

Cisco UCS X-Series Direct

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The Cisco UCS X-Series Direct expands the successful Cisco UCS X-Series Modular System with a new dimension of edge scale computing.

Product overview

The Cisco UCS® X-Series Direct simplifies your data center, adapting to the unpredictable needs of modern applications while also providing an edge scaled for remote branch office workloads. It minimizes the IT infrastructure deployed at edge locations to achieve desired business outcomes. As customers are looking to increase the number of applications at the edge while deploying as little IT infrastructure as possible, the Cisco UCS® X-Series Direct, powered by Cisco Intersight® and Cisco UCS Manager, enables the benefits of scale together with a secure and unified connectivity.

The Cisco UCS X-Series Direct begins with the [Cisco UCS X9508 Chassis](#) engineered to be adaptable and future ready. It is a standard, open system designed to deploy and automate faster in concert with a hybrid-cloud environment.

With a midplane-free design, I/O connectivity for the X9508 chassis is accomplished with frontloading, vertically oriented compute nodes intersecting with horizontally oriented I/O connectivity modules in the rear of the chassis. The I/O connectivity modules of the solution are the Cisco UCS X-Series Direct Fabric Interconnect Modules, a unified fabric for Ethernet and Fibre Channel. Additionally, the UCS X9508 chassis can have expanded GPU capabilities using the Cisco UCS X-Fabric technology which interconnects X-series compute and PCIe nodes using high-speed PCIe technology.

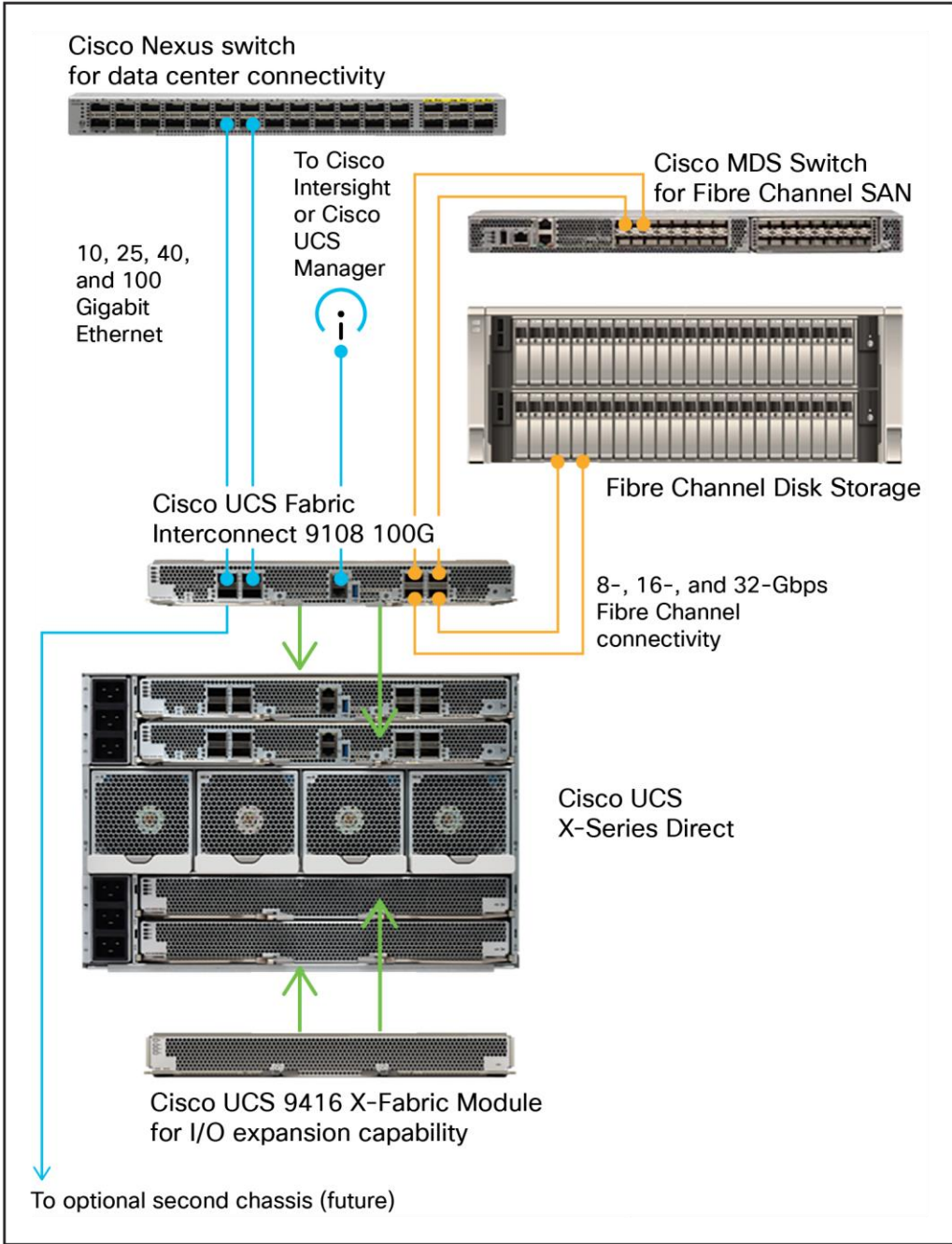


Figure 1.
Cisco UCS X-Series Direct architectural options

Features and benefits

Table 1. Features and benefits

Feature	Benefit
Adaptable system	Enables the system to support new technologies for modern applications Improves operational efficiency and agility by reducing complexity
Fabric interconnect modules	Connects the chassis to upstream network switches for direct connectivity Reduces the Capital expenditures (CapEx) for small data centers and edge locations
Enterprise-class server	Offers performance, flexibility, and optimization for deployments in data centers, in the cloud, and at remote sites Offers one of the highest densities of compute, I/O, and storage per rack unit to reduce Operational expenditures (OpEx)
PCIe node	Accelerates modern applications by connecting up to four GPUs per compute node Dramatically simplifies the addition, removal, or upgrade of GPUs to compute nodes
X-Fabric module	Creates a modular pool of resources to connect PCIe devices to compute nodes
Intersight Infrastructure Service	Brings all the benefits of SaaS delivery and full lifecycle management to Cisco UCS X-Series Direct Transforms Cisco UCS X-Series Direct from a set of components into a flexible server platform to propel the most important workloads
Cisco UCS Manager	Simplifies the migration for current UCS Mini customers to UCS X-Series Direct Comprehensive management capabilities to enable full view of Cisco UCS X-Series Direct

Simplification for workloads at the edge

The Cisco UCS X-Series Direct provides a lossless and deterministic converged fabric for management, Ethernet, and storage connectivity for the Cisco UCS X-Series Modular System. With full Intersight management capabilities through Cisco UCS Fabric Interconnect 9108 100G, it offers the same simplicity and functionality as Cisco UCS X-Series and at the same time reduces the CapEx for small data centers and remote locations.

With the Cisco UCS X-Series Direct, customers can extend the Cisco UCS X-Series architecture into environments with fewer requirements for compute architecture yet still work on an enterprise level. A flat network-layer architecture allows simpler connectivity and helps connecting at the edge or in smaller domains. The Cisco UCS X-Series Direct takes the simplicity to a next level:

- **Get simplified connectivity at the edge:** with direct connectivity to the top-of-rack switch, the Cisco UCS X-Series Direct helps customers get fast access to all resources, simplifying diagnostics, cabling, and management. With a combined network layer for Ethernet and Fibre Channel traffic, it is an ideal fit for environments where you run either a complete data center or just a single solution such as Hyperconverged Infrastructure (HCI), Virtual Server Infrastructure (VSI), or Virtual Desktop Infrastructure (VDI). The integration of third-party solutions, including storage from NetApp, Pure Storage, Dell, Hitachi, and IBM helps run your applications in a single environment.

- **Support a broader range of use cases:** the Cisco UCS X-Series Direct enables customers to run specific solutions, such as hyperconverged, container, or data protection infrastructure in small data centers or remote locations, based on a single-server architecture. This simplifies overall management and increases the flexibility to run multiple applications on the same hardware.
- **Simplify with future-ready technology:** with a modular system designed to support future generations of processors, storage, nonvolatile memory, and accelerators, the Cisco UCS X-Series Direct is ready to house technology for today with an approach that embraces the future.
- **Simplify with cloud-operated infrastructure:** with management pulled out of servers and chassis and put into the cloud with Cisco Intersight or through Cisco UCS Manager you can manage your entire infrastructure and respond at the speed and scale of your business. You can shape the Cisco UCS X-Series Direct resources to workload requirements with the Cisco Intersight cloud-operations platform or Cisco UCS Manager and gain intelligent visualization, optimization, and orchestration for all of your applications and infrastructure. Automation drives agility and consistency, helping you reduce time to market while lowering cost and risk.

Platform support

Table 2. Platform support

Product family	Platforms supported
UCSX-M6-MLB	Cisco UCS X210c M6 compute node
UCSX-M7-MLB	Cisco UCS X210c/X410c M7 compute nodes

Product sustainability

Information about Cisco’s Environmental, Social, and Governance (ESG) initiatives and performance is provided in Cisco’s CSR and sustainability [reporting](#).

Table 3. 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 product takeback and reuse program	• Cisco Takeback and Reuse Program
	Sustainability Inquiries	• Contact: csr_inquiries@cisco.com
Material	Product packaging weight and materials	• Contact: environment@cisco.com

Product specifications

Table 4. Product specifications

Item	Specification
Server data path bandwidth	1.6 Tbps for 8 compute nodes (1x 100 Gbps or 4x25 Gbps per compute-node per UCSX-S9108-100G, for a total of 200Gbps per compute node with dual UCSX-S9108-100G per X9508 Chassis)
Network data path bandwidth	1.6Tbps 8x 100Gbps per UCSX-S9108-100G, with two FI per chassis.
Ethernet connectivity	1, 10, 25, 40, 100 Gbps
Fibre Channel connectivity	8, 16, 32 Gbps
Fibre Channel mode	End-host and switch mode
Number of Fibre Channel ports	Up to 8x 32 Gbps through breakout cables
Number of Ethernet uplink ports	Up to 8x 100 Gbps
Number of Fibre Channel uplink ports	Up to 8x 32 Gbps through breakout cables
Number of appliance ports	Up to 8
Management	Cisco Intersight software (SaaS, virtual appliance, and private virtual appliance) or Cisco UCS Manager
Physical (height x width x depth)	1.71 in, x 14.92 in x 10.15 in. (4.3 cm x 37.9 cm x 25.8 cm)
Temperature: operating	10C to 35C (50F to 95 F)
Temperature: nonoperating	-40° C to 65° C (-40F to 149F)
Humidity: operating	operating 8-80% RH noncondensing
Humidity: nonoperating	nonoperating 10-93%RH, noncondensing
Altitude: operating	0 to 10,000 ft at 30° C max.
Altitude: nonoperating	12,000 meters (39,370 feet)
Weight	8.5 lb (3.9 kg)

Table 5. Regulatory standards compliance: safety and EMC

Item	Description
Regulatory compliance	<ul style="list-style-type: none"> • Products comply with CE markings per directives 2004/108/EC and 2006/108/EC
Safety	<ul style="list-style-type: none"> • UL 60950-1 • CAN/CSA-C22.2 No. 60950-1 • EN 60950-1 • IEC 60950-1 • AS/NZS 60950-1 • GB4943
EMC: emissions	<ul style="list-style-type: none"> • 47CFR Part 15 (CFR 47) Class A (FCC Class A) • AS/NZS CISPR22 Class A • CISPR2 2 Class A • EN55022 Class A • ICES003 Class A • VCCI Class A • EN61000-3-2 • EN61000-3-3 • KN22 Class A • CNS13438 Class A
EMC: Immunity	<ul style="list-style-type: none"> • EN50082-1 • EN61000-6-1 • EN55024 • CISPR24 • EN300386 • KN 61000-4 Series

System requirements

Table 6. System requirements

Item	Description
X-Series chassis	Cisco UCS X9508 Chassis
Cisco Intersight or Cisco UCS Manager	Intersight Managed Mode for Cisco Intersight

Ordering Information

Table 7. Ordering Information

Part #	Product description
UCSX-S9108-100G	Cisco UCS Fabric Interconnects 9108 100G

Warranty information

The Cisco UCS X-Series Direct 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 that is 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 on average 43 percent more quickly than with product support alone. Cisco Solution Support is a critical element in data-center administration, helping rapidly resolve issues encountered 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. For more information, please refer to <https://www.cisco.com/c/en/us/services/technical/solution-support.html>.

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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