



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.

OVERVIEW

Figure 1 Cisco UCS C240 SD M5 SFF Rack Server

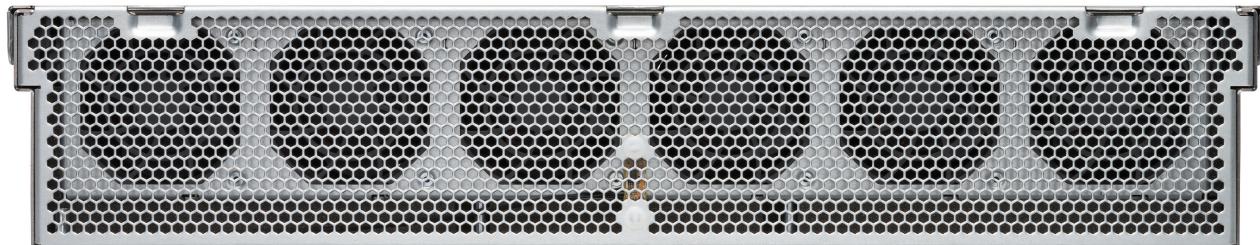
Front Views - 6 drives and 2 PCIe slots



Front Views - 2 drives and 6 PCIe slots



Rear View



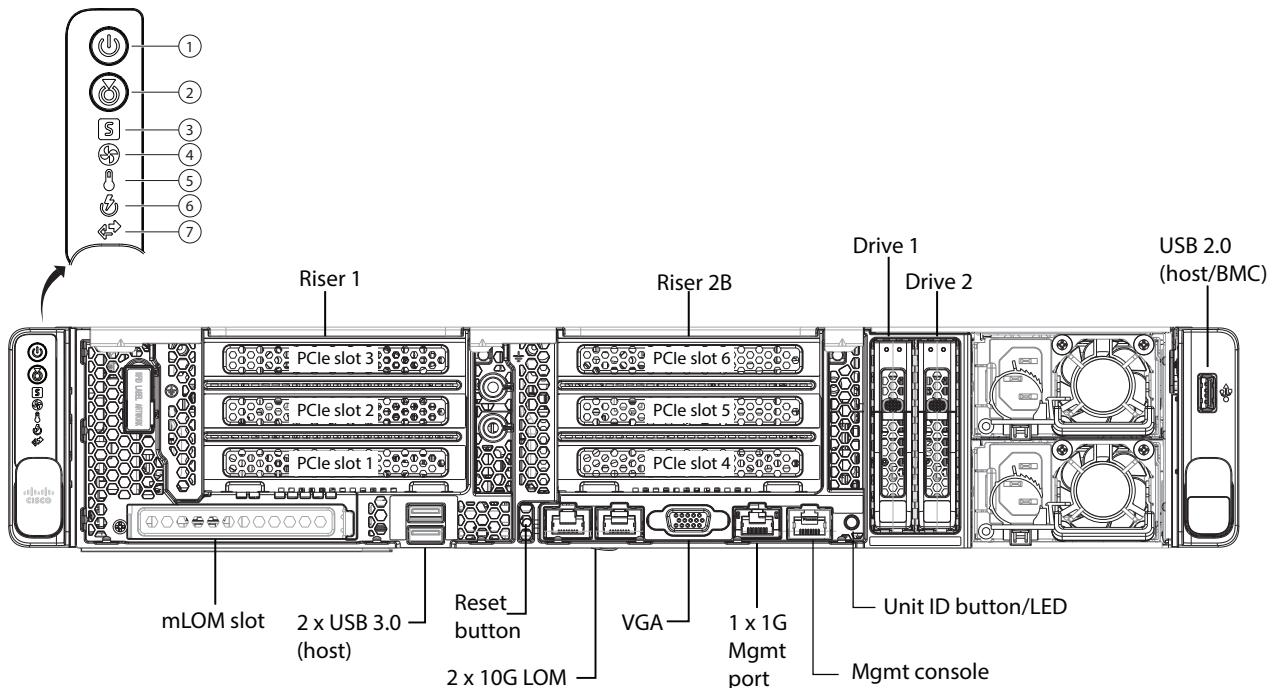
DETAILED VIEWS

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)

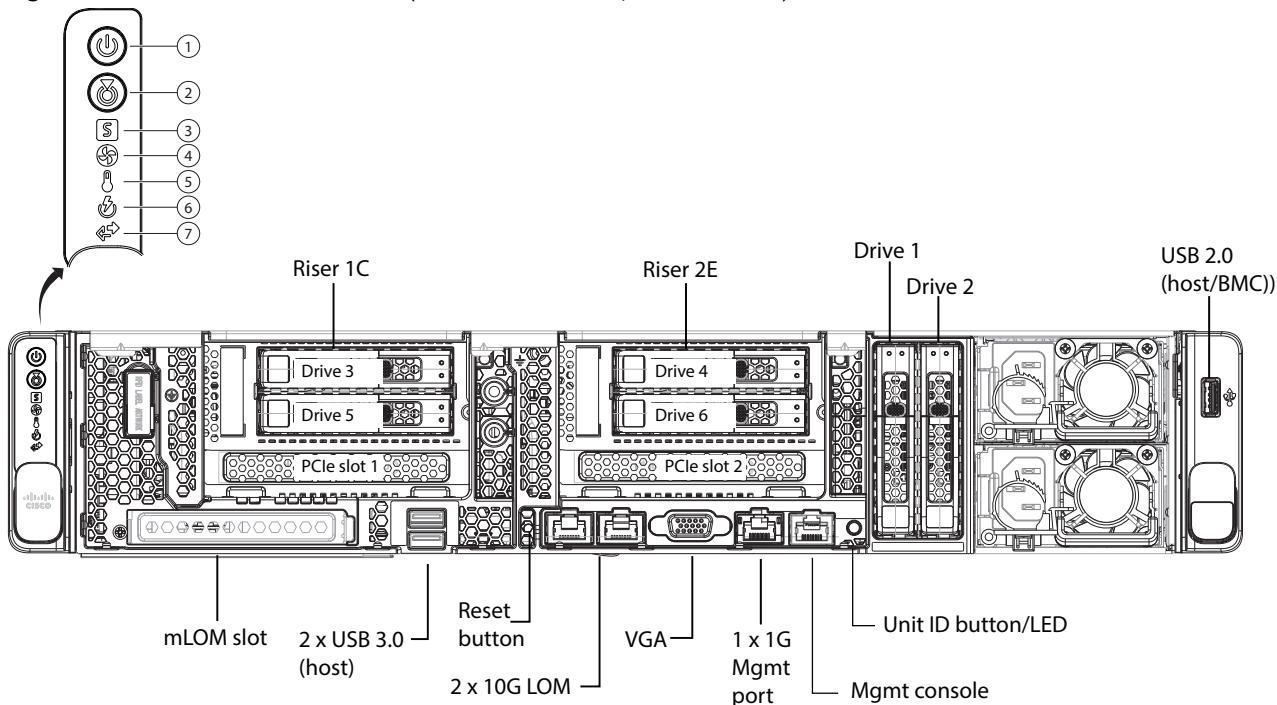


| | | | |
|---|---------------------------|---|-------------------------|
| 1 | Power button/LED | 2 | Unit ID button/LED |
| 3 | System health LED | 4 | Fan status LED |
| 5 | Temperature status LED | 6 | Power supply status LED |
| 7 | Network link activity LED | - | |

DETAILED VIEWS

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)

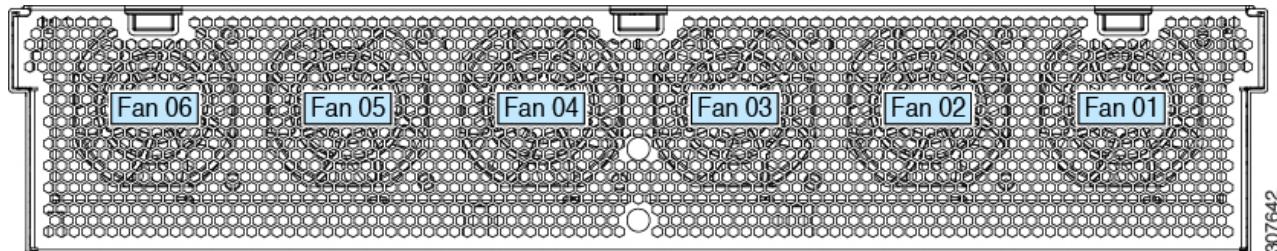


| | | | |
|---|---------------------------|---|-------------------------|
| 1 | Power button/LED | 2 | Unit ID button/LED |
| 3 | System health LED | 4 | Fan status LED |
| 5 | Temperature status LED | 6 | Power supply status LED |
| 7 | Network link activity LED | - | |

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 68, 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 72.</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. |
| | <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. |
| | <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 <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 | UCS Manager (UCSM) runs in the Fabric Interconnect and automatically discovers and provisions some of the server components. |

CONFIGURING the SERVER

Follow these steps to configure the Cisco UCS 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 26**](#)
- [**STEP 6 SELECT DRIVES, page 28**](#)
- [**STEP 7 SELECT PCIe OPTION CARD\(s\), page 32**](#)
- [**STEP 8 ORDER OPTIONAL PCIe OPTION CARD ACCESSORIES, page 36**](#)
- [**STEP 9 ORDER GPU CARDS \(OPTIONAL\), page 40**](#)
- [**STEP 10 ORDER POWER SUPPLY, page 42**](#)
- [**STEP 11 SELECT INPUT POWER CORD\(s\), page 43**](#)
- [**STEP 12 ORDER TOOL-LESS RAIL KIT and RAIL EXTENDER KIT, page 47**](#)
- [**STEP 13 SELECT MANAGEMENT CONFIGURATION \(OPTIONAL\), page 48**](#)
- [**STEP 14 SELECT SERVER BOOT MODE \(OPTIONAL\), page 49**](#)
- [**STEP 15 ORDER SECURITY DEVICES \(OPTIONAL\), page 50**](#)
- [**STEP 16 ORDER CISCO SD CARD MODULE \(OPTIONAL\), page 51**](#)
- [**STEP 17 ORDER M.2 SATA SSD \(OPTIONAL\), page 52**](#)
- [**STEP 18 ORDER INTERNAL MICRO-SD CARD MODULE \(OPTIONAL\), page 54**](#)
- [**STEP 19 ORDER OPTIONAL USB 3.0 DRIVE, page 55**](#)
- [**STEP 20 SELECT OPERATING SYSTEM AND VALUE-ADDED SOFTWARE, page 56**](#)
- [**STEP 21 SELECT SERVICE and SUPPORT LEVEL, page 60**](#)

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 42 on page 73](#) 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 72*](#)

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 42 on page 73](#) 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 CPUs³ (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.

3. For details on memory support for processor classes and CPU modes, see [Memory Support for C240 SD M5 CPUs, page 80](#)

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 ³ |
|------------------------------|------------------|-----------|-----------------|----------|-------------------------------|--|----------------------------------|
| 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® |

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 ³ |
|------------------------------|------------------|-----------|-----------------|-------------|-------------------------------|--|----------------------------------|
| 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® |
| 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-I4214Y | 2.2 | 85 | 16.50 | 12/10/ 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-I3204 | 1.9 | 85 | 8.25 | 6 | 2 x 9.6 | 2133 | 2 nd Gen Intel® Xeon® |
| 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.
3. For details on memory support for processor classes and CPU modes, see [Memory Support for C240 SD M5 CPUs, page 80](#)

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 26](#)
 - [STEP 6 SELECT DRIVES, page 28](#)
 - [STEP 7 SELECT PCIe OPTION CARD\(s\), page 32](#)
 - [Table 42 on page 73](#)



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

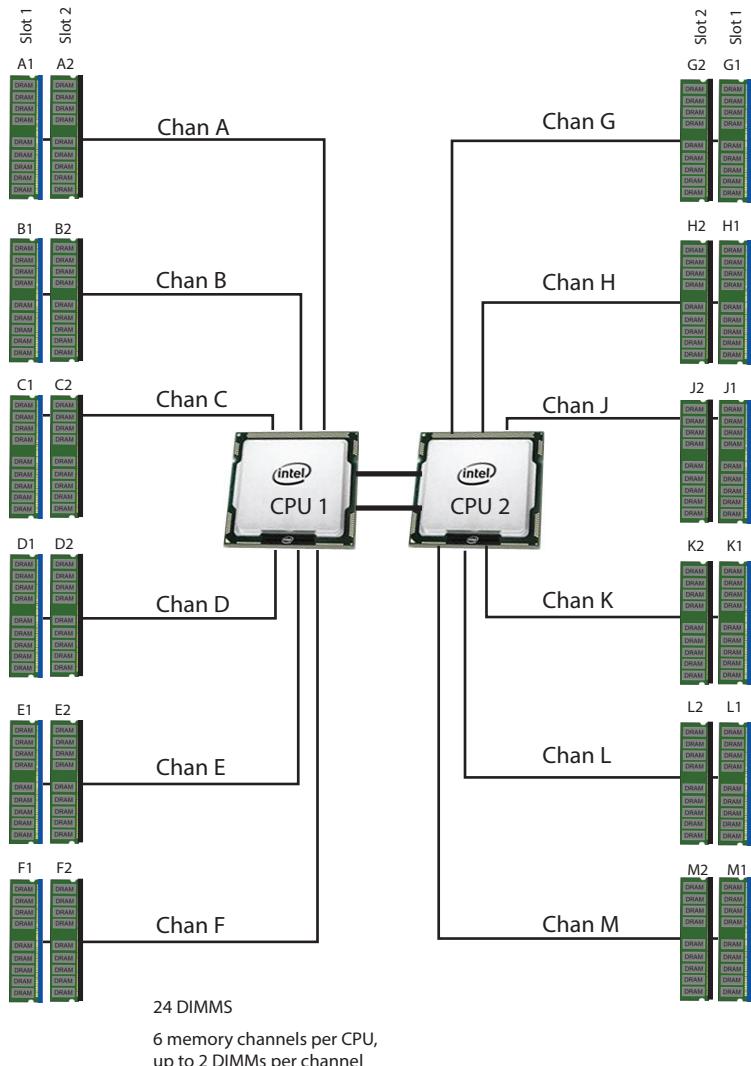
STEP 4 SELECT MEMORY

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-256G8RT-H | 256 GB DDR4-2933MHz LRDIMM/8Rx4/1.2v | 1.2 V | 8 |
| UCS-ML-128G4RT-H ¹ | 128 GB DDR4-2933MHz LRDIMM/4Rx4 (16Gb) | 1.2 V | 4 |
| UCS-ML-X64G4RT-H ¹ | 64 GB DDR4-2933MHz LRDIMM/4Rx4 (8Gb) | 1.2 V | 4 |
| UCS-MR-X64G2RT-H ¹ | 64 GB DDR4-2933MHz RDIMM/2Rx4 (16Gb) | 1.2 V | 2 |
| UCS-MR-X32G2RT-H ¹ | 32GB DDR4-2933MHz RDIMM/2Rx4 (8Gb) | 1.2 V | 2 |
| UCS-MR-X16G1RT-H ¹ | 16 GB DDR4-2933MHz RDIMM/1Rx4 (8Gb) | 1.2 V | 1 |
| UCS-ML-128G4RW ² | 128GB DDR4-3200MHz LRDIMM 4Rx4 (16Gb) | 1.2 V | 1 |
| UCS-MR-X64G2RW ² | 64GB DDR4-3200MHz RDIMM 2Rx4 (16Gb) | 1.2 V | 1 |
| UCS-MR-X32G2RW ² | 32GB DDR4-3200MHz RDIMM 2Rx4 (8Gb) | 1.2 V | 1 |
| UCS-MR-X16G1RW ² | 16GB 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. Cisco announced the End-of-sale of the DDR4-2933 Memory DIMM products: [EOL14611](#) lists the product part numbers affected by this announcement. [Table 7](#) describes the replacement Memory DIMM product Part Numbers.
2. 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.

[Table 7](#) lists the EOL Memory DIMM product part numbers and their replacement PIDs.

Table 7 EOL14611 Memory DIMM Product Part Numbers and their replacement PIDs

| EOS Product Part Number (PID) | PID Description | Replacement Product PID | Replacement Product Description |
|-------------------------------|--|-----------------------------|--|
| UCS-MR-X16G1RT-H | 16GB DDR4-2933MHz RDIMM 1Rx4 (8Gb)/1.2v | UCS-MR-X16G1RW | 16GB DDR4-3200MHz RDIMM 1Rx4 (8Gb)/1.2v |
| UCS-MR-X32G2RT-H | 32GB DDR4-2933MHz RDIMM 2Rx4 (8Gb)/1.2v | UCS-MR-X32G2RW | 32GB DDR4-3200MHz RDIMM 2Rx4 (8Gb)/1.2v |
| UCS-MR-X64G2RT-H | 64GB DDR4-2933MHz RDIMM 2Rx4 (16Gb)/1.2v | UCS-MR-X64G2RW | 64GB DDR4-3200MHz RDIMM 2Rx4 (16Gb)/1.2v |
| UCS-ML-X64G4RT-H | 64GB DDR4-2933MHz LRDIMM 4Rx4 (8Gb)/1.2v | UCS-MR-X64G2RW ¹ | 64GB DDR4-3200MHz RDIMM 2Rx4 (16Gb)/1.2v |
| UCS-ML-128G4RT-H | 128GB DDR4-2933MHz LRDIMM 4Rx4 (16Gb)/1.2v | UCS-ML-128G4RW | 128GB DDR4-3200MHz LRDIMM 4Rx4 (16Gb)/1.2v |



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) |
| 12 | (A1, B1); (C1, D1); (E1, F1); (A2, B2); (C2, D2); (E2, F2) | (G1, H1); (J1, K1); (L1, M1); (G2, H2); (J2, K2); (L2, M2) |

(4) 2-CPU configuration with memory mirroring:

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

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

- Select the memory mirroring option (N01-MMIRROR) as shown in [Table 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 8](#) for PMem memory modes.

Table 8 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 9 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 |

Table 9 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 |

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 10 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 | <p>Cisco 12G Modular SAS HBA (max 16 drives)</p> <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 | <p>Cisco 12G Modular RAID controller with 1GB cache</p> <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 11](#).

Table 11 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 11 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 DWPD (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-SD240GM1X-EV | 240 GB 2.5 inch Enterprise Value 6G SATA SSD (Micron 5100 PRO) | SATA | 240 GB |
| UCS-SD480GM1X-EV | 480 GB 2.5 inch Enterprise Value 6G SATA SSD (Micron 5100 PRO) | SATA | 480 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-SD76TM1X-EV | 7.6 TB 2.5 inch Enterprise Value 6G SATA SSD (Micron 5100 ECO) | SATA | 7.6 TB |
| UCS-SD480G61X-EV | 480GB 2.5 inch Enterprise Value 6G SATA SSD (Intel S4500) | SATA | 480 GB |
| UCS-SD960G61X-EV | 960GB 2.5 inch Enterprise Value 6G SATA SSD (Intel S4500) | SATA | 960 GB |
| UCS-SD38T61X-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-SD960G2HTNK9 | 960 GB 2.5 inch Enterprise Value 12G SAS SSD (SED) FIPS140-2 | SAS | 960 GB |
| UCS-SD800GBHNG9 | 800 GB Enterprise performance SAS SSD (10X DWPD, SED) | SAS | 800 GB |

Table 11 Available Hot-Pluggable Sled-Mounted Front Facing Drives (*continued*)

| Product ID (PID) | PID Description | Drive Type | Capacity |
|---|---|-------------------|-----------------|
| UCS-SD800GBKNK9 | 800GB Enterprise Performance SAS SSD (3X DWPD, SED) | SAS | 800 GB |
| UCS-SD960GBKNK9 | 960GB Enterprise Value SAS SSD (1X DWPD, SED) | SAS | 960 GB |
| UCS-SD38TBKNK9 | 3.8TB Enterprise Value SAS SSD (1X DWPD, SED) | SAS | 3.8 TB |
| UCS-SD16TBKNK9 | 1.6TB Enterprise performance SAS SSD (3X DWPD, SED) | SATA | 1.6 TB |
| 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-NVMEHW-I8000 | U.2 8 TB Intel P4510 NVMe High Perf. Value Endurance | NVMe | 8 TB |
| UCSC-NVME2H-I1600 | U.2 1.6 TB Intel P4610 NVMe High Perf. High Endurance | NVMe | 1.6 TB |
| UCSC-NVME2H-I3200 | U.2 3.2 TB Intel P4610 NVMe High Perf. High Endurance | NVMe | 3.2 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:

1. 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.
2. Targeted for write centric IO applications. Supports endurance of 10 or 3 DWPD (drive writes per day). Target applications are caching, online transaction processing (OLTP), data warehousing, and virtual desktop infrastructure (VDI).
3. Targeted for read centric IO applications. Supports endurance of 1 DWPD (drive write per day). Target applications are boot, streaming media, and collaboration.
4. 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).
5. 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 11 on page 28](#)

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 11](#) 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://ucschltool.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 12*.

Table 12 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 12 on page 32](#) for the selection of plug-in and mLOM VIC cards. See also [Table 1 on page 7](#) and [Riser Card Configuration and Options, page 72](#) 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 12 on page 32](#) for the selection of plug-in and mLOM VIC cards. See also [Table 1 on page 7](#) and [Riser Card Configuration and Options, page 72](#) 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 13 PCIe Card Configuration with 2 CPU

| PCIe Card Type | Primary Slot | Secondary Slot | Alternate Slot |
|-----------------------------------|---------------|----------------|----------------|
| Cisco12G Modular RAID controller | Midplane Slot | None | |
| Cisco 12G 9460-8i Raid controller | 10 | None | |
| PCIe Switch card | 10 | None | |
| Cisco x16 VIC (Cisco VIC 1385) | 1 | 2 | 8, 5 |
| Nvidia | 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>

For NIC interoperability with Cisco cables and optics, see [Table 14](#), [Table 15](#), and [Table 16](#).

For NIC interoperability with Intel cables and optics, see [Table 17](#).

The results in the tables are compiled from testing conducted by the Cisco Transceiver Module Group (TMG) and vendors.

Table 14 10G NIC Interoperability with Cisco Cables and Optics

| Cisco Product ID (PID) | UCSC- PCIE-ID10GF | UCSC- PCIE-IQ10GF |
|---|-------------------|-------------------|
| Cisco Direct Attach Cables (DAC) | | |
| SFP-H10GB-CU1M | ✓ | ✓ |
| SFP-H10GB-CU3M | ✓ | ✓ |
| SFP-H10GB-CU5M | ✓ | ✓ |
| SFP-H10GB-ACU7M | ✓ | ✓ |
| SFP-H10GB-ACU10M | ✓ | ✓ |
| SFP-10G-AOC1M | ✓ | ✓ |
| SFP-10G-AOC2M | ✓ | ✓ |
| SFP-10G-AOC3M | ✓ | ✓ |
| SFP-10G-AOC5M | ✓ | ✓ |
| SFP-10G-AOC7M | ✓ | ✓ |
| SFP-10G-AOC10M | ✓ | ✓ |
| UTP/RJ45 | | |

Table 14 10G NIC Interoperability with Cisco Cables and Optics (continued)

| Cisco Product ID (PID) | UCSC- PCIE-ID10GF | UCSC- PCIE-IQ10GF |
|-----------------------------------|-------------------|-------------------|
| Cisco Optical Transceivers | | |
| SFP-10G-SR | ✓ | ✓ |
| SFP-10G-SR-S | ✓ | ✓ |
| SFP-10G-LR | ✓ | ✓ |
| SFP-10G-LR-S | ✓ | ✓ |
| UCS-SFP-1WSR | | |
| UCS-SFP-1WLR | | |
| GLC-LH-SMD | | ✓ |
| GLC-SX-MMD | ✓ | ✓ |

Table 15 25G NIC Interoperability with Cisco Cables and Optics

| Cisco Product ID (PID) | UCSC-PCIE-ID25GF | UCSC-P-M5D25GF | UCSC-PCIE-QD25GF |
|---|------------------|----------------|------------------|
| Cisco Direct Attach Cables (DAC) | | | |
| SFP-H10GB-CU1M | ✓ | ✓ | |
| SFP-H10GB-CU3M | ✓ | ✓ | |
| SFP-H10GB-CU4M | | ✓ | |
| SFP-H10GB-CU5M | ✓ | ✓ | |
| SFP-H10GB-ACU7M | ✓ | ✓ | |
| SFP-H10GB-ACU10M | ✓ | ✓ | |
| SFP-10G-AOC1M | ✓ | | |
| SFP-10G-AOC2M | ✓ | | |
| SFP-10G-AOC3M | ✓ | | |
| SFP-10G-AOC5M | ✓ | | |
| SFP-10G-AOC7M | ✓ | | |
| SFP-10G-AOC10M | ✓ | ✓ | |
| SFP-H25G-AOC10M | | ✓ | |
| SFP-25G-AOC1M | ✓ | | ✓ |
| SFP-25G-AOC2M | ✓ | | ✓ |
| SFP-25G-AOC3M | ✓ | | ✓ |

Table 15 25G NIC Interoperability with Cisco Cables and Optics (continued)

| Cisco Product ID (PID) | UCSC-PCIE-ID25GF | UCSC-P-M5D25GF | UCSC-PCIE-QD25GF |
|-----------------------------------|------------------|----------------|------------------|
| SFP-25G-AOC4M | ✓ | | ✓ |
| SFP-25G-AOC5M | ✓ | ✓ | ✓ |
| SFP-25G-AOC7M | ✓ | ✓ | ✓ |
| SFP-25G-AOC10M | | | ✓ |
| QSFP-4SFP25G-CU3M | ✓ | | |
| SFP-H25G-CU1M | ✓ | ✓ | |
| SFP-H25G-CU2M | ✓ | ✓ | |
| SFP-H25G-CU2.5M | | ✓ | |
| SFP-H25G-CU3M | ✓ | ✓ | |
| SFP-H25G-CU4M | | ✓ | |
| SFP-H25G-CU5M | ✓ | ✓ | |
| Cisco Optical Transceivers | | | |
| SFP-10G-SR | ✓ | ✓ | |
| SFP-10G-SR-S | ✓ | | |
| SFP-10G-LR | ✓ | ✓ | |
| SFP-10G-LR-S | ✓ | | |
| SFP-25G-SR-S | ✓ | ✓ | |
| SFP-10/25G-LR-S | | ✓ | |

Table 16 100G NIC Interoperability with Cisco Cables/Optics

| Cisco Product ID (PID) | UCSC-P-M5D100GF |
|---|-----------------|
| Cisco Direct Attach Cables (DAC) | |
| QSFP-100G-AOC5M | ✓ |
| QSFP-100G-AOC7M | ✓ |
| QSFP-100G-AOC10M | ✓ |
| QSFP-100G-CU3M | ✓ |
| QSFP-100G-CU5M | ✓ |
| Cisco Optical Transceivers | |
| QSFP-100G-LR4-S | ✓ |

Table 16 100G NIC Interoperability with Cisco Cables/Optics (continued)

| | |
|------------------|---|
| QSFP-100G-SR4-S | ✓ |
| QSFP-40/100-SRBD | ✓ |

Table 17 NIC Interoperability with Intel Cables and Optics

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

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 18**.

Table 18 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 19](#) for the PCIe slot usage for GPU cards.

Table 19 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 72](#)

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>

Table 20 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.



NOTE: If a GPU is installed, it is required to have two power supplies.

STEP 11 SELECT INPUT POWER CORD(s)

Using [Table 21](#), select the appropriate AC power cords. You can select a minimum of no power cords and a maximum of two. If you select the option R2XX-DMYMPWRCORD, no power cord is shipped with the server.

Table 21 Available Power Cords

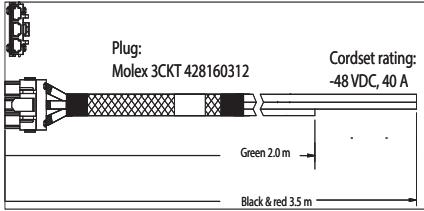
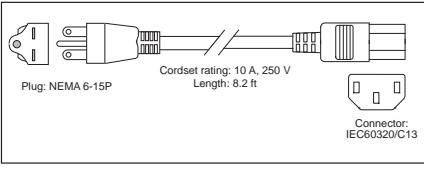
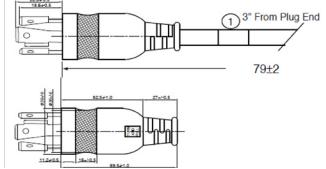
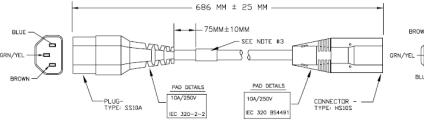
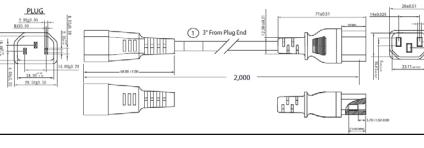
| Product ID (PID) | PID Description | Images |
|-------------------|---|--|
| R2XX-DMYMPWRCORD | No power cord (dummy PID to allow for a no power cord option) | Not applicable |
| NO-POWER-CORD | ECO friendly green option, no power cable will be shipped | Not applicable |
| CAB-48DC-40A-8AWG | C-Series -48VDC PSU Power Cord, 3.5M, 3 Wire, 8AWG, 40A |  <p>Plug: Molex 3CKT 428160312 Cordset rating: -48 VDC, 40 A Green 2.0 m Black & red 3.5 m</p> |
| CAB-N5K6A-NA | Power Cord, 200/240V 6A, North America |  <p>Plug: NEMA 6-15P Cordset rating: 10 A, 250 V Length: 8.2 ft Connector: IEC60320/C13</p> |
| 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 21 Available Power Cords

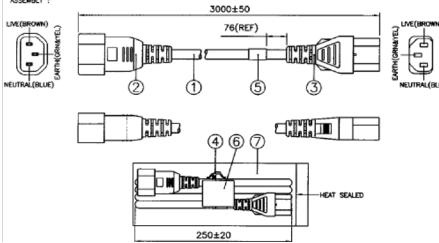
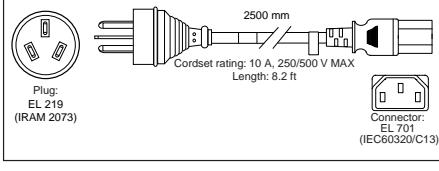
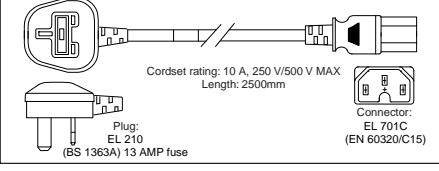
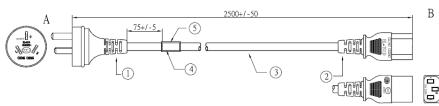
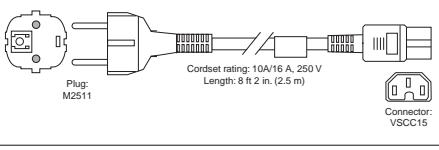
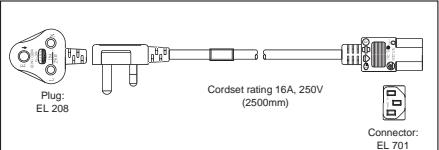
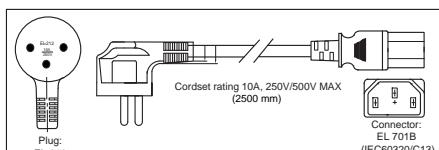
| Product ID (PID) | PID Description | Images |
|------------------|--|--|
| CAB-C13-C14-AC | CORD,PWR,JMP,IEC60320/C14,IEC60320/C13, 3.0M |  <p>ASSEMBLY : LIVE(BROWN) NEUTRAL(BLUE) GND(GREY) 3000±50 76(REF) 250±20 HEAT SEALED</p> |
| CAB-250V-10A-AR | Power Cord, 250V, 10A, Argentina |  <p>2500 mm Cordset rating: 10 A, 250/500 V MAX Length: 8.2 ft Plug: EL 219 (IRAM 2073) Connector: EL 701 (IEC60320/C13)</p> |
| CAB-9K10A-AU | Power Cord, 250VAC 10A 3112 Plug, Australia |  <p>Cordset rating: 10 A, 250 V/500 V MAX Length: 2500mm Plug: EL 210 (BS 1363A) 13 AMP fuse Connector: EL 701C (EN 60320/C15)</p> |
| CAB-250V-10A-CN | AC Power Cord - 250V, 10A - PRC |  <p>A 2500/-50 B 75±5 2500/-50 ① ② ③ ④ ⑤ ⑥ ⑦</p> |
| CAB-9K10A-EU | Power Cord, 250VAC 10A CEE 7/7 Plug, EU |  <p>Plug: M2511 Cordset rating: 10A/16 A, 250 V Length: 8 ft 2 in. (2.5 m) Connector: VSCC15</p> |
| CAB-250V-10A-ID | Power Cord, SFS, 250V, 10A, India |  <p>Plug: EL 208 Cordset rating 16A, 250V (2500mm) Connector: EL 701</p> |
| CAB-250V-10A-IS | Power Cord, SFS, 250V, 10A, Israel |  <p>Plug: EL 212 (SI-32) Cordset rating 10A, 250V/500V MAX (2500 mm) Connector: EL 701B (IEC60320/C13)</p> |

Table 21 Available Power Cords

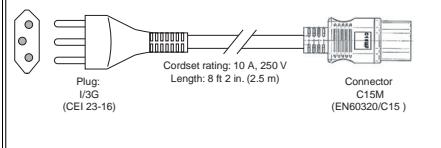
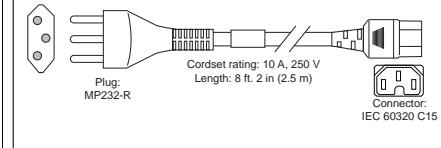
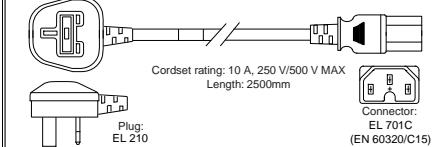
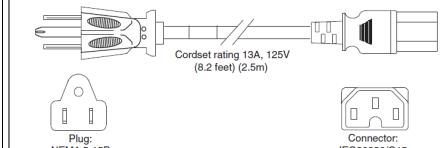
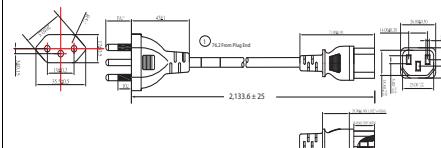
| Product ID (PID) | PID Description | Images |
|----------------------------|--|--|
| CAB-9K10A-IT | Power Cord, 250VAC 10A CEI 23-16/VII Plug, Italy |  <p>Plug: I/3G (CEI 23-16) Cordset rating: 10 A, 250 V Length: 8 ft 2 in. (2.5 m) Connector: C15M (EN60320/C15)</p> |
| CAB-9K10A-SW | Power Cord, 250VAC 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>Plug: EL 210 (BS 1363A) 13 AMP fuse Cordset rating: 10 A, 250 V/500 V MAX Length: 2500mm Connector: EL 701C (EN 60320/C15)</p> |
| CAB-9K12A-NA ¹ | Power Cord, 125VAC 13A NEMA 5-15 Plug, North America |  <p>Plug: NEMA 5-15P Cordset rating 13A, 125V (8.2 feet) (2.5m) Connector: IEC60320/C15</p> |
| CAB-250V-10A-BR | Power Cord - 250V, 10A - Brazil |  <p>2.133.6 ± 25 mm</p> |
| 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, 3 Wire, 8AWG, 40A (AS/NZ) | Image Not available |

Table 21 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 22](#).

Table 22 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/c240_sdm5.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 23](#).

Table 23 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 24](#). 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 24](#). 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 24 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 25](#).

Table 25 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 26*.

Table 26 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 68](#) for the location of the mini storage module connector, which accommodates an SD module. Each SD module accommodates two SD cards.

Table 27 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 52](#)).

STEP 17 ORDER M.2 SATA SSD (OPTIONAL)

Order one or two matching M.2 SATA SSDs (see [Table 28](#)) along with a mini storage carrier or a boot-optimized RAID controller (see [Table 29](#)).



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 28](#).

Table 28 M.2 SATA SSDs

| Product ID (PID) | PID Description |
|------------------|---------------------|
| UCS-M2-240GB | 240 GB M.2 SATA SSD |
| UCS-M2-960GB | 960 GB M.2 SATA SSD |

Table 29 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
- The UCS-M2-HWRAID controller is available only with 240 GB and 960 GB M.2 SSDs.
- (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 29](#).
 - 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 28](#).



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 30 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 31**](#).

Table 31 USB 3.0 Drive

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

See [**Figure 6** on page **68**](#) 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.

Select

- Cisco Software ([Table 32](#))
- OEM Software ([Table 33](#))
- Operating System ([Table 34](#))

Table 32 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 33 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 34 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 34 (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 Resilient Storage (1-2 CPU); Premium 1-yr SnS |
| RHEL-2S-RS-3S | RHEL Resilient 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 34 (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 35*.

Table 35 Cisco SNTC for UCS Service (PID UCSC-C240-M5SD)

| Service SKU | Service Level GSP | On Site? | Description |
|--------------------|-------------------|----------|-------------------------|
| CON-PREM-C240M5SD | C2P | Yes | SNTC 24X7X2OS |
| CON-UCSD8-C240M5SD | UCSD8 | Yes | UC SUPP DR 24X7X2OS* |
| CON-C2PL-C240M5SD | C2PL | Yes | LL 24X7X2OS** |
| CON-OSP-C240M5SD | C4P | Yes | SNTC 24X7X4OS |
| CON-UCSD7-C240M5SD | UCSD7 | Yes | UCS DR 24X7X4OS* |
| CON-C4PL-C240M5SD | C4PL | Yes | LL 24X7X4OS** |
| CON-USD7L-C240M5SD | USD7L | Yes | LLUCS HW DR 24X7X4OS*** |
| CON-OSE-C240M5SD | C4S | Yes | SNTC 8X5X4OS |

Table 35 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 8X5XNB DOS |
| CON-UCSD5-C240M5SD | UCSD5 | Yes | UCS DR 8X5XNB DOS* |
| 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 66) | | | |
| **Includes Local Language Support (see Local Language Technical Support for UCS, page 67) - 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 36**.

Table 36 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 66) | | | |
| **Includes Local Language Support (see Local Language Technical Support for UCS, page 67) - 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 37**.

Table 37 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 37 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 66) | | | |
| **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 38](#)

Table 38 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 66) | | | |
| **Includes Local Language Support (see Local Language Technical Support for UCS, page 67) - 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 39](#).

Table 39 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 66](#))

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 40](#)

Table 40 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 66](#))

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 41*

Table 41 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 | NCFC | 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

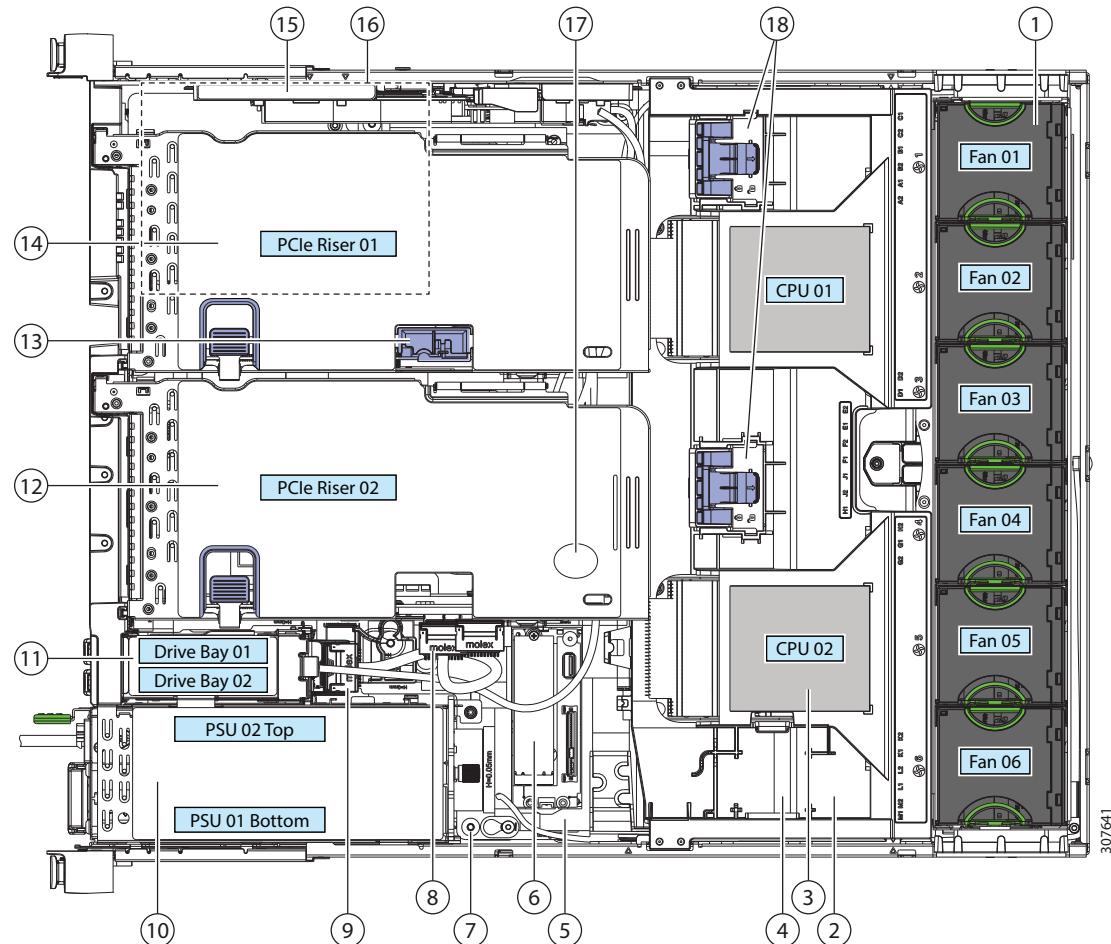
http://www.cisco.com/en/US/products/ps10312/serv_group_home.html

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

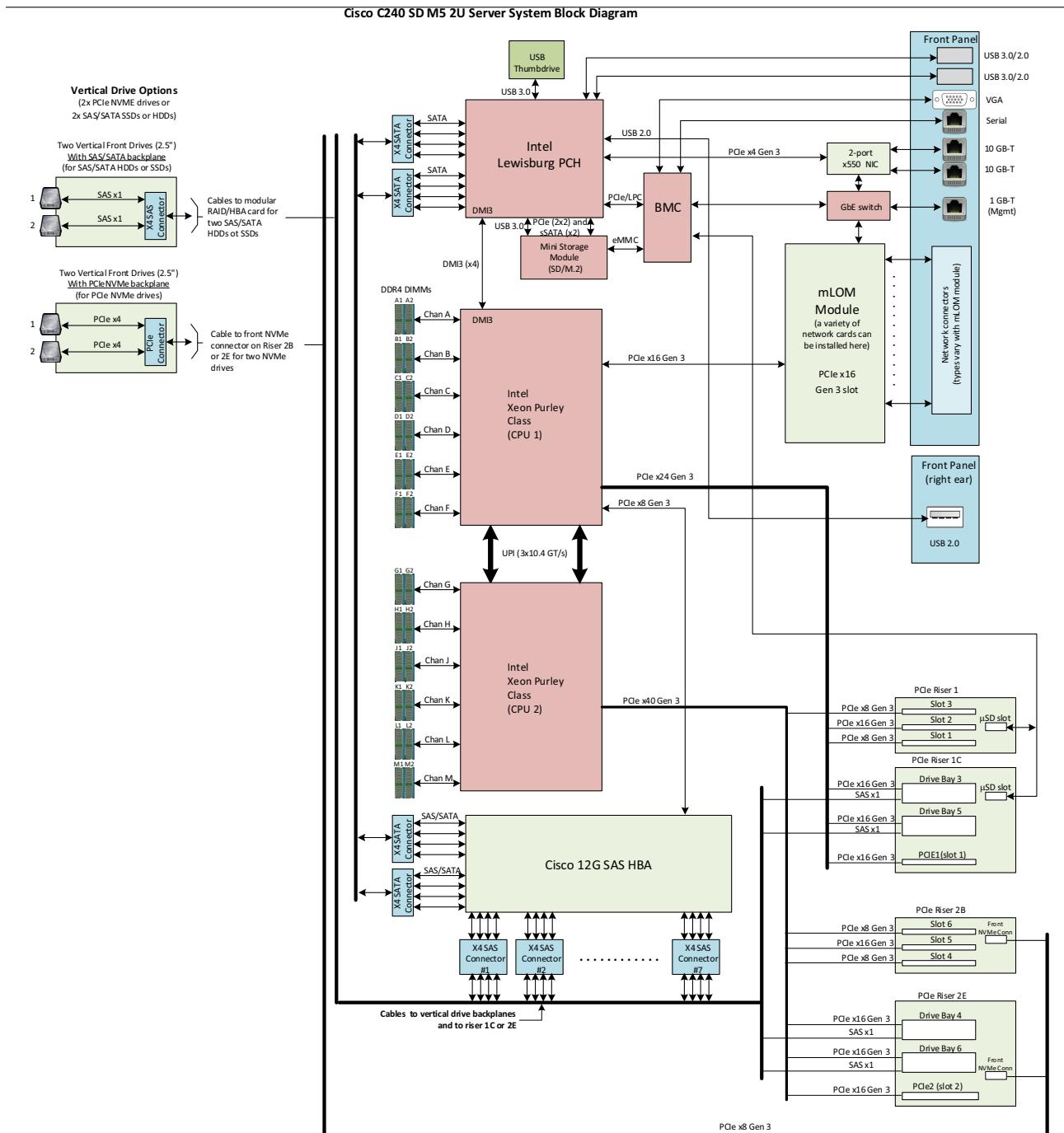


| | | | |
|---|-----------------------------|---|---|
| 1 | Fan modules (hot swap) | 2 | DIMM sockets (hidden in this view) |
| 3 | CPUs and heatsinks (1 or 2) | 4 | Supercap power module mounting clip on air baffle (if applicable) |
| 5 | USB slot on motherboard | 6 | Mini storage module socket Supports 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:

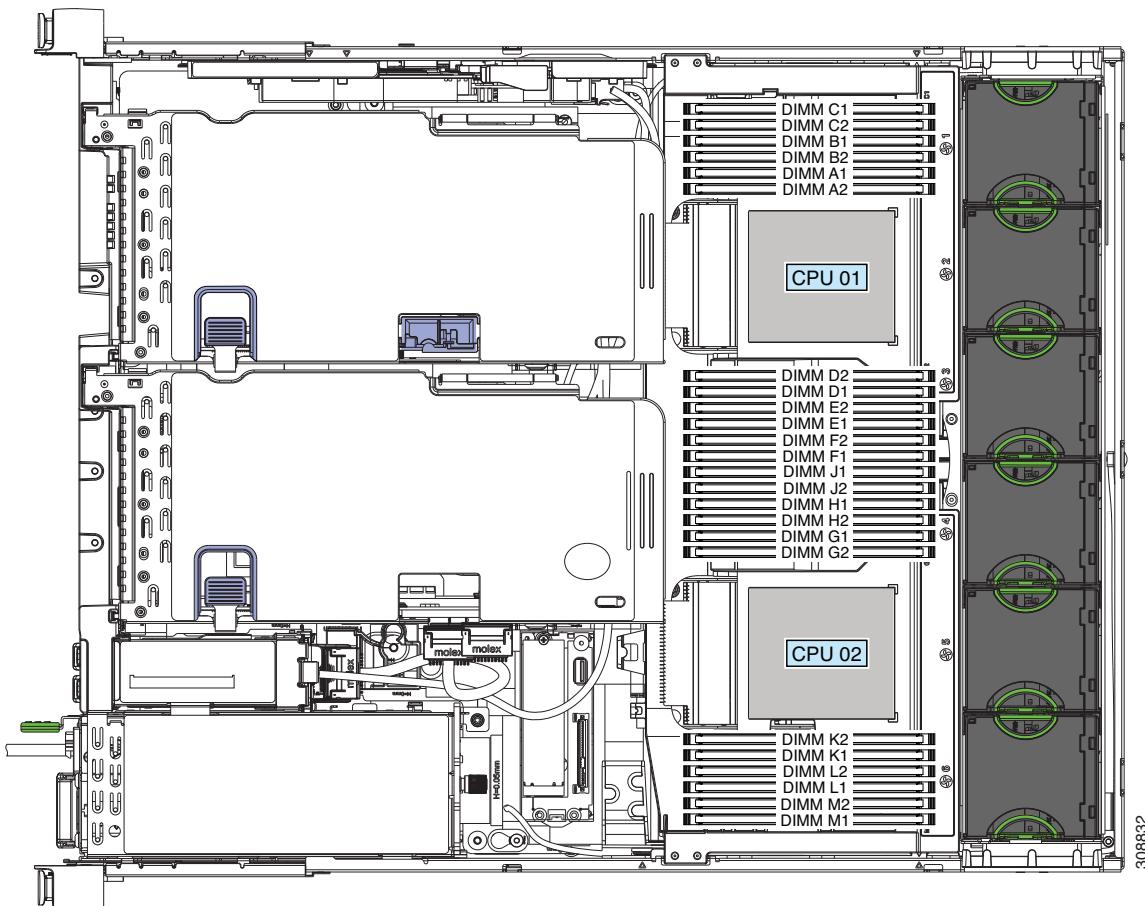
- CPU1 has channels A, B, C, D, E, F
- CPU2 has channels G, H, J, K, L, M

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).

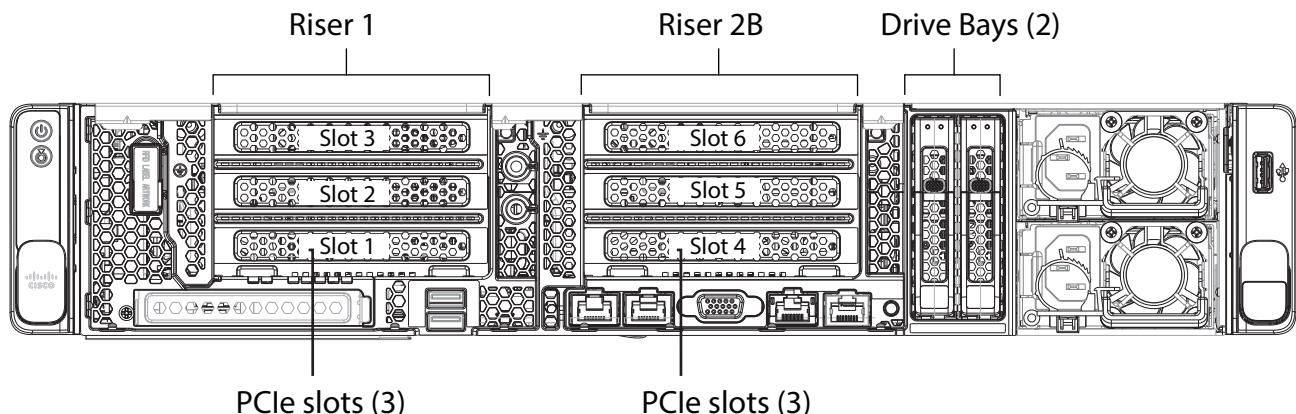
Figure 8 C240 SD M5 CPU and DIMM Layout



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 are 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

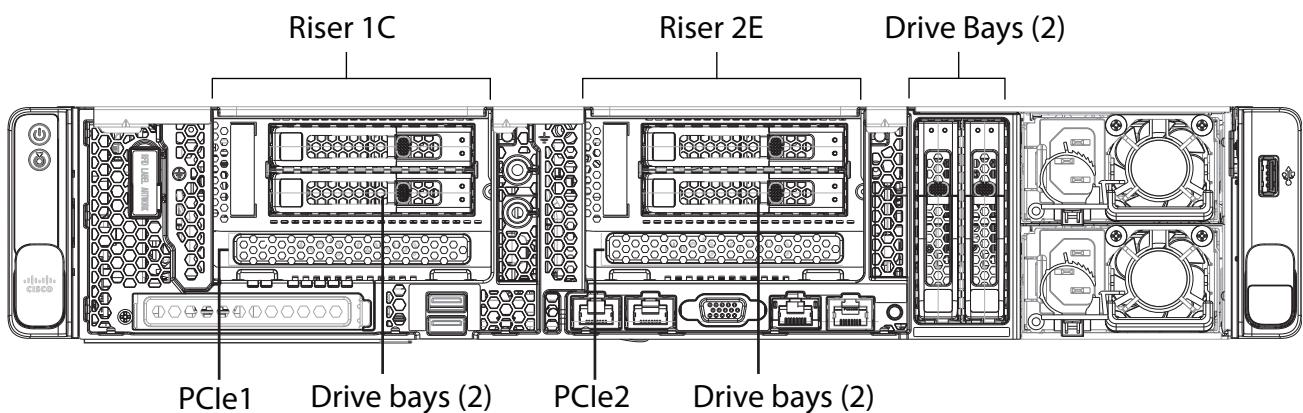


Table 42 shows the storage and PCIe slot combinations for the risers.

Table 42 Storage and PCIe Slot Combinations

| Configuration | Combination Options |
|---|---|
| Single CPU Server with Risers 1C and 2E Installed (Figure 10 on page 72) | |
| 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 72) | |
| 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 72) | |
| 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 72) | |
| 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 43*.

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

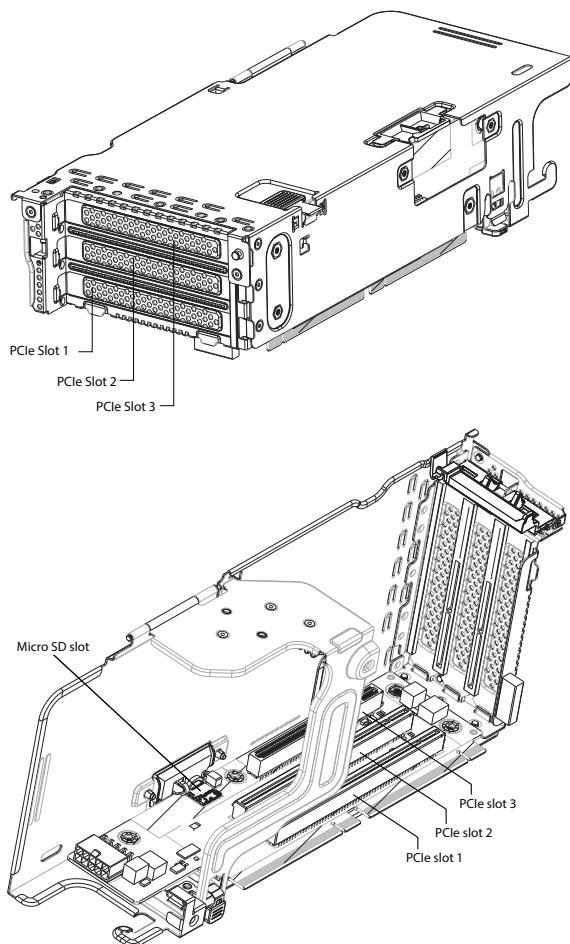


Table 43 Riser Card 1

| 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 44*

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

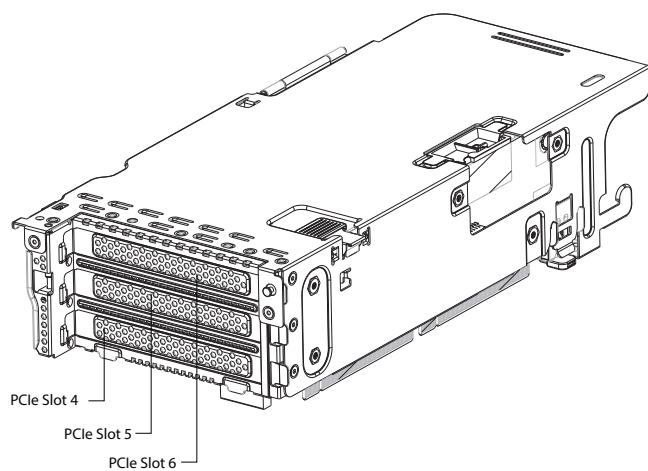


Table 44 Riser Card 2B

| 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 45*.

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

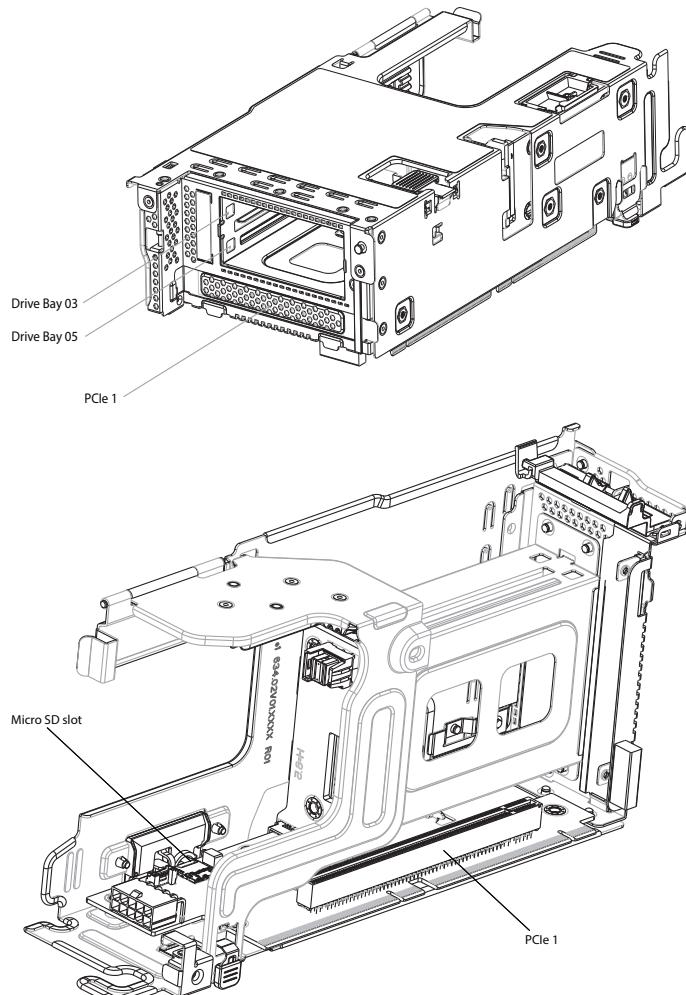


Table 45 Riser Card 1C

| 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 |

SUPPLEMENTAL MATERIAL

Riser card 2E is shown in *Figure 14* and *Table 46*.

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

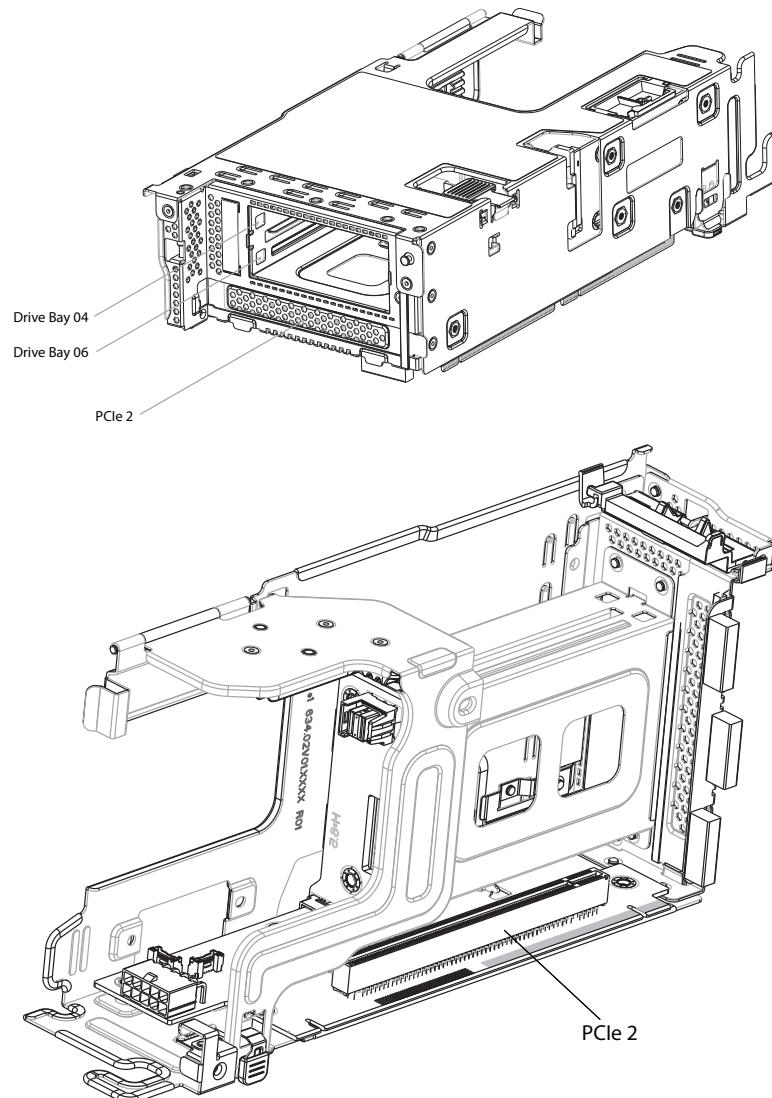


Table 46 Riser Card 2E

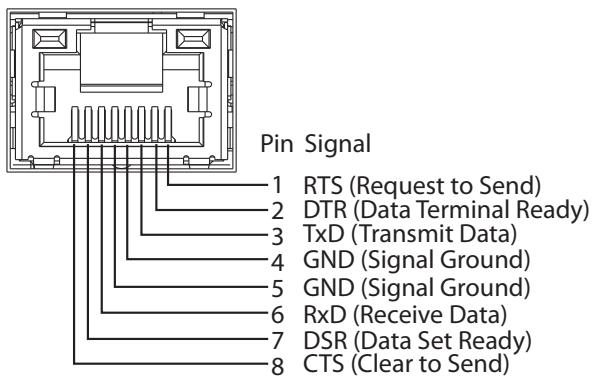
| Slot # | Height | Length | Electrical | NCSI Support |
|---|--------|--------|------------|--------------|
| Riser Card 2E PID UCSC-RS2E-240M5SD | | | | |
| Drive Bay 04 - accommodates an NVMe drive or SAS/SATA HDD/SSD drive | | | | |
| Drive Bay 06 - accommodates an NVMe drive or SAS/SATA HDD/SSD 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 47](#).

Table 47 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 3PCleslots(x8,x16,x8); supports GPU and rear SFF NVMe |
| UCSC-RS1C-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



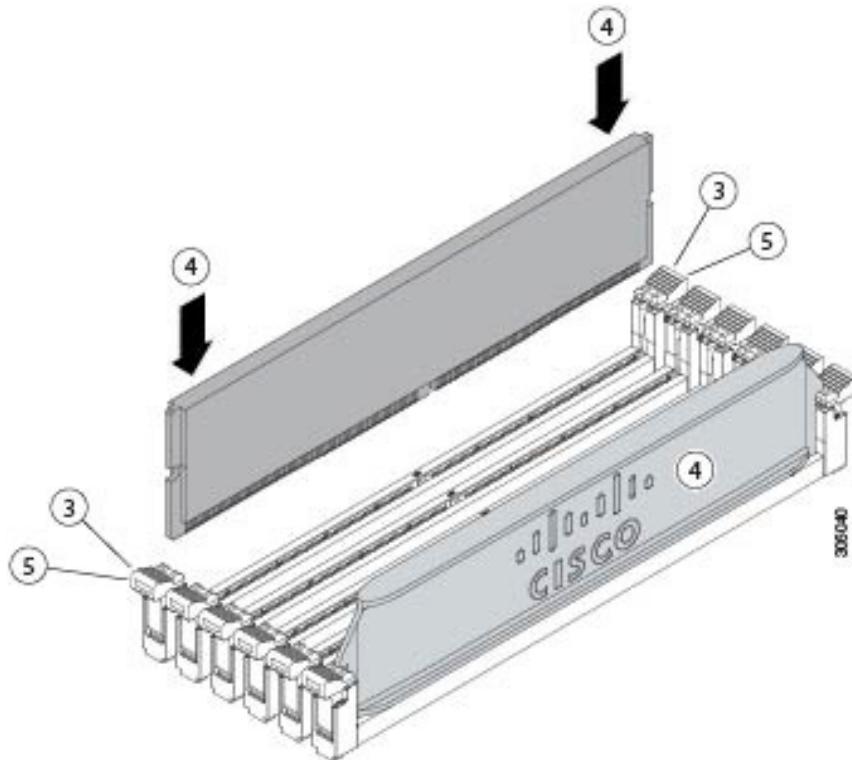
NOTE: Before servicing any DIMM or PMem, do the following:

- 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 48** below to determine if still supported.

Table 48 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 |
| 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 |
| 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 |

Table 48 EOL Products

| EOS option PID | Description | EOL bulletin link |
|-------------------------|---|---|
| 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 HHHL AIC 3.8TB HGST SN260 NVMe Extreme Performance High Endurance | https://www.cisco.com/c/en/us/products/collateral/servers-unified-computing/ucs-c-series-rack-servers/eos-eol-notice-c51-2412151.html |
| UCSC-NVMEHW-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 |
| Operating system | | |
| SLES-2SUV-1A | SUSE Linux Enterprise Svr (1-2 CPU,Unl VM); 1-Yr Support Req | |
| SLES-2SUV-1S | SUSE Linux Enterprise Svr (1-2 CPU,Unl VM); Prio 1-Yr SnS | |

Table 48 EOL Products

| EOS option PID | Description | EOL bulletin link |
|-----------------------|--|---|
| SLES-2SUV-3A | SUSE Linux Enterprise Svr (1-2 CPU,Unl VM); 3-Yr Support Req | |
| SLES-2SUV-3S | SUSE Linux Enterprise Svr (1-2 CPU,Unl VM); Prio 3-Yr SnS | |
| SLES-2SUV-5A | SUSE Linux Enterprise Svr (1-2 CPU,Unl VM); 5-Yr Support Req | |
| SLES-2SUV-5S | SUSE Linux Enterprise Svr (1-2 CPU,Unl VM); Prio 5-Yr SnS | |
| SLES-SAP-2SUV-1A | SLES for SAP Apps w/ HA (1-2 CPU, Unl VM); 1-Yr Support Reqd | |
| SLES-SAP-2SUV-1S | SLES for SAP Apps (1-2 CPU, Unl VM); Priority 1-Yr SnS | |
| SLES-SAP-2SUV-3A | SLES for SAP Apps w/ HA (1-2 CPU, Unl VM); 3-Yr Support Reqd | |
| 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 |
| 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 49 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 50*).

Table 50 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 51*.

Table 51 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) | 5.8 |
| Operation at 73°F (23°C) | |
| Sound Pressure level, Measure A-weighted per ISO7779 LpAm (dBA) | 43 |
| Operation at 73°F (23°C) | |

Compliance Requirements

The regulatory compliance requirements for C-Series servers are listed in [Table 52](#)

Table 52 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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