This product has been discontinued

Spec Sheet

Cisco UCS C220 M5 Server (Large Form Factor Disk Drive Model)

CISCO SYSTEMS
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SAN JOSE, CA, 95134
WWW.CISCO.COM

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OVERVIEW

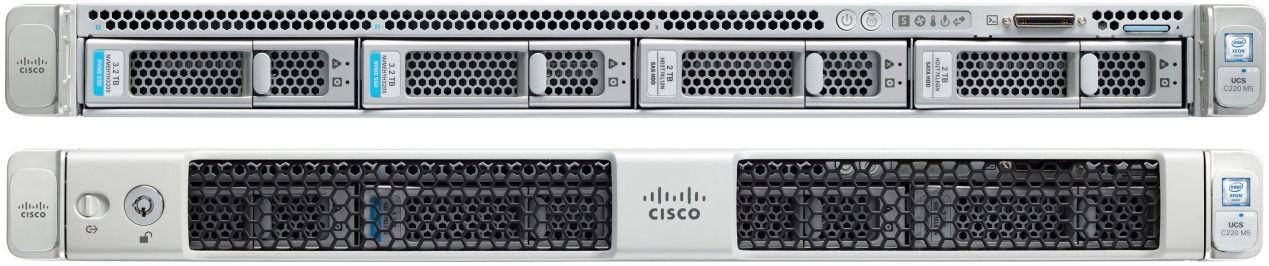
The UCS C220 M5 LFF server extends the capabilities of Cisco's Unified Computing System portfolio in a 1U form factor with the addition of the 2nd Generation Intel® Xeon® Scalable Processors, DDR4-3200MHz memory, and the new 512GB Intel® Optane™ Persistent Memory (PMem). With this combination of features, up to 9 TB of memory is possible (12 x 256 GB DDR4 DIMMs and 12 x 512 GB PMem), two 2 PCI Express (PCIe) 3.0 slots, up to four SAS/SATA hard disk drives (HDDs) or solid state drives (SSDs), and one dedicated internal slot for a 12G SAS storage controller card.

The C220 M5 LFF server includes a dedicated internal modular LAN on motherboard (mLOM) slot for installation of a Cisco Virtual Interface Card (VIC) or third-party network interface card (NIC) without consuming a PCI slot in addition to 2 x 10 Gbase-T Intel® x550 embedded (on the motherboard) LOM ports.

The Cisco UCS C220 M5 server can be used standalone, or as part of the Cisco Unified Computing System, which unifies computing, networking, management, virtualization, and storage access into a single integrated architecture, enabling end-to-end server visibility, management, and control in both bare metal and virtualized environments.

Figure 1 Cisco C220 M5 LFF Rack Server

Front View



Rear View

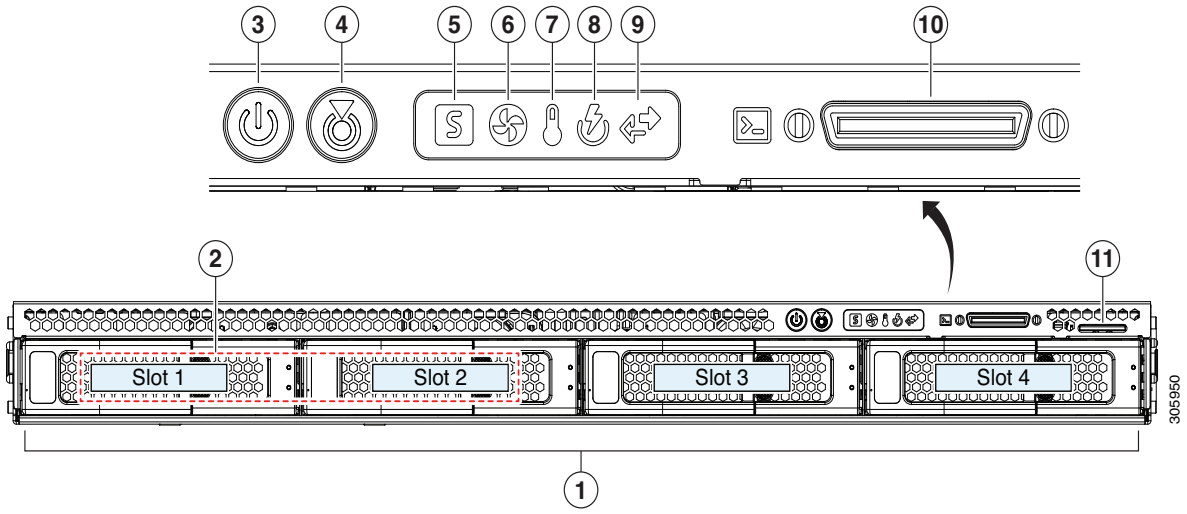


DETAILED VIEWS

Chassis Front View

Figure 2 shows the front view of the Cisco C220 M5 LFF Rack Server.

Figure 2 Chassis Front View



1	Drive bays 1 – 4 support SAS/SATA hard drives and solid state drives (SSDs). A size-converter drive sled is required to hold 2.5-inch SSDs.	7	Temperature status LED
2	Drive bays 1 and 2 support 2.5-inch (SFF) NVMe PCIe SSDs.	8	Power supply status LED
3	Power button/Power status LED	9	Network link activity LED
4	Unit identification button/LED	10	KVM connector (used with KVM cable that provides two USB 2.0, one VGA, and one serial connector[1]
5	System status LED	11	Pull-out asset tag
6	Fan status LED		

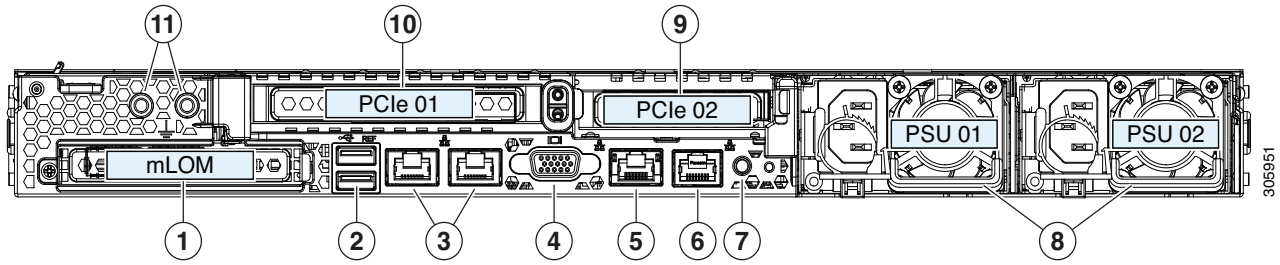
Notes:

1. For more information about the KVM cable connection, see *KVM Cable, page 68*

Chassis Rear View

Figure 3 shows the external features of the rear panel.

Figure 3 Chassis Rear View



1	Modular LAN-on-motherboard (mLOM) card slot	7	Rear Identification button/LED
2	USB 3.0 ports (two)	8	Power supplies (up to two, redundant as 1+1)
3	Two embedded (on the motherboard) Intel® x550 10Gbase-T Ethernet controller ports LAN1 is left connector, and LAN2 is right connector	9	PCIe riser 2 (PCIe slot 2) (x16) includes NVMe connectors for cabling to connect up to two front-mount NVMe drives in drive bays 1 and 2.
4	VGA video port (DB-15)	10	PCIe riser 1/slot 1 (x16)
5	1GE dedicated management port	11	Threaded holes for dual-hole grounding lug
6	Serial port (RJ-45 connector)[1]		

Notes:

1. For details of the serial port pinout, see *Serial Port Details, page 67*.

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 9*.

Table 1 Capabilities and Features

Capability/Feature	Description
Chassis	One rack unit (1RU) chassis
CPU	One or two 2nd Generation Intel® Xeon® scalable family CPUs
Chipset	Intel® C621 series chipset
Memory	24 slots for registered DIMMs (RDIMMs), load-reduced DIMMs (LRDIMMs), or through silicon via (TSV) DIMMs and support for Intel® Optane™ Persistent Memory (PMem)
Multi-bit Error Protection	This server supports multi-bit error protection.
Video	The Cisco Integrated Management Controller (CIMC) provides video using the Matrox G200e video/graphics controller: ■ Integrated 2D graphics core with hardware acceleration ■ 512MB total DDR4 memory, with 16MB dedicated to Matrox 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
SATA Interposer Board	An optional SATA interposer board for up to four SATA-only drives.
Power subsystem	Up to two of the following hot-swappable power supplies: ■ 770 W (AC) ■ 1050 W (AC) ■ 1050 W (DC) ■ 1600 W (AC) ■ 1050ELV (AC) One power supply is mandatory; one more can be added for 1 + 1 redundancy.
Front Panel	A front panel controller provides status indications and control buttons
ACPI	This server supports the advanced configuration and power interface (ACPI) 6.2 standard.
Fans	Seven hot-swappable fans for front-to-rear cooling
Infiniband	The Infiniband architecture is supported by the PCIe slots

Table 1 Capabilities and Features *(continued)*

Capability/Feature	Description
Expansion slots	■ Riser 1 (controlled by CPU 1): • One full-height profile, 3/4-length slot with x24 connector and x16 lane. ■ Riser 2 (controlled by CPU 2): • One half-height profile, half-length slot with x24 connector and x16 lane. ■ Dedicated RAID controller slot (see ***Figure 5 on page 63***) • An internal slot is reserved for use by the Cisco 12G SAS RAID controller or the Cisco 12G SAS HBA.
Interfaces	■ Rear panel • One 1Gbase-T RJ-45 management port (Marvell 88E6176) • Two 10Gbase-T LOM ports (Intel® X550 controller embedded on the motherboard) • One RS-232 serial port (RJ45 connector) • One DB15 VGA connector • Two USB 3.0 port connectors • One flexible modular LAN on motherboard (mLOM) slot that can accommodate various interface cards ■ Front panel • One KVM console connector (supplies two USB 2.0 connectors, one VGA DB15 video connector, and one serial port (RS232) RJ45 connector)
Internal storage devices	Drive storage: Drives are installed into front-panel drive bays that provide hot-swappable access for SAS/SATA drives. The server accommodates up to 4 x 3.5-inch SAS and SATA HDDs and SSDs and up to 2 NVMe PCIe drives Other storage: ■ One internal USB 3.0 port on the motherboard that you can use with an optional 16 GB USB thumb drive for additional storage. ■ A mini-storage module connector on the motherboard supports either: • An SD card module with two SD card slots. Mixing different capacity SD cards is not supported, or • An M.2 module with two SATA M.2 SSD slots. Mixing different capacity M.2 modules is not supported **NOTE:** SD cards and M.2 SSDs cannot be mixed. See details for RAID functionality in the ***ORDER M.2 SATA SSDs (OPTIONAL)*** section. ■ One socket for a micro-SD card on PCIe Riser 1. The micro-SD card serves as a dedicated resource for utilities such as HUU. Images can be pulled from a fileshare (NFS/CIFS) and uploaded to the cards for future use.

Table 1 Capabilities and Features *(continued)*

Capability/Feature	Description
Integrated management processor	Baseboard Management Controller (BMC) running Cisco Integrated Management Controller (CIMC) firmware. Depending on your CIMC settings, the CIMC can be accessed through the 1GE dedicated management port, the 1GE/10GE mLOM/OCP ports, or a Cisco virtual interface card (VIC). CIMC manages certain components within the server, such as the Cisco 12G SAS HBA and the Cisco VIC
Storage controller	■ Embedded RAID (software RAID) • Supports up to four SATA-only drives • Requires a SATA interposer board ■ Cisco 12G SAS RAID controller card with internal SAS connectivity. • Supports up to 4 internal SAS/SATA drives • Plugs into a dedicated RAID controller slot • Supports RAID 0, 1, 5, 6, 10, 50, 60, JBOD mode, and SRAID0 ■ Cisco 12G 9400-8e SAS HBA • Supports external JBOD attach • Plugs into an appropriate riser slot (up to 2 supported) • No RAID support
Modular LAN on Motherboard (mLOM) slot	The dedicated mLOM slot on the motherboard can flexibly accommodate the following cards: ■ Cisco Virtual Interface Cards (VICs) ■ Quad Port Intel® i350 1GE RJ45 Network Interface Card (NICs) **NOTE:** Dedicated mLOM slot that can flexibly accommodate 1-, 10-, 25-, 40-, and 100-Gbps adapters
	NOTE: The four Intel® i350 ports are provided on an optional card that plugs into the mLOM slot, and are separate from the two embedded (on the motherboard) LAN ports
UCSM	Unified Computing System Manager (UCSM) runs in the Fabric Interconnect and automatically discovers and provisions some of the server components.

CONFIGURING the SERVER

Follow these steps to configure the Cisco UCS C220 M5 LFF Rack Server:

- *STEP 1 VERIFY SERVER SKU, page 10*
- *STEP 2 SELECT CPU(s), page 11*
- *STEP 3 SELECT MEMORY, page 16*
- *STEP 4 SELECT RAID CONTROLLERS, page 23*
- *STEP 5 SELECT DRIVES, page 27*
- *STEP 6 SELECT PCIe OPTION CARD(s), page 31*
- *STEP 7 ORDER OPTIONAL PCIe OPTION CARD ACCESSORIES, page 35*
- *STEP 8 ORDER GPU CARDS (OPTIONAL), page 36*
- *STEP 9 ORDER POWER SUPPLY, page 37*
- *STEP 10 SELECT POWER CORD(s), page 38*
- *STEP 11 ORDER TOOL-LESS RAIL KIT AND OPTIONAL REVERSIBLE CABLE MANAGEMENT ARM, page 41*
- *STEP 12 SELECT MANAGEMENT CONFIGURATION (OPTIONAL), page 42*
- *STEP 13 SELECT SERVER BOOT MODE (OPTIONAL), page 43*
- *STEP 14 ORDER SECURITY DEVICES (OPTIONAL), page 44*
- *STEP 15 SELECT LOCKING SECURITY BEZEL (OPTIONAL), page 45*
- *STEP 16 ORDER CISCO SD CARD MODULE (OPTIONAL), page 46*
- *STEP 17 ORDER M.2 SATA SSDs (OPTIONAL), page 47*
- *STEP 18 ORDER INTERNAL MICRO-SD CARD MODULE (OPTIONAL), page 49*
- *STEP 19 ORDER OPTIONAL USB 3.0 DRIVE, page 50*
- *STEP 20 SELECT OPERATING SYSTEM AND VALUE-ADDED SOFTWARE, page 51*
- *STEP 21 SELECT OPERATING SYSTEM MEDIA KIT, page 55*
- *STEP 22 SELECT SERVICE and SUPPORT LEVEL, page 56*

STEP 1 VERIFY SERVER SKU

Verify the product ID (PID) of the server as shown in *Table 2*.

Table 2 PID of the C220 M5 LFF Rack Base Server

Product ID (PID)	Description
UCSC-C220-M5L	UCS C220 M5 LFF, no CPU, memory, HDD, power supply, SD cards, PCIe cards, or tool-less rail kit

The Cisco C220 M5 LFF server:

- Does not include power supply, CPU, memory, hard disk drives (HDDs), SD cards, rail kit, plug-in PCIe cards or Intel® Optane™ Persistent Memory (PMem).



NOTE: Use the steps on the following pages to configure the server with the components that you want to include.

STEP 2 SELECT CPU(s)

The standard CPU features are:

- 2nd Generation Intel® Xeon® scalable family CPUs
- Intel® C621 series chipset
- Cache size of up to 38.5 MB

Select CPUs

The available CPUs are listed in *Table 3*.

Table 3 Available CPUs

Product ID (PID)	Clock Freq (GHz)	Power (W)	Cache Size (MB)	Cores	UPI[1] Links (GT/s)	Highest DDR4 DIMM Clock Support (MHz)[2]	Workload/Processor type
Cisco Recommended CPUs[3] (2nd Generation Intel® Xeon® Processors)							
UCS-CPU-I8276	2.2	165	38.50	28	3 x 10.4	2933	Oracle, SAP
UCS-CPU-I8260	2.4	165	35.75	24	3 x 10.4	2933	Microsoft Azure Stack
UCS-CPU-I6262V	1.9	135	33.00	24	3 x 10.4	2400	Virtual Server infrastructure or VSI
UCS-CPU-I6248R	3.0	205	35.75	24	2 x 10.4	2933	
UCS-CPU-I6248	2.5	150	27.50	20	3 x 10.4	2933	VDI, Oracle, SQL, Microsoft Azure Stack
UCS-CPU-I6238R	2.2	165	38.50	28	2 x 10.4	2933	Oracle, SAP (2-Socket TDI only), Microsoft AzureStack
UCS-CPU-I6238	2.1	140	30.25	22	3 x 10.4	2933	SAP
UCS-CPU-I6230R	2.1	150	35.75	26	2 x 10.4	2933	Virtual Server Infrastructure, Data Protection, Big Data, Splunk, Microsoft AzureStack
UCS-CPU-I6230	2.1	125	27.50	20	3 x 10.4	2933	Big Data, Virtualization
UCS-CPU-I5220R	2.2	125	35.75	24	2 x 10.4	2666	Virtual Server Infrastructure, Splunk, Microsoft Azure Stack
UCS-CPU-I5220	2.2	125	24.75	18	2 x 10.4	2666	HCI
UCS-CPU-I5218R	2.1	125	27.50	20	2 x 10.4	2666	Virtual Server Infrastructure, Data Protection, Big Data, Splunk, Scale-out Object Storage, Microsoft AzureStack

Table 3 Available CPUs

Product ID (PID)	Clock Freq (GHz)	Power (W)	Cache Size (MB)	Cores	UPI[1] Links (GT/s)	Highest DDR4 DIMM Clock Support (MHz)[2]	Workload/Processor type
UCS-CPU-I5218	2.3	125	22.00	16	2 x 10.4	2666	Virtualization, Microsoft Azure Stack, Splunk, Data Protection
UCS-CPU-I4216	2.1	100	22.00	16	2 x 9.6	2400	Data Protection, Scale Out Storage
UCS-CPU-I4214R	2.4	100	16.50	12	2 x 9.6	2400	Data Protection, Splunk, Scale-out Object Storage, Microsoft AzureStack
UCS-CPU-I4214	2.2	85	16.50	12	2 x 9.6	2400	Data Protection, Scale Out Storage
UCS-CPU-I4210R	2.4	100	13.75	10	2 x 9.6	2400	Virtual Server Infrastructure, Data Protection, Big Data, Splunk
UCS-CPU-I4210	2.2	85	13.75	10	2 x 9.6	2400	Virtualization, Big Data, Splunk
8000 Series Processor							
UCS-CPU-I8280L	2.7	205	38.50	28	3 x 10.4	2933	2nd Gen Intel® Xeon®
UCS-CPU-I8280	2.7	205	38.50	28	3 x 10.4	2933	2nd Gen Intel® Xeon®
UCS-CPU-I8276L	2.2	165	38.50	28	3 x 10.4	2933	2nd Gen Intel® Xeon®
UCS-CPU-I8276	2.2	165	38.50	28	3 x 10.4	2933	2nd Gen Intel® Xeon®
UCS-CPU-I8270	2.7	205	35.75	26	3 x 10.4	2933	2nd Gen Intel® Xeon®
UCS-CPU-I8268	2.9	205	35.75	24	3 x 10.4	2933	2nd Gen Intel® Xeon®
UCS-CPU-I8260Y	2.4	165	35.75	24/20/16	3 x 10.4	2933	2nd Gen Intel® Xeon®
UCS-CPU-I8260L	2.4	165	35.75	24	3 x 10.4	2933	2nd Gen Intel® Xeon®
UCS-CPU-I8260	2.4	165	35.75	24	3 x 10.4	2933	2nd Gen Intel® Xeon®
UCS-CPU-I8253	2.2	125	22.00	16	3 x 10.4	2933	2nd Gen Intel® Xeon®
6000 Series Processor							
UCS-CPU-I6262V	1.9	135	33.00	24	3 x 10.4	2400	2nd Gen Intel® Xeon®
UCS-CPU-I6258R	2.7	205	38.50	28	2 x 10.4	2933	2nd Gen Intel® Xeon®
UCS-CPU-I6254	3.1	200	24.75	18	3 x 10.4	2933	2nd Gen Intel® Xeon®
UCS-CPU-I6252	2.1	150	35.75	24	3 x 10.4	2933	2nd Gen Intel® Xeon®
UCS-CPU-I6248R	3.0	205	35.75	24	2 x 10.4	2933	2nd Gen Intel® Xeon®
UCS-CPU-I6248	2.5	150	27.50	20	3 x 10.4	2933	2nd Gen Intel® Xeon®
UCS-CPU-I6246R	3.4	205	35.75	16	2 x 10.4	2933	2nd Gen Intel® Xeon®
UCS-CPU-I6246	3.3	165	24.75	12	3 x 10.4	2933	2nd Gen Intel® Xeon®
UCS-CPU-I6244	3.6	150	24.75	8	3 x 10.4	2933	2nd Gen Intel® Xeon®

Table 3 Available CPUs

Product ID (PID)	Clock Freq (GHz)	Power (W)	Cache Size (MB)	Cores	UPI[1] Links (GT/s)	Highest DDR4 DIMM Clock Support (MHz)[2]	Workload/Processor type
UCS-CPU-I6242R	3.1	205	35.75	20	2 x 10.4	2933	2nd Gen Intel® Xeon®
UCS-CPU-I6242	2.8	150	22.00	16	3 x 10.4	2933	2nd Gen Intel® Xeon®
UCS-CPU-I6240R	2.4	165	35.75	24	2 x 10.4	2933	2nd Gen Intel® Xeon®
UCS-CPU-I6240Y	2.6	150	24.75	18/14/8	3 x 10.4	2933	2nd Gen Intel® Xeon®
UCS-CPU-I6240L	2.6	150	24.75	18	3 x 10.4	2933	2nd Gen Intel® Xeon®
UCS-CPU-I6240	2.6	150	24.75	18	3 x 10.4	2933	2nd Gen Intel® Xeon®
UCS-CPU-I6238R	2.2	165	38.50	28	2 x 10.4	2933	2nd Gen Intel® Xeon®
UCS-CPU-I6238L	2.1	140	30.25	22	3 x 10.4	2933	2nd Gen Intel® Xeon®
UCS-CPU-I6238	2.1	140	30.25	22	3 x 10.4	2933	2nd Gen Intel® Xeon®
UCS-CPU-I6234	3.3	130	24.75	8	3 x 10.4	2933	2nd Gen Intel® Xeon®
UCS-CPU-I6230R	2.1	150	35.75	26	2 x 10.4	2933	2nd Gen Intel® Xeon®
UCS-CPU-I6230N	2.3	125	27.50	20	3 x 10.4	2933	2nd Gen Intel® Xeon®
UCS-CPU-I6230	2.1	125	27.50	20	3 x 10.4	2933	2nd Gen Intel® Xeon®
UCS-CPU-I6226R	2.9	150	22.00	16	2 x 10.4	2933	2nd Gen Intel® Xeon®
UCS-CPU-I6226	2.7	125	19.25	12	3 x 10.4	2933	2nd Gen Intel® Xeon®
UCS-CPU-I6222V	1.8	115	27.50	20	3 x 10.4	2400	2nd Gen Intel® Xeon®
5000 Series Processor							
UCS-CPU-I5222	3.8	105	16.50	4	2 x 10.4	2933	2nd Gen Intel® Xeon®
UCS-CPU-I5220S	2.6	125	19.25	18	2 x 10.4	2666	2nd Gen Intel® Xeon®
UCS-CPU-I5220R	2.2	150	35.75	24	2 x 10.4	2666	2nd Gen Intel® Xeon®
UCS-CPU-I5220	2.2	125	24.75	18	2 x 10.4	2666	2nd Gen Intel® Xeon®
UCS-CPU-I5218R	2.1	125	27.50	20	2 x 10.4	2666	2nd Gen Intel® Xeon®
UCS-CPU-I5218B	2.3	125	22.00	16	2 x 10.4	2933	2nd Gen Intel® Xeon®
UCS-CPU-I5218N	2.3	105	22.00	16	2 x 10.4	2666	2nd Gen Intel® Xeon®
UCS-CPU-I5218	2.3	125	22.00	16	2 x 10.4	2666	2nd Gen Intel® Xeon®
UCS-CPU-I5217	3.0	115	11.00	8	2 x 10.4	2666	2nd Gen Intel® Xeon®
UCS-CPU-I5215L	2.5	85	13.75	10	2 x 10.4	2666	2nd Gen Intel® Xeon®
UCS-CPU-I5215	2.5	85	13.75	10	2 x 10.4	2666	2nd Gen Intel® Xeon®
4000 Series Processor							
UCS-CPU-I4216	2.1	100	22.00	16	2 x 9.6	2400	2nd Gen Intel® Xeon®
UCS-CPU-I4215R	3.2	130	11.00	8	2 x 9.6	2400	2nd Gen Intel® Xeon®
UCS-CPU-I4215	2.5	85	11.00	8	2 x 9.6	2400	2nd Gen Intel® Xeon®
UCS-CPU-I4214R	2.4	100	16.50	12	2 x 9.6	2400	2nd Gen Intel® Xeon®

Table 3 Available CPUs

Product ID (PID)	Clock Freq (GHz)	Power (W)	Cache Size (MB)	Cores	UPI[1] Links (GT/s)	Highest DDR4 DIMM Clock Support (MHz)[2]	Workload/Processor type
UCS-CPU-I4214	2.2	85	16.50	12	2 x 9.6	2400	2nd Gen Intel® Xeon®
UCS-CPU-I4210R	2.4	100	13.75	10	2 x 9.6	2400	2nd Gen Intel® Xeon®
UCS-CPU-I4210	2.2	85	13.75	10	2 x 9.6	2400	2nd Gen Intel® Xeon®
UCS-CPU-I4208	2.1	85	11.00	8	2 x 9.6	2400	2nd Gen Intel® Xeon®
3000 Series Processor							
UCS-CPU-I3206R	1.9	85	11.00	8	2 x 9.6	2133	2nd Gen Intel® Xeon®

Notes:

1. UPI = Ultra Path Interconnect. 2-socket servers support only 2 UPI performance, even if the CPU supports 3 UPI.
2. If higher or lower speed DIMMs are selected than what is shown in *Table 4 on page 17* for a given CPU speed, the DIMMs will be clocked at the lowest common denominator of CPU clock and DIMM clock.
3. For details on memory support for processor classes and CPU modes, see *SPARE PARTS, page 69*



CAUTION: For systems configured with 2nd Gen Intel® Xeon® 205W below R-series processors, operating above 30° C [86° F], a fan fault or executing workloads with extensive use of heavy instructions sets like Intel® Advanced Vector Extensions 512 (Intel® AVX-512), may assert thermal and/or performance faults with an associated event recorded in the System Event Log (SEL).

- **UCS-CPU-I6258R** - Intel® 6258R 2.7GHz/205W 28C/38.50MB DDR4 2933MHz
- **UCS-CPU-I6248R** - Intel® 6248R 3.0GHz/205W 24C/35.75MB DDR4 2933MHz
- **UCS-CPU-I6246R** - Intel® 6246R 3.4GHz/205W 16C/35.75MB DDR4 2933MHz
- **UCS-CPU-I6242R** - Intel® 6242R 3.1GHz/205W 20C/35.75MB DDR4 2933MHz

Approved Configurations

(1) DIMM only configurations:

- Select one or two identical CPUs listed in *Table 3 on page 11* or *Table 4 on page 17*

(2) DIMM/PMem Mixed Configurations:

- You must select two identical CPUs listed in *Table 3 on page 11* or *Table 4 on page 17*.

Caveats

- The selection of 1 or 2 CPUs depends on the desired server functionality. See the following sections:
  - *STEP 3 SELECT MEMORY, page 16*

- *STEP 4 SELECT RAID CONTROLLERS, page 23*
- *STEP 5 SELECT DRIVES, page 27*
- *STEP 6 SELECT PCIe OPTION CARD(s), page 31*



NOTE: See *SELECT MEMORY, page 16* for details on the compatibility of CPUs and DIMM speeds.

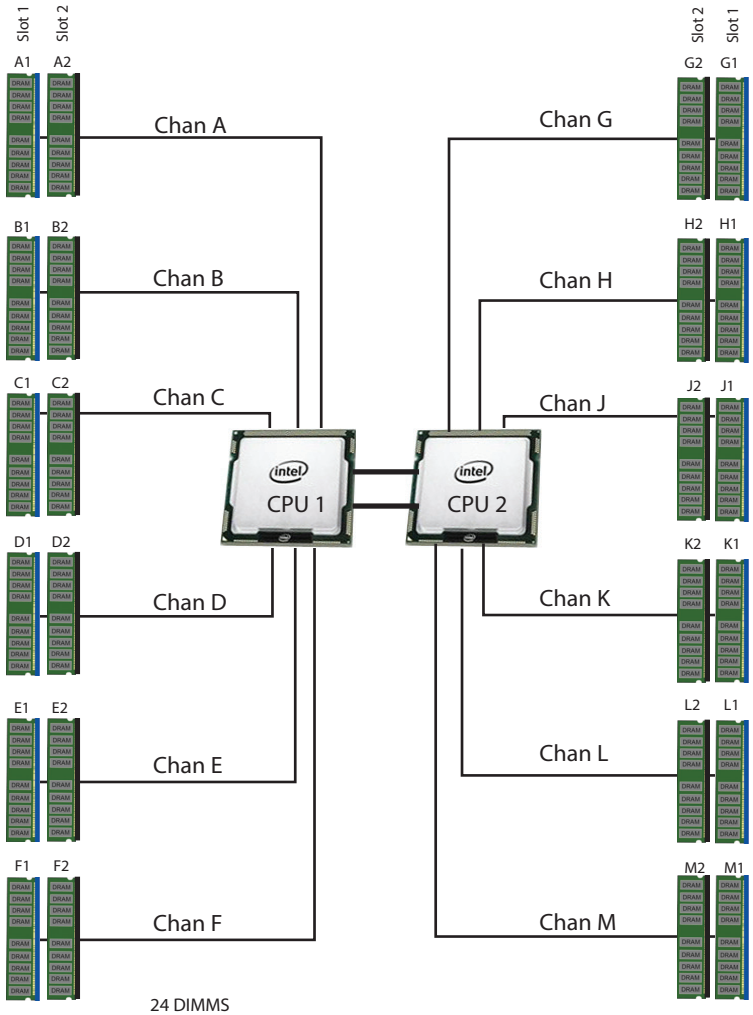
STEP 3 SELECT MEMORY

The available memory for the C220 M5 LFF is as follows:

- Clock speed: Up to 2933 MHz; See available CPUs and their associated DDR4 DIMM maximum clock support in ***Table 3***.
- Rank per DIMM: 1, 2, 4, or 8
- Operational voltage: 1.2 V
- Registered ECC DDR4 DIMMS (RDIMMs), Load-reduced DIMMs (LRDIMMs), or Intel® Optane™ Persistent Memory Modules (PMem)

Memory is organized with six memory channels per CPU, with up to two DIMMs per channel, as shown in ***Figure 4***.

Figure 4 C220 M5 LFF Memory Organization



Select DIMMs and Memory Mirroring

Select the memory configuration and whether or not you want the memory mirroring option. The available memory DIMMs and mirroring option are listed in *Table 4*.

NOTE: When memory mirroring is enabled, the memory subsystem simultaneously writes identical data to two channels. If a memory read from one of the channels returns incorrect data due to an uncorrectable memory error, the system automatically retrieves the data from the other channel. A transient or soft error in one channel does not affect the mirrored data, and operation continues unless there is a simultaneous error in exactly the same location on a DIMM and its mirrored DIMM. Memory mirroring reduces the amount of memory available to the operating system by 50% because only one of the two populated channels provides data.

Table 4 Available DDR4 DIMMs

Product ID (PID)	PID Description	Voltage	Ranks /DIMM
UCS-ML-256G8RW[1]	256 GB DDR4-3200MHz LRDIMM 8Rx4 (16Gb) (3DS)	1.2 V	8
UCS-ML-128G4RW[1]	128 GB DDR4-3200MHz LRDIMM 4Rx4 (16Gb) (non-3DS)	1.2 V	4
UCS-MR-X64G2RW[1]	64 GB DDR4-3200MHz RDIMM 2Rx4 (16Gb)	1.2 V	2
UCS-MR-X32G2RW[1]	32 GB DDR4-3200MHz RDIMM 2Rx4 (8Gb)	1.2 V	2
UCS-MR-X16G1RW[1]	16 GB DDR4-3200MHz RDIMM 1Rx4 (8Gb)	1.2 V	1
Intel® Optane™ Persistent Memory Product			
UCS-MP-128GS-A0	Intel® Optane™ Persistent Memory, 128GB, 2666 MHz		
UCS-MP-256GS-A0	Intel® Optane™ Persistent Memory, 256GB, 2666 MHz		
UCS-MP-512GS-A0	Intel® Optane™ Persistent Memory, 512GB, 2666 MHz		
Intel® Optane™ Persistent Memory Product Operational Modes			
UCS-DCPMM-AD	App Direct Mode		
UCS-DCPMM-MM	Memory Mode		
Memory Mirroring Option			
N01-MMIRROR	Memory mirroring option		

Notes:

1. DDR4-3200MHz replacement part numbers will operate at the maximum speed of the Intel 2nd generation Xeon Scalable processor memory interface, ranging from 2133 MHz to 2933 MHz.

Approved Configurations

(1) 1-CPU configuration without memory mirroring:

- Select from 1 to 12 DIMMs.

	CPU 1 DIMM Placement in Channels (for identically ranked DIMMs)
1	(A1)
2	(A1, B1)
3	(A1, B1, C1)
4	(A1, B1); (D1, E1)
6	(A1, B1); (C1, D1); (E1, F1)
8	(A1, B1); (D1, E1); (A2, B2); (D2, E2)
12	(A1, B1); (C1, D1); (E1, F1); (A2, B2); (C2, D2); (E2, F2)

(2) 1-CPU configuration with memory mirroring:

- Select 4, 6, 8, or 12 identical DIMMs. The DIMMs will be placed by the factory as shown in the following table.

	CPU 1 DIMM Placement in Channels (for identical ranked DIMMs)
4	(A1, B1); (D1, E1)
6	(A1, B1, C1); (D1, E1, F1)
8	(A1, A2, B1, B2); (D1, D2, E1, E2)
12	(A1, A2, B1, B2, C1, C2); (D1, D2, E1, E2, F1, F2)

- Select the memory mirroring option (N01-MMIRROR) as shown in *Table 4 on page 17*.

(3) 2-CPU configuration without memory mirroring:

- Select from 1 to 12 DIMMs per CPU.

	CPU 1 DIMM Placement in Channels (for identical ranked DIMMs)		CPU 2 DIMM Placement in Channels (for identical ranked DIMMs)
	CPU 1		CPU 2
1	(A1)		(G1)
2	(A1, B1)		(G1, H1)
3	(A1, B1, C1)		(G1, H1, J1)
4	(A1, B1); (D1, E1)		(G1, H1); (K1, L1)
6	(A1, B1); (C1, D1); (E1, F1)		(G1, H1); (J1, K1); (L1, M1)
8	(A1, B1); (D1, E1); (A2, B2); (D2, E2)		(G1, H1); (K1, L1); (G2, H2); (K2, L2)
12	(A1, B1); (C1, D1); (E1, F1); (A2, B2); (C2, D2); (E2, F2)		(G1, H1); (J1, K1); (L1, M1); (G2, H2); (J2, K2); (L2, M2)

(4) 2-CPU configuration with memory mirroring:

- Select 8,12 16, or 24 identical DIMMs per CPU. The DIMMs will be placed by the factory as shown in the following table.

	CPU 1 DIMM Placement in Channels (for identical ranked DIMMs)	CPU 2 DIMM Placement in Channels (for identical ranked DIMMs)
	CPU 1	CPU 2
8	(A1,B1); (D1,E1)	(G1, H1); (K1, L1)
12	(A1, B1, C1); (D1, E1, F1)	(G1, H1, J1); (K1, L1, M1)
16	(A1, A2, B1, B2); (D1, D2, E1, E2)	(G1, G2, H1, H2); (K1, K2, L1, L2)
24	(A1, A2, B1, B2, C1, C2); (D1, D2, E1, E2, F1, F2)	(G1, G2, H1, H2, J1, J2); (K1, K2, L1, L2, M1, M2)

- Select the memory mirroring option (N01-MMIRROR) as shown in *Table 4 on page 17*.

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.
- DIMM mixing is not allowed when PMem are installed; in these cases, all DIMMs must be the same type and size.

System Speed

Memory will operate at the maximum speed of the Intel Xeon Scalable processor memory controller, ranging from 2133 MHz to 2933 MHz for M5 servers. Check CPU specifications for supported speeds.



NOTE: Detailed mixing DIMM configurations are described in Cisco UCS **Cisco UCS C220/C240/B200 M5 Memory Guide**

See *Table 5* for PMem memory modes.

Table 5 Intel® Optane™ Persistent Memory Modes

Intel® Optane™ Persistent Memory	
App Direct Mode:	PMem operates as a solid-state disk storage device. Data is saved and is non-volatile. Both PMem and DIMM capacity counts towards CPU tiering (both PMem and DIMM capacities count towards the CPU capacity limit)
Memory Mode:[1]	PMem operates as a 100% memory module. Data is volatile and DRAM acts as a cache for PMem. Only PMem capacity counts towards CPU tiering (only the PMem capacity counts towards the CPU capacity limit). This is the factory default mode.
Mix Mode:	DRAM as cache. Only PMem capacity counts towards CPU tiering (only the PMem capacity counts towards the CPU capacity limit)

Notes:

1. For Memory Mode, the Intel®-recommended DIMM to PMem capacity ratio in the same CPU channel is from 1:2 to 1:16. So if you use a 128 GB DIMM in a channel, you could use a 512 GB PMem for a 1:6 capacity ratio. If you use a 32 GB DIMM in a channel, you could use a 512 GB PMem for a 1:16 capacity ratio. There are several other combinations possible.

Table 6 2nd Generation Intel® Xeon® Scalable Processor DIMM and PMem[1] Physical Configuration

DIMM to PMem Count	CPU 1											
	iMC1						iMC0					
	Channel 2		Channel 1		Channel 0		Channel 2		Channel 1		Channel 0	
	F2	F1	E2	E1	D2	D1	C2	C1	B2	B1	A2	A1
6 - 2		DIMM		DIMM	PMem	DIMM		DIMM		DIMM	PMem	DIMM
6 - 4		DIMM	PMem	DIMM	PMem	DIMM		DIMM	PMem	DIMM	PMem	DIMM
6 - 6	PMem	DIMM	PMem	DIMM	PMem	DIMM	PMem	DIMM	PMem	DIMM	PMem	DIMM

DIMM to PMem Count	CPU 2											
	iMC1						iMC0					
	Channel 2		Channel 1		Channel 0		Channel 2		Channel 1		Channel 0	
	M2	M1	L2	L1	K2	K1	J2	J1	H2	H1	G2	G1
6 - 2		DIMM		DIMM	PMem	DIMM		DIMM		DIMM	PMem	DIMM
6 - 4		DIMM	PMem	DIMM	PMem	DIMM		DIMM	PMem	DIMM	PMem	DIMM
6 - 6	PMem	DIMM	PMem	DIMM	PMem	DIMM	PMem	DIMM	PMem	DIMM	PMem	DIMM

Notes:

1. All systems must be fully populated with two CPUs when using PMem at this time.



NOTE: There are three possible memory configurations for each CPU when combining DIMMs and PMem, and the configurations must be the same for each CPU:

- 6 DIMMs and 2 PMem, or
- 6 DIMMs and 4 PMem, or
- 6 DIMMs and 6 PMem

For detailed Intel® PMem configurations, refer to

Cisco UCS C220 M5 Server Installation and Service Guide

For detailed DIMM/PMem informations, refer to

Cisco UCS C220/C240/B200 M5 Memory Guide

STEP 4 SELECT RAID CONTROLLERS

RAID Controller Options (internal HDD/SSD support)

NOTE: NVMe drives are controlled directly by CPU2 and not by any RAID controller.

Embedded Software RAID

The default RAID configuration is embedded software RAID, which supports only SATA HDDs and enterprise value SSDs (RAID 0, 1, 10). A maximum of four SATA drives are supported with embedded software RAID. Embedded RAID requires a SATA interposer board.

NOTE: The embedded software RAID is limited to Windows and Linux operating systems only. There is no VMware support for embedded software RAID.

Cisco 12G SAS RAID controller

You can choose a Cisco 12G SAS RAID controller, which plugs into a dedicated internal RAID controller card slot. This RAID controller includes a 1 GB cache and supports RAID 0, 1, 5, 6, 10, 50, 60, JBOD mode, and SRAID0.

NOTE: The number of RAID groups (virtual drives) supported per RAID controller is as follows:

- Embedded RAID = 8
- Cisco 12G SAS RAID controller = 64

SAS HBA (external JBOD support)

In addition to a RAID controller or JBOD controller for internal drives, you can choose the following SAS HBA for external JBOD drive connectivity (non-RAID):

- Cisco 9400-8e 12G SAS HBA for external JBOD attach (you can install up to two of these, one in each of the two PCIe slots in the rear panel).

RAID Volumes and Groups

When creating each RAID volume, follow these guidelines:

- Use the same capacity for each drive in each RAID volume
- For embedded software RAID:
  - Use only SATA HDDs
  - Embedded software RAID has two ports and each port can control 4 drives.

  - Each set of 4 SATA HDDs for a port must be in separate RAID volumes.
  - You cannot mix drives across ports to create a RAID volume.
  - For more details, see *Embedded Software RAID, page 23*.
- For the Cisco 12G SAS RAID controller upgrade:
  - Use either all SAS/SATA HDDs, or all SAS SSDs, or all SATA SSDs in each RAID volume

Select Controller Options

Select one of the following RAID controllers:

- Embedded software RAID (this is the default if no other selection is made), or
- One Cisco 12G SAS RAID controller and a RAID configuration option listed in *Table 7 on page 24*.



NOTE: The default RAID solution is embedded software RAID that supports a limited number of drives, operating systems, and virtualized environments. For a more comprehensive RAID solution, choose the Cisco 12G SAS RAID controller from *Table 7*.

Table 7 Hardware Controller Options

Product ID (PID)	PID Description
Controllers for Internal Drives Note that if the following Cisco 12G SAS RAID controller **(UCSC-MRAID1GB-KIT)** is selected, it is factory-installed in the dedicated internal slot.	
UCSC-MRAID1GB-KIT	SAS RAID KIT for C220M5L (Avila Beach kit for C220M5L) ■ Supports up to 4 internal SAS/SATA HDDs and SAS/SATA SSDs. ■ Supports SRAID0, RAID 0, 1, 5, 6, 10, 50, 60 and JBOD Mode ■ For all self-encrypting drives (SED), standalone Management (CIMC/UCSM) is supported for configuring and managing local keys. For now, SED drives are managed with local key management only. Third-party key management will be supported (KMIP compliant).
Controller for External Drives (plugs into PCIe slot)	
UCSC-9400-8E	Cisco 12G 9400-8e 12G SAS HBA for external JBOD attach. You can install up to two of these, one in each rear PCIe slot.

Table 7 Hardware Controller Options *(continued)*

Product ID (PID)	PID Description
RAID Configuration Options (not available for embedded software RAID)	
R2XX-SRAID0	Enable Single Disk Raid 0 Setting
R2XX-RAID0	Factory preconfigured RAID striping option Enable RAID 0 Setting. Requires a minimum of one hard drive.
R2XX-RAID1	Factory preconfigured RAID mirroring option Enable RAID 1 Setting. Requires exactly two drives with the same size, speed, capacity.
R2XX-RAID5	Factory preconfigured RAID option Enable RAID 5 Setting. Requires a minimum of three drives of the same size, speed, capacity.
R2XX-RAID6	Factory preconfigured RAID option Enable RAID 6 Setting. Requires a minimum of four drives of the same size, speed, capacity.
R2XX-RAID10	Factory preconfigured RAID option Enable RAID 10 Setting. Requires a even number of drives (minimum of four drives) of the same size, speed, capacity.

NOTE:

- Although RAID levels 50 and 60 are not orderable from the factory, they are supported for selected controllers as shown in ***Table 7***.
- For Cisco SAS 9400-8e 12G SAS HBA external drive enclosure support, see the enclosure section of the compatibility list at the following link:

  https://www.broadcom.com/support/storage/interop-compatibility

  Customers should contact their storage vendor for technical support related to external JBOD enclosures.

Approved Configurations

- Embedded software RAID default supports up to 4 internal SATA HDDs with RAID 0, 1, 10 support.
- The SAS RAID controller upgrade option supports up to four internal drives with RAID 0, 1, 10, 5, 6, 50, 60, and JBOD mode support.
- Up to two Cisco 12G 9400-8e SAS HBA external drive PCIe controller cards can be installed simultaneously with the SAS RAID KIT for C220M5L (UCSC-MRAID1GB-KIT).

See *Table 8* for a summary of the supported controller configuration options.

Table 8 Supported Controller Configurations for C220 M5 LFF Server

# CPUs	Embedded RAID	UCSC-MRAID1GB-KIT	UCSC-9400-8E	MAX# Drives Supported	RAID Support	Internal Drive Types Allowed
1	Enabled	Not allowed	Up to two installed in rear PCIe slots	4 internal SATA only, 8 or 16 external	0, 1, 10 (SATA only)	SATA HDDs/Enterprise Value SSDs
1	Not allowed	Installed in a dedicated slot	Up to two installed in rear PCIe slots	4 internal, 8 or 16 external	0,1,10,5,6,50, 60 JBOD (UCSC-MRAID1GB-KIT)	SAS/SATA HDDs, SAS/SATA SSDs
2	Enabled	Not allowed	Up to two installed in rear PCIe slots	4 internal SATA only, 8 or 16 external	0, 1, 10 (SATA only)	SATA HDDs/Enterprise Value SSDs
2	Not allowed	Installed in a dedicated slot	Up to two installed in rear PCIe slots	4 internal, 8 or 16 external	0,1,10,5,6,50, 60 JBOD (UCSC-MRAID1GB-KIT)	SAS/SATA HDDs, SAS/SATA SSDs, LFF NVMe

NOTE: There is no RAID support for NVMe. NVMe drives are controlled directly by CPU2. In an embedded RAID configuration, only embedded software RAID (0, 1, 10) is supported. AHCI mode is not supported.

STEP 5 SELECT DRIVES

The standard disk drive features are:

- 3.5-inch large form factor
- Hot-pluggable
- Drives come mounted in sleds

Select Drives

The available drives are listed in *Table 9*.

Table 9 Available Hot-Pluggable Sled-Mounted Drives

Product ID (PID)	PID Description	Drive Type	Capacity
HDDs			
HDDs (10K RPM)			
UCS-HY18TB10K4KN[1]	1.8 TB 12G SAS 10K RPM LFF HDD (4K)	SAS	1.8 TB
UCS-HY12TB10K12N	1.2 TB 12G SAS 10K RPM LFF HDD	SAS	1.2 TB
HDDs (7.2K RPM)			
UCS-HD2T7KL12N	2 TB 12G SAS 7.2K RPM LFF HDD	SAS	2 TB
UCS-HD4T7KL12N	4 TB 12G SAS 7.2K RPM LFF HDD	SAS	4 TB
UCS-HD6T7KL4KN	6 TB 12G SAS 7.2K RPM LFF HDD (4K)	SAS	6 TB
UCS-HD8T7K4KAN	8 TB 12G SAS 7.2K RPM LFF HDD (4K)	SAS	8 TB
UCS-HD10T7K4KAN	10 TB 12G SAS 7.2K RPM LFF HDD (4K)	SAS	10 TB
UCS-HD12T7KL4KN	12 TB 12G SAS 7.2K RPM LFF HDD (4K)	SAS	12 TB
UCS-HD14T7KL4KN	14 TB 12G SAS 7.2K RPM LFF HDD(4K)	SAS	14 TB
UCS-HD14TT7KL4KN	14 TB 12G SAS 7.2K RPM LFF HDD(4K)	SAS	14 TB
UCS-HD14TW7KL4KN	14TB 4Kn SAS He14 7200RPM 3.5" HDD ISE	SAS	14 TB
UCS-HD16TW7KL4KN	16TB 12G SAS 7.2K RPM LFF HDD(4K)	SAS	16 TB
UCS-HD16T7KL4KN	16 TB 12G SAS 7.2K RPM LFF HDD(4K)	SAS	16 TB
UCS-HD18TW7KL4KN	18TB 12G SAS 7.2K RPM LFF HDD(4K)	SAS	18 TB
UCS-HD20TW7KL4KN	20TB 12G SAS 7.2K RPM LFF HDD(4K)	SAS	20 TB
UCS-HD22TW7KL4KN	22TB 12G SAS 7.2K RPM LFF HDD(4K)	SAS	22 TB
UCS-HD8T7K6GAN	8 TB 6G SATA 7.2K RPM LFF HDD (512e)	SATA	8 TB
UCS-HD10T7K6GAN	10TB 6G SATA 7.2K RPM LFF HDD (512e)	SATA	10 TB
UCS-HD12T7KL6GN	12 TB 6G SATA 7.2K RPM LFF HDD (512e)	SATA	12 TB
SAS/SATA SSDs[2]			

Table 9 Available Hot-Pluggable Sled-Mounted Drives

Product ID (PID)	PID Description	Drive Type	Capacity
Enterprise Performance SSDs (High endurance, supports up to 10X or 3X DWPD (drive writes per day))[3]			
SAS SSDs			
UCS-HY800GK3X-EP	800GB 3.5in Enterprise Performance 12G SAS SSD(3X endurance)	SAS	800 GB
UCS-HY16TK3X-EP	1.6TB 3.5in Enterprise Performance 12G SAS SSD(3X endurance)	SAS	1.6 TB
UCS-SD32TKA3X-EP	3.2TB 2.5in Enter Perf 12G SAS Kioxia G2 SSD (3X)	SAS	3.2 TB
SATA SSDs			
UCS-HY480G63X-EP	480GB 3.5in Enterprise performance 6G SATA SSD(3X endurance) (Intel® S4600/S4610)	SATA	480 GB
UCS-HY960G63X-EP	960GB 3.5in Enterprise performance 6G SATA SSD(3X endurance) (Intel® S4600/S4610)	SATA	960 GB
UCS-HY19T63X-EP	1.9TB 3.5in Enterprise performance 6G SATA SSD(3X endurance) (Intel® S4600/S4610)	SATA	1.9 TB
Enterprise Value SATA SSDs (Low endurance, supports up to 1X DWPD (drive writes per day))[4]			
UCS-HY240G61X-EV	240 GB 2.5 inch Enterprise Value 6G SATA SSD (Samsung PM863a/PM883)	SATA	240 GB
UCS-HY480G61X-EV	480 GB 2.5 inch Enterprise Value 6G SATA SSD (Intel® 3520)	SATA	480 GB
UCS-HY19TM1X-EV	1.9TB 3.5 inch Enterprise Value 6G SATA SSD	SATA	1.9 TB
Self-Encrypted Drives (SED)			
HDDs			
UCS-HY600G15NK9	600 GB 12G SAS 15K RPM LFF HDD (SED) **FIPS140-2**	SAS	600 GB
UCS-HD4T12GNK9	4 TB 7.2k RPM LFF HDD (SED) **FIPS140-2**	SAS	4 TB
UCS-HD6T12GANK9	6 TB 7.2k RPM LFF HDD (4K format, SED) **FIPS140-2**	SAS	6 TB
UCS-HD12T7KL4NK9	12 TB 7.2 K RPM LFF HDD (4K format SED) **FIPS140-2**	SAS	12 TB
PCIe/NVMe LFF 2.5" drives [2,5]			
UCSC-NVMEHY-H800	800 GB HGST SN200 NVMe High Perf. High Endurance (HGST)	NVMe	800 GB
UCS-NVMEHY-W1600	1.6TB 3.5in U.2 WD SN840 NVMe Extreme Perf. High Endurance	NVMe	1.6 TB
UCS-NVMEHY-W3200	3.2TB 3.5in U.2 WD SN840 NVMe Extreme Perf. High Endurance	NVMe	3.2 TB
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.			



NOTE: When configuring front facing drives with spare NVMe drives, you must order an NVMe cable (PID = CBL-NVME -220FF) along with the spare drives.

Notes:

1. Operating Systems supported on 4k sector size drives is as follows:

   - Windows: Minimum release Win2012 and later

   - Linux: Minimum release RHEL 6.5 and later

   - VMware ESXI 6.5 and later is needed for 512E drive support; VMware ESXI 6.7 and later is needed for 4KN drive support

   - UEFI Mode must be used when booting from 4K sector size drives, legacy mode is not supported. Ensure that 4K sector size and 512 byte sector size drives are not mixed in the same RAID volume.
2. Two CPUs must be installed in order to include any number of SFF NVMe PCIe SSDs. If you choose one or two SFF PCIe SSD or SFF NVMe drives, drive slots 1 and 2 at the front of the chassis are reserved for these drives (see *Figure 2 on page 4* for drive slot numbering).
3. Targeted for write centric IO applications. Supports endurance of 10 or 3 DWPD (drive writes per day). Target App app are caching, online transaction processing (OLTP), data warehousing, and virtual desktop infrastructure (VDI).
4. Targeted for read centric IO applications. Supports endurance of 1 DWPD (drive write per day). Target applications are boot, streaming media, and collaboration.
5. Except HGST, Intel® and Western Digital (WD) NVMe drives can be mixed anywhere in a C220 M5.

Caveats

- You can choose only SATA HDDs when using embedded software RAID.
- 2.5-inch SFF NVMe drives are connected directly to the CPU, and not managed by the RAID controller.
- You can mix HDDs and SSDs as long as you keep all HDDs in their own RAID volume and all SSDs in their own RAID volume.
- You can mix SAS/SATA HDDs and SAS/SATA SSDs when using the Cisco 12G SAS RAID Controller or Cisco 12G SAS HBA.
- If you order any SFF NVMe drives, you must also order two CPUs.
- SFF NVMe drives are bootable only in standalone mode with IMC software and in UEFI mode only.
- NVMe HHHL drives are not bootable (see *Table 10 on page 31*).
- SED drives can be mixed with the non-SED drives in *Table 9 on page 27*

Intel® Virtual RAID on CPU (Intel® VROC)

The server supports Intel® Virtual RAID on CPU (Intel® VROC). VROC is an enterprise RAID solution used with Intel NVMe SSDs (see *Table 9* for supported Intel NVMe SSDs). The Intel® Volume Management Device (Intel® VMD) is a controller integrated into the CPU PCIe root complex. Intel® VMD NVMe SSDs are connected to the CPU, which allows the full performance potential of fast Intel® Optane™ SSDs to be realized. Intel® VROC, when implemented, replaces traditional hardware RAID host bus adapter (HBA) cards placed between the drives and the CPU.



NOTE:

- Intel® VROC is only supported with Intel drives
- Intel® VROC enablement key factory pre-provisioned to BIOS - no additional licensing required.

VROC has the following features:

- Small Form Factor (SFF) drive support (only)
- No battery backup (BBU) or external SuperCap needed
- Software-based solution utilizing Intel SFF NVMe direct connected to Intel CPU
- RAID 0/1/5/10 support
- Windows, Linux, VMware OS support.
- Host Tools- Windows GUI/CLI, Linux CLI.
- UEFI Support- HII Utility, OBSE.
- Intel VROC NVMe operates in UEFI mode only

See the **instructions on setting up and managing VROC for Intel NVMe SSDs** for more information.

STEP 6 SELECT PCIe 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)
- Virtual Interface Cards (VICs)
- Network Interface Cards (NICs)
- PCIe - Accelerators/Smart NICs
- Host Bus Adapters and (HBAs)
- UCS NVMe/PCIe Add in Cards

Select PCIe Option Cards

The available PCIe option cards are listed in ***Table 10***.

Table 10 Available PCIe Option Cards

Product ID (PID)	PID Description	Location	Electrical slot	Card Height[1]
Modular LAN on Motherboard (mLOM)				
UCSC-MLOM-C100-04	Cisco UCS VIC 1497 Dual Port 40/100G QSFP28 CNA mLOM	mLOM	x 16	N/A
UCSC-MLOM-C25Q-04	Cisco UCS VIC 1457 Quad Port 10/25G SFP28 mLOM	mLOM	x 16	N/A
UCSC-MLOM-C40Q-03	Cisco UCS VIC 1387 Dual Port 40Gb QSFP+ CNA	mLOM	x 8	N/A
UCSC-MLOM-IRJ45	Intel® i350 Quad Port 1GBase-T NIC	mLOM	x 8	N/A
Virtual Interface Card (VICs)				
UCSC-PCIE-C100-04	Cisco UCS VIC 1495 Dual Port 40/100G QSFP28 CNA PCIe	Riser 1 or 2	x 16	HHHL
UCSC-PCIE-C40Q-03	Cisco VIC 1385 Dual Port 40Gb QSFP+ CNA w/RDMA	Riser 1 or 2	x 16	HHHL
UCSC-PCIE-C25Q-04	Cisco VIC 1455 VIC PCIE – Quad Port 10/25G SFP28	Riser 1 or 2	x 16	HHHL
Network Interface Cards (NICs)				
1 Gb NICs				
UCSC-PCIE-IRJ45	Intel® i350 Quad Port 1GBase-T NIC	Riser 1 or 2	x 8	HHHL
10 Gb NICs				
N2XX-AIPCI01	Intel® X520 Dual Port 10Gb SFP+ NIC	Riser 1 or 2	x 8	HHHL
UCSC-PCIE-ID10GC	Intel® X550-T2 Dual Port 10GBase-T NIC	Riser 1 or 2	x 8	HHHL

Table 10 Available PCIe Option Cards *(continued)*

Product ID (PID)	PID Description	Location	Electrical slot	Card Height[1]
UCSC-PCIE-ID10GF	Intel® X710-DA2 Dual Port 10Gb SFP+ NIC	Riser 1 or 2	x 8	HHHL
UCSC-PCIE-IQ10GF	Intel® X710 Quad Port 10Gb SFP+ NIC	Riser 1 or 2	x 8	HHHL
UCSC-PCIE-IQ10GC	Intel® X710 Quad Port 10GBase-T NIC	Riser 1 or 2	x 8	HHHL
25 Gb NICs				
UCSC-PCIE-QD25GF	Qlogic QL41212H Dual Port 25Gb NIC	Riser 1 or 2	x 8	HHHL
UCSC-PCIE-ID25GF	Intel® XXV710 Dual Port 25Gb SFP28 NIC	Riser 1 or 2	x 8	HHHL
UCSC-P-M4D25GF	Mellanox MCX4121A-ACAT dual port 10/25G SFP28 NIC	Riser 1 or 2	x 8	HHHL
UCSC-P-M5D25GF	Mellanox CX-5 EN MCX512A-ACAT 2x25/10GbE SFP PCIe NIC	Riser 1 or 2	x 16	HHHL
40 Gb NICs				
UCSC-PCIE-QD40GF	Qlogic QL45412H Dual Port 40Gb NIC	Riser 1 or 2	x 8	HHHL
UCSC-PCIE-ID40GF	Intel® XL710 Dual Port 40Gb QSFP+ NIC	Riser 1 or 2	x 8	HHHL
100 Gb NICs				
UCSC-PCIE-QS100GF	Qlogic QLE45611HLCU single port 100G NIC	Riser 1 or 2	x 16	HHHL
UCSC-P-M5D100GF	Mellanox CX-5 MCX516A-CDAT 2x100GbE QSFP PCIe NIC	Riser 1 or 2	x 16	HHHL
UCSC-P-M5S100GF	Mellanox CX-5 MCX515A-CCAT 1x100GbE QSFP PCIe NIC	Riser 1 or 2	x 16	HHHL
PCIe - Accelerators/Smart NICs				
UCSC-P-IQAT8970	Cisco-Intel® 8970 QAT Offload PCIe Adapter	Riser 1 or 2	x 16	HHHL
Host Bus Adapters (HBAs)				
UCSC-PCIE-QD16GF	Qlogic QLE2692 Dual Port 16G Fibre Channel HBA	Riser 1 or 2	x 8	HHHL
UCSC-PCIE-BD16GF	Emulex LPe31002 Dual Port 16G Fibre Channel HBA	Riser 1 or 2	x 8	HHHL
UCSC-PCIE-QD32GF	Qlogic QLE2742 Dual Port 32G Fibre Channel HBA	Riser 1 or 2	x 8	HHHL
UCSC-PCIE-BS32GF	Emulex LPe32000-M2 Single Port 32G Fibre Channel HBA	Riser 1 or 2	x 8	HHHL
UCSC-PCIE-BD32GF	Emulex LPe32002-M2 Dual Port 32G Fibre Channel HBA	Riser 1 or 2	x 8	HHHL

Notes:

1. HHHL = Half Height Half Length

Approved Configurations

(1) 1-CPU Systems

- You can select up to one PCIe option card (slot 1 for 1-CPU systems) listed in *Table 10*.

(2) 2-CPU Systems

- You can select up to two PCIe option cards (slots 1 and 2 for 2-CPU systems) listed in *Table 10*.

Caveats

- For 1-CPU systems:
  - Only the full-height PCIe slot on riser 1 (slot 1) is supported
  - Only a single plug-in PCIe VIC card is supported and must be installed in slot 1 (the full-height slot). However, in addition to the one PCIe VIC card, you can also choose to install an mLOM VIC card in the mLOM slot at the rear of the chassis.
- For 2-CPU systems:
  - Both PCIe slots (slots 1 and 2) are supported
  - Two plug-in PCIe VIC cards can be installed in 2-CPU systems, using slots 1 and 2. In addition, you can order an mLOM VIC card, which is installed in the mLOM slot at the rear of the chassis and thus have three VIC cards in operation at the same time. See *Table 10 on page 31* for the selection of plug-in and mLOM VIC cards. See also *Table 1 on page 6*.
- 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 UCS C220 M5 server, 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



NOTE: Mixing 1300 and 1400 series VIC and MLOMs configurations is not supported.

PCIe Card Configuration with 2 CPU

Below table helps in finding the right slot for the selected PCIe cards.

Table 11 PCIe Card Configuration with 2 CPU

PCIe Card Type	Primary Slot	Secondary Slot	Alternate Slot
Cisco12G Modular RAID controller	Midplane Slot	None	
Cisco 12G 9460-8i Raid controller	10	None	
PCIe Switch card	10	None	
Cisco x16 VIC (Cisco VIC 1385)	1	2	8, 5
Nvidia and AMD GPUs	2	8	10, 1
Other 16x PCIe I/O card	8	10	2, 1
Other 8x PCIe I/O card	9	5	8, 2, 10, 1
Cisco x16 VIC	1	2	8



NOTE:

- Slot 1 only if no VIC present
- When no VIC presents in the configuration, GPU primary slot could be 1
- First VIC has the highest priority, then GPUs, then others.
- Primary Slots are first priorities
- Secondary slots are for additional card of the same type, follow the order listed
- Alternate slots can be used but may be with reduced functionality

STEP 7 ORDER OPTIONAL PCIe OPTION CARD ACCESSORIES

- These optics and cables have been tested for compatibility and are approved for use with Intel® Ethernet Network Adapter (as of the time of this publication). For the latest update, check the and consult Cisco Compatibility Matrix at https://tmgmatrix.cisco.com.
- For list of supported optics and cables for VIC1385, VIC 1387, VIC 1440, VIC 1455, VIC 1457, VIC 1495 and VIC 1497 refer to VIC 1300 and VIC 1400 series data sheet at the following links:
  - https://www.cisco.com/c/en/us/products/collateral/interfaces-modules/unified-computing-system-adapters/datasheet-c78-741130.html
  - https://www.cisco.com/c/en/us/products/interfaces-modules/ucs-virtual-interface-card-1387/index.html
  - https://www.cisco.com/c/en/us/products/collateral/interfaces-modules/unified-computing-system-adapters/datasheet-c78-734727.html

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 8 ORDER GPU CARDS (OPTIONAL)

Select GPU Options

The available GPU PCIe options are listed in *Table 12*

Table 12 Available PCIe GPU Cards [1]

Product ID (PID)	PID Description	Card Size	Maximum cards Per node
GPU PCIe Cards			
UCSC-GPU-P4	NVIDIA P4	Low Profile Single-Width	2
UCSC-GPU-T4-16	NVIDIA T4 16GB	Low Profile Single-Width	2

Notes:

1. Refer to **C220 M5 GPU Card Installation** 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.
- A GPU can be installed in either PCIe slot 1 or 2; however, for 1-CPU systems, only slot 1 is available. In 2-CPU systems, matching GPUs can be installed in both slots. for the additional information related to GPU card slots, refer to *PCIe Card Configuration with 2 CPU, page 34*.
- The NVIDIA P4 GPU is not supported with 2nd Generation Intel® Xeon® Processors.

STEP 9 ORDER POWER SUPPLY

Power supplies share a common electrical and physical design that allows for hot-plug and tool-less installation into M5 C-series 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

Table 13 Power Supply

Product ID (PID)	PID Description
UCSC-PSU1-770W	770W AC power supply for C-Series Servers Platinum
UCSC-PSU1-1050W	1050W AC power supply for C-Series servers Platinum
UCSC-PSUV2-1050DC	1050W DC power supply for C-Series servers Platinum
UCSC-PSU1-1600W	1600W AC power supply for C-Series servers Platinum
UCSC-PSU1-1050ELV	1050W AC Power Supply C-Series Enhanced Low Line Platinum



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

STEP 10 SELECT POWER CORD(s)

Using *Table 14*, select the appropriate AC power cords. You can select a minimum of no power cords and a maximum of two.

Table 14 Available Power Cords

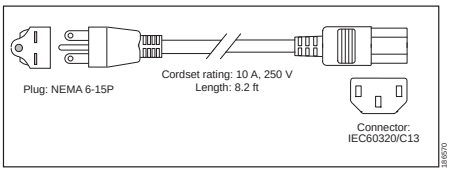
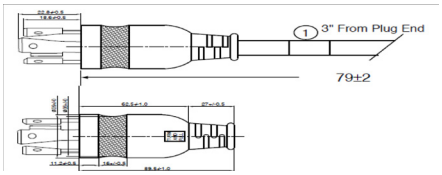
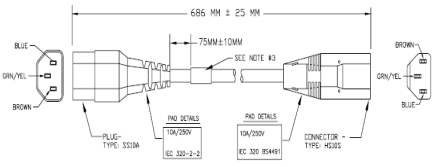
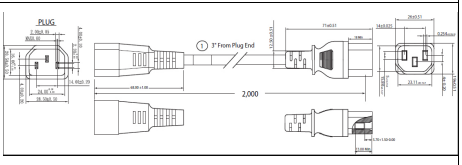
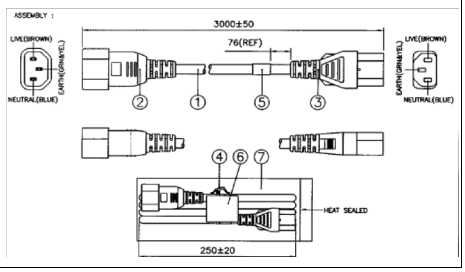
Product ID (PID)	PID Description	Images
NO-POWER-CORD	ECO friendly green option, no power cable will be shipped	Not applicable
CAB-48DC-40A-8AWG	C-Series -48VDC PSU Power Cord, 3.5M, 3 Wire, 8AWG, 40A	
CAB-N5K6A-NA	Power Cord, 200/240V 6A, North America	
CAB-AC-L620-C13	AC Power Cord, NEMA L6-20 - C13, 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 14 Available Power Cords

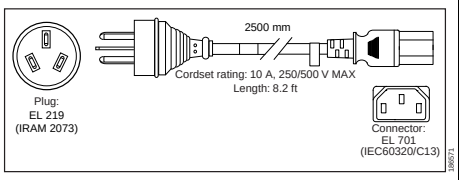
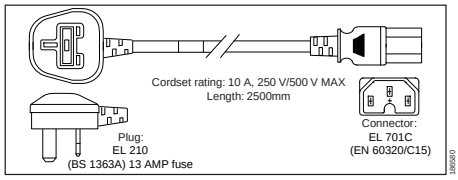
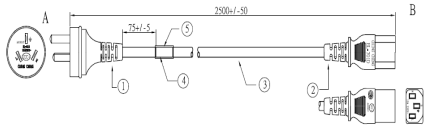
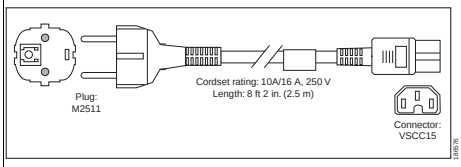
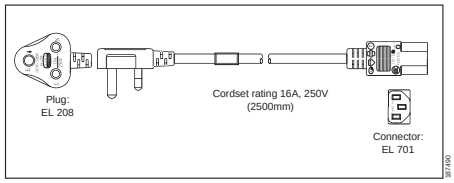
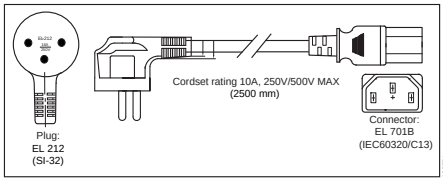
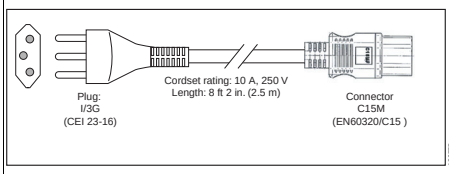
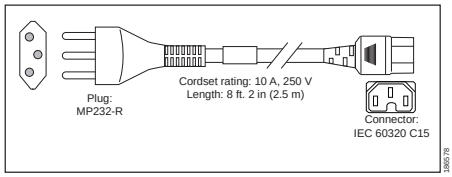
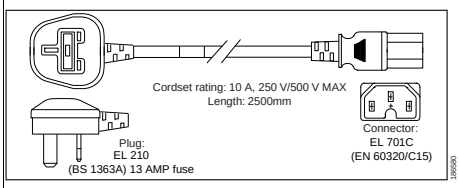
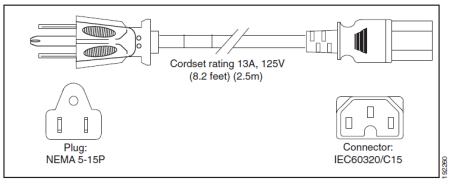
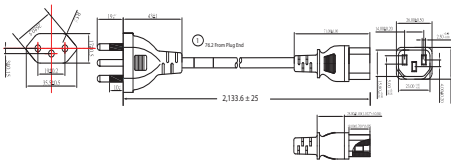
Product ID (PID)	PID Description	Images
CAB-250V-10A-AR	Power Cord, 250V, 10A, Argentina	
CAB-9K10A-AU	Power Cord, 250VAC 10A 3112 Plug, Australia	
CAB-250V-10A-CN	AC Power Cord - 250V, 10A - PRC	
CAB-9K10A-EU	Power Cord, 250VAC 10A CEE 7/7 Plug, EU	
CAB-250V-10A-ID	Power Cord, SFS, 250V, 10A, India	
CAB-250V-10A-IS	Power Cord, SFS, 250V, 10A, Israel	
CAB-9K10A-IT	Power Cord, 250VAC 10A CEI 23-16/VII Plug, Italy	
CAB-9K10A-SW	Power Cord, 250VAC 10A MP232 Plug, Switzerland	

Table 14 Available Power Cords

Product ID (PID)	PID Description	Images
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	-48VDC PSU PWR Cord, 3.5M, 3 Wire, 8AWG, 40A (INT)	Image Not available
CAB-48DC-40A-AS	-48VDC PSU PWR Cord, 3.5M, 3Wire, 8AWG, 40A (AS/NZ)	Image Not available
CAB-C13-C14-IN	Power Cord Jumper,C13-C14 Connectors,1.4 Meter Length, India	Image Not available
CAB-C13-C14-3M-IN	Power Cord Jumper, C13-C14 Connectors, 3 Meter Length, India	Image Not available

Notes:

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

STEP 11 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 15*.

Table 15 Tool-less Rail Kit Options

Product ID (PID)	PID Description
UCSC-RAILF-M4	Friction Rail Kit for C220 M4 and M5 Servers
UCSC-RAILB-M4	Ball Bearing Rail Kit for C220 and C240 M4/M5 Rack Servers

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 16* to order a cable management arm.

Table 16 Cable Management Arm

Product ID (PID)	PID Description
UCSC-CMAF-M4	Reversible CMA for C220 M4 and M5 rack servers

For more information about the tool-less rail kit and cable management arm, see the *Cisco UCS C220 M5 Installation and Service Guide* at this URL:

https://www.cisco.com/c/en/us/td/docs/unified_computing/ucs/c/hw/C220M5/install/C220M5.html



NOTE: If you plan to rackmount your UCS C220 M5 server, you must order a tool-less rail kit. The same rail kits and CMAs are used for used for C220 M4 and C220 M5 servers.

STEP 12 SELECT MANAGEMENT CONFIGURATION (OPTIONAL)

By default, the C220 M5 server NIC mode is configured to be Shared LOM Extended. This NIC mode allows any LOM port or adapter card port to be used to access the Cisco Integrated Management Controller (CIMC). The Cisco VIC card must be installed in a slot with NCSI support.

To change the default NIC mode to Dedicated, select the UCSC-DLOM-01 PID shown in *Table 17*. In Dedicated NIC mode, the CIMC can be accessed only through the dedicated management port. See *Chassis Rear View, page 5* for the location of the management port.

To change the default NIC mode to Cisco Card Mode, select the UCSC-CCARD-01 PID shown in *Table 17*. In this mode, you can assign an IP address to the CIMC using DHCP and from there you can fully automate your deployment.

For more details on all the NIC mode settings, see

https://www.cisco.com/c/en/us/td/docs/unified_computing/ucs/c/hw/C480M5/install/C480M5/C480M5_chapter_010.html#concept_rqj_vsr_fz

Table 17 Management Configuration Ordering Information

Product ID (PID)	PID Description
UCSC-DLOM-01	Dedicated Mode BIOS setting for C-Series Servers
UCSC-CCARD-01	Cisco Card Mode BIOS setting for C-Series Servers

STEP 13 SELECT SERVER BOOT MODE (OPTIONAL)

By default, the C220 M5 server ships with UEFI as the default boot mode. To have a server shipped with the Legacy BIOS mode (which was standard on M4 and previous generation servers), select the Legacy BIOS PID from *Table 18*.

Table 18 Server Boot Mode Ordering Information

Product ID (PID)	PID Description
UCSC-LBIOS-01	Legacy Boot Mode BIOS setting for C-Series 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 19*.

Table 19 Security Devices

Product ID (PID)	PID Description
UCSX-TPM2-001	Trusted Platform Module 1.2 SPI-based for UCS Servers
UCSX-TPM2-002	Trusted Platform Module 2.0 for UCS servers
UCSX-TPM2-002B	Trusted Platform Module 2.0 M5 UCS Servers (FIPS 140-2 Compliant)
UCSC-INT-SW01	C220 M5 and C240 M5 Chassis Intrusion Switch



NOTE:

- The TPM module used in this system conforms to TPM v1.2 and 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 20*.

Table 20 Locking Bezel Option

Product ID (PID)	Description
UCSC-BZL-C220M5	C220 M5 Security Bezel

STEP 16 ORDER CISCO SD CARD MODULE (OPTIONAL)

Order one or two matching SD cards. See *Figure 5 on page 63* for the location of the mini storage module connector, which accommodates an SD module. Each SD module accommodates two SD cards.

Table 21 Secure Digital (SD) Card (blank)

Product ID (PID)	PID Description
UCS-SD-128G	128 GB SD Card for UCS Servers
UCS-SD-64G-S	64 GB SD Card for UCS Servers
UCS-SD-32G-S	32 GB SD Card for UCS Servers



NOTE: Starting from vSphere 8.0, SD cards/USB media as a standalone boot device will not be supported by VMware. For more information please refer to the VMware KB article: https://kb.vmware.com/s/article/85685

Caveats

- Install either one or two SD cards
- Do not mix SD card sizes
- You cannot mix SD cards with an internal M.2 SATA SSD (see *ORDER M.2 SATA SSDs (OPTIONAL)*).

STEP 17 ORDER M.2 SATA SSDs (OPTIONAL)

Order one or two matching M.2 SATA SSDs (see *Table 22*) along with a mini storage carrier or a boot-optimized RAID controller (see *Table 23*).

NOTE: It is recommended that M.2 SATA SSDs be used as boot-only devices.

Each mini storage carrier or boot-optimized RAID controller can accommodate up to two SATA M.2 SSDs shown in *Table 22*.

Table 22 M.2 SATA SSDs

Product ID (PID)	PID Description
UCS-M2-I240GB	240 GB M.2 SATA SSD
UCS-M2-I480GB	480 GB M.2 SATA SSD
UCS-M2-240G	240GB SATA M.2
UCS-M2-480G	480GB M.2 SATA SSD
UCS-M2-960G	960GB SATA M.2

Table 23 Mini Storage Carrier/Boot-Optimized RAID Controller

Product ID (PID)	PID Description
UCS-MSTOR-M2	Mini Storage Carrier for M.2 SATA (holds up to 2 M.2 SATA SSDs)
UCS-M2-HWRAID	Cisco Boot optimized M.2 RAID controller (holds up to 2 M.2 SATA SSDs)

NOTE:

- The UCS-M2-HWRAID boot-optimized RAID controller supports RAID 1 and JBOD mode
- (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 support this controller is 4.0(4b) 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 not supported when the server is used as a compute node in HyperFlex configurations

- Order either the Mini Storage carrier or the Boot-Optimized RAID controller from *Table 23*.

  - Choose the UCS-MSTOR-M2 mini storage carrier for controlling the M.2 SATA drives with no RAID control.
  - Choose the UCS-M2-HWRAID Boot-Optimized RAID controller for hardware RAID across the two internal SATA M.2 drives. The Boot-Optimized RAID controller holds up to 2 matching M.2 SATA drives.
- Order up to two matching M.2 SATA SSDs from *Table 22*.



NOTE: The Boot-Optimized RAID controller supports VMWare, Windows and Linux Operating Systems

Caveats

- You cannot mix M.2 SATA SSDs with SD cards.
- Order either one or two identical M.2 SATA SSDs for the mini-storage carrier or boot-optimized RAID controller. You cannot mix M.2 SATA SSD capacities.
- When ordering two M.2 SATA drives with embedded software RAID, the maximum number of internal SATA drives supported is six. To support greater than six internal drives, a Cisco 12G Raid Controller or a Cisco 12G SAS HBA must be ordered

STEP 18 ORDER INTERNAL MICRO-SD CARD MODULE (OPTIONAL)

Order a 32 GB micro-SD card. The micro-SD card serves as a dedicated local resource for utilities such as a Host Upgrade Utility (HUU). Images can be pulled from a file share (NFS/CIFS) and uploaded to the card for future use.

Table 24 32 GB Secure Digital (SD) Card

Product ID (PID)	PID Description
UCS-MSD-32G	32GB Micro-SD Card for UCS servers

Caveats

- The micro-SD card mounts internally on riser 1.
- The Flexutil user partition does not support OS installation. The user partition must be used for storage only.

STEP 19 ORDER OPTIONAL USB 3.0 DRIVE

You can order one optional USB 3.0 drive. The USB drive ordering information is listed in *Table 25*.

Table 25 USB 3.0 Drive

Product ID (PID)	PID Description
UCS-USBFLSHB-16GB	UCS Servers 16 GB Flash USB Drive

See *Figure 5 on page 63* for the location of the USB connector

STEP 20 SELECT OPERATING SYSTEM AND VALUE-ADDED SOFTWARE

For more details on supported operating systems and software for this server, see the Hardware and Software Compatibility List (HCL).

Note: PIDs tagged with an asterisk (*) are Resell of an OEM Vendor's Support. They are required to be added to the associated Product License PID.



NOTE: VMware is on Compliance Hold. Contact the Compute-Vmware-Hold@cisco.com mailer to see if you are allowed to receive VMware Licenses

Select

- Cisco Software (*Table 26*)
- OEM Software (*Table 27*)
- Operating System (*Table 28*)

Table 26 Cisco Software

Product ID (PID)	PID Description
IMC Supervisor	
CIMC-SUP-BASE-K9	IMC Supervisor One-time Site Installation License
CIMC-SUP-B01	IMC Supervisor-Branch Mgt SW for C-Series & E-Series up to 100 Svrs
CIMC-SUP-B02	IMC Supervisor- Branch Mgt SW for C and E-Series up to 250 Svrs
CIMC-SUP-B10	IMC Supervisor- Branch Mgt SW for C and E-Series up to 1K Svrs
CIMC-SUP-B25	IMC Supervisor Branch Mgt SW for C and E-Series 25 Svrs
CIMC-SUP-A01	IMC Supervisor Adv-Branch Mgt SW for C and E-Series 100 Svrs
CIMC-SUP-A02	IMC Supervisor Adv-Branch Mgt SW for C and E-Series 250 Svrs
CIMC-SUP-A10	IMC Supervisor Adv-Branch Mgt SW for C and E-Series 1000 Svrs
CIMC-SUP-A25	IMC Supervisor Adv-Branch Mgt SW for C and E-Series 25 Svrs
EVAL-CIMC-SUP-BAS	EVAL: IMC Supervisor One-time Site Installation License
EVAL-CIMC-SUP	EVAL: IMC Supervisor-Branch Mgt SW for C/E-Series - 50 Svrs
UCS Multi-Domain Manager	
UCS-MDMGR-1S	UCS Central Per Server License
NOTE: IF you must order quantity greater than 1 of UCS-MDMGR-1S, you need to reference the UCS Central Per Server Data Sheet to order the standalone PIDs: UCS-MDMGR-LIC= or UCS-MDMGR-1DMN=	

Table 27 OEM Software

Product ID (PID)	PID Description
VMware vCenter	
VMW-VCS-STD-1A	VMware vCenter 7 Server Standard, 1 yr support require
VMW-VCS-STD-3A	VMware vCenter 7 Server Standard, 3 yr support required
VMW-VCS-STD-5A	VMware vCenter 7 Server Standard, 5 yr support required
VMW-VCS-FND-1A	VMware vCenter 7 Server Foundation (4 Host), 1 yr supp reqd
VMW-VCS-FND-3A	VMware vCenter 7 Server Foundation (4 Host), 3 yr supp reqd
VMW-VCS-FND-5A	VMware vCenter 7 Server Foundation (4 Host), 5 yr supp reqd

Table 28 Operating System

Product ID (PID)	PID Description
Microsoft Windows Server	
MSWS-19-DC16C	Windows Server 2019 Data Center (16 Cores/Unlimited VMs)
MSWS-19-DC16C-NS	Windows Server 2019 DC (16 Cores/Unlim VMs) - No Cisco SVC
MSWS-19-ST16C	Windows Server 2019 Standard (16 Cores/2 VMs)
MSWS-19-ST16C-NS	Windows Server 2019 Standard (16 Cores/2 VMs) - No Cisco SVC
MSWS-22-ST16C	Windows Server 2022 Standard (16 Cores/2 VMs)
MSWS-22-ST16C-NS	Windows Server 2022 Standard (16 Cores/2 VMs) - No Cisco SVC
MSWS-22-DC16C	Windows Server 2022 Data Center (16 Cores/Unlimited VMs)
MSWS-22-DC16C-NS	Windows Server 2022 DC (16 Cores/Unlim VMs) - No Cisco SVC
Red Hat	
RHEL-2S2V-1A	Red Hat Enterprise Linux (1-2 CPU,1-2 VN); 1-Yr Support Req
RHEL-2S2V-3A	Red Hat Enterprise Linux (1-2 CPU,1-2 VN); 3-Yr Support Req
RHEL-2S2V-5A	Red Hat Enterprise Linux (1-2 CPU,1-2 VN); 5-Yr Support Req
RHEL-VDC-2SUV-1A	RHEL for Virt Datacenters (1-2 CPU, Unlim VN) 1 Yr Supp Req
RHEL-VDC-2SUV-3A	RHEL for Virt Datacenters (1-2 CPU, Unlim VN) 3 Yr Supp Req
RHEL-VDC-2SUV-5A	RHEL for Virt Datacenters (1-2 CPU, Unlim VN) 5 Yr Supp Req
Red Hat Ent Linux/ High Avail/ Res Strg/ Scal	
RHEL-2S2V-1S	Red Hat Enterprise Linux (1-2 CPU,1-2 VN); Prem 1-Yr SnS
RHEL-2S2V-3S	Red Hat Enterprise Linux (1-2 CPU,1-2 VN); Prem 3-Yr SnS

Table 28 ***(continued)*****Operating System**

Product ID (PID)	PID Description
RHEL-2S-HA-1S	RHEL High Availability (1-2 CPU); Premium 1-yr SnS
RHEL-2S-HA-3S	RHEL High Availability (1-2 CPU); Premium 3-yr SnS
RHEL-2S-RS-1S	RHEL Resilent Storage (1-2 CPU); Premium 1-yr SnS
RHEL-2S-RS-3S	RHEL Resilent Storage (1-2 CPU); Premium 3-yr SnS
RHEL-VDC-2SUV-1S	RHEL for Virt Datacenters (1-2 CPU, Unlim VN) 1 Yr SnS Reqd
RHEL-VDC-2SUV-3S	RHEL for Virt Datacenters (1-2 CPU, Unlim VN) 3 Yr SnS Reqd
Red Hat SAP	
RHEL-SAP-2S2V-1S	RHEL for SAP Apps (1-2 CPU, 1-2 VN); Prem 1-Yr SnS Reqd
RHEL-SAP-2S2V-3S	RHEL for SAP Apps (1-2 CPU, 1-2 VN); Prem 3-Yr SnS Reqd
RHEL-SAPSP-3S	RHEL SAP Solutions Premium - License with 3 Years of SnS
RHEL-SAPSS-3S	RHEL SAP Solutions Standard - License with 3 Years of SnS
VMware	
VMW-VSP-STD-1A	VMware vSphere 7 Std (1 CPU, 32 Core) 1-yr, Support Required
VMW-VSP-STD-3A	VMware vSphere 7 Std (1 CPU, 32 Core) 3-yr, Support Required
VMW-VSP-STD-5A	VMware vSphere 7 Std (1 CPU, 32 Core) 5-yr, Support Required
VMW-VSP-EPL-1A	VMware vSphere 7 Ent Plus (1 CPU, 32 Core) 1Yr, Support Reqd
VMW-VSP-EPL-3A	VMware vSphere 7 Ent Plus (1 CPU, 32 Core) 3Yr, Support Reqd
VMW-VSP-EPL-5A	VMware vSphere 7 Ent Plus (1 CPU, 32 Core) 5Yr, Support Reqd
SUSE	
SLES-2S2V-1A	SUSE Linux Enterprise Svr (1-2 CPU,1-2 VM); 1-Yr Support Req
SLES-2S2V-3A	SUSE Linux Enterprise Svr (1-2 CPU,1-2 VM); 3-Yr Support Req
SLES-2S2V-5A	SUSE Linux Enterprise Svr (1-2 CPU,1-2 VM); 5-Yr Support Req
SLES-2S2V-1S	SUSE Linux Enterprise Svr (1-2 CPU,1-2 VM); Prio 1-Yr SnS
SLES-2SUV-3S	SUSE Linux Enterprise Svr (1-2 CPU,Unl VM); Prio 3-Yr SnS
SLES-2SUV-5S	SUSE Linux Enterprise Svr (1-2 CPU,Unl VM); Prio 5-Yr SnS
SLES-2S-HA-1S	SUSE Linux High Availability Ext (1-2 CPU); 1yr SnS
SLES-2S-HA-3S	SUSE Linux High Availability Ext (1-2 CPU); 3yr SnS
SLES-2S-HA-5S	SUSE Linux High Availability Ext (1-2 CPU); 5yr SnS
SLES-2S-GC-1S	SUSE Linux GEO Clustering for HA (1-2 CPU); 1yr Sns

Table 28 ***(continued)*** **Operating System**

Product ID (PID)	PID Description
SLES-2S-GC-3S	SUSE Linux GEO Clustering for HA (1-2 CPU); 3yr SnS
SLES-2S-GC-5S	SUSE Linux GEO Clustering for HA (1-2 CPU); 5yr SnS
SLES-2S-LP-1S	SUSE Linux Live Patching Add-on (1-2 CPU); 1yr SnS Required
SLES-2S-LP-3S	SUSE Linux Live Patching Add-on (1-2 CPU); 3yr SnS Required
SLES-2S-LP-1A	SUSE Linux Live Patching Add-on (1-2 CPU); 1yr Support Req
SLES-2S-LP-3A	SUSE Linux Live Patching Add-on (1-2 CPU); 3yr Support Req
SLES and SAP	
SLES-SAP-2S2V-1A	SLES for SAP Apps (1-2 CPU, 1-2 VM); 1-Yr Support Reqd
SLES-SAP-2S2V-3A	SLES for SAP Apps (1-2 CPU, 1-2 VM); 3-Yr Support Reqd
SLES-SAP-2S2V-5A	SLES for SAP Apps (1-2 CPU, 1-2 VM); 5-Yr Support Reqd
SLES-SAP-2S2V-1S	SLES for SAP Apps (1-2 CPU, 1-2 VM); Priority 1-Yr SnS
SLES-SAP-2S2V-3S	SLES for SAP Apps (1-2 CPU, 1-2 VM); Priority 3-Yr SnS
SLES-SAP-2S2V-5S	SLES for SAP Apps (1-2 CPU, 1-2 VM); Priority 5-Yr SnS

STEP 21 SELECT OPERATING SYSTEM MEDIA KIT

Select the optional operating system media listed in *Table 29*.

Table 29 OS Media

Product ID (PID)	PID Description
MSWS-19-ST16C-RM	Windows Server 2019 Stan (16 Cores/2 VMs) Rec Media DVD Only
MSWS-19-DC16C-RM	Windows Server 2019 DC (16Cores/Unlim VM) Rec Media DVD Only

STEP 22 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.
- 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 UCS

For support of the entire Unified Computing System, Cisco offers the Cisco Smart Net Total Care 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 30***.

Table 30 Cisco SNTC for UCS Service (PID UCSC-C220-M5L)

Service SKU	Service Level GSP	On Site?	Description
CON-PREM-CC220M5L	C2P	Yes	SNTC 24X7X2OS
CON-UCSD8-CC220M5L	UCSD8	Yes	UC SUPP DR 24X7X2OS*
CON-C2PL-CC220M5L	C2PL	Yes	LL 24X7X2OS**
CON-OSP-CC220M5L	C4P	Yes	SNTC 24X7X4OS
CON-UCSD7-CC220M5L	UCSD7	Yes	UCS DR 24X7X4OS*
CON-C4PL-CC220M5L	C4PL	Yes	LL 24X7X4OS**
CON-USD7L-CC220M5L	USD7L	Yes	LLUCS HW DR 24X7X4OS***
CON-OSE-CC220M5L	C4S	Yes	SNTC 8X5X4OS
CON-UCSD6-CC220M5L	UCSD6	Yes	UC SUPP DR 8X5X4OS*
CON-SNCO-CC220M5L	SNCO	Yes	SNTC 8x7xNCDOS****

Table 30 Cisco SNTC for UCS Service (PID UCSC-C220-M5L)

Service SKU	Service Level GSP	On Site?	Description
CON-OS-CC220M5L	CS	Yes	SNTC 8X5XNBDOS
CON-UCSD5-CC220M5L	UCSD5	Yes	UCS DR 8X5XNBDOS*
CON-S2P-CC220M5L	S2P	No	SNTC 24X7X2
CON-S2PL-CC220M5L	S2PL	No	LL 24X7X2**
CON-SNTP-CC220M5L	SNTP	No	SNTC 24X7X4
CON-SNTPL-CC220M5L	SNTPL	No	LL 24X7X4**
CON-SNTE-CC220M5L	SNTE	No	SNTC 8X5X4
CON-SNC-CC220M5L	SNC	No	SNTC 8x7xNCD****
CON-SNT-CC220M5L	SNT	No	SNTC 8X5XNBD
CON-SW-CC220M5L	SW	No	SNTC NO RMA

*Includes Drive Retention (see *UCS Drive Retention Service, page 61*)

**Includes Local Language Support (see *Local Language Technical Support for UCS, page 62*) – Only available in China and Japan

***Includes Local Language Support and Drive Retention – Only available in China and Japan

****Available in China Only

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 Internet-working Support Engineer (VISE). You can choose a desired service listed in *Table 31*

Table 31 SNTC for Cisco UCS Onsite Troubleshooting Service (PID UCSC-C220-M5L)

Service SKU	Service Level GSP	On Site?	Description
CON-OSPT-CC220M5L	OSPT	Yes	24X7X4OS Trblshtg
CON-OSPTD-CC220M5L	OSPTD	Yes	24X7X4OS TrblshtgDR*
CON-OSPTL-CC220M5L	OSPTL	Yes	24X7X4OS TrblshtgLL**
CON-OPTLD-CC220M5L	OPTLD	Yes	24X7X4OS TrblshtgLLD***

*Includes Drive Retention (see *UCS Drive Retention Service, page 61*)

**Includes Local Language Support (see *Local Language Technical Support for UCS, page 62*) – Only available in China and Japan

***Includes Local Language Support and Drive Retention – Only available in China and Japan

Solution Support 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 32***

Table 32 Solution Support for UCS Service (PID UCSC-C220-M5L)

Service SKU	Service Level GSP	On Site?	Description
CON-SSC2P-CC220M5L	SSC2P	Yes	SOLN SUPP 24X7X2OS
CON-SSC4P-CC220M5L	SSC4P	Yes	SOLN SUPP 24X7X4OS
CON-SSC4S-CC220M5L	SSC4S	Yes	SOLN SUPP 8X5X4OS
CON-SSCS-CC220M5L	SSCS	Yes	SOLN SUPP 8X5XNBDOS
CON-SSDR7-CC220M5L	SSDR7	Yes	SSPT DR 24X7X4OS*
CON-SSDR5-CC220M5L	SSDR5	Yes	SSPT DR 8X5XNBDOS*
CON-SSS2P-CC220M5L	SSS2P	No	SOLN SUPP 24X7X2
CON-SSSNP-CC220M5L	SSSNP	No	SOLN SUPP 24X7X4
CON-SSSNE-CC220M5L	SSSNE	No	SOLN SUPP 8X5X4
CON-SSSNC-CC220M5L	SSSNC	No	SOLN SUPP NCD**
CON-SSSNT-CC220M5L	SSSNT	No	SOLN SUPP 8X5XNBD

Includes Drive Retention (see ***UCS Drive Retention Service, page 61***)

**Available in China only

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 33*

Table 33 SNTC for UCS Hardware Only Service (PID UCSC-C220-M5L)

Service SKU	Service Level GSP	On Site?	Description
CON-UCW7-CC220M5L	UCW7	Yes	UCS HW 24X7X4OS
CON-UCWD7-CC220M5L	UCWD7	Yes	UCS HW+DR 24X7X4OS*
CON-UCW7L-CC220M5L	UCW7L	Yes	LL UCS 24X7X4OS**
CON-UWD7L-CC220M5L	UWD7L	Yes	LL UCS DR 24X7X4OS***
CON-UCW5-CC220M5L	UCW5	Yes	UCS HW 8X5XNBDOS
CON-UCWD5-CC220M5L	UCWD5	Yes	UCS HW+DR 8X5XNBDOS*

*Includes Drive Retention (see *UCS Drive Retention Service, page 61*)

**Includes Local Language Support (see *Local Language Technical Support for UCS, page 62*) – 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 Intel®lectual 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 34*.

Table 34 PSS for UCS (PID UCSC-C220-M5L)

Service SKU	Service Level GSP	On Site?	Description
CON-PSJ8-CC220M5L	PSJ8	Yes	UCS PSS 24X7X2 OS
CON-PSJ7-CC220M5L	PSJ7	Yes	UCS PSS 24X7X4 OS
CON-PSJD7-CC220M5L	PSJD7	Yes	UCS PSS 24X7X4 DR*
CON-PSJ6-CC220M5L	PSJ6	Yes	UCS PSS 8X5X4 OS
CON-PSJD6-CC220M5L	PSJD6	Yes	UCS PSS 8X5X4 DR*
CON-PSJ4-CC220M5L	PSJ4	No	UCS SUPP PSS 24X7X2
CON-PSJ3-CC220M5L	PSJ3	No	UCS SUPP PSS 24X7X4
CON-PSJ2-CC220M5L	PSJ2	No	UCS SUPP PSS 8X5X4
CON-PSJ1-CC220M5L	PSJ1	No	UCS SUPP PSS 8X5XNBD
*Includes Drive Retention (see *UCS Drive Retention Service, page 61*)			

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. See *Table 35*

Table 35 PSS for UCS Hardware Only (PID UCSC-C220-M5L)

Service SKU	Service Level GSP	On Site?	Description
CON-PSW7-CC220M5L	PSW7	Yes	UCS W PSS 24X7X4 OS
CON-PSWD7-CC220M5L	PSWD7	Yes	UCS W PSS 24X7X4 DR*
CON-PSW6-CC220M5L	PSW6	Yes	UCS W PSS 8X5X4 OS
CON-PSWD6-CC220M5L	PSWD6	Yes	UCS W PSS 8X5X4 DR*
CON-PSW4-CC220M5L	PSW4	No	UCS W PL PSS 24X7X2
CON-PSW3-CC220M5L	PSW3	No	UCS W PL PSS 24X7X4
CON-PSW2-CC220M5L	PSW2	No	UCS W PL PSS 8X5X4
*Includes Drive Retention (see *UCS Drive Retention Service, page 61*)			

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 UCSC-C220-M5L)

Service SKU	Service Level GSP	On Site?	Description
CON-NCF2P-CC220M5L	NCF2P	Yes	CMB SVC 24X7X2OS
CON-NCF4P-CC220M5L	NCF4P	Yes	CMB SVC 24X7X4OS
CON-NCF4S-CC220M5L	NCF4S	Yes	CMB SVC 8X5X4OS
CON-NCFCS-CC220M5L	NCFCS	Yes	CMB SVC 8X5XNBDOS
CON-NCF2-CC220M5L	NCF2	No	CMB SVC 24X7X2
CON-NCFP-CC220M5L	NCFP	No	CMB SVC 24X7X4
CON-NCFE-CC220M5L	NCFE	No	CMB SVC 8X5X4
CON-NCFT-CC220M5L	NCFT	No	CMB SVC 8X5XNBD
CON-NCFW-CC220M5L	NCFW	No	CMB SVC SW

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:

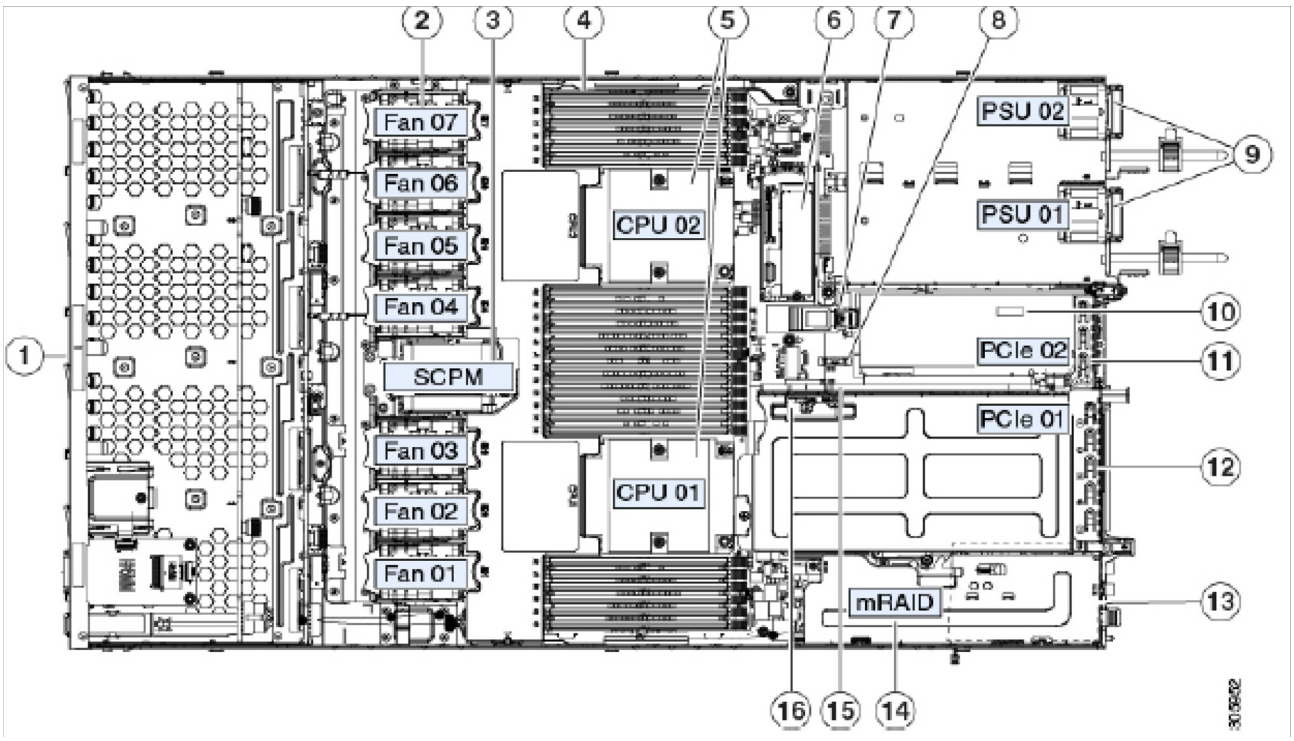
http://www.cisco.com/en/US/products/ps10312/serv_group_home.html

SUPPLEMENTAL MATERIAL

Chassis

An internal view of the C220 M5 LFF chassis with the top cover removed is shown in ***Figure 5***.

Figure 5 C220 M5 LFF With Top Cover Off



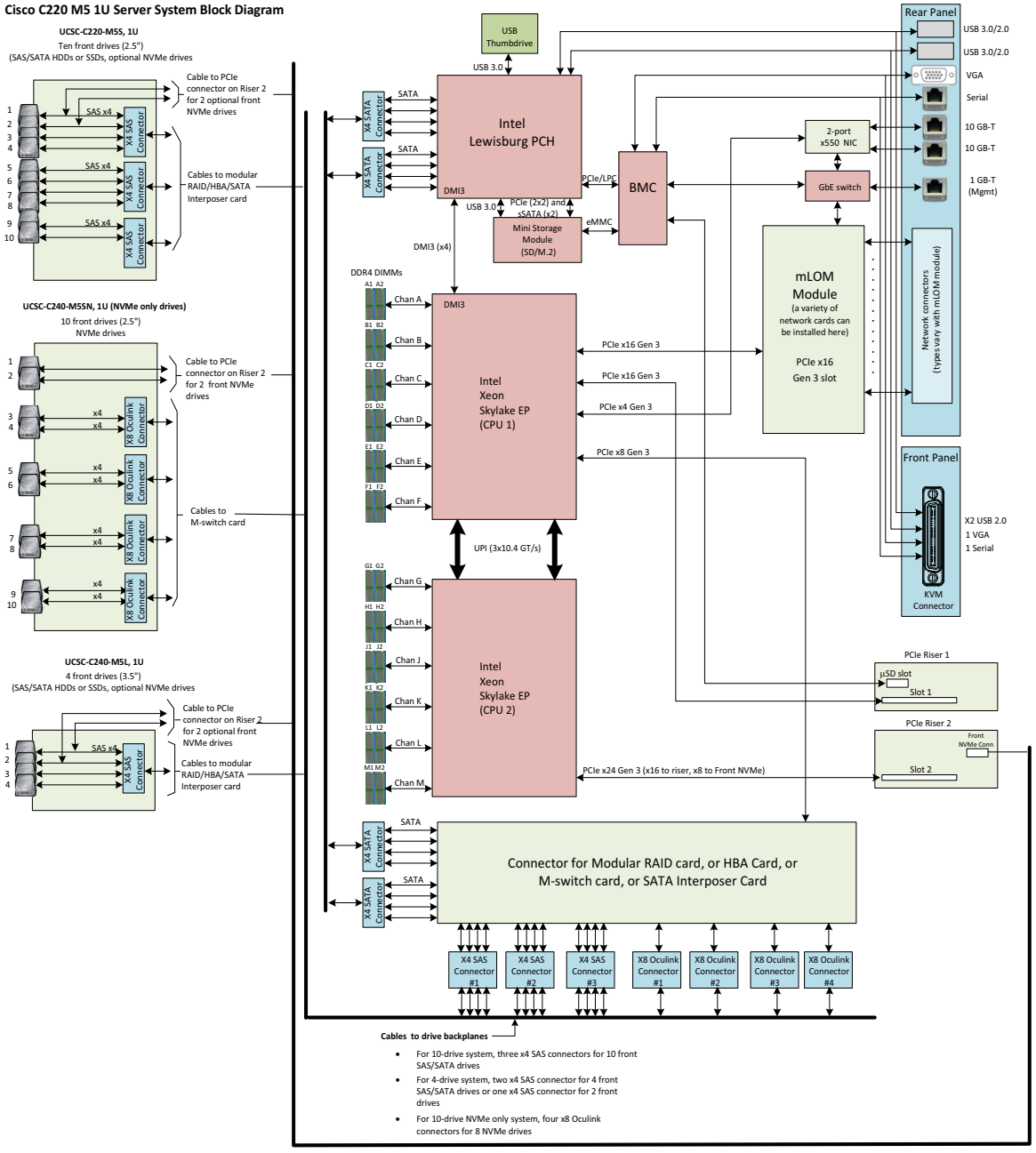
1	Drive bays 1–4 support SAS/SATA drives and drive bays 1 and 2 also support SFF NVMe PCIe SSDs.	9	Power supplies (Hot-swappable when redundant as 1+1)
2	Cooling fan modules (seven)	10	Trusted platform module (TPM) socket on motherboard (not visible in this view)
3	Supercap Power Module (RAID backup) mounting bracket	11	PCIe slot 2 (half-height, x16); includes PCIe cable connector for SFF NVMe SSDs (x8)
4	DIMM sockets on motherboard (up to 12 per CPU; total 24)	12	PCIe slot 1 (full-height, x16); includes socket for Micro-SD card
5	CPUs and heatsinks (up to two)	13	Modular LOM (mLOM) card bay on chassis floor (x16) (not visible in this view)
6	Mini storage module connector Supports either an SD card module with two SD cards or an M.2 module with two PCIe/SATA M.2 SSD slots	14	Modular RAID (mRAID) riser, can optionally be a riser that supports either: ■ Hardware RAID controller card ■ Interposer card for embedded SATA RAID

7	Internal USB 3.0 port on motherboard	15	PCIe cable connectors for front-panel SFF NVMe SSDs on PCIe riser 2
8	RTC battery vertical socket on motherboard	16	Micro-SD card socket on PCIe riser 1

Block Diagram

A simplified block diagram of the C220 M5 server is shown in ***Figure 6***.

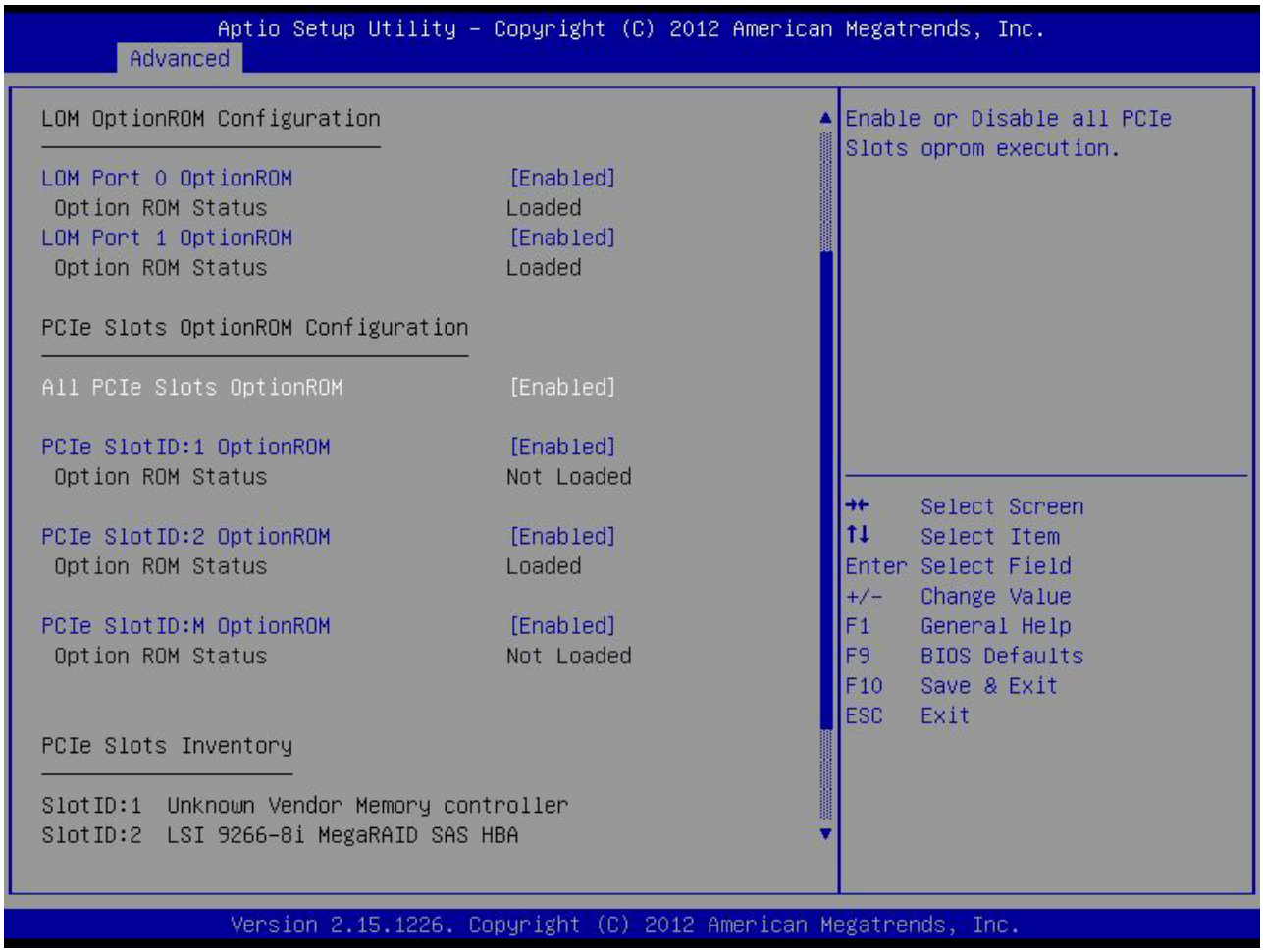
Figure 6 C220 M5 LFF Block Diagram (simplified)



RAID Option ROM (OPROM) Settings

The server contains an Option ROM (OPROM) for the PCIe slots. The server has a finite amount of option ROM with which it can boot up devices. Go into the BIOS and disable the OPROM on the PCIe slots not used for booting so that resources are available for the slots that are used for booting. An example OPROM BIOS screen is shown in *Figure 7*.

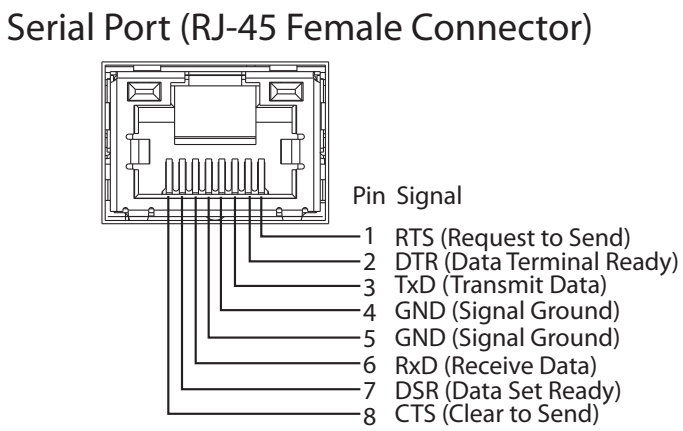
Figure 7 Example BIOS Screen for OPROM



Serial Port Details

The pinout details of the rear RJ-45 serial port connector are shown in ***Figure 8***.

Figure 8 Serial Port (Female RJ-45 Connector) Pinout



KVM Cable

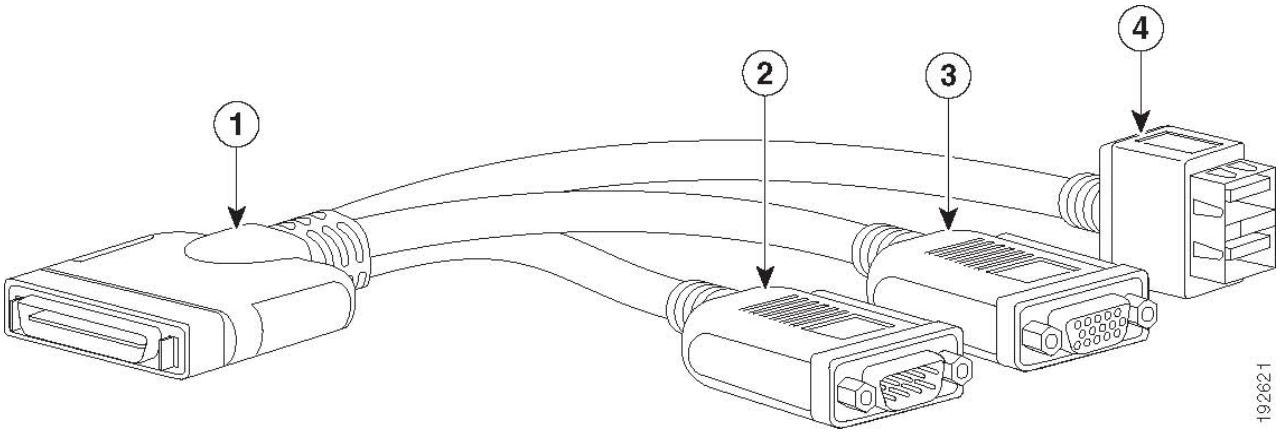
The KVM cable provides a connection into the server, providing a DB9 serial connector, a VGA connector for a monitor, and dual USB ports for a keyboard and mouse. With this cable, you can create a direct connection to the operating system and the BIOS running on the server.

The KVM cable ordering information is listed in *Table 37*.

Table 37 KVM Cable

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

Figure 9 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 UCS C220 M5 server. Some of these parts are configured with every server.

Table 38 Spare Parts

Product ID (PID)	PID Description
KVM Cable	
N20-BKVM=	KVM local IO cable for UCS servers console port
CPUs	
UCS-CPU-I8280	Intel 8280 2.7GHz/205W 28C/38.50MB 3DX DDR4 2933 MHz
UCS-CPU-I8280L	Intel 8280L 2.7GHz/205W 28C/38.50MB 3DX DDR4 **4.5TB** 2933 MHz
UCS-CPU-I8276	Intel 8276 2.2GHz/165W 28C/38.50MB 3DX DDR4 2933 MHz
UCS-CPU-I8276L	Intel 8276L 2.2GHz/165W 28C/38.50MB 3DX DDR4 **4.5TB** 2933 MHz
UCS-CPU-I8270	Intel 8270 2.6GHz/205W 26C/35.75MB 3DX DDR4 2933 MHz
UCS-CPU-I8268	Intel 8268 2.9GHz/205W 24C/35.75MB 3DX DDR4 2933 MHz
UCS-CPU-I8260	Intel 8260 2.4GHz/165W 24C/35.75MB 3DX DDR4 2933 MHz
UCS-CPU-I8260Y	Intel 8260Y SS 2.4GHz/165W 24/20/16C 35.75MB 3DX DDR4 2933
UCS-CPU-I8260L	Intel 8260L 2.4GHz/165W 24C/35.75MB 3DX DDR4 **4.5TB** 2933 MHz
UCS-CPU-I8253	Intel 8253 2.2GHz/125W 16C/22MB DCP DDR4 1TB 2933 MHz
UCS-CPU-I6262V	Intel 6262V 1.9GHz/135W 24C/ 33MB 3DX DDR4 2400 MHz
UCS-CPU-I6258R	Intel 6258R 2.7GHz/205W 28C/35.75MB DDR4 2933MHz
UCS-CPU-I6254	Intel 6254 3.1GHz/200W 18C/24.75MB 3DX DDR4 2933 MHz
UCS-CPU-I6252	Intel 6252 2.1GHz/150W 24C/35.75MB 3DX DDR4 2933 MHz
UCS-CPU-I6248	Intel 6248 2.5GHz/150W 20C/27.5MB 3DX DDR4 2933 MHz
UCS-CPU-I6248R	Intel 6248R 3GHz/205W 24C/35.75MB DDR4 2933MHz
UCS-CPU-I6246	Intel 6246 3.3GHz/165W 12C/24.75MB 3DX DDR4 2TB 2933 MHz
UCS-CPU-I6246R	Intel 6246R 3.4GHz/205W 16C/35.75MB DDR4 2933MHz
UCS-CPU-I6244	Intel 6244 3.6GHz/150W 8C/24.75MB 3DX DDR4 2933 MHz
UCS-CPU-I6242	Intel 6242 2.8GHz/150W 16C/22MB 3DX DDR4 2933 MHz
UCS-CPU-I6242R	Intel 6242R 3.1GHz/205W 20C/35.75MB DDR4 2933MHz
UCS-CPU-I6240	Intel 6240 2.6GHz/150W 18C/24.75MB 3DX DDR4 2933 MHz

Table 38 Spare Parts *(continued)*

Product ID (PID)	PID Description
UCS-CPU-I6240R	Intel 6240R 2.4GHz/165W 24C/35.75MB DDR4 2933MHz
UCS-CPU-I6240Y	Intel 6240Y SS 2.6GHz/150W 18/14/8C 24.75MB 3DX DDR4 2933
UCS-CPU-I6240L	Intel 6240L 2.6GHz/150W 18C/24.75MB 3DX DDR4 4.5TB 2933 MHz
UCS-CPU-I6238	Intel 6238 2.1GHz/140W 22C/30.25MB 3DX DDR4 2933 MHz
UCS-CPU-I6238R	Intel 6238R 2.2GHz/165W 28C/38.5MB DDR4 2933MHz
UCS-CPU-I6238L	Intel 6238L 2.1GHz/140W 22C/30.25MB 3DX DDR4 4.5TB 2933 MHz
UCS-CPU-I6234	Intel 6234 3.3GHz/130W 8C/24.75MB 3DX DDR4 2933 MHz
UCS-CPU-I6230	Intel 6230 2.1GHz/125W 20C/27.50MB 3DX DDR4 2933 MHz
UCS-CPU-I6230R	Intel 6230R 2.1GHz/150W 26C/35.75MB DDR4 2933MHz
UCS-CPU-I6230N	Intel 6230N 2.3GHz/125W 20C/27.50MB DCP DDR4 2933 MHz
UCS-CPU-I6226	Intel 6226 2.7GHz/125W 12C/19.25MB 3DX DDR4 2933 MHz
UCS-CPU-I6226R	Intel 6226R 2.8GHz/150W 16C/22MB DDR4 2933MHz
UCS-CPU-I6222V	Intel 6222V 1.8GHz/115W 20C/ 27.5MB 3DX DDR4 2400 MHz
UCS-CPU-6146	3.2 GHz 6146/**165W** 12C/24.75MB Cache/DDR4 2666MHz
UCS-CPU-I5222	Intel 5222 3.8GHz/105W 4C/16.50MB 3DX DDR4 2933 MHz
UCS-CPU-I5220S	Intel 5220S 2.6GHz/125W 18C/19.25MB 3DX DDR4 2665 MHz
UCS-CPU-I5220	Intel 5220 2.2GHz/125W 18C/19.25MB 3DX DDR4 2665 MHz
UCS-CPU-I5220R	Intel 5220R 2.2GHz/125W 18C/24.75MB DCP DDR4 2666MHz
UCS-CPU-I5218B	Intel 5218B 2.3GHz/125W 16C/22MB 3DX DDR4 2TB 2933 MHz
UCS-CPU-I5218	Intel 5218 2.3GHz/125W 16C/16.50MB 3DX DDR4 2666MHz
UCS-CPU-I5218R	Intel 5218R 2.2GHz/125W 20C/27.5MB DDR4 2667MHz
UCS-CPU-I5218N	Intel 5218N 2.3GHz/105W 16C/22MB DCP DDR4 2666MHz
UCS-CPU-I5217	Intel 5217 3.0GHz/85W 8C/16.50MB 3DX DDR4 2665 MHz
UCS-CPU-I5215	Intel 5215 2.5GHz/85W 10C/13.75MB 3DX DDR4 2666MHz
UCS-CPU-I5215L	Intel 5215L 2.5GHz/85W 10C/13.75MB 3DX DDR4 4.5TB 2666MHz
UCS-CPU-I4216	Intel 4216 2.1GHz/100W 16C/16.50MB DDR4 2400MHz
UCS-CPU-I4215R	Intel 4215R 3.2GHz/130W 10C/11MB DCP DDR4 1TB 2400 MHz
UCS-CPU-I4215	Intel 4215 2.5GHz/85W 8C/13.75MB 3DX/DDR4 2400MHz
UCS-CPU-I4214	Intel 4214 2.2GHz/85W 12C/13.75MB DDR4 2400MHz

Table 38 Spare Parts *(continued)*

Product ID (PID)	PID Description
UCS-CPU-I4214R	Intel 4214R 2.4GHz/100W 12C/16.50MB DDR4 2400MHz
UCS-CPU-I4210	Intel 4210 2.2GHz/85W 10C/11MB DDR4 2400MHz
UCS-CPU-I4210R	Intel 4210R 2.4GHz/100W 10C/13.75MB DDR4 2400MHz
UCS-CPU-I4208	Intel 4208 2.1GHz/85W 8C/11MB DDR4 2400MHz
UCS-CPU-I3206R	Intel 3206R 1.9GHz/85W 8C/11MB DDR4 2133MHz
CPU Accessories	
UCSC-HS-C220M5=	Heat sink for UCS C220 M5 rack servers 150W CPUs & below
UCSC-HS2-C220M5=	Heat sink for UCS C220 M5 rack servers CPUs above 150W
UCS-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]
UCS-CPUAT=	CPU Assembly Tool for M5 Servers
UCS-M5-CPU-CAR=	UCS M5 CPU Carrier
UCSC-FAN-C220M5=	C220 M5 Fan Module (one)
Riser	
UCSC-RISER-220M5=	PCIe Riser for C220 M5
SD Cards	
UCS-MSTOR-SD=	SD module (holds up to 2 SD cards)
M.2 SATA SSD and Raid controller	
UCS-MSTOR-M2=	M.2 module (holds up to 2 M.2 SATA drives)
UCS-M2-HWRAID =	Cisco Boot optimized M.2 RAID controller (holds up to 2 M.2 SATA SSDs)
UCS-M2-I240GB=	240 GB M.2 SATA SSD
UCS-M2-I480GB=	480 GB M.2 SATA SSD
UCS-M2-240G=	240GB SATA M.2
UCS-M2-480G=	480GB M.2 SATA SSD
UCS-M2-960G=	960GB SATA M.2
Memory	
UCS-ML-128G4RW=	128GB DDR4-3200MHz LRDIMM 4Rx4 (16Gb)
UCS-MR-X64G2RW=	64GB DDR4-3200MHz RDIMM 2Rx4 (16Gb)
UCS-MR-X32G2RW=	32GB DDR4-3200MHz RDIMM 2Rx4 (8Gb)

Table 38 Spare Parts *(continued)*

Product ID (PID)	PID Description
UCS-MR-X16G1RW=	16GB DDR4-3200MHz RDIMM 1Rx4 (8Gb)
UCSC-BBLKD-S2=	C-Series M5 SFF drive blanking panel
HDDs	
HDDs (10K RPM)	
UCS-HY18TB10K4KN=	1.8 TB 12G SAS 10K RPM LFF HDD (4K)
UCS-HY12TB10K12N=	1.2 TB 12G SAS 10K RPM LFF HDD
HDDs (7.2K RPM)	
UCS-HD2T7KL12N=	2 TB 12G SAS 7.2K RPM LFF HDD
UCS-HD4T7KL12N=	4 TB 12G SAS 7.2K RPM LFF HDD
UCS-HD6T7KL4KN=	6 TB 12G SAS 7.2K RPM LFF HDD (4K)
UCS-HD8T7K4KAN=	8 TB 12G SAS 7.2K RPM LFF HDD (4K)
UCS-HD10T7K4KAN=	10 TB 12G SAS 7.2K RPM LFF HDD (4K)
UCS-HD12T7KL4KN=	12 TB 12G SAS 7.2K RPM LFF HDD (4K)
UCS-HD14T7KL4KN=	14 TB 12G SAS 7.2K RPM LFF HDD(4K)
UCS-HD14TT7KL4KN=	14 TB 12G SAS 7.2K RPM LFF HDD(4K)
UCS-HD14TW7KL4KN=	14TB 4Kn SAS He14 7200RPM 3.5" HDD ISE
UCS-HD16TW7KL4KN=	16TB 12G SAS 7.2K RPM LFF HDD(4K)
UCS-HD16T7KL4KN=	16 TB 12G SAS 7.2K RPM LFF HDD(4K)
UCS-HD18TW7KL4KN=	18TB 12G SAS 7.2K RPM LFF HDD(4K)
UCS-HD20TW7KL4KN=	20TB 12G SAS 7.2K RPM LFF HDD(4K)
UCS-HD22TW7KL4KN=	22TB 12G SAS 7.2K RPM LFF HDD(4K)
UCS-HD8T7K6GAN=	8 TB 6G SATA 7.2K RPM LFF HDD (512e)
UCS-HD10T7K6GAN=	10TB 6G SATA 7.2K RPM LFF HDD (512e)
UCS-HD12T7KL6GN=	12 TB 6G SATA 7.2K RPM LFF HDD (512e)
SAS/SATA SSDs	
Enterprise Performance SSDs (High endurance, supports up to 10X or 3X DWPD (drive writes per day))	
SAS SSDs	
UCS-HY800GK3X-EP=	800GB 3.5in Enterprise Performance 12G SAS SSD(3X endurance)
UCS-HY16TK3X-EP=	1.6TB 3.5in Enterprise Performance 12G SAS SSD(3X endurance)

Table 38 Spare Parts *(continued)*

Product ID (PID)	PID Description
SATA SSDs	
UCS-HY480G63X-EP=	480GB 3.5in Enterprise performance 6G SATA SSD(3X endurance) (Intel® S4600/S4610)
UCS-HY960G63X-EP=	960GB 3.5in Enterprise performance 6G SATA SSD(3X endurance) (Intel® S4600/S4610)
UCS-HY19T63X-EP=	1.9TB 3.5in Enterprise performance 6G SATA SSD (3X endurance) (Intel® S4600/S4610)
UCSC-SATA-KIT-M5=	C220 M5 (2) SATA/SW RAID cables for up to 8-drives
Enterprise Value SATA SSDs (Low endurance, supports up to 1X DWPD (drive writes per day))	
UCS-HY240G61X-EV=	240 GB 2.5 inch Enterprise Value 6G SATA SSD
UCS-HY480G61X-EV=	480 GB 2.5 inch Enterprise Value 6G SATA SSD (Intel® 3520)
Self-Encrypted Drives (SED)	
HDDs	
UCS-HY600G15NK9=	600 GB 12G SAS 15K RPM LFF HDD (SED)
UCS-HD4T12GNK9=	4 TB 7.2k RPM LFF HDD (SED)
UCS-HD6T12GANK9=	6 TB 7.2k RPM LFF HDD (4K format, SED)
UCS-HD12T7KL4NK9=	12 TB 7.2 K RPM LFF HDD (4K format SED)
PCIe/NVMe LFF 2.5” drives	
UCSC-NVMEHY-H800=	800 GB HGST SN200 NVMe High Perf. High Endurance (HGST)
UCSC-NVMEHY-H1600=	1.6 TB HGST SN200 NVMe High Perf. High Endurance (HGST)
UCS-NVMEHY-W3200=	3.2TB 3.5in U.2 WD SN840 NVMe Extreme Perf. High Endurance
CBL-NVME-C220FF=	C220 M5L/M5S PCIe SSD cable (1) for SFF & LFF chassis
Drive cables/accessories	
UCSC-BBLKD-S2=	C-Series M5 SFF drive blanking panel
CBL-NVME-C220FF=	C220 M5L/M5S PCIe SSD cable (1) for SFF & LFF chassis

Table 38 Spare Parts *(continued)*

Product ID (PID)	PID Description
RAID Controllers	
UCSC-9400-8E=	Cisco 9400-8E 12G SAS HBA for external JBOD attach
UCSC-MRAID1GB-KIT= **Note:** Supercap (UCSC-MRAID-SC=), Cable (CBL-SC-MR12GM5=), and (UCSC-MRAIDR-220M5=) included when RAID card is ordered as a spare	SAS RAID KIT for C220M5L (Avila Beach kit for C220M5L)
Raid Controller accessories	
UCSC-MRAID-SC=	Supercap for Cisco 12G SAS Modular Raid controller
UCSC-MRAIDR-220M5=	Riser 3 to support (MRAID12G) for C220 M5 servers
Modular LAN on Motherboard (mLOM)	
UCSC-MLOM-C100-04=	Cisco UCS VIC 1497 Dual Port 40/100G QSFP28 CNA mLOM
UCSC-MLOM-C25Q-04=	Cisco UCS VIC 1457 Quad Port 10/25G SFP28 mLOM
UCSC-MLOM-C40Q-03=	Cisco UCS VIC 1387 Dual Port 40Gb QSFP+ CNA
UCSC-MLOM-IRJ45=	Intel® i350 Quad Port 1GBase-T NIC
Converged Network Adapters (CNAs)	
UCSC-PCIE-C100-04=	Cisco UCS VIC 1495 Dual Port 40/100G QSFP28 CNA PCIe
UCSC-PCIE-C40Q-03=	Cisco UCS VIC 1385 Dual Port 40Gb QSFP+ CNA w/RDMA
UCSC-PCIE-C25Q-04=	Cisco UCS VIC 1455 Quad Port 10/25G SFP28 CNA PCIE
Network Interface Cards (NICs)	
1 Gb NICs	
UCSC-PCIE-IRJ45=	Intel® i350 Quad Port 1GBase-T NIC
10 Gb NICs	
N2XX-AIPCI01=	Intel® X520 Dual Port 10Gb SFP+ NIC
UCSC-PCIE-ID10GC=	Intel® X550-T2 Dual Port 10GBase-T NIC
UCSC-PCIE-ID10GF=	Intel® X710-DA2 Dual Port 10Gb SFP+ NIC
UCSC-PCIE-IQ10GF=	Intel® X710 Quad Port 10Gb SFP+ NIC
UCSC-PCIE-IQ10GC=	Intel® X710 Quad Port 10GBase-T NIC

Table 38 Spare Parts *(continued)*

Product ID (PID)	PID Description
25 Gb NICs	
UCSC-PCIE-QD25GF=	Qlogic QL41212H Dual Port 25Gb NIC
UCSC-PCIE-ID25GF=	Intel® XXV710 Dual Port 25Gb SFP28 NIC
UCSC-P-M4D25GF=	Mellanox MCX4121A-ACAT dual port 10/25G SFP28 NIC
40 Gb NICs	
UCSC-PCIE-QD40GF=	Qlogic QL45412H Dual Port 40Gb NIC
UCSC-PCIE-ID40GF=	Intel® XL710 Dual Port 40Gb QSFP+ NIC
100 Gb NICs	
UCSC-PCIE-QS100GF=	Qlogic QLE45611HLCU single port 100G NIC
PACK-QSFP-SFP=	Packaging for QSFP 40G and SFP 10G
UCSC-LPBRKT-C40Q=	Low Profile Bracket VIC 1385 Dual Port 40Gb QSFP+ CNA w/RDMA
UCSC-LP-C25-1485=	Low profile bracket for VIC
UCSC-LP-C40-1485=	Low profile bracket for VIC1495
Host Bus Adapters (HBAs)	
UCSC-PCIE-QD16GF=	Qlogic QLE2692 Dual Port 16G Fibre Channel HBA
UCSC-PCIE-BD16GF=	Emulex LPe31002 Dual Port 16G Fibre Channel HBA
UCSC-PCIE-QD32GF=	Qlogic QLE2742 Dual Port 32G Fibre Channel HBA
UCSC-PCIE-BS32GF=	Emulex LPe32000-M2 Single Port 32G Fibre Channel HBA
UCSC-PCIE-BD32GF=	Emulex LPe32002-M2 Dual Port 32G Fibre Channel HBA
UCS NVMe/PCIe Add in Cards	
UCSC-NVME-H76801=	Cisco HHHL AIC 7.7TB HGST SN260 NVMeExtreme Performance Value Endurance
PCI Card accessories	
UCSC-LPBRKT-C40Q=	Low Profile Bracket VIC 1385 Dual Port 40Gb QSFP+ CNA w/RDMA
UCSC-LP-C25-1485=	Low profile bracket for VIC
UCSC-LP-C40-1485=	Low profile bracket for VIC1495
SD Cards	
UCS-SD-32G-S=	32 GB SD Card for UCS servers
UCS-SD-64G-S=	64 GB SD Card for UCS servers

Table 38 Spare Parts *(continued)*

Product ID (PID)	PID Description
UCS-SD-128G=	128GB SD Card for UCS servers
GPU PCIe Cards	
UCSC-GPU-T4-16=	NVIDIA T4 16GB
Power Supply	
UCSC-PSU1-770W=	770W AC power supply for C-Series Servers Platinum
UCSC-PSU1-1050W=	1050W AC power supply for C-Series servers Platinum
UCSC-PSUV2-1050DC=	1050W DC power supply for C-Series servers Platinum
UCSC-PSU1-1600W=	1600W AC power supply for C-Series servers Platinum
UCSC-PSU1-1050ELV=	1050W AC Power Supply C-Series Enhanced Low Line Platinum
UCSC-PSU-M5BLK=	Power Supply Blanking Panel for M5 servers
UCSC-BBLKD-L2=	C-Series M5 LFF drive blanking panel
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, SFS, 250V, 10A, India
CAB-250V-10A-IS=	Power Cord, SFS, 250V, 10A, Israel
CAB-9K10A-IT=	Power Cord, 250VAC 10A CEI 23-16/VII Plug, Italy
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=	Power Cord, 125VAC 13A NEMA 5-15 Plug, North America
CAB-250V-10A-BR=	Power Cord - 250V, 10A - Brazil

Table 38 Spare Parts *(continued)*

Product ID (PID)	PID Description
CAB-C13-C14-2M-JP=	Power Cord C13-C14, 2M/6.5ft Japan PSE mark
CAB-9K10A-KOR=	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-C13-C14-IN=	Power Cord Jumper,C13-C14 Connectors,1.4 Meter Length, India
CAB-C13-C14-3M-IN=	Power Cord Jumper, C13-C14 Connectors, 3 Meter Length, India
CMA	
UCSC-CMA-M5=	Reversible CMA for C220 M4 and M5 rack servers
USB Drive	
UCS-USBFLSHB-16GB=	UCS Servers 16 GB Flash USB Drive (optional)
TPM	
UCSX-TPM2-001=	Trusted Platform Module 1.2 for UCS Servers
UCSX-TPM2-002=	Trusted Platform Module 2.0 for UCS servers
UCSC-INT-SW01=	C220 M5 and C240 M5 Chassis Intrusion Switch
Bezel	
UCSC-BZL-C220M5=	C220 M5 Security Bezel
Software/Firmware	
IMC Supervisor	
CIMC-SUP-BASE-K9=	IMC Supervisor One-time Site Installation License
CIMC-SUP-B01=	IMC Supervisor-Branch Mgt SW for C-Series & E-Series up to 100 Svrs
CIMC-SUP-B02=	IMC Supervisor- Branch Mgt SW for C & E-Series up to 250 Svrs
CIMC-SUP-B10=	IMC Supervisor- Branch Mgt SW for C & E-Series up to 1K Svrs
CIMC-SUP-B25=	IMC Supervisor Branch Mgt SW for C & E-Series 25 Svrs
CIMC-SUP-A01=	IMC Supervisor Adv-Branch Mgt SW for C & E-Series 100 Svrs
CIMC-SUP-A02=	IMC Supervisor Adv-Branch Mgt SW for C & E-Series 250 Svrs
CIMC-SUP-A10=	IMC Supervisor Adv-Branch Mgt SW for C & E-Series 1000 Svrs
CIMC-SUP-A25=	IMC Supervisor Adv-Branch Mgt SW for C & E-Series 250 Svrs
EVAL-CIMC-SUP=	EVAL: IMC Supervisor-Branch Mgt SW for C/E-Series - 50 Svrs
EVAL-CIMC-SUP-BAS=	EVAL: IMC Supervisor One-time Site Installation License

Table 38 Spare Parts *(continued)*

Product ID (PID)	PID Description
UCS Multi-Domain Manager	
UCS-MDMGR-1S=	UCS Central Per Server License **NOTE:** IF you must order quantity greater than 1 of UCS-MDMGR-1S, you need to reference the UCS Central Per Server Data Sheet to order the standalone PIDs: UCS-MDMGR-LIC= or UCS-MDMGR-1DMN=
Red Hat	
RHEL-2S2V-1A=	Red Hat Enterprise Linux (1-2 CPU,1-2 VN); 1-Yr Support Req
RHEL-2S2V-3A=	Red Hat Enterprise Linux (1-2 CPU,1-2 VN); 3-Yr Support Req
RHEL-2S2V-1S=	Red Hat Enterprise Linux (1-2 CPU,1-2 VN); Prem 1-Yr SnS
RHEL-2S2V-3S=	Red Hat Enterprise Linux (1-2 CPU,1-2 VN); Prem 3-Yr SnS
RHEL-2S-HA-1S=	RHEL High Availability (1-2 CPU); Premium 1-yr SnS
RHEL-2S-HA-3S=	RHEL High Availability (1-2 CPU); Premium 3-yr SnS
RHEL-2S-RS-1S=	RHEL Resilient Storage (1-2 CPU); Premium 1-yr SnS
RHEL-2S-RS-3S=	RHEL Resilient Storage (1-2 CPU); Premium 3-yr SnS
RHEL-2S2V-5A=	Red Hat Enterprise Linux (1-2 CPU,1-2 VN); 5-Yr Support Req
RHEL-2S-HA-1A=	RHEL High Availability (1-2 CPU); 1-Yr Support Reqd
RHEL-2S-HA-3A=	RHEL High Availability (1-2 CPU); 3-Yr Support Reqd
RHEL-2S-HA-5A=	RHEL High Availability (1-2 CPU); 5-Yr Support Reqd
RHEL-2S-RS-1A=	RHEL Resilent Storage (1-2 CPU); Premium 1-yr SnS Reqd
RHEL-2S-RS-3A=	RHEL Resilent Storage (1-2 CPU); Premium 3-yr SnS Reqd
RHEL-2S-RS-5A=	RHEL Resilent Storage (1-2 CPU); Premium 5-yr SnS Reqd
Red Hat SAP	
RHEL-SAP-2S2V-1S=	RHEL for SAP Apps (1-2 CPU, 1-2 VN); Prem 1-Yr SnS Reqd
RHEL-SAP-2S2V-3S=	RHEL for SAP Apps (1-2 CPU, 1-2 VN); Prem 3-Yr SnS Reqd
RHEL-SAPSP-3S=	RHEL SAP Solutions Premium - License with 3 Years of SnS
RHEL-SAPSS-3S=	RHEL SAP Solutions Standard - License with 3 Years of SnS
VMware	
VMW-VSP-STD-1A=	VMware vSphere 7 Std (1 CPU, 32 Core) 1-yr, Support Required
VMW-VSP-STD-3A=	VMware vSphere 7 Std (1 CPU, 32 Core) 3-yr, Support Required
VMW-VSP-STD-5A=	VMware vSphere 7 Std (1 CPU, 32 Core) 5-yr, Support Required

Table 38 Spare Parts *(continued)*

Product ID (PID)	PID Description
VMW-VSP-EPL-1A=	VMware vSphere 7 Ent Plus (1 CPU, 32 Core) 1Yr, Support Reqd
VMW-VSP-EPL-3A=	VMware vSphere 7 Ent Plus (1 CPU, 32 Core) 3Yr, Support Reqd
VMW-VSP-EPL-5A=	VMware vSphere 7 Ent Plus (1 CPU, 32 Core) 5Yr, Support Reqd
SLES and SAP	
SLES-SAP-2S2V-1A=	SLES for SAP Apps (1-2 CPU, 1-2 VM); 1-Yr Support Reqd
SLES-SAP-2S2V-3A=	SLES for SAP Apps (1-2 CPU, 1-2 VM); 3-Yr Support Reqd
SLES-SAP-2S2V-5A=	SLES for SAP Apps (1-2 CPU, 1-2 VM); 5-Yr Support Reqd
SLES-SAP-2S2V-1S=	SLES for SAP Apps (1-2 CPU, 1-2 VM); Priority 1-Yr SnS
SLES-SAP-2S2V-3S=	SLES for SAP Apps (1-2 CPU, 1-2 VM); Priority 3-Yr SnS
SLES-SAP-2S2V-5S=	SLES for SAP Apps (1-2 CPU, 1-2 VM); Priority 5-Yr SnS
SUSE	
SLES-2S2V-1A=	SUSE Linux Enterprise Svr (1-2 CPU,1-2 VM); 1-Yr Support Req
SLES-2S2V-3A=	SUSE Linux Enterprise Svr (1-2 CPU,1-2 VM); 3-Yr Support Req
SLES-2S2V-5A=	SUSE Linux Enterprise Svr (1-2 CPU,1-2 VM); 5-Yr Support Req
SLES-2S2V-1S=	SUSE Linux Enterprise Svr (1-2 CPU,1-2 VM); Prio 1-Yr SnS
SLES-2S2V-3S=	SUSE Linux Enterprise Svr (1-2 CPU,1-2 VM); Prio 3-Yr SnS
SLES-2S2V-5S=	SUSE Linux Enterprise Svr (1-2 CPU,1-2 VM); Prio 5-Yr SnS
SLES-2S-HA-1S=	SUSE Linux High Availability Ext (1-2 CPU); 1yr SnS
SLES-2S-HA-3S=	SUSE Linux High Availability Ext (1-2 CPU); 3yr SnS
SLES-2S-HA-5S=	SUSE Linux High Availability Ext (1-2 CPU); 5yr SnS
SLES-2S-GC-1S=	SUSE Linux GEO Clustering for HA (1-2 CPU); 1yr Sns
SLES-2S-GC-3S=	SUSE Linux GEO Clustering for HA (1-2 CPU); 3yr SnS
SLES-2S-GC-5S=	SUSE Linux GEO Clustering for HA (1-2 CPU); 5yr SnS
SLES-2S-LP-1S=	SUSE Linux Live Patching Add-on (1-2 CPU); 1yr SnS Required
SLES-2S-LP-3S=	SUSE Linux Live Patching Add-on (1-2 CPU); 3yr SnS Required
Microsoft	
MSWS-19-DC16C=	Windows Server 2019 Data Center (16 Cores/Unlimited VMs)
MSWS-19-DC16C-NS=	Windows Server 2019 DC (16 Cores/Unlim VMs) - No Cisco SVC
MSWS-19-ST16C=	Windows Server 2019 Standard (16 Cores/2 VMs)

Table 38 Spare Parts *(continued)*

Product ID (PID)	PID Description
MSWS-19-ST16C-NS=	Windows Server 2019 Standard (16 Cores/2 VMs) - No Cisco SVC
MSWS-22-ST16C=	Windows Server 2022 Standard (16 Cores/2 VMs)
MSWS-22-ST16C-NS=	Windows Server 2022 Standard (16 Cores/2 VMs) - No Cisco SVC
MSWS-22-DC16C=	Windows Server 2022 Data Center (16 Cores/Unlimited VMs)
MSWS-22-DC16C-NS=	Windows Server 2022 DC (16 Cores/Unlim VMs) - No Cisco SVC

Notes:

1. This part is included with the purchase of option or spare CPU or CPU processor kits.

Please refer to “Cisco UCS C220 M5 Server Installation and Service Guide” for installation procedures. See this link:
https://www.cisco.com/c/en/us/td/docs/unified_computing/ucs/c/hw/C220M5/install/C220M5.html

Memory Support for CPU Classes and CPU Modes

For 2nd Generation Intel® Xeon® Scalable Processors:

- DIMMs and PMem are supported
- CPU PIDs ending in “M” support up to a limit of 2048 GB per CPU
- CPU PIDs ending in “L” support up to a limit of 4608 GB per CPU
- All other CPU PIDs support up to a limit of 1024 GB per CPU
- For the App Direct Mode, both PMem and DIMM capacities count towards the CPU capacity limit
- For the Memory Mode and Mixed Mode only the PMem capacity counts towards the CPU capacity limit

For Configurations Using Only DIMMs

- CPU PIDs ending in “M” support DIMM capacities up to 1536 GB per CPU (using 12 x 128 GB DIMMs) and DIMM capacities up to 2048 GB per CPU (using 8 x 256 GB DIMMs).
- CPU PIDs ending in “L” support DIMM capacities up to 1536 GB per CPU (using 12 x 128 GB DIMMs) and DIMM capacities up to 3072 GB per CPU (using 12 x 256 GB DIMMs). The 4608 GB limit cannot be reached with these capacity DIMMs.
- CPU PIDs not ending in “L” or “M” support DIMM capacities up to 1024 GB per CPU (using 8 x 128 GB DIMMs or 4 x 256 GB DIMMs).

For Configurations Using DIMMs and PMem in App Direct Mode

- CPU PIDs ending in “M” support capacities up to 1792 GB per CPU (using 6 x 128 GB DIMMS and 2 x 512 GB PMem or 4 x 256 GB PMem) or up to 2048 GB per CPU (using 6 x 256 GB DIMMs and 2 x 256 GB PMem or 6 x 256 GB DIMMs and 4 x 128 GB PMem)
- CPU PIDs ending in “L” support capacities up to 3840 GB per CPU (using 6 x 128 GB DIMMs and 6 x 512 GB PMem) or up to 4608 GB per CPU (using 6 x 256 GB DIMMs and 6 x 512 GB PMem)
- CPU PIDs not ending in “L” or “M” support capacities up to 1024 GB per CPU (using 6 x 128 GB DIMMs and 2 x 128 GB PMem).

For Configurations Using DIMMs and PMem in Memory or Mixed Mode



NOTE: For Memory and Mixed Modes, DIMMs are used as cache and do not factor into CPU capacity.

- CPU PIDs ending in “M” support capacities up to 2048 GB per CPU using:
  - 6 x 128 GB DIMMs as cache and 4 x 512 GB PMem as memory, or
  - 6x 256 GB DIMMs as cache and 4 x 512 GB PMem as memory
- CPU PIDs ending in “L” support capacities up to 3072 GB using:
  - 6 x 128 GB DIMMs as cache and 6 x 512 GB PMem as memory, or

- 6 x 256 GB DIMMs as cache and 6 x 512 GB PMem as memory

The allowable 4608 limit for PMem capacity is not reached in this case.

- CPU PIDs not ending in “L” or “M” support capacities up to 1024 GB per CPU using:
  - 6 x 128 GB DIMMs as cache and 2 x 512 GB PMem as memory, or
  - 6 x 256 GB DIMMs as cache and 2 x 512 GB PMem as memory

For Intel® Xeon® Scalable Processors:

- DIMMs are supported; PMem are not supported
- CPU PIDs ending in “M' support DIMM capacities up to 1536 GB per CPU (using 12 x 128 GB DIMMs).

All other CPU PIDs support DIMM capacities up to 768 GB per CPU (using 6 x 128 GB DIMMs or 12 x 64 GB DIMMs)

UPGRADING or REPLACING CPUs

NOTE: Before servicing any CPU, do the following:

- Decommission and power off the server.
- Slide the C220 M5 LFF server out from the rack.
- Remove the top cover.

To replace an existing CPU, follow these steps:

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

- T-30 Torx driver—Supplied with replacement CPU.
- #1 flat-head screwdriver—Supplied with replacement CPU.
- CPU assembly tool—Supplied with replacement CPU. Can be ordered separately as Cisco PID UCS-CPUAT=.
- Heatsink cleaning kit—Supplied with replacement CPU. Can be ordered separately as Cisco PID UCSX-HSCK=.
- Thermal interface material (TIM)—Syringe supplied with replacement CPU. Can be ordered separately as Cisco PID UCS-CPU-TIM=.

(2) Order the appropriate replacement CPU from *Table 3 on page 11*

(3) Carefully remove and replace the CPU and heatsink in accordance with the instructions found in "Cisco UCS C220 M5 Server Installation and Service Guide," found at: https://www.cisco.com/c/en/us/td/docs/unified_computing/ucs/c/hw/C220M5/install/C220M5/C220M5_chapter_010.html#concept_bfk_kwp_hz.

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.
- #1 flat-head screwdriver—Supplied with new CPU
- CPU assembly tool—Supplied with new CPU.Can be ordered separately as Cisco PID UCS-CPUAT=
- Thermal interface material (TIM)—Syringe supplied with replacement CPU.Can be ordered separately as Cisco PID UCS-CPU-TIM=

(2) Order the appropriate new CPU from *Table 3 on page 11***.**

(3) Order one heat sink for each new CPU. Order PID UCSC-HS-C220M5= for CPUs that dissipate 150 W or less. Order PID UCSC-HS2-C220M5= for CPUs that dissipate more than 150 W.

(4) Carefully install the CPU and heatsink in accordance with the instructions found in "Cisco UCS C220 M5 Server Installation and Service Guide," found at: https://www.cisco.com/c/en/us/td/docs/unified_computing/ucs/c/hw/C220M5/install/C220M5/C220M5_chapter_010.html#concept_bfk_kwp_hz.

UPGRADING or REPLACING MEMORY

NOTE: Before servicing any DIMM or PMem, do the following:

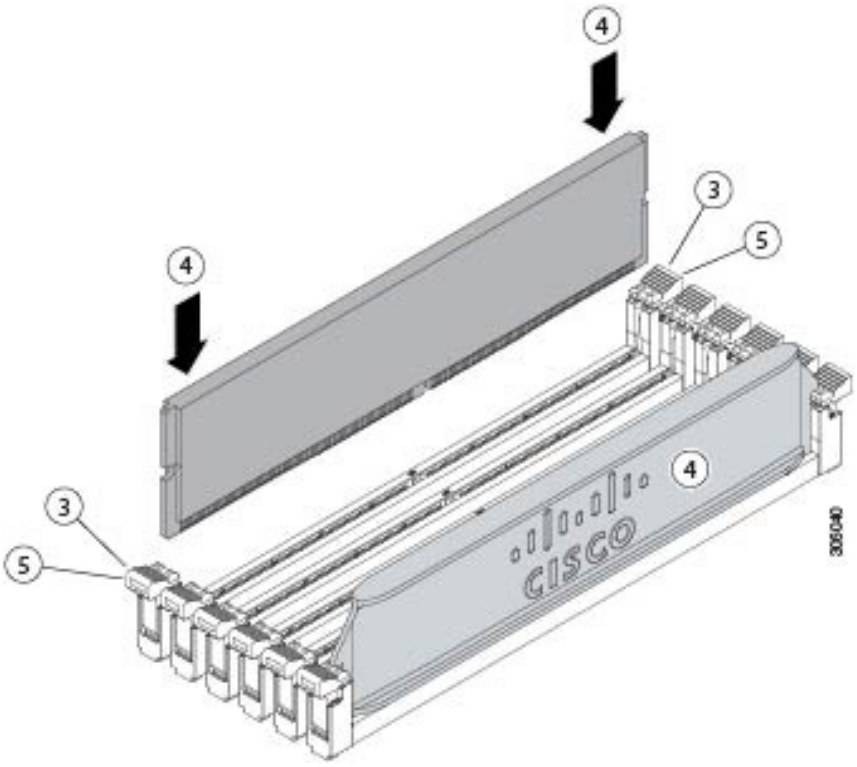
- Decommission and power off the server.
- Remove the top cover from the server
- Slide the server out the front of the chassis.

To add or replace DIMMs or PMem, follow these steps:

(1) Order new DIMMs or PMem as needed from *Table 4 on page 17*.

(2) Open both connector latches and remove and replace the DIMM/PMem as needed.

Figure 10 Replacing Memory



(3) Press evenly on both ends of the DIMM/PMem until it clicks into place in its slot.



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

(4) Press the connector latches inward slightly to seat them fully.

For additional details on replacing or upgrading DIMMs and PMem, see “Cisco UCS C220 M5 Server Installation and Service Guide,” found at these links:

https://www.cisco.com/c/en/us/td/docs/unified_computing/ucs/c/hw/C220M5/install/C220M5/C220M5_chapter_010.html#concept_c53_tbp_hz

https://www.cisco.com/c/en/us/td/docs/unified_computing/ucs/c/hw/C220M5/install/C220M5/C220M5_chapter_010.html#concept_b1k_mbt_tgb

DISCONTINUED EOL PRODUCTS

Below is the list of parts were previously available for this product and are no longer sold. Please refer to the EOL Bulletin Links via the *Table 39* below to determine, if still supported.

Table 39 EOL Products

EOS option PID	Description	EOL bulletin link
DRIVES		
HDD		
UCS-HD8T7KL4KN	8 TB 12G SAS 7.2K RPM LFF HDD (4K)	https://www.cisco.com/c/en/us/products/collateral/servers-unified-computing/ucs-c-series-rack-servers/eos-eol-notice-c51-743558.html
UCS-HD8T7KL6GN	8 TB 6G SATA 7.2K RPM LFF HDD (512e)	https://www.cisco.com/c/en/us/products/collateral/servers-unified-computing/ucs-c-series-rack-servers/eos-eol-notice-c51-742823.html
UCS-HD10T7KL6GN	10 TB 6G SATA 7.2K RPM LFF HDD (512e)	https://www.cisco.com/c/en/us/products/collateral/servers-unified-computing/ucs-c-series-rack-servers/eos-eol-notice-c51-743832.html
UCS-HD1T7KL12N	1TB 12G SAS 7.2K RPM LFF HDD	https://www.cisco.com/c/en/us/products/collateral/servers-unified-computing/ucs-c-series-rack-servers/select-ucs-hyperflex-accessories-eol.html
UCS-HD1T7KL6GN	1 TB 6G SATA 7.2K RPM LFF HDD	https://www.cisco.com/c/en/us/products/collateral/servers-unified-computing/ucs-c-series-rack-servers/select-ucs-hyperflex-accessories-eol.html
UCS-HD10T7KLEM	10 TB 12G SAS 7.2K RPM LFF HDD (512e)	https://www.cisco.com/c/en/us/products/collateral/servers-unified-computing/ucs-c-series-rack-servers/eos-eol-notice-c51-742823.html
UCS-HD4T7KL6GN	4 TB 6G SATA 7.2K RPM LFF HDD	https://www.cisco.com/c/en/us/products/collateral/servers-unified-computing/ucs-c-series-rack-servers/eos-eol-notice-c51-742823.html
UCS-HD6T7KL6GN	6 TB 6G SATA 7.2K RPM LFF HDD (512e)	https://www.cisco.com/c/en/us/products/collateral/servers-unified-computing/ucs-c-series-rack-servers/eos-eol-notice-c51-742823.html
UCS-HD10T7KL4KN	10 TB 12G SAS 7.2K RPM LFF HDD (4K)	https://www.cisco.com/c/en/us/products/collateral/servers-unified-computing/ucs-c-series-rack-servers/select-ucs-hyperflex-accessories-eol.html
UCS-HD2T7KL6GN	2 TB 6G SATA 7.2K RPM LFF HDD	https://www.cisco.com/c/en/us/products/collateral/servers-unified-computing/ucs-c-series-rack-servers/select-ucs-hyperflex-accessories-eol.html
Enterprise Value SSDs		
UCS-HY16T61X-EV	1.6TB 3.5 inch Enterprise Value 6G SATA SSD	https://www.cisco.com/c/en/us/products/collateral/servers-unified-computing/ucs-c-series-rack-servers/eos-eol-notice-c51-741895.html
UCS-SD240G61X-EV	240GB 2.5 inch Enterprise Value 6G SATA SSD	https://www.cisco.com/c/en/us/products/collateral/servers-unified-computing/ucs-b-series-blade-servers/eos-eol-notice-c51-742066.html

Table 39 EOL Products

EOS option PID	Description	EOL bulletin link
UCS-SD480G61X-EV	480 GB 2.5 inch Enterprise Value 6G SATA SSD	https://www.cisco.com/c/en/us/products/collateral/servers-unified-computing/ucs-c-series-rack-servers/eos-eol-notice-c51-741644.html
UCS-HY150G61X-EV	150 GB 2.5 inch Enterprise Value 6G SATA SSD (Intel® 3520)	https://www.cisco.com/c/en/us/products/collateral/servers-unified-computing/ucs-c-series-rack-servers/eos-eol-notice-c51-741644.html
UCS-HY960G61X-EV	960GB 3.5 inch Enterprise Value 6G SATA SSD	https://www.cisco.com/c/en/us/products/collateral/servers-unified-computing/ucs-c-series-rack-servers/select-ucs-hyperflex-accessories-eol2.html
NVMe		
UCSC-NVMELW-I500	500GB 2.5in U.2 Intel® P4501 NVMe Med. Perf. Value Endurance	https://www.cisco.com/c/en/us/products/collateral/servers-unified-computing/ucs-c-series-rack-servers/eos-eol-notice-c51-742509.html
UCSC-NVMEHY-H1600	1.6 TB HGST SN200 NVMe High Perf. High Endurance (HGST)	https://www.cisco.com/c/en/us/products/collateral/hyperconverged-infrastructure/hyperflex-hx-series/eos-eol-notice-c51-2451489.html
UCSC-NVMEHY-H3200	3.2 TB HGST SN200 NVMe High Perf. High Endurance (HGST)	https://www.cisco.com/c/en/us/products/collateral/hyperconverged-infrastructure/hyperflex-hx-series/eos-eol-notice-c51-2451489.html
UCSC-NVME-H32003	Cisco HHHL AIC 3.2T HGST SN260 NVMe Extreme Perf High Endrnc	https://www.cisco.com/c/en/us/products/collateral/servers-unified-computing/ucs-c-series-rack-servers/eos-eol-notice-c51-2412151.html
UCSC-NVME-H38401	Cisco HHHL AIC 3.8TB HGST SN260 NVMe Extreme Performance High Endurance	https://www.cisco.com/c/en/us/products/collateral/servers-unified-computing/ucs-c-series-rack-servers/eos-eol-notice-c51-2412151.html
UCSC-NVMEHW-H6400	6.4TB HGST SN200 NVMe High Perf. High Endurance (HGST)	https://www.cisco.com/c/en/us/products/collateral/hyperconverged-infrastructure/hyperflex-hx-series/eos-eol-notice-c51-2451489.html
UCSC-NVME-H64003	Cisco HHHL AIC 6.4T HGST SN260 NVMe Extreme Perf High Endrnc	https://www.cisco.com/c/en/us/products/collateral/servers-unified-computing/ucs-c-series-rack-servers/eos-eol-notice-c51-2412151.html
UCSC-NVME2H-I2TBV	Cisco 2.5" U.2 2.0TB Intel P4510 NVMe High Perf. Value Endu	https://www.cisco.com/c/en/us/products/collateral/servers-unified-computing/ucs-c-series-rack-servers/select-ucs-hyperflex-accessories-eol3.html
UCSC-NVME2H-I1000	Cisco 2.5" U.2 1,0 TB Intel P4510 NVMe High Perf. Value Endu	https://www.cisco.com/c/en/us/products/collateral/servers-unified-computing/ucs-c-series-rack-servers/select-ucs-hyperflex-accessories-eol3.html
UCSC-NVME2H-I4000	Cisco 2.5" U.2 4.0TB Intel P4510 NVMe High Perf. Value Endu	https://www.cisco.com/c/en/us/products/collateral/servers-unified-computing/ucs-c-series-rack-servers/select-ucs-hyperflex-accessories-eol3.html

Table 39 EOL Products

EOS option PID	Description	EOL bulletin link
UCS-SD960G2HTNK9	960GB Enterprise Value SSD 12G SAS SED FIPS	https://www.cisco.com/c/en/us/products/collateral/hyperconverged-infrastructure/hyperflex-hx-series/eos-eol-notice-c51-2451489.html
UCSC-F-H16003	Cisco HHHL AIC 1.6T HGST SN260 NVMe Extreme Perf High Endrnc	https://www.cisco.com/c/en/us/products/collateral/servers-unified-computing/ucs-c-series-rack-servers/eos-eol-notice-c51-2412151.html
UCSC-NVME-H76801	Cisco HHHL 7.7T HGST SN260 NVMe Extreme Perf Value Enderance	https://www.cisco.com/c/en/us/products/collateral/servers-unified-computing/ucs-c-series-rack-servers/eos-eol-notice-c51-2412151.html
UCSC-NVME2H-I1600	Cisco 2.5" U.2 1.6TB Intel P4610 NVMe High Perf. High Endu	http://https://www.cisco.com/c/en/us/products/collateral/servers-unified-computing/ucs-c-series-rack-servers/select-ucs-hyperflex-accessories-eol3.html-eol.cisco.com/eol/pbReport.html?id=ID1031408
Enterprise Performance SSDs		
UCS-HY16T63X-EP	1.6TB 3.5in Enterprise Performance 6GSATA SSD(3X endurance)	https://www.cisco.com/c/en/us/products/collateral/servers-unified-computing/ucs-b-series-blade-servers/eos-eol-notice-c51-742066.html
UCS-HY400G12TX-EP	400 GB 3.5 inch Enterprise performance 12G SAS SSD (10X DWPD) (Toshiba PM4)	https://www.cisco.com/c/en/us/products/collateral/servers-unified-computing/ucs-b-series-blade-servers/eos-eol-notice-c51-742066.html
UCS-HY800G12TX-EP	800 GB 3.5 inch Enterprise performance 12G SAS SSD (10X DWPD) (Toshiba PM4)	https://www.cisco.com/c/en/us/products/collateral/servers-unified-computing/ucs-c-series-rack-servers/eos-eol-notice-c51-741644.html
UCS-HY16TB12TX-EP	1.6 TB 3.5 inch Enterprise performance 12G SAS SSD (10X DWPD) (Toshiba PM4)	https://www.cisco.com/c/en/us/products/collateral/servers-unified-computing/ucs-c-series-rack-servers/eos-eol-notice-c51-741644.html
UCS-SD400GBCNK9	400 GB Enterprise performance SAS LFF SSD (10X DWPD, SED) (Micron 650DC)	https://www.cisco.com/c/en/us/products/collateral/servers-unified-computing/ucs-c-series-rack-servers/ucs-hyperflex-accessories-eol.html
UCS-HY16T123X-EP	1.6 TB 3.5in Enterprise performance 12G SAS SSD (3X endurance)	https://www.cisco.com/c/en/us/products/collateral/hyperconverged-infrastructure/hyperflex-hx-series/eos-eol-notice-c51-2451489.html
UCS-HY400G123X-EP	400GB 3.5in Enterprise performance 12G SAS SSD(3X endurance)	https://www.cisco.com/c/en/us/products/collateral/hyperconverged-infrastructure/hyperflex-hx-series/eos-eol-notice-c51-2451489.html
UCS-SD800GBCNK9	800 GB Enterprise performance SAS LFF SSD (10X DWPD, SED) (Micron 650DC)	https://www.cisco.com/c/en/us/products/collateral/servers-unified-computing/ucs-c-series-rack-servers/ucs-hyperflex-accessories-eol.html
UCS-HY800G123X-EP	800GB 3.5in Enterprise performance 12G SAS SSD(3X endurance)	https://www.cisco.com/c/en/us/products/collateral/hyperconverged-infrastructure/hyperflex-hx-series/eos-eol-notice-c51-2451489.html
CPU		
UCS-CPU-I8280M	Intel® 8280M 2.7GHz/205W 28C/38.50MB 3DX DDR4 2TB 2933 MHz	https://www.cisco.com/c/en/us/products/collateral/servers-unified-computing/ucs-c-series-rack-servers/eos-eol-notice-c51-743832.html

Table 39 EOL Products

EOS option PID	Description	EOL bulletin link
UCS-CPU-I8276M	Intel® 8276M 2.2GHz/165W 28C/38.50MB 3DX DDR4 2TB 2933 MHz	https://www.cisco.com/c/en/us/products/collateral/servers-unified-computing/ucs-c-series-rack-servers/eos-eol-notice-c51-743832.html
UCS-CPU-I8260M	Intel® 8260M 2.4GHz/165W 24C/35.75MB 3DX DDR4 2TB 2933 MHz	https://www.cisco.com/c/en/us/products/collateral/servers-unified-computing/ucs-c-series-rack-servers/eos-eol-notice-c51-743832.html
UCS-CPU-I6240M	Intel® 6240M 2.6GHz/150W 18C/24.75MB 3DX DDR4 2TB 2933 MHz	https://www.cisco.com/c/en/us/products/collateral/servers-unified-computing/ucs-c-series-rack-servers/eos-eol-notice-c51-743832.html
UCS-CPU-I6238M	Intel® 6238M 2.1GHz/140W 22C/30.25MB 3DX DDR4 2TB 2933 MHz	https://www.cisco.com/c/en/us/products/collateral/servers-unified-computing/ucs-c-series-rack-servers/eos-eol-notice-c51-743832.html
UCS-CPU-I5215M	Intel® 5215M 2.5GHz/85W 10C/13.75MB 3DX DDR4 2TB 2666MHz	https://www.cisco.com/c/en/us/products/collateral/servers-unified-computing/ucs-c-series-rack-servers/eos-eol-notice-c51-743832.html
UCS-CPU-8180M	2.5 GHz 8180M/205W 28C/38.50MB Cache/DDR4 2666MHz	https://www.cisco.com/c/en/us/products/collateral/servers-unified-computing/ucs-c-series-rack-servers/eos-eol-notice-c51-744580.html
UCS-CPU-8176M	2.1 GHz 8176M/165W 28C/38.50MB Cache/DDR4 2666MHz	https://www.cisco.com/c/en/us/products/collateral/servers-unified-computing/ucs-c-series-rack-servers/eos-eol-notice-c51-744580.html
UCS-CPU-8170M	2.1 GHz 8170M/165W 26C/35.75MB Cache/DDR4 2666MHz	https://www.cisco.com/c/en/us/products/collateral/servers-unified-computing/ucs-c-series-rack-servers/eos-eol-notice-c51-744580.html
UCS-CPU-8160M	2.1 GHz 8160M/150W 24C/33MB Cache/DDR4 2666MHz	https://www.cisco.com/c/en/us/products/collateral/servers-unified-computing/ucs-c-series-rack-servers/eos-eol-notice-c51-744580.html
UCS-CPU-8180	2.5 GHz 8180/205W 28C/38.50MB Cache/DDR4 2666MHz	https://www.cisco.com/c/en/us/products/collateral/servers-unified-computing/ucs-c-series-rack-servers/eos-eol-notice-c51-744580.html
UCS-CPU-8176	2.1 GHz 8176/165W 28C/38.50MB Cache/DDR4 2666MHz	https://www.cisco.com/c/en/us/products/collateral/servers-unified-computing/ucs-c-series-rack-servers/eos-eol-notice-c51-744580.html
UCS-CPU-8170	2.1 GHz 8170/165W 26C/35.75MB Cache/DDR4 2666MHz	https://www.cisco.com/c/en/us/products/collateral/servers-unified-computing/ucs-c-series-rack-servers/eos-eol-notice-c51-744580.html
UCS-CPU-8168	2.7 GHz 8168/205W 24C/33MB Cache/DDR4 2666MHz	https://www.cisco.com/c/en/us/products/collateral/servers-unified-computing/ucs-c-series-rack-servers/eos-eol-notice-c51-744580.html
UCS-CPU-8164	2.0 GHz 8164/150W 26C/35.75MB Cache/DDR4 2666MHz	https://www.cisco.com/c/en/us/products/collateral/servers-unified-computing/ucs-c-series-rack-servers/eos-eol-notice-c51-744580.html
UCS-CPU-8160T	2.1 GHz 8160/150W 24C/33MB Cache/DDR4 2666MHz	https://www.cisco.com/c/en/us/products/collateral/servers-unified-computing/ucs-c-series-rack-servers/eos-eol-notice-c51-744580.html
UCS-CPU-8160	2.1 GHz 8160/150W 24C/33MB Cache/DDR4 2666MHz	https://www.cisco.com/c/en/us/products/collateral/servers-unified-computing/ucs-c-series-rack-servers/eos-eol-notice-c51-744580.html

Table 39 EOL Products

EOS option PID	Description	EOL bulletin link
UCS-CPU-8158	3.0 GHz 8158/150W 12C/24.75MB Cache/DDR4 2666MHz	https://www.cisco.com/c/en/us/products/collateral/servers-unified-computing/ucs-c-series-rack-servers/eos-eol-notice-c51-744580.html
UCS-CPU-8156	3.6 GHz 8156/105W 4C/16.50MB Cache/DDR4 2666MHz	https://www.cisco.com/c/en/us/products/collateral/servers-unified-computing/ucs-c-series-rack-servers/eos-eol-notice-c51-744580.html
UCS-CPU-8153	2.0 GHz 8153/125W 16C/22MB Cache/DDR4 2666MHz	https://www.cisco.com/c/en/us/products/collateral/servers-unified-computing/ucs-c-series-rack-servers/eos-eol-notice-c51-744580.html
UCS-CPU-6142M	2.6 GHz 6142M/150W 16C/22MB Cache/DDR4 2666MHz	https://www.cisco.com/c/en/us/products/collateral/servers-unified-computing/ucs-c-series-rack-servers/eos-eol-notice-c51-744580.html
UCS-CPU-6140M	2.3 GHz 6140M/140W 18C/24.75MB Cache/DDR4 2666MHz	https://www.cisco.com/c/en/us/products/collateral/servers-unified-computing/ucs-c-series-rack-servers/eos-eol-notice-c51-744580.html
UCS-CPU-6134M	3.2 GHz 6134M/130W 8C/24.75MB Cache/DDR4 2666MHz	https://www.cisco.com/c/en/us/products/collateral/servers-unified-computing/ucs-c-series-rack-servers/eos-eol-notice-c51-744580.html
UCS-CPU-6154	3.0 GHz 6154/**200W** 18C/24.75MB Cache/DDR4 2666MHz	https://www.cisco.com/c/en/us/products/collateral/servers-unified-computing/ucs-c-series-rack-servers/eos-eol-notice-c51-744580.html
UCS-CPU-6152	2.1 GHz 6152/140W 22C/30.25MB Cache/DDR4 2666MHz	https://www.cisco.com/c/en/us/products/collateral/servers-unified-computing/ucs-c-series-rack-servers/eos-eol-notice-c51-744580.html
UCS-CPU-6150	2.7 GHz 6150/**165W** 18C/24.75MB Cache/DDR4 2666MHz	https://www.cisco.com/c/en/us/products/collateral/servers-unified-computing/ucs-c-series-rack-servers/eos-eol-notice-c51-744580.html
UCS-CPU-6148	2.4 GHz 6148/150W 20C/27.50MB Cache/DDR4 2666MHz	https://www.cisco.com/c/en/us/products/collateral/servers-unified-computing/ucs-c-series-rack-servers/eos-eol-notice-c51-744580.html
UCS-CPU-6144	3.5 GHz 6144/150W 8C/24.75MB Cache/DDR4 2666MHz	https://www.cisco.com/c/en/us/products/collateral/servers-unified-computing/ucs-c-series-rack-servers/eos-eol-notice-c51-744580.html
UCS-CPU-6142	2.6 GHz 6142/150W 16C/22MB Cache/DDR4 2666MHz	https://www.cisco.com/c/en/us/products/collateral/servers-unified-computing/ucs-c-series-rack-servers/eos-eol-notice-c51-744580.html
UCS-CPU-6140	2.3 GHz 6140/140W 18C/24.75MB Cache/DDR4 2666MHz	https://www.cisco.com/c/en/us/products/collateral/servers-unified-computing/ucs-c-series-rack-servers/eos-eol-notice-c51-744580.html
UCS-CPU-6138T	2.0 GHz 6138T/125W 20C/27.5MB Cache/DDR4 2666MHz	https://www.cisco.com/c/en/us/products/collateral/servers-unified-computing/ucs-c-series-rack-servers/eos-eol-notice-c51-744580.html
UCS-CPU-6138	2.0 GHz 6138/125W 20C/27.50MB Cache/DDR4 2666MHz	https://www.cisco.com/c/en/us/products/collateral/servers-unified-computing/ucs-c-series-rack-servers/eos-eol-notice-c51-744580.html
UCS-CPU-6136	3.0 GHz 6136/150W 12C/24.75MB Cache/DDR4 2666MHz	https://www.cisco.com/c/en/us/products/collateral/servers-unified-computing/ucs-c-series-rack-servers/eos-eol-notice-c51-744580.html

Table 39 EOL Products

EOS option PID	Description	EOL bulletin link
UCS-CPU-6134	3.2 GHz 6134/130W 8C/24.75MB Cache/DDR4 2666MHz	https://www.cisco.com/c/en/us/products/collateral/servers-unified-computing/ucs-c-series-rack-servers/eos-eol-notice-c51-744580.html
UCS-CPU-6132	2.6 GHz 6132/140W 14C/19.25MB Cache/DDR4 2666MHz	https://www.cisco.com/c/en/us/products/collateral/servers-unified-computing/ucs-c-series-rack-servers/eos-eol-notice-c51-744580.html
UCS-CPU-6130	2.1 GHz 6130/125W 16C/22MB Cache/DDR4 2666MHz	https://www.cisco.com/c/en/us/products/collateral/servers-unified-computing/ucs-c-series-rack-servers/eos-eol-notice-c51-744580.html
UCS-CPU-6128	3.4 GHz 6128/115W 6C/19.25MB Cache/DDR4 2666MHz	https://www.cisco.com/c/en/us/products/collateral/servers-unified-computing/ucs-c-series-rack-servers/eos-eol-notice-c51-744580.html
UCS-CPU-6126	2.6 GHz 6126/125W 12C/19.25MB Cache/DDR4 2666MHz	https://www.cisco.com/c/en/us/products/collateral/servers-unified-computing/ucs-c-series-rack-servers/eos-eol-notice-c51-744580.html
UCS-CPU-5122	3.6 GHz 5122/105W 4C/16.50MB Cache/DDR4 2666MHz	https://www.cisco.com/c/en/us/products/collateral/servers-unified-computing/ucs-c-series-rack-servers/eos-eol-notice-c51-744580.html
UCS-CPU-5120	2.2 GHz 5120/105W 14C/19.25MB Cache/DDR4 2400MHz	https://www.cisco.com/c/en/us/products/collateral/servers-unified-computing/ucs-c-series-rack-servers/eos-eol-notice-c51-744580.html
UCS-CPU-5118	2.3 GHz 5118/105W 12C/16.50MB Cache/DDR4 2400MHz	https://www.cisco.com/c/en/us/products/collateral/servers-unified-computing/ucs-c-series-rack-servers/eos-eol-notice-c51-744580.html
UCS-CPU-5117	2.0 GHz 5117/105W 14C/19.25MB Cache/DDR4 2400MHz	https://www.cisco.com/c/en/us/products/collateral/servers-unified-computing/ucs-c-series-rack-servers/eos-eol-notice-c51-744580.html
UCS-CPU-5115	2.4 GHz 5115/85W 10C/13.75MB Cache/DDR4 2400MHz	https://www.cisco.com/c/en/us/products/collateral/servers-unified-computing/ucs-c-series-rack-servers/eos-eol-notice-c51-744580.html
UCS-CPU-I3204	Intel 3204 1.9GHz/85W 6C/8.25MB DDR4 2133MHz	https://www.cisco.com/c/en/us/products/collateral/servers-unified-computing/ucs-c-series-rack-servers/select-ucs-accessories-eol.html
UCS-CPU-I4214Y	Intel 4214Y SS 2.2GHz/85W 12/10/8C 16.75MB DDR4 2400MHz	https://www.cisco.com/c/en/us/products/collateral/servers-unified-computing/ucs-c-series-rack-servers/select-ucs-accessories-eol.html
UCS-CPU-I6250	Intel 6250 3.9GHz/185W 8C/35.75MB PMM DDR4 1TB 2933 MHz	https://www.cisco.com/c/en/us/products/collateral/servers-unified-computing/ucs-c-series-rack-servers/select-ucs-accessories-eol.html
UCS-CPU-I6252N	Intel 6252N 2.3GHz/150W 24C/35.75MB DCP DDR4 2933 MHz	https://www.cisco.com/c/en/us/products/collateral/servers-unified-computing/ucs-c-series-rack-servers/select-ucs-accessories-eol.html
UCS-CPU-4116	2.1 GHz 4116/85W 12C/16.50MB Cache/DDR4 2400MHz	https://www.cisco.com/c/en/us/products/collateral/servers-unified-computing/ucs-c-series-rack-servers/eos-eol-notice-c51-744580.html
UCS-CPU-4114	2.2 GHz 4114/85W 10C/13.75MB Cache/DDR4 2400MHz	https://www.cisco.com/c/en/us/products/collateral/servers-unified-computing/ucs-c-series-rack-servers/eos-eol-notice-c51-744580.html

Table 39 EOL Products

EOS option PID	Description	EOL bulletin link
UCS-CPU-4112	2.6 GHz 4112/85W 4C/8.25MB Cache/DDR4 2400MHz	https://www.cisco.com/c/en/us/products/collateral/servers-unified-computing/ucs-c-series-rack-servers/eos-eol-notice-c51-744580.html
UCS-CPU-4110	2.1 GHz 4110/85W 8C/11MB Cache/DDR4 2400MHz	https://www.cisco.com/c/en/us/products/collateral/servers-unified-computing/ucs-c-series-rack-servers/eos-eol-notice-c51-744580.html
UCS-CPU-4108	1.8 GHz 4108/85W 8C/11MB Cache/DDR4 2400MHz	https://www.cisco.com/c/en/us/products/collateral/servers-unified-computing/ucs-c-series-rack-servers/eos-eol-notice-c51-744580.html
UCS-CPU-3106	1.7 GHz 3106/85W 8C/11MB Cache/DDR4 2133MHz	https://www.cisco.com/c/en/us/products/collateral/servers-unified-computing/ucs-c-series-rack-servers/eos-eol-notice-c51-744580.html
UCS-CPU-3104	1.7 GHz 3104/85W 6C/8.25MB Cache/DDR4 2133MHz	https://www.cisco.com/c/en/us/products/collateral/servers-unified-computing/ucs-c-series-rack-servers/eos-eol-notice-c51-744580.html
MEMORY		
UCS-MR-X16G2RS-H	16GB DDR4-2666-MHz RDIMM/PC4-21300/dual rank/x4/1.2v	https://www.cisco.com/c/en/us/products/collateral/servers-unified-computing/ucs-c-series-rack-servers/eos-eol-notice-c51-740780.html
UCS-MR-X8G1RS-H	8GB DDR4-2666-MHz RDIMM/PC4-21300/single rank/x4/1.2v	https://www.cisco.com/c/en/us/products/collateral/servers-unified-computing/ucs-c-series-rack-servers/eos-eol-notice-c51-740780.html
UCS-MR-X16G1RT-H	16GB DDR4-2933MHz RDIMM 1Rx4 (8Gb)/1.2v	https://www.cisco.com/c/en/us/products/collateral/servers-unified-computing/ucs-c-series-rack-servers/ucs-hyperflex-accessories-eol14611.html
UCS-MR-X32G2RT-H	32GB DDR4-2933MHz RDIMM 2Rx4 (8Gb)/1.2v	https://www.cisco.com/c/en/us/products/collateral/servers-unified-computing/ucs-c-series-rack-servers/ucs-hyperflex-accessories-eol14611.html
UCS-MR-X64G2RT-H	64GB DDR4-2933MHz RDIMM 2Rx4 (16Gb)/1.2v	https://www.cisco.com/c/en/us/products/collateral/servers-unified-computing/ucs-c-series-rack-servers/ucs-hyperflex-accessories-eol14611.html
UCS-ML-X64G4RT-H	64GB DDR4-2933MHz LRDIMM 4Rx4 (8Gb)/1.2v	https://www.cisco.com/c/en/us/products/collateral/servers-unified-computing/ucs-c-series-rack-servers/ucs-hyperflex-accessories-eol14611.html
UCS-ML-128G4RT-H	128GB DDR4-2933MHz LRDIMM 4Rx4 (16Gb)/1.2v	https://www.cisco.com/c/en/us/products/collateral/servers-unified-computing/ucs-c-series-rack-servers/ucs-hyperflex-accessories-eol14611.html
UCS-ML-X64G4RS-H	64GB DDR4-2666-MHz LRDIMM/PC4-21300/quad rank/x4/1.2v	https://www.cisco.com/c/en/us/products/collateral/servers-unified-computing/ucs-c-series-rack-servers/eos-eol-notice-c51-2412151.html

Table 39 EOL Products

EOS option PID	Description	EOL bulletin link
UCS-ML-X64G4RS-H	64GB DDR4-2666-MHz LRDIMM/PC4-21300/quad rank/x4/1.2v	https://www.cisco.com/c/en/us/products/collateral/servers-unified-computing/ucs-c-series-rack-servers/eos-eol-notice-c51-2412151.html
UCS-ML-X32G2RS-H	32GB DDR4-2666-MHz LRDIMM/PC4-21300/dual rank/x4/1.2v	https://www.cisco.com/c/en/us/products/collateral/servers-unified-computing/ucs-c-series-rack-servers/eos-eol-notice-c51-2412151.html
UCS-ML-X32G2RSHM	32GB DDR4-2666-MHz LRDIMM/dual rank/x4/1.2v. Micron only	https://www.cisco.com/c/en/us/products/collateral/servers-unified-computing/ucs-c-series-rack-servers/eos-eol-notice-c51-2412151.html
UCS-ML-X64G4RS-H	64GB DDR4-2666-MHz LRDIMM/PC4-21300/quad rank/x4/1.2v	https://www.cisco.com/c/en/us/products/collateral/servers-unified-computing/ucs-c-series-rack-servers/eos-eol-notice-c51-2412151.html
UCS-ML-X64G4RSHM	64GB DDR4-2666-MHz LRDIMM/quad rank/x4/1.2v. Micron only	https://www.cisco.com/c/en/us/products/collateral/servers-unified-computing/ucs-c-series-rack-servers/eos-eol-notice-c51-2412151.html
UCS-ML-X64G4RSHS	64GB DDR4-2666-MHz LRDIMM/quad rank/x4/1.2v. Samsung only	https://www.cisco.com/c/en/us/products/collateral/servers-unified-computing/ucs-c-series-rack-servers/eos-eol-notice-c51-2412151.html
UCS-MR-128G8RS-H	128GB DDR4-2666-MHz TSV-RDIMM/PC4-21300/octal rank/x4/1.2v	https://www.cisco.com/c/en/us/products/collateral/servers-unified-computing/ucs-c-series-rack-servers/eos-eol-notice-c51-2412151.html
UCS-MR-X16G1RS-H	16GB DDR4-2666-MHz RDIMM/PC4-21300/single rank/x4/1.2v	https://www.cisco.com/c/en/us/products/collateral/servers-unified-computing/ucs-c-series-rack-servers/eos-eol-notice-c51-2412151.html
UCS-MR-X16G1RSHM	16GB DDR4-2666-MHz RDIMM/single rank/x4/1.2v. Micron only	https://www.cisco.com/c/en/us/products/collateral/servers-unified-computing/ucs-c-series-rack-servers/eos-eol-notice-c51-2412151.html
UCS-MR-X32G2RS-H	32GB DDR4-2666-MHz RDIMM/PC4-21300/dual rank/x4/1.2v	https://www.cisco.com/c/en/us/products/collateral/servers-unified-computing/ucs-c-series-rack-servers/eos-eol-notice-c51-2412151.html
UCS-MR-X32G2RSHM	32GB DDR4-2666-MHz RDIMM/dual rank/x4/1.2v. Micron only	https://www.cisco.com/c/en/us/products/collateral/servers-unified-computing/ucs-c-series-rack-servers/eos-eol-notice-c51-2412151.html
UCS-MR-X32G2RSHS	32GB DDR4-2666-MHz RDIMM/dual rank/x4/1.2v. Samsung only	https://www.cisco.com/c/en/us/products/collateral/servers-unified-computing/ucs-c-series-rack-servers/eos-eol-notice-c51-2412151.html
UCS-MR-X64G4RS-H	64GB DDR4-2666-MHz TSV-RDIMM/PC4-21300/quad	https://www.cisco.com/c/en/us/products/collateral/servers-unified-computing/ucs-c-series-rack-servers/eos-eol-notice-c51-2412151.html
UCS-ML-256G8RT-H	256GB DDR4-2933-MHz LRDIMM/8Rx4/1.2v	https://www.cisco.com/c/en/us/products/collateral/servers-unified-computing/ucs-b-series-blade-servers/select-ucs-accessories-eol.html
PCIe OPTION CARD		
UCSC-PCIE-E16002	Emulex LPe16002 Dual-Port 16Gb Fibre Channel HBA w/SR Optics	https://www.cisco.com/c/en/us/products/collateral/servers-unified-computing/ucs-c-series-rack-servers/eos-eol-notice-c51-741234.html

Table 39 EOL Products

EOS option PID	Description	EOL bulletin link
UCSC-PCIE-Q2672	Qlogic QLE2672-CSC, 16Gb Fibre Channel HBA with SR Optics	https://www.cisco.com/c/en/us/products/collateral/servers-unified-computing/ucs-c-series-rack-servers/eos-eol-notice-c51-741234.html
Microsoft Windows server		
MSWS-16-ST16C	Windows Server 2016 Standard (16 Cores/2 VMs)	https://www.cisco.com/c/en/us/products/servers-unified-computing/ucs-c-series-rack-servers/eos-eol-notice-c51-743145.html
MSWS-16-ST24C	Windows Server 2016 Standard (24 Cores/2 VMs)	https://www.cisco.com/c/en/us/products/servers-unified-computing/ucs-c-series-rack-servers/eos-eol-notice-c51-743145.html
MSWS-16-ST16C-NS	Windows Server 2016 Standard (16 Cores/2 VMs) - No Cisco SVC	https://www.cisco.com/c/en/us/products/servers-unified-computing/ucs-c-series-rack-servers/eos-eol-notice-c51-743145.html
MSWS-16-ST24C-NS	Windows Server 2016 Standard (24 Cores/2 VMs) - No Cisco SVC	https://www.cisco.com/c/en/us/products/servers-unified-computing/ucs-c-series-rack-servers/eos-eol-notice-c51-743145.html
MSWS-16-DC16C	Windows Server 2016 Data Center (16 Cores/Unlimited VMs)	https://www.cisco.com/c/en/us/products/servers-unified-computing/ucs-c-series-rack-servers/eos-eol-notice-c51-743145.html
MSWS-16-DC24C	Windows Server 2016 Data Center (24 Cores/Unlimited VMs)	https://www.cisco.com/c/en/us/products/servers-unified-computing/ucs-c-series-rack-servers/eos-eol-notice-c51-743145.html
MSWS-16-DC16C-NS	Windows Server 2016 DC (16 Cores/Unlim VMs) - No Cisco SVC	https://www.cisco.com/c/en/us/products/servers-unified-computing/ucs-c-series-rack-servers/eos-eol-notice-c51-743145.html
MSWS-16-DC24C-NS	Windows Server 2016 DC (24 Cores/Unlim VMs) - No Cisco SVC	https://www.cisco.com/c/en/us/products/servers-unified-computing/ucs-c-series-rack-servers/eos-eol-notice-c51-743145.html
OS Media		
MSWS-16-ST16C-RM	Windows Server 2016 Std (16 Cores/2 VMs) - Recovery Media	https://www.cisco.com/c/en/us/products/servers-unified-computing/ucs-c-series-rack-servers/eos-eol-notice-c51-743145.html
MSWS-16-ST24C-RM	Windows Server 2016 Std (24 Cores/2 VMs) - Recovery Media	https://www.cisco.com/c/en/us/products/servers-unified-computing/ucs-c-series-rack-servers/eos-eol-notice-c51-743145.html
MSWS-16-DC16C-RM	Windows Server 2016 DC (16 Cores/Unlim VMs) - Recovery Media	https://www.cisco.com/c/en/us/products/servers-unified-computing/ucs-c-series-rack-servers/eos-eol-notice-c51-743145.html
MSWS-16-DC24C-RM	Windows Server 2016 DC (24 Cores/Unlim VMs) - Recovery Media	https://www.cisco.com/c/en/us/products/servers-unified-computing/ucs-c-series-rack-servers/eos-eol-notice-c51-743145.html
Operating system		
SLES-2SUV-1A	SUSE Linux Enterprise Svr (1-2 CPU,Unl VM); 1-Yr Support Req	
SLES-2SUV-1S	SUSE Linux Enterprise Svr (1-2 CPU,Unl VM); Prio 1-Yr SnS	

Table 39 EOL Products

EOS option PID	Description	EOL bulletin link
SLES-2SUV-3A	SUSE Linux Enterprise Svr (1-2 CPU,Unl VM); 3-Yr Support Req	
SLES-2SUV-3S	SUSE Linux Enterprise Svr (1-2 CPU,Unl VM); Prio 3-Yr SnS	
SLES-2SUV-5A	SUSE Linux Enterprise Svr (1-2 CPU,Unl VM); 5-Yr Support Req	
SLES-2SUV-5S	SUSE Linux Enterprise Svr (1-2 CPU,Unl VM); Prio 5-Yr SnS	
SLES-SAP-2SUV-1A	SLES for SAP Apps w/ HA (1-2 CPU, Unl VM); 1-Yr Support Reqd	
SLES-SAP-2SUV-1S	SLES for SAP Apps (1-2 CPU, Unl VM); Priority 1-Yr SnS	
SLES-SAP-2SUV-3A	SLES for SAP Apps w/ HA (1-2 CPU, Unl VM); 3-Yr Support Reqd	
SLES-SAP-2SUV-3S	SLES for SAP Apps (1-2 CPU, Unl VM); Priority 3-Yr SnS	
SLES-SAP-2SUV-5A	SLES for SAP Apps w/ HA (1-2 CPU, Unl VM); 5-Yr Support Reqd	
SLES-SAP-2SUV-5S	SLES for SAP Apps (1-2 CPU, Unl VM); Priority 5-Yr SnS	
SPARE		
UCSC-MLOM-BLK=	MLOM Blanking Panel	https://www.cisco.com/c/en/us/products/collateral/servers-unified-computing/ucs-c-series-rack-servers/eos-eol-notice-c51-741234.html

TECHNICAL SPECIFICATIONS

Dimensions and Weight

Table 40 UCS C220 M5 LFF Dimensions and Weight

Parameter	Value
Height	1.7 in. (4.32 cm)
Width	16.89 in. (43.0 cm) including handles: 18.98 in. (48.2 cm)
Depth	29.8 in. (75.6 cm) including handles: 30.98 in. (78.7 cm)
Front Clearance	3 in. (76 mm)
Side Clearance	1 in. (25 mm)
Rear Clearance	6 in. (152 mm)
Weight	
Maximum (4 HDDs, 2 CPUs, 24 DIMMs, two power supplies)	37.5 lbs (17.0 kg)
Minimum (1 HDD, 1 CPU, 1 DIMM, one power supply)	30.5 lbs (13.8 kg)
Bare (0 HDD, 0 CPU, 0 DIMM, one power supply)	28.3 lbs (12.8 kg)

Power Specifications

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

- 770 W (AC) power supply (see *Table 41*).
- 1050 W (AC) power supply (see *Table 42*).
- 1050 W V2 (DC) power supply (see *Table 43*)
- 1600 W (AC) power supply (see *Table 44*)

Table 41 UCS C220 M5 Power Specifications (770 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)	770			
Maximum Rated Standby Output (W)	36			
Nominal Input Voltage (V rms)	100	120	208	230
Nominal Input Current (A rms)	8.8	7.4	4.2	3.8
Maximum Input at Nominal Input Voltage (W)	855	855	855	846
Maximum Input at Nominal Input Voltage (VA)	882	882	882	872
Minimum Rated Efficiency (%)[1]	90	90	90	91
Minimum Rated Power Factor[1]	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)[2]	12			

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 42 UCS C220 M5 1050 W (AC) Power Supply Specifications

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

Table 42 UCS C220 M5 1050 W (AC) Power Supply Specifications

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 43 UCS C220 M5 1050 W (DC) Power Supply Specifications

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 44 UCS C220 M5 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)	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 (%)[1]	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)[2]	12			

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

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 C220 M5 server are listed in *Table 45*.

Table 45 UCS C220 M5 SFF 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 46 Cisco UCS C220 M5 Extended Operating Temperature Hardware Configuration Limits

Platform[1]	ASHRAE A3 (5ºC to 40ºC)[2]	ASHRAE A4 (5ºC to 45ºC)[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

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