

Cisco HyperFlex HX225 M6 Edge All Flash and Hybrid Server Nodes

A printed version of this document is only a copy and not necessarily the latest version. Refer to the following link for the latest released version:

<https://www.cisco.com/c/en/us/products/servers-unified-computing/HX-c-series-rack-servers/datasheet-listing.html>



CONTENTS

OVERVIEW	5
DETAILED VIEWS	7
Chassis Front View - HXAF-E-225M6S (All Flash)	7
Chassis Front View - HX-E-225M6S (Hybrid)	8
Detailed Chassis Rear Views	9
BASE SERVER STANDARD CAPABILITIES and FEATURES	13
CONFIGURING the SERVER	17
STEP 1 VERIFY SERVER SKU	18
STEP 2 SELECT RISERS	19
STEP 3 SELECT CPU(s)	20
STEP 4 SELECT MEMORY	22
STEP 5 SELECT DRIVE CONTROLLERS	27
Cisco 12G SAS HBA	27
STEP 6 SELECT DRIVES	28
STEP 7 SELECT OPTION CARD(s)	32
STEP 8 ORDER OPTIONAL PCIe OPTION CARD ACCESSORIES	34
STEP 9 SELECT HYPERFLEX EDGE NETWORK TOPOLOGY	37
STEP 10 ORDER GPU CARDS (OPTIONAL)	39
STEP 11 ORDER POWER SUPPLY	40
STEP 12 SELECT INPUT POWER CORD(s)	41
STEP 13 ORDER TOOL-LESS RAIL KIT AND OPTIONAL REVERSIBLE CABLE MANAGEMENT ARM	44
STEP 14 ORDER SECURITY DEVICES (OPTIONAL)	45
STEP 15 SELECT LOCKING SECURITY BEZEL (OPTIONAL)	46
STEP 16 SELECT HYPERVISOR / HOST OPERATING SYSTEM	47
STEP 17 SELECT HYPERFLEX DATA PLATFORM (HXDP) SOFTWARE	49
STEP 18 CISCO INTERSIGHT	50
STEP 19 SELECT SERVICE and SUPPORT LEVEL	51
Unified Computing Warranty, No Contract	51
Smart Net Total Care (SNTC) for Cisco UCS	51
Smart Net Total Care for Cisco UCS Onsite Troubleshooting Service	53
Solution Support (SSTP) for UCS	54
Solution Support for Service Providers	55
Smart Net Total Care for UCS Hardware Only Service	56
Partner Support Service for UCS	57
PSS for UCS Hardware Only	58
Distributor Support Service (DSS)	59
Unified Computing Combined Support Service	60
UCS Drive Retention Service	61
Local Language Technical Support for UCS	61
SUPPLEMENTAL MATERIAL	62
Supported Network Topologies for HyperFlex Edge 2 Node Deployments	62
Supported Network Topologies for HyperFlex Edge 3 and 4 Node Deployments	67
Chassis	72
Risers	74
Memory Support for AMD Rome and Milan CPUs	77
Serial Port Details	77
KVM Cable	78
SPARE PARTS	79
REPLACING CPUs and HEATSINKS	84

CONTENTS

- UPGRADING or REPLACING MEMORY 85**
- TECHNICAL SPECIFICATIONS 86**
 - Dimensions and Weight 86
 - Power Specifications 87
 - Environmental Specifications 90
 - Extended Operating Temperature Hardware Configuration Limits 91
 - Compliance Requirements 92

CONTENTS

OVERVIEW

Cisco HyperFlex Edge Systems are optimized for remote sites, branch offices, and edge environments. As a smaller form factor of Cisco HyperFlex, Cisco HyperFlex Edge keeps the full power of a next generation hyperconverged platform even without connecting to Cisco UCS Fabric Interconnects. Cisco HyperFlex Edge Systems support a variable configuration of 2, 3, or 4 HX converged nodes and supports the scale up of CPU, memory, and storage capacity (hot-add additional capacity drives).

HyperFlex Edge operates using existing top of rack 1GE or 10/25GE switching with options for both single and dual switch configurations. Edge clusters are configured with replication factor 2 (RF2) to ensure availability during various failure scenarios. HyperFlex Edge is typically deployed in environments with a minimal infrastructure footprint, hence the use of UCS compute-only nodes is not supported.

The HyperFlex HX225 M6 Edge All Flash and Hybrid Server Nodes extends the capabilities of Cisco's HyperFlex portfolio in a 1U form factor with the addition of the AMD CPUs, 16 DIMM slots per CPU for 3200-MHz DDR4 DIMMs with DIMM capacity points up to 128 GB. The maximum memory capacity for 2 CPUs is listed here:

- 4 TB (32 x 128 GB DDR4 DIMMs)

There are several front drive and rear riser configurations:

Drives

There are two server nodes to choose from:

- **HXAF-E-225M6S (All Flash)** (see [Figure 1 on page 6](#)):
 - Up to 10 front SFF SAS/SATA SSDs only.
- **HX-E-225M6S (Hybrid)** (see [Figure 1 on page 6](#)):
 - Up to 10 front SFF SAS/SATA HDDs and SSDs.

Rear PCIe Risers

- One to three half-height PCIe risers, or
- One to two full-height PCIe risers

The server provides an internal slot for one of the following:

- Cisco 12G SAS pass-through HBA to control SAS/SATA drives



NOTE:
PCIe drives are controlled directly from CPU1

The HX225 M6 Edge All Flash and Hybrid Server Nodes has two LOM ports (10Gbase-T LOM) and a single 1 GbE management port. A modular LAN on motherboard (mLOM) module provides up to two 100 GbE ports. A connector on the front of the chassis provides KVM functionality.

See [Figure 1 on page 6](#) for front and rear views of the HyperFlex HX225 M6 Edge All Flash and Hybrid Server Nodes.

Figure 1 Cisco HyperFlex HX225 M6 Edge All Flash and Hybrid Server Nodes

HXAF-E-225M6S (All Flash)
10 front drives are SAS/SATA SDDs
Front View (see [Figure 2 on page 7](#) for details)



HX-E-225M6S (Hybrid)
10 front drives are SAS/SATA HDDs and SDDs
Front View (see [Figure 3 on page 8](#) for details)



Rear View (one half-height riser version) (see [Figure 4 on page 10](#) for details)



Rear View (three half-height riser version) (see [Figure 5 on page 11](#) for details)



Rear View (two full-height riser version) (see [Figure 6 on page 12](#) for details)

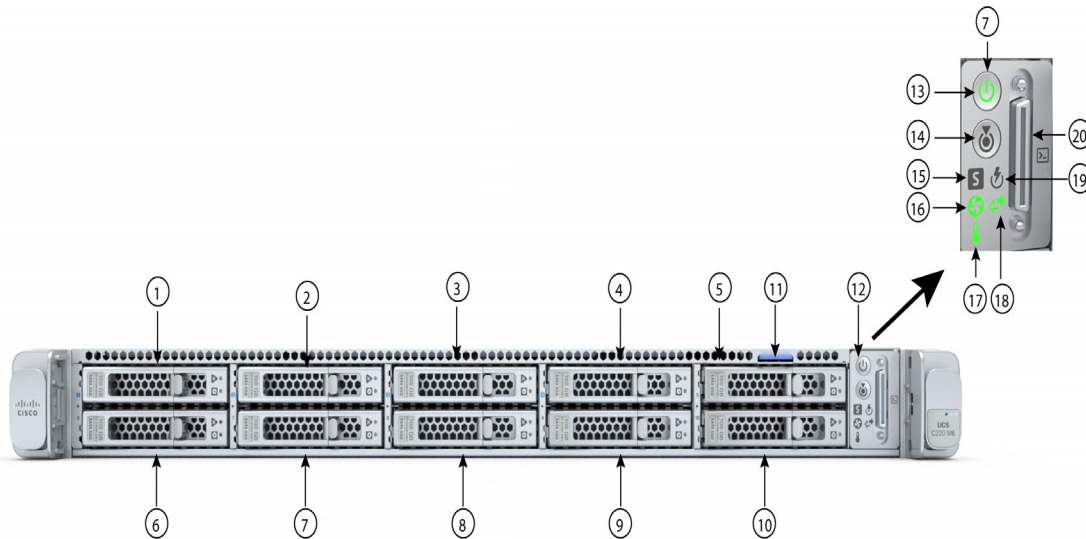


DETAILED VIEWS

Chassis Front View - HXAF-E-225M6S (All Flash)

Figure 2 shows the front view of the Cisco HyperFlex HXAF-E-225M6S (All Flash) server node.

Figure 2 Chassis Front View

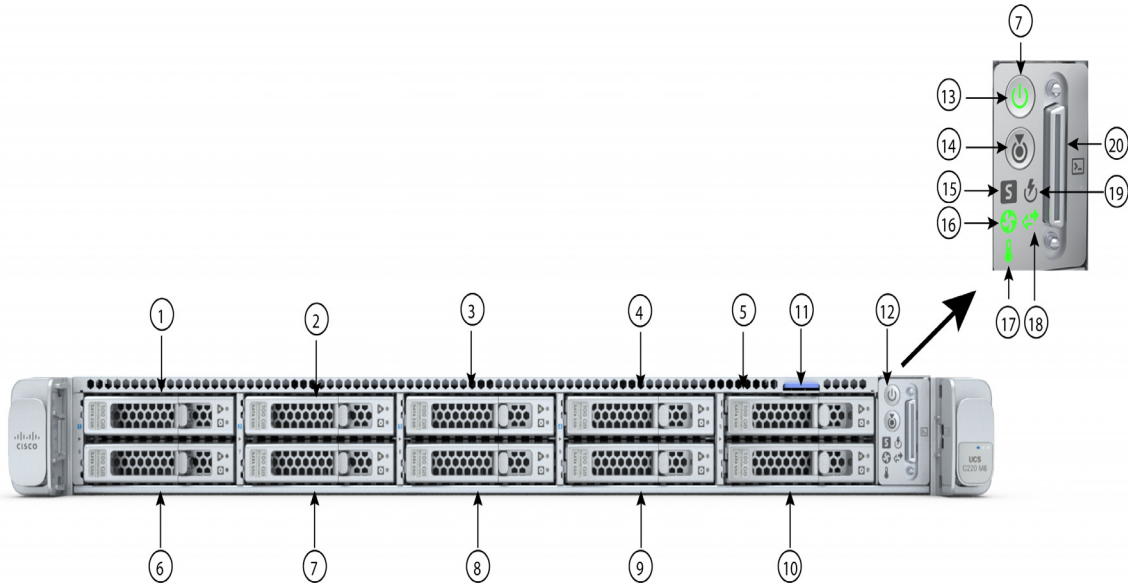


1 - 10	Drive bays 1 - 10 support SAS/SATA solid state drives (SSDs) only	16	Fan status LED
11	Asset tag location	17	Temperature status LED
12	Control panel	18	Network link activity LED
13	Power button/power status LED	19	Power supply status LED
14	Unit Identification button/LED	20	KVM connector (used with KVM cable that provides two USB 2.0, one VGA, and one serial connector)
15	System status LED	—	—

Chassis Front View - HX-E-225M6S (Hybrid)

Figure 3 shows the front view of the Cisco HyperFlex HX-E-225M6S (Hybrid) server node.

Figure 3 Chassis Front View



1 - 4	Drive bays 1 - 4 support SAS/SATA hard drives (HDDs) and solid state drives (SSDs)	15	System status LED
5 - 10	Drive bays 5 - 10 support SAS/SATA hard drives (HDDs) only	16	Fan status LED
11	Asset tag location	17	Temperature status LED
12	Control panel	18	Network link activity LED
13	Power button/power status LED	19	Power supply status LED
14	Unit Identification button/LED	20	KVM connector (used with KVM cable that provides two USB 2.0, one VGA, and one serial connector)

Detailed Chassis Rear Views

Figure 4 shows the details of the rear panel for the HyperFlex HX225 M6 Edge All Flash and Hybrid Server Nodes with one rear half-height PCIe riser.

Figure 5 shows the details of the rear panel for the HyperFlex HX225 M6 Edge All Flash and Hybrid Server Nodes with three rear half-height PCIe risers.

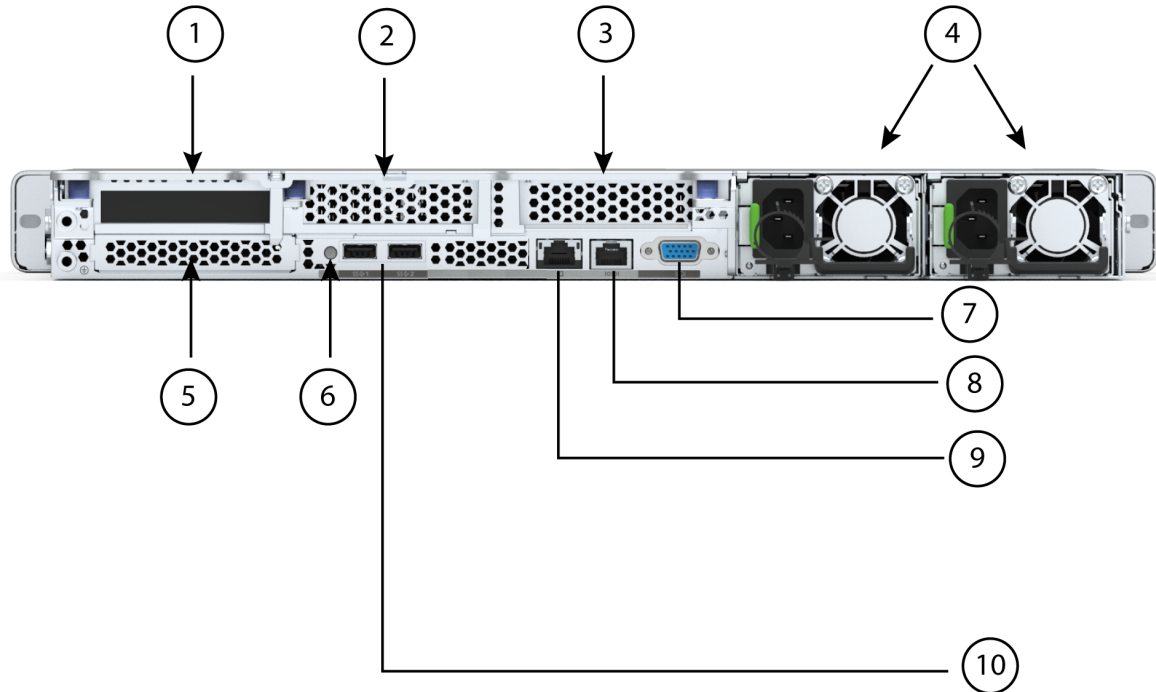
Figure 6 shows the details of the rear panel for the HyperFlex HX225 M6 Edge All Flash and Hybrid Server Nodes with two rear full-height PCIe risers.

One Half-Height Riser



NOTE: By default, 1-CPU server comes with only one half-height riser 1 installed. 2-CPU servers support all three half-height risers.

Figure 4 Chassis Rear View (one half-height, 3/4 length PCIe riser)



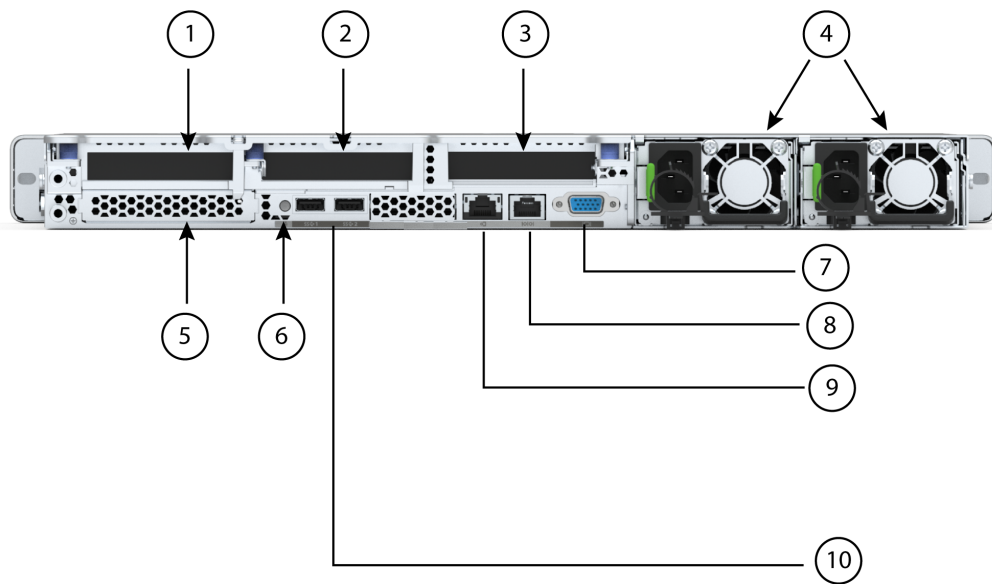
1	Riser 1 (CPU1 control) <ul style="list-style-type: none"> ■ Supports one PCIe slot ■ Slot 1 is half-height, 3/4 length, x16 	7	VGA display port (DB15 connector)
2	Riser 2 blanking panel	8	COM port (RJ45 connector)
3	Riser 3 blanking panel	9	1 GbE dedicated Ethernet management port
4	Power supplies (two, redundant as 1+1)	10 - 11	Dual 1/10 GbE Ethernet ports (LAN1, LAN2) LAN1 is left connector, LAN2 is right connector
5	Modular LAN on motherboard (mLOM)	12	USB 3.0 ports (two)
6	System ID pushbutton/LED	-	-

Three Half-Height Risers



NOTE: Only 2-CPU server support all three half-height risers.

Figure 5 Chassis Rear View (three half-height, 3/4 length PCIe risers)



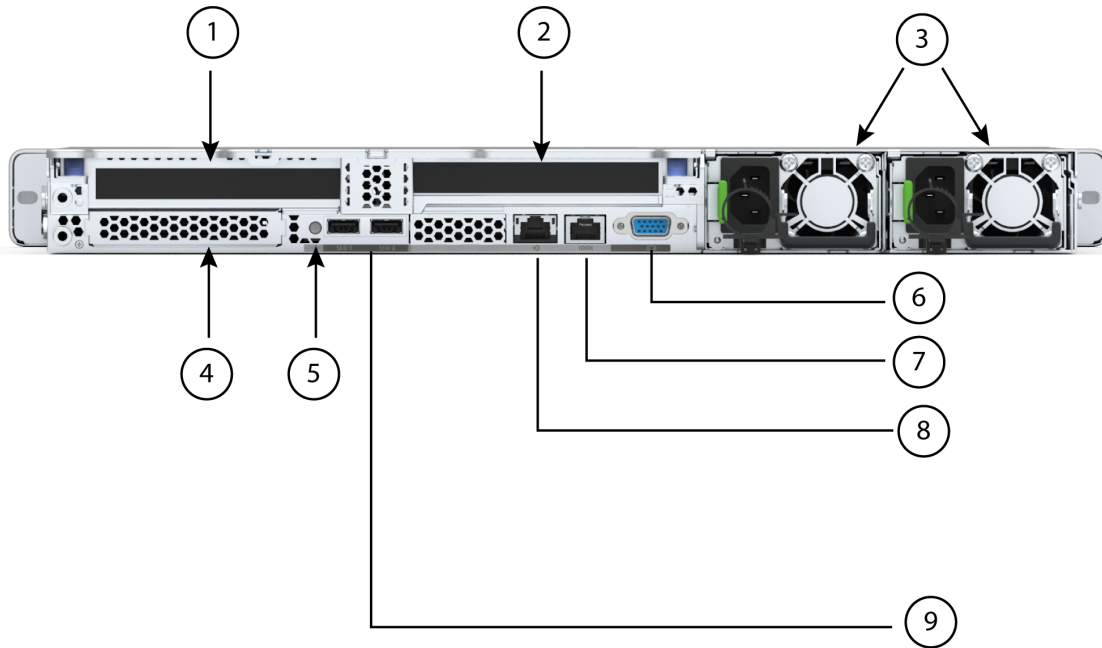
1	Riser 1 (CPU1 control) <ul style="list-style-type: none"> ■ Supports one PCIe slot (slot 1) ■ Slot 1 is half-height, 3/4 length, x16 	7	VGA display port (DB15 connector)
2	Riser 2 (CPU1 control) <ul style="list-style-type: none"> ■ Supports one PCIe slot (slot 2) ■ Slot 2 is half-height, 3/4 length, x16 	8	COM port (RJ45 connector)
3	Riser 3 (CPU2 control) <ul style="list-style-type: none"> ■ Supports one PCIe slot (slot 3) ■ Slot 3 is half-height, 3/4 length, x16 	9	1 GbE dedicated Ethernet management port
4	Power supplies (two, redundant as 1+1)	10 - 11	Dual 1/10 GbE Ethernet ports (LAN1, LAN2) LAN1 is left connector, LAN2 is right connector
5	Modular LAN on motherboard (mLOM)	12	USB 3.0 ports (two)
6	System ID pushbutton/LED	-	-

Two Full-Height Risers



NOTE: 1-CPU server support only full-height riser 1 while 2-CPU server support both full-height risers.

Figure 6 Chassis Rear View (two full-height, 3/4-length PCIe risers)



1	Riser 1 (CPU1 control) <ul style="list-style-type: none"> Plugs into riser 1 motherboard connector Full-height, 3/4 length, x16 	6	VGA display port (DB15 connector)
2	Riser 2 (CPU2 control) <ul style="list-style-type: none"> Plugs into riser 3 motherboard connector Full-height, 3/4 length, x16 	7	COM port (RJ45 connector)
3	Power supplies (two, redundant as 1+1)	8	1 GbE dedicated Ethernet management port
4	Modular LAN on motherboard (mLOM)	9 - 10	Dual 1/10 GbE Ethernet ports (LAN1, LAN2) LAN1 is left connector, LAN2 is right connector
5	System ID pushbutton/LED	11	USB 3.0 ports (two)

BASE SERVER STANDARD CAPABILITIES and FEATURES

Table 1 lists the capabilities and features of the base server. Details about how to configure the server for a particular feature or capability (for example, number of processors, disk drives, or amount of memory) are provided in *CONFIGURING the SERVER, page 17*.

Table 1 Capabilities and Features

Capability/Feature	Description
Chassis	One rack unit (1RU) chassis
CPU	One or two AMD Milan and Rome CPUs
Memory	32 slots for registered DIMMs (RDIMMs) or load-reduced DIMMs (LRDIMMs)
Multi-bit Error Protection	This server supports multi-bit error protection.
Video	<p>The Cisco Integrated Management Controller (CIMC) 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 16bpp @ 60Hz ■ 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) <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	<p>This server supports the advanced configuration and power interface (ACPI)</p> <p>Rome - ACPI version 6.2 Milan - ACPI version 6.3</p>
Fans	Eight hot-swappable fans for front-to-rear cooling
Infiniband	The InfiniBand architecture is supported by the PCI slots.

Table 1 Capabilities and Features (continued)

Capability/Feature	Description
Expansion slots	<p>Three half-height riser slots</p> <ul style="list-style-type: none"> ■ Riser 1 (controlled by CPU 1): <ul style="list-style-type: none"> • One x16 PCIe Gen4 Slot, (Cisco VIC), half-height, 3/4 length ■ Riser 2 (controlled by CPU 1): <ul style="list-style-type: none"> • One x16 PCIe Gen4 Slot, half-height, 3/4 length ■ Riser 3 (controlled by CPU 1): <ul style="list-style-type: none"> • One x16 PCIe Gen4 Slot, (Cisco VIC), half-height, 3/4 length <p>Two full-height riser slots</p> <ul style="list-style-type: none"> ■ Riser 1 (controlled by CPU 1): <ul style="list-style-type: none"> • One x16 PCIe Gen4 Slot, (Cisco VIC), full-height, 3/4 length ■ Riser 2¹ (controlled by CPU 1): <ul style="list-style-type: none"> • One x16 PCIe Gen4 Slot, (Cisco VIC), full-height, 3/4 length
Interfaces	<ul style="list-style-type: none"> ■ Rear panel <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 ■ Front panel <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)

Table 1 Capabilities and Features (continued)

Capability/Feature	Description
Internal storage devices	<p>Drive storage: This is orderable in two different nodes:</p> <p>HXAF-E-225M6S (All Flash):</p> <ul style="list-style-type: none"> ■ Up to 10 SFF SAS/SATA solid state drives (SSDs). 10 Drives are used as below: <ul style="list-style-type: none"> • Three to eight SAS/SATA SSD (for capacity) • One SAS/SATA SSD (for caching) • One SAS/SATA SSD (system drive for HXDP operations) <p>HX-E-225M6S (Hybrid):</p> <ul style="list-style-type: none"> ■ Up to 10 SFF SAS/SATA hard drives (HDDs) and SAS/SATA solid state drives (SSDs). 10 Drives are used as below: <ul style="list-style-type: none"> • Three to eight SAS HDD (for capacity) • One SAS/SATA SSD (for caching) • One SAS/SATA SSD (system drive for HXDP operations) <p>NOTE: NVMe and SED drives are not supported with HyperFlex Edge nodes.</p> <p><u>Other storage:</u></p> <ul style="list-style-type: none"> ■ A mini-storage module connector on the motherboard supports a boot-optimized RAID controller carrier that holds up two SATA M.2 SSDs. Mixing different capacity SATA M.2 SSDs is not supported.
Integrated management processor	<p>Baseboard Management Controller (BMC) running Cisco Integrated Management Controller (CIMC) firmware.</p> <p>Depending on your CIMC settings, the CIMC can be accessed through the 1GE dedicated management port or a Cisco virtual interface card (VIC).</p> <p>CIMC manages certain components within the server, such as the Cisco 12G SAS HBA.</p>
Storage controllers	<p>Cisco 12G SAS HBA plugs into a dedicated slot.</p> <ul style="list-style-type: none"> ■ Cisco 12G SAS HBA <ul style="list-style-type: none"> • No RAID support • JBOD/Pass-through Mode support • Supports up to 10 SAS/SATA internal drives
Modular LAN on Motherboard (mLOM)	<p>The dedicated mLOM slot on the motherboard can flexibly accommodate the following cards:</p> <ul style="list-style-type: none"> ■ Cisco Virtual Interface Cards

Table 1 Capabilities and Features (continued)

Capability/Feature	Description
(optional) Additional NICs	<ul style="list-style-type: none"> ■ Intel i350 Quad Port 1Gb Adapter ■ Intel X710-DA2 dual-port 10G SFP+ NIC ■ Intel X710 quad-port 10G SFP+ NIC ■ Cisco-Intel E810XXVDA2 2x25/10 GbE SFP28 PCIe NIC ■ Cisco-Intel X710T2LG 2x10 GbE RJ45 PCIe NIC ■ Cisco-Intel E810XXVDA4L 4x25/10 GbE SFP28 PCIe NIC
Intersight	Intersight provides server management capabilities
CIMC	Cisco Integrated Management Controller 4.2(1) or later

Notes:

1. There are three PCIe riser connectors on the motherboard: they are labeled Riser 1, Riser 2, and Riser 3. If the server is configured with three half-height risers, Riser 1 plugs into Riser 1 connector, Riser 2 plugs into Riser 2 connector, and Riser 3 plugs into Riser 3 connector. If the server is configured with two full-height connectors, Riser 1 plugs into Riser 1 connector and Riser 2 plugs into Riser 3 connector. See [Risers, page 73](#) for more details.

CONFIGURING the SERVER

Follow these steps to configure the Cisco HyperFlex HX225 M6 Edge All Flash and Hybrid Server Nodes:

- *STEP 1 VERIFY SERVER SKU, page 18*
- *STEP 2 SELECT RISERS, page 19*
- *STEP 3 SELECT CPU(s), page 20*
- *STEP 4 SELECT MEMORY, page 22*
- *STEP 5 SELECT DRIVE CONTROLLERS, page 27*
- *STEP 6 SELECT DRIVES, page 28*
- *STEP 7 SELECT OPTION CARD(s), page 32*
- *STEP 8 ORDER OPTIONAL PCIe OPTION CARD ACCESSORIES, page 34*
- *STEP 9 SELECT HYPERFLEX EDGE NETWORK TOPOLOGY, page 37*
- *STEP 10 ORDER GPU CARDS (OPTIONAL), page 39*
- *STEP 11 ORDER POWER SUPPLY, page 40*
- *STEP 12 SELECT INPUT POWER CORD(s), page 41*
- *STEP 13 ORDER TOOL-LESS RAIL KIT AND OPTIONAL REVERSIBLE CABLE MANAGEMENT ARM, page 44*
- *STEP 14 ORDER SECURITY DEVICES (OPTIONAL), page 45*
- *STEP 15 SELECT LOCKING SECURITY BEZEL (OPTIONAL), page 46*
- *STEP 16 SELECT HOST OPERATING SYSTEM, page 47*
- *STEP 17 SELECT HYPERFLEX DATA PLATFORM (HXDP) SOFTWARE, page 48*
- *STEP 18 CISCO INTERSIGHT, page 49*
- *STEP 19 SELECT SERVICE and SUPPORT LEVEL, page 50*

STEP 1 VERIFY SERVER SKU

Table 2 PID of Major Line Bundle (MLB)

Product ID (PID)	Description
HX-M6-MLB	HX/HXAF/EDG M6 MLB This major line bundle (MLB) consists of the HyperFlex All Flash, Hybrid and Edge Server Nodes, with Intersight and HXDP software spare PIDs.

Select one of the product ID (PID) of the server as shown in [Table 3](#).

Table 3 PID of the HyperFlex HX225C M6S All Flash and Hybrid Base Server Nodes

Product ID (PID)	Description
HXAF-E-225M6S ¹	Cisco HyperFlex HX225 M6 Edge All Flash Edge server is up to 10 SFF front drives with no CPU, memory, HDD, PCIe cards, or power supply
HX-E-225M6S ¹	Cisco HyperFlex HX225 M6 Edge server is up to 10 SFF front drives with no CPU, memory, HDD, PCIe cards, or power supply

Notes:

1. This product may not be purchased outside of the approved bundles (must be ordered under the MLB).

The Cisco HyperFlex HX225 M6 Edge All Flash and Hybrid Server Nodes does not include power supply, CPU, DIMM memory, hard disk drives (HDDs), solid-state drives (SSDs), riser 1, riser 2, riser 3, tool-less rail kit, or option cards.

The Cisco HX225 M6 Edge All Flash/Hybrid Server Nodes Requires selection of one HyperFlex network topology based on the top of rack switch configuration and network redundancy requirements. Selecting a topology automatically adds the necessary networking adapters to the configuration.configuration. See [SELECT HYPERFLEX EDGE NETWORK TOPOLOGY, page 37](#) for more details.

HX225 M6 Edge All Flash/Hybrid Clusters:

HyperFlex Edge clusters can be configured in 2, 3 or 4 node configurations. Single node clusters and clusters larger than 4 nodes are not supported with HyperFlex Edge.



NOTE:

- Refer to [Cisco HyperFlex Drive Compatibility](#) document for future expansion and drive compatibility within the same node and HX cluster.
- Use the steps on the following pages to configure the server with the components that you want to include.

STEP 2 SELECT RISERS

The riser PIDs are listed in [Table 4](#). Full-height risers cannot be mixed with half-height risers.

Table 4 PIDs of the Risers and Riser Blanks

Product ID (PID)	Description
Included by default (no PID)	Half-height riser 1 (controlled by CPU1) <ul style="list-style-type: none"> ■ Riser 1: One x16 PCIe Gen4 riser, supports Cisco VIC, half-height, 3/4 length
UCSC-R2R3-C220M6	Kit containing two half-height risers (risers 2 and 3): <ul style="list-style-type: none"> ■ Riser 2: One x16 PCIe Gen4 riser, half-height, 3/4 length ■ Riser 3: One x16 PCIe Gen4 riser, supports Cisco VIC, half-height, 3/4 length
HX-GPURKIT-C220	Kit containing a GPU mounting bracket and the following risers (risers 1 and 2): <ul style="list-style-type: none"> ■ Riser 1: One x16 PCIe Gen4 riser, supports Cisco VIC, full-height, 3/4 length ■ Riser 2: One x16 PCIe Gen4 riser, supports Cisco VIC, full-height, 3/4 length
UCSC-FBRS-C220 M6	Riser 2 and Riser 3 blank panels

- If you do not order any risers, the system defaults to automatically include the one half-height riser shown in the table.
- If you order PID UCSC-R2R3-C220M6, the system includes three half-height risers (riser 1, riser 2, and riser 3).
- If you order PID HX-GPURKIT-C220, the system includes two full-height risers (riser 1 and riser 2)

Approved Configurations

- (1) Half-height riser 1 only (controlled from CPU1). This is the default and is automatically included.
- (2) Half-height risers 1, 2, and 3 only. All risers are controlled from CPU1.
- (3) Full-height risers 1 and 2 only (controlled from CPU1).

STEP 3 SELECT CPU(s)

The standard CPU features are:

- AMD® Rome®, Milan®, and Milan-X® family CPUs
- CPU-to-CPU communication using Infinity Fabric Interconnect
- Cache size of up to 768 MB
- Up to 64 cores

Select CPUs

The available CPUs are listed in [Table 5](#)

Table 5 Available CPUs

Product ID (PID) ¹	Clock Freq (GHz)	Power (W)	L3 Cache Size (MB)	Cores	Highest DDR4 DIMM Clock Support (MHz) ²
Milan Processors					
HX-CPU-A7763	2.45	280	256	64	3200
HX-CPU-A7713	2.00	225	256	64	3200
HX-CPU-A7713P	2.00	225	256	64	3200
HX-CPU-A7663	2.00	225	256	56	3200
HX-CPU-A7643	2.30	225	256	48	3200
HX-CPU-A7543	2.80	225	256	32	3200
HX-CPU-A7543P	2.80	225	256	32	3200
HX-CPU-A7513	2.60	200	128	32	3200
HX-CPU-A75F3	2.95	280	256	32	3200
HX-CPU-A7413	2.65	180	128	24	3200
HX-CPU-A7453	2.75	180	64	28	3200
HX-CPU-A7443	2.85	200	128	24	3200
HX-CPU-A7443P	2.85	200	128	24	3200
HX-CPU-A74F3	3.20	240	256	24	3200
HX-CPU-A7343	3.20	190	128	16	3200
HX-CPU-A7313	3.00	155	128	16	3200
HX-CPU-A7313P	3.00	155	128	16	3200
HX-CPU-A73F3	3.50	240	256	16	3200
HX-CPU-A72F3	3.70	180	256	8	3200
Milan-X Processors					
HX-CPU-A7773X	2.20	280	768	64	3200
HX-CPU-A7573X	2.80	280	768	32	3200
HX-CPU-A7473X	2.80	240	768	24	3200
HX-CPU-A7373X	3.05	240	768	16	3200

Table 5 Available CPUs

Product ID (PID) ¹	Clock Freq (GHz)	Power (W)	L3 Cache Size (MB)	Cores	Highest DDR4 DIMM Clock Support (MHz) ²
Rome Processors					
HX-CPU-A7662	2.00	225	256	64	3200
HX-CPU-A7532	2.40	200	256	32	3200
HX-CPU-A7502P	2.50	180	128	32	3200
HX-CPU-A7352	2.30	155	128	24	3200
HX-CPU-A7302	3.00	155	128	16	3200
HX-CPU-A7282	2.80	120	64	16	3200
HX-CPU-A7272	2.90	120	64	12	3200
HX-CPU-A7262	3.20	155	128	8	3200
HX-CPU-A7252	3.10	120	64	8	3200
HX-CPU-A7232P	3.10	120	32	8	3200

Notes:

1. Any CPU PID ending in “P” cannot be used in a 2-CPU system. They can only be used in a 1-CPU system.
2. If higher or lower speed DIMMs are selected than what is shown in [Table 6 on page 22](#) for a given CPU speed, the DIMMs will be clocked at the lowest common denominator of CPU clock and DIMM clock.

Approved Configurations**(1) One-CPU Configuration:**

- Choose one CPU from any one of the rows of [Table 5 Available CPUs, page 20](#)

(2) Two-CPU Configuration:

- Choose two identical CPUs from any one of the rows of [Table 5 Available CPUs, page 20](#)

**NOTE:**

- You cannot have two CPUs ending in a “P” suffix in a two-CPU configuration.
- If you configure a server with one CPU with a “P” suffix, you cannot later upgrade to a 2-CPU system with two of these CPUs.

Caveats

- The selection of 1 or 2 CPUs depends on the desired server functionality. See the following sections:
 - [STEP 4 SELECT MEMORY, page 22](#)
 - [STEP 5 SELECT DRIVE CONTROLLERS, page 27](#)
 - [STEP 6 SELECT DRIVES, page 28](#)
 - [STEP 7 SELECT OPTION CARD\(s\), page 32](#)

STEP 4 SELECT MEMORY

The available memory main characteristics for the Cisco HyperFlex HX225 M6 Edge All Flash and Hybrid Server Nodes are as follows:

- Clock speed: 3200 MHz
- Ranks per DIMM: 1, 2, 4, or 8
- Operational voltage: 1.2 V
- Registered ECC DDR4 DIMMS (RDIMMs) or Load-reduced DIMMs (LRDIMMs).

Memory is organized with eight memory channels per CPU, with one or two DIMMs per channel (DPC).

Select DIMMs

The supported memory DIMMs are listed in [Table 6](#).

Table 6 Available DDR4 DIMMs

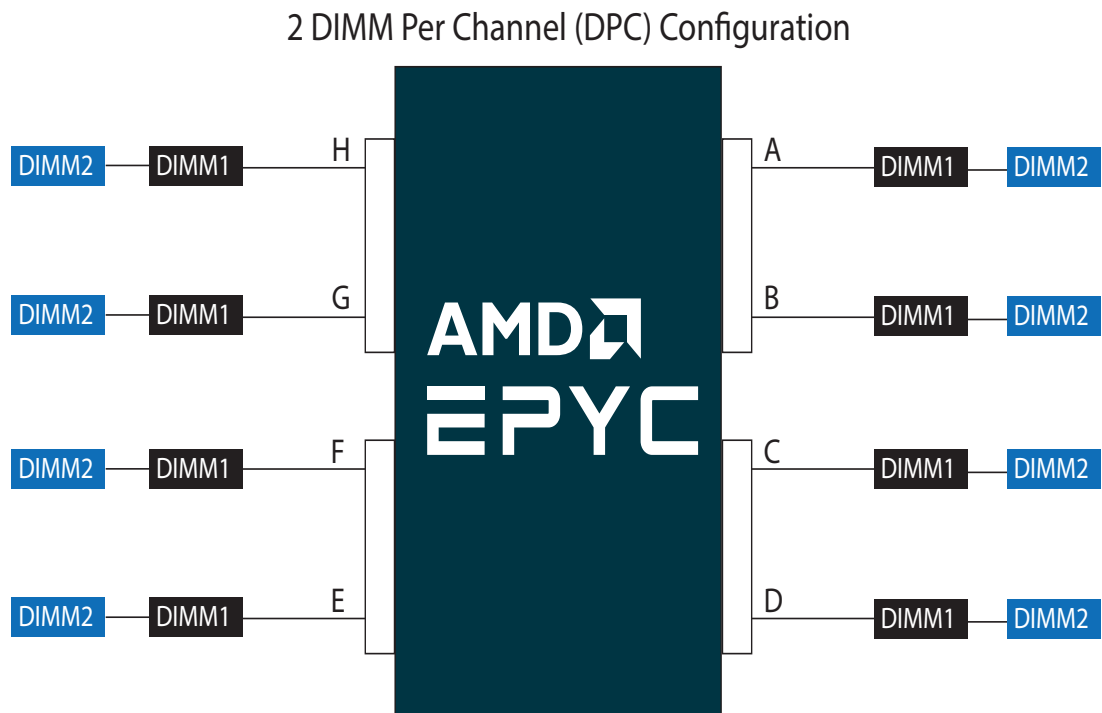
Product ID (PID)	PID Description	Voltage	Ranks /DIMM
3200-MHz DIMMs			
HX-MR-X16G1RW	16 GB RDIMM SRx4 3200 (8Gb)	1.2 V	1
HX-MR-X32G1RW	32GB RDIMM SRx4 3200 (16Gb)	1.2 V	1
HX-MR-X32G2RW	32 GB RDIMM DRx4 3200 (8Gb)	1.2 V	2
HX-MR-X64G2RW	64 GB RDIMM DRx4 3200 (16Gb)	1.2 V	2
HX-ML-128G4RW	128 GB LRDIMM QRx4 3200 (16Gb) (non-3DS)	1.2 V	4
DIMM Blank¹			
UCS-DIMM-BLK	UCS DIMM Blank		

Notes:

1. Any empty DIMM slot must be populated with a DIMM blank to maintain proper cooling airflow.

Figure 7 is the supported 8-channel configuration, with one or two DPC.

Figure 7 8-Channel Memory Organization



Note: Blue DIMM sockets are farthest from CPU and black DIMM sockets are closest to CPU

Approved Configurations

(1) One CPU (CPU1) population

- Select 4, 6, 8, 10, 12, 14, or 16 DIMMs for the 1 CPU system.
- 4 DIMMs configuration is only allowed, if eight channels cannot be populated, and only with processors that have 128MB L3 cache or less.

The DIMMs will be placed by the factory as shown in the following table.

Total DIMM number per system	CPU 1 DIMM Placement in Channels (for identically ranked DIMMs)
4	(C2, D2); (G2, H2)
6	(C2, D2); (G2, H2); (A2, E2)
8	(C2, D2); (G2, H2); (A2, E2); (B2, F2)
10	(C2, D2); (G2, H2); (A2, E2); (B2, F2); (D1, E1)
12	(C2, D2); (G2, H2); (A2, E2); (B2, F2); (D1, E1); (B1, G1)
14	(C2, D2); (G2, H2); (A2, E2); (B2, F2); (D1, E1); (B1, G1); (C1, F1)
16	(C2, D2); (G2, H2); (A2, E2); (B2, F2); (D1, E1); (B1, G1); (C1, F1); (A1, H1)

(2) Two CPU (CPU1 and CPU2) population

- Select 8,12,16,20,24,28,32 DIMMs for the 2 CPUs system.
- 8 DIMMs for 2 CPUs system configuration is only allowed if the 16 channels cannot be populated, and only with processors that have 128MB L3 cache or less.

The DIMMs will be placed by the factory as shown in the following tables.

Total DIMM number per system	CPU 1 DIMM Placement in Channels (for identically ranked DIMMs)	CPU 2 DIMM Placement in Channels (for identically ranked DIMMs)
8	(C2, D2); (G2, H2)	(C2, D2); (G2, H2)
12	(C2, D2); (G2, H2); (A2, E2)	(C2, D2); (G2, H2); (A2, E2)
16	(C2, D2); (G2, H2); (A2, E2); (B2, F2)	(C2, D2); (G2, H2); (A2, E2); (B2, F2)
20	(C2, D2); (G2, H2); (A2, E2); (B2, F2); (D1, E1)	(C2, D2); (G2, H2); (A2, E2); (B2, F2); (D1, E1)
24	(C2, D2); (G2, H2); (A2, E2); (B2, F2); (D1, E1); (B1, G1)	(C2, D2); (G2, H2); (A2, E2); (B2, F2); (D1, E1); (B1, G1)
28	(C2, D2); (G2, H2); (A2, E2); (B2, F2); (D1, E1); (B1, G1); (C1, F1)	(C2, D2); (G2, H2); (A2, E2); (B2, F2); (D1, E1); (B1, G1); (C1, F1)
32	(C2, D2); (G2, H2); (A2, E2); (B2, F2); (D1, E1); (B1, G1); (C1, F1); (A1, H1)	(C2, D2); (G2, H2); (A2, E2); (B2, F2); (D1, E1); (B1, G1); (C1, F1); (A1, H1)



NOTE: System performance is optimized when the DIMM type and quantity are equal for both CPUs, and when all channels are filled equally across the CPUs in the server.

[Table 7 on page 25](#) and [Table 8 on page 25](#) give the maximum DRAM speeds for various DIMM populations.

Table 7 Memory Speed for 1 DIMM Per Channel (1 DPC)

DIMM Type	DIMM Population	Maximum DRAM Frequency (MHz)
	DIMM0	
RDIMM	One rank	3200
	Two ranks	3200
LRDIMM	Four ranks	3200

Table 8 Memory Speed for 2 DIMMs Per Channel (2DPC)

DIMM Type	DIMM Population		Maximum DRAM Frequency (MHz)
	DIMM0	DIMM1	
RDIMM	One rank	One rank	2933
	One rank	Two rank	2933
	Two rank	Two rank	2933
LRDIMM	Four ranks	Four ranks	2933

DIMM Rules

- DIMM Mixing:
 - Mixing different types of DIMM (RDIMM with LRDIMM) is not supported within a server.
 - Mixing RDIMM with RDIMM types is allowed if they are mixed in same quantities, in a balanced configuration.
 - Mixing 32GB, and 64GB RDIMMs is supported. It is recommended to populate all the memory slots when mixing memory.
 - 128GB LRDIMMs cannot be mixed with other RDIMMs.
- General Population Order Guidelines
 - For best performance, populate all eight memory channels for each CPU socket, with every channel having the same capacity.
 - Populate open channels before populating two DIMMs on a given channel.
 - In 2 DPC configurations where only one DIMM is populated on a channel, populate the DIMM socket physically farthest away from the processor.
 - Balance memory capacity per channel pair on a given CPU.
 - Balance memory capacity per CPU socket in a two-socket system.
 - DIMMs within the same channel must be of the same base DIMM module type (all RDIMM, LRDIMM).
 - DIMMs within the same channel must be of the same base DIMM module type (all RDIMM, or LRDIMM)
 - All memory channels operate at the same frequency. The system will use the highest common supported frequency when populated with different speed DIMMs. The highest common supported speed is the rated speed of the slowest DIMM in the system while also applying the population speed limits for the configuration (1 of 1, 1 of 2, 2 of 2).

STEP 5 SELECT DRIVE CONTROLLERS

The following list summarizes how drives are controlled on the server:

- SAS/SATA drives are controlled through Cisco 12G SAS HBAs
- PCIe drives are controlled directly from the CPUs

Cisco 12G SAS HBA

The Cisco 12G SAS HBA supports up to 10 SAS or SATA drives operating at 3 Gbs, 6 Gbs, and 12Gbs. It supports JBOD or pass-through mode (not RAID) and plugs directly into a dedicated slot.

Select RAID Controller Options

Select the following:

- Cisco 12G SAS HBA (see [Table 9](#))

Table 9 Hardware Controller Options

Product ID (PID)	PID Description
Controllers for Internal Drives	
Note that if a Cisco 12G SAS HBA is selected, it is factory-installed in the drive backplane connector.	
HX-SAS-220M6	Cisco 12G SAS HBA <ul style="list-style-type: none"> ■ Supports up to 10 internal SAS HDDs and SAS/SATA SSDs ■ Supports JBOD or pass-through mode

Approved Configurations

- The Cisco 12G SAS HBA supports up to 10 internal drives with JBOD support.

STEP 6 SELECT DRIVES

The standard disk drive features are:

- 2.5-inch small form factor
- Hot-pluggable
- Drives come mounted in sleds

Select Drives - [HXAF-E-225M6S \(All Flash\)](#)

The available drives are listed in [Table 10](#).

Table 10 Available Hot-Pluggable Sled-Mounted Drive

Product ID (PID)	PID Description	Drive Type	Capacity
Front Capacity Drive			
HX-SD960G6S1X-EV	960 GB 2.5 inch Enterprise Value 6G SATA SSD	SATA	960 GB
HX-SD19T6S1X-EV	1.9 TB 2.5 inch Enterprise Value 6G SATA SSD	SATA	1.9 TB
HX-SD38T6S1X-EV	3.8 TB 2.5 inch Enterprise Value 6G SATA SSD	SATA	3.8 TB
HX-SD76T6S1X-EV	7.6 TB 2.5 inch Enterprise Value 6G SATA SSD	SATA	7.6 TB
Front Cache Drive			
HX-SD800GK3X-EP	800 GB 2.5in Enterprise Performance 12G SAS SSD(3X endurance)	SAS	800 GB
Front System Drive			
HX-SD240GM1X-EV	240 GB 2.5 inch Enterprise Value 6G SATA SSD	SATA	240 GB
Boot Drive			
HX-M2-240GB	240 GB SATA M.2	SATA	240 GB
HX-M2-HWRAID	Cisco Boot optimized M.2 Raid controller		
<p>NOTE: Cisco uses solid state drives (SSDs) from a number of vendors. All solid state drives (SSDs) are subject to physical write limits and have varying maximum usage limitation specifications set by the manufacturer. Cisco will not replace any solid state drives (SSDs) that have exceeded any maximum usage specifications set by Cisco or the manufacturer, as determined solely by Cisco.</p>			

Approved Configurations

- Three to eight capacity drives

**NOTE:**

- A minimum of 3 capacity drives is supported for HX Edge configuration.
- For cluster scale related information please see the product [release notes](#)

-
- One cache drive
 - One system drive
 - One boot drive

**NOTE:**

- Order two identical M.2 SATA SSDs for the boot-optimized RAID controller. You cannot mix M.2 SATA SSD capacities
- It is recommended that M.2 SATA SSDs be used as boot-only devices.
- The Boot-Optimized RAID controller supports VMWare, Windows and Linux Operating Systems.
- CIMC/UCSM is supported for configuring of volumes and monitoring of the controller and installed SATA M.2 drives.
- The minimum version of Cisco IMC and Cisco UCS Manager that supports this controller is 4.2(1) and later. The name of the controller in the software is MSTOR-RAID.
- The SATA M.2 drives can boot in UEFI mode only. Legacy boot mode is not supported.
- Hot-plug replacement is not supported. The server must be powered off.
- The boot-optimized RAID controller is supported when the server is used as a compute node in HyperFlex configurations.
- See [Figure 17 on page 72](#) for the location of the module connector on the motherboard. This connector accepts the boot-optimized RAID controller.

Caveats

- Self Encrypting Drives (SEDs) and NVMe drives are not supported for HX Edge configurations.

Select Drives - HX-E-225M6S (Hybrid)

The available drives are listed in [Table 11](#)

Table 11 Available Hot-Pluggable Sled-Mounted Drives

Product ID (PID)	PID Description	Drive Type	Capacity
Front Capacity Drive			
HX-HD12TB10K12N	1.2 TB 12G SAS 10K RPM SFF HDD	SAS	1.2 TB
HX-HD18TB10K4KN	1.8 TB 12G SAS 10K RPM SFF HDD (4K)	SAS	1.8 TB
HX-HD24TB10K4KN	2.4 TB 12G SAS 10K RPM SFF HDD (4K)	SAS	2.4 TB
Front Cache Drive			
HX-SD480G63X-EP	480 GB 2.5in Enterprise Performance 6G SATA SSD(3X endurance)	SATA	480 GB
HX-SD800GK3X-EP	800 GB 2.5in Enterprise Performance 12G SAS SSD(3X endurance)	SAS	800 GB
Front System Drive			
HX-SD240GM1X-EV	240 GB 2.5 inch Enterprise Value 6G SATA SSD	SATA	240 GB
Boot Drive			
HX-M2-240GB	240 GB SATA M.2	SATA	240 GB
HX-M2-HWRAID	Cisco Boot optimized M.2 Raid controller		
<p>NOTE: Cisco uses solid state drives (SSDs) from a number of vendors. All solid state drives (SSDs) are subject to physical write limits and have varying maximum usage limitation specifications set by the manufacturer. Cisco will not replace any solid state drives (SSDs) that have exceeded any maximum usage specifications set by Cisco or the manufacturer, as determined solely by Cisco.</p>			

Approved Configurations

- Three to eight capacity drives

**NOTE:**

- A minimum of 3 capacity drives is supported for HX Edge configuration.
- For cluster scale related information please see the product [release notes](#)

-
- One cache drive
 - One system drive
 - One boot drive

**NOTE:**

- Order two identical M.2 SATA SSDs for the boot-optimized RAID controller. You cannot mix M.2 SATA SSD capacities
- It is recommended that M.2 SATA SSDs be used as boot-only devices.
- The Boot-Optimized RAID controller supports VMWare, Windows and Linux Operating Systems.
- CIMC/UCSM is supported for configuring of volumes and monitoring of the controller and installed SATA M.2 drives.
- The minimum version of Cisco IMC and Cisco UCS Manager that supports this controller is 4.2(1) and later. The name of the controller in the software is MSTOR-RAID
- The SATA M.2 drives can boot in UEFI mode only. Legacy boot mode is not supported.
- Hot-plug replacement is not supported. The server must be powered off.
- The boot-optimized RAID controller is supported when the server is used as a compute node in HyperFlex configurations.
- See [Figure 17 on page 72](#) for the location of the module connector on the motherboard. This connector accepts the boot-optimized RAID controller.

Caveats

Self Encrypting Drives (SEDs) and NVMe drives are not supported for HX Edge configurations.

STEP 7 SELECT OPTION CARD(S)

For up-to-date server compatibility, please check the Hardware and Software compatibility list (HCL) at <https://ucshcltool.cloudapps.cisco.com/public/>.

The standard PCIe card offerings are:

- Modular LAN on Motherboard (mLOM)
- Network Interface Cards (NICs)

Select Option Cards

The available option cards are listed in [Table 12](#).

Table 12 Available PCIe Option Cards

Product ID (PID)	PID Description	Location	Card Size ¹
Modular LAN on Motherboard (mLOM)			
HX-M-V25-04 ²	Cisco UCS VIC 1467 quad port 10/25G SFP28 mLOM	mLOM	HHHL, SS
Network Interface Cards (NICs)			
1 Gb NICs			
HX-PCIE-IRJ45	Intel i350 Quad Port 1Gb Adapter	Riser 1, 2, or 3	HHHL, SS
10 Gb NICs			
HX-PCIE-ID10GF	Intel X710-DA2 Dual Port 10Gb SFP+ NIC	Riser 1, 2, or 3	HHHL, SS
HX-PCIE-IQ10GF	Intel X710 Quad Port 10G SFP+ NIC	Riser 1, 2, or 3	HHHL, SS
HX-P-ID10GC	Cisco-Intel X710T2LG 2x10 GbE RJ45 PCIe NIC	Riser 1, 2, or 3	HHHL, SS
25 Gb NICs			
HX-P-I8D25GF	Cisco-Intel E810CQDA2 2x100 GbE QSFP28 PCIe NIC	Riser 1, 2, or 3	HHHL, SS
HX-P-I8Q25GF ³	Cisco-Intel E810XXVDA4L 4x25/10 GbE SFP28 PCIe NIC	Riser 1 or 2	FHHL, SS

Notes:

1. HHHL = half-height, half-length; FHHL = full-height, half-length; SS = single-slot; DS = double-slot.
2. This PID is auto included with the selection of TOPO 4.
3. If HX-P-I8Q25GF selected then HX-GPURKIT-C220 must be selected



NOTE:

- Use of 10GE PCIe card is not allowed with 6300 Series FI.
- The number of NICs supported depends on the HyperFlex network topology selected and the number of physical CPUs configured.
- These additional adapters are optional and may not be substituted for an HX Edge network topology selection.
- Connections to optional NIC adapters must be in a link-down or disconnected state during HyperFlex deployment.

Approved Configurations

(1) 1-CPU Systems

- You can select up to one of the PCIe option cards listed in [Table 12](#) to be installed in Riser 1. Riser 1 is controlled by CPU 1. Risers 2 and 3 are not installed in a 1-CPU system.
- One additional PCIe card may be added with HX-E-TOPO4

(2) 2-CPU Systems

- You can select up to two of the PCIe option cards listed in [Table 12](#) for a two-riser system (Riser 1 and Riser 2 installed) and up to three of the PCIe option cards for a three-riser system (Riser 1, Riser 2, and Riser 3 installed). Risers 1 and 2 are controlled by CPU 1 and riser 3 is controlled by CPU 2.

Caveats

- For 1-CPU systems:
 - Only Riser 1 is supported.
- For 2-CPU systems:
 - All risers (Risiers 1, 2, and 3) are supported.
- To help ensure that your operating system is compatible with the card you have selected, or to see additional cards that have been qualified to work with the HX225 M6 Edge All Flash/Hybrid Server Nodes, but are not sold on the Cisco pricelist, check the Hardware Compatibility List at this URL:
http://www.cisco.com/en/US/products/ps10477/prod_technical_reference_list.html

STEP 8 ORDER OPTIONAL PCIe OPTION CARD ACCESSORIES

For list of supported optics and cables for VIC, refer to the VIC 1400 series data sheets at the following link:

- <https://www.cisco.com/c/en/us/products/collateral/interfaces-modules/unified-computing-system-adapters/datasheet-c78-741130.html>

Select

- NIC Interoperability with Cisco Cables/Optics ([Table 13](#) & [Table 14 on page 35](#) & [Table 15 on page 36](#)).
- NIC Interoperability with Intel Cables/Optics ([Table 15 on page 36](#)).

Table 13 10G NIC Interoperability with Cisco Cables/Optics

Cisco Product ID (PID)	HX- PCIE-ID10GF	HX- PCIE-IQ10GF	HX-P-ID10GC
Cisco Direct Attach Cables (DAC)			
SFP-H10GB-CU1M	✓	✓	
SFP-H10GB-CU3M	✓	✓	
SFP-H10GB-CU5M	✓	✓	
SFP-H10GB-ACU7M	✓	✓	
SFP-H10GB-ACU10M	✓	✓	
SFP-10G-AOC1M	✓	✓	
SFP-10G-AOC2M	✓	✓	
SFP-10G-AOC3M	✓	✓	
SFP-10G-AOC5M	✓	✓	
SFP-10G-AOC7M	✓	✓	
SFP-10G-AOC10M	✓	✓	
UTP/RJ45			✓
Cisco Optical Transceivers			
SFP-10G-SR	✓	✓	
SFP-10G-SR-S	✓	✓	
SFP-10G-LR	✓	✓	
SFP-10G-LR-S	✓	✓	
GLC-SX-MMD	✓	✓	

Table 14 25G NIC Interoperability with Cisco Cables/Optics

Cisco Product ID (PID)	HX-P-I8Q25GF	HX-P-I8D25GF
Cisco Direct Attach Cables (DAC)		
SFP-H10GB-CU1M	✓	✓
SFP-H10GB-CU3M	✓	✓
SFP-H10GB-CU4M		
SFP-H10GB-CU5M	✓	✓
SFP-H10GB-ACU7M		
SFP-H10GB-ACU10M		
SFP-10G-AOC7M	✓	✓
SFP-10G-AOC10M		
SFP-25G-AOC10M	✓	✓
SFP-25G-AOC5M		
SFP-25G-AOC7M		
QSFP-4SFP25G-CU2M	✓	✓
SFP-H25G-CU1M	✓	✓
SFP-H25G-CU2M	✓	✓
SFP-H25G-CU2.5M		
SFP-H25G-CU3M	✓	✓
SFP-H25G-CU4M		
SFP-H25G-CU5M	✓	✓
Cisco Optical Transceivers		
SFP-10G-SR	✓	✓
SFP-10G-SR-S	✓	✓
SFP-10G-LR	✓	✓
SFP-25G-SR-S	✓	✓
SFP-10/25G-LR-S	✓	✓
SFP-10/25G-CSR-S	✓	✓

Table 15 NIC Interoperability with Intel Cables/Optics

Intel Product ID (PID)	HX-PCIE-ID10GF	HX-PCIE-IQ10GF
Intel Direct Attach Cables (DACs)		
XDACBL1M	✓	✓
XDACBL3M	✓	✓
XDACBL5M	✓	✓
Intel Optical Transceivers		
E10GSFPSR	✓	✓
E10GSFPLR	✓	✓

The information in the preceding tables was compiled from testing conducted by Cisco Transceiver Module Group (TMG) and vendors. The latest compatibility with optical modules and DACs can be found at <https://tmgmatrix.cisco.com/>.

Refer to the these links for additional connectivity options:

Intel:	Marvell/Qlogic:	Mellanox:
Product Guide	41000 series Interoperability Matrix	Firmware Release Notes
Speed White Paper	45000 series Interoperability Matrix	

STEP 9 SELECT HYPERFLEX EDGE NETWORK TOPOLOGY

HyperFlex Edge utilizes the existing top of rack (ToR) switches available in the customer environment.

Many topologies are supported to ensure the right fit for many environments. HyperFlex Edge supports single and dual switch topologies, depending on the level of high availability required. See the [SUPPLEMENTAL MATERIAL, page 61](#) for more details on each topology option.

Select one network topology from the options listed in [Table 16](#).

Table 16 Edge network category

Product ID (PID)	PID Description
HX-E-TOPO4	10/25 GbE Single or Dual Switch (2, 3, or 4 node)
Connectivity Mode	
HX-E-TOPO5 ^{1,2,3}	Hyperflex NIC Connectivity Mode

Notes:

1. Starting with HyperFlex 5.0(2a), the Hyperflex NIC Connectivity Mode is supported
2. Minimum 4 NIC Ports required, If NIC connectivity mode is selected, cannot select Riser1 HH X16 Slot or Riser2 HH X8 Slot Options
3. Refer to [Table 17](#) for the list of available cards for the TOPO5 (NIC connectivity mode)

Table 17 Available Cards for the HyperFlex NIC Connectivity Mode

Product ID (PID)	Description
HyperFlex NIC Connectivity Mode	
R2 Slot 4 x8 PCIe NIC	
HX-PCIE-ID10GF	Intel X710 dual-port 10G SFP+
HX-PCIE-IQ10GF	Intel X710 quad-port 10G SFP+ NIC
HX-P-I8D25GF	Cisco-Intel E810XXVDA2 2x25/10 GbE SFP28 PCIe NIC
HX-P-I8Q25GF	Cisco-Intel E810XXVDA4L 4x25/10 GbE SFP28 PCIe NIC
R2 Slot 6 x8 PCIe NIC	
HX-PCIE-ID10GF	Intel X710 dual-port 10G SFP+
HX-PCIE-IQ10GF	Intel X710 quad-port 10G SFP+ NIC
HX-P-I8D25GF	Cisco-Intel E810XXVDA2 2x25/10 GbE SFP28 PCIe NIC
HX-P-I8Q25GF	Cisco-Intel E810XXVDA4L 4x25/10 GbE SFP28 PCIe NIC

**NOTE:**

- A topology selection is required. Intel NIC adapters in [STEP 7](#) are used by guest VMs/applications only. These adapters may not be substituted for the adapters automatically included when selecting a topology.
 - Selecting **HX-E-TOPO4** will include the Cisco UCS VIC 1467 quad port 25G SFP28 mLOM card (HX-M-V25-04) for 10/25GE topologies. Two ports on the 10GE are used for HyperFlex functions. The remaining two ports may be used by applications after the HyperFlex deployment is completed.
 - Cisco strongly recommends **HX-E-TOPO4** for all new deployments for the following reasons:
 - Higher storage performance
 - Expansion ready - Ability to support node expansion in a future HyperFlex Data Platform software release.
 - Investment protection provides up to 100GE of theoretical throughput per server.
 - Leaves PCIe slots free for accessories
 - Starting with HyperFlex 5.0(2a), the **TOPO5** option is supported
 - For full details see the [HyperFlex Networking Topologies Tech Note](#).
-

STEP 10 ORDER GPU CARDS (OPTIONAL)

Select GPU Options

The available GPU PCIe options are listed in [Table 18](#).

Table 18 Available PCIe GPU Cards¹

Product ID (PID)	PID Description	Card Size	Maximum cards Per node
HX-GPU-T4-16	NVIDIA T4 PCIE 75W 16GB	HHHL, single-wide	3

Notes:

1. Refer to https://www.cisco.com/content/en/us/td/docs/unified_computing/ucs/c/hw/c220m6/install/c220m6.html for more details.



NOTE:

- All GPU cards must be procured from Cisco as there is a unique SBIOS ID required by CIMC and UCSM.

Caveats

- GPUs cannot be mixed.
- For the maximum of 3x T4 GPUs, the 3x half slot riser should be selected.
- A GPU can be installed in either full-height PCIe riser 1 or 2 (or both) or can be installed in three half-height riser 1, 2, or 3.

STEP 11 ORDER POWER SUPPLY

Power supplies share a common electrical and physical design that allows for hot-plug and tool-less installation into M6 HX servers. Each power supply is certified for high-efficiency operation and offers multiple power output options. This allows users to “right-size” based on server configuration, which improves power efficiency, lowers overall energy costs and avoids stranded capacity in the data center. Use the power calculator at the following link to determine the needed power based on the options chosen (CPUs, drives, memory, and so on):

<http://ucspowercalc.cisco.com>



WARNING:

- Starting 1st January 2024, only Titanium rated PSUs are allowed to be shipped to European Union (EU), European Economic Area (EEA), United Kingdom (UK), Switzerland and other countries that adopted Lot 9 Regulation.
- DC PSUs are not impacted by Lot 9 Regulation and are EU/UK Lot 9 compliant

Table 19 Power Supply

Product ID (PID)	PID Description
PSU (Input High Line 210VAC)	
HX-PSU1-1050W	1050W AC PSU Platinum (Not EU/UK Lot 9 Compliant)
HX-PSUV2-1050DC	Cisco UCS 1050W -48V DC Power Supply for Rack Server Requires power cord CAB-48DC-40A-8AWG
HX-PSU1-1600W	UCS 1600W AC PSU Platinum (Not EU/UK Lot 9 Compliant)
HX-PSU1-1200W	1200W Titanium power supply for C-Series Servers
PSU (Input Low Line 110VAC)	
HX-PSU1-1050W	1050W AC PSU Platinum (Not EU/UK Lot 9 Compliant)
HX-PSUV2-1050DC	Cisco UCS 1050W -48V DC Power Supply for Rack Server Requires power cord CAB-48DC-40A-8AWG
HX-PSU1-1200W	1200W Titanium power supply for C-Series Servers



NOTE: In a server with two power supplies, both power supplies must be identical.

STEP 12 SELECT INPUT POWER CORD(s)

Using [Table 20](#) , select the appropriate AC power cords. You can select a minimum of no power cords and a maximum of two. If you select the option R2XX-DMYMPWRCORD, no power cord is shipped with the server.

Table 20 Available Power Cords (for server PSUs less than 2300 W)

Product ID (PID)	PID Description	Images
NO-POWER-CORD	ECO friendly green option, no power cable will be shipped	Not applicable
R2XX-DMYMPWRCORD	No power cord (dummy PID to allow for a no power cord option)	Not applicable
CAB-48DC-40A-8AWG	C-Series -48VDC PSU Power Cord, 3.5M, 3 Wire, 8AWG, 40A	
CAB-N5K6A-NA	Power Cord, 200/240V 6A, North America	
CAB-AC-L620-C13	AC Power Cord, NEMA L6-20 - C13, 2M/6.5ft	
CAB-C13-CBN	CABASY,WIRE,JUMPER CORD, 27" L, C13/C14, 10A/250V	
CAB-C13-C14-2M	CABASY,WIRE,JUMPER CORD, PWR, 2 Meter, C13/C14,10A/250V	
CAB-C13-C14-AC	CORD,PWR,JMP,IEC60320/C14,IEC60320/C13, 3.0M	

Table 20 Available Power Cords (for server PSUs less than 2300 W)

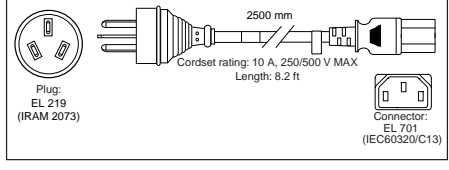
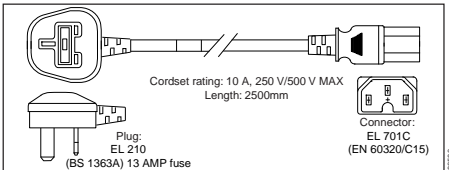
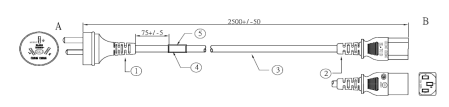
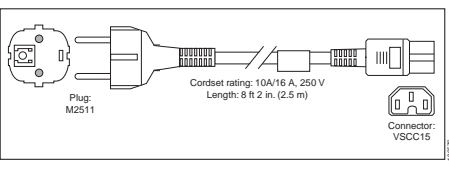
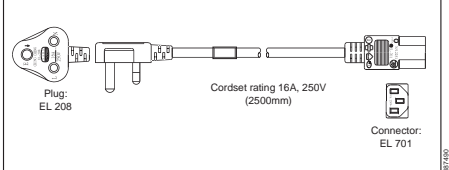
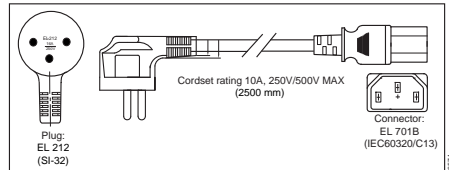
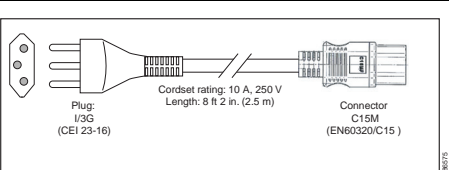
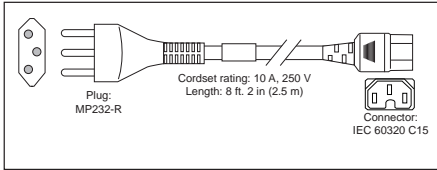
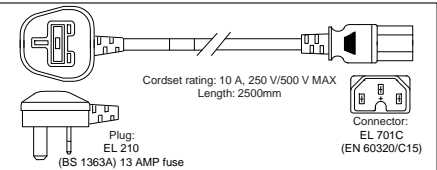
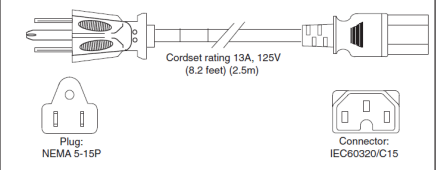
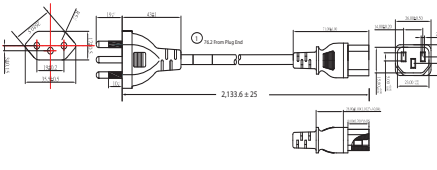
Product ID (PID)	PID Description	Images
CAB-250V-10A-AR	Power Cord, 250V, 10A, Argentina	 <p>Plug: EL 219 (IRAM 2073)</p> <p>Connector: EL 701 (IEC60320/C13)</p>
CAB-9K10A-AU	Power Cord, 250VAC 10A 3112 Plug, Australia	 <p>Plug: EL 210 (BS 1363A) 13 AMP fuse</p> <p>Connector: EL 701C (EN 60320/C15)</p>
CAB-250V-10A-CN	AC Power Cord - 250V, 10A - PRC	
CAB-9K10A-EU	Power Cord, 250VAC 10A CEE 7/7 Plug, EU	 <p>Plug: M2511</p> <p>Connector: VSCC15</p>
CAB-250V-10A-ID	Power Cord, 250V, 10A, India	 <p>Plug: EL 208</p> <p>Connector: EL 701</p>
CAB-C13-C14-3M-IN	Power Cord Jumper, C13-C14 Connectors, 3 Meter Length, India	Image not available
CAB-C13-C14-IN	Power Cord Jumper, C13-C14 Connectors, 1.4 Meter Length, India	Image not available
CAB-250V-10A-IS	Power Cord, SFS, 250V, 10A, Israel	 <p>Plug: EL 212 (SI-32)</p> <p>Connector: EL 701B (IEC60320/C13)</p>
CAB-9K10A-IT	Power Cord, 250VAC 10A CEI 23-16/VII Plug, Italy	 <p>Plug: 13G (CEI 23-16)</p> <p>Connector: C15M (EN60320/C15)</p>

Table 20 Available Power Cords (for server PSUs less than 2300 W)

Product ID (PID)	PID Description	Images
CAB-9K10A-SW	Power Cord, 250VAC 10A MP232 Plug, Switzerland	
CAB-9K10A-UK	Power Cord, 250VAC 10A BS1363 Plug (13 A fuse), UK	
CAB-9K12A-NA ¹	Power Cord, 125VAC 13A NEMA 5-15 Plug, North America	
CAB-250V-10A-BR	Power Cord - 250V, 10A - Brazil	
CAB-C13-C14-2M-JP	Power Cord C13-C14, 2M/6.5ft Japan PSE mark	Image not available
CAB-9K10A-KOR ¹	Power Cord, 125VAC 13A KSC8305 Plug, Korea	Image not available
CAB-ACTW	AC Power Cord (Taiwan), C13, EL 302, 2.3M	Image not available
CAB-JPN-3PIN	Japan, 90-125VAC 12A NEMA 5-15 Plug, 2.4m	Image not available
CAB-48DC-40A-INT	C-Series -48VDC PSU PWR Cord, 3.5M, 3 Wire, 8AWG, 40A (INT)	Image not available
CAB-48DC-40A-AS	C-Series -48VDC PSU PWR Cord, 3.5M, 3Wire, 8AWG, 40A (AS/NZ)	Image not available

Notes:

1. This power cord is rated to 125V and only supported for PSU rated at 1050W or less

STEP 13 ORDER TOOL-LESS RAIL KIT AND OPTIONAL REVERSIBLE CABLE MANAGEMENT ARM

Select a Tool-less Rail Kit

Select a tool-less rail kit from [Table 21](#).

Table 21 Tool-less Rail Kit Options

Product ID (PID)	PID Description
HX-RAIL-M6	Ball Bearing Rail Kit for C220 and C240 M6 rack servers



NOTE: Cisco recommends a minimum quantity of 1 Rail Kit.

Select an Optional Reversible Cable Management Arm

The reversible cable management arm mounts on either the right or left slide rails at the rear of the server and is used for cable management. Use [Table 22](#) to order a cable management arm.

Table 22 Cable Management Arm

Product ID (PID)	PID Description
HX-CMA-C220M6	Reversible CMA for C220 M6 ball bearing rail kit

For more information about the tool-less rail kit and cable management arm, see the Cisco 220 M6 Installation and Service Guide at this URL:

https://www.cisco.com/content/en/us/td/docs/unified_computing/ucs/c/hw/c220m6/install/c220m6.html



NOTE: If you plan to rackmount your HX225 M6 Edge All Flash/Hybrid Server Nodes, you must order a tool-less rail kit. The same rail kits and CMAs are used for M5 and M6 servers.

STEP 14 ORDER SECURITY DEVICES (OPTIONAL)

A Trusted Platform Module (TPM) is a computer chip (microcontroller) that can securely store artifacts used to authenticate the platform (server). These artifacts can include passwords, certificates, or encryption keys. A TPM can also be used to store platform measurements that help ensure that the platform remains trustworthy. Authentication (ensuring that the platform can prove that it is what it claims to be) and attestation (a process helping to prove that a platform is trustworthy and has not been breached) are necessary steps to ensure safer computing in all environments.

A chassis intrusion switch gives a notification of any unauthorized mechanical access into the server.

The security device ordering information is listed in [Table 23](#).

Table 23 Security Devices

Product ID (PID)	PID Description
HX-TPM2-002B-C	Trusted Platform Module 2.0 UCS servers (FIPS 140-2 Compliant)
HX-INT-SW02	C220 and C240 M6 Chassis Intrusion Switch
UCSX-TPM-OPT-OUT	OPT OUT, TPM 2.0, TCG, FIPS140-2, CC EAL4+ Certified ¹

Notes:

1. Please note that Microsoft certification requires a TPM 2.0 for bare-metal or guest VM deployments. Opt-out of the TPM 2.0 voids the Microsoft certification



NOTE:

- The TPM module used in this system conforms to TPM 2.0, as defined by the Trusted Computing Group (TCG). It is also SPI-based.
- TPM installation is supported after-factory. However, a TPM installs with a one-way screw and cannot be replaced, upgraded, or moved to another server. If a server with a TPM is returned, the replacement server must be ordered with a new TPM.

STEP 15 SELECT LOCKING SECURITY BEZEL (OPTIONAL)

An optional locking bezel can be mounted to the front of the chassis to prevent unauthorized access to the drives.

Select the locking bezel from [Table 24](#).

Table 24 Locking Bezel Option for HX225 M6 Edge All Flash/Hybrid Server Nodes

Product ID (PID)	Description
HXAF220C-BZL-M5S	HXAF220C M5 Security Bezel
HX220C-BZL-M5	HX220C M5 Security Bezel

STEP 16 SELECT HOST OPERATING SYSTEM

Select Microsoft Windows operating system as desired from [Table 25](#)



NOTE:

- **VMware ESXi Hypervisor** - We no longer ship VMWare ESXi from the factory. Refer to this link for the further details.
https://www.cisco.com/c/en/us/td/docs/hyperconverged_systems/HyperFlex_HX_DataPlatformSoftware/BroadcomAgreementNotice/b-broadcom-terminated-vmware-embedded-agreement.html
- **Microsoft operating system** - Optional guest OS licenses that may be purchased to run on top of the hypervisor.

Table 25 Host Operation System

Product ID (PID)	PID Description
Operating system	
Microsoft Options	
HX-MSWS-22-ST16C	Windows Server 2022 Standard (16 Cores/2 VMs)
HX-MSWS-22-DC16C	Windows Server 2022 Data Center (16 Cores/Unlimited VMs)

STEP 17 SELECT HYPERFLEX DATA PLATFORM (HXDP) SOFTWARE

Product ID (PID)	
HXDP-SW	Cisco HyperFlex Data Platform Software

HyperFlex Data Platform Edition & Subscription Period options are available as follows. Select as desired from [Table 26](#).

Table 26 HX Data Platform Software

Product ID (PID)	PID Description
Cisco HyperFlex Data Platform Software	
HXDP-E-AD	HyperFlex Data Platform Edge Advantage (1 to 5) Yr
HXDP-E-PR	HyperFlex Data Platform Edge Premier (1 to 5) Yr
Cisco HyperFlex Data Platform Software - SLR	
HXDP-E-PR-SLR	HyperFlex Data Platform Edge Premier SLR (1 to 5) Yr
Cisco HyperFlex Data Platform Software Support	
SVS-DCM-SUPT-BAS	Basic Support for DCM
SVS-SSTCS-DCMGMT	Solution Support for DC Mgmt
SVS-L1DCS-HXDP	CXL1 for HXDP
SVS-L2DCS-HXDP	CXL2 for HXDP

STEP 18 CISCO INTERSIGHT

Cisco Intersight™ is a Software-as-a-Service (SaaS) hybrid cloud operations platform which delivers intelligent automation, observability, and optimization to customers for traditional and cloud-native applications and infrastructure.

Product ID (PID)	
DC-MGT-SAAS	Cisco Intersight SaaS

Select as desired option from [Table 27](#).

Table 27 Cisco Intersight

Product ID (PID)	PID Description
Cisco Intersight - SaaS	
DC-MGT-SAAS-EST-C	Cisco Intersight SaaS - Essentials (1 to 5) Yr
DC-MGT-SAAS-AD-C	Cisco Intersight SaaS - Advantage (new) (1 to 5) Yr
DC-MGT-SAAS-PR-C	Cisco Intersight SaaS - Premier (1 to 5) Yr
Cisco Intersight - Connected Virtual Appliance	
DC-MGT-ONPREM-EST	Cisco Intersight Connected Virtual Appliance - Essentials (1 to 5) Yr
DC-MGT-VAPP-AD	Cisco Intersight Connected Virtual Appliance - Advantage (1 to 5) Yr
DC-MGT-VAPP-PR	Cisco Intersight Connected Virtual Appliance - Premier (1 to 5) Yr
Cisco Intersight - Private Virtual Appliance	
DC-MGT-PVAPP-EST	Cisco Intersight Private Virtual Appliance - Essentials (1 to 5) Yr
DC-MGT-PVAPP-AD	Cisco Intersight Private Virtual Appliance - Advantage (1 to 5) Yr
DC-MGT-PVAPP-PR	Cisco Intersight Private Virtual Appliance - Premier (1 to 5) Yr
Cisco Intersight Support	
SVS-DCM-SUPT-BAS	Basic Support for DCM
SVS-SSTCS-DCMGMT	Solution Support for DC Mgmt
SVS-L1DCS-INTER	CXL1 for INTERSIGHT
SVS-L2DCS-INTER	CXL2 for INTERSIGHT

STEP 19 SELECT SERVICE and SUPPORT LEVEL

A variety of service options are available, as described in this section.

Unified Computing Warranty, No Contract

If you have noncritical implementations and choose to have no service contract, the following coverage is supplied:

- Three-year parts coverage.
- Next business day (NBD) parts replacement eight hours a day, five days a week.
- 90-day software warranty on media.
- Ongoing downloads of BIOS, drivers, and firmware updates.
- UCSM updates for systems with Unified Computing System Manager. These updates include minor enhancements and bug fixes that are designed to maintain the compliance of UCSM with published specifications, release notes, and industry standards.

Smart Net Total Care (SNTC) for Cisco UCS

For support of the entire Unified Computing System, Cisco offers the Cisco Smart Net Total Care (SNTC) for UCS Service. This service provides expert software and hardware support to help sustain performance and high availability of the unified computing environment. Access to Cisco Technical Assistance Center (TAC) is provided around the clock, from anywhere in the world.

For systems that include Unified Computing System Manager, the support service includes downloads of UCSM upgrades. The Cisco Smart Net Total Care for UCS Service includes flexible hardware replacement options, including replacement in as little as two hours. There is also access to Cisco's extensive online technical resources to help maintain optimal efficiency and uptime of the unified computing environment. For more information please refer to the following url:

<http://www.cisco.com/c/en/us/services/technical/smart-net-total-care.html?stickynav=1>

You can choose a desired service listed in *Table 28*.

Table 28 Cisco SNTC for UCS Service (PID HX-E-225M6S)

Service SKU	Service Level GSP	On Site?	Description
CON-PREM-HXEE225S	C2P	Yes	SNTC 24X7X20S
CON-UCSD8-HXEE225S	UCSD8	Yes	UC SUPP DR 24X7X20S*
CON-C2PL-HXEE225S	C2PL	Yes	LL 24X7X20S**
CON-OSP-HXEE225S	C4P	Yes	SNTC 24X7X40S
CON-UCSD7-HXEE225S	UCSD7	Yes	UCS DR 24X7X40S*

Table 28 Cisco SNTC for UCS Service (PID HX-E-225M6S) (continued)

Service SKU	Service Level GSP	On Site?	Description
CON-C4PL-HXEE225S	C4PL	Yes	LL 24X7X4OS**
CON-USD7L-HXEE225S	USD7L	Yes	LLUCS HW DR 24X7X4OS***
CON-OSE-HXEE225S	C4S	Yes	SNTC 8X5X4OS
CON-UCSD6-HXEE225S	UCSD6	Yes	UC SUPP DR 8X5X4OS*
CON-SNCO-HXEE225S	SNCO	Yes	SNTC 8x7xNCDOS****
CON-OS-HXEE225S	CS	Yes	SNTC 8X5XNBDOS
CON-UCSD5-HXEE225S	UCSD5	Yes	UCS DR 8X5XNBDOS*
CON-S2P-HXEE225S	S2P	No	SNTC 24X7X2
CON-S2PL-HXEE225S	S2PL	No	LL 24X7X2**
CON-SNTP-HXEE225S	SNTP	No	SNTC 24X7X4
CON-SNTPL-HXEE225S	SNTPL	No	LL 24X7X4**
CON-SNTE-HXEE225S	SNTE	No	SNTC 8X5X4
CON-SNC-HXEE225S	SNC	No	SNTC 8x7xNCD
CON-SNT-HXEE225S	SNT	No	SNTC 8X5XNBD
CON-SW-HXEE225S	SW	No	SNTC NO RMA
Note: For PID HX-E-225M6S, select Service SKU with HXAFE2SE suffix (Example: CON-OSP-HXAFE2SE)			
*Includes Drive Retention (see below for full description)			
**Includes Local Language Support (see below for full description) – Only available in China and Japan			
***Includes Local Language Support and Drive Retention – Only available in China and Japan			

Smart Net Total Care for Cisco UCS Onsite Troubleshooting Service

An enhanced offer over traditional Smart Net Total Care which provides onsite troubleshooting expertise to aid in the diagnostics and isolation of hardware issue within our customers' Cisco Unified Computing System (UCS) environment. It is delivered by a Cisco Certified field engineer (FE) in collaboration with remote TAC engineer and Virtual Internetworking Support Engineer (VISE). You can choose a desired service listed in [Table 29](#).

Table 29 SNTC for UCS Onsite Troubleshooting Service (PID HX-E-225M6S)

Service SKU	Service Level GSP	On Site?	Description
CON-OSPT-HXEE225S	OSPT	Yes	24X7X40S Trblshtg
CON-OSPTD-HXEE225S	OSPTD	Yes	24X7X40S TrblshtgDR*
CON-OSPTL-HXEE225S	OSPTL	Yes	24X7X40S TrblshtgLL**
CON-OPTLD-HXEE225S	OPTLD	Yes	24X7X40S TrblshtgLLD***
*Includes Drive Retention (see below for full description)			
**Includes Local Language Support (see below for full description) – Only available in China and Japan			
***Includes Local Language Support and Drive Retention – Only available in China and Japan			

Solution Support (SSTP) for UCS

Solution Support includes both Cisco product support and solution-level support, resolving complex issues in multivendor environments, on average, 43% more quickly than product support alone. Solution Support is a critical element in data center administration, to help rapidly resolve any issue 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 you've deployed in your ecosystem. Whether there is an issue with a Cisco or 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 the following URL:

<http://www.cisco.com/c/en/us/services/technical/solution-support.html?stickynav=1>

You can choose a desired service listed in [Table 30](#).

Table 30 Solution Support for UCS Service (PID HX-E-225M6S)

Service SKU	Service Level GSP	On Site?	Description
CON-SSC2P-HXEE225S	SSC2P	Yes	SOLN SUPP 24X7X2OS
CON-SSC4P-HXEE225S	SSC4P	Yes	SOLN SUPP 24X7X4OS
CON-SSC4S-HXEE225S	SSC4S	Yes	SOLN SUPP 8X5X4OS
CON-SSCS-HXEE225S	SSCS	Yes	SOLN SUPP 8X5XNBDOS
CON-SSDR7-HXEE225S	SSDR7	Yes	SSPT DR 24X7X4OS*
CON-SSDR5-HXEE225S	SSDR5	Yes	SSPT DR 8X5XNBDOS*
CON-SSS2P-HXEE225S	SSS2P	No	SOLN SUPP 24X7X2
CON-SSSNP-HXEE225S	SSSNP	No	SOLN SUPP 24X7X4
CON-SSSNE-HXEE225S	SSSNE	No	SOLN SUPP 8X5X4
CON-SSSNC-HXEE225S	SSSNC	No	SOLN SUPP NCD
CON-SSSNT-HXEE225S	SSSNT	No	SOLN SUPP 8X5XNBD
Note: For PID HX-E-225M6S, select Service SKU with HXAFE2SE suffix (Example: CON-SSC4P-HXAFE2SE)			
*Includes Drive Retention (see below for full description)			

Solution Support for Service Providers

You can choose a desired service listed in [Table 31](#).

Table 31 Solution Support for UCS Service (PID HX-E-225M6S)

Service SKU	Service Level GSP	On Site?	Description
SP-SSC2P-HXEE225S	SPSSC2P	Yes	SP SOLN SUPP 24X7X2OS
SP-SSC4P-HXEE225S	SPSSC4P	Yes	SP SOLN SUPP 24X7X4OS
SP-SSC4S-HXEE225S	SPSSC4S	Yes	SP SOLN SUPP 8X5X4OS
SP-SSCS-HXEE225S	SPSSCS	Yes	SP SOLN SUPP 8X5XNBDOS
SP-SSS2P-HXEE225S	SPSSS2P	Yes	SP SOLN SUPP 24X7X2
SP-SSS4P-HXEE225S	SPSSS4P	Yes	SP SOLN SUPP 24X7X4
SP-SSSNE-HXEE225S	SPSSSNE	No	SP SOLN SUPP 8X5X4
SP-SSSNT-HXEE225S	SPSSSNT	No	SP SOLN SUPP 8X5XNBD
SP-SSSPB-HXEE225S	SPSSSPB	No	SP SOLN SUPP NO HW RPL
Note: For PID HX-E-225M6S, select Service SKU with HXAFE2SE suffix (Example: CON-SPSSC4P-HXAFE2SE)			

Smart Net Total Care for UCS Hardware Only Service

For faster parts replacement than is provided with the standard Cisco Unified Computing System warranty, Cisco offers the Cisco Smart Net Total Care for UCS Hardware Only Service. You can choose from two levels of advanced onsite parts replacement coverage in as little as four hours. Smart Net Total Care for UCS Hardware Only Service provides remote access any time to Cisco support professionals who can determine if a return materials authorization (RMA) is required. You can choose a desired service listed in [Table 32](#).

Table 32 SNTC for UCS Hardware Only Service (PID HX-E-225M6S)

Service SKU	Service Level GSP	On Site?	Description
CON-UCW7-HXEE225S	UCW7	Yes	UCS HW 24X7X40S
CON-UCWD7-HXEE225S	UCWD7	Yes	UCS HW+DR 24X7X40S*
CON-UCW7L-HXEE225S	UCW7L	Yes	LL UCS 24X7X40S**
CON-UWD7L-HXEE225S	UWD7L	Yes	LL UCS DR 24X7X40S***
CON-UCW5-HXEE225S	UCW5	Yes	UCS HW 8X5XNBDOS
CON-UCWD5-HXEE225S	UCWD5	Yes	UCS HW+DR 8X5XNBDOS*
Note: For PID HX-E-225M6S, select Service SKU with HXAFE2SE suffix (Example: CON-UCW7-HXAFE2SE)			
*Includes Drive Retention (see below for full description)			
**Includes Local Language Support (see below for full description) – Only available in China and Japan			
***Includes Local Language Support and Drive Retention – Only available in China and Japan			

Partner Support Service for UCS

Cisco Partner Support Service (PSS) is a Cisco Collaborative Services service offering that is designed for partners to deliver their own branded support and managed services to enterprise customers. Cisco PSS provides partners with access to Cisco's support infrastructure and assets to help them:

- Expand their service portfolios to support the most complex network environments
- Lower delivery costs
- Deliver services that increase customer loyalty

PSS options enable eligible Cisco partners to develop and consistently deliver high-value technical support that capitalizes on Cisco intellectual assets. This helps partners to realize higher margins and expand their practice. PSS is available to all Cisco PSS partners. The two Partner Unified Computing Support Options include:

- Partner Support Service for UCS
- Partner Support Service for UCS Hardware Only

PSS for UCS provides hardware and software support, including triage support for third party software, backed by Cisco technical resources and level three support. You can choose a desired service listed in [Table 33](#).

Table 33 PSS for UCS (PID HX-E-225M6S)

Service SKU	Service Level GSP	On Site?	Description
CON-PSJ8-HXEE225S	PSJ8	Yes	UCS PSS 24X7X2 OS
CON-PSJ7-HXEE225S	PSJ7	Yes	UCS PSS 24X7X4 OS
CON-PSJD7-HXEE225S	PSJD7	Yes	UCS PSS 24X7X4 DR*
CON-PSJ6-HXEE225S	PSJ6	Yes	UCS PSS 8X5X4 OS
CON-PSJD6-HXEE225S	PSJD6	Yes	UCS PSS 8X5X4 DR*
CON-PSJ4-HXEE225S	PSJ4	No	UCS SUPP PSS 24X7X2
CON-PSJ3-HXEE225S	PSJ3	No	UCS SUPP PSS 24X7X4
CON-PSJ2-HXEE225S	PSJ2	No	UCS SUPP PSS 8X5X4
CON-PSJ1-HXEE225S	PSJ1	No	UCS SUPP PSS 8X5XNBD
*Includes Drive Retention (see below for full description)			

PSS for UCS Hardware Only

PSS for UCS Hardware Only provides customers with replacement parts in as little as two hours and provides remote access any time to Partner Support professionals who can determine if a return materials authorization (RMA) is required. You can choose a desired service listed in [Table 34](#).

Table 34 PSS for UCS Hardware Only (PID HX-E-225M6S)

Service SKU	Service Level GSP	On Site?	Description
CON-PSW7-HXEE225S	PSW7	Yes	UCS W PSS 24X7X4 OS
CON-PSWD7-HXEE225S	PSWD7	Yes	UCS W PSS 24X7X4 DR*
CON-PSW6-HXEE225S	PSW6	Yes	UCS W PSS 8X5X4 OS
CON-PSWD6-HXEE225S	PSWD6	Yes	UCS W PSS 8X5X4 DR*
CON-PSW4-HXEE225S	PSW4	No	UCS W PL PSS 24X7X2
CON-PSW3-HXEE225S	PSW3	No	UCS W PL PSS 24X7X4
CON-PSW2-HXEE225S	PSW2	No	UCS W PL PSS 8X5X4
*Includes Drive Retention (see below for full description)			

Distributor Support Service (DSS)

You can choose a desired service listed in [Table 35](#).

Table 35 PSS for UCS Hardware Only (PID HX-E-225M6S)

Service SKU	Service Level GSP	On Site?	Description
CON-DSCO-HXEE225S	DSCO	Yes	DSS CORE 24X7X20S
CON-DSO-HXEE225S	DSO	Yes	DSS CORE 24X7X4
CON-DSNO-HXEE225S	DSNO	Yes	DSS CORE 8X5XNBDOS
CON-DSCC-HXEE225S	DSCC	No	DSS CORE 24X7X2
CON-DCP-HXEE225S	DCP	No	DSS CORE 24X7X4
CON-DSE-HXEE225S	DSE	No	DSS CORE 8X5X4
CON-DSN-HXEE225S	DSN	No	DSS CORE 8X5XNBD
Note: For PID HX-E-225M6S, select Service SKU with HXAFE2SE suffix (Example: CON-DSO-HXAFE2SE)			

Unified Computing Combined Support Service

Combined Services makes it easier to purchase and manage required services under one contract. SNTC services for UCS help increase the availability of your vital data center infrastructure and realize the most value from your unified computing investment. The more benefits you realize from the Cisco Unified Computing System (Cisco UCS), the more important the technology becomes to your business. These services allow you to:

- Optimize the uptime, performance, and efficiency of your UCS
- Protect your vital business applications by rapidly identifying and addressing issues
- Strengthen in-house expertise through knowledge transfer and mentoring
- Improve operational efficiency by allowing UCS experts to augment your internal staff resources
- Enhance business agility by diagnosing potential issues before they affect your operations

You can choose a desired service listed in [Table 36](#).

Table 36 Combined Support Service for UCS (PID HX-E-225M6S)

Service SKU	Service Level GSP	On Site?	Description
CON-NCF2P-HXEE225S	NCF2P	Yes	CMB SVC 24X7X2OS
CON-NCF4P-HXEE225S	NCF4P	Yes	CMB SVC 24X7X4OS
CON-NCF4S-HXEE225S	NCF4S	Yes	CMB SVC 8X5X4OS
CON-NCFCs-HXEE225S	NCFCs	Yes	CMB SVC 8X5XNBDOS
CON-NCF2-HXEE225S	NCF2	No	CMB SVC 24X7X2
CON-NCFP-HXEE225S	NCFP	No	CMB SVC 24X7X4
CON-NCFE-HXEE225S	NCFE	No	CMB SVC 8X5X4
CON-NCFT-HXEE225S	NCFT	No	CMB SVC 8X5XNBD
CON-NCFW-HXEE225S	NCFW	No	CMB SVC SW
Note: For PID HX-E-225M6S, select Service SKU with HXAFE2SE suffix (Example: CON-NCF4P-HXAFE2SE)			

UCS Drive Retention Service

With the Cisco Unified Computing Drive Retention Service, you can obtain a new disk drive in exchange for a faulty drive without returning the faulty drive.

Sophisticated data recovery techniques have made classified, proprietary, and confidential information vulnerable, even on malfunctioning disk drives. The Drive Retention service enables you to retain your drives and ensures that the sensitive data on those drives is not compromised, which reduces the risk of any potential liabilities. This service also enables you to comply with regulatory, local, and federal requirements.

If your company has a need to control confidential, classified, sensitive, or proprietary data, you might want to consider one of the Drive Retention Services listed in the above tables (where available).



NOTE: Cisco does not offer a certified drive destruction service as part of this service.

Local Language Technical Support for UCS

Where available, and subject to an additional fee, local language support for calls on all assigned severity levels may be available for specific product(s) - see tables above.

For a complete listing of available services for Cisco Unified Computing System, see the following URL:

http://www.cisco.com/en/US/products/ps10312/serv_group_home.html

SUPPLEMENTAL MATERIAL

Supported Network Topologies for HyperFlex Edge 2 Node Deployments

Cisco HyperFlex Edge offers 10/25 Gigabit Ethernet (GE) installation option. Both topologies support single top-of-rack (ToR) and dual ToR switch options for ultimate network flexibility and redundancy.

Consider the following when determining the best topology for your cluster:

- Cisco highly recommends the 10/25GE topology for higher performance and future node expansion capabilities.



NOTE: A network topology is chosen during initial deployment and cannot be changed or upgraded without a full reinstallation. Choose your network topology carefully and with future needs in mind.

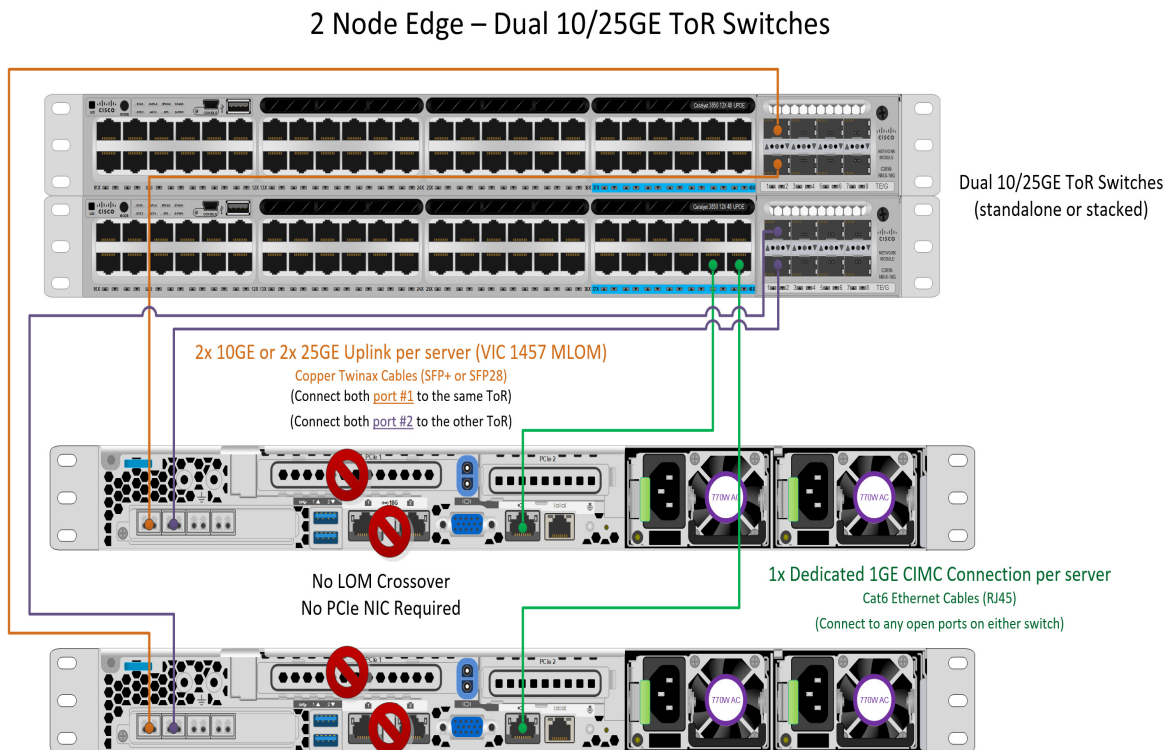
Below is a summary of the supported topologies, refer to the [Cisco HyperFlex Edge Deployment Guide, Pre-installation Checklist chapter](#), for full details.

10 or 25 Gigabit Ethernet Dual Switch Topology

Dual switch configuration provides a slightly more complex topology with full redundancy that protects against: switch failure, link failure, and port failure. It requires two switches that may be standalone or stacked, and two 10/25GE ports, one 1GE port for CIMC management, and one Cisco VIC 1467 per server. Trunk ports are the only supported network port configuration. refer [10/25 Gigabit Ethernet Switch Configuration Guidelines](#) for more information.

To deploy this topology, select HX-E-TOPO4 from [STEP 9](#)

Figure 8 Physical cabling for the 10/25GE Dual Switch Topology. Detailed diagrams for network topologies can be found in the [pre-installation checklist](#).

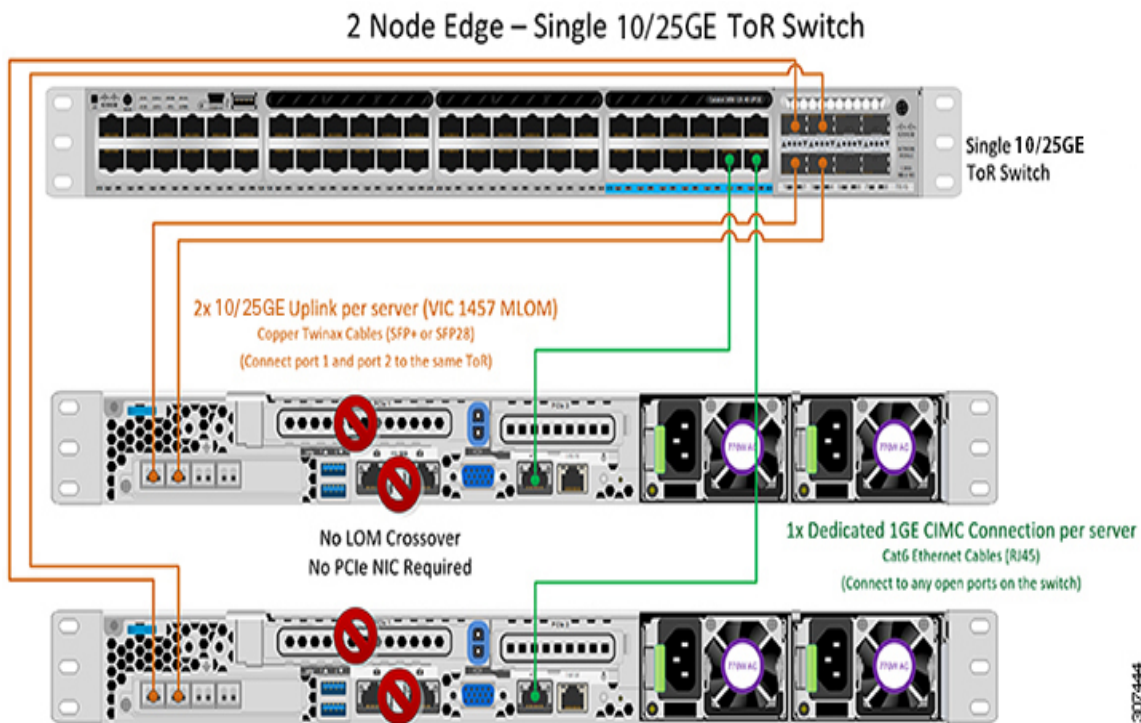


10 or 25 Gigabit Ethernet Single Switch Topology

Single switch configuration provides a simple topology requiring only a single switch, and two 10/25GE ports, one 1GE port for CIMC management, and one Cisco VIC 1467 per server. Switch level redundancy is not provided, however all links/ports and associated network services are fully redundant and can tolerate failures. refer [10/25 Gigabit Ethernet Switch Configuration Guidelines](#) for more information.

To deploy this topology, select HX-E-TOPO4 from [STEP 9](#)

Figure 9 Physical cabling for the 10/25GE Single Switch Topology. Detailed diagrams for network topologies can be found in the [pre-installation checklist](#).

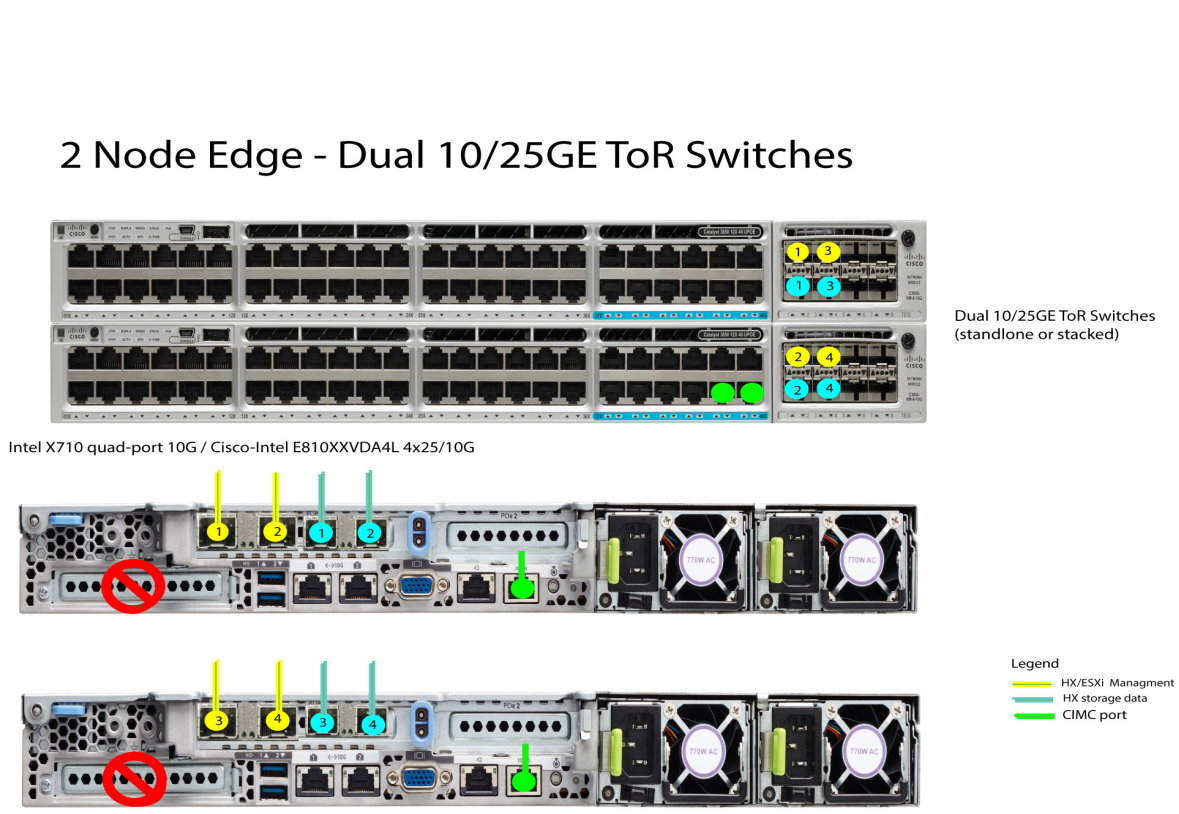


NIC Based 10 or 25 Gigabit Ethernet Dual Switch Topology (quad port)

Dual switch configuration provides a slightly more complex topology with full redundancy that protects against: switch failure, link failure, and port failure. It requires two switches that may be standalone or stacked, and four 10/25GE ports, one 1GE port for CIMC management, and 1 x quad port NIC per server. Trunk ports are the only supported network port configuration. refer [10/25 Gigabit Ethernet Switch Configuration Guidelines](#) for more information.

To deploy this topology, select HX-E-TOP05 from [STEP 9](#)

Figure 10 Physical cabling for the Quad Port NIC Based 10/25GE Dual Switch Topology.



NIC Based 10 or 25 Gigabit Ethernet Dual Switch Topology (dual port)

Dual switch configuration provides a slightly more complex topology with full redundancy that protects against: switch failure, link failure, and port failure. It requires two switches that may be standalone or stacked, and four 10/25GE ports, one 1GE port for CIMC management, and 2 x dual port NIC per server. Trunk ports are the only supported network port configuration. refer [10/25 Gigabit Ethernet Switch Configuration Guidelines](#) for more information.

To deploy this topology, select HX-E-TOP05 from [STEP 9](#)

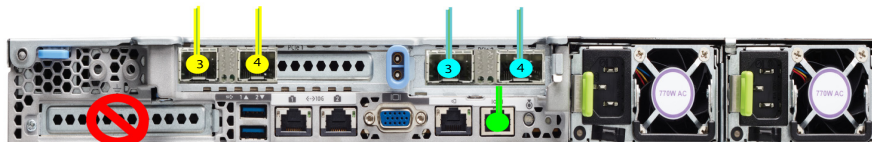
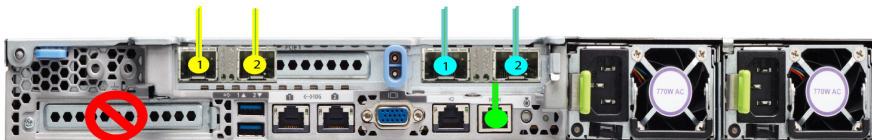
Figure 11 Physical cabling for the Dual Port NIC Based 10/25GE Dual Switch Topology.

2 Node Edge - Dual 10/25GE ToR Switches



Dual 10/25GE ToR Switches (standalone or stacked)

Intel X710-DA2 Dual Port 10G / Cisco-Intel E810XXVDA2 2x25/10 GE810XXVDA2 2x25/10 G



Legend
 ■ HX/ESXi Managment
 ■ HX storage data
 ■ CIMC port

Supported Network Topologies for HyperFlex Edge 3 and 4 Node Deployments

Cisco HyperFlex 225 M6 Edge clusters should be deployed using Cisco Intersight installer. Cisco Intersight provides advanced multi-cluster monitoring and management capabilities; Cisco HyperFlex M6 edge nodes are not supported for installation using HyperFlex OVA installer VM.

Cisco HyperFlex Edge offers 10/25 Gigabit Ethernet (GE) installation option. topologies support single top-of-rack (ToR) and dual ToR switch options for ultimate network flexibility and redundancy.

Consider the following when determining the best topology for your cluster:

- Cisco highly recommends the 10/25GE topology for higher performance and future node expansion capabilities.



NOTE: A network topology is chosen during initial deployment and cannot be changed or upgraded without a full reinstallation. Choose your network topology carefully and with future needs in mind.

Below is a summary of the supported topologies, refer to the [Cisco HyperFlex Edge Deployment Guide, Pre-installation Checklist chapter](#), for full details.

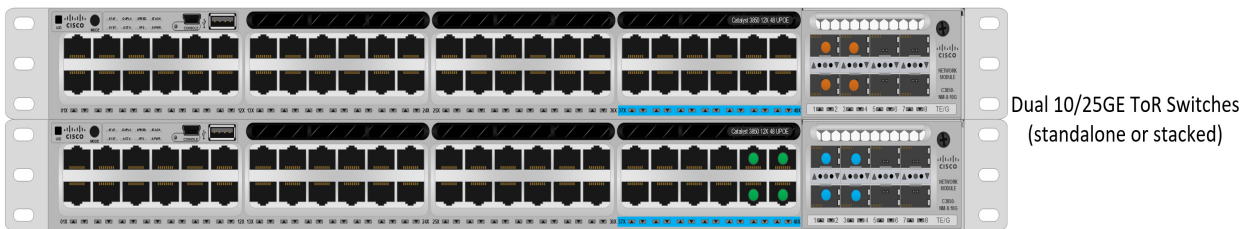
10 or 25 Gigabit Ethernet Dual Switch Topology

Dual switch configuration provides a slightly more complex topology with full redundancy that protects against: switch failure, link failure, and port failure. It requires two switches that may be standalone or stacked, and two 10/25GE ports, one 1GE port for CIMC management, and one Cisco VIC 1467 per server. Trunk ports are the only supported network port configuration. refer [10/25 Gigabit Ethernet Switch Configuration Guidelines](#) for more information.

To deploy this topology, select HX-E-TOP04 from [STEP 9](#)

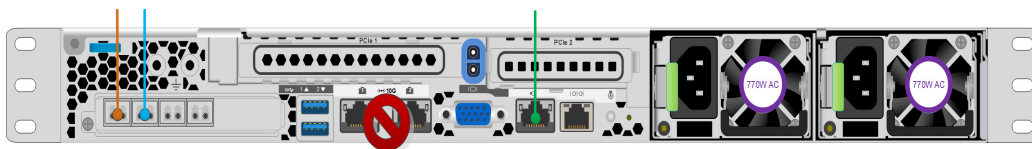
Figure 12 Physical cabling for the 10/25GE Dual Switch Topology. Detailed diagrams for network topologies can be found in the [pre-installation checklist](#).

3 & 4 Node Edge – Dual 10/25GE ToR Switches



Dual 10/25GE ToR Switches (standalone or stacked)

2x 10GE or 2x 25GE Uplink per server (VIC 1457 MLOM)
 Copper Twinax Cables (SFP+ or SFP28)
 (Connect all [port #1](#) to the same ToR)
 (Connect all [port #2](#) to the other ToR)



x3 or x4

1x Dedicated 1GE CIMC Connection per server
 Cat6 Ethernet Cables (RJ45)
 (Connect to any open port on either switch)

10 or 25 Gigabit Ethernet Single Switch Topology

Single switch configuration provides a simple topology requiring only a single switch, and two 10/25GE ports, one 1GE port for CIMC management, and one Cisco VIC 1467 per server. Switch level redundancy is not provided, however all links/ports and associated network services are fully redundant and can tolerate failures. refer [10/25 Gigabit Ethernet Switch Configuration Guidelines](#) for more information.

To deploy this topology, select HX-E-TOPO4 from [STEP 9](#)

Figure 13 Physical cabling for the 10/25GE Single Switch Topology. Detailed diagrams for network topologies can be found in the [pre-installation checklist](#).

3 & 4 Node Edge – Single 10/25GE ToR Switch



2x 10/25GE Uplink per server (VIC 1457 MLOM)
Copper Twinax Cables (SFP+ or SFP28)
(Connect all ports to the same ToR)



1x Dedicated 1GE CIMC Connection per server
Cat6 Ethernet Cables (RJ45)
(Connect to any open port)

502780

NIC Based 10 or 25 Gigabit Ethernet Dual Switch Topology (quad port)

Dual switch configuration provides a slightly more complex topology with full redundancy that protects against: switch failure, link failure, and port failure. It requires two switches that may be standalone or stacked, and four 10/25GE ports, one 1GE port for CIMC management, and 1 x quad port NIC per server. Trunk ports are the only supported network port configuration. refer [10/25 Gigabit Ethernet Switch Configuration Guidelines](#) for more information.

To deploy this topology, select HX-E-TOP05 from [STEP 9](#)

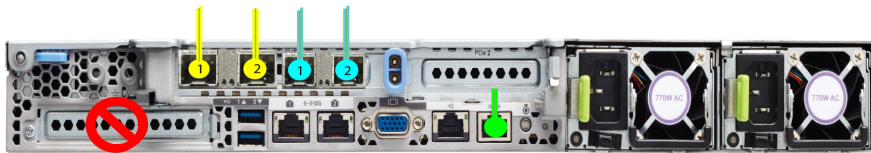
Figure 14 Physical cabling for the Quad Port NIC Based 10/25GE Dual Switch Topology.

3 or greater Node Edge/DC-no-FI - Dual 10/25GE



Dual 10/25GE ToR Switches (standalone or stacked)

Intel X710 quad-port 10G / Cisco-Intel E810XXVDA4L 4x25/10G



x3 or x4 for edge
x3 and up to 12 for DC-no-FI

- Legend
- HX/ESXi Managment
 - HX storage data
 - CIMC port

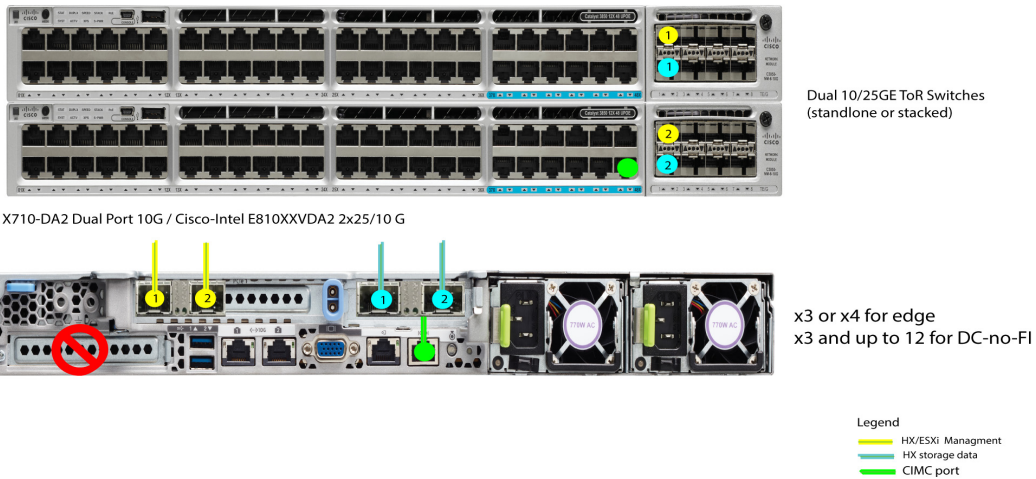
NIC Based 10 or 25 Gigabit Ethernet Dual Switch Topology (dual port)

Dual switch configuration provides a slightly more complex topology with full redundancy that protects against: switch failure, link failure, and port failure. It requires two switches that may be standalone or stacked, and four 10/25GE ports, one 1GE port for CIMC management, and 2 x dual port NIC per server. Trunk ports are the only supported network port configuration. refer [10/25 Gigabit Ethernet Switch Configuration Guidelines](#) for more information.

To deploy this topology, select HX-E-TOP05 from [STEP 9](#)

Figure 15 Physical cabling for the Dual Port NIC Based 10/25GE Dual Switch Topology.

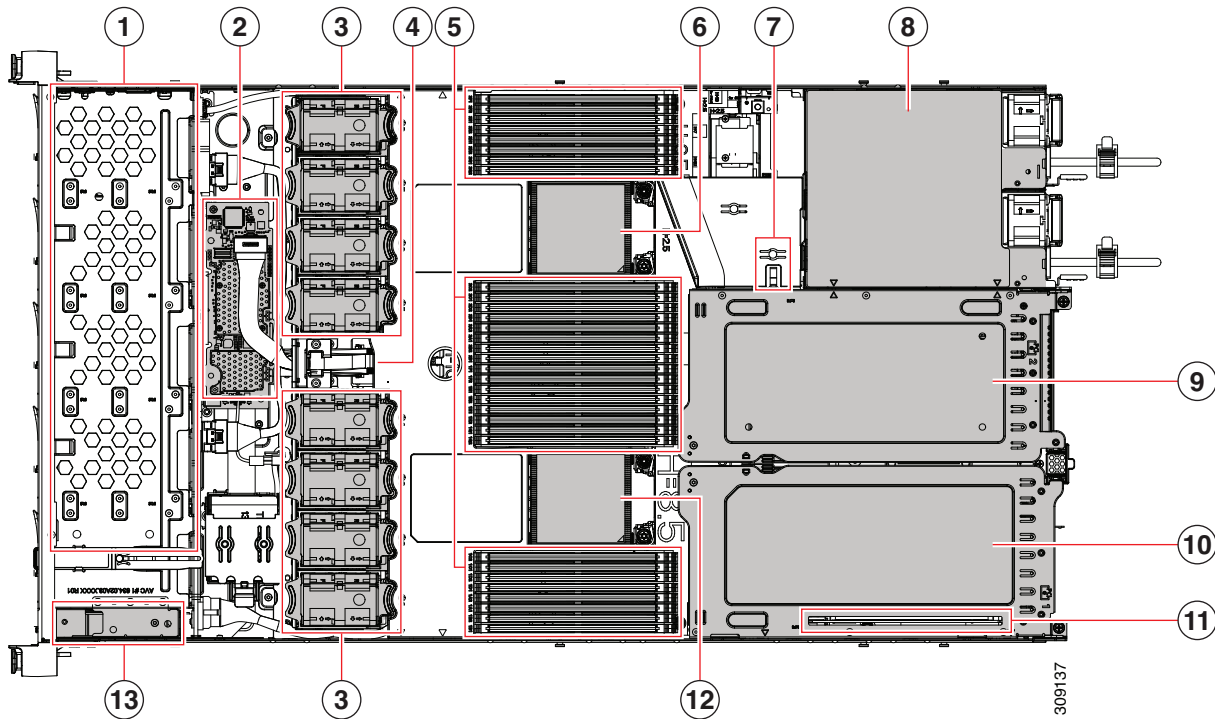
3 or greater Node Edge/DC-no-FI - Dual 10/25GE



Chassis

Internal views of the HX225C M6S All Flash and Hybrid chassis with the top cover removed are shown in [Figure 16](#) and [Figure 17 on page 72](#).

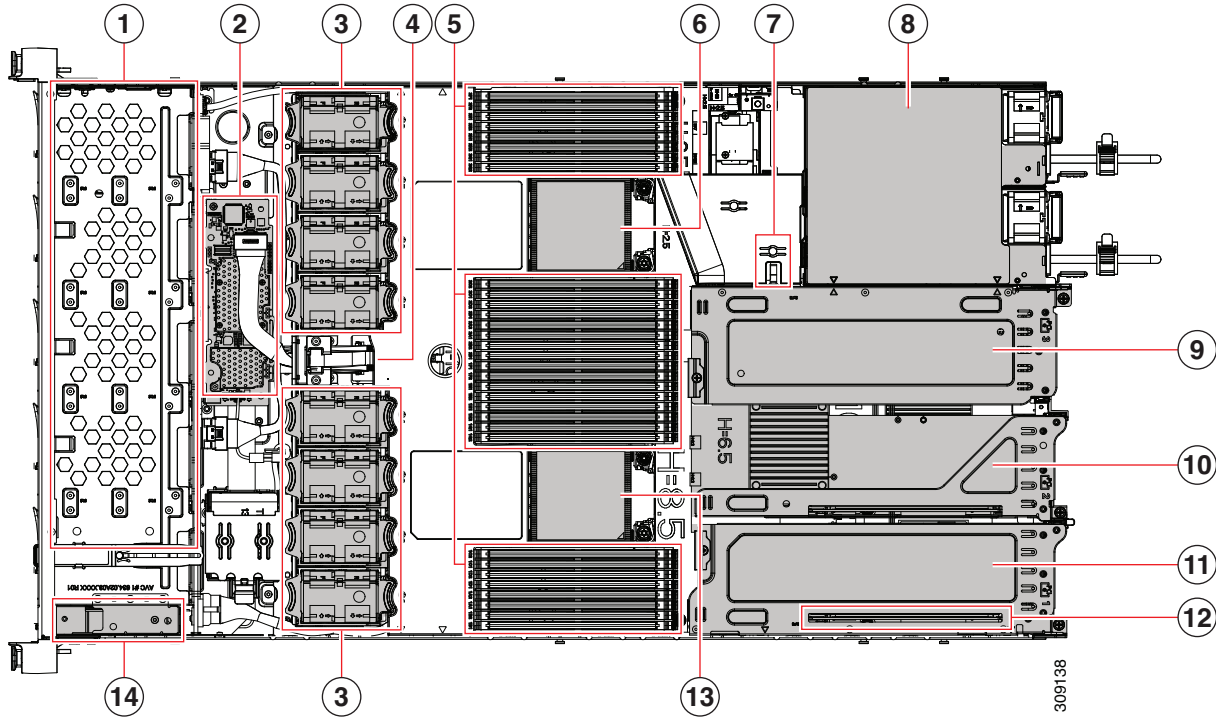
Figure 16 HyperFlex HX225C M6S All Flash and Hybrid With Top Cover Off (full-height, full-width PCIe cards)



1	Front-loading drive bays	2	M6 modular RAID card
3	Cooling fan modules (eight) Each fan is hot-swappable	4	Supercap module mounting bracket
5	DIMM sockets on motherboard, 32 total, 16 per CPU CPUs are arranged in groups of eight sockets above the top CPU and below the bottom CPU, and 16 sockets between the CPUs.	6	Motherboard CPU2 socket
7	M.2 module connector, supporting a boot-optimized RAID controller with connectors for up to two SATA M.2 SSDs.	8	Two power supplies
9	PCIe riser 2 Accepts 1 full height, full width PCIe riser card	10	PCIe riser 1 Accepts 1 full height, full width PCIe riser card
11	Modular LOM (mLOM) card bay on chassis floor(x16 PCIe lane) Connector shown, but the card bay sits below PCIe riser slot 1.	12	Motherboard CPU1 socket

13	Front Panel Controller board	-	
----	------------------------------	---	--

Figure 17 HyperFlex HX225C M6S All Flash and Hybrid With Top Cover Off (full-height, half-width PCIe cards)



1	Front-loading drive bays	2	M6 modular RAID card
3	Cooling fan modules (eight) Each fan is hot-swappable	4	Supercap module mounting bracket
5	DIMM sockets on motherboard, 32 total, 16 per CPU CPUs are arranged in groups of eight sockets above the top CPU and below the bottom CPU, and 16 sockets between the CPUs.	6	Motherboard CPU2 socket
7	M.2 module connector, supporting a boot-optimized RAID controller with connectors for up to two SATA M.2 SSDs.	8	Two power supplies
9	PCIe riser 3 Accepts 1 half height, half width PCIe riser card	10	PCIe riser 2 Accepts 1 half height, half width PCIe riser card
11	PCIe riser slot 1 Accepts 1 half height, half width PCIe riser card	12	Modular LOM (mLOM)/OCP 3.0 card bay on chassis floor(x16 PCIe lane) Connector shown, but the card bay sits below PCIe riser slot 1.
13	Motherboard CPU1 socket	14	Front Panel Controller board

Risers

Figure 18 shows the locations of the PCIe riser connectors on the HyperFlex HX225 M6 Edge All Flash and Hybrid Server Nodes motherboard. The allowed configurations are:

- Half-height risers in riser 1, 2, and 3 connectors (see **Figure 19**), or
- Full-height risers in riser 1 and 3 connectors (see **Figure 20**).

Figure 18 HyperFlex HX225 M6 Edge All Flash and Hybrid Server Nodes Riser Connector Locations
C225 M6 SFF Motherboard

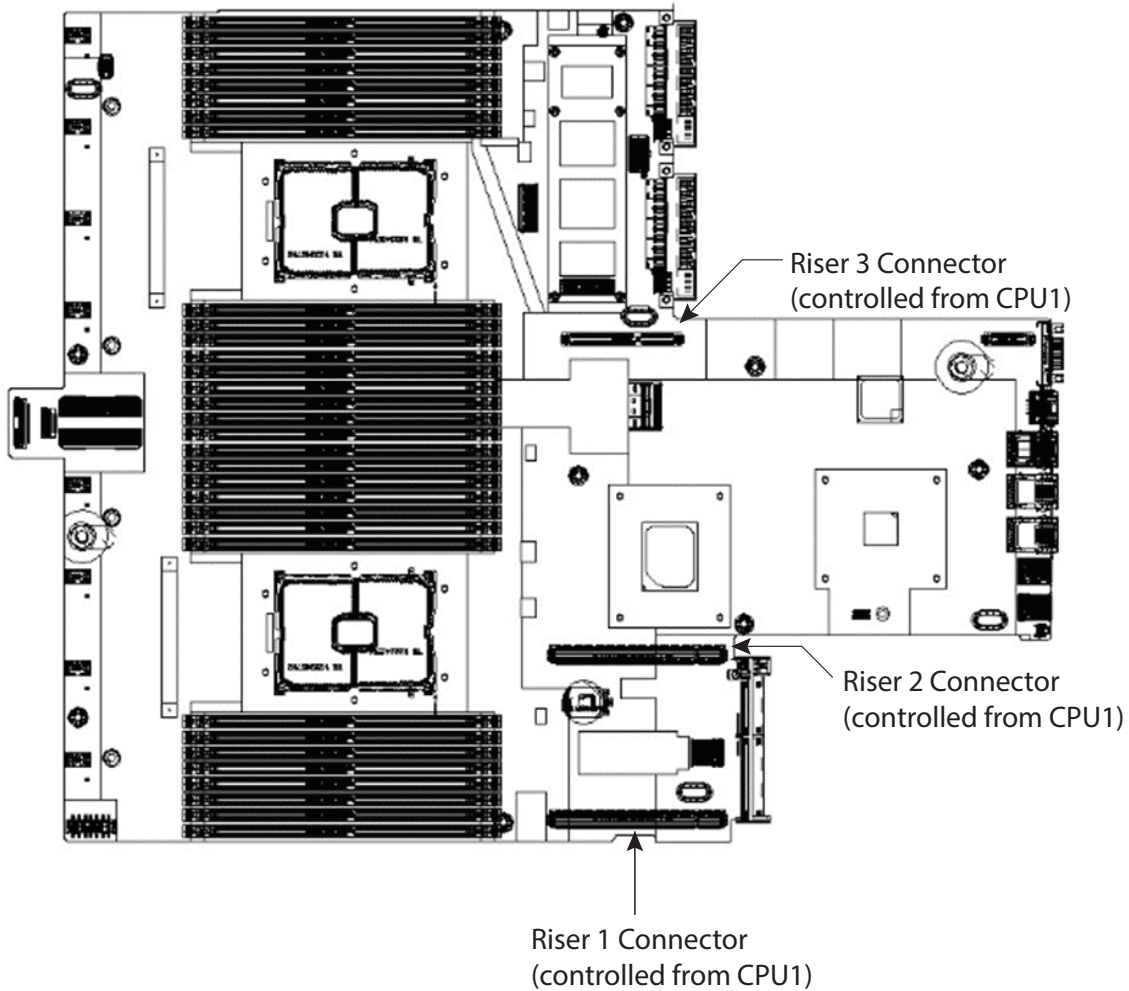


Figure 19 shows three half-height risers plugged into their respective connectors.

Figure 19 HyperFlex HX225 M6 Edge All Flash and Hybrid Server Nodes With Three Half-Height Risers Plugged In

C225 M6 SFF Motherboard

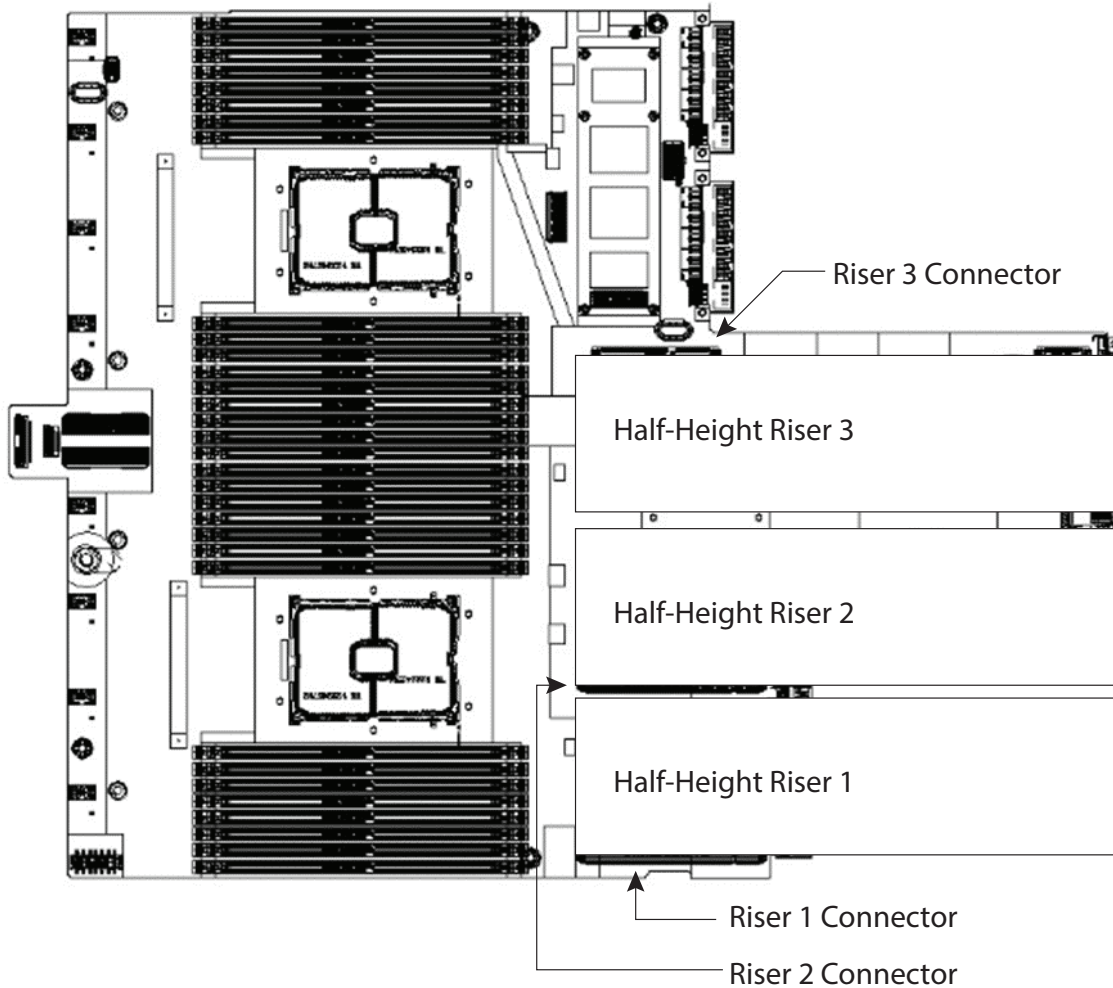
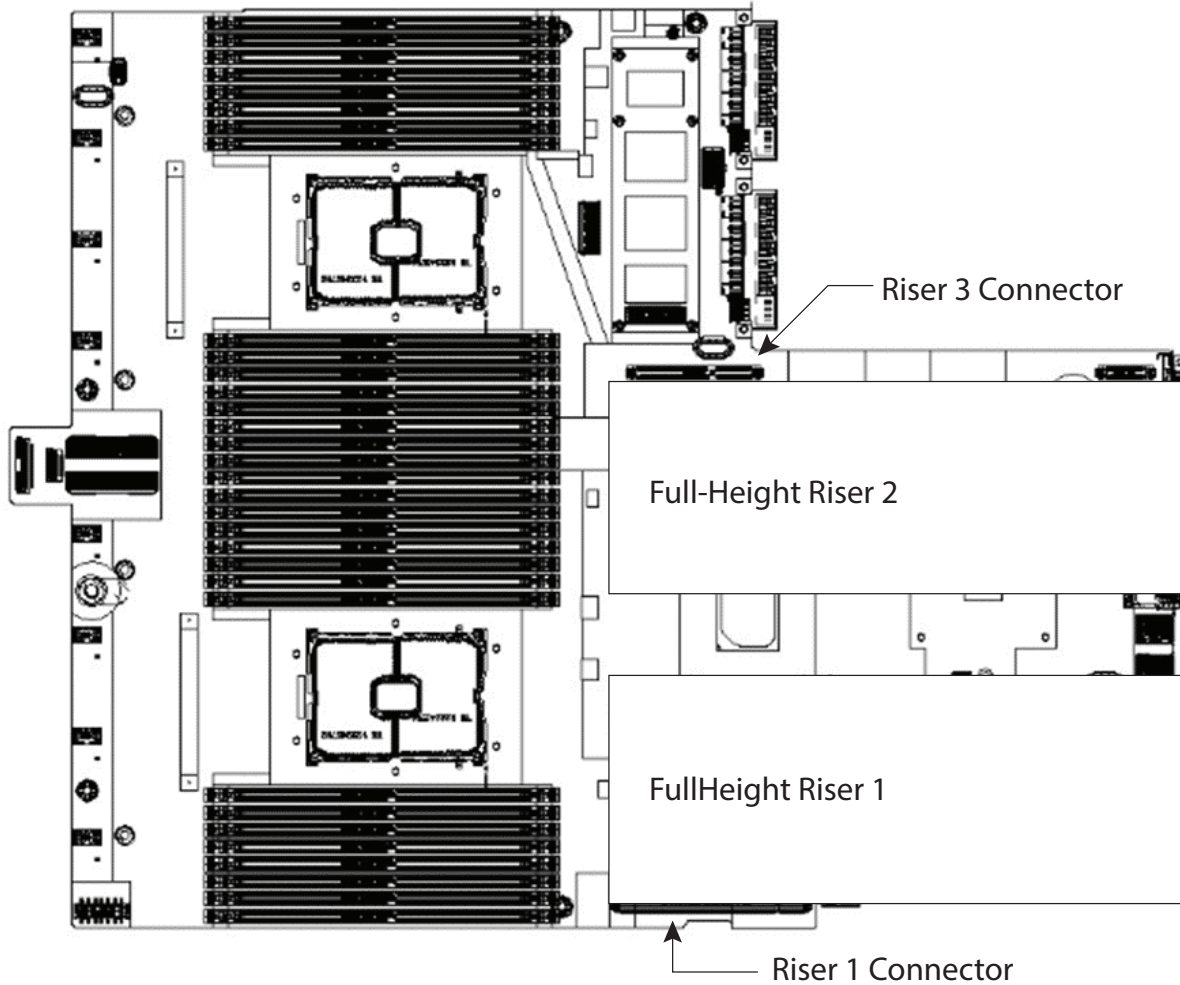


Figure 20 shows two full-height risers plugged in. Note that riser 1 is plugged into the riser 1 connector and riser 2 is plugged into the riser 3 connector. Riser 2 connector is not used.

Figure 20 HyperFlex HX225 M6 Edge All Flash and Hybrid Server Nodes With Two Full-Height Risers Plugged In

C225 M6 SFF Motherboard



Memory Support for AMD Rome and Milan CPUs

Each CPU has 16 DIMM sockets and supports a maximum memory capacity of 2 GB using 16 x 128 GB DRAMs.

The CPUs support the DRAMs shown in [Table 37](#).

Table 37 Supported DRAMs

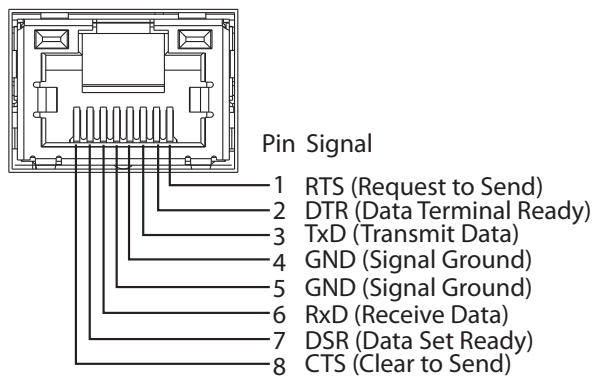
DRAM Type	Ranks	Capacity
RDIMM	1 (SR)	16 GB or 32 GB
RDIMM	2 (DR)	32 GB or 64 GB
LRDIMM	4 (QR)	128 GB (non-3DS)

Serial Port Details

The pinout details of the rear RJ-45 serial port connector are shown in [Figure 21](#).

Figure 21 Serial Port (Female RJ-45 Connector) Pinout

Serial Port (RJ-45 Female Connector)



KVM Cable

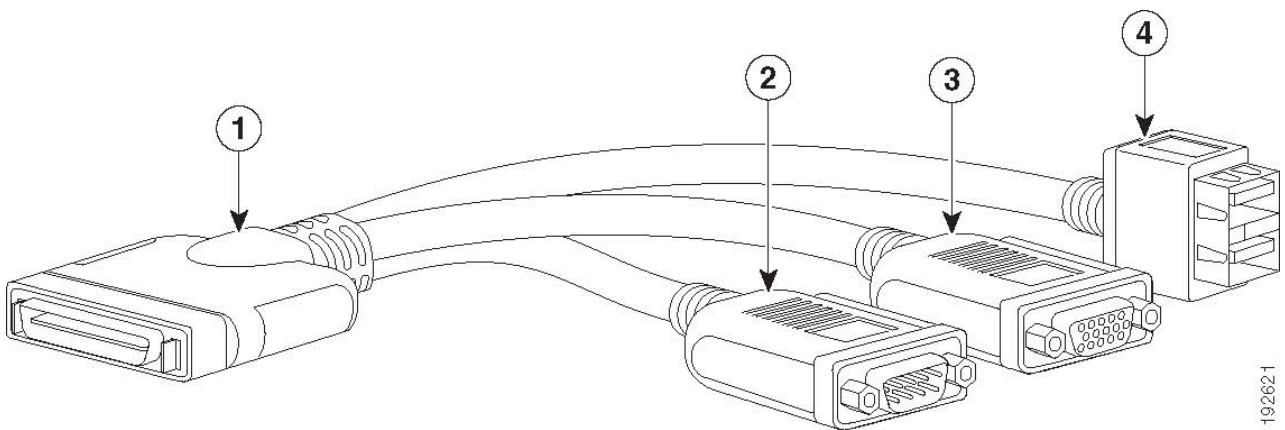
The KVM cable provides a connection into the server, providing a DB9 serial connector, a VGA connector for a monitor, and dual USB ports for a keyboard and mouse. With this cable, you can create a direct connection to the operating system and the BIOS running on the server.

The KVM cable ordering information is listed in [Table 38](#).

Table 38 KVM Cable

Product ID (PID)	PID Description
N20-BKVM	KVM cable for UCS Server console port

Figure 22 KVM Cable



1	Connector (to server front panel)	3	VGA connector (for a monitor)
2	DB-9 serial connector	4	Two-port USB connector (for a mouse and keyboard)

SPARE PARTS

This section lists the upgrade and service-related parts for the HyperFlex HX225 M6 Edge All Flash and Hybrid Server Nodes. Some of these parts are configured with every server.



NOTE: Some spare parts you order may also require accessories for full functionality. For example, drives or RAID controllers may need accompanying cables. CPUs may need heatsinks, thermal paste, and installation tools. The spares and their accessory parts are listed in [Table 39](#).

Table 39 Spare Parts

Product ID (PID)	PID Description
KVM Cable	
N20-BKVM=	KVM local IO cable for UCS servers console port
Riser Cards	
UCSC-R2R3-C220M6	Kit containing two half-height risers (risers 2 and 3):
HX-GPURKIT-C220	Kit containing a GPU mounting bracket and the following risers (risers 1 and 2)
UCSC-FBRS-C220 M6	Riser 2 and Riser 3 blank panels
CPUs	
<p>Note: When ordering spare CPUs, check the CPU Accessories section of this table for additional parts you may need.</p>	
HX-CPU-A7773X=	AMD 2.20GHz 7773X 280W 64C/768MB Cache DDR4 3200MHz
HX-CPU-A7763=	AMD 2.5GHz 7763 280W 64C/256MB Cache DDR4 3200MHz
HX-CPU-A7713P=	AMD 2.0GHz 7713P 225W 64C/256MB Cache DDR4 3200MHz
HX-CPU-A7713=	AMD 2.0GHz 7713 225W 64C/256MB Cache DDR4 3200MHz
HX-CPU-A7663=	AMD 2.0GHz 7663 225W 56C/256MB Cache DDR4 3200MHz
HX-CPU-A7662=	AMD 2.0GHz 7662 225W 64C/256MB Cache DDR4 3200MHz
HX-CPU-A7643=	AMD 2.3GHz 7643 225W 48C/256MB Cache DDR4 3200MHz
HX-CPU-A75F3=	AMD 2.95GHz 75F3 280W 32C/256MB Cache DDR4 3200MHz
HX-CPU-A7573X=	AMD 2.80GHz 7573X 280W 32C/768MB Cache DDR4 3200MHz
HX-CPU-A7543P=	AMD 2.7GHz 7543P 225W 32C/256MB Cache DDR4 3200MHz
HX-CPU-A7543=	AMD 2.7GHz 7543 225W 32C/256MB Cache DDR4 3200MHz
HX-CPU-A7532=	AMD 2.4GHz 7532 200W 32C/256MB Cache DDR4 3200MHz
HX-CPU-A7513=	AMD 2.6GHz 7513 200W 32C/128MB Cache DDR4 3200MHz
HX-CPU-A7502P=	AMD 2.5GHz 7502P 180W 32C/128MB Cache DDR4 3200MHz
HX-CPU-A74F3=	AMD 3.2GHz 74F3 240W 24C/256MB Cache DDR4 3200MHz
HX-CPU-A7473X=	AMD 2.80GHz 7473X 240W 24C/768MB Cache DDR4 3200MHz
HX-CPU-A7453=	AMD 2.75GHz 7453 180W 28C/64MB Cache DDR4 3200MHz
HX-CPU-A7443P=	AMD 2.85GHz 7443P 200W 24C/128MB Cache DDR4 3200MHz

Table 39 Spare Parts (continued)

Product ID (PID)	PID Description
HX-CPU-A7443=	AMD 2.8GHz 7443 200W 24C/128MB Cache DDR4 3200MHz
HX-CPU-A7413=	AMD 2.6GHz 7413 180W 24C/128MB Cache DDR4 3200MHz
HX-CPU-A73F3=	AMD 3.5GHz 73F3 240W 16C/256MB Cache DDR4 3200MHz
HX-CPU-A7373X=	AMD 3.05GHz 7373X 240W 16C/768MB Cache DDR4 3200MHz
HX-CPU-A7352=	AMD 2.3GHz 7352 155W 24C/128MB Cache DDR4 3200MHz
HX-CPU-A7343=	AMD 3.2GHz 7343 190W 16C/128MB Cache DDR4 3200MHz
HX-CPU-A7313P=	AMD 3.0GHz 7313P 155W 16C/128MB Cache DDR4 3200MHz
HX-CPU-A7313=	AMD 2.9GHz 7313 155W 16C/128MB Cache DDR4 3200MHz
HX-CPU-A7302=	AMD 3.0GHz 7302 155W 16C/128MB Cache DDR4 3200MHz
HX-CPU-A72F3=	AMD 3.7GHz 72F3 180W 8C/256MB Cache DDR4 3200MHz
HX-CPU-A7282=	AMD 2.8GHz 7282 120W 16C/64MB Cache DDR4 3200MHz
HX-CPU-A7272=	AMD 2.9GHz 7272 120W 12C/64MB Cache DDR4 3200MHz
HX-CPU-A7262=	AMD 3.2GHz 7262 155W 8C/128MB Cache DDR4 3200MHz
HX-CPU-A7252=	AMD 3.1GHz 7252 120W 8C/64MB Cache DDR4 3200MHz
HX-CPU-A7232P=	AMD 3.1GHz 7232P 120W 8C/32MB Cache DDR4 3200MHz
CPU Accessories	
HX-HSHP-225M6=	Heatsink 1U SFF M6 PCIe SKU
HX-CPU-TIM=	Single CPU thermal interface material syringe for M5 server HS seal ¹
UCSX-HSCK=	UCS Processor Heat Sink Cleaning Kit (when replacing a CPU) ²
HX-CPUAT=	CPU Assembly Tool for M5 Servers
HX-M5-CPU-CAR=	UCS M5 CPU Carrier
Memory	
HX-MR-X16G1RW=	16 GB RDIMM SRx4 3200 (8Gb)
HX-MR-X32G1RW =	32GB RDIMM SRx4 3200 (16Gb)
HX-MR-X32G2RW=	32 GB RDIMM DRx4 3200 (8Gb)
HX-MR-X64G2RW=	64 GB RDIMM DRx4 3200 (16Gb)
HX-ML-128G4RW=	128 GB LRDIMM QRx4 3200 (16Gb)
UCS-DIMM-BLK=	UCS DIMM Blanking Panel - C480M5
Drives	
HXAF225-M6S (All Flash)	
Front Capacity Drive	
HX-SD960G6S1X-EV=	960 GB 2.5 inch Enterprise Value 6G SATA SSD
HX-SD19T6S1X-EV=	1.9 TB 2.5 inch Enterprise Value 6G SATA SSD
HX-SD38T6S1X-EV=	3.8 TB 2.5 inch Enterprise Value 6G SATA SSD
HX-SD76T6S1X-EV=	7.6 TB 2.5 inch Enterprise Value 6G SATA SSD
Front Cache Drive	
HX-SD800GK3X-EP=	800 GB 2.5in Enterprise Performance 12G SAS SSD(3X endurance)
Front System Drive	
HX-SD240GM1X-EV=	240 GB 2.5 inch Enterprise Value 6G SATA SSD

Table 39 Spare Parts (continued)



Product ID (PID)	PID Description
Boot Drive	
HX-M2-240GB=	240 GB SATA M.2
HX-M2-HWRAID=	Cisco Boot optimized M.2 Raid controller
HX225-M6S (Hybrid)	
Front Capacity Drive	
HX-HD12TB10K12N=	1.2TB 12G SAS 10K RPM SFF HDD
HX-HD18TB10K4KN=	1.8TB 12G SAS 10K RPM SFF HDD (4K)
HX-HD24TB10K4KN=	2.4TB 12G SAS 10K RPM SFF HDD (4K)
Front Cache Drive	
HX-SD800GK3X-EP=	480GB 2.5in Enterprise Performance 6G SATA SSD(3X endurance)
HX-SD480G63X-EP=	800GB 2.5in Enterprise Performance 12G SAS SSD(3X endurance)
Front System Drive	
HX-SD240GM1X-EV=	240GB 2.5 inch Enterprise Value 6G SATA SSD
Boot Drives	
HX-M2-240GB=	240GB SATA M.2
HX-M2-HWRAID=	Cisco Boot optimized M.2 Raid controller
Drive Blanking Panel	
HX-BBLKD-S2=	C-Series M5 SFF drive blanking panel
RAID Controllers	
 <p>Note: When ordering additional RAID controllers, you may need to order a cable to connect from the RAID controller to the motherboard. See the RAID Controller Cables section in this table.</p>	
HX-SAS-220M6=	Cisco 12G SAS Tri Mode HBA up to 16 drvs 1U w/1U Brkt (PR)
HX-M2-HWRAID=	Cisco Boot optimized M.2 RAID controller (holds up to two M.2 SATA SSDs)
RAID Controller Cables	
CBL-SAS-C225M6=	CABLE, MB to SAS/RAID controller and HDD BKPLN
 <p>Note: Order this cable if you are adding a SAS Controller HX-SAS-220M6</p>	
Low Profile Bracket	
UCSC-LP-C25-1485=	Low profile bracket for VIC
UCSC-LP-C40-1485=	Low profile bracket for VIC1495
PCIe Cards	
Modular LAN on Motherboard (mLOM)	
HX-M-V25-04=	Cisco UCS VIC 1467 Quad Port 10/25G SFP28 mLOM
Network Interface Cards (NICs)	

Table 39 Spare Parts (continued)

Product ID (PID)	PID Description
1 Gb NICs	
HX-PCIE-IRJ45=	Intel i350 Quad Port 1Gb Adapter
10 Gb NICs	
HX-PCIE-ID10GF=	Intel X710-DA2 Dual Port 10Gb SFP+ NIC
HX-PCIE-IQ10GF=	Intel X710 Quad Port 10G SFP+ NIC
HX-P-ID10GC=	Cisco-Intel X710T2LG 2x10 GbE RJ45 PCIe NIC
25 Gb NICs	
HX-P-I8D25GF=	Cisco-Intel E810CQDA2 2x100 GbE QSFP28 PCIe NIC
HX-P-I8Q25GF=	Cisco-Intel E810XXVDA4L 4x25/10 GbE SFP28 PCIe NIC
Power Supplies	
PSU (Input High Line 210VAC)	
HX-PSU1-1050W=	1050W AC PSU Platinum (Not EU/UK Lot 9 Compliant)
HX-PSUV2-1050DC=	Cisco UCS 1050W -48V DC Power Supply for Rack Server Requires power cord CAB-48DC-40A-8AWG
HX-PSU1-1600W=	UCS 1600W AC PSU Platinum (Not EU/UK Lot 9 Compliant)
HX-PSU1-1200W=	1200W Titanium power supply for C-Series Servers
PSU (Input Low Line 110VAC)	
HX-PSU1-1050W=	1050W AC PSU Platinum (Not EU/UK Lot 9 Compliant)
HX-PSUV2-1050DC=	Cisco UCS 1050W -48V DC Power Supply for Rack Server Requires power cord CAB-48DC-40A-8AWG
HX-PSU1-1200W=	1200W Titanium power supply for C-Series Servers
Power Supply Blanking Panel	
UCSC-PSU-M5BLK=	Power Supply Blanking Panel for M5 servers
Power Cables	
CAB-48DC-40A-8AWG=	C-Series -48VDC PSU Power Cord, 3.5M, 3 Wire, 8AWG, 40A
CAB-N5K6A-NA	Power Cord, 200/240V 6A, North America
CAB-AC-L620-C13=	AC Power Cord, NEMA L6-20 - C13, 2M/6.5ft
CAB-C13-CBN=	CABASY,WIRE,JUMPER CORD, 27" L, C13/C14, 10A/250V
CAB-C13-C14-2M =	CABASY,WIRE,JUMPER CORD, PWR, 2 Meter, C13/C14,10A/250V
CAB-C13-C14-AC=	CORD,PWR,JMP,IEC60320/C14,IEC6 0320/C13, 3.0M
CAB-250V-10A-AR=	Power Cord, 250V, 10A, Argentina
CAB-9K10A-AU=	Power Cord, 250VAC 10A 3112 Plug, Australia
CAB-250V-10A-CN=	AC Power Cord - 250V, 10A - PRC
CAB-9K10A-EU=	Power Cord, 250VAC 10A CEE 7/7 Plug, EU
CAB-250V-10A-ID=	Power Cord, 250V, 10A, India
CAB-C13-C14-3M-IN=	Power Cord Jumper, C13-C14 Connectors, 3 Meter Length, India
CAB-C13-C14-IN=	Power Cord Jumper,C13-C14 Connectors,1.4 Meter Length, India
CAB-250V-10A-IS=	Power Cord, SFS, 250V, 10A, Israel
CAB-9K10A-IT=	Power Cord, 250VAC 10A CEI 23-16/VII Plug, Italy

Table 39 Spare Parts (continued)

Product ID (PID)	PID Description
CAB-9K10A-SW=	Power Cord, 250VAC 10A MP232 Plug, Switzerland
CAB-9K10A-UK=	Power Cord, 250VAC 10A BS1363 Plug (13 A fuse), UK
CAB-9K12A-NA ² =	Power Cord, 125VAC 13A NEMA 5-15 Plug, North America
CAB-250V-10A-BR =	Power Cord - 250V, 10A - Brazil
CAB-C13-C14-2M-JP=	Power Cord C13-C14, 2M/6.5ft Japan PSE mark
CAB-9K10A-KOR ¹ =	Power Cord, 125VAC 13A KSC8305 Plug, Korea
CAB-ACTW=	AC Power Cord (Taiwan), C13, EL 302, 2.3M
CAB-JPN-3PIN=	Japan, 90-125VAC 12A NEMA 5-15 Plug, 2.4m
CAB-48DC-40A-INT=	C-Series -48VDC PSU PWR Cord, 3.5M, 3 Wire, 8AWG, 40A (INT)
CAB-48DC-40A-AS=	C-Series -48VDC PSU PWR Cord, 3.5M, 3Wire, 8AWG, 40A (AS/NZ)
Rail Kit and CMA	
HX-RAIL-M6=	Ball Bearing Rail Kit for C220 & C240 M6 rack servers
HX-CMA-C220M6=	Reversible CMA for C220 M6 ball bearing rail kit
HX-RAIL-NONE=	NO RAIL KIT OPTION
TPM	
UCSX-TPM2-002B-C=	Trusted Platform Module 2.0 for UCS servers
HX-INT-SW02=	Chassis Intrusion Switch
Bezel	
HXAF220C-BZL-M5S=	HXAF220C M5 Security Bezel
HX220C-BZL-M5=	HX220C M5 Security Bezel

Notes:

1. This part is included with the purchase of option or spare CPU or CPU processor kits.
2. This power cord is rated to 125V and only supported for PSU rated at 1050W or less

Please refer to “Cisco HyperFlex HX225 M6 Edge All Flash and Hybrid Server Nodes Installation and Service Guide” for installation procedures. See this link:

https://www.cisco.com/content/en/us/td/docs/unified_computing/ucs/c/hw/c225m6/install/c225m6.html

REPLACING CPUs and HEATSINKS



NOTE: Before servicing any CPU, do the following:

- Decommission and power off the server.
- Slide the Cisco HyperFlex HX225 M6 Edge All Flash and Hybrid Server Nodes out from the rack.
- Remove the top cover.



CAUTION:

- CPUs and their sockets are fragile and must be handled with extreme care to avoid damaging pins. The CPUs must be installed with heatsinks and thermal interface material to ensure cooling. Failure to install a CPU correctly might result in damage to the server.
- Always shut down the server before removing it from the chassis, as described in the procedures. Failure to shut down the server before removal results in the corresponding RAID supercap cache being discarded and other data might be lost.

To replace an existing CPU, follow these steps:

(1) Have the following tools and materials available for the procedure:

- T-20 Torx driver—Supplied with replacement CPU.
- Thermal interface material (TIM)—Syringe supplied with replacement CPU.

(2) Order the appropriate replacement CPU from [Table 5 on page 20](#)

(3) Carefully remove and replace the CPU and heatsink in accordance with the instructions found in “Cisco HyperFlex HX225 M6 Edge All Flash and Hybrid Server Nodes Installation and Service Guide,” found at:

https://www.cisco.com/content/en/us/td/docs/unified_computing/ucs/c/hw/c225m6/install/c225m6.html

To add a new CPU, follow these steps:

(1) Have the following tools and materials available for the procedure:

- T-30 Torx driver—Supplied with new CPU.
- Thermal interface material (TIM)—Syringe supplied with replacement CPU.

(2) Order the appropriate new CPU from [Table 5 on page 20](#)

(3) Order one heat sink for each new CPU. Order PID HX-HSHP-225M6 unless you have installed a double-wide or A10 GPU. In that case, order PID HX-HSLP-225M6.

(4) Carefully install the CPU and heatsink in accordance with the instructions found in “[Cisco UCS C220 M6 Server Installation and Service Guide](#).”

UPGRADING or REPLACING MEMORY



NOTE: Before servicing any DIMM, do the following:

- Decommission and power off the server.
- Remove the top cover from the server
- Slide the server out the front of the chassis.

To add or replace DIMMs, follow these steps:

Step 1 Open both DIMM connector latches.

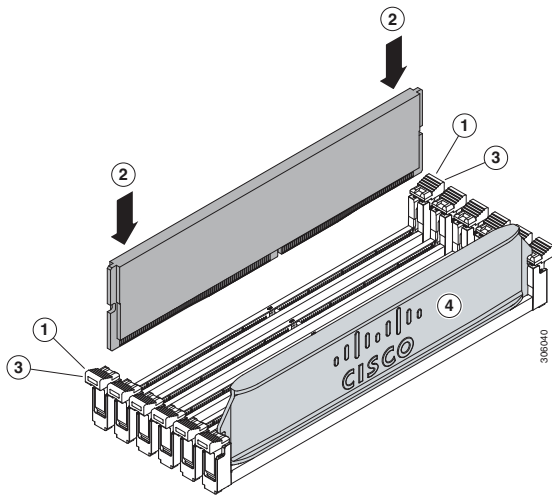
Step 2 Press evenly on both ends of the DIMM until it clicks into place in its slot

Note: Ensure that the notch in the DIMM aligns with the slot. If the notch is misaligned, it is possible to damage the DIMM, the slot, or both.

Step 3 Press the DIMM connector latches inward slightly to seat them fully.

Step 4 Populate all slots with a DIMM or DIMM blank. A slot cannot be empty.

Figure 23 Replacing Memory



For additional details on replacing or upgrading DIMMs, see “Cisco UCS C240 M6 Server Installation and Service Guide,” found at these links:

https://www.cisco.com/content/en/us/td/docs/unified_computing/ucs/c/hw/c225m6/install/c225m6.html

TECHNICAL SPECIFICATIONS

Dimensions and Weight

Table 40 HyperFlex HX225 M6 Edge All Flash and Hybrid Server Nodes Dimensions and Weight

Parameter	Value
Height	1.70 in. (4.3 cm)
Width (Not including slam latches)	16.9 in. (42.9 cm)
Width (including slam latches)	18.9 in. (48.0 cm)
Depth	30 in. (76.2 cm)
Front Clearance	3 in. (76 mm)
Side Clearance	1 in. (25 mm)
Rear Clearance	6 in. (152 mm)
Weight	
Weight with following options and no rail kit: 1 HDD, 1 CPU, 1 DIMM, and 1 1600 W power supply	22.32 lbs (10.1 kg)
Weight with following options and including rail kit: 1 HDD, 1 CPU, 1 DIMM, and 1 1600 W power supply	32.38 lbs (14.7 kg)
Weight with following options and no rail kit: 10 HDDs, 2 CPUs, 32 DIMMs, and 2 1600 W power supplies	32.38 lbs (14.7 kg)
Weight with following options and including rail kit: 10 HDDs, 2 CPUs, 32 DIMMs, and 2 1600 W power supplies	42.43 lbs (19.3 kg)

Power Specifications

The server is available with the following types of power supplies:

- 1050 W (AC) power supply (see [Table 41](#)).
- 1050 W V2 (DC) power supply (see [Table 42](#))
- 1600 W (AC) power supply (see [Table 43](#))

Table 41 HyperFlex HX225C M6S All Flash and Hybrid Power Specifications (1050 W AC power supply)

Parameter	Specification			
Input Connector	IEC320 C14			
Input Voltage Range (V rms)	100 to 240			
Maximum Allowable Input Voltage Range (V rms)	90 to 264			
Frequency Range (Hz)	50 to 60			
Maximum Allowable Frequency Range (Hz)	47 to 63			
Maximum Rated Output (W) ¹	800		1050	
Maximum Rated Standby Output (W)	36			
Nominal Input Voltage (V rms)	100	120	208	230
Nominal Input Current (A rms)	9.2	7.6	5.8	5.2
Maximum Input at Nominal Input Voltage (W)	889	889	1167	1154
Maximum Input at Nominal Input Voltage (VA)	916	916	1203	1190
Minimum Rated Efficiency (%) ²	90	90	90	91
Minimum Rated Power Factor ²	0.97	0.97	0.97	0.97
Maximum Inrush Current (A peak)	15			
Maximum Inrush Current (ms)	0.2			
Minimum Ride-Through Time (ms) ³	12			

Notes:

1. Maximum rated output is limited to 800W when operating at low-line input voltage (100-127V)
2. This is the minimum rating required to achieve 80 PLUS Platinum certification, see test reports published at <http://www.80plus.org/> for certified values
3. Time output voltage remains within regulation limits at 100% load, during input voltage dropout

Table 42 HyperFlex HX225C M6S All Flash and Hybrid Power Specifications (1050 W V2 DC power supply)

Parameter	Specification
Input Connector	Molex 42820
Input Voltage Range (V rms)	-48
Maximum Allowable Input Voltage Range (V rms)	-40 to -72
Frequency Range (Hz)	NA
Maximum Allowable Frequency Range (Hz)	NA
Maximum Rated Output (W)	1050
Maximum Rated Standby Output (W)	36
Nominal Input Voltage (V rms)	-48
Nominal Input Current (A rms)	24
Maximum Input at Nominal Input Voltage (W)	1154
Maximum Input at Nominal Input Voltage (VA)	1154
Minimum Rated Efficiency (%) ¹	91
Minimum Rated Power Factor ¹	NA
Maximum Inrush Current (A peak)	15
Maximum Inrush Current (ms)	0.2
Minimum Ride-Through Time (ms) ²	5

Notes:

1. This is the minimum rating required to achieve 80 PLUS Platinum certification, see test reports published at <http://www.80plus.org/> for certified values
2. Time output voltage remains within regulation limits at 100% load, during input voltage dropout

Table 43 HyperFlex HX225C M6S All Flash and Hybrid 1600 W (AC) Power Supply Specifications

Parameter	Specification			
Input Connector	IEC320 C14			
Input Voltage Range (V rms)	200 to 240			
Maximum Allowable Input Voltage Range (V rms)	180 to 264			
Frequency Range (Hz)	50 to 60			
Maximum Allowable Frequency Range (Hz)	47 to 63			
Maximum Rated Output (W) ¹	1600			
Maximum Rated Standby Output (W)	36			
Nominal Input Voltage (V rms)	100	120	208	230
Nominal Input Current (A rms)	NA	NA	8.8	7.9
Maximum Input at Nominal Input Voltage (W)	NA	NA	1778	1758
Maximum Input at Nominal Input Voltage (VA)	NA	NA	1833	1813
Minimum Rated Efficiency (%) ²	NA	NA	90	91
Minimum Rated Power Factor ²	NA	NA	0.97	0.97
Maximum Inrush Current (A peak)	30			
Maximum Inrush Current (ms)	0.2			
Minimum Ride-Through Time (ms) ³	12			

Notes:

1. Maximum rated output is limited to 800W when operating at low-line input voltage (100-127V)
2. This is the minimum rating required to achieve 80 PLUS Platinum certification, see test reports published at <http://www.80plus.org/> for certified values
3. Time output voltage remains within regulation limits at 100% load, during input voltage dropout

For configuration-specific power specifications, use the Cisco UCS Power Calculator at this URL:

<http://ucspowercalc.cisco.com>

Environmental Specifications

The environmental specifications for the M6 server are listed in [Table 44](#).

Table 44 M6 Environmental Specifications

Parameter	Minimum
Operating Temperature	Dry bulb temperature of 10°C to 35°C (50°F to 95°F) Maximum temperature change of 20°C (36°F) per hour (a temperature change within a specified period of time and not a rate of change) Humidity condition: Uncontrolled, not to exceed 50% RH starting condition Derate the maximum temperature by 1°C (33.8°F) per every 305 meters of altitude above 900m
Extended Operating Temperature	5°C to 40°C (41°F to 104°F) with no direct sunlight Humidity condition: Uncontrolled, not to exceed 50% RH starting condition Derate the maximum temperature by 1°C (33.8°F) per every 305 meters of altitude above 900m
Non-Operating Temperature	Dry bulb temperature of -40°C to 65°C (-40°F to 149°F)
Operating Relative Humidity	10% to 90% and 28°C (82.4°F) maximum dew-point temperature, non-condensing environment Minimum to be higher (more moisture) of -12°C (10.4°F) dew point or 8% relative humidity Maximum to be 24°C (75.2°F) dew point or 90% relative humidity
Non-Operating Relative Humidity	5% to 93% relative humidity, non-condensing, with a maximum wet bulb temperature of 28°C across the 20°C to 40°C dry bulb range.
Maximum Operating Duration	Unlimited
Operating Altitude	A maximum elevation of 3050 meters (10,006 ft)
Non-Operating Altitude	An elevation of 0 to 12,000 meters (39,370 ft)
Sound Power level, Measure A-weighted per ISO7779 LWAd (Bels) Operation at 23°C (73°F)	5.5
Sound Pressure level, Measure A-weighted per ISO7779 LpAm (dBA) Operation at 23°C (73°F)	40

Extended Operating Temperature Hardware Configuration Limits

Table 45 Cisco HyperFlex HX225 M6 Edge All Flash and Hybrid Server Nodes Extended Operating Temperature Hardware Configuration Limits

Platform ¹	ASHRAE A3 (5°C to 40°C) ²	ASHRAE A4 (5°C to 45°C) ³
Processors:	155W+	155W+ and 105W+ (4 or 6 Cores)
Memory:	LRDIMMs	LRDIMMs
Storage:	M.2 SATA SSDs NVMe SSDs	M.2 SATA SSDs NVMe SSDs
Peripherals:	PCIe NVMe SSDs GPUs	MRAID PCIe NVMe SSDs GPUs mLOMs VICs NICs HBAs

Notes:

1. Two PSUs are required and PSU failure is not supported
2. Non-Cisco UCS qualified peripherals and/or peripherals that consume more than 25W are not supported
3. High power or maximum power fan control policy must be applied

Compliance Requirements

The regulatory compliance requirements for servers are listed in [Table 46](#).

Table 46 UCS HX-Series Regulatory Compliance Requirements

Parameter	Description
Regulatory Compliance	Products should comply with CE Markings per directives 2014/30/EU and 2014/35/EU
Safety	UL 60950-1 Second Edition CAN/CSA-C22.2 No. 60950-1 Second Edition EN 60950-1 Second Edition IEC 60950-1 Second Edition AS/NZS 60950-1 GB4943 2001
EMC - Emissions	47CFR Part 15 (CFR 47) Class A AS/NZS CISPR32 Class A CISPR32 Class A EN55032 Class A ICES003 Class A VCCI Class A EN61000-3-2 EN61000-3-3 KN32 Class A CNS13438 Class A
EMC - Immunity	EN55024 CISPR24 EN300386 KN35



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

Cisco has more than 200 offices worldwide. Addresses, phone numbers, and fax numbers are listed on the Cisco Website at www.cisco.com/go/offices.

Cisco and the Cisco Logo are trademarks of Cisco Systems, Inc. and/or its affiliates in the U.S. and other countries. A listing of Cisco's trademarks can be found at www.cisco.com/go/trademarks. Third party trademarks mentioned are the property of their respective owners. The use of the word partner does not imply a partnership relationship between Cisco and any other company. (1005R)

