes, with expert consultants assisting with troubleshooting and problem-determination
- Assistance to help improve availability and reduce problem resolution time
- Proactive IT planning and preventative support advice and services

**SAP HANA with
Lenovo ThinkSystem
servers and DM/DE
Storage provide a
high performance,
cost effective
solution to extract
strategic insights
from your fast-
growing data**



Agile. Scalable. Reliable.

It is no secret your business depends on technology. The Lenovo Solution for SAP HANA with ThinkSystem DM and DE Series Storage provides the seamless, scalable and dependable performance needed to extract strategic insights from exploding information volumes helping deliver the bottom line business results you demand.

Why Lenovo

Lenovo is a leading provider of data center solutions. Lenovo offers a full range of compute, networking, storage, software, solutions, and comprehensive services supporting business needs throughout the IT lifecycle. With options for planning, deployment, and support, Lenovo offers expertise and services needed to deliver better service-level agreements and generate greater end-user satisfaction.

For More Information

To learn more about the Lenovo Solution for SAP HANA with ThinkSystem DM and DE Series Storage, contact your Lenovo Business Partner or visit: www.lenovo.com/sap/hana

To see the official SAP certifications of the Lenovo Solution for SAP HANA with DM/DE Series storage, please click on the following links:

- [Lenovo DM Series storage](#)
- [Lenovo DE Series storage](#)



1. Gartner. Mastering the New Business Executive Job of the CIO - Insights From the 2018 CIO Agenda Report (views of 3,160 CIOs across 98 countries). gartner.com/cioagenda
2. Forrester Consulting, Ultra-Fast Data Access Is The Key To Unleashing Full Big Data Potential, January 2016
3. Unistar PRO sharpens its competitive edge with SAP and Lenovo <https://lenovosuccess.com/casestudy/unistar-pro>
4. SAP BWoH Records for SR950 as of July 1, 2019: 4-socket 1.3B records v3 - <https://www.sap.com/dmc/benchmark/2019/Cert19013.pdf> (Query Exec/Hr); SR950 4-socket 10.4B records v3 - <https://www.sap.com/dmc/benchmark/2019/Cert19014.pdf> (3 records)
5. ITIC reliability study, <https://lenovopress.com/lp1117-itic-reliability-study>
6. TBR customer satisfaction study, <https://lenovopress.com/lp1118-tbr-customer-satisfaction-study>
7. Gulf Ocean Trading gets an SAP HANA advantage with an integrated solution from Lenovo <https://lenovosuccess.com/casestudy/gulf-ocean-trading>
8. Contact your Lenovo or Lenovo Business Partner sales representative for availability in your region

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