

SOLUTION BRIEF

NetApp AI and Lenovo ThinkSystem for enterprise AI and ML

Accelerate performance and
streamline data management



The challenge

Organizations large and small are navigating in a rapidly changing data-driven economy. Artificial intelligence (AI) and machine learning (ML) workloads are becoming omnipresent across all verticals. In industries such as retail, financial services, energy, and healthcare organizations are leveraging ML, deep learning (DL), and inference techniques to stay ahead of the competition, to bring new products to market faster, and to accelerate innovation. But with the complexity and high integration costs of AI and ML solutions, achieving a predictable and scalable solution while minimizing operational expenses is especially challenging for small and medium-size organizations.

The solution

NetApp and Lenovo have partnered to develop a cost-effective, high performance AI and ML solution. This validated solution delivers scalable performance, streamlined data management, and rock-solid data protection in a scale-out architecture. Built on enterprise-grade NetApp® ONTAP® cloud-connected all-flash storage and Lenovo ThinkSystem servers, the NetApp AI and Lenovo AI solution offers small and medium-size organizations a solution that balances performance and cost. The solution is available at Lenovo's AI Innovation centers around the world, giving customers the opportunity to experience first-hand, the value and performance it delivers.

Affordable performance with maximum data protection

Speed innovation and get to market faster

Designed to handle large datasets, the NetApp and Lenovo solution uses the processing power of traditional CPUs, plus the acceleration of GPUs to deliver superior levels of performance. The Lenovo ThinkSystem SR670 supports up to eight small or four large GPUs including the NVIDIA A100 Tensor Core per 2U node. With the latest scalable Intel Xeon CPUs the ThinkSystem SR670 delivers optimized

Key benefits

Affordable performance with maximum data protection

- Deliver the highest possible throughput at the lowest possible cost.
- Keep your data safe with built-in data protection capabilities such as volume-level encryption and NetApp Snapshot copies.

Streamline operations and reduce TCO

- Simplify management with a unified management interface and a single set of tools.
- Reduce the amount of storage needed with NetApp data compaction and deduplication, and lower storage costs with automatic cold data tiering.
- Independently scale compute and storage to minimize costs and improve resource utilization.

Future-proof your infrastructure

- Meet demanding and constantly changing business needs with a solution that delivers seamless scalability, easy cloud connectivity, and integration with emerging applications.
- Deploy a proven enterprise-grade, nondisruptive scalable solution for small and medium-size organizations.

accelerated performance for the computationally intensive workload requirements of ML. To achieve maximum performance, you need data storage that can keep pace with the processing power of the ThinkSystem SR670. NetApp AFF A-Series systems are designed to help organizations accelerate their infrastructure transformation and fuel data-driven strategies. Powered by NetApp ONTAP data management software, AFF systems deliver the industry's highest performance, superior flexibility, and best-in-class data services and cloud integration to help you accelerate, manage, and protect your business-critical data in the hybrid cloud.

Keep your data safe

When it comes to AI and ML operations, data is everything; and protecting that data is crucial to the success of your projects and your business. NetApp AFF systems come with a full suite of NetApp integrated and application-consistent data protection software. Space-efficient NetApp Snapshot™ copies enable you to perform complete backups frequently, without affecting performance and without requiring additional storage space. NetApp SnapMirror® technology enables you to replicate your data to any NetApp FAS or AFF system on your premises or in the cloud for disaster recovery. And that replication comes with low recovery point objectives (RPOs) and recovery time objectives (RTOs) with no data loss. Native volume-level encryption and key management help guard your sensitive data on your premises, in the cloud, and in transit. Multifactor authentication, role-based access control, secure multitenancy, and storage-level file security help further protect your data.

Streamline operations and reduce TCO Simplify data management

Data management is crucial to enterprise IT operations to ensure that appropriate resources are used for applications and for datasets. NetApp ONTAP 9, the industry-leading enterprise data management software, simplifies management of the most complex environments. A single management interface with a single set of tools streamlines and simplifies operations regardless of where your data resides. It also allows you to freely move your data to wherever it's needed—the edge, the core, or the cloud. Snapshot and thin-cloning technologies enable creation of near-instant copies of data, helping to streamline development workflows and providing opportunities for more frequent testing using up-to-date production data.



NetApp/Lenovo Best Machine Learning Platform 2020

Lower TCO

NetApp AFF systems running ONTAP 9 leverage built-in storage efficiencies that help to reduce your TCO. Data compaction and deduplication enable you to store more data in less storage, significantly reducing the amount of storage you need to purchase, both on your premises and in the cloud. FabricPool helps reduce costs by automatically tiering cold data to lower cost storage in the public cloud or in NetApp StorageGRID® object storage on your premises. With NetApp AFF systems, you can dramatically reduce your data center costs with the most effective capacity for any workload, backed by the industry's most effective guarantee.

By leveraging the compute power of the ThinkSystem SR670 for training your AI models, you can reduce your overall cost for AI training by keeping the model development in your data center. You can start with a single ThinkSystem SR670 node with four NVIDIA A100 Tensor core GPUs and scale out to more nodes as your compute demand increases.

Bring AI to life

The ThinkSystem SR670 is a 2U two-processor system built on a concept called integrated modularity, in which the fundamental system design is reimagined. The system is optimized for devices such as GPUs or accelerators by leveraging flexible PCI lanes instead of PCIe slots, allowing users to dynamically reconfigure their GPUs to accommodate multiple workflows. The system is perfect for emerging AI workloads, which require the additional processing power for model training and algorithm development.

Future-proof your infrastructure

NetApp ONTAP is the most cloud-connected storage management software, with options for software-defined storage (ONTAP Select) and cloud-native instances (NetApp Cloud Volumes Service) in all public clouds. To accommodate your ever-expanding data growth, ONTAP supports the nondisruptive addition of capacity to existing controllers as well as to scale-out clusters, and it offers enterprise-grade data services for next-generation platforms and applications. You get full scalability of data storage and computation power with multiple Lenovo servers.

About Lenovo

Lenovo (HKSE: 992) (ADR: LNVGY) is a US\$50 billion Fortune Global 500 company, with 63,000 employees and operating in 180 markets around the world. Focused on a bold vision to deliver smarter technology for all, we are developing world-changing technologies that create a more inclusive, trustworthy and sustainable digital society. By designing, engineering and building the world's most complete portfolio of smart devices and infrastructure, we are also leading an Intelligent Transformation – to create better experiences and opportunities for millions of customers around the world. To find out more visit <https://www.lenovo.com>, follow us on [LinkedIn](#), [Facebook](#), [Twitter](#), [YouTube](#), [Instagram](#), [Weibo](#) and read about the latest news via our [StoryHub](#).

About NetApp

In a world full of generalists, NetApp is a specialist. We're focused on one thing, helping your business get the most out of your data. NetApp brings the enterprise-grade data services you rely on into the cloud, and the simple flexibility of cloud into the data center. Our industry-leading solutions work across diverse customer environments and the world's biggest public clouds.

As a cloud-led, data-centric software company, only NetApp can help build your unique data fabric, simplify and connect your cloud, and securely deliver the right data, services and applications to the right people—anytime, anywhere. www.netapp.com

