

Cisco UCS C240 SD M5 Rack Server

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



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OVERVIEW

The UCS C240 SD M5 SFF server is a two-socket C-Series 2U chassis designed to operate both in standalone and UCS environments. It serves the edge computing market that uses standard x86 based 19" rack servers.

The UCS C240 SD M5 SFF server is a derivative of the Cisco UCS 240 M5 server.

The following list summarizes the C240 SD M5 server features that are identical to the C240 M5 features:

- 2U form factor
- 2nd Gen Intel® Xeon® Processor Scalable Family (maximum 2 CPUs)
- 24 DIMM slots for 2933-MHz DIMMs with DIMM sizes up to 128 GB and 2666-MHz PMem with capacity points up to 512 GB
- Maximum memory size is 7.6 TB (using 12 x 128 GB DDR4 DIMMs and 12 x 512 GB PMem)
- Six PCIe slots
- Cisco 12G Modular SAS HBA
- Cisco 12G Modular RAID controller

The following list summarizes how the C240 SD M5 differs from the C240 M5 server:

- Up to six NVMe drives, SAS/SATA SSD drives, or HDD drives mounted in risers in front of the chassis (C240 M5 has a maximum of 24 front-mount drives in drive cages)
- I/O connectors on front (C240 M5 I/O is on the back)
- Fans at rear of chassis (C240 M5 fans are towards the front)
- 22" chassis depth requirement (C240 M5 is 29")
- Support for up to two NVIDIA T4 (only) GPUs (in riser slots)
- Front accessible I/O connectors (C240 M5 has rear I/O)
- New riser cards for Riser 1 and Riser 2
- PCIe driven configurability
 - For I/O centric applications, the server supports two 2.5-inch NVMe drives, SAS/SATA SSDs, or HDDs along with six PCIe slots, or
 - For storage-centric applications, the server supports six NVMe drives, SAS/SATA SSDs, or HDDs along with two PCIe slots

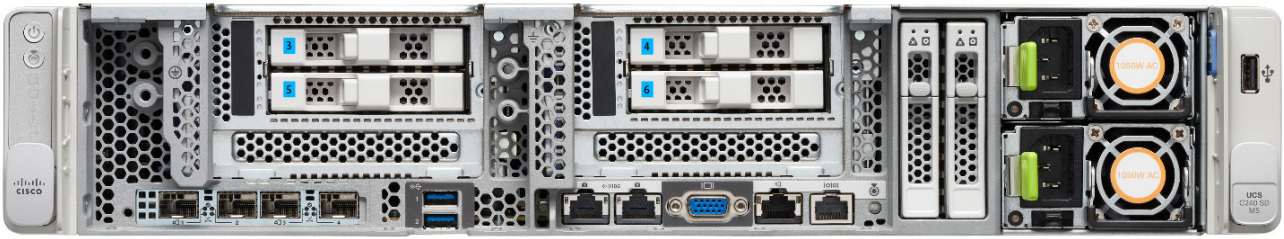
The C240 SD M5 server includes a dedicated internal modular LAN on motherboard (mLOM) connector for installation of a Cisco Virtual Interface Card (VIC) or third-party network interface card (NIC), without consuming a PCI slot, in addition to 2 x 10Gbase-T Intel x550 embedded (on the motherboard) LOM ports.

The Cisco UCS C240 SD 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.

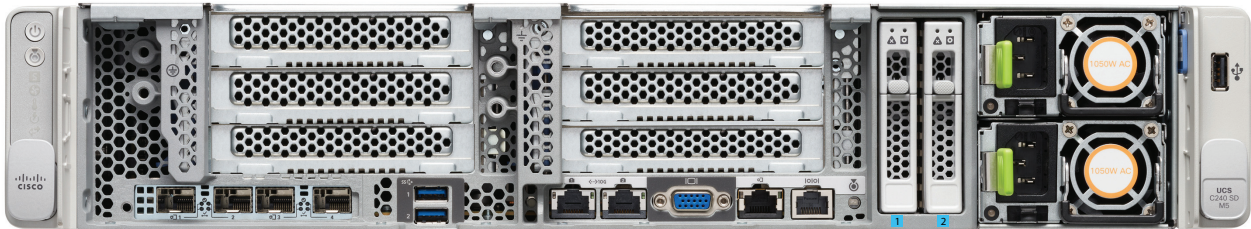
The C240 SD M5 comes in two versions: 6 PCIe slots and 2 drive slots, or 2 PCIe slots and 6 drive slots. [Figure 1 on page 4](#) shows the version with 2 PCIe slots and 6 drive slots.

Figure 1 Cisco UCS C240 SD M5 SFF Rack Server

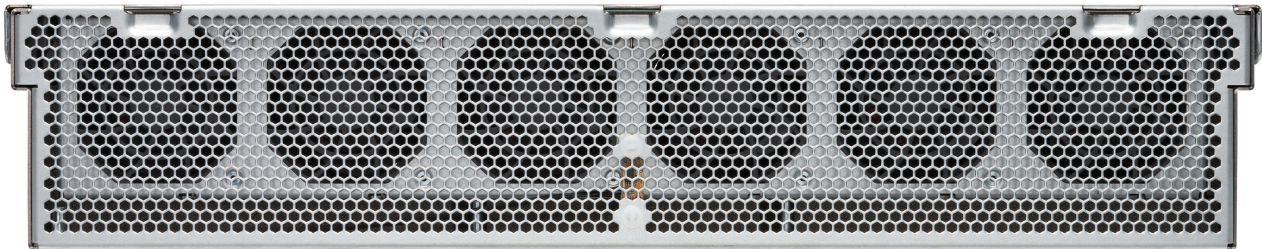
Front Views - 6 drives and 2 PCIe slots



Front Views - 2 drives and 6 PCIe slots



Rear View



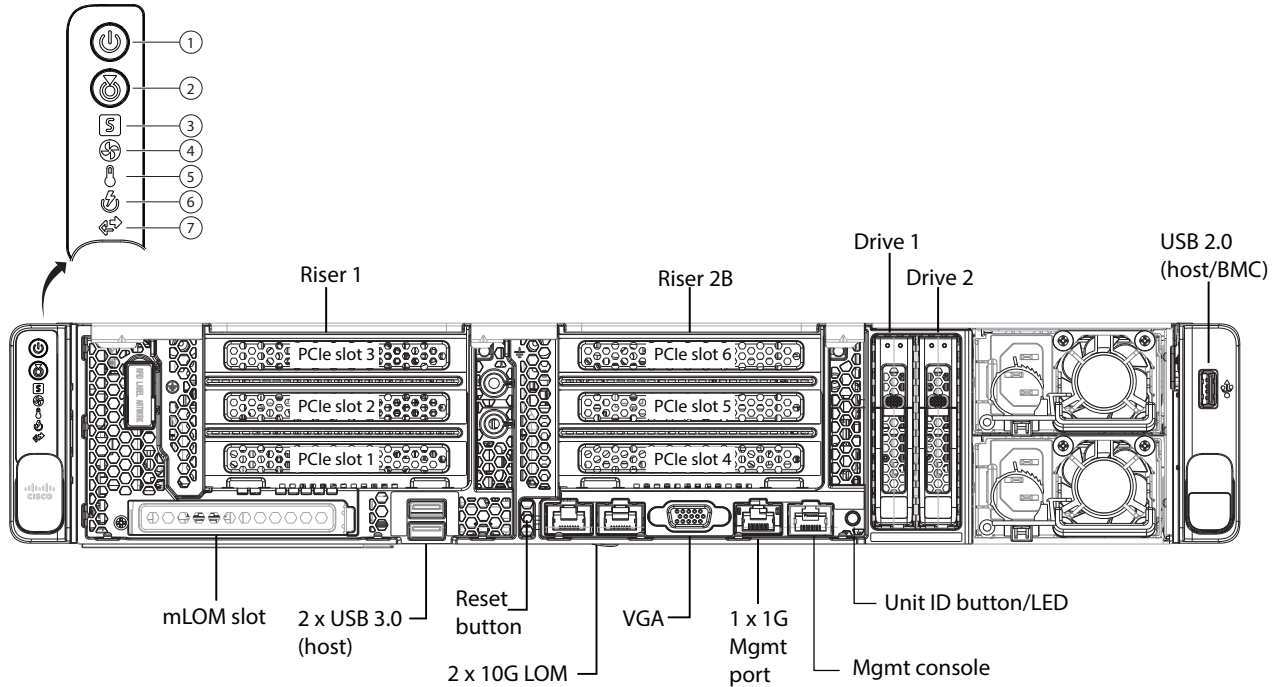
DETAILED VIEWS

Chassis Front View

The Cisco UCS C240 SD M5 SFF Rack Server can be configured either as shown in [Figure 2](#) or in [Figure 3 on page 6](#). [Figure 2](#) is optimized for I/O and [Figure 3 on page 6](#) is optimized for storage capacity.

[Figure 2](#) shows the Cisco UCS C240 SD M5 SFF Rack Server with 2 drive slots and 6 PCIe slots.

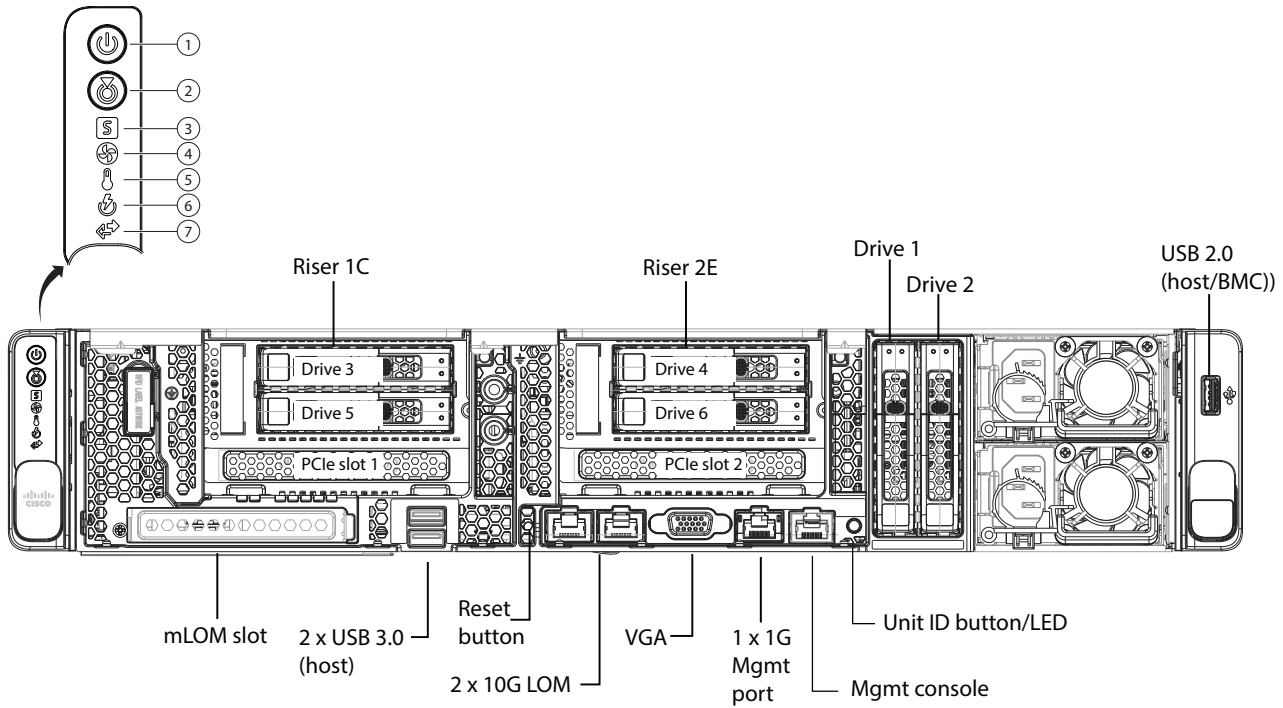
Figure 2 Chassis Front View (2 SFF drive slots; 6 PCIe slots)



1	Power button/LED	2	Unit ID button/LED
3	System health LED	4	Fan status LED
5	Temperature status LED	6	Power supply status LED
7	Network link activity LED	-	

Figure 3 shows the Cisco UCS C240 SD M5 SFF Rack Server with 6 drive slots and 2 PCIe slots.

Figure 3 Chassis Front View(6 SFF drive slots; 2 PCIe slots)

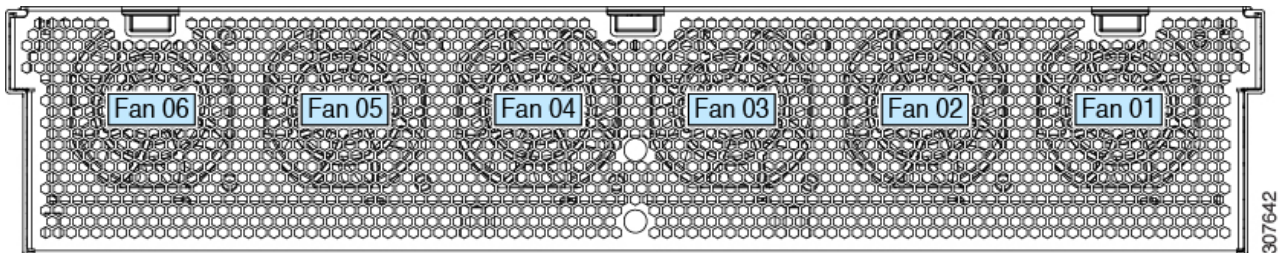


1	Power button/LED	2	Unit ID button/LED
3	System health LED	4	Fan status LED
5	Temperature status LED	6	Power supply status LED
7	Network link activity LED	-	

Chassis Rear View

Figure 4 shows the external features of the rear panel.

Figure 4 Chassis Rear View






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 12*.

Table 1 Capabilities and Features

Capability/Feature	Description
Chassis	Two rack unit (2RU) chassis
CPU	One or two 2 nd Generation Intel® Xeon® scalable family CPUs
Chipset	Intel® Lewisburg 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: <ul style="list-style-type: none"> ■ Integrated 2D graphics core with hardware acceleration ■ DDR2/3 memory interface supports up to 512 MB of addressable memory (8 MB is allocated by default to video memory) ■ Supports display resolutions up to 1920 x 1200 16bpp @ 60Hz ■ High-speed integrated 24-bit RAMDAC ■ Single lane PCI-Express host interface running at Gen 1 speed
Power subsystem	Two of the following hot-swappable power supplies for full redundancy: <ul style="list-style-type: none"> ■ 1050 W (AC) ■ 1050 W (DC) (available at a later date)
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	<ul style="list-style-type: none"> ■ Six rear-mounted hot-swappable fans for front-to-rear cooling (air pulled from front to back)
Infiniband	The InfiniBand architecture is supported by the PCIe slots.

Capability/ Feature	Description
Expansion slots	<p>Up to six PCIe slots (on two riser cards)</p> <p>The server can be configured for either of the following:</p> <ul style="list-style-type: none"> ■ Riser 1 option 1 and riser 2 option 2B, or ■ Riser 1 option 1C and riser 2 option 2E <p>Riser 1- PCIe slots controlled by CPU 1 and CPU 2</p> <ul style="list-style-type: none"> ■ Option 1: three PCIe slots and a micro SD slot. <ul style="list-style-type: none"> • Slot 1 = full height, 3/4 length, Gen-3 x8, CPU1, NCSI support. • Slot 2 = full height, full length, Gen-3 x16, CPU1, NCSI and GPU support. • Slot 3 = full height, full length, Gen-3 x8, CPU2. • Micro SD slot included on inside top of riser ■ Option 1C: one PCIe slot, 2 drive bays, and a micro SD slot <ul style="list-style-type: none"> • Drive bay 3 Gen-3 x4 2.5” card height • Drive bay 5 Gen-3 x4 2.5” card height • PCIe1 (bottom slot) = full height, 3/4 length, Gen-3 x16, CPU1, GPU, NCSI support. • Micro SD slot included on inside top of riser <p>Riser 2 - PCIe slots all controlled by CPU 2.</p> <ul style="list-style-type: none"> ■ Option 2B: three PCIe slots, 1 NVMe connector <ul style="list-style-type: none"> • Slot 4 = full height, 3/4length, Gen-3 x8, NCSI support. • Slot 5 = full height, full length, Gen-3 x16, NCSI and GPU support. • Slot 6 = full height, full length, Gen-3 x8, • One Gen-3 x8 NVME connector that connects to vertical drive PCIe backplane and supports two PCIe NVMe drives) ■ Option 2E: one PCIe slot, 2 drive bays, 1 NVMe connector <ul style="list-style-type: none"> • Drive bay 4 Gen-3 x4 2.5” card height • Drive bay 6 Gen-3 x4 2.5” card height • PCIe 2 (bottom slot) = full height, 3/4 length, Gen-3 x16, GPU, NCSI support • One Gen-3 x8 NVME connector that connects to vertical drive PCIe backplane and supports two PCIe NVMe drives <p>Dedicated internal storage controller slot see Figure 6 on page 64), which accommodates a Cisco 12G SAS HBA or a Cisco 12G SAS RAID controller with 1 GB cache, used as follows:</p> <ul style="list-style-type: none"> • Controls two SAS/SATA vertical drives equipped with a SAS/SATA backplane • Controls four SAS/SATA drives mounted in Risers 1C and 2E <p> Note: The vertical drives are equipped with a SAS/SATA backplane for SAS/SATA drives or a PCIe backplane for PCIe NVMe drives. Risers 1C and 2E can accommodate either PCIe NVMe drives or SAS/SATA drives with no changes to the risers. Appropriate cable connections accommodate all drive types (SAS/SATA or PCIe NVMe)</p> <p>For more details on riser 1 and riser 2 see Riser Card Configuration and Options, page 68.</p>

Capability/ Feature	Description
Internal storage devices	<ul style="list-style-type: none"> ■ With riser 1 and 2B installed <ul style="list-style-type: none"> • Two front-mounting SFF drives (NVMe or SAS/SATA SSD or HDD drives, depending on the drive backplane) vertically mounted next to power supplies. ■ With riser 1C and 2E installed <ul style="list-style-type: none"> • Six SFF drives. Four SFF drives (NVMe or SAS/SATA SSD or HDD drives) mounted in risers and two front-mounting SFF drives (NVMe or SAS/SATA SSD or HDD drives, depending on the drive backplane) vertically mounted next to power supplies. <hr/> <p> NOTE: If you choose SAS/SATA SSDs or HDDs for the vertical drives, a SAS/SATA backplane, storage controller, and appropriate cables are configured for the server.</p> <p>If you choose NVME drives for the vertical drives, an NVME backplane and appropriate cables are configured for the server. In this case, the drives are controlled from the CPU over the PCIe bus and over an NVME cable from Riser 2B or 2E</p>
	<ul style="list-style-type: none"> ■ One internal USB 3.0 port on the motherboard for use with an optional 16 GB USB thumb drive for additional storage. ■ A mini-storage module connector on the motherboard supports either: <ul style="list-style-type: none"> • An SD card module with two SD card slots. Mixing different capacity SD cards is not supported, or • An M.2 2280 module with two SATA M.2 SSD drive slots. Mixing different capacity M.2 modules is not supported, or • An M.2 2280 module with two NVMe M.2 SSD slots. Mixing different capacity M.2 modules is not supported. <hr/> <p> NOTE: SD cards and M.2 cannot be mixed. M.2 does not support RAID1 with VMWare. M.2 modules have Windows and Linux support only.</p>
	<ul style="list-style-type: none"> ■ One slot for a micro-SD card on PCIe Riser 1 and 1C. The micro-SD card serves as a dedicated local resource for utilities such as HUU. Images can be pulled from a file share (NFS/CIFS) and uploaded to the cards for future use.

Capability/ Feature	Description
I/O Interfaces and Indicators	<ul style="list-style-type: none"> ■ Front Panel <ul style="list-style-type: none"> • One 1Gbase-T RJ-45 management port (Marvell 88E6176) • Two 10Gbase-T LOM ports (Intel X550-AT2(100 M/1G/10G) controller embedded on the motherboard) • One flexible modular LAN on motherboard (mLOM) slot that can accommodate various interface cards • One RS-232 serial port (RJ45 connector) • One DB15 VGA connector • Two USB 3.0 port connectors • One unit ID (UID) LED/button • One reset button ■ Left Slam Latch <ul style="list-style-type: none"> • One power LED/button • One unit ID (UID) LED/button • One system status LED • One fan status LED • One temperature status LED • One power supply status LED • One network link activity LED ■ Right Slam Latch <ul style="list-style-type: none"> • One USB port (host/BMC)
Storage controller	<ul style="list-style-type: none"> ■ Cisco 12G SAS RAID controller card with internal SAS connectivity <ul style="list-style-type: none"> • Supports up to 6 SAS/SATA SSD or SAS/SATA HDD internal drives • Supports RAID 1, 1, 5, 6, 10, 50, 60, or JBOD mode • Plugs into the dedicated RAID controller slot • Comes with a 1GB write cache (backed up with a SuperCap) ■ Cisco 12G SAS HBA (JBOD/Pass-through Mode) <ul style="list-style-type: none"> • Supports up to 6 SAS/SATA SSD or SAS/SATA HDD internal drives • Plugs into the dedicated RAID controller slot
Modular LAN on Motherboard (mLOM) slot	<p>The dedicated mLOM slot on the motherboard can flexibly accommodate the following cards:</p> <ul style="list-style-type: none"> ■ Cisco Virtual Interface Cards <hr/> <p> 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</p>

Capability/ Feature	Description
Integrated management processor	<p>Baseboard Management Controller (BMC) running Cisco Integrated Management Controller (CIMC) firmware.</p> <p>Depending on your CIMC settings, the CIMC can be accessed through the 1GE dedicated management port, the 1GE/10GE LOM ports, or a Cisco virtual interface card (VIC).</p> <p>CIMC manages certain components within the server, such as the Cisco 12G SAS HBA.</p>
UCSM	<p>UCS Manager (UCSM) runs in the Fabric Interconnect and automatically discovers and provisions some of the server components.</p>

CONFIGURING the SERVER

Follow these steps to configure the Cisco UCS C240 SD M5 SFF Rack Server:

- *STEP 1 VERIFY SERVER SKU, page 13*
- *STEP 2 SELECT RISER CARDS (REQUIRED), page 14*
- *STEP 3 SELECT CPU(s), page 15*
- *STEP 4 SELECT MEMORY, page 19*
- *STEP 5 SELECT STORAGE CONTROLLER, page 25*
- *STEP 6 SELECT DRIVES, page 27*
- *STEP 7 SELECT PCIe OPTION CARD(s), page 31*
- *STEP 8 ORDER OPTIONAL PCIe OPTION CARD ACCESSORIES, page 35*
- *STEP 9 ORDER GPU CARDS (OPTIONAL), page 36*
- *STEP 10 ORDER POWER SUPPLY, page 38*
- *STEP 11 SELECT INPUT POWER CORD(s), page 39*
- *STEP 12 ORDER TOOL-LESS RAIL KIT and RAIL EXTENDER KIT, page 43*
- *STEP 13 SELECT MANAGEMENT CONFIGURATION (OPTIONAL), page 44*
- *STEP 14 SELECT SERVER BOOT MODE (OPTIONAL), page 45*
- *STEP 15 ORDER SECURITY DEVICES (OPTIONAL), page 46*
- *STEP 16 ORDER CISCO SD CARD MODULE (OPTIONAL), page 47*
- *STEP 17 ORDER M.2 SATA SSD (OPTIONAL), page 48*
- *STEP 18 ORDER INTERNAL MICRO-SD CARD MODULE (OPTIONAL), page 50*
- *STEP 19 ORDER OPTIONAL USB 3.0 DRIVE, page 51*
- *STEP 20 SELECT OPERATING SYSTEM AND VALUE-ADDED SOFTWARE, page 52*
- *STEP 21 SELECT SERVICE and SUPPORT LEVEL, page 56*

STEP 1 VERIFY SERVER SKU

The Product ID (PID) for the C240 SD M5 server is UCSC-C240-M5SD. During product configuration, the server can be configured for two different functionalities, as shown in [Table 2](#).

Table 2 PID of the C240 SD M5 SFF Rack Base Server

Sample Product Configuration	Description
I/O Centric	<p>Small form-factor (SFF) drives, with a 2 vertical-drive backplane.</p> <ul style="list-style-type: none"> ■ Configured with risers 1 and 2B ■ 2 vertical drive bays, supporting 2.5-inch NVMe or SAS/SATA SSD or HDD drives. ■ 6 PCIe slots ■ No CPU, memory, drives, PCIe cards, or power supply included
Storage Centric	<p>Small form-factor (SFF) drives, with a 2 vertical-drive backplane.</p> <ul style="list-style-type: none"> ■ Configured with risers 1C and 2E ■ 2 vertical drive bays, supporting 2.5-inch NVMe or SAS/SATA SSD or HDD drives. ■ 4 drive bays, 2 in riser 1C and 2 in riser 2E, supporting SAS/SATA SSD or HDD drives or NVME drives. ■ 2 PCIe slots. ■ No CPU, memory, drives, PCIe cards, or power supply included



NOTE: Server configuration depends on the number of CPUs installed. See [Table 37 on page 69](#) for further information.

The Cisco UCS C240 SD M5 server:

- Does not include power supply, CPU, memory DIMMs or PMem, hard disk drives (HDDs), solid-state drives (SSDs), NVMe drives, SD cards, risers, tool-less rail kit, or PCIe cards.



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

STEP 2 SELECT RISER CARDS (REQUIRED)

There are two riser cards per server, riser card 1 and 2. There are two options for riser card 1 (1 and 1C) and two options for riser card 2 (2B and 2E). Riser card 1 is the one on the left when viewed from the back of the server and riser card 2 is on the right.

The only valid riser ordering options are as follows:

- Riser card 1 only (in this case, Riser card 2 is automatically populated with a blank panel), or
- Riser card 1 and Riser card 2B, or
- Riser card 1C and Riser card 2E

Table 3 Riser PIDs

Product ID (PID)	Description
UCSC-RIS-1-240M5	Riser card 1. Three PCIe slots (x8, x16, x8); slot 3 requires CPU2, supports T4 GPU
UCSC-RIS-2B-240M5	Riser card 2B. Three PCIe slots (x8,x16,x8) supports GPU plus rear NVMe, supports T4 GPU
UCSC-RS1C-240M5SD	Riser card 1C. One x16 PCIE slot, 2x Drive slots, supports microSD
UCSC-RS2E-240M5SD	Riser card 2E. One x16 PCIE slot, 2x Drive slots, does not support microSD

For additional details, see [Riser Card Configuration and Options, page 68](#)

STEP 3 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



NOTE: Server configuration depends on the number of CPUs installed. See [Table 37 on page 69](#) for further information.

Select CPUs

The available CPUs are listed in [Table 4](#)

Table 4 Available Intel CPUs (Cisco Recommended)

Product ID (PID)	Intel Number	Clock Freq (GHz)	Power (W)	Cache Size (MB)	Cores	UPI ¹ Links (GT/s)	Highest DDR4 DIMM Clock Support (MHz) ²
Cisco Recommended CPUs (2nd Generation Intel® Xeon® Processors)							
UCS-CPU-I8276	I8276	2.2	165	38.50	28	3 x 10.4	2933
UCS-CPU-I8260	I8260	2.4	165	35.75	24	3 x 10.4	2933
UCS-CPU-I6262V	I6262V	1.9	135	33.00	24	3 x 10.4	2400
UCS-CPU-I6248	I6248	2.5	150	27.50	20	3 x 10.4	2933
UCS-CPU-I6238R	I6238R	2.2	165	38.50	28	3 x 10.4	2933
UCS-CPU-I6238	I6238	2.1	140	30.25	22	3 x 10.4	2933
UCS-CPU-I6230R	I6230R	2.1	150	35.75	26	3 x 10.4	2933
UCS-CPU-I6230	I6230	2.1	125	27.50	20	3 x 10.4	2933
UCS-CPU-I5220R	I5220R	2.2	125	24.75	18	3 x 10.4	2666
UCS-CPU-I5220	I5220	2.2	125	24.75	18	3 x 10.4	2666
UCS-CPU-I5218R	I5218R	2.2	125	27.50	20	3 x 10.4	2666
UCS-CPU-I5218	I5218	2.3	125	22.00	16	3 x 10.4	2666
UCS-CPU-I4216	I4216	2.1	100	22.00	16	2 x 9.6	2400
UCS-CPU-I4214R	I4214R	2.4	100	16.50	12	2 x 9.6	2400
UCS-CPU-I4214	I4214	2.2	85	16.50	12	2 x 9.6	2400
UCS-CPU-I4210R	I4210R	2.4	100	13.75	10	2 x 9.6	2400
UCS-CPU-I4210	I4210	2.2	85	13.75	10	2 x 9.6	2400

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 the table for a given CPU, the DIMMs will be clocked at the lowest common denominator of CPU clock and DIMM clock.

Table 5 Additional Available Intel 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	Processor Type
8000 Series Processor							
UCS-CPU-I8276L	2.2	165	38.50	28	3 x 10.4	2933	2 nd Gen Intel® Xeon®
UCS-CPU-I8276	2.2	165	38.50	28	3 x 10.4	2933	2 nd Gen Intel® Xeon®
UCS-CPU-I8260Y	2.4	165	35.75	24/20/16	3 x 10.4	2933	2 nd Gen Intel® Xeon®
UCS-CPU-I8260L	2.4	165	35.75	24	3 x 10.4	2933	2 nd Gen Intel® Xeon®
UCS-CPU-I8260	2.4	165	35.75	24	3 x 10.4	2933	2 nd Gen Intel® Xeon®
6000 Series Processor							
UCS-CPU-I6262V	1.9	135	33.00	24	3 x 10.4	2400	2 nd Gen Intel® Xeon®
UCS-CPU-I6252	2.1	150	35.75	24	3 x 10.4	2933	2 nd Gen Intel® Xeon®
UCS-CPU-I6248	2.5	150	27.50	20	3 x 10.4	2933	2 nd Gen Intel® Xeon®
UCS-CPU-I6246	3.3	165	24.75	12	3 x 10.4	2933	2 nd Gen Intel® Xeon®
UCS-CPU-I6244	3.6	150	24.75	8	3 x 10.4	2933	2 nd Gen Intel® Xeon®
UCS-CPU-I6242	2.8	150	22.00	16	3 x 10.4	2933	2 nd Gen Intel® Xeon®
UCS-CPU-I6240R	2.4	165	35.75	24	3 x 10.4	2933	2 nd Gen Intel® Xeon®
UCS-CPU-I6240L	2.6	150	24.75	18	3 x 10.4	2933	2 nd Gen Intel® Xeon®
UCS-CPU-I6240Y	2.6	150	24.75	18/14/8	3 x 10.4	2933	2 nd Gen Intel® Xeon®
UCS-CPU-I6240M	2.6	150	24.75	18	3 x 10.4	2933	2 nd Gen Intel® Xeon®
UCS-CPU-I6240	2.6	150	24.75	18	3 x 10.4	2933	2 nd Gen Intel® Xeon®
UCS-CPU-I6238L	2.1	140	30.25	22	3 x 10.4	2933	2 nd Gen Intel® Xeon®
UCS-CPU-I6238R	2.2	165	38.5	28	3 x 10.4	2933	2 nd Gen Intel® Xeon®
UCS-CPU-I6238M	2.1	140	30.25	20	3 x 10.4	2933	2 nd Gen Intel® Xeon®
UCS-CPU-I6238	2.1	140	30.25	22	3 x 10.4	2933	2 nd Gen Intel® Xeon®
UCS-CPU-I6234	3.3	125	24.75	8	3 x 10.4	2933	2 nd Gen Intel® Xeon®
UCS-CPU-I6230R	2.1	150	35.75	26	3 x 10.4	2933	2 nd Gen Intel® Xeon®
UCS-CPU-I6230	2.1	125	27.50	20	3 x 10.4	2933	2 nd Gen Intel® Xeon®
UCS-CPU-I6226R	2.9	150	22.00	16	3 x 10.4	2933	2 nd Gen Intel® Xeon®
UCS-CPU-I6226	2.7	125	19.25	12	3 x 10.4	2666	2 nd Gen Intel® Xeon®
UCS-CPU-I6222V	1.8	115	27.50	20	3 x 10.4	2400	2 nd Gen Intel® Xeon®
5000 Series Processor							
UCS-CPU-I5222	3.8	125	16.50	4	3 x 10.4	2933	2 nd Gen Intel® Xeon®
UCS-CPU-I5220S	2.7	125	24.75	18	3 x 10.4	2666	2 nd Gen Intel® Xeon®
UCS-CPU-I5220R	2.2	150	35.75	24	3 x 10.4	2666	2 nd Gen Intel® Xeon®
UCS-CPU-I5220	2.2	125	24.75	18	3 x 10.4	2666	2 nd Gen Intel® Xeon®

Table 5 Additional Available Intel 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	Processor Type
UCS-CPU-I5218B	2.3	125	22.00	16	3 x 10.4	2666	2 nd Gen Intel® Xeon®
UCS-CPU-I5218R	2.1	125	27.5	20	3 x 10.4	2666	2 nd Gen Intel® Xeon®
UCS-CPU-I5218	2.3	125	22.00	16	3 x 10.4	2666	2 nd Gen Intel® Xeon®
UCS-CPU-I5217	3.0	115	11.00	8	3 x 10.4	2666	2 nd Gen Intel® Xeon®
UCS-CPU-I5215L	2.5	85	13.75	10	3 x 10.4	2666	2 nd Gen Intel® Xeon®
UCS-CPU-I5215	2.5	85	13.75	10	3 x 10.4	2666	2 nd Gen Intel® Xeon®
4000 Series Processor							
UCS-CPU-I4216	2.1	100	22.00	16	2 x 9.6	2400	2 nd Gen Intel® Xeon®
UCS-CPU-I4215R	3.2	130	11.00	8	2 x 9.6	2400	2 nd Gen Intel® Xeon®
UCS-CPU-I4215	2.5	85	11.00	8	2 x 9.6	2400	2 nd Gen Intel® Xeon®
UCS-CPU-I4214R	2.4	100	16.50	12	2 x 9.6	2400	2 nd Gen Intel® Xeon®
UCS-CPU-I4214	2.2	85	16.50	12	2 x 9.6	2400	2 nd Gen Intel® Xeon®
UCS-CPU-I4210R	2.4	100	13.75	10	2 x 9.6	2400	2 nd Gen Intel® Xeon®
UCS-CPU-I4210	2.2	85	13.75	10	2 x 9.6	2400	2 nd Gen Intel® Xeon®
UCS-CPU-I4208	2.1	85	11.00	8	2 x 9.6	2400	2 nd Gen Intel® Xeon®
3000 Series Processor							
UCS-CPU-I3206R	1.9	85	11.00	8	2 x 9.6	2133	2 nd 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 the table for a given CPU, the DIMMs will be clocked at the lowest common denominator of CPU clock and DIMM clock.

Supported Configurations**(1) DIMM only configurations:**

- Select one CPU (server will have reduced functionality) or two identical CPUs listed in [Table 4 on page 15](#) or [Table 5 on page 16](#)

(2) DIMM/PMem Mixed Configurations:

- You must select two identical CPUs listed in [Table 4 on page 15](#) or [Table 5 on page 16](#)

Caveats

- The selection of 1 or 2 CPUs depends on the desired server functionality. See the following sections:
 - [STEP 4 SELECT MEMORY, page 19](#)

- [STEP 5 SELECT STORAGE CONTROLLER, page 25](#)
- [STEP 6 SELECT DRIVES, page 27](#)
- [STEP 7 SELECT PCIe OPTION CARD\(s\), page 31](#)
- [Table 37 on page 69](#)



NOTE: Due to EU Regulation 2019/424, you can select only min qty to two (2) for below CPUs

UCS-CPU-I4210, UCS-CPU-I4215

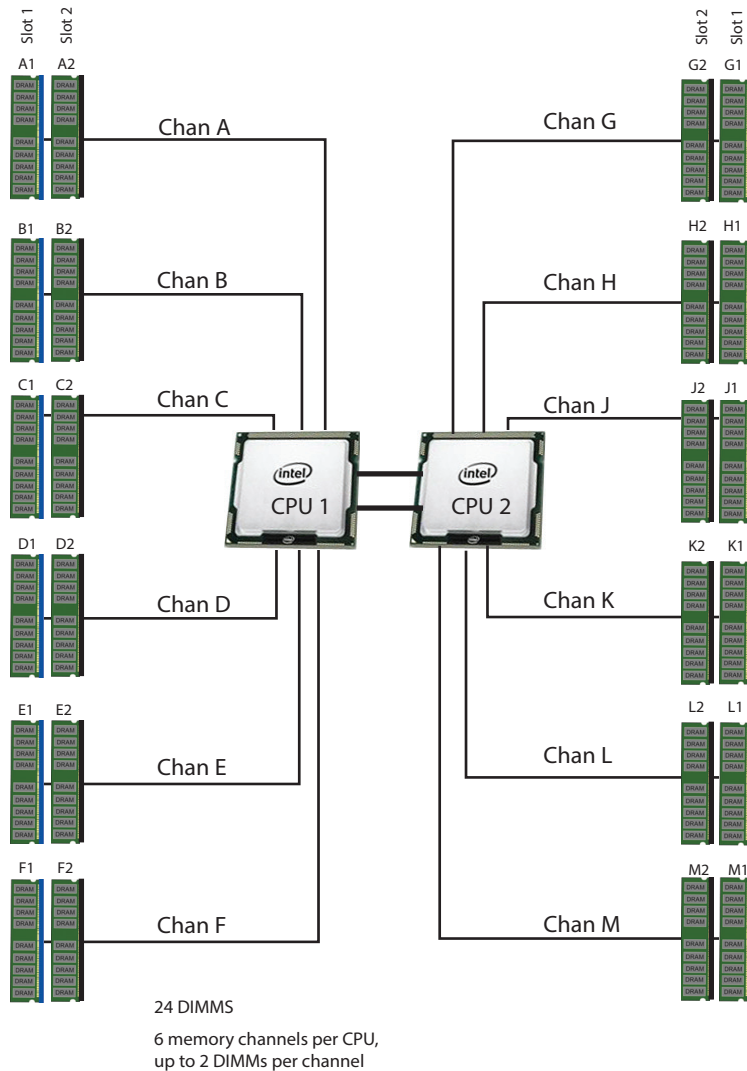
STEP 4 SELECT MEMORY

The available memory for the C240 SD M5 SFF is as follows:

- Clock speed: Up to 2933 MHz; See available CPUs and their associated DDR4 DIMM maximum clock support in [Table 4](#).
- 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 5](#).

Figure 5 C240 SD M5 SFF 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 6](#).



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 6 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.



NOTE: (1) Cisco doesn't support a Load Reduce DIMM (LRDIMM) 64GB Memory PID as a replacement PID of existing UCS-ML-x64G4RT-H and recommends migrating to the Registered DIMM (RDIMM) instead, delivering the best balance in performance and price.

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 6 on page 20](#).

(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)	
1 2	(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 6 on page 20](#).



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](#)

Memory Configurations and Modes

See [Table 7](#) for PMem memory modes.

Table 7 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 1:4 to 1:16. So if you use a 128 GB DIMM in a channel, you could use a 512 GB PMem for a 1:4 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 8 2nd Generation Intel® Xeon® Scalable Processor DIMM and PMem¹ 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

Table 8 2nd Generation Intel® Xeon® Scalable Processor DIMM and PMem¹ Physical Configuration

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 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 C240 M5 Server Installation and Service Guide](#)

STEP 5 SELECT STORAGE CONTROLLER

Storage Controller Options (internal HDD/SSD support)



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

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 supports RAID 0, 1, 5, 6, 10, 50, 60, and JBOD mode.



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

- Cisco 12G SAS RAID controller = 64
-

Cisco 12G SAS HBA (internal HDD/SSD/JBOD support)

You can choose a SAS HBA for JBOD or Pass-through mode support:

- The Cisco 12G SAS HBA plugs into a dedicated controller slot.

RAID Volumes and Groups

When creating each RAID volume, follow these guidelines:

- Use the same capacity for each drive in each RAID volume
- 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

Table 9 Hardware Controller Options

Product ID (PID)	PID Description
Controllers for Internal Drives Note that if the Cisco 12G SAS HBA controller is selected, it is factory-installed in the dedicated internal slot.	
UCSC-SAS-M5	Cisco 12G Modular SAS HBA (max 16 drives) <ul style="list-style-type: none"> ■ Supports internal SAS/SATA SSDs and HDDs ■ Supports JBOD mode only (no RAID functionality). Ideal for SDS (Software Defined Storage) applications. It is also ideal for environments demanding the highest IOPs (for external SSD attach), where a RAID controller can be an I/O bottleneck.
UCSC-RAID-M5	Cisco 12G Modular RAID controller with 1GB cache <ul style="list-style-type: none"> ■ Supports up to 6 internal SAS/SATA HDDs and SAS/SATA SSDs ■ Supports RAID 0, 1, 5, 6, 10, 50, 60, and JBOD mode. Supports running mixed RAID 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).
UCSC-SCAP-M5	1 GB Super Cap

Approved Configurations

- The Cisco 12G SAS RAID controller upgrade option supports up to 6 internal drives with up to RAID 0, 1, 10, 5, 6, 50, 60, JBOD mode.
- The Cisco 12 Gbps SAS HBA supports up to 6 internal drives with JBOD support.

STEP 6 SELECT DRIVES

The standard disk drive features are:

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

Select Front-Facing Drives

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

Table 10 Available Hot-Pluggable Sled-Mounted Front Facing Drives

Product ID (PID)	PID Description	Drive Type	Capacity
HDDs			
HDDs (15K RPM)			
UCS-HD300G15K12N	300 GB 12G SAS 15K RPM SFF HDD	SAS	300 GB
UCS-HD600G15K12N	600 GB 12G SAS 15K RPM SFF HDD	SAS	600 GB
UCS-HD900G15K12N	900 GB 12G SAS 15K RPM SFF HDD	SAS	900 GB
HDDs (10K RPM)			
UCS-HD300G10K12N	300 GB 12G SAS 10K RPM SFF HDD	SAS	300 GB
UCS-HD600G10K12N	600 GB 12G SAS 10K RPM SFF HDD	SAS	600 GB
UCS-HD12TB10K12N	1.2 TB 12G SAS 10K RPM SFF HDD	SAS	1.2 TB
UCS-HD18TB10K4KN ¹	1.8 TB 12G SAS 10K RPM SFF HDD (4K)	SAS	1.8 TB
UCS-HD24TB10K4KN	2.4 TB 12G SAS 10K RPM SFF HDD (4K)	SAS	2.4 TB
HDDs (7.2K RPM)			
UCS-HD1T7K12N	1 TB 12G SAS 7.2K RPM SFF HDD	SAS	1 TB
UCS-HD2T7K12N	2 TB 12G SAS 7.2K RPM SFF HDD	SAS	2 TB
UCS-HD1T7K6GAN	1 TB 6G SATA 7.2K RPM SFF HDD	SAS	1 TB
SAS/SATA SSDs			
Enterprise Performance SSDs (High endurance, supports up to 3X DWPD (drive writes per day))²			
SATA SSDs			
UCS-SD480G63X-EP	480GB 2.5in Enterprise performance 6GSATA SSD(3X endurance) (Intel S4600)	SATA	480 GB
UCS-SD960G63X-EP	960GB 2.5in Enterprise performance 6GSATA SSD(3X endurance) (Intel S4600)	SATA	960 GB
UCS-SD19T63X-EP	1.9TB 2.5in Enterprise performance 6GSATA SSD(3X endurance) (Intel S4600)	SATA	1.9 TB
UCS-SD480GM3X-EP	480GB 2.5in Enterprise Performance 6GSATA SSD(3X endurance)	SATA	480 GB
UCS-SD960GM3X-EP	960GB 2.5in Enterprise performance 6GSATA SSD(3X endurance)	SATA	960 GB

Table 10 Available Hot-Pluggable Sled-Mounted Front Facing Drives (continued)

Product ID (PID)	PID Description	Drive Type	Capacity
UCS-SD19TM3X-EP	1.9TB 2.5in Enterprise performance 6GSATA SSD(3X endurance)	SATA	1.9 TB
Enterprise Value SSDs (Low endurance, supports up to 1X DDPD (drive writes per day))³			
SAS SSDs			
UCS-SD480G121X-EV	480 GB 2.5 inch Enterprise Value 12G SAS SSD (Toshiba PM4)	SAS	480 GB
UCS-SD960GK1X-EV	960 GB 2.5 inch Enterprise Value 12G SAS SSD	SAS	960 GB
UCS-SD19TK1X-EV	1.9 TB 2.5 inch Enterprise Value 12G SAS SSD	SAS	1.9 TB
UCS-SD38TK1X-EV	3.8 TB 2.5 inch Enterprise Value 12G SAS SSD	SAS	3.8 TB
UCS-SD76TK1X-EV	7.6 TB 2.5 inch Enterprise Value 12G SAS SSD	SAS	7.6 TB
UCS-SD15TK1X-EV	15.3 TB 2.5 inch Enterprise Value 12G SAS SSD	SAS	15.3 TB
SATA SSDs			
UCS-SD120GM1X-EV	120 GB 2.5 inch Enterprise Value 6G SATA SSD (Micron 5100 MAX)	SATA	120 GB
UCS-SD960G61X-EV	960 GB 2.5 inch Enterprise Value 6G SATA SSD (Samsung PM863A)	SATA	960 GB
UCS-SD960GM1X-EV	960 GB 2.5 inch Enterprise Value 6G SATA SSD (Micron 5100 PRO)	SATA	960 GB
UCS-SD16TM1X-EV	1.6 TB 2.5 inch Enterprise Value 6G SATA SSD (Micron 5100 MAX)	SATA	1.6 TB
UCS-SD19T61X-EV	1.9 TB 2.5 inch Enterprise Value 6G SATA SSD (Samsung PM863A)	SATA	1.9 TB
UCS-SD38T61X-EV	3.8TB 2.5 inch Enterprise Value 6G SATA SSD (Samsung PM863A)	SATA	3.8 TB
UCS-SD76T61X-EV	7.6 TB 2.5 inch Enterprise Value 6G SATA SSD	SATA	7.8 TB
UCS-SD19TM1X-EV	1.9 TB 2.5 inch Enterprise Value 6G SATA SSD (Micron 5100 ECO)	SATA	1.9 TB
UCS-SD38TM1X-EV	3.8 TB 2.5 inch Enterprise Value 6G SATA SSD (Micron 5100 ECO)	SATA	3.8 TB
UCS-SD480G611X-EV	480GB 2.5 inch Enterprise Value 6G SATA SSD (Intel S4500)	SATA	480 GB
UCS-SD960G611X-EV	960GB 2.5 inch Enterprise Value 6G SATA SSD (Intel S4500)	SATA	960 GB
UCS-SD38T611X-EV	3.8TB 2.5 inch Enterprise Value 6G SATA SSD (Intel S4500)	SATA	3.8 TB
UCS-SD960G6S1X-EV	960GB 2.5 inch Enterprise Value 6G SATA SSD	SATA	960 GB
UCS-SD19T6S1X-EV	1.9TB 2.5 inch Enterprise Value 6G SATA SSD	SATA	1.9 TB
UCS-SD38T6S1X-EV	3.8TB 2.5 inch Enterprise Value 6G SATA SSD	SATA	3.8 TB
UCS-SD76T6S1X-EV	7.6TB 2.5 inch Enterprise Value 6G SATA SSD	SATA	7.6 TB
Self-Encrypted Drives (SED)⁴			
HDDs			
UCS-HD600G15NK9	600 GB 12G SAS 15K RPM SFF HDD (SED)	SAS	600 GB
UCS-HD12T10NK9	1.2 TB 12G SAS 10K RPM SFF HDD (SED)	SAS	1.2 TB
UCS-HD24T10NK9	2.4 TB 12G SAS 10K RPM SFF HDD (4K) SED	SAS	2.4 TB
SSDs			
UCS-SD800GBHKNK9	800 GB Enterprise performance SAS SSD (10X DDPD, SED)	SAS	800 GB
UCS-SD800GBKNK9	800GB Enterprise Performance SAS SSD (3X DDPD, SED)	SAS	800 GB
UCS-SD960GBKNK9	960GB Enterprise Value SAS SSD (1X DDPD, SED)	SAS	960 GB
UCS-SD38TBKNK9	3.8TB Enterprise Value SAS SSD (1X DDPD, SED)	SAS	3.8 TB
UCS-SD16TBKNK9	1.6TB Enterprise performance SAS SSD (3X DDPD, SED)	SATA	1.6 TB

Table 10 Available Hot-Pluggable Sled-Mounted Front Facing Drives (*continued*)

Product ID (PID)	PID Description	Drive Type	Capacity
PCIe/NVMe SFF 2.5" drives⁵			
UCSC-NVME2H-I1000	U.2 1 TB Intel P4510 NVMe High Perf. Value Endurance	NVMe	1 TB
UCSC-NVME2H-I2TBV	U.2 2 TB Intel P4510 NVMe High Perf. Value Endurance	NVMe	2 TB
UCSC-NVME2H-I4000	U.2 4 TB Intel P4510 NVMe High Perf. Value Endurance	NVMe	4 TB
UCSC-NVMEXPB-I375	375 GB Intel Optane NVMe Extreme Perf.	NVMe	375 GB
UCSC-NVMEXP-I750	750 GB Intel Optane NVMe Extreme Perf.	NVMe	750 GB
NOTE: Cisco uses solid state drives from a number of vendors. All solid state drives 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 that have exceeded any maximum usage specifications set by Cisco or the manufacturer, as determined solely by Cisco.			

Notes:

- Operating Systems supported on 4k sector size drives are as follows:
 - Windows: Win2012, Win2012R2 and Win2016
 - Linux: RHEL 6.5/6.6/6.7/7.0/7.2/7.3 SLES 11 SP3 and SLES 12
 - 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.
- Targeted for write centric IO applications. Supports endurance of 10 or 3 DDPD (drive writes per day). Target applications are caching, online transaction processing (OLTP), data warehousing, and virtual desktop infrastructure (VDI).
- Targeted for read centric IO applications. Supports endurance of 1 DDPD (drive write per day). Target applications are boot, streaming media, and collaboration.
- For all self-encrypting drives (SED), standalone Management (CIMC) and UCSM is supported for configuring and managing local keys. SED drives can be managed with local and remote key management (third-party key management).
- Two CPUs must be installed in order to include any number of SFF NVMe PCIe SSDs.

Caveats

- 2.5-inch SFF NVMe drives are connected directly to the CPU, and are not managed by the Cisco 12G SAS HBA 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 HDDs and SAS/SATA SSDs when using the or Cisco 12G SAS HBA.
- If you order any SFF NVMe drives, you must also order two CPUs.
- Mixing of HGST and Intel NVMe drives is NOT supported
- SFF NVMe drives are bootable in UEFI mode only.
- SED drives can be mixed with the non-SED drives in [Table 10 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 10](#) 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 7 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)

Select PCIe Option Cards

The available PCIe option cards are listed in [Table 11](#).

Table 11 Available PCIe Option Cards

Product ID (PID)	PID Description	Card Height	Electrical Slot
Modular LAN on Motherboard (mLOM)			
UCSC-MLOM-C100-04	Cisco UCS VIC 1497 MLOM - Dual Port 40/100G QSFP28	mLOM	x16
UCSC-MLOM-C25Q-04	Cisco UCS VIC 1457 Quad Port 25G SFP28 mLOM	mLOM	x16
Virtual Interface Card (VICs)			
UCSC-PCIE-C100-04	Cisco VIC 1495 PCIE - Dual Port 40/100G QSFP28	1 or 2	x16
UCSC-PCIE-C25Q-04	Cisco VIC 1455 VIC PCIE - Quad Port 10/25G SFP28	1 or 2	x16
Network Interface Cards (NICs)			
1 Gb NICs			
UCSC-PCIE-IRJ45	Intel i350 Quad Port 1Gb Adapter	1 or 2	x8
10 Gb NICs			
UCSC-PCIE-ID10GF	Intel X710-DA2 Dual Port 10Gb SFP+ NIC	1 or 2	x8
UCSC-PCIE-IQ10GF	Intel X710 Quad Port 10Gb SFP+ NIC	1 or 2	x8
25 Gb NICs			
UCSC-PCIE-ID25GF	Intel XXV710 Dual Port 25Gb SFP28 NIC	1 or 2	x8
UCSC-P-M5D25GF	MELLANOX MCX512A-ACAT dual port 10/25G SFP28 NIC	1 or 2	x8
UCSC-PCIE-QD25GF	Qlogic QL41212H Dual Port 25Gb NIC	1 or 2	x8
100 Gb NICs			
UCSC-P-M5D100GF	MELLANOX CX-5 MCX516A-CDAT 2x100GbE QSFP PCIe NIC	1 or 2	x16

Caveats

- For 1-CPU systems:

- For systems with riser 1, only PCIe slots 1 and 2 (bottom two slots) on PCIe riser 1 are available for a 1-CPU system. Riser 1 is to the left when looking at the rear of the server
- For systems with risers 1C and 2E, only PCIe slot 1 (bottom slot) on riser 1C is available for a 1-CPU system. Riser 1C is to the left when looking at the rear of the server.
- The PCIe slots on riser 2B and 2E are not supported on 1-CPU systems. Riser 2B has PCIe slots 4, 5, and 6. These are the slots on the right when looking at the rear of the server. Slot 4 is the bottom slot. Riser 2E has PCIe2 (bottom slot)
- Only a single plug-in PCIe VIC card may be installed on a 1-CPU system, and it must be installed in slot 2 or 1 of riser 1.
- You can order an mLOM VIC card to be installed in the mLOM slot internal to the chassis and thus have two VIC cards in operation at the same time. If you order a GPU, it must be installed in slot 2, See [Table 11 on page 31](#) for the selection of plug-in and mLOM VIC cards. See also [Table 1 on page 7](#) and [Riser Card Configuration and Options, page 68](#) or the PCIe slot physical descriptions.
- For 2-CPU systems:
 - For the riser 1/2B combination, six PCIe slots are available, three on PCIe riser 1 (PCIe slots 1, 2, and 3) and three on PCIe riser 2B (PCIe slots 4, 5, and 6).
 - For the riser 1C/2E combination, the bottom slot on 1C (PCIe1) is available and the bottom slot on 1E (PCIe2) is available.
 - Two plug-in PCIe VIC cards can be installed in dual CPU systems, using slots 2 and 5. In addition, you can order an mLOM VIC card, which is installed in the mLOM slot inside the chassis and thus have three VIC cards in operation at the same time. See [Table 11 on page 31](#) for the selection of plug-in and mLOM VIC cards. See also [Table 1 on page 7](#) and [Riser Card Configuration and Options, page 68](#) for the PCIe slot physical descriptions.
 - If GPUs are installed in slots 2 (riser 1) and 5 (riser 2B), the NCSI capability automatically switches over to slots 1 (riser 1) and 4 (riser 2B). Therefore, Cisco PCIe VICs can be installed in slots 1 and 4 if GPUs are installed in slots 2 and 5. If you order two GPUs, they must be installed in slots 2 and 5 and thus you will not be able to install VIC cards in those slots.



NOTE: UCSM managed servers are discoverable only if a VIC is installed in slot 2 or a VIC is installed in the MLOM slot. If you install two GPUs, they must be located in slots 2 and 5. Therefore, if two GPUs are installed, UCSM managed servers are discoverable only if you install a VIC in the MLOM slot.

- The server supports up to two PCIe Cisco VICs plus an MLOM VIC

However, single wire management is supported on only one VIC at a time. If multiple VICs are installed on a server, only one slot has NCSI enabled at a time and for single wire management, priority goes to the MLOM slot, then slot 2, then slot 5 for NCSI management traffic. When multiple cards are installed, connect the single wire management cables in the priority order mentioned above.

- 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 C240 SD M5 server, but are not sold on the Cisco price list, check the Hardware Compatibility List at this

URL: http://www.cisco.com/en/US/products/ps10477/prod_technical_reference_list.html

PCIe Card Configuration with 2 CPU

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

Table 12 PCIe Card Configuration with 2 CPU

PCIe Card Type	Primary Slot	Secondary Slot	Alternate Slot
Cisco 12G 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	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 8 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 VIC1495 and VIC 1497 refer to the VIC 1400 series data sheet at the following link:
 - <https://www.cisco.com/c/en/us/products/collateral/interfaces-modules/unified-computing-system-adapters/datasheet-c78-741130.html>
- The Intel X710 NIC adapter supports the following Cisco optical transceiver PIDs: SFP-10G-SR and SFP-10G-SR-S.
- For information on supported SFPs for the Intel XXV710 Dual Port 25Gb SFP28 NIC, refer to this link:
 - <https://www.cisco.com/c/dam/en/us/products/collateral/servers-unified-computing/ucs-c-series-rack-servers/intel-xxv710-dual-port-25g-product-brief.pdf>

Refer to the following links for additional connectivity options:

- Intel
 - [Product Guide](#)
 - [Speed White Paper](#)
- Marvell/Qlogic
 - [41000 Series Interoperability Matrix](#)
 - [45000 Series Interoperability Matrix](#)
- Mellanox
 - [Firmware Release Notes](#)

STEP 9 ORDER GPU CARDS (OPTIONAL)

Select GPU Options

The available GPU PCIe options are listed in [Table 13](#).

Table 13 Available PCIe GPU Cards

Product ID (PID)	PID Description	Card Size	Maximum cards Per node
GPU PCIe Cards			
UCSC-GPU-T4-16 ¹	NVIDIA T4 PCIE 75W 16GB	Low Profile Single-Width	2

Notes:

1. Refer to [C240 SD 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
- When a GPU is installed, it is recommended to have two CPUs if NVMe support is needed.
- When two GPUs are installed, it is required to have two power supplies in the server. When only one GPU is installed, use the power calculator at the following link to determine the needed power based on the options chosen (CPUs, drives, GPUs, memory, and so on):

<http://ucspowercalc.cisco.com>

Caveats

- Currently, only T4 GPUs are supported.
- For riser combination 1/2B (see [Figure 2 on page 5](#)), slot 2 on riser card 1 is the required slot for the first GPU and slot 5 on riser card 1B is the required slot for the second GPU.
- For riser combination 1C/2E (see [Figure 3 on page 6](#)), slot 1 on riser card 1C is the required slot for the first GPU and slot 2 on riser card 2E is the required slot for the second GPU.

Refer to [Table 14](#) for the PCIe slot usage for GPU cards.

Table 14 PCIe Slot Usage in Riser 1/2B and Riser 1C/2E Combinations

Riser Combinations	Total Riser Slots Available		Riser Slots Available for GPUs	
	1-CPU System	2-CPU System	1-CPU System	2-CPU System
1/2B	Slots 1 and 2	Slots 1, 2, 3, 4, 5, and 6	Slot 2	Slots 2 and 5
1C/2E	Slot 1	Slots 1 and 2	Slot 1	Slots 1 and 2



NOTE:

- UCSM managed servers are discoverable only if a PCIe VIC card is installed in slot 2 or an mLOM VIC card is installed in the mLOM slot. If you install two GPUs, they must be located in slots 2 and 5. Therefore, if two GPUs are installed, UCSM managed servers are discoverable only if you install a VIC in the MLOM slot.
- For more information on the riser card options, see [Riser Card Configuration and Options, page 68](#)

STEP 10 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 offer multiple power output options. This allows users to “right-size” based on server configuration, which improves power efficiency, lower overall energy costs and avoid stranded capacity in the data center. Use the power calculator at the following link to determine the needed power based on the options chosen (CPUs, drives, memory, and so on):

<http://ucspowercalc.cisco.com>



WARNING: Starting 1st 2024, only Titanium rated PSUs are allowed to be shipped to EU, UK and other countries that adopted Lot 9 Regulation.

Table 15 Power Supply

Product ID (PID)	PID Description
UCSC-PSUF-1050W	UCSC 1050W Power Supply for SD
UCSC-PSUF-1050WDC	UCSC 1050WDC Power Supply for SD



NOTE:

- In a two power supply server, both power supplies must be identical.
- If a GPU is installed, it is required to have two power supplies.
- DC PSUs are not impacted by Lot 9 Regulation and are EU/UK Lot 9 compliant

STEP 11 SELECT INPUT POWER CORD(S)

Using [Table 16](#), select the appropriate AC power cords. You can select a minimum of no power cords and a maximum of two.

Table 16 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	

Table 16 Available Power Cords

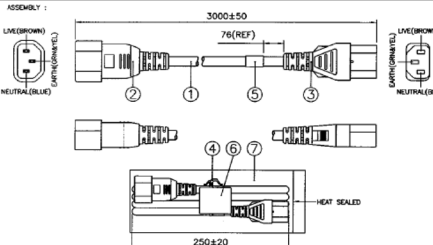
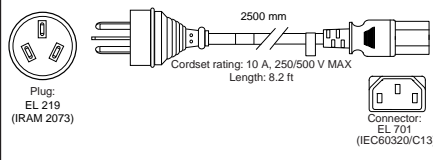
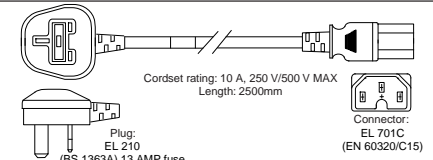
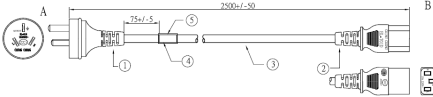
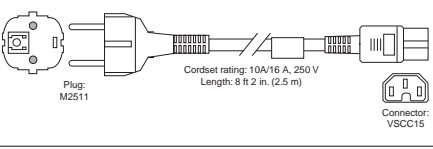
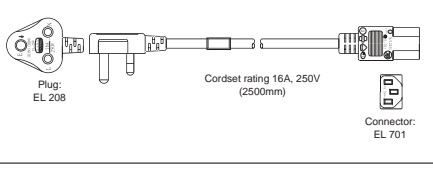
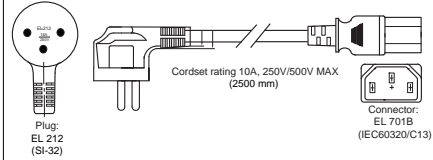
Product ID (PID)	PID Description	Images
CAB-C13-C14-AC	CORD,PWR,JMP,IEC60320/C14,IEC60320/C13, 3.0M	
CAB-250V-10A-AR	Power Cord, 250V, 10A, Argentina	
CAB-9K10A-AU	Power Cord, 250VAC 10A 3112 Plug, Australia	
CAB-250V-10A-CN	AC Power Cord - 250V, 10A - PRC	
CAB-9K10A-EU	Power Cord, 250VAC 10A CEE 7/7 Plug, EU	
CAB-250V-10A-ID	Power Cord, SFS, 250V, 10A, India	
CAB-250V-10A-IS	Power Cord, SFS, 250V, 10A, Israel	

Table 16 Available Power Cords

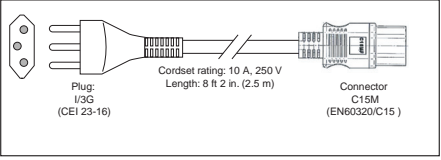
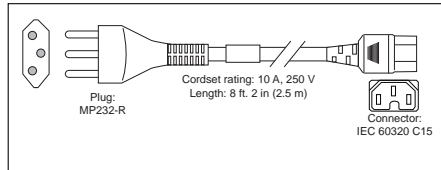
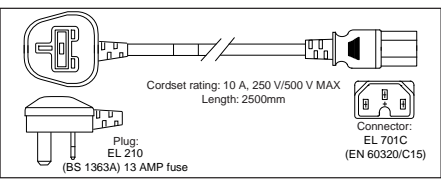
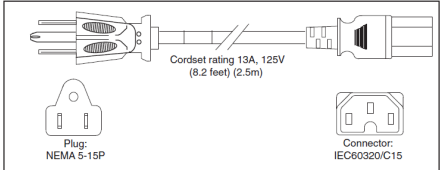
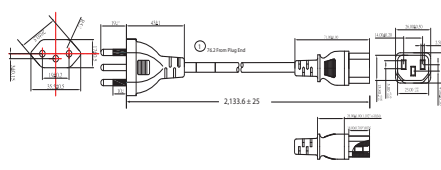
Product ID (PID)	PID Description	Images
CAB-9K10A-IT	Power Cord, 250VAC 10A CEI 23-16/VII Plug, Italy	 <p>Plug: I/3G (CEI 23-16) Cordset rating: 10 A, 250 V Length: 8 ft 2 in (2.5 m) Connector: C15M (EN60320/C15)</p>
CAB-9K10A-SW	Power Cord, 250VAC 10A MP232 Plug, Switzerland	 <p>Plug: MP232-R Cordset rating: 10 A, 250 V Length: 8 ft. 2 in (2.5 m) Connector: IEC 60320 C15</p>
CAB-9K10A-UK	Power Cord, 250VAC 10A BS1363 Plug (13 A fuse), UK	 <p>Cordset rating: 10 A, 250 V/500 V MAX Length: 2500mm Plug: EL 210 (BS 1363A) 13 AMP fuse Connector: EL 701 C (EN 60320/C15)</p>
CAB-9K12A-NA ¹	Power Cord, 125VAC 13A NEMA 5-15 Plug, North America	 <p>Cordset rating: 13A, 125V (8.2 feet) (2.5m) Plug: NEMA 5-15P Connector: IEC60320/C15</p>
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

Table 16 Available Power Cords

Product ID (PID)	PID Description	Images
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 12 ORDER TOOL-LESS RAIL KIT and RAIL EXTENDER KIT

Select a Tool-less Rail Kit

Select a tool-less rail kit from [Table 17](#).

Table 17 Tool-less Rail Kit Options

Product ID (PID)	PID Description
UCSC-RAILS-M5	Ball Bearing Rail Kit for C240M5 SD Rack Server
UCSC-RAIL-NONE	No rail kit option

For more information about the tool-less rail kit, see the Cisco UCS C240 SD M5 Installation and Service Guide at this URL:

http://www.cisco.com/c/en/us/td/docs/unified_computing/ucs/c/hw/c240sdm5/install/c240sdm5.html



NOTE: If you plan to rackmount your UCS C240 SD M5 server, you must order a tool-less rail kit. The same rail kits is used for C240 M4 M5 and C240 SD M5 servers.

Select a Rail Extender Kit

For two-post rack installation, you must select a rail extender kit from [Table 18](#).

Table 18 Rail Extender Kit Option

Product ID (PID)	PID Description
UCSC-C240SD-EXT	UCS C240 SD M5 Extender Kit

STEP 13 SELECT MANAGEMENT CONFIGURATION (OPTIONAL)

By default, the C240 SD 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 19](#). In Dedicated NIC mode, the CIMC can be accessed only through the dedicated management port. See [Chassis Rear View, page 6](#) 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 19](#). 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 19 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 14 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 20](#).

Table 20 Server Boot Mode Ordering Information

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

STEP 15 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 21](#).

Table 21 Security Devices

Product ID (PID)	PID Description
UCSX-TPM2-002	Trusted Platform Module 2.0 for UCS servers
UCSX-TPM2-002B	FIPS Compliant Trusted Platform Module 2.0 for UCS servers
UCSC-INT-SW01	C220 M5 and C240 SD 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 16 ORDER CISCO SD CARD MODULE (OPTIONAL)

Order one or two matching SD cards. See [Figure 6 on page 64](#) for the location of the mini storage module connector, which accommodates an SD module. Each SD module accommodates two SD cards.

Table 22 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

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 SSD \(OPTIONAL\), page 48](#)).

STEP 17 ORDER M.2 SATA SSD (OPTIONAL)

Order one or two matching M.2 SATA SSDs (see [Table 23](#)) along with a mini storage carrier or a boot-optimized RAID controller (see [Table 24](#)).



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 23](#).

Table 23 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

Table 24 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 24](#).
 - 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 23](#).



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 25 32 GB Secure Digital (SD) Card

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

NOTE:

- The microSD card mounts internally on riser 1 or riser 1C, so you must order either UCSC-PCI-1-C240M5 or UCSC-RS1C-240M5SD when you order a micro-SD card.
- 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 26](#).

Table 26 USB 3.0 Drive

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

See [Figure 6 on page 64](#) 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 27](#))
- OEM Software ([Table 28](#))
- Operating System ([Table 29](#))

Table 27 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 28 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 29 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	

Table 29 (continued) Operating System

Product ID (PID)	PID Description
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 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 Req4.0(4b)4.0(4b)
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

Table 29 (continued) Operating System

Product ID (PID)	PID Description
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
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 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-C240-M5SD)

Service SKU	Service Level GSP	On Site?	Description
CON-PREM-C240M5SD	C2P	Yes	SNTC 24X7X20S
CON-UCSD8-C240M5SD	UCSD8	Yes	UC SUPP DR 24X7X20S*
CON-C2PL-C240M5SD	C2PL	Yes	LL 24X7X20S**
CON-OSP-C240M5SD	C4P	Yes	SNTC 24X7X40S
CON-UCSD7-C240M5SD	UCSD7	Yes	UCS DR 24X7X40S*
CON-C4PL-C240M5SD	C4PL	Yes	LL 24X7X40S**
CON-USD7L-C240M5SD	USD7L	Yes	LLUCS HW DR 24X7X40S***
CON-OSE-C240M5SD	C4S	Yes	SNTC 8X5X40S

Table 30 Cisco SNTC for UCS Service (PID UCSC-C240-M5SD)

Service SKU	Service Level GSP	On Site?	Description
CON-UCSD6-C240M5SD	UCSD6	Yes	UC SUPP DR 8X5X4OS*
CON-SNCO-C240M5SD	SNCO	Yes	SNTC 8x7xNCDOS****
CON-OS-C240M5SD	CS	Yes	SNTC 8X5XNBDOS
CON-UCSD5-C240M5SD	UCSD5	Yes	UCS DR 8X5XNBDOS*
CON-S2P-C240M5SD	S2P	No	SNTC 24X7X2
CON-S2PL-C240M5SD	S2PL	No	LL 24X7X2**
CON-SNTP-C240M5SD	SNTP	No	SNTC 24X7X4
CON-SNTPL-C240M5SD	SNTPL	No	LL 24X7X4**
CON-SNTE-C240M5SD	SNTE	No	SNTC 8X5X4
CON-SNC-C240M5SD	SNC	No	SNTC 8x7xNCD****
CON-SNT-C240M5SD	SNT	No	SNTC 8X5XNBD
CON-SW-C240M5SD	SW	No	SNTC NO RMA
Note: For PID UCSC-C240-M5S, select Service SKU with CC240M5S suffix (Example: CON-PREM-CC240M5S)			
Note: For PID UCSC-C240-M5SN, select Service SKU with C240M5SN suffix (Example: CON-PREM-C240M5SN)			
*Includes Drive Retention (see UCS Drive Retention Service, page 62)			
**Includes Local Language Support (see Local Language Technical Support for UCS, page 63) - 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 listed in [Table 31](#).

Table 31 Cisco SNTC for Cisco UCS Onsite Troubleshooting Service

Service SKU	Service Level GS	On Site?	Description
CON-OSPT-C240M5SD	OSPT	Yes	24X7X4OS Trblshtg
CON-OSPTD-C240M5SD	OSPTD	Yes	24X7X4OS TrblshtgDR*
CON-OSPTL-C240M5SD	OSPTL	Yes	24X7X4OS TrblshtgLL**
CON-OPTLD-C240M5SD	OPTLD	Yes	24X7X4OS TrblshtgLLD***
*Includes Drive Retention (see UCS Drive Retention Service, page 62)			
**Includes Local Language Support (see Local Language Technical Support for UCS, page 63) - 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-C240-M5SD)

Service SKU	Service Level GSP	On Site?	Description
CON-SSC2P-C240M5SD	SSC2P	Yes	SOLN SUPP 24X7X2OS
CON-SSC4P-C240M5SD	SSC4P	Yes	SOLN SUPP 24X7X4OS
CON-SSC4S-C240M5SD	SSC4S	Yes	SOLN SUPP 8X5X4OS

Table 32 Solution Support for UCS Service (PID UCSC-C240-M5SD) (continued)

CON-SSCS-C240M5SD	SSCS	Yes	SOLN SUPP 8X5XNBDOS
CON-SSDR7-C240M5SD	SSDR7	Yes	SSPT DR 24X7X4OS*
CON-SSDR5-C240M5SD	SSDR5	Yes	SSPT DR 8X5XNBDOS*
CON-SSS2P-C240M5SD	SSS2P	No	SOLN SUPP 24X7X2
CON-SSSNP-C240M5SD	SSSNP	No	SOLN SUPP 24X7X4
CON-SSSNE-C240M5SD	SSSNE	No	SOLN SUPP 8X5X4
CON-SSSNC-C240M5SD	SSSNC	No	SOLN SUPP NCD**
CON-SSSNT-C240M5SD	SSSNT	No	SOLN SUPP 8X5XNBD
*Includes Drive Retention (see UCS Drive Retention Service, page 62)			
**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-C240-M5SD)

Service SKU	Service Level GSP	On Site?	Description
CON-UCW7-C240M5SD	UCW7	Yes	UCS HW 24X7X4OS
CON-UCWD7-C240M5SD	UCWD7	Yes	UCS HW+DR 24X7X4OS*
CON-UCW7L-C240M5SD	UCW7L	Yes	LL UCS 24X7X4OS**
CON-UWD7L-C240M5SD	UWD7L	Yes	LL UCS DR 24X7X4OS***
CON-UCW5-C240M5SD	UCW5	Yes	UCS HW 8X5XNBDOS
CON-UCWD5-C240M5SD	UCWD5	Yes	UCS HW+DR 8X5XNBDOS*
*Includes Drive Retention (see UCS Drive Retention Service, page 62)			
**Includes Local Language Support (see Local Language Technical Support for UCS, page 63) - Only available in China and Japan			
***Includes Local Language Support and Drive Retention - Only available in China and Japan			

Partner Support Service for UCS

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

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

PSS options enable eligible Cisco partners to develop and consistently deliver high-value technical support that capitalizes on Cisco intellectual assets. This helps partners to realize higher margins and expand their practice.

PSS is available to all Cisco PSS partners.

The two Partner Unified Computing Support Options include:

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

PSS for UCS provides hardware and software support, including triage support for third party software, backed by Cisco technical resources and level three support. You can choose a desired service listed in [Table 34](#).

Table 34 PSS for UCS (PID UCSC-C240-M5SD)

Service SKU	Service Level GSP	On Site?	Description
CON-PSJ8-C240M5SD	PSJ8	Yes	UCS PSS 24X7X2 OS
CON-PSJ7-C240M5SD	PSJ7	Yes	UCS PSS 24X7X4 OS
CON-PSJD7-C240M5SD	PSJD7	Yes	UCS PSS 24X7X4 DR*
CON-PSJ6-C240M5SD	PSJ6	Yes	UCS PSS 8X5X4 OS
CON-PSJD6-C240M5SD	PSJD6	Yes	UCS PSS 8X5X4 DR*
CON-PSJ4-C240M5SD	PSJ4	No	UCS SUPP PSS 24X7X2
CON-PSJ3-C240M5SD	PSJ3	No	UCS SUPP PSS 24X7X4
CON-PSJ2-C240M5SD	PSJ2	No	UCS SUPP PSS 8X5X4
CON-PSJ1-C240M5SD	PSJ1	No	UCS SUPP PSS 8X5XNBD
*Includes Drive Retention (see UCS Drive Retention Service, page 62)			

PSS for UCS Hardware Only

PSS for UCS Hardware Only provides customers with replacement parts in as little as two hours and provides remote access any time to Partner Support professionals who can determine if a return materials authorization (RMA) is required. You can choose a desired service listed in [Table 35](#)

Table 35 PSS for UCS Hardware Only (PID UCSC-C240-M5SD)

Service SKU	Service Level GSP	On Site?	Description
CON-PSW7-C240M5SD	PSW7	Yes	UCS W PSS 24X7X4 OS
CON-PSWD7-C240M5SD	PSWD7	Yes	UCS W PSS 24X7X4 DR*
CON-PSW6-C240M5SD	PSW6	Yes	UCS W PSS 8X5X4 OS
CON-PSWD6-C240M5SD	PSWD6	Yes	UCS W PSS 8X5X4 DR*
CON-PSW4-C240M5SD	PSW4	No	UCS W PL PSS 24X7X2
CON-PSW3-C240M5SD	PSW3	No	UCS W PL PSS 24X7X4
CON-PSW2-C240M5SD	PSW2	No	UCS W PL PSS 8X5X4
*Includes Drive Retention (see UCS Drive Retention Service, page 62)			

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-C240-M5SD)

Service SKU	Service Level GSP	On Site?	Description
CON-NCF2P-C240M5SD	NCF2P	Yes	CMB SVC 24X7X2OS
CON-NCF4P-C240M5SD	NCF4P	Yes	CMB SVC 24X7X4OS
CON-NCF4S-C240M5SD	NCF4S	Yes	CMB SVC 8X5X4OS
CON-NCFCS-C240M5SD	NCFCS	Yes	CMB SVC 8X5XNBDOS
CON-NCF2-C240M5SD	NCF2	No	CMB SVC 24X7X2
CON-NCFP-C240M5SD	NCFP	No	CMB SVC 24X7X4
CON-NCFE-C240M5SD	NCFE	No	CMB SVC 8X5X4
CON-NCFT-C240M5SD	NCFT	No	CMB SVC 8X5XNBD
CON-NCFW-C240M5SD	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

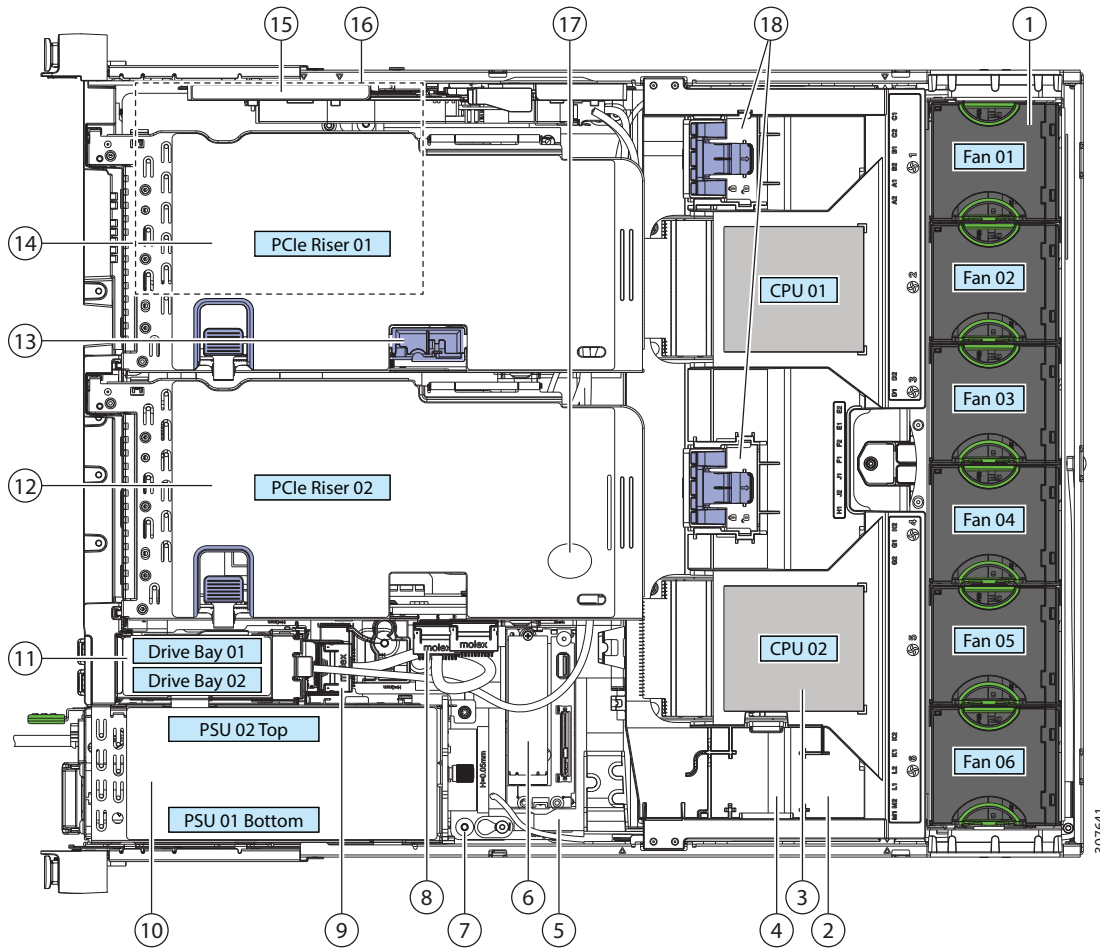
http://www.cisco.com/en/US/products/ps10312/serv_group_home.html

SUPPLEMENTAL MATERIAL

Chassis

An internal view of the C240 SD M5 chassis with the top cover removed is shown in [Figure 6](#).

Figure 6 C240 SD M5 SFF With Top Cover Off

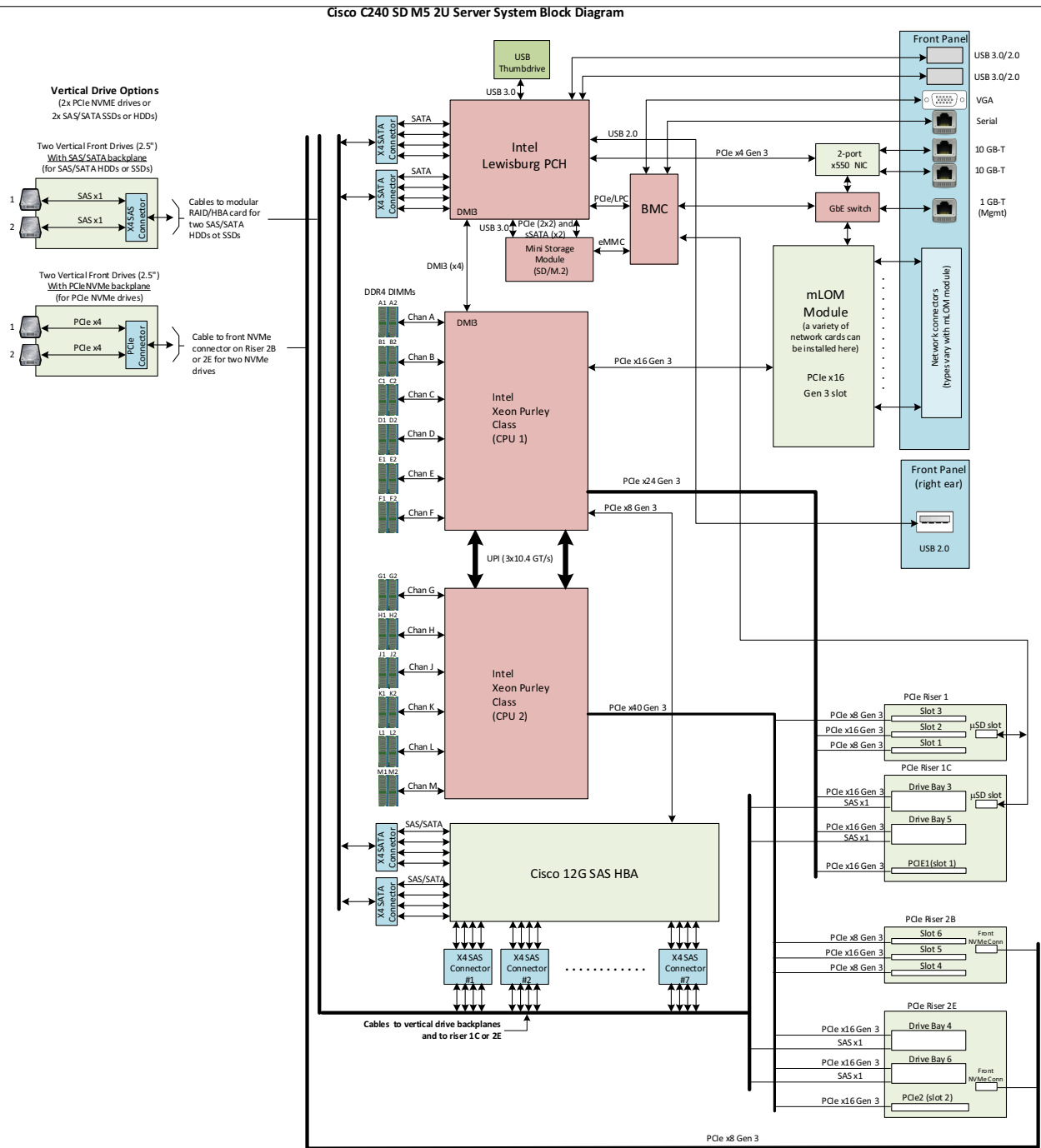


1	Fan modules (hot swap)	2	DIMM sockets (hidden in this view)
3	CPUs and heatsinks (1 or 2)	4	Supercap power module mounting clip on air baffle (if applicable)
5	USB slot on motherboard	6	Mini storage module socket Supports either an SD card carrier with two SD card slots; or an M.2 SSD carrier with two slots for either two M.2 SATA or two M.2 NVMe SSDs.
7	Chassis intrusion switch	8	PCI cable connectors for NVMe drives

9	Vertical drive backplane assembly	10	Power supplies (hot swap)
11	Drive bays 01 and 02	12	PCIe riser 2 <ul style="list-style-type: none"> ■ Riser 2B option - PCIe slots 4, 5, 6, or ■ Riser 2E option - PCIe slot 2 and drive bays 4 and 6
13	Micro SD socket on PCIe riser 01	14	PCIe riser 1 <ul style="list-style-type: none"> ■ Riser 1 option - PCIe slots 1,2, 3, or ■ Riser 1C option - PCIe slot 1 and drive bays 3 and 5
15	Storage controller (dedicated slot)	16	mLOM card socket on board
17	RTC battery on board (not visible in this view)	18	-

Block Diagram

Figure 7 C240 SD M5 Block Diagram



CPU and DIMM Layout

Each CPU has four DIMM channels:

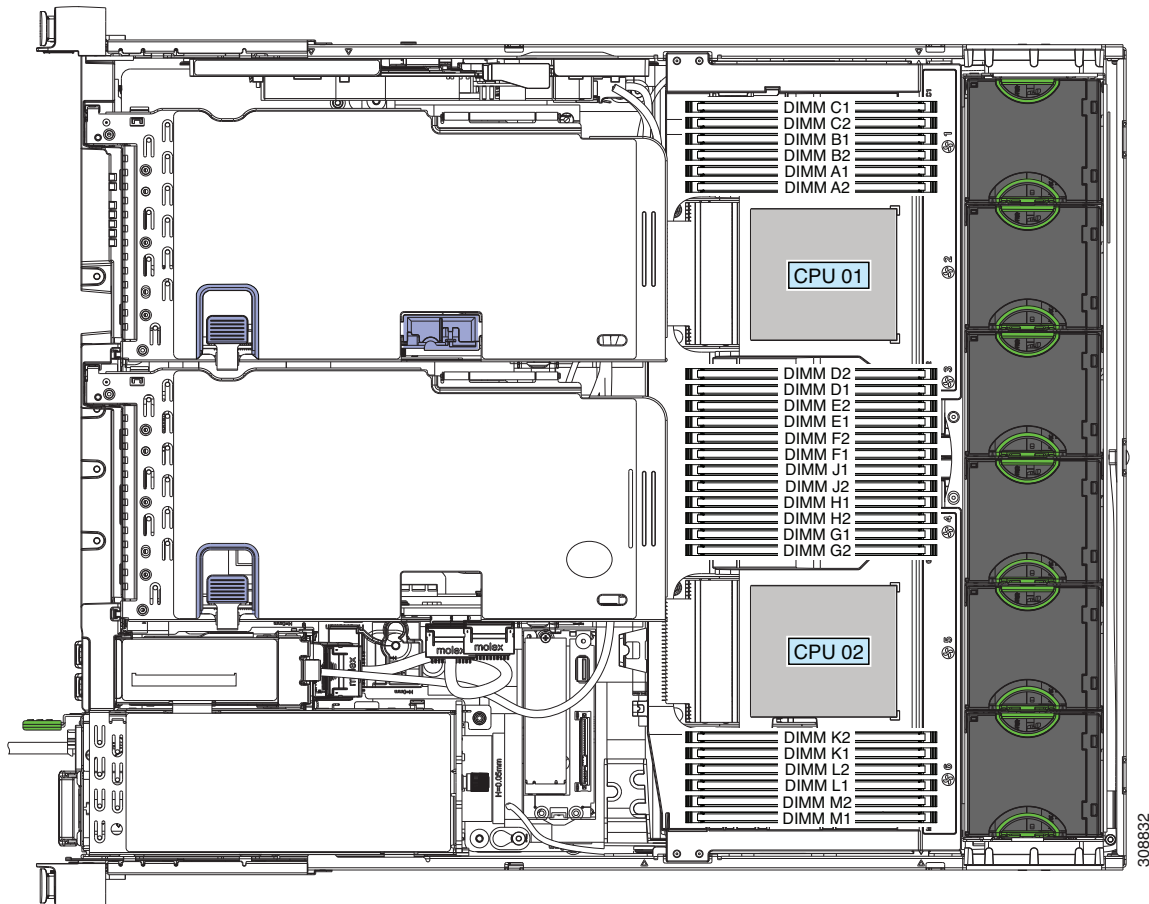
- CPU1 has channels A, B, C, D, E, F
- CPU2 has channels G, H, J, K, L, M

Each DIMM channel has two slots: slot 1 and slot 2. The black-colored DIMM slots are for slot 1 and the blue-colored slots for slot 2.

As an example, DIMM slots A1, B1, C1, D1, E1, and F1 belong to slot 1, while A2, B2, C2, D2, E2, and F2 belong to slot 2.

Figure 8 shows how slots and channels are physically laid out on the motherboard. The slot 1 (blue) DIMM slots are always located farther away from a CPU than the corresponding slot 2 (black) DIMM slots. Slot 1 slots (blue) are populated before slot 2 slots (black).

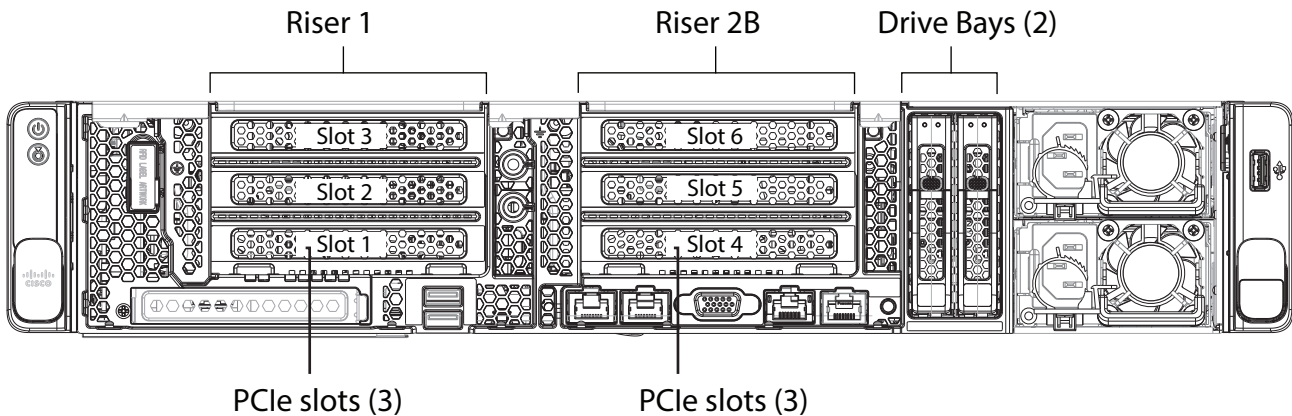
Figure 8 C240 SD M5 CPU and DIMM Layout



Riser Card Configuration and Options

The 1/2B riser card combination is shown in [Figure 9](#). This combination provides six PCIe slots in addition to the two permanent drive bays in the chassis.

Figure 9 Riser Card 1 (PCIe slots 1, 2, and 3) on left and Riser Card 2B (PCIe slots 4, 5, and 6) on right



The 1C/2E riser card combination is shown in [Figure 10](#). This combination provides two PCIe slots and four drive bays in addition to the two permanent drive bays in the chassis.

Figure 10 Riser Card 1C (PCIe1 slot and two drive bays) on left and Riser Card 2E (PCIe2 slot and two drive bays) on right

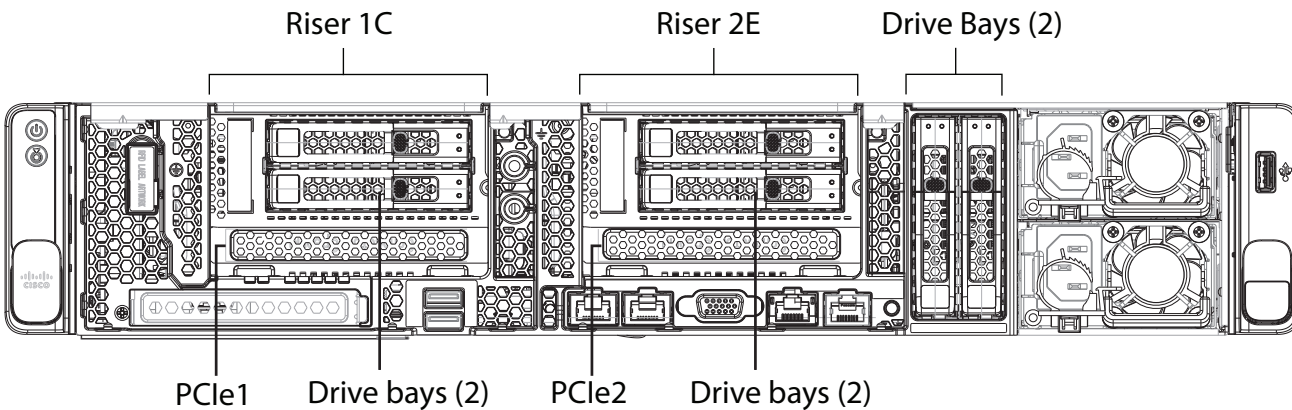


Table 37 shows the storage and PCIe slot combinations for the risers.

Table 37 Storage and PCIe Slot Combinations

Configuration	Combination Options
Single CPU Server with Risers 1C and 2E Installed (Figure 10 on page 68)	
Vertical Drives (drives 1 and 2)	Up to 2 SAS/SATA drives (with vertical SAS backplane) No NVMe drives can be installed
Horizontal Drives (drives 3, 4, 5, and 6)	Up to 4 SAS/SATA drives No NVMe drives can be installed
PCIe Slots (PCIe slots 1 and 2)	Only PCIe slot 1 is available (x16). NCSI and NVIDIA T4 GPU compatible.
Dual CPU Server with Risers 1C and 2E Installed (Figure 10 on page 68)	
Vertical Drives (drives 1 and 2)	Up to 2 SAS/SATA drives (with vertical SAS backplane), or Up to 2 NVMe drives (with vertical NVMe backplane)
Horizontal Drives (drives 3, 4, 5, and 6)	Up to 4 SAS/SATA drives or NVMe drives in any combination
PCIe Slots (PCIe slots 1 and 2)	PCIe slot 1 (x16) and PCIe 2 slot (x16) are available. Both slots are NCSI and NVIDIA T4 GPU compatible.
Single CPU Server with Risers 1 and 2B Installed (Figure 9 on page 68)	
Vertical Drives (drives 1 and 2)	Up to 2 SAS/SATA drives (with vertical SAS backplane) No NVMe drives can be installed
Horizontal Drives (drives 3, 4, 5, and 6)	Not applicable
PCIe Slots (PCIe slots 1, 2, 3, 4, 5, and 6)	Only PCIe slots 1 (x8, NCSI compatible) and 2 (x16, NCSI and NVIDIA T4 GPU compatible) are available
Dual CPU Server with Risers 1 and 2B Installed (Figure 9 on page 68)	
Vertical Drives (drives 1 and 2)	Up to 2 SAS/SATA drives (with vertical SAS backplane), or Up to 2 NVMe drives (with vertical NVMe backplane)
Horizontal Drives (drives 3, 4, 5, and 6)	Not applicable
PCIe Slots (PCIe slots 1, 2, 3, 4, 5, and 6)	All 6 PCIe slots are available PCIe slot 1 (x8, NCSI) PCIe 2 slot (x16, NCSI and T4 GPU compatible), PCIe slot 3 (x8), PCIe slot 4 (x8, NCSI), PCIe slot 5 (x16, NCSI and T4 GPU compatible), and PCIe slot 6 (x8)

Riser card 1 is shown in [Figure 11](#) and [Table 38](#).

Figure 11 Riser Card 1 (PCIe slots 1, 2, and 3)

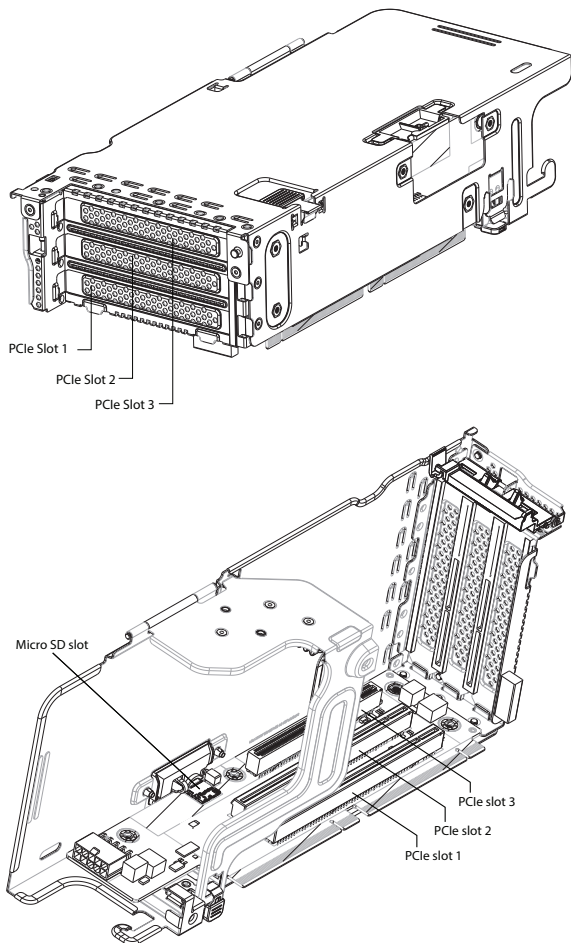


Table 38 Riser Card 1

Slot #	Height	Length	Electrical	NCSI Support
Riser Card 1 PID UCSC-PCI-1-C240M5				
3	Full	Full	x8	No
2	Full	Full ¹	x16	Yes ²
1	Full	3/4	x8	Yes ²

Notes:

1. GPU capable slot
2. NCSI supported in only one slot at a time (default slot 2). If a GPU card is present in slot 2, NCSI support automatically moves to slot 1.

Riser card 2B is shown in [Figure 12](#) and [Table 39](#)

Figure 12 Riser Card 2B (PCIe slots 4, 5, and 6)

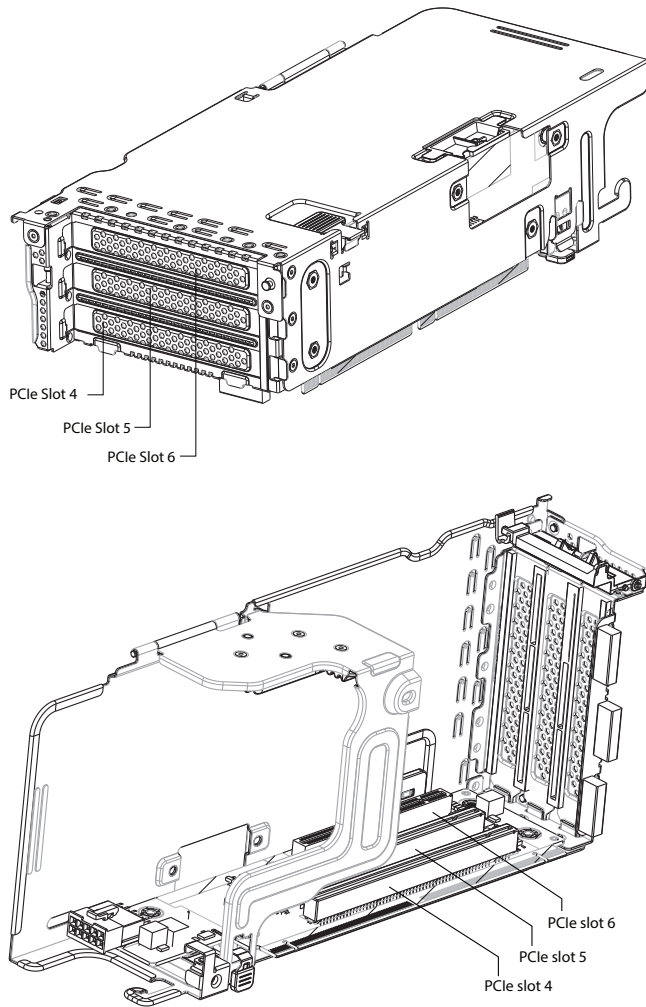


Table 39 Riser Card 2B

Slot #	Height	Length	Electrical	NCSI Support
Riser Card 2B PID UCSC-PCI-2B-240M5				
6	Full	Half	x8	No
5	Full	Full ¹	x16	Yes ²
4	Full	Full	x8	Yes ²

Notes:

1. GPU capable slot
2. NCSI supported in only one slot at a time (default slot 5). If a GPU card is present in slot 5, NCSI support automatically moves to slot 4.

Riser card 1C is shown in [Figure 13 Table 40](#).

Figure 13 Riser Card 1C (PCIe slot 1 and Drive Bays 3 and 5)

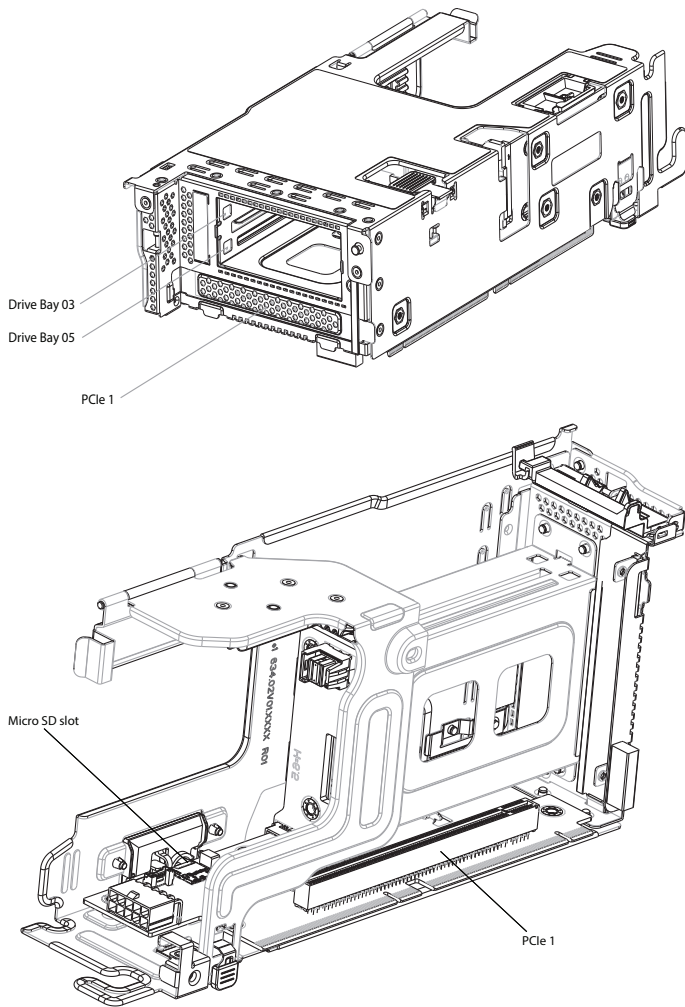


Table 40 Riser Card 1C

Slot #	Height	Length	Electrical	NCSI Support
Riser Card 1C PID UCSC-RS1C-240M5SD				
Drive Bay 03 - accommodates an NVMe drive or SAS/SATA HDD/SSD drive				
Drive Bay 05 - accommodates an NVMe drive or SAS/SATA HDD/SSD drive				
PCIe 1	Full	3/4	x16	Yes

Riser card 2E is shown in [Figure 14](#) and [Table 41](#).

Figure 14 Riser Card 2E (PCIe slot 2 and Drive Bays 4 and 6)

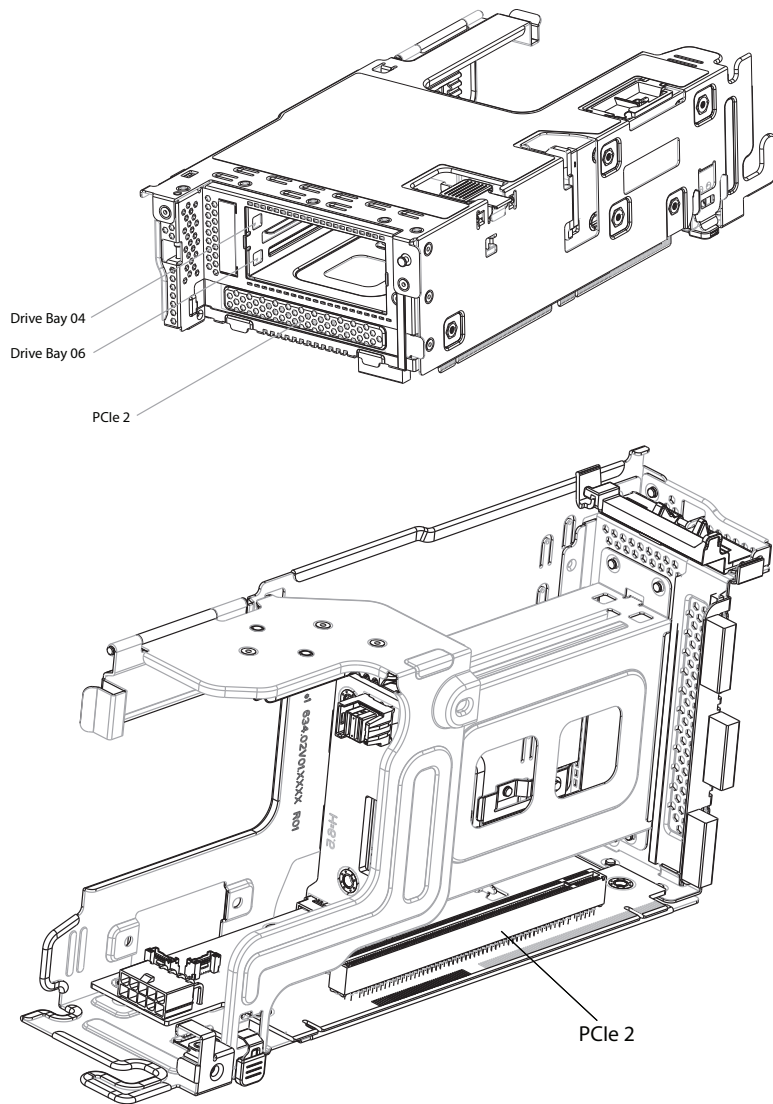


Table 41 Riser Card 2E

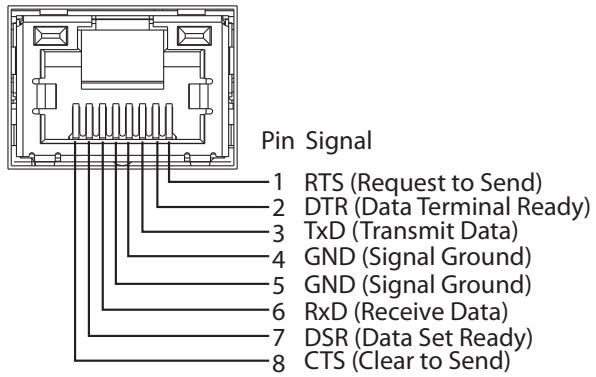
Slot #	Height	Length	Electrical	NCSI Support
Riser Card 2E PID UCSC-RS2E-240M5SD				
Drive Bay 04 - accommodates an NVMe drive or SAS/SATA HDD/SSD drive				
Drive Bay 06 - accommodates an NVMe drive or SAS/SATA HDD/SSD drive				
PCIe 2	Full	3/4	x16	Yes

Serial Port Details

The pinout details of the rear RJ-45 serial port connector are shown in [Figure 15](#).

Figure 15 Serial Port (Female RJ-45 Connector) Pinout

Serial Port (RJ-45 Female Connector)



SPARE PARTS

This section lists the upgrade and servicing-related parts you may need during the life of your server. Some of these parts are configured with every server, and some may be ordered when needed or may be ordered and kept on hand as spares for future use. See [Table 42](#).

Table 42 Upgrade and Servicing-related Parts for UCS C240 SD M5 Server

Spare Product ID (PID)	Description
UCSC-HS2-C240M5=	Heat sink for UCS C240 SD M5 rack servers CPUs above 150W
UCS-CPUAT=	CPU Assembly Tool for M5 Servers
UCS-CPU-TIM=	Single CPU thermal interface material syringe for M5 server HS seal
UCSX-HSCK=	UCS Processor Heat Sink Cleaning Kit For Replacement of CPU
UCS-M5-CPU-CAR=	UCS M5 CPU Carrier
UCSC-RNVME-240M5=	C240 SD M5 Rear NVMe cable (1) kit, contain Rear NVMe cable and backplane
UCSC-RSAS-C240M5x	C240M5SX Rear drive SAS cable kit (includes SAS cable/backplane)
UCSC-BBLKD-S2=	C-Series M5 SFF drive blanking panel ¹
CBL-SASHBA-M5SD=	CBL, SAS HBA to Riser1 & 2 w/ SAS/SATA drive, C240M5SD
UCSC-RIS-CBL-M5SD	C240 M5SD Riser-2 to Riser-1 Cable
UCSC-PCI-1-C240M5=	Riser 1 incl 3 PCIe slots (x8, x16, x8); slot 3 requires CPU2
UCSC-PCI-2B-240M5=	Riser 2B incl 3PCieslots(x8,x16,x8); supports GPU and rear SFF NVMe
UCSC-R51C-240M5SD=	Riser 1C one PCIe slot, 2 drive bays, and a micro SD slot
UCSC-RS2E-240M5SD=	Riser 2E one PCIe slot, 2 drive bays, 1 NVMe connector
UCSC-PCIF-240M5= ²	C240 SD M5 PCIe Riser Blanking Panel
UCSC-MLOMBLK-M5=	C220 M5 and C240 SD M5 mLOM blanking panel
UCSC-RAILS-M5=	Ball Bearing Rail Kit for C240M5 SD Rack Server
UCSC-C240SD-EXT=	UCS C240 SD M5 Extender Kit for 2-post rack
UCSC-FAN-C240M5SD=	C240 SD M5 Fan Module (one)
N20-BKVM=	KVM cable for Server console port
UCSC-PSU-M5BLK=	Power Supply Blanking Panel for M5 servers
UCS-MSTOR-SD=	Mini Storage Carrier for SD (holds up to 2)
UCS-MSTOR-M2=	Mini Storage Carrier for M.2 SATA/NVME (holds up to 2)
PACK-QSFP-SFP=	Packaging for QSFP 40G and SFP 10G
UCSC-INT-SW01=	C220 M5 and C240 SD M5 Chassis Intrusion Switch
UCSC-SCAP-M5=	Super Cap for UCSC-RAID-M5, UCSC-MRAID1GB-KIT
CBL-SC-MR12GM52=	Super Cap cable for UCSC-RAID-M5 on C240 M5 Servers

Notes:

1. A drive blanking panel must be installed if you remove a disk drive from a UCS server. These panels are required to maintain system temperatures at safe operating levels, and to keep dust away from system components.
2. If a new riser blanking panel is required, please order UCSC-PCIF-240M5=, which is a 3-panel filler for the entire riser. For a single slot filler, please order UCSC-PCIF-01F= (only for Riser 1 and Riser 2B).

UPGRADING or REPLACING CPUs



NOTE: Before servicing any CPU, do the following:

- Decommission and power off the server.
- Slide the C240 SD M5 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 4 on page 15](#) or [Table 5 on page 16](#).

(3) Carefully remove and replace the CPU and heatsink in accordance with the instructions found in “Cisco UCS C240 SD M5 Server Installation and Service Guide,” found at:

https://www.cisco.com/c/en/us/td/docs/unified_computing/ucs/c/hw/C240M5/install/C240M5/C240M5_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 4 on page 15](#) or [Table 5 on page 16](#).

(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/C240M5/install/C240M5/C240M5_chapter_010.html#concept_bfk_kwp_hz.

UPGRADING or REPLACING MEMORY



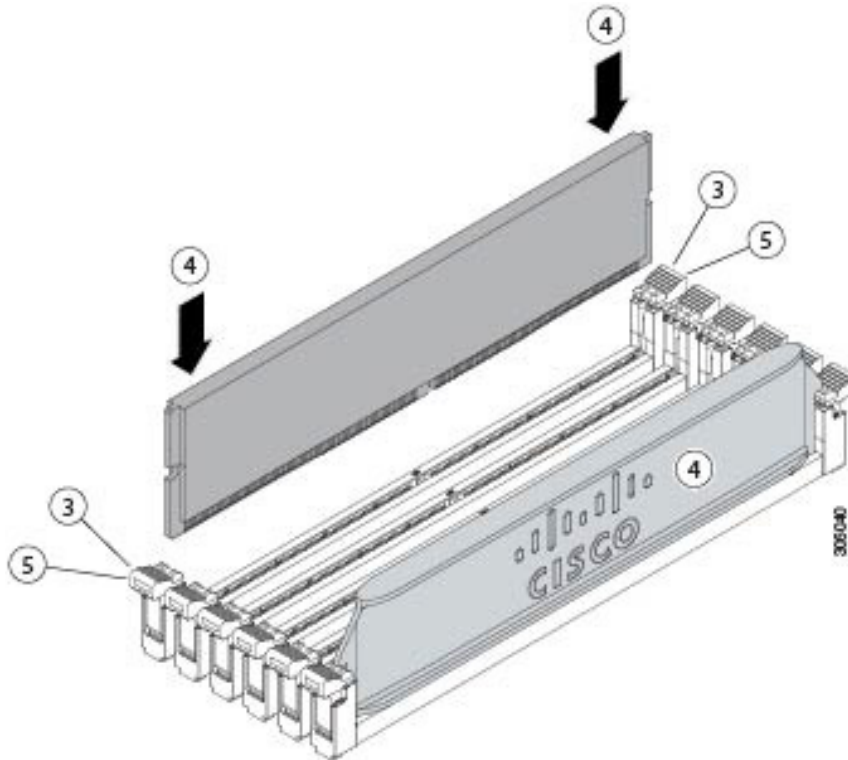
NOTE: Before servicing any DIMM or PMem, do the following:

- 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 6 on page 20](#).
- (2) Open both connector latches and remove and replace the DIMM or PMem or blank as needed.

Figure 16 Replacing Memory



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



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

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

For additional details on replacing or upgrading DIMMs or PMem, see “Cisco UCS C240 SD M5 Server Installation and Service Guide,” found at these links:

https://www.cisco.com/c/en/us/td/docs/unified_computing/ucs/c/hw/C240M5/install/C240M5/C240M5_chapter_010.html#concept_c53_tbp_hz

https://www.cisco.com/c/en/us/td/docs/unified_computing/ucs/c/hw/C240M5/install/C240M5/C240M5_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 43](#) below to determine if still supported.

Table 43 EOL Products

EOS option PID	Description	EOL bulletin link
CPU		
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-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
DRIVES		
UCS-SD19TH61X-EV	1.9 TB 2.5 inch Enterprise Value 12G SAS SSD	https://www.cisco.com/c/en/us/products/collateral/servers-unified-computing/ucs-c-series-rack-servers/eos-eol-notice-c51-743832.html
UCS-SD38TH61X-EV	3.8 TB 2.5 inch Enterprise Value 12G SAS SSD	https://www.cisco.com/c/en/us/products/collateral/servers-unified-computing/ucs-c-series-rack-servers/eos-eol-notice-c51-743832.html
UCS-SD32H123X-EP	3.2 TB 2.5 inch Enterprise performance 12G SAS SSD(3X endurance)	https://www.cisco.com/c/en/us/products/collateral/servers-unified-computing/ucs-c-series-rack-servers/eos-eol-notice-c51-743832.html
UCS-SD800H123X-EP	800 GB 2.5 inch Enterprise performance 12G SAS SSD(3X endurance)	https://www.cisco.com/c/en/us/products/collateral/servers-unified-computing/ucs-c-series-rack-servers/eos-eol-notice-c51-743832.html
UCS-SD400H123X-EP	400 GB 2.5 inch Enterprise performance 12G SAS SSD(3X endurance)	https://www.cisco.com/c/en/us/products/collateral/servers-unified-computing/ucs-c-series-rack-servers/eos-eol-notice-c51-743832.html
UCS-SD480GH61X-EV	480 GB 2.5 inch Enterprise Value 12G SAS SSD	https://www.cisco.com/c/en/us/products/collateral/servers-unified-computing/ucs-c-series-rack-servers/eos-eol-notice-c51-743832.html

Table 43 EOL Products

EOS option PID	Description	EOL bulletin link
UCS-SD16T123X-EP	1.6 TB 2.5 inch Enterprise performance 12G SAS SSD(3X DWPD)	https://www.cisco.com/c/en/us/products/collateral/hyperconverged-infrastructure/hyperflex-hx-series/eos-eol-notice-c51-2451489.html
UCS-SD32T123X-EP	3.2TB 2.5in 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-SD19TB121X-EV	1.9 TB 2.5 inch Enterprise Value 12G SAS SSD (Toshiba PM4)	https://www.cisco.com/c/en/us/products/collateral/hyperconverged-infrastructure/hyperflex-hx-series/eos-eol-notice-c51-2451489.html
UCS-SD38TB121X-EV	3.8 TB 2.5 inch Enterprise Value 12G SAS SSD (Toshiba PM4)	https://www.cisco.com/c/en/us/products/collateral/hyperconverged-infrastructure/hyperflex-hx-series/eos-eol-notice-c51-2451489.html
UCS-SD960G121X-EV	960 GB 2.5 inch Enterprise Value 12G SAS SSD (Toshiba PM4)	https://www.cisco.com/c/en/us/products/collateral/hyperconverged-infrastructure/hyperflex-hx-series/eos-eol-notice-c51-2451489.html
UCS-SD400G123X-EP	400 GB 2.5 inch Enterprise performance 12G SAS SSD(3X DWPD)	https://www.cisco.com/c/en/us/products/collateral/hyperconverged-infrastructure/hyperflex-hx-series/eos-eol-notice-c51-2451489.html
UCS-SD960GH61X-EV	960 GB 2.5 inch Enterprise Value 12G SAS SSD	https://www.cisco.com/c/en/us/products/collateral/hyperconverged-infrastructure/hyperflex-hx-series/eos-eol-notice-c51-2451489.html
UCSC-NVMEHW-H3200	U.2 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-NVMEHW-H1600	U.2 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
UCS-SD800G123X-EP	800GB 2.5in 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-SD16H123X-EP +	1.6TB 2.5in Enterprise performance 12G SAS SSD(3X endurance)	https://www.cisco.com/c/en/us/products/collateral/servers-unified-computing/ucs-c-series-rack-servers/eos-eol-notice-c51-743832.html
UCSC-NVMEHW-H6400	Cisco 2.5" U.2 6.4TB HGST SN200 NVMe High Perf. High Endurance	https://www.cisco.com/c/en/us/products/collateral/hyperconverged-infrastructure/hyperflex-hx-series/eos-eol-notice-c51-2451489.html
UCSC-NVME-H38401	Cisco HHLA 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-H7680	7.7TB 2.5in U.2 HGST SN200 NVMe High Perf. Value Endurance	https://www.cisco.com/c/en/us/products/collateral/hyperconverged-infrastructure/hyperflex-hx-series/eos-eol-notice-c51-2451489.html
UCSC-NVMEHW-H800	800GB 2.5in U.2 HGST SN200 NVMe High Perf. 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

Table 43 EOL Products

EOS option PID	Description	EOL bulletin link
UCS-M2-240GB	240GB M.2 SATA Micron G1 SSD	https://www.cisco.com/c/en/us/products/collateral/servers-unified-computing/ucs-c-series-rack-servers/unified-computing-accessories-eol.html
UCS-M2-960GB	960GB M.2 SATA Micron G1 SSD	https://www.cisco.com/c/en/us/products/collateral/servers-unified-computing/ucs-c-series-rack-servers/unified-computing-accessories-eol.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
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-NVME2H-I3200	Cisco 2.5" U.2 3.2TB Intel P4610 NVMe High Perf. High Endu	https://www.cisco.com/c/en/us/products/collateral/servers-unified-computing/ucs-c-series-rack-servers/unified-computing-accessories-eol.html
UCSC-NVMEHW-I8000	8TB 2.5in U.2 Intel P4510 NVMe High Perf. Value Endurance	https://www.cisco.com/c/en/us/products/collateral/servers-unified-computing/ucs-c-series-rack-servers/unified-computing-accessories-eol.html
UCS-SD76TBEM2NK9	7.6TB 2.5in Enter Value 6G SATA Micron G1 SSD (SED)	https://www.cisco.com/c/en/us/products/collateral/servers-unified-computing/ucs-c-series-rack-servers/unified-computing-accessories-eol.html
UCS-SD960GBM2NK9	960GB 2.5in Enter Value 6G SATA Micron G1 SSD (SED)	https://www.cisco.com/c/en/us/products/collateral/servers-unified-computing/ucs-c-series-rack-servers/unified-computing-accessories-eol.html
UCS-SD240GM1X-EV	240GB 2.5in Enter Value 6G SATA Micron G1 SSD	https://www.cisco.com/c/en/us/products/collateral/servers-unified-computing/ucs-c-series-rack-servers/unified-computing-accessories-eol.html
UCS-SD480GM1X-EV	480 GB 2.5in Enter Value 6G SATA Micron G1 SSD	https://www.cisco.com/c/en/us/products/collateral/servers-unified-computing/ucs-c-series-rack-servers/unified-computing-accessories-eol.html
UCS-SD76TM1X-EV	7.6TB 2.5in Enter Value 6G SATA Micron G1 SSD	https://www.cisco.com/c/en/us/products/collateral/servers-unified-computing/ucs-c-series-rack-servers/unified-computing-accessories-eol.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	
SLES-2SUV-3A	SUSE Linux Enterprise Svr (1-2 CPU,Unl VM); 3-Yr Support Req	

Table 43 EOL Products

EOS option PID	Description	EOL bulletin link
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	
Memory		
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
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

Table 43 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-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
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	

TECHNICAL SPECIFICATIONS

Dimensions and Weight

Table 44 UCS C240 SD M5 Dimensions and Weight

Parameter	Value
Height	3.43 in. (87.1 mm)
Width (including slam latches)	17.57 in. (446.3 mm) Including handles: 18.96 in (481.5 mm)
Depth	22.0 in. (55.9 cm) Including handles: 22.9 in (58.1cm)
Front Clearance	3 in. (76 mm)
Side Clearance	1 in. (25 mm)
Rear Clearance	6 in. (152 mm)
Weight ¹	
Maximum (6 SSD, 2 CPUs, 24 DIMMs, 2 1050 W power supplies)	40.5 lbs (18.4 kg)
Minimum (1 SSD, 1 CPU, 1 DIMM, 1 1050 W power supply))	33 lbs (15 kg)
Bare (0 SSD, 0 CPU, 0 DIMM, 1 1050 W power supply))	29 lbs (13.2 kg)

Notes:

1. Weight includes inner rail, which is attached to the server. Weight does not include outer rail, which is attached to the rack.

Power Specifications

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

- 1050 W (AC) power supply (see [Table 45](#)).

Table 45 UCS C240 SD 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	
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

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 C240 SD M5 server are listed in [Table 46](#).

Table 46 UCS C240 SD M5 SFF Environmental Specifications

Parameter	Minimum
Operating Temperature	10°C to 35°C (50°F to 95°F) with no direct sunlight Maximum allowable operating temperature derated 1°C/300 m (1°F/547 ft) above 950 m (3117 ft)
Non-Operating Temperature	-40°C to 65°C (-40°F to 149°F) Maximum rate of change (operating and non-operating) 20°C/hr (36°F/hr)
Operating Relative Humidity	8% to 90% and 24°C (75°F) maximum dew-point temperature, non-condensing environment
Non-Operating Relative Humidity	5% to 95% and 33°C (91°F) maximum dew-point temperature, non-condensing environment
Operating Altitude	0 m to 3050 m {10,000 ft)
Non-Operating Altitude	0 m to 12,000 m (39,370 ft)
Sound Power level, Measure A-weighted per ISO7779 LWAd (Bels) Operation at 73°F (23°C)	5.8
Sound Pressure level, Measure A-weighted per ISO7779 LpAm (dBA) Operation at 73°F (23°C)	43

Compliance Requirements

The regulatory compliance requirements for C-Series servers are listed in [Table 47](#)

Table 47 UCS C-Series Regulatory Compliance Requirements

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



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