

Lenovo, Cisco, and NVIDIA collaborate for New Accelerated Computing Hybrid AI Infrastructure

Article

The Lenovo Hybrid AI platform allows customers to leverage the unique advantages of Cisco AI Networking solutions while also taking advantage of the value add provided by NVIDIA and Lenovo's Hybrid AI platform.



Accelerate AI Workloads: Spectrum-X Ethernet drives 1.6 × faster network throughput for model training and inference

Accelerate your AI workloads

Lenovo and Cisco aim to release a jointly validated design to include the integration of the combined networking solution for AI workloads, with customers benefitting from current and future technology advancements in the NVIDIA Spectrum-X platform-- such as adaptive routing, telemetry, congestion control and low latency, as well as Cisco's broader networking portfolio. This will enable customers to optimize their AI infrastructure investments with a common architecture and using their existing management tools and processes, spanning front and back-end networks.

The design enables **1.6x faster AI network performance, 95% effective bandwidth, and industry-leading networking management, all in a single AI design** (NVIDIA) performance and industry-leading networking management in a single AI design.

Reduce Congestion: Rail-optimized load-balancing boosts traffic flow by 48%, lowering latency and lifting GPU utilization



The Lenovo Hybrid AI platform with NVIDIA and Cisco is part of the Lenovo Hybrid AI Advantage™ with NVIDIA joint initiative, designed to help organizations improve productivity, increase agility, and innovate with trust through standardized and accelerated development and deployment of AI use case solutions. Lenovo Hybrid AI Advantage with NVIDIA brings the power of Lenovo AI library and validated, tested hybrid AI factories (hybrid AI platforms, workstations, servers, storage, network, software, models, services, partner ecosystem) to the enterprises.

The hybrid AI factory is designed to support hybrid deployments in the data centers, colos and business locations with cloud integration. It offers flexibility of model, infrastructure choice, enables a wide range of AI applications, agentic and machine learning workflows, and real-time data analysis. Lenovo's hybrid AI platforms power the hybrid AI factory, and they can scale from a single server with just four GPUs as starter environment to a rack scalable unit (SU) as a turnkey infrastructure solution with partner technology choice.

Lenovo Hybrid AI Platform with NVIDIA for Cisco

Currently, the Lenovo Hybrid AI Platform with Cisco networking scales from 4 GPUs to 96 GPUs.

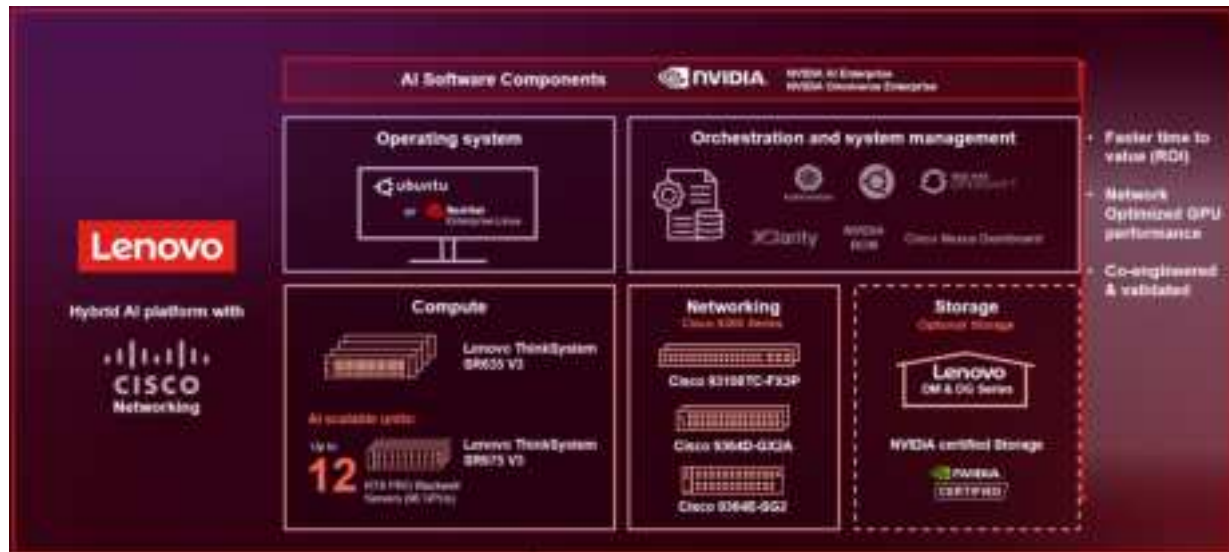


Figure 1. Lenovo Hybrid AI Platform with Cisco Networking

Lenovo Hybrid AI Platform with Cisco will soon be enhanced to scale up to 160 GPUs and take advantage of NVIDIA's Spectrum-X technology with the new Cisco Silicon One based Nexus switches. NVIDIA Spectrum-X innovations result in higher AI performance through optimized network flow achieving **95%** effective bandwidth.



Scale without Redesign: Grows smoothly from 4-GPU starters to 160-GPU clusters via Scalable Units

Additionally, recently announced Cisco's AI Networking capabilities with Intelligent Packet Flow and AI Job Visibility on Nexus Dashboard will provide intelligent congestion-aware traffic optimization and comprehensive AI workload monitoring to maximize infrastructure performance and reduce job completion times.

Ready to optimize your AI infrastructure performance

With the improved Hybrid AI cloud performance needed for LLMs, RAG, agentic AI, machine and deep learning, natural language processing, and diverse industry applications, deploying validated solutions with architectures designed for new and emerging AI use cases matters even more. Our partnership allows us to address customer challenges with Hybrid AI solutions that provide customers with cutting-edge flexible solutions across multiple domains, including networking, security, collaboration, and data centers. Organizations can benefit from the NVIDIA Spectrum-X networking technology in Cisco Networking fabric, bringing the industry-leading technologies together with the most reliable servers under a single management fabric experience Nexus Dashboard.

With Cisco, Lenovo, and NVIDIA as trusted partners, committed to meeting the Hybrid AI demands of the future, we'll help your business optimize its AI infrastructure performance for better business outcomes.

Learn more about Lenovo Hybrid AI Advantage™, Lenovo's Hybrid AI Platform and its unified networking, compute, security, and observability to power AI-ready data centers for your customers. Start your Hybrid AI journey here: [Lenovo Hybrid AI Platform](#).

For more information

For more information, see the following resource:

- [Lenovo Hybrid AI with Cisco Networking Platform Guide:
https://lenovopress.lenovo.com/lp2236-lenovo-hybrid-ai-285-with-cisco-networking](https://lenovopress.lenovo.com/lp2236-lenovo-hybrid-ai-285-with-cisco-networking)

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Related product families

Product families related to this document are the following:

- [Artificial Intelligence](#)

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