Cisco Compute Hyperconverged with vSAN X210c M8 All NVMe Node

Contents

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 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 solutions are purpose-built platforms that unify 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.

Figure 1. Cisco Compute Hyperconverged with vSAN HCIXVS210C M8 All-NVMe Server

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 also helps reduce complexity. Powered by the Cisco Intersight® cloud-operations platform, it shifts your thinking from administrative details to business outcomes—with a 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 X-Series Direct features integrated fabric interconnects, which are particularly beneficial for edge and small or remote-office use cases, thus offering a self-contained system without the need for top-of-rack switches.

The Cisco X-Series, equipped with fabric interconnects, enables seamless scalability of up to 160 servers, distributed across 20 chassis, each containing up to eight 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 X210c M8 All-NVMe Node

The Cisco Compute Hyperconverged X210c 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 eight hyperconverged nodes can reside in the 7-Rack-Unit (7RU) Cisco Compute Hyperconverged X9508 Chassis, offering one of the highest densities of compute, I/O, and storage per rack unit in the industry.

The Cisco Compute Hyperconverged x210c M8 All NVMe Node family incorporates Intel® Xeon® 6 processors. It improves security, performance, and efficiency while helping achieve sustainability goals with built-in accelerators such as Intel Trust Domain Extensions (TDX), Intel Data Streaming Accelerator (DSA), Intel QuickAssist Technology (QAT), Intel Advanced Matrix Extensions (AMX), and Intel In-Memory Analytics Accelerator (IAA).

Features and benefits

The Cisco Compute Hyperconverged X210c M8 All-NVMe Node provides these main features:

Table 1. Summary of features and benefits of Cisco Compute Hyperconverged with vSAN x210c M8 All-NVMe Node

Feature	Benefit	
Memory	• Up to 8 TB of main memory with 32x 256GB DDR5 6400 MT/s	
Processors	Intel 6th Gen Xeon 6700P or 6500P processors (Granite Rapids Massive processing power with up to 86 cores per socket) • Improved performance with AI-accelerated features and new virtual-machine security features • High-speed DDR5 memory technology for up to 6400 MT/s • Multiple built-in accelerators for new functional capabilities across AI, analytics, security, and storage	
Cloud-based services and management	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 • Obtain full control over Virtual Machines (VMs), the virtualization layer, and software-defined storage • Use Leverage Distributed Resource Scheduler (DRS) to balance workloads across the cluster

Feature	Benefit
Storage	• Up to six hot-pluggable U.2/U.3 NVMe drives with a passthrough front-mezzanine controller option that is new in the Cisco Compute Hyperconverged X210c M8 All-NVMe Node • Two M.2 SATA drives for flexible boot capabilities • 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 such as compression and erasure coding applied in the write path
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	• Data-at-rest encryption with enterprise key management integration • 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 X210c 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 Hyperconverged with vSAN X210c M8 All-NVMe Node family
Processors	One or two Intel 6th Gen Xeon 6700P or 6500P processors (Granite Rapids)
Memory	Up to 32 DDR5 DIMM slots (up to 16 DIMMS per CPU): 16, 32, 64, 128, 256GB RDIMM at up to 6400 MT/s and support of 32, 64B MRDIMM at up to 8000 MT/s
Storage	• Cisco Compute Hyperconverged X215c M8 All-NVMe Node: various capacity options from 1.6 TB to 15.3 TB U.2/U.3 NVMe drives (up to 6 drives per node) • Dual M.2 SATA SSDs with HW RAID support
mLOM	mLOM slot for Cisco UCS VIC 15420 or Cisco VIC 15230
Mezzanine adapter (rear)	Cisco UCS 15422 mezzanine card with UCS VIC 15000 bridge connector compatible with Cisco UCS VIC 15420

Item	Common specifications across the Cisco Hyperconverged with vSAN X210c M8 All-NVMe Node family
Mezzanine module (front)	**Front-mezzanine module options:** • U.3 NVMe passthrough controller
Internal storage and GPU	**Front-mezzanine storage options:** • Up to 6x 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 960/480 GB per drive) SATA drives with hardware RAID **GPU options:** • Cisco HCI X-Series Gen4 PCIe node
Management	• Cisco Intersight software (SaaS, Virtual Appliance, and Private Virtual Appliance)
Software	• **Management software:** Cisco Intersight and Broadcom VMware vCenter • **Storage software:** Broadcom VMware vSAN ESA • **Hypervisor choice:** Support for Broadcom VMware ESXi/vSphere

System requirements

Table 3. System requirements

Item	Requirements
Cisco UCS X-Series chassis	Cisco Compute UCS X9508 Chassis
Fabric interconnects	Cisco UCS 6454, 64108, and 6536 fabric interconnects Cisco UCS Fabric Interconnect 9108 100G (for Cisco UCS X-Series Direct deployment)
X-Fabric modules	9416 X-Fabric modules for Cisco Compute Hyperconverged X9508 Chassis
Cisco Intersight	Intersight Managed Mode (minimum 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
HCIXVS210C-M8SN	Cisco Compute Hyperconverged X210c M8 Compute Node with up to 6x NVMe drives capability
HCIXVS210C-M8SN-U	Cisco Compute Hyperconverged X210c M8 Compute Node UPG with up to 6x NVMe drives capability

For ordering information, see the Cisco Compute Hyperconverged X210c 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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