Cisco UCS X9516 X-Fabric

August 2025

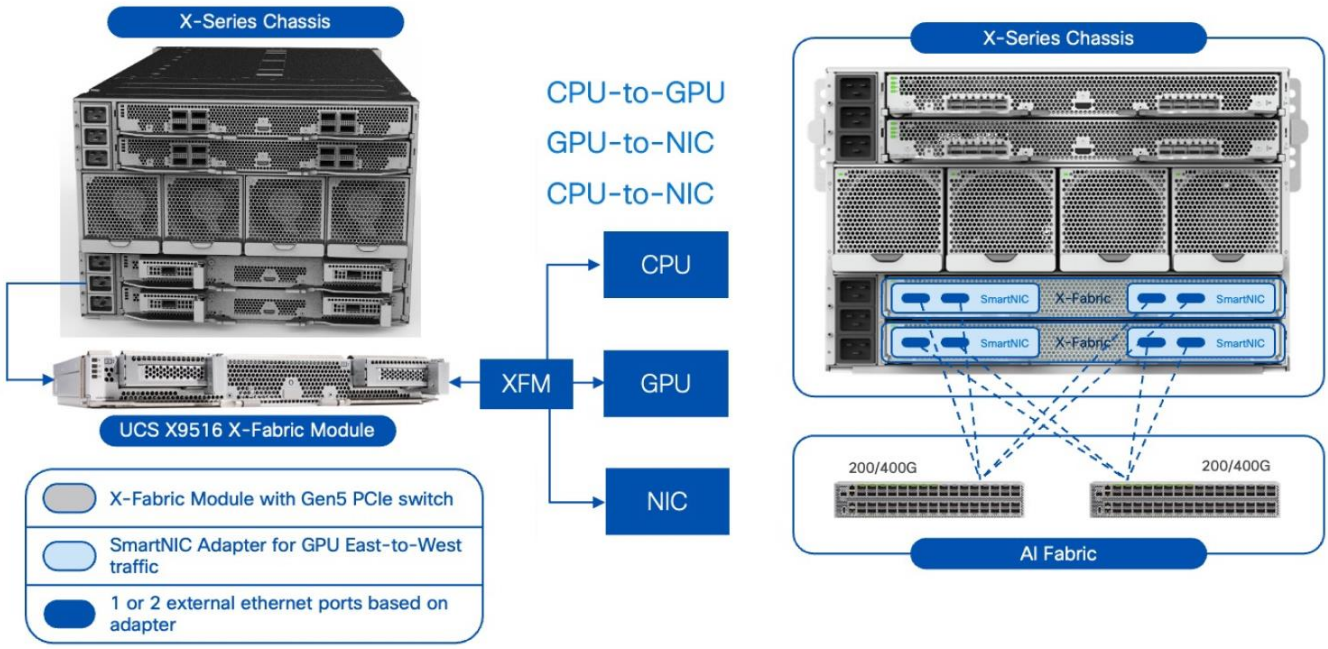
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Unbox the future with the Cisco UCS® X-Series Modular System and Cisco Intersight®. Together, the Cisco UCS X9516 X-Fabric Module and UCS X580p PCIe Node deliver a fully composable, cloud-operated infrastructure optimized for generative AI, HPC, VDI, and enterprise workloads. This future-ready solution provides high-speed PCIe switching, flexible GPU expansion, SmartNIC integration, and policy-driven resource provisioning to simplify IT and innovate at the speed of software.



Product overview

The Cisco UCS X9516 X-Fabric Module is a key component of the Cisco UCS X-Series Modular System, delivering high-speed PCIe switching to meet the demands of modern GPU-intensive workloads such as generative AI, agentic AI, HPC, and high-performance visualization. As the second generation of X-Fabric technology from Cisco, the UCS X9516 enables true composable infrastructure with policy-based GPU and NIC provisioning tailored to application needs.

The Cisco UCS X9516 supports third-party SmartNICs and DPUs, which can be provisioned with servers and GPUs in the chassis, enhancing performance for distributed AI workloads and enabling east-west GPU-to-GPU communication at scale. Managed through Cisco Intersight®, the UCS X9516 simplifies operations with flexible, non-disruptive addition, removal, and upgrades of GPUs and fabric components.

The Cisco UCS X580p PCIe Node complements the UCS X9516 by expanding GPU capacity, supporting up to four dual-slot, full-height GPUs per node with NVLink Bridge and GPU Direct RDMA. This integration allows GPUs to be dynamically shared across servers, maximizing utilization and efficiency.

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The UCS X-Series chassis is engineered with a midplane-free design to optimize airflow, serviceability, and upgradeability. Its vertical compute and PCIe nodes connect directly to horizontal UCS X9516 modules, enabling a future-ready architecture that allows seamless upgrades across compute, GPU, and fabric components without forklift replacements.

Key highlights:

- High-speed PCIe switching for GPU, NIC, and server connectivity
- Policy-driven GPU and NIC assignment through Cisco Intersight
- Support for NVIDIA H200 NVL, L40S, and RTX Pro 6000 Blackwell GPUs
- NVLink Bridge and GPU Direct RDMA for GPU-to-GPU performance
- SmartNIC-enabled AI fabric support for large-scale distributed workloads
- Modular, composable design for disaggregated lifecycle management
- Scalability: up to 8 GPUs and 4 SmartNICs per chassis

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Features and benefits

Table 1. Summary of features and benefits of the Cisco UCS X9516 X-Fabric

Feature	Benefit
Scalable and flexible	• Rapid deployment of AI and accelerated computing technologies • Suited for any data center environment
PCIe Gen5 switching	• PCIe Gen5 host-to-GPU and host-to-NIC connectivity
2x CEM slots to support HHHL NIC cards	• Scale out with external connectivity to AI fabric
Managed XFM modules with BMC support	• Provides out-of-band management capabilities
Intersight-based management	• Dynamic GPU and NIC provisioning • See, control, and automate your compute, GPU, and networking infrastructure throughout its lifecycle
GPU direct support over RDMA	• Enables high-performance memory-to-memory data transfers between nodes
GPU backend (east-west traffic) network support	• Handle large volumes of GPU-to-GPU communication

Product sustainability

Information about Cisco's environmental, social, and governance (ESG) initiatives and performance is provided in the Cisco CSR and sustainability reporting.

Table 2. Cisco environmental sustainability information

Sustainability topic		Reference
General	Information on product/material/content laws and regulations	Materials
	Information on electronic waste laws and regulations, including our products, batteries, and packaging	WEEE compliance
	Information on the Cisco Takeback and Reuse Program	Cisco Takeback and Reuse Program
	General sustainability inquiries	Contact: csr_inquiries@cisco.com
Material	Product packaging weight and materials	Contact: environment@cisco.com

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Product specifications

Table 3. Specifications of Cisco UCS X9516 X-Fabric

Item	Specifications
X-Fabric	• X-Fabric modules with PCIe switching
Network adapter (east-west traffic)	• NVIDIA OEM MCX715105AS-HEAT 1x 400 GbE QSFP112 PCIe gen5 NIC • NVIDIA OEM MCX755106AS-HEAT 2x 200 GbE QSFP112 PCIe gen5 NIC
Management	• Cisco Intersight software (SaaS)
Temperature: operating	• 50° to 81°F (10° to 27°C)
Temperature: nonoperating	• -40° to 149°F (-40° to 65°C)
Humidity: operating	• 5% to 93% noncondensing
Humidity: nonoperating	• 5% to 93% noncondensing
Altitude: operating	• 0 to 10,000 ft (0 to 3000 m); maximum ambient temperature decreases by 1°C per 300 m
Altitude: nonoperating	• 40,000 ft (12,000 m)

System requirements

Table 4. System requirements

Item	Requirements
X-Series chassis	• Cisco UCS X9508 Chassis
Compute nodes	• Cisco UCS X210c M8 & UCS X215c M8 Compute Nodes
Fabric interconnects	• Cisco UCS fourth-, fifth-, and sixth-generation fabric interconnects
X-Fabric modules	• Cisco UCS X9516 X-Fabric Modules for UCS X9508 Chassis
Cisco Intersight	• Intersight Managed Mode (minimum Essentials license per server attached)

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Ordering information

Table 5. Ordering information for the Cisco UCS X9516 X-Fabric

Part number	Description
UCSX-FS-9516	• UCS X9516 X-Fabric PCIe Gen5 switch module for 9508 chassis
UCSX-M8-MLB	• UCSX M8 Modular Server and CHASSIS MLB
UCSX-P-N7S400GFO	• NVIDIA OEM MCX715105AS-HEAT 1x 400 GbE QSFP112 PCIe Gen5 NIC
UCSX-P-N7D200GFO	• NVIDIA OEM MCX755106AS-HEAT 2x 200 GbE QSFP112 PCIe Gen5 NIC

For information about installing or upgrading your server, see the Hardware Installation Guide.

For ordering information, see the UCS X9516 Spec Sheet.

Warranty Information

Warranty services

The Cisco UCS X9516 X-Fabric Module has a three-year next-business-day (NBD) hardware warranty and a 90-day software warranty.

Augmenting the Cisco Unified Computing System™ (Cisco UCS) warranty, Cisco Smart Net Total Care™ and Cisco Solution Support services are part of Cisco's technical services portfolio. Cisco Smart Net Total Care combines Cisco's industry-leading and award-winning foundational technical services with an extra level of actionable business intelligence delivered to you through the smart capabilities in the Cisco Smart Net Total Care portal. For more information, please refer to: https://www.cisco.com/c/en/us/support/services/smart-net-total-care/index.html.

Cisco Solution Support includes both Cisco product support and solution-level support, resolving complex issues in multivendor environments 43% more quickly on average than with product support alone. Cisco Solution Support is a critical element in data center administration, helping rapidly resolve issues while maintaining performance, reliability, and return on investment.

This service centralizes support across your multivendor Cisco environment for both our products and solution partner products that you have deployed in your ecosystem. Whether there is an issue with a Cisco product or with a solution partner product, just call us. Our experts are the primary point of contact and own the case from first call to resolution. Transform your IT environment with Cisco Services.

Cisco and partner services

Cisco and our industry-leading partners deliver services that accelerate your transition to a Cisco UCS X-Series Modular System solution. Cisco Unified Computing Services can help you create an agile infrastructure, accelerate time to value, reduce costs and risks, and maintain availability during deployment and migration. After deployment, our services can help you improve performance, availability, and resiliency as your business needs evolve and help you further mitigate risk. For more information, visit https://www.cisco.com/go/unifiedcomputingservices.

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Cisco Capital

Flexible payment solutions to help you achieve your objectives

Cisco Capital™ financing makes it easier to get the right technology to achieve your objectives, enable business transformation, and help you stay competitive. We can help you reduce total cost of ownership, conserve capital, and accelerate growth. In more than 100 countries, our flexible payment solutions can help you acquire hardware, software, services, and complementary third-party equipment in easy, predictable payments. Cisco Capital.

Document history

Table 6. Document history

New or revised topic	Described in	Date
Initial version	Document	August 2025

Americas Headquarters
Cisco Systems, Inc.
San Jose, CA

Asia Pacific Headquarters
Cisco Systems (USA) Pte. Ltd.
Singapore

Europe Headquarters
Cisco Systems International BV Amsterdam,
The Netherlands

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