

Cisco HyperFlex HX245c Edge M6 Node

High storage capacity for edge computing

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Rich digital experiences need always-on, local, high-performance computing that is close to users. Retail, finance, education, healthcare, transportation, and manufacturing organizations, and remote and branch offices in general, are all pushing computing to the network edge. Cisco HyperFlex™ HX245c Edge M6 Nodes bring the robust feature set of Cisco HyperFlex systems to your edge environments with high-capacity storage and cloud-based management in a small footprint.

Simplicity for the edge

As enterprise applications migrated to centralized data centers and the cloud, the internet edge moved closer to user devices and organizational touchpoints such as remote and branch offices. Cisco HyperFlex HX245c Edge M6 Nodes are deployed as a preintegrated cluster with a unified pool of resources that you can quickly provision, adapt, scale, and manage to efficiently power your remote-office and branch-office (ROBO) locations. Physically, the solutions are deployed as sets of two, three, or four edge-specific nodes that use Cisco® or third-party Gigabit or 10 Gigabit Ethernet switches, offering the utmost in flexibility for deployment in remote and branch-office environments (Figure 1). All nodes use AMD EPYC™ CPUs and next-generation DDR4 memory and offer 12-Gbps SAS throughput.

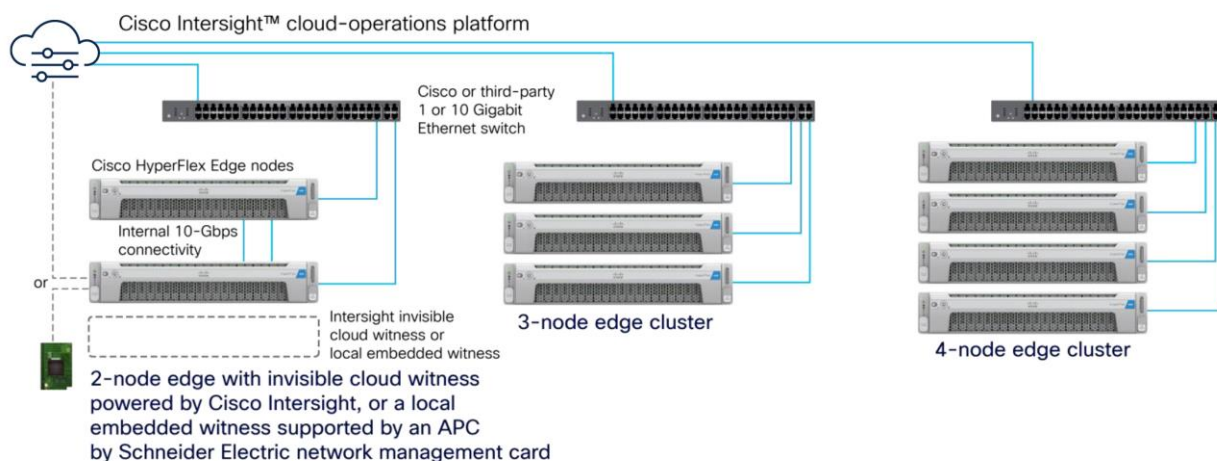


Figure 1. Cisco HyperFlex Edge delivers a preintegrated, high storage capacity cluster to remote-office and branch-office locations

Cisco HyperFlex HX245c Edge M6 Nodes

Cisco HyperFlex HX245c Edge M6 Nodes bring high storage capacity to the network edge. These nodes are available with hybrid and all-flash storage in a Two-Rack-Unit (2RU) chassis. With the same easy deployment and management as all Cisco HyperFlex Edge systems, these platforms bring greater storage capacity to edge locations and small or medium-size businesses. The solutions are managed by the Cisco Intersight cloud-operations platform, delivering consistent policy-based enforcement, powering growing requirements in branch offices and remote sites, and enabling new IoT and intelligent services at the network edge.

Features and benefits

Table 1. Features and benefits of Cisco HyperFlex HX245c Edge M6 Nodes

Feature	Benefit	
Chassis	<ul style="list-style-type: none"> Two-Rack-Unit (2RU) chassis 	
Memory	<ul style="list-style-type: none"> 32 DIMM slots (16 DIMMs per CPU socket), 3200 MHZ DDR4 for up to 4 TB of capacity 	
AMD EPYC CPUs	<ul style="list-style-type: none"> One to two 3rd Gen AMD EPYC CPUs 	
Network	<ul style="list-style-type: none"> Easy deployment in existing edge locations Use of existing top-of-rack 1 Gigabit Ethernet or 10/25 Gigabit Ethernet switching networks for cluster communication Support for single and dual switch configurations 	
Expansion	<p>The HX245 M6 SFF server has:</p> <ul style="list-style-type: none"> Up to 24 front SFF SAS/SATA HDDs or SSDs (optionally up to four of the drives can be NVMe) An I/O-centric option that provides up to eight PCIe slots using three rear risers, or A storage-centric option that provides three rear risers with a total of up to four NVMe SFF drives and three PCIe slots <p>The server provides internal slots for:</p> <ul style="list-style-type: none"> Two Cisco 12G SAS HBAs to control SAS/SATA drives <p>The HX245 M6 server has a single 1-GE management port. A modular, LAN-on-motherboard slot can extended to an OCP 3.0 slot and provides up to two 100-GE ports. A connector on the front of the chassis provides KVM functionality.</p>	
Cloud-based management	<p>Cisco Intersight simplifies operations across on- premises data centers, edge sites, and public clouds.</p> <ul style="list-style-type: none"> Use a software-as-a-service platform that bridges applications with infrastructure Gain instant access to clusters regardless of where they are deployed Correlate visibility and management across bare-metal servers, hypervisors, Kubernetes, and serverless and application components Transform operations with artificial intelligence to reach needed scale and velocity Collaborate and work smarter and faster by automating lifecycle workflows Support compliance and governance with extensible, open capabilities that natively integrate with third-party platforms and tools Proactively respond to impending issues with a recommendation engine that determines when capacity needs to be scaled 	<p>Additional management capabilities include:</p> <ul style="list-style-type: none"> Optional installation wizard for automated configuration Support for the VMware vSphere plug-in Support for the Cisco HyperFlex Connect interface with an HTML 5 presentation layer accessible on desktop and laptop computers and mobile devices
Storage	<ul style="list-style-type: none"> Up to 24 front SFF SAS/SATA HDDs or SSDs (optionally up to four of the drives can be NVMe) An I/O-centric option that provides up to eight PCIe slots using three rear risers, or A storage-centric option that provides three rear risers with a total of up to four NVMe SFF drives and three PCIe slots 	

Feature	Benefit
Enterprise data protection	<ul style="list-style-type: none"> • Pointer-based snapshot capabilities • Native snapshots for iSCSI LUNs, including a consistency group for snapshot operations, instantaneous snapshot creation, and RESTful APIs for snapshot creation and third-party backup use • Snapshot integration with MEDITECH BridgeHead for electronic health records and databases • Near-instant cloning • Inline deduplication and compression • Native replication for disaster recovery • N:1 replication for data center clusters with fabric interconnects and more than 4 nodes, as well as a flexible retention policy for local and remote point-in-time copies • Data-at-rest encryption using self-encrypting drives and enterprise key management integration
Security	<ul style="list-style-type: none"> • Locking bezel option to protect against unauthorized access to disk drives
Software	<ul style="list-style-type: none"> • Cisco HyperFlex HX Data Platform Software (software subscription, Edge license)

Product specifications

Table 2. Specifications for Cisco HyperFlex HX245c Edge M6 Nodes

Capability / feature	Description
Chassis	Two-Rack-Unit (2RU) chassis
CPU	Up to two 3 rd Gen AMD EPYC processors
Memory	32 DIMM slots (16 DIMMs per CPU socket), 3200 MHZ DDR4 for up to 4 TB of capacity
Multi-bit error protection	This server supports multi-bit error protection.
Video	<p>The Cisco Integrated Management Controller (Cisco IMC) provides video using the Matrox-G200e video/graphics controller:</p> <ul style="list-style-type: none"> • Integrated 2D graphics core with hardware acceleration • Embedded DDR memory interface supports up to 512 MB of addressable memory (8 MB is allocated by default to video memory.) • Supports display resolutions up to 1920 x 1200 16 bpp @ 60 Hz • High-speed, integrated 24-bit RAMDAC • Single-lane PCI-Express host interface running at Gen 1 speed
Power subsystem	<p>Up to two of the following hot-swappable power supplies:</p> <ul style="list-style-type: none"> • 1050 W (AC) • 1050 W (DC) • 1600 W (AC) • 2300 W (AC) <p>One power supply is mandatory; one more can be added for 1 + 1 redundancy.</p>
Front panel	A front-panel controller provides status indications and control buttons.
ACPI	This server supports the Advanced Configuration and Power Interface (ACPI) 4.0 standard.
Fans	Six hot-swappable fans for front-to-rear cooling

Capability / feature	Description
InfiniBand	The InfiniBand architecture is supported by the PCIe slots.
Expansion slots	<ul style="list-style-type: none"> • Riser 1A (3 PCIe slots) • Riser 1B (2 drive bays) • Riser 2A (3 PCIe slots) • Riser 3A (2 PCIe slots) • Riser 3B (2 drive bays) • Riser 3C (1 PCIe slot)
Interfaces	<p>Rear panel:</p> <ul style="list-style-type: none"> • One 1GBASE-T RJ-45 management port • One RS-232 serial port (RJ45 connector) • One DB15 VGA connector • Two USB 3.0 port connectors • One flexible modular LAN-on-motherboard (mLOM)/OCP 3.0 slot that can accommodate various interface cards <p>Front panel:</p> <ul style="list-style-type: none"> • One KVM console connector (supplies two USB 2.0 connectors, one VGA DB15 video connector, and one serial port (RS232) RJ45 connector) • Up to 24 front SFF SAS/SATA hard drives (HDDs) or SAS/SATA Solid State Drives (SSDs) • Optionally, up to four front SFF NVMe PCIe SSDs These drives must be placed in front drive bays 1, 2, 3, and 4 only and are connected to CPU The rest of the bays (5 - 24) can be populated with SAS/SATA SSDs or HDDs. • Optionally, up to four SFF rear-facing NVMe drives
Internal storage devices	<p>Other storage:</p> <ul style="list-style-type: none"> • A mini-storage module connector on the motherboard supports a boot-optimized RAID controller carrier that holds two SATA M.2 SSDs. Mixing different capacity SATA M.2 SSDs is not supported. • HX245c Edge M6 All Flash Node (HXAF-E-245-M6SX) <ul style="list-style-type: none"> ◦ Data drives: 3 to 26 SATA SSD ◦ Cache drive: 1 NVMe/SAS SSD ◦ Logging drive: 1 SATA SSD • HX245c Edge M6 Node (hybrid) (HX-E-245-M6SX) <ul style="list-style-type: none"> ◦ Data drives: 3 to 26 SAS HDD ◦ Cache drive: 1 SAS SSD ◦ Logging drive: 1 SATA SSD
Integrated management controller	<p>A Baseboard Management Controller (BMC) runs Cisco Integrated Management Controller (Cisco IMC) firmware.</p> <p>Depending on your settings, the controller can be accessed through the 1-GE dedicated management port or a Cisco Virtual Interface Card (VIC).</p> <p>Cisco IMC manages certain components within the server, such as the Cisco 12G SAS HBA.</p>

Capability / feature	Description
Storage controllers	<p>One Cisco M6 12G SAS RAID controller or up to two Cisco 12G SAS HBAs plug into a dedicated slot.</p> <p>Cisco 12G SAS HBA:</p> <ul style="list-style-type: none"> • No RAID support • JBOD/passthrough mode support • Supports up to 16 SAS/SATA internal drives • Plugs into a dedicated slot
Modular LAN-on-motherboard (mLOM) / Open Compute Project (OCP) 3.0 slot	<p>The dedicated mLOM/OCP 3.0 slot on the motherboard can flexibly accommodate the following cards:</p> <ul style="list-style-type: none"> • Cisco Virtual Interface Cards (VICs) • OCP 3.0 network interface card (UCSC-O-ID10GC)
Cisco Intersight	Intersight provides server management capabilities
Cisco Integrated Management Controller	Requires Release 4.2(1) or later
Operating temperature	<p>Minimum 10°C to 35°C (50°F to 95°F) with no direct sunlight (If any A10, A100, or rear HDDs are installed, the 35°C (50°F) restriction changes to 30°C (86°F).)</p> <p>Maximum allowable operating temperature derated 1C/300 m (1F/547 ft) above 950 m (3117 ft)</p>
Extended operating temperature	<p>5°C to 40°C (41°F to 104°F) with no direct sunlight</p> <p>Maximum allowable operating temperature derated 1C/175 m (1F/319 ft) above 950 m (3117 ft)</p> <p>5°C to 4°5C (41°F to 113°F) with no direct sunlight</p> <p>Maximum allowable operating temperature derated 1C/125 m (1F/228 ft) above 950 m (3117 ft)</p> <p>System performance may be impacted when operating in the extended operating temperature range.</p> <p>Operation above 40°C is limited to less than 1% of annual operating hours.</p> <p>Hardware configuration limits apply to extended operating temperature range.</p>
Non-operating temperature	<p>Below -40°C or above 65°C (below -40°F or above 149°F)</p> <p>Maximum rate of change (operating and non-operating) 20°C/hr (36°F/hr)</p>
Operating relative humidity	8% to 90% and 24°C (75°F) maximum dew-point temperature, non-condensing environment
Non-operating relative humidity	5% to 95% and 33°C (91°F) maximum dew-point temperature, non-condensing environment
Operating altitude	0 m to 3050 m {10,000 ft}
Non-operating altitude	Below 0 m or above 12,000 m (39,370 ft)

Ordering information

For a complete list of part numbers, refer to the [HX245c Edge M6](#) specification sheet.

Cisco Unified Computing Services

Cisco and our industry-leading partners deliver services that accelerate your transition to Cisco HyperFlex systems. 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 you have deployed your system, our services can help you improve performance, availability, and resiliency as your business needs evolve and help you further mitigate risk.

Cisco environmental sustainability

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Reference links to information about key environmental sustainability topics (mentioned in the “Environment Sustainability” section of the CSR Report) are provided in the following table:

Sustainability topic	Reference
Information on product material content laws and regulations	Materials
Information on electronic waste laws and regulations, including products, batteries, and packaging	WEEE compliance

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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How to buy

To view buying options and speak with a Cisco sales representative, go to www.cisco.com/c/en/us/buy.html.

For more information

For more information about Cisco HyperFlex systems, refer to <https://www.cisco.com/go/hyperflex>.

Document history

New or revised topic	Described in	Date
Initial release	Spec sheet	March, 2022



Cisco HyperFlex systems with AMD EPYC processors

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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