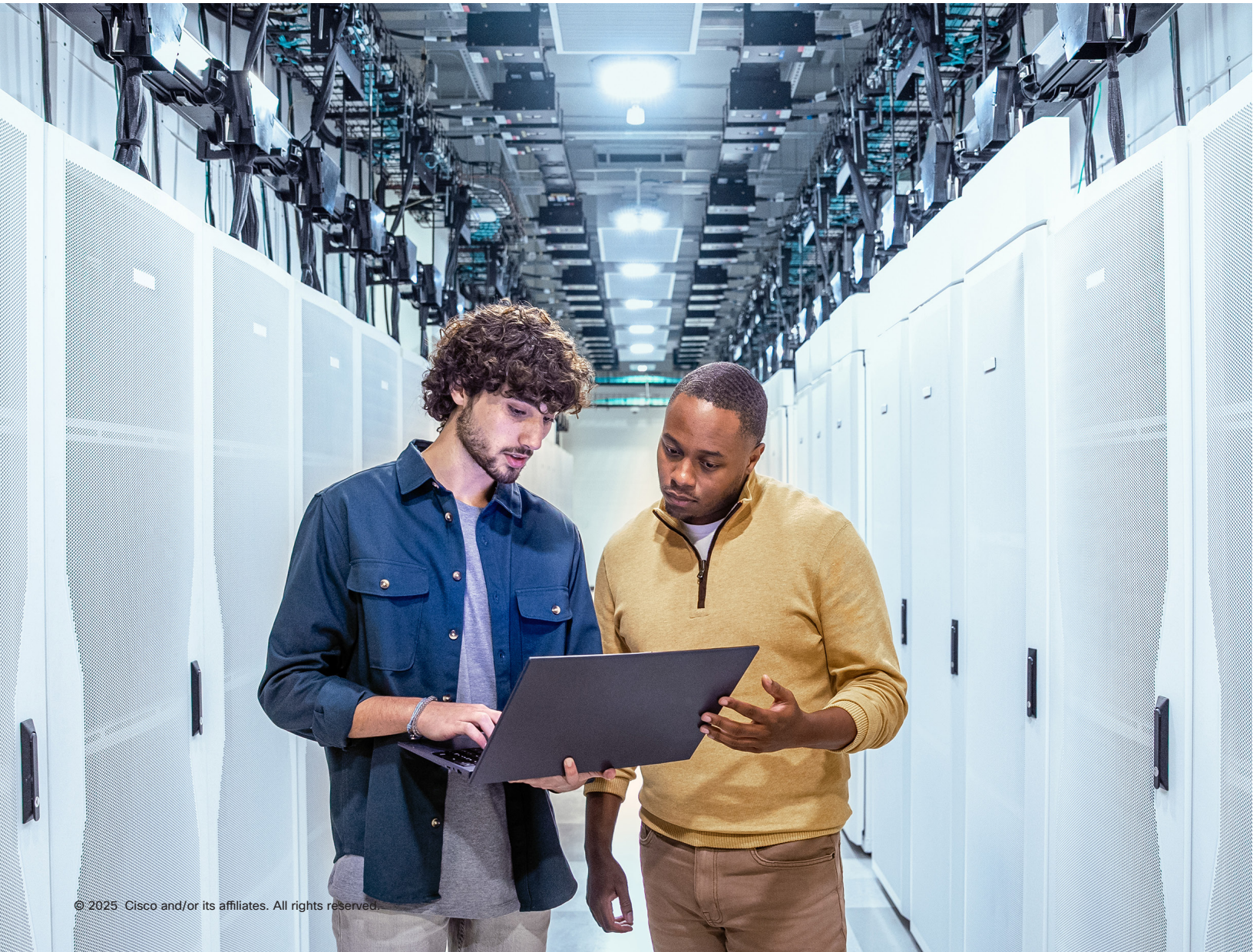
Cisco Compute Hyperconverged with vSAN X215 M8 All NVMe Node



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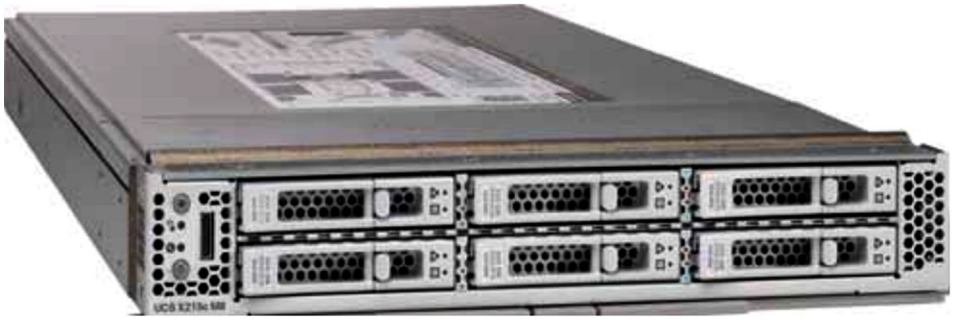
Product overview

Cisco Compute Hyperconverged with vSAN

VMware vSAN Express Storage Architecture (ESA) is a software-defined storage solution that runs natively as part of an ESXi hypervisor. It aggregates local storage from multiple hosts to create a shared storage pool for virtual machines that can then be accessed by all hosts in the vSAN cluster.

Cisco Compute Hyperconverged with vSAN is a purpose-built platform that unifies compute, storage, and networking into a single, software-defined infrastructure. Cisco and VMware by Broadcom have partnered to deliver a robust, scalable, and high-performance Hyperconverged Infrastructure (HCI) solution for modern workloads



VMware vSAN Express Storage Architecture (ESA) is a next generation Hyperconverged Infrastructure (HCI) architecture designed to deliver exceptional performance, scalability, and resilience. vSAN ESA is optimized for high-performance NVMe-based storage and modern server platforms, offering a simplified, flash-optimized data path that enables faster I/O, improved efficiency, and lower latency. By decoupling performance from capacity, vSAN ESA supports mission-critical workloads with enhanced data services and streamlined operations—making it ideal for modern enterprise environments.

VMware vSAN ReadyNodes are pre-configured, tested, and jointly certified by Broadcom and Cisco to deliver enterprise-grade storage performance and reliability for IT customers. When deployed on Cisco UCS® servers qualified as vSAN ReadyNodes, customers can confidently build a robust hyperconverged infrastructure stack that maximizes hardware utilization, simplifies operations, and scales linearly with business growth.

The Cisco Compute Hyperconverged X-Series System solution combines the operational simplicity of vSAN with the flexibility and efficiency of the award-winning Cisco UCS X-Series Modular System, enabling organizations to easily deploy, scale, and upgrade hyperconverged clusters with a more sustainable, future-ready solution.

The Cisco Compute Hyperconverged X-Series System simplifies your data center, adapting to the unpredictable needs of modern applications while also providing for traditional scale-out and enterprise workloads. It reduces the number of server types to maintain, helping to improve operational efficiency and agility as it helps reduce complexity. Powered by the Cisco Intersight® cloud-operations platform, it helps you shift focus from administrative details to business outcomes—with hybrid-cloud infrastructure that is assembled from the cloud, shaped to your workloads, and continuously optimized.

Cisco Compute Hyperconverged with vSAN is supported on both the Cisco Compute Hyperconverged X-Series and Cisco Compute Hyperconverged X-Series Direct platforms. The primary distinction between these two platforms lies in the integration of the fabric module. The Cisco Compute Hyperconverged X-Series Direct features integrated fabric interconnects, which are particularly beneficial for edge and small or remote-office use cases, offering a self-contained system without the need for top-of-rack switches.

The Cisco Compute Hyperconverged X-Series, equipped with fabric interconnects, enables seamless scalability up to 160 servers, distributed across 20 chassis, each containing up to 8 nodes. This architecture simplifies management by eliminating the need for dedicated chassis management and blade switches, while also reducing cabling requirements, thereby minimizing complexity and enhancing operational efficiency.

Cisco Compute Hyperconverged with vSAN X215c M8 All NVMe Node

Cisco Compute Hyperconverged X215c M8 All NVMe Node delivers performance, flexibility, and optimization for deployments in data centers, in the cloud, and at remote sites. This enterprise-class server offers market-leading performance, versatility, and density without compromise for workloads. Up to 8 compute nodes can reside in the 7-rack-unit (7RU) Cisco UCS X9508 Chassis, offering one of the highest densities of compute, I/O, and storage per rack unit in the industry.

Cisco Compute Hyperconverged X215c M8 All NVMe Node family powers 5th Gen AMD EPYC processors with 150 percent more cores per socket designed using AMD's chiplet architecture. With advanced features such as AMD Infinity Guard, compute-intensive applications will see significant performance improvements and reap other benefits such as power and cost efficiencies.

Features and benefits

The Cisco Compute Hyperconverged X215c M8 All NVMe Node provides the features given in Table 1.

Table 1. Summary of features and benefits of Cisco Compute Hyperconverged with vSAN X215c M8 All NVMe Node

Feature	Benefit
Memory	• Up to 6 TB of main memory with 24x 256GB DDR5 6400 MT/s
Processors	• 5th Gen AMD EPYC processors (Turin) • Massive processing power with up to 160 cores per socket • High-speed DDR5 memory technology for up to 6400 MT/s • Advanced capabilities, such as AMD Infinity Guard, enhance security in virtualized environments • Designed for compute-intensive applications
Cloud-based services and management - retain	Cisco Intersight simplifies infrastructure operations across on-premises data centers, edge sites, and public clouds: • Use a software-as-a-service platform that bridges applications with infrastructure. • Correlate visibility and management across bare-metal servers, hypervisors, and application components. • Transform operations with artificial intelligence to reach needed scale and velocity. • VMware vCenter is the centralized management platform for vSphere environments, including vSAN: • Configure, control, scale, and monitor your vSphere environments. • Provides full control over virtual machines (VMs), the virtualization layer, and software-defined storage. • Leverage Distributed Resource Scheduler (DRS) to balance workloads across the cluster.
Storage	• Up to six hot-pluggable, U.2/U.3 Non-Volatile Memory Express (NVMe) 2.5-inch drives with a passthrough controller • Two M.2 SATA drives with hardware RAID • VMware vSAN ESA eliminates traditional disk groups and instead pools all local NVMe devices into a single storage tier, enabling direct, parallel access across drives. This architecture simplifies storage management and improves performance by allowing dynamic distribution of data and metadata. Data is stored using a log-structured, object-based model with built-in services like compression and erasure coding applied in the write path.

Feature	Benefit
Enterprise data protection	▪ Synchronous and asynchronous replication allowing for flexible disaster recovery strategies tailored to specific needs ▪ Deduplication and compression ▪ Virtual-machine data protection and disaster recovery with VMware vSphere Replication ▪ Disaster recovery with VMware's DRaaS (Disaster-as-a-Service)
Security	▪ The server supports an optional Trusted Platform Module (TPM). Additional features include a secure boot FPGA and ACT2 anti-counterfeit provisions.
Software	▪ **Management software:** Cisco Intersight and Broadcom VMware vCenter ▪ **Storage software:** Broadcom VMware vSAN ESA ▪ **Hypervisor choice:** Support for Broadcom VMware ESXi/vSphere

Management

Cisco Intersight simplifies infrastructure operations across on-premises data centers, edge sites, and public clouds. In Intersight Managed Mode (IMM), the X215c M8 All NVMe nodes are connected to a pair of Cisco UCS 6400 series or a pair of Cisco UCS 6500 series fabric interconnects and managed by Intersight. The primary use case is for general-purpose workloads and mission-critical/high-performance workload deployments in the data center. While a minimum of three nodes is required to deploy a standard vSAN cluster, the option to deploy two-node clusters for remote-office/branch-office locations is supported. Refer to Broadcom's documentation on two-node clusters.

Benefits

Since we first delivered the Cisco Unified Computing System™ (Cisco UCS) in 2009, our goal has been to simplify the data center. We pulled management out of servers and into the network. We simplified multiple networks into a single unified fabric. And we eliminated network layers in favor of a flat topology wrapped into a single unified system. With the Cisco Compute Hyperconverged X-Series System, we take that simplicity to the next level:

- Simplified operations with a solution that combines the operational simplicity of hyperconverged software with the efficiency and flexibility of a modular system
- Increased agility and response to the dynamic needs of your business with a solution that is inherently easy to scale and includes support for future generations of processors, storage, accelerators, networking technologies, and SaaS innovations
- Improved sustainability with a solution that is engineered to be more energy efficient and can be easily upgraded and reused, lowering the consumption of power and raw materials when compared to traditional rack servers

Product specifications

Table 2. Product specifications

Item	Common specifications across the Cisco Compute Hyperconverged with vSAN X215c M8 All NVMe Node family
Processors	Up to 2x 5th Gen AMD EPYC processors (1 or 2)
Memory	**24 DDR5-6400 DIMM slots (12 DIMMS per CPU):** 16, 32, 48, 64, 96, 128, 256 GB at up to 6400 MT/s
mLOM	mLOM slot for Cisco UCS VIC 15420 or Cisco UCS VIC 15230
Mezzanine adapter (rear)	Cisco UCS 15422 mezzanine card with UCS VIC 15000 bridge connector compatible with Cisco UCS VIC 15420
Mezzanine module (front)	Front mezzanine module options: • Compute passthrough controller (for NVMe drives)
Internal storage and GPU	**Front mezzanine storage options:** • Up to 6x U.2/U.3 NVMe drives **Note:** Drives require a passthrough controller in the front mezzanine module slot. **Boot drive options:** • Mini storage module with 2x M.2 (up to 480 GB per drive) SATA drives with hardware RAID **GPU options:** • Cisco UCS X440p Gen4 PCIe node
Management	• Cisco Intersight software (SaaS, virtual appliance, and private virtual appliance)

System requirements

Table 3. System requirements

Item	Requirements
X-Series chassis	Cisco UCS X9508 Chassis
Fabric interconnect	Cisco UCS 6454, 64108, and 6536 fabric interconnects Cisco UCS Fabric Interconnect 9108 100G (for Cisco Compute Hyperconverged X-Series Direct deployment)
X-Fabric modules	Cisco 9416 X-Fabric Modules for Cisco Compute Hyperconverged X9508 Chassis
Cisco Intersight	Intersight Managed Mode (minimum Cisco Intersight Essentials license per server)

Ordering information

Table 4. Ordering information

Part number	Description
HCIX-M8-VSAN-MLB	Cisco Compute Hyperconverged X-Series M8 with vSAN MLB
HCIXVS215C-M8SN	Cisco Compute Hyperconverged with vSAN X215c M8 Compute Node with up to 6x NVMe drives capability
HCIXVS215C-M8SN-U	Cisco Compute Hyperconverged with vSAN X215c M8 Compute Node UPG with up to 6x NVMe drives capability

For ordering information, see the Cisco Compute Hyperconverged X215c M8 All NVMe Node specification sheet and Cisco Compute Hyperconverged X-Series M8 with vSAN MLB ordering guide.

Cisco Unified Computing Services

Enhance your investment in Cisco Hyperconverged Infrastructure (HCI) with Cisco Services

How can you quickly adopt and maximize the value of your investments in Cisco Hyperconverged with vSAN to accelerate business outcomes? To achieve enhanced performance and reliability for your HCI solutions, Cisco services ensure seamless integration, efficient deployment, and scalability of vSAN powered environments on Cisco® platforms. From expert guidance and troubleshooting to best practices, Cisco and our certified partners provide comprehensive services to help you maximize your HCI investment while minimizing risks and downtime. For more information, contact your Cisco representative or trusted partner.

Product sustainability

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

Table 5. 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

Cisco makes the packaging data available for informational purposes only. It may not reflect the most current legal developments, and Cisco does not represent, warrant, or guarantee that it is complete, accurate, or up to date. This information is subject to change without notice.

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