

# Cisco HyperFlex HX220c Edge M5

Edge computing at scale with 2 to 4 node clusters

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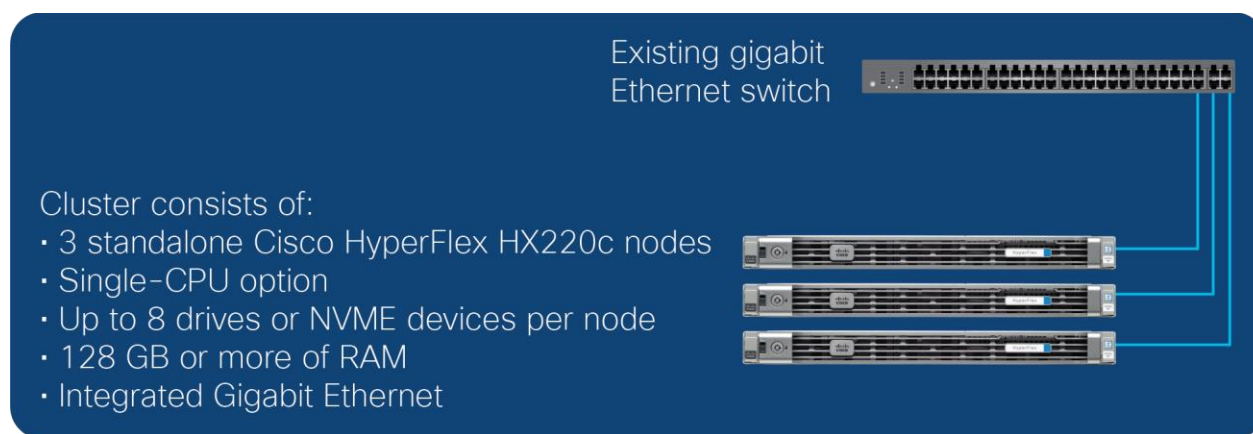
Rich digital experiences need always-on, local, high-performance computing that is close to users. Retail, finance, education, healthcare, transportation, and manufacturing organizations, and remote and branch offices in general, are all pushing computing to the network edge. Cisco HyperFlex™ Edge Nodes bring the robust feature set of Cisco HyperFlex systems to your edge environments with low-cost, easy-to-deploy, cloud-managed solutions.

## Designed for the edge

While enterprise applications have been migrating to centralized data centers and to the cloud, the Internet edge has been moving to branch and remote locations closer to user devices and organizational touchpoints. Cisco HyperFlex Edge Nodes are designed to work in simplified two- to four-node clusters using existing 1, 10, and 25 Gigabit Ethernet networks. These nodes are available in one-rack-unit (1RU) hybrid and all-flash, two-rack-unit (2RU) hybrid and all flash, and 2RU short-depth form factors. With the same easy deployment and management as all Cisco HyperFlex systems, Cisco HyperFlex Edge Nodes deliver the power of hyperconvergence to a multitude of edge locations, or can act as the sole cluster supporting a small or medium-size business.

## Cisco HyperFlex HX220c Edge M5

Cisco HyperFlex Edge is 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 system is delivered as a cluster of three hybrid, all-flash, or all-NVMe nodes that are integrated using your existing Gigabit Ethernet switch (Figure 1). All nodes use Intel® Xeon® Scalable CPUs and next-generation DDR4 memory and offer 12-Gbps SAS throughput. As a result, these sixth-generation servers offer faster processing, more cores, and a faster, larger memory capacity than previous-generation nodes.



**Figure 1.**

Cisco HyperFlex Edge delivers a preintegrated cluster for remote-office and branch-office locations

## Features and benefits

**Table 1.** Summary of features and benefits of the Cisco HyperFlex Edge system.

Feature	Benefit		
<b>Memory</b>	<ul style="list-style-type: none"> <li>High memory capacity, from 128 GB to 3 TB of memory</li> </ul>		
<b>Intel Xeon Scalable CPUs</b>	<p>High performance</p> <ul style="list-style-type: none"> <li>14-nanometer (nm) processor technology</li> <li>Massive processing power</li> <li>Top-of-the-line memory-channel performance</li> <li>Improved scalability and intercore data flow</li> <li>Intel Automated Vector Extensions 2 (AVX2)</li> </ul>	<p>Agility</p> <ul style="list-style-type: none"> <li>Supports highly dense virtual machine deployments</li> <li>Offers flexible virtualization technology that optimizes performance for virtualized environments, including processor support for migration and direct I/O</li> </ul>	<p>Efficiency and security</p> <ul style="list-style-type: none"> <li>Low-power, high-speed DDR4 memory technology</li> <li>Automated energy efficiency reduces energy costs by automatically putting the processor and memory in the lowest available power state while delivering the performance required</li> <li>Hardware-assisted security advancements</li> </ul>
<b>Network</b>	<ul style="list-style-type: none"> <li>Easy deployment in existing edge locations</li> <li>Use of existing top-of-rack 1 Gigabit Ethernet or 10/25 Gigabit Ethernet switching networks for cluster communication</li> <li>Support for single and dual switch configurations</li> </ul>		
<b>Expansion</b>	<ul style="list-style-type: none"> <li>Support for up to 2 PCI Express (PCIe) 3.0 slots</li> <li>Flexibility, increased performance, and compatibility with industry standards</li> <li>High I/O bandwidth, increased flexibility, and backward compatibility with support for PCIe 2.0</li> </ul>		
<b>Virtualization optimization</b>	<ul style="list-style-type: none"> <li>I/O virtualization and Intel Xeon Scalable processor features, extending the network directly to virtual machines Consistent and scalable operational model</li> <li>Increased security and efficiency with reduced complexity</li> <li>Capability to move virtual machine security features and policies from rack to rack or rack to blade</li> </ul>		
<b>Cloud-based management</b>	<p>Cisco Intersight™ simplifies operations across on-premises data centers, edge sites, and public clouds.</p> <ul style="list-style-type: none"> <li>Use a software-as-a-service platform that bridges applications with infrastructure</li> <li>Gain instant access to clusters regardless of where they are deployed</li> <li>Correlate visibility and management across bare-metal servers, hypervisors, Kubernetes, and serverless and application components</li> <li>Transform operations with artificial intelligence to reach needed scale and velocity</li> <li>Collaborate and work smarter and faster by automating lifecycle workflows</li> <li>Support compliance and governance with extensible, open capabilities that natively integrate with third-party platforms and tools</li> <li>Proactively respond to impending issues with a recommendation engine that determines when capacity needs to be scaled</li> </ul>	<p>Additional management capabilities include:</p> <ul style="list-style-type: none"> <li>Optional Installation wizard for automated configuration</li> <li>Support for the VMware vSphere plug-in</li> <li>Support for the Cisco HyperFlex Connect interface with an HTML 5 presentation layer accessible on desktop and laptop computers and mobile devices</li> </ul>	
<b>Storage</b>	<ul style="list-style-type: none"> <li>Support for all-flash, hybrid, or all-NVMe devices</li> </ul>		
<b>Enterprise data protection</b>	<ul style="list-style-type: none"> <li>Pointer-based snapshot capabilities</li> </ul>		

Feature	Benefit
	<ul style="list-style-type: none"> <li>• 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</li> <li>• Snapshot integration with MEDITECH-BridgeHead for electronic health records and databases</li> <li>• Near-instant cloning</li> <li>• Inline deduplication and compression</li> <li>• Native replication for disaster recovery</li> <li>• 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</li> <li>• Data-at-rest encryption using self-encrypting drives and enterprise key management integration</li> </ul>
<b>Security</b>	<ul style="list-style-type: none"> <li>• Locking bezel option to protect against unauthorized access to disk drives</li> </ul>
<b>Software</b>	<ul style="list-style-type: none"> <li>• Cisco HyperFlex HX Data Platform Software (software subscription)</li> </ul>

## Product specifications

**Table 2.** Specifications for Cisco HyperFlex Edge systems.

Feature	Description
<b>Chassis</b>	<ul style="list-style-type: none"> <li>• 3RU of rack space for the cluster</li> </ul>
<b>Nodes</b>	<ul style="list-style-type: none"> <li>• 3 Cisco HyperFlex HX220c M5SX Nodes or HX220c M5SX All Flash Nodes</li> </ul>
<b>Processors</b>	<ul style="list-style-type: none"> <li>• One or two 2<sup>nd</sup> Generation Intel Xeon Scalable CPUs per node</li> </ul>
<b>Interconnect</b>	<ul style="list-style-type: none"> <li>• 3 Intel UPI channels per processor, each capable of 10.4 gigatransfers per second (GTPS)</li> </ul>
<b>Chip set</b>	<ul style="list-style-type: none"> <li>• Intel C621 series</li> </ul>
<b>Memory</b>	<ul style="list-style-type: none"> <li>• 24 DDR4 DIMM slots per node</li> <li>• Support for DDR4 registered DIMMs (RDIMMs) and Load-Reduced DIMMs (LRDIMMs)</li> <li>• Advanced error-correcting code (ECC)</li> <li>• Independent channel mode</li> <li>• Lockstep channel mode</li> </ul>
<b>PCIe slots</b>	<ul style="list-style-type: none"> <li>• 6 PCIe 3.0 slots per cluster (2 PCIe slots per node)</li> <li>• Support the following cards: <ul style="list-style-type: none"> <li>○ Intel X550-T2 dual-port 10 Gigabit Ethernet network interface card</li> <li>○ Intel XXV710-DA2 dual-port 25 Gigabit Ethernet network interface card</li> <li>○ Intel i350 quad-port 1 Gigabit Ethernet network interface card</li> <li>○ Intel X710-DA2 dual-port 10 Gigabit Ethernet network interface card</li> </ul> </li> </ul>
<b>Expansion slots</b>	<ul style="list-style-type: none"> <li>• 1 full-height, ¾ length slot with x24 connector and x16 lane</li> <li>• 1 half-height, half-length slot with x24 connector and x16 lane</li> <li>• Dedicated SAS HBA slot</li> </ul>
<b>Modular LAN on Motherboard (mLOM) slot</b>	<ul style="list-style-type: none"> <li>• 1 dedicated mLOM spot supports the following cards: <ul style="list-style-type: none"> <li>○ Cisco 1457 Quad Port Virtual Interface Card (10/25 Gigabit Ethernet)</li> <li>○ Quad Port Intel i350 1-Gigabit Ethernet RJ-45 Network Interface card</li> </ul> </li> </ul>

Feature	Description
<b>Storage</b>	<ul style="list-style-type: none"> <li>• All-flash-memory, all-NVMe, or hybrid storage configurations (combination of hard-disk drives [HDDs], and solid-state-disks [SSDs])</li> <li>• High-capacity configurations for the Cisco HyperFlex HX Data Platform capacity layer: <ul style="list-style-type: none"> <li>◦ HX220c M5 Node: 3 to 8 x 1.2-TB SATA HDDs</li> <li>◦ HX220c M5 All Flash Node: 3 to 8 x 3.8-TB or 960-GB SSD drives</li> </ul> </li> <li>• 1 x 240-GB NVMe SSD log drive</li> <li>• Caching or write log drive: <ul style="list-style-type: none"> <li>◦ HX220c M5 Node: 1 NVMe SSD caching drive</li> <li>◦ HX220c M5 All Flash Node: 1 NVMe SSD write-logging drive</li> </ul> </li> <li>• Cisco 12-Gbps Modular SAS host bus adapter (HBA) with internal SAS connectivity M.2 SATA SSD drive for boot</li> </ul>
<b>Embedded network interface card (NIC)</b>	<ul style="list-style-type: none"> <li>• Dual 10-Gbps Intel x550 Ethernet ports per node (1-Gbps connection usable for Cisco HyperFlex Edge)</li> <li>• Support for the wake-on-LAN (WoL) standard</li> </ul>
<b>Cisco® Integrated Management Controller (IMC)</b>	<ul style="list-style-type: none"> <li>• Provides video using the ASPEED Pilot 4 video and graphics controller</li> <li>• Connection to Cisco UCS management or the Cisco HyperFlex dashboard for automated configuration through a unified interface</li> <li>• Integrated baseboard management controller (BMC)</li> <li>• IPMI 2.0 compliant for management and control</li> <li>• One 10/100/1000 Ethernet out-of-band management interface</li> <li>• Command-line interface (CLI) and web GUI management tool for automated, lights-out management</li> <li>• Keyboard, video, and mouse (KVM) console</li> </ul>
<b>Advanced reliability, availability, and serviceability (RAS) features</b>	<ul style="list-style-type: none"> <li>• Highly available and self-healing architecture</li> <li>• Robust reporting and analytics</li> <li>• Hot-swappable, front-accessible drives</li> <li>• Dual-redundant fans and hot-swappable, redundant power supplies for enterprise-class reliability and uptime Convenient latching lid for easy access to internal server</li> <li>• Tool-free CPU insertion, enabling processor upgrades and replacements with less risk of damage</li> <li>• Tool-free access to all serviceable items, and color-coded indicators to guide users to hot-pluggable and serviceable items</li> <li>• Nondisruptive rolling upgrades</li> <li>• Cisco Call Home and onsite 24-hours-a-day, 7-days-a-week (24 x 7) support options</li> </ul>
<b>Front-panel connector</b>	<ul style="list-style-type: none"> <li>• 1 KVM console connector per node (supplies 2 USB connectors, 1 VGA connector, and 1 serial connector)</li> </ul>
<b>Front-panel locator LED</b>	<ul style="list-style-type: none"> <li>• Helps direct administrators to specific servers in large data center environments</li> </ul>
<b>Additional rear connectors</b>	<ul style="list-style-type: none"> <li>• 1 Gigabit Ethernet management port</li> <li>• 2 x 10 Gigabit Ethernet ports per node</li> <li>• 1 RS-232 serial port (RJ45 connector)</li> <li>• 1 Video Graphics Array (VGA) video port (DB15 connector)</li> <li>• 2 USB 3.0 ports</li> <li>• 1 flexible modular LAN on motherboard (mLOM) slot</li> </ul>
<b>Power and cooling</b>	<ul style="list-style-type: none"> <li>• One or two hot-swappable power supplies</li> <li>• Second power supply provides 1+1 redundancy</li> <li>• 1050W (AC and DC options), 1600W</li> <li>• 7 hot-swappable fans for front-to-rear cooling</li> </ul>

Feature	Description
<b>Rail-kit options</b>	<ul style="list-style-type: none"> <li>• Cisco ball-bearing rail kit with optional reversible cable-management arm</li> <li>• Cisco friction rail kit with optional reversible cable-management arm</li> </ul>
<b>Software</b>	<ul style="list-style-type: none"> <li>• Cisco HyperFlex HX Data Platform Software (software subscription)</li> </ul>

## Ordering information

For a complete list of part numbers, refer to the Cisco HyperFlex Edge 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 Capital

### Flexible payment solutions to help you achieve your objectives

Cisco Capital 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 the 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. [Learn more.](#)

## Cisco environmental sustainability

Information about Cisco's environmental sustainability policies and initiatives for our products, solutions, operations, and extended operations or supply chain is provided in the "Environment Sustainability" section of Cisco's [Corporate Social Responsibility](#) (CSR) Report.

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
<b>Information on product material content laws and regulations</b>	<a href="#">Materials</a>
<b>Information on electronic waste laws and regulations, including products, batteries, and packaging</b>	<a href="#">WEEE compliance</a>

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](http://www.cisco.com/c/en/us/buy).

## For more information

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



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## Document history

New or revised topic	Described in	Date
Updated to latest hardware specifications	Spec sheet	Jan 21, 2021
Update to include new data protection features	Spec sheet, presentation	September 2021

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