Cisco N9100 Series Switches, Powered by NVIDIA Spectrum-X Ethernet Silicon

Q: What are the Cisco N9100 series switches and why is it significant?

A: The Cisco N9100 series is a groundbreaking lineup of high-performance AI networking switches, powered by NVIDIA Spectrum-X Ethernet switch silicon and designed to be NVIDIA Cloud Partner (NCP) Reference Architecture (RA)-compliant for secure AI factory deployments. The series debuted with the 64-port, 800G N9100 switch, and the latest annoucement from Cisco is a 2RU 64-port 1.6T OSFP switch, featuring ultimate performance, extraordinary network scale, and 100% liquid cooling technology.

Purpose-built for Ethernet-based AI-scale deployments, the N9100 series will deliver industry-leading bandwidth, low latency, and lossless Ethernet fabrics, meeting the demands of next-generation secure AI factories. It accelerates AI adoption and simplifies operations for neoclouds, sovereign clouds, service providers and enterprises.

Q: What sets the Cisco N9100 apart in the market?

A: The Cisco N9100 series delivers unparalleled customer outcomes by enabling seamless scalability, flexibility, and modernization for AI-buiders that adheres to NCP RA compliant designs. As the first NVIDIA partner to achieve this compliance for deployments exceeding 1000 GPU clusters, Cisco N9100 series switches empower customers to meet the demands of next-generation secure AI factories.

Supporting both Cisco NX-OS and SONiC operating systems, unified under Cisco Nexus One, the N9100 simplifies operations with on-premises managed Nexus Dashboard and cloud-managed Nexus Hyperfabric. This ensures customers can modernize their data centers effortlessly while achieving industry-leading performance, low latency, and lossless Ethernet fabrics for AI-scale deployments, while adhering to the NCP RA.

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Q: How does the Cisco N9100 optimize AI workload performance?

A: Cisco N9100 will offer the new102.4 Tbps (2RU, 64p 1.6T OSFP) Cisco N9164F-NS6 switch along with the newly available 51.2 Tbps (2RU, 64p, 800G OSFP) N9100 switch Cisco N9164E-NS4-O with adaptive routing for real-time network optimization. This ensures that AI workloads operate efficiently at scale, making the Cisco N9100 ideal for large AI clusters and high-performance backend networks.

Q: What are the key benefits for Cisco customers?

A: Scalability: Supports large-scale AI clusters with lossless Ethernet fabrics.

Flexibility: Cisco offers diverse silicon options, including Cisco Silicon One, Cloud Scale, and NVIDIA Spectrum-X Ethernet switch silicon, for tailored solutions.

Operating System Choice: Supports both integrated Cisco NX-OS and robust SONiC OS.

Unified Operations: Managed centrally through unfied management plane Cisco Nexus One with on-premises Cisco Nexus Dashboard or cloud-managed Cisco Nexus Hyperfabric for simplified operations.

Security: Protect your network with Live Protect on Cisco N9000 (formerly Nexus 9000) series switches with NX-OS, ensuring security and reliability.

Q: Who should consider the Cisco N9100 switch?

A: Neocloud Providers: Needing to efficiently scale high-performance AI clusters that adhere to NCP RA.

Sovereign Clouds: Requiring strict data sovereignty and security compliance.

NCP RA Compliance: Cisco Cloud Reference Architecture (CRA) with Cisco N9100, powered by NVIDIA Spectrum-X Ethernet switch silicon is NCP RA compliant for Cisco NX-OS or SONiC.

Q: What AI reference architectures does Cisco offer, and which one is right for me?

A: Cisco offers two validated AI reference architectures that map to different customer types and scales (Cisco ERA and Cisco CRA). NVIDIA has two reference architectures that also map to these customer type and scales (NVIDIA ERA and NCP RA).

Note: The Cisco N9000 (formerly Nexus 9000) switch series serves as the overarching product family for these solutions, encompassing both the N9100 and N9300 series.

1. **Cisco Enterprise Reference Architecture (ERA)**: Designed for enterprise, commercial, and public-sector customers building private AI clusters, typically at a scale of fewer than 1,000 GPUs. Built on Cisco UCS systems with NVIDIA HGX and Cisco AI networking, this reference architecture is NVIDIA ERA compliant when the optional NVIDIA Spectrum-X license is enabled on Cisco Silicon One-based switches.
2. **Cisco Cloud Reference Architecture (CRA) with N9300:** Designed for large cloud, neocloud, and sovereign cloud deployments at high GPU scale (~1,000-32,000 GPUs, with further scale options). This architecture is based on NCP RA design tenets when the optional Spectrum-X technology is enabled on Cisco Silicon One-based N9300 series switches.
3. **Cisco Cloud Reference Architecture (CRA) with N9100:** Designed for neocloud and sovereign-cloud operators that specifically require full NCP RA compliance. This architecture for high GPU scale (~1,000-32,000 GPUs, with further scale options) is built on Cisco N9100 series switches utilizing NVIDIA Spectrum-X Ethernet silicon.

Each architecture is purpose-built to address specific customer needs, offering the right combination of compliance, scalability, and performance for AI-driven data centers.

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Q: How does the Cisco N9100 integrate with existing Cisco solutions?

A: The Cisco N9100 integrates seamlessly into the Cisco Nexus operational model, supporting both Cisco NX-OS and SONiC. It works alongside Cisco Silicon One and Cloud Scale silicon-based switches, ensuring consistent architecture and operations across diverse deployment scenarios. Centralized management through unfied management plane Cisco Nexus One, on-premises managed Cisco Nexus Dashboard or cloud-managed Cisco Nexus Hyperfabric ensures simplified operations along with smooth integrations into existing infrastructures.

Q: What are the software license requirements for the Cisco N9100 series switches?

A: The Cisco N9100 series switches will support the same three license tiers – Data Center Networking (DCN) Essentials, Advantage, and Premier that are supported on other Cisco Nexus 9000 Series switches.

Q: When would the Cisco N9100 switch be orderable?

A: The NVIDIA Spectrum-4 Ethernet silicon based Cisco N9100 switch will be generally available in April 2026. The NVIDIA Spectrum-6 Ethernet silicon based Cisco N9100 switch will be orderable at the end of calendar year 2026.



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