Cisco UCS C240 M5 Rack Server (Large Form Factor Disk Drive Model)
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The UCS C240 M5 LFF server extends the capabilities of Cisco's Unified Computing System portfolio in a 2U form factor with the addition of the 2nd Generation Intel® Xeon® Scalable Processors, 2933-MHz DDR4 memory, and the new 512GB Intel® Optane™ Persistent Memory (PMEMs). With this combination of features, up to 9 TB of memory is possible (using 12 x 256 GB DDR4 DIMMs and 12 x 512 GB PMEMs), up to 6 PCI Express (PCIe) 3.0 slots, and up to 12 front-facing internal LFF drives. The C240 M5 LFF server also includes one dedicated internal slot for a 12G SAS storage controller card.

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

The Cisco UCS C240 M5 server can be used standalone, or as part of the Cisco Unified Computing System, which unifies computing, networking, management, virtualization, and storage access into a single integrated architecture enabling end-to-end server visibility, management, and control in both bare metal and virtualized environments.

Figure 1   Cisco UCS C240 M5 LFF Rack Server

Front View

Rear View
DETAILED VIEWS

Chassis Front View

Figure 2 shows the 12-drive Cisco UCS C240 M5 LFF Rack Server.

For more information about the KVM cable connection, see *KVM CABLE, page 86.*
Chassis Rear View

*Figure 3* shows the external features of the rear panel.

**Figure 3**  Chassis Rear View

<table>
<thead>
<tr>
<th></th>
<th>PCIe riser 1 (slots 1, 2, 3)</th>
<th>PCIe riser 2 (slots 4, 5, 6)</th>
<th>USB 3.0 ports (two)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Two options:</td>
<td>Four options:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>■ Riser 1A option</td>
<td>■ Riser 2A option</td>
<td></td>
</tr>
<tr>
<td></td>
<td>● slot 1 (x8, CPU1 controlled)</td>
<td>● slot 4 (x16, CPU2 controlled)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>● slot 2 (x16, CPU1 controlled)</td>
<td>● slot 5 (x16, CPU2 controlled)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>● slot 3 (x8, CPU2 controlled)</td>
<td>● slot 6 (x8, CPU2 controlled)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>■ Riser 1B option</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>● slot 1 (x8, CPU1 controlled)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>● slot 2 (x8, CPU1 controlled)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>● slot 3 (x8, CPU1 controlled)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

See *Riser Card Configuration and Options, page 81* for details.

LAN1 is left connector, LAN2 is right connector.
## Detailed Views

### Riser 2B option
- slot 4 (x8, CPU2 controlled)
- slot 5 (x16, CPU2 controlled)
- slot 6 (x8, CPU2 controlled)
- One x8 NVMe connector (for two rear drives) from slot 4

### Riser 2C option
- slot 4 (x8, CPU2 controlled)
- slot 5 (x8, CPU2 controlled)
- slot 6 (x8, CPU2 controlled)
- Two NVMe connectors (for two front and two rear drives) from slots 4 and 5

### Riser 2D option
- slot 4 (x16, CPU2 controlled)
- slot 5 (x8, CPU2 controlled)
- slot 6 (x8, CPU2 controlled)
- One NVMe connector (for two rear drives) from slot 6

See *Riser Card Configuration and Options, page 81* for details.

### Rear 2.5-inch drive bays:
- Support up to two drives:
  - When using a hardware RAID controller card in the server, SAS/SATA HDDs or SSDs or NVMe PCIe SSDs are supported in the rear bays.
  - When using software RAID in the server, only NVMe PCIe SSDs are supported in the rear bays.

### Power supplies (two, redundant as 1+1)

### Power supplies (two, redundant as 1+1)

### Screw holes for dual-hole grounding lug

### Modular LAN-on-motherboard (mLOM) card slot (x16)

### VGA video port (DB-15 connector)

### 1-Gb Ethernet dedicated management port

### Serial port (RJ-45 connector)

### Rear Unit Identification button/LED
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 11.

Table 1 Capabilities and Features

<table>
<thead>
<tr>
<th>Capability/Feature</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chassis</td>
<td>Two rack unit (2RU) chassis</td>
</tr>
<tr>
<td>CPU</td>
<td>One or two 2nd Generation Intel® Xeon® scalable family CPUs</td>
</tr>
<tr>
<td>Chipset</td>
<td>Intel® C621 series chipset</td>
</tr>
<tr>
<td>Memory</td>
<td>24 slots for registered DIMMs (RDIMMs), load-reduced DIMMs (LRDIMMs), or through silicon via (TSV) DIMMs and support for Intel® Optane™ Persistent Memory (PMEMs)</td>
</tr>
<tr>
<td>Multi-bit Error</td>
<td>Protection This server supports multi-bit error protection.</td>
</tr>
<tr>
<td>Video</td>
<td>The Cisco Integrated Management Controller (CIMC) provides video using the Matrox G200e video/graphics controller:</td>
</tr>
<tr>
<td></td>
<td>■ Integrated 2D graphics core with hardware acceleration</td>
</tr>
<tr>
<td></td>
<td>■ 512MB total DDR4 memory, with 16MB dedicated to Matrox video memory</td>
</tr>
<tr>
<td></td>
<td>■ Supports display resolutions up to 1920 x 1200 16bpp @ 60Hz</td>
</tr>
<tr>
<td></td>
<td>■ High-speed integrated 24-bit RAMDAC</td>
</tr>
<tr>
<td></td>
<td>■ Single lane PCI-Express host interface running at Gen 1 speed</td>
</tr>
<tr>
<td>Power subsystem</td>
<td>Up to two of the following hot-swappable power supplies:</td>
</tr>
<tr>
<td></td>
<td>■ 770 W (AC)</td>
</tr>
<tr>
<td></td>
<td>■ 1050 W (AC)</td>
</tr>
<tr>
<td></td>
<td>■ 1050 W (DC)</td>
</tr>
<tr>
<td></td>
<td>■ 1600 W (AC)</td>
</tr>
<tr>
<td></td>
<td>■ 1050ELV (AC)</td>
</tr>
<tr>
<td></td>
<td>One power supply is mandatory; one more can be added for 1 + 1 redundancy.</td>
</tr>
<tr>
<td>Front Panel</td>
<td>A front panel controller provides status indications and control buttons</td>
</tr>
<tr>
<td>ACPI</td>
<td>This server supports the advanced configuration and power interface (ACPI) 4.0 standard.</td>
</tr>
<tr>
<td>Fans</td>
<td>■ Six hot-swappable fans for front-to-rear cooling</td>
</tr>
<tr>
<td>Infiniband</td>
<td>The InfiniBand architecture is supported by the PCIe slots.</td>
</tr>
</tbody>
</table>
BASE SERVER STANDARD CAPABILITIES and FEATURES

<table>
<thead>
<tr>
<th>Capability/Feature</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Expansion slots</td>
<td>Up to six PCIe slots (on two riser cards)</td>
</tr>
<tr>
<td>Riser 1 (PCIe slots 1, 2, and 3), controlled by CPU 1 and CPU 2</td>
<td></td>
</tr>
<tr>
<td>• Option 1A: three slots available.</td>
<td></td>
</tr>
<tr>
<td>Slot 1 = full height, half length, x8, 230 pins, CPU1, NCSI support.</td>
<td></td>
</tr>
<tr>
<td>Slot 2 = full height, full length, x16, 230 pins, CPU1, NCSI and GPU support.</td>
<td></td>
</tr>
<tr>
<td>Slot 3 = full height, half length, x8, 164 pins, CPU2.</td>
<td></td>
</tr>
<tr>
<td>• Option 1B: three slots available.</td>
<td></td>
</tr>
<tr>
<td>Slot 1 = full height, half length, x8, 230 pins, CPU1, NCSI support.</td>
<td></td>
</tr>
<tr>
<td>Slot 2 = full height, full length, x8, 230 pins, CPU1, NCSI support.</td>
<td></td>
</tr>
<tr>
<td>Slot 3 = full height, full length, x8, 164 pins, CPU1.</td>
<td></td>
</tr>
<tr>
<td>Riser 2 (PCIe slots 4, 5, and 6), all controlled by CPU 2. Three slots available.</td>
<td></td>
</tr>
<tr>
<td>• Option 2A: three slots available</td>
<td></td>
</tr>
<tr>
<td>Slot 4 = full height, half length, x16, 230 pins, NCSI support.</td>
<td></td>
</tr>
<tr>
<td>Slot 5 = full height, full length, x16, 230 pins, NCSI and GPU support.</td>
<td></td>
</tr>
<tr>
<td>Slot 6 = full height, full length, x8, 164 pins.</td>
<td></td>
</tr>
<tr>
<td>• Option 2B: three slots available</td>
<td></td>
</tr>
<tr>
<td>Slot 4 = full height, half length, x8, 230 pins, NCSI support.</td>
<td></td>
</tr>
<tr>
<td>Slot 5 = full height, full length, x8, 230 pins, NCSI support.</td>
<td></td>
</tr>
<tr>
<td>Slot 6 = full height, full length, x8, 164 pins.</td>
<td></td>
</tr>
<tr>
<td>One connector for two rear NVMe drives (from slot 4)</td>
<td></td>
</tr>
<tr>
<td>• Option 2C: three slots available</td>
<td></td>
</tr>
<tr>
<td>Slot 4 = full height, half length, x8, 230 pins, NCSI support.</td>
<td></td>
</tr>
<tr>
<td>Slot 5 = full height, full length, x8, 230 pins, NCSI and GPU support.</td>
<td></td>
</tr>
<tr>
<td>Slot 6 = full height, full length, x8, 164 pins.</td>
<td></td>
</tr>
<tr>
<td>One connector for two rear NVMe drives (from slot 4) and one connector for two front NVMe drives (from slot 5)</td>
<td></td>
</tr>
<tr>
<td>Dedicated RAID controller slot (see Figure 5 on page 76)</td>
<td></td>
</tr>
<tr>
<td>• An internal slot is reserved for the Cisco 12G SAS RAID controller or the Cisco 12G SAS HBA.</td>
<td></td>
</tr>
</tbody>
</table>

For more details on riser 1 and riser 2 see Riser Card Configuration and Options, page 81.
Internal storage devices

- Large Form Factor (LFF) drives with 12-drive backplane. The server can hold up to:
  - 12 LFF 3.5 inch front-facing SAS/SATA hard drives (HDDs) or SAS/SATA solid state drives (SSDs).
  - Optionally, up to two front-facing SFF NVMe PCIe SSDs (replacing SAS/SATA drives). These drives must be placed in front drive bays 1 and 2 only.
  - Optionally, up to two SFF 2.5-inch, rear-facing SAS/SATA HDDs/SSDs or up to two rear-facing SFF NVMe PCIe SSDs.
- One internal USB 3.0 port on the motherboard that you can use with an optional 16 GB USB thumb drive for additional storage.
- A mini-storage module connector supports either:
  - An SD card module with two SD card slots. Mixing different capacity SD cards is not supported.
  - An M.2 module with two SATA M.2 SSD slots. Mixing different capacity M.2 modules is not supported.

I/O Interfaces

- Rear panel
  - One 1Gbase-T RJ-45 management port (Marvell 88E6176)
  - Two 10Gbase-T LOM ports (Intel x550 10Gbase-T controller embedded on the motherboard)
  - One RS-232 serial port (RJ45 connector)
  - One DB15 VGA connector
  - Two USB 3.0 port connectors
  - One flexible modular LAN on motherboard (mLOM) slot that can accommodate various interface cards
  - A dedicated socket can be used to add an mLOM-style card for additional rear-panel connectivity (up to four Ethernet ports).

- Front panel
  - One KVM console connector (supplies two USB 2.0 connectors, one VGA DB15 video connector, and one serial port (RS232) RJ45 connector)

NOTE: SD cards and M.2 SSDs cannot be mixed. See details for RAID functionality in the ORDER M.2 SATA SSDs (OPTIONAL) section.
BASE SERVER STANDARD CAPABILITIES and FEATURES

<table>
<thead>
<tr>
<th>Capability/Feature</th>
<th>Description</th>
</tr>
</thead>
</table>
| Storage controller            | ■ Cisco 12G SAS RAID controller card with internal SAS connectivity.  
                               |   • Supports up to 14 internal SAS/SATA drives  
                               |   • Plugs into a dedicated RAID controller slot  
                               |   • Comes with 2 GB cache  
                               |   ■ Cisco 12G SAS HBA  
                               |   • Supports up to 14 SAS/SATA internal drives  
                               |   • Plugs into the dedicated RAID controller slot  
                               |   ■ Cisco 12G 9400-8e SAS HBA (up to two supported)  
                               |   • Supports external JBOD attach  
                               |   • Plugs into an appropriate riser slot  
                               |   • No RAID support  
| Modular LAN on Motherboard    | The dedicated mLOM slot on the motherboard can flexibly accommodate the following cards:  
                               | (mLOM) slot                                                                                                                                   |
|                               |   ■ Cisco Virtual Interface Cards  
                               |   ■ Quad Port Intel i350 1GbE RJ45 Network Interface Card (NIC)  
| Notes:                       | 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  
|                              |                                                                                                                                             |
| Integrated management         | Baseboard Management Controller (BMC) running Cisco Integrated Management Controller (CIMC) firmware.  
| processor                    | Depending on your CIMC settings, the CMC can be accessed through the 1GE dedicated management port, the 1GE/10GE LOM ports, or a Cisco virtual interface card (VIC).  
|                              | CMC manages certain components within the server, such as the Cisco 12G SAS HBA.  
| UCSM                          | Unified Computing System Manager (UCSM) runs in the Fabric Interconnect and automatically discovers and provisions some of the server components.  
| Notes:                       | 1. NCSI is supported on only one slot per riser at a time.
CONFIGURING the SERVER

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

- **STEP 1** VERIFY SERVER SKU, page 12
- **STEP 2** SELECT RISER CARDS (REQUIRED), page 13
- **STEP 3** SELECT CPU(s), page 14
- **STEP 4** SELECT MEMORY, page 20
- **STEP 5** SELECT RAID CONTROLLERS, page 27
- **STEP 6** SELECT DRIVES, page 30
- **STEP 7** SELECT PCIe OPTION CARD(s), page 37
- **STEP 8** ORDER OPTIONAL PCIe OPTION CARD ACCESSORIES, page 42
- **STEP 9** ORDER GPU CARDS (OPTIONAL), page 46
- **STEP 10** ORDER POWER SUPPLY, page 49
- **STEP 11** SELECT INPUT POWER CORD(s), page 50
- **STEP 12** ORDER TOOL-LESS RAIL KIT AND OPTIONAL REVERSIBLE CABLE MANAGEMENT ARM, page 54
- **STEP 13** MANAGEMENT CONFIGURATION (OPTIONAL), page 55
- **STEP 14** SELECT SERVER BOOT MODE (OPTIONAL), page 56
- **STEP 15** ORDER SECURITY DEVICES (OPTIONAL), page 57
- **STEP 16** SELECT LOCKING SECURITY BEZEL (OPTIONAL), page 58
- **STEP 17** ORDER CISCO SD CARD MODULE (OPTIONAL), page 59
- **STEP 18** ORDER M.2 SATA SSDs (OPTIONAL), page 60
- **STEP 19** ORDER INTERNAL MICRO-SD CARD MODULE (OPTIONAL), page 62
- **STEP 20** ORDER OPTIONAL USB 3.0 DRIVE, page 63
- **STEP 21** SELECT OPERATING SYSTEM AND VALUE-ADDED SOFTWARE, page 64
- **STEP 22** SELECT OPERATING SYSTEM MEDIA KIT, page 68
- **STEP 23** SELECT SERVICE and SUPPORT LEVEL, page 69
STEP 1  VERIFY SERVER SKU

Select one server product ID (PID) from Table 2.

Table 2  PID of the C240 M5 LFF Rack Base Server

<table>
<thead>
<tr>
<th>Product ID (PID)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>UCSC-C240-M5L</td>
<td>Large form-factor (LFF) drives, with 12-drive backplane.</td>
</tr>
<tr>
<td></td>
<td>■ Front-loading drive bays 1—12 support 3.5-inch SAS/SATA drives.</td>
</tr>
<tr>
<td></td>
<td>■ Optionally, front-loading drive bays 1 and 2 support 3.5-inch NVMe SSDs.</td>
</tr>
<tr>
<td></td>
<td>■ Optionally, the two rear-loading drive bays support up to two 2.5-inch SAS/SATA drives; or up to two 2.5-inch NVMe SSDs.</td>
</tr>
</tbody>
</table>

The Cisco UCS C240 M5 server:

■ Does not include power supply, CPU, memory (DIMMs or PMEMs), hard disk drives (HDDs), solid-state drives (SSDs), boot drives, SD cards, riser 1, riser 2, 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 optional riser cards, riser card 1 and 2. There are two options for riser card 1 (1 and 1B) and three options for riser card 2 (2A, 2B, 2C). Order one riser card 1 and/or one riser 2 card from Table 3. 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.

Table 3  Riser 1 required

<table>
<thead>
<tr>
<th>Product ID (PID)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PCIe Riser 1 required</td>
<td></td>
</tr>
<tr>
<td>UCSC-PCI-1-C240M5</td>
<td>Riser 1. Includes 3 PCIe slots (x8, x16, x8). Slots 1 and 2 controlled with CPU1; slot 3 controlled with CPU2.</td>
</tr>
<tr>
<td>UCSC-PCI-1B-240M5</td>
<td>Riser 1B. Includes 3 PCIe slots (x8, x8, x8). All slots controlled with CPU1.</td>
</tr>
<tr>
<td>UCSC-RIS-1-240M5</td>
<td>Riser 1 3PCIe slots (x8, x16, x8); slot 3 req CPU2, For T4</td>
</tr>
<tr>
<td>UCSC-RIS-1B-240M5</td>
<td>Riser 1B 3PCIe slots (x8, x8, x8); all from CPU1, For T4</td>
</tr>
</tbody>
</table>

PCle Riser 2 options (all slots controlled with CPU2)

<table>
<thead>
<tr>
<th>Product ID (PID)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>UCSC-PCI-2A-240M5</td>
<td>Riser 2A. Includes 3 PCIe slots (x16, x16, x8) and supports a GPU.</td>
</tr>
<tr>
<td>UCSC-PCI-2B-240M5</td>
<td>Riser 2B. Includes 3PCIe slots (x8, x16, x8) + 1 NVMe connector (controls two rear NVMe drives) and supports a GPU.</td>
</tr>
<tr>
<td>UCSC-PCI-2C-240M5</td>
<td>Riser 2C. Includes 3 PCIe slots (x8, x8, x8) + 2 NVMe connectors (one connector for two front NVMe drives and one connector for two rear NVMe drives).</td>
</tr>
<tr>
<td>UCSC-RIS-2A-240M5</td>
<td>Riser 2A 3PCIe slots (x8, x16, x16) supports GPU, For T4</td>
</tr>
<tr>
<td>UCSC-RIS-2B-240M5</td>
<td>Riser 2B 3PCIe slot(x8,x16,x8) supports GPU+rear NVMe, For T4</td>
</tr>
<tr>
<td>UCSC-RIS-2C-240M5</td>
<td>Riser 2C 3PCIe slots (x8) supports front+rear NVMe, For T4</td>
</tr>
</tbody>
</table>

**NOTE:** Riser 1 is required to be ordered

If no riser 2 option is selected, a riser blanking panel will be installed that covers PCIe slots 4, 5, and 6. You will not be able to install any PCIe cards in PCIe slots 4, 5, or 6 if the riser 2 option is not selected. You can order a spare riser 2 blanking panel (UCSC-PCIF-240M5=)

If there is any PCIe slot that does not have a card installed, you must order a blanking panel for that slot (SC-PCIF-01F=).

For additional details, see Riser Card Configuration and Options, page 81.
**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

Select CPUs

The available CPUs are listed in *Table 4*.

Table 4  Available CPUs

<table>
<thead>
<tr>
<th>Product ID (PID)</th>
<th>Clock Freq (GHz)</th>
<th>Power (W)</th>
<th>Cache Size (MB)</th>
<th>Cores</th>
<th>UPI¹ Links (GT/s)</th>
<th>Highest DDR4 DIMM Clock Support (MHz)²</th>
<th>Workload/Processor type</th>
</tr>
</thead>
<tbody>
<tr>
<td>UCS-CPU-I8276</td>
<td>2.2</td>
<td>165</td>
<td>38.50</td>
<td>28</td>
<td>3 x 10.4</td>
<td>2933</td>
<td>Oracle, SAP</td>
</tr>
<tr>
<td>UCS-CPU-I8260</td>
<td>2.4</td>
<td>165</td>
<td>35.75</td>
<td>24</td>
<td>3 x 10.4</td>
<td>2933</td>
<td>Microsoft Azure Stack</td>
</tr>
<tr>
<td>UCS-CPU-I6262V</td>
<td>1.9</td>
<td>135</td>
<td>33.00</td>
<td>24</td>
<td>3 x 10.4</td>
<td>2400</td>
<td>Virtual Server infrastructure or VSI</td>
</tr>
<tr>
<td>UCS-CPU-I6248R</td>
<td>3.0</td>
<td>205</td>
<td>35.75</td>
<td>24</td>
<td>2 x 10.4</td>
<td>2933</td>
<td>VDI, Oracle, SQL, Microsoft Azure Stack</td>
</tr>
<tr>
<td>UCS-CPU-I6248</td>
<td>2.5</td>
<td>150</td>
<td>27.50</td>
<td>24</td>
<td>3 x 10.4</td>
<td>2933</td>
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<td>2.5</td>
<td>85</td>
<td>11.00</td>
<td>8</td>
<td>2 x 9.6</td>
<td>2400</td>
<td>2nd Gen Intel® Xeon®</td>
</tr>
<tr>
<td>UCS-CPU-I4214R</td>
<td>2.4</td>
<td>100</td>
<td>16.50</td>
<td>12</td>
<td>2 x 9.6</td>
<td>2400</td>
<td>2nd Gen Intel® Xeon®</td>
</tr>
<tr>
<td>UCS-CPU-I4214Y</td>
<td>2.2</td>
<td>85</td>
<td>16.50</td>
<td>12/10/8</td>
<td>2 x 9.6</td>
<td>2400</td>
<td>2nd Gen Intel® Xeon®</td>
</tr>
<tr>
<td>UCS-CPU-I4214</td>
<td>2.2</td>
<td>85</td>
<td>16.50</td>
<td>12</td>
<td>2 x 9.6</td>
<td>2400</td>
<td>2nd Gen Intel® Xeon®</td>
</tr>
<tr>
<td>UCS-CPU-I4210R</td>
<td>2.4</td>
<td>100</td>
<td>13.75</td>
<td>10</td>
<td>2 x 9.6</td>
<td>2400</td>
<td>2nd Gen Intel® Xeon®</td>
</tr>
<tr>
<td>UCS-CPU-I4210</td>
<td>2.2</td>
<td>85</td>
<td>13.75</td>
<td>10</td>
<td>2 x 9.6</td>
<td>2400</td>
<td>2nd Gen Intel® Xeon®</td>
</tr>
<tr>
<td>UCS-CPU-I4208</td>
<td>2.1</td>
<td>85</td>
<td>11.00</td>
<td>8</td>
<td>2 x 9.6</td>
<td>2400</td>
<td>2nd Gen Intel® Xeon®</td>
</tr>
<tr>
<td>UCS-CPU-I3206R</td>
<td>1.9</td>
<td>85</td>
<td>11.00</td>
<td>8</td>
<td>2 x 9.6</td>
<td>2133</td>
<td>2nd Gen Intel® Xeon®</td>
</tr>
<tr>
<td>UCS-CPU-I3204</td>
<td>1.9</td>
<td>85</td>
<td>8.25</td>
<td>6</td>
<td>2 x 9.6</td>
<td>2133</td>
<td>2nd Gen Intel® Xeon®</td>
</tr>
</tbody>
</table>

Notes:
1. UPI = Ultra Path Interconnect. 2-socket servers support only 2 UPI performance, even if the CPU supports 3 UPI.
2. If higher or lower speed DIMMs are selected than what is shown in Table 5 on page 22 for a given CPU speed, the DIMMs will be clocked at the lowest common denominator of CPU clock and DIMM clock.
3. For details on memory support for processor classes and CPU modes, see SPARE PARTS, page 87
Cisco UCS C240 M5 Rack Server (Large Form Factor Disk Drive Model)

CONFIGURING the SERVER

The following table lists ambient temperature limitation and displayed respective temperature (last column) and configuration restrictions to ensure proper cooling and avoid excessive processor throttling, which may impact system performance.

Table 4a Ambient Temperature and Configuration Restrictions

<table>
<thead>
<tr>
<th>Processor Thermal Design Power (TDP)</th>
<th>CPU PID/Description</th>
<th>Ambient Temperature Limitation</th>
</tr>
</thead>
<tbody>
<tr>
<td>205W</td>
<td>UCS-CPU-I6256 - 3.6GHz/205W 12C/33MB PMM DDR4 1TB 2933MHz</td>
<td>30°C [86°F]</td>
</tr>
<tr>
<td>185W</td>
<td>UCS-CPU-I6250 - 3.9GHz/185W 8C/35.75MB PMM DDR4 1TB 2933MHz</td>
<td>25°C [77°F]</td>
</tr>
<tr>
<td>205W R SKUs</td>
<td>UCS-CPU-I6258R - 2.7GHz/205W 28C/35.75MB DDR4 2933MHz</td>
<td>32°C [90°F]</td>
</tr>
<tr>
<td></td>
<td>UCS-CPU-I6248R - 3.0GHz/205W 24C/35.75MB DDR4 2933MHz</td>
<td></td>
</tr>
<tr>
<td></td>
<td>UCS-CPU-I6246R - 3.4GHz/205W 16C/35.75MB DDR4 2933MHz</td>
<td></td>
</tr>
<tr>
<td></td>
<td>UCS-CPU-I6242R - 3.1GHz/205W 20C/35.75MB DDR4 2933MHz</td>
<td></td>
</tr>
</tbody>
</table>

**CAUTION:** Systems configured with above processors need to adhere by the below ambient inlet temperature threshold, if not, a fan fault or executing workloads with extensive use of heavy instructions sets like Intel® Advanced Vector Extensions 512 (Intel® AVX-512), may assert thermal and/or performance faults with an associated event recorded in the System Event Log (SEL).

Approved Configurations

(1) DIMM only configurations:
- Select one or two identical CPUs listed in Table 4 on page 14

(2) DIMM/PMEM Mixed Configurations:
- You must select two identical CPUs listed in Table 4 on page 14

Caveats

- The selection of 1 or 2 CPUs depends on the desired server functionality. See the following sections:
  - STEP 4 SELECT MEMORY, page 20 (memory mirroring section)
  - STEP 5 SELECT RAID CONTROLLERS, page 27
  - STEP 6 SELECT DRIVES, page 30
  - ORDER OPTIONAL PCIE OPTION CARD ACCESSORIES, page 42
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

NOTE: See SELECT MEMORY, page 20 for details on the compatibility of CPUs and DIMM speeds.
**STEP 4  SELECT MEMORY**

The available memory for the C240 M5 LFF is as follows:

- Clock speed: 2933 or 2666 MHz depending on CPU type
- Ranks per DIMM: 1, 2, 4, or 8
- Operational voltage: 1.2 V
- Registered ECC DDR4 DIMMS (RDIMMs), Load-reduced DIMMs (LRDIMMs), through-silicon via DIMMs (TSV DIMMs), or Intel® Optane™ Persistent Memory (PMEMs).
- New server purchases that include 2nd Generation Intel Scalable CPUs must use 2933-MHz DIMMs.

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

*Figure 4  C240 M5 LFF Memory Organization*
Select DIMMs and Memory Mirroring

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

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

Table 5 Available DDR4 DIMMs

<table>
<thead>
<tr>
<th>Product ID (PID)</th>
<th>PID Description</th>
<th>Voltage</th>
<th>Ranks /DIMM</th>
</tr>
</thead>
<tbody>
<tr>
<td>2933-MHz DIMMs</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>UCS-ML-256G8RT-H</td>
<td>256 GB DDR4-2933-MHz LRDIMM/8Rx4/1.2v</td>
<td>1.2 V</td>
<td>8</td>
</tr>
<tr>
<td>UCS-ML-128G4RT-H</td>
<td>128 GB DDR4-2933-MHz LRDIMM/4Rx4 (16Gb)</td>
<td>1.2 V</td>
<td>4</td>
</tr>
<tr>
<td>UCS-ML-X64G4RT-H</td>
<td>64 GB DDR4-2933-MHz LRDIMM/4Rx4 (8Gb)</td>
<td>1.2 V</td>
<td>4</td>
</tr>
<tr>
<td>UCS-MR-X64G2RT-H</td>
<td>64 GB DDR4-2933-MHz RDIMM/2Rx4 (16Gb)</td>
<td>1.2 V</td>
<td>2</td>
</tr>
<tr>
<td>UCS-MR-X32G2RT-H</td>
<td>32GB DDR4-2933-MHz RDIMM/2Rx4 (8Gb)</td>
<td>1.2 V</td>
<td>2</td>
</tr>
<tr>
<td>UCS-MR-X16G1RT-H</td>
<td>16 GB DDR4-2933-MHz RDIMM/1Rx4 (8Gb)</td>
<td>1.2 V</td>
<td>1</td>
</tr>
<tr>
<td>Intel® Optane™ Persistent Memory Product</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>UCS-MP-128GS-A0</td>
<td>Intel® Optane™ Persistent Memory, 128GB, 2666 MHz</td>
<td></td>
<td></td>
</tr>
<tr>
<td>UCS-MP-256GS-A0</td>
<td>Intel® Optane™ Persistent Memory, 256GB, 2666 MHz</td>
<td></td>
<td></td>
</tr>
<tr>
<td>UCS-MP-512GS-A0</td>
<td>Intel® Optane™ Persistent Memory, 512GB, 2666 MHz</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intel® Optane™ Persistent Memory Product Operational Modes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>UCS-DCPMM-AD</td>
<td>App Direct Mode</td>
<td></td>
<td></td>
</tr>
<tr>
<td>UCS-DCPMM-MM</td>
<td>Memory Mode</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Memory Mirroring Option</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N01-MMIRROR</td>
<td>Memory mirroring option</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
NOTE:

- Based on the Intel tech spec, the below DIMMs be used with the 1st Generation Intel® Xeon® scalable processor family CPUs and the 2nd Generation Intel® Xeon® scalable processor family CPUs:
  - UCS-MR-X16G1RT-H
  - UCS-MR-X32G2RT-H
  - UCS-ML-X64G4RT-H

- Based on the Intel tech spec, the below DIMMs can be used only with 2nd Generation Intel® Xeon® scalable processor family CPUs, not with Intel® Xeon® scalable processor family CPUs:
  - UCS-ML-256G8RT-H
  - UCS-ML-128G4RT-H
  - UCS-MR-X64G2RT-H

Approved Configurations

(1) 1-CPU configuration without memory mirroring:

- Select from 1 to 12 DIMMs.

<table>
<thead>
<tr>
<th>CPU 1 DIMM Placement in Channels (for identically ranked DIMMs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
</tr>
<tr>
<td>2</td>
</tr>
<tr>
<td>3</td>
</tr>
<tr>
<td>4</td>
</tr>
<tr>
<td>6</td>
</tr>
<tr>
<td>8</td>
</tr>
<tr>
<td>12</td>
</tr>
</tbody>
</table>

(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.

<table>
<thead>
<tr>
<th>CPU 1 DIMM Placement in Channels (for identical ranked DIMMs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
</tr>
<tr>
<td>6</td>
</tr>
<tr>
<td>8</td>
</tr>
<tr>
<td>12</td>
</tr>
</tbody>
</table>

- Select the memory mirroring option (N01-MMIRROR) as shown in Table 4 on page 17.
### 3) 2-CPU configuration without memory mirroring:

- Select from 1 to 12 DIMMs per CPU.

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

### 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.

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

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

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

### Table 6  2933-MHz DIMM Memory Speeds with Different 2nd Generation Intel® Xeon® Scalable Processors

<table>
<thead>
<tr>
<th>DIMM and CPU Frequencies (MHz)</th>
<th>DPC</th>
<th>LRDIMM (4Rx4)-128 GB (MHz)</th>
<th>LRDIMM (4Rx4)-64 GB (MHz)</th>
<th>RDIMM (2Rx4)-64 GB (MHz)</th>
<th>RDIMM (2Rx4)-32 GB (MHz)</th>
<th>RDIMM (1Rx4)-16 GB (MHz)</th>
</tr>
</thead>
<tbody>
<tr>
<td>DIMM = 2933 CPU = 2933</td>
<td>1DPC</td>
<td>1.2 V</td>
<td>1.2 V</td>
<td>1.2 V</td>
<td>1.2 V</td>
<td>1.2 V</td>
</tr>
<tr>
<td></td>
<td>2DPC</td>
<td>2933</td>
<td>2933</td>
<td>2933</td>
<td>2933</td>
<td>2933</td>
</tr>
<tr>
<td>DIMM = 2933 CPU = 2666</td>
<td>1DPC</td>
<td>2666</td>
<td>2666</td>
<td>2666</td>
<td>2666</td>
<td>2666</td>
</tr>
<tr>
<td></td>
<td>2DPC</td>
<td>2666</td>
<td>2666</td>
<td>2666</td>
<td>2666</td>
<td>2666</td>
</tr>
<tr>
<td>DIMM = 2933 CPU = 2400</td>
<td>1DPC</td>
<td>2400</td>
<td>2400</td>
<td>2400</td>
<td>2400</td>
<td>2400</td>
</tr>
<tr>
<td></td>
<td>2DPC</td>
<td>2400</td>
<td>2400</td>
<td>2400</td>
<td>2400</td>
<td>2400</td>
</tr>
<tr>
<td>DIMM = 2933 CPU = 2133</td>
<td>1DPC</td>
<td>2133</td>
<td>2133</td>
<td>2133</td>
<td>2133</td>
<td>2133</td>
</tr>
<tr>
<td></td>
<td>2DPC</td>
<td>2133</td>
<td>2133</td>
<td>2133</td>
<td>2133</td>
<td>2133</td>
</tr>
</tbody>
</table>

### Table 7  2666-MHz DIMM Memory Speeds with Different Intel® Xeon® Scalable Processors

<table>
<thead>
<tr>
<th>DIMM and CPU Frequencies (MHz)</th>
<th>DPC</th>
<th>TSV-RDIMM (8Rx4)-128 GB (MHz)</th>
<th>TSV-RDIMM (4Rx4)-64 GB (MHz)</th>
<th>LRDIMM (4Rx4)-64 GB (MHz)</th>
<th>RDIMM (2Rx4)-32 GB (MHz)</th>
<th>RDIMM (2Rx4)-32 GB (MHz)</th>
</tr>
</thead>
<tbody>
<tr>
<td>DIMM = 2666 CPU = 2666</td>
<td>1DPC</td>
<td>2666</td>
<td>2666</td>
<td>2666</td>
<td>2666</td>
<td>2666</td>
</tr>
<tr>
<td></td>
<td>2DPC</td>
<td>2666</td>
<td>2666</td>
<td>2666</td>
<td>2666</td>
<td>2666</td>
</tr>
<tr>
<td>DIMM = 2666 CPU = 2400</td>
<td>1DPC</td>
<td>2400</td>
<td>2400</td>
<td>2400</td>
<td>2400</td>
<td>2400</td>
</tr>
<tr>
<td></td>
<td>2DPC</td>
<td>2400</td>
<td>2400</td>
<td>2400</td>
<td>2400</td>
<td>2400</td>
</tr>
<tr>
<td>DIMM = 2666 CPU = 2133</td>
<td>1DPC</td>
<td>2133</td>
<td>2133</td>
<td>2133</td>
<td>2133</td>
<td>2133</td>
</tr>
<tr>
<td></td>
<td>2DPC</td>
<td>2133</td>
<td>2133</td>
<td>2133</td>
<td>2133</td>
<td>2133</td>
</tr>
</tbody>
</table>
See *Table 8* for PMEM memory modes.

**Table 8  Intel® Optane™ Persistent Memory Modes**

<table>
<thead>
<tr>
<th>Intel® Optane™ Persistent Memory</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>App Direct Mode:</strong> 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).</td>
</tr>
<tr>
<td><strong>Memory Mode:</strong> PMEM operates as a 100% memory module. Data is volatile and DRAM acts as a cache for PMEMs. Only PMEM capacity counts towards CPU tiering (only the PMEM capacity counts towards the CPU capacity limit). This is the factory default mode.</td>
</tr>
<tr>
<td><strong>Mix Mode:</strong> DRAM as cache. Only PMEM capacity counts towards CPU tiering (only the PMEM capacity counts towards the CPU capacity limit).</td>
</tr>
</tbody>
</table>

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

**Table 9  2nd Generation Intel® Xeon® Scalable Processor DIMM and PMEM¹ Physical Configuration**

<table>
<thead>
<tr>
<th>DIMM to PMEM Count</th>
<th>CPU 1</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>iMC1</td>
</tr>
<tr>
<td></td>
<td>Channel 2</td>
</tr>
<tr>
<td>F2 F1 E2 E1 D2 D1 C2 C1 B2 B1 A2 A1</td>
<td>DIMM</td>
</tr>
<tr>
<td>6 - 2</td>
<td>DIMM</td>
</tr>
<tr>
<td>6 - 4</td>
<td>DIMM</td>
</tr>
<tr>
<td>6 - 6</td>
<td>PMEM</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>DIMM to PMEM Count</th>
<th>CPU 2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>iMC1</td>
</tr>
<tr>
<td></td>
<td>Channel 2</td>
</tr>
<tr>
<td>M2 M1 L2 L1 K2 K1 J2 J1 H2 H1 G2 G1</td>
<td>DIMM</td>
</tr>
<tr>
<td>6 - 2</td>
<td>DIMM</td>
</tr>
<tr>
<td>6 - 4</td>
<td>DIMM</td>
</tr>
<tr>
<td>6 - 6</td>
<td>PMEM</td>
</tr>
</tbody>
</table>

**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 PMEMs, and the configurations must be the same for each CPU:

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

For detailed Intel PMEM configurations, refer to

Cisco UCS C240 M5 Server Installation and Service Guide

For detailed DIMM/PMEM informations, refer to

Cisco UCS C220/C240/B200 M5 Memory Guide
STEP 5  SELECT RAID CONTROLLERS

RAID Controller Options (internal HDD/SSD support)

Cisco 12G SAS RAID Controller
You can choose a Cisco 12G SAS RAID controller, which supports up to 14 drives and plugs into the dedicated 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:
- Embedded RAID = 8
- Cisco 12G SAS RAID controller = 64

SAS HBA (internal HDD/SSD/JBOD support)
You can choose a SAS HBA for JBOD or pass-through mode support:
- Cisco 12G SAS HBA plugs into the dedicated RAID controller slot.

SAS HBA (external JBOD support)
In addition to a RAID controller or JBOD controller for internal drives, you can choose up to two of the following SAS HBAs for external JBOD drive connectivity (non-RAID):
- Cisco 9400-8e 12G SAS HBA for external JBOD attach (choose up to two)

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
  - Do not mix HDDs and SSDs

Select Controller Options
Select as follows:
- For the 12-drive backplane system, select one of the following:
  - Cisco 12G SAS RAID controller with 2 GB FBWC, or
  - Cisco 12G SAS HBA
### Table 10 Hardware Controller Options

<table>
<thead>
<tr>
<th>Product ID (PID)</th>
<th>PID Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Controllers for Internal Drives</strong></td>
<td></td>
</tr>
<tr>
<td>UCS-C-RAID-M5</td>
<td>Cisco 12G SAS RAID Controller with 2 GB FBWC</td>
</tr>
<tr>
<td></td>
<td>- Supports up to 14 internal SAS/SATA HDDs and SAS/SATA SSDs</td>
</tr>
<tr>
<td></td>
<td>- Supports RAID 0, 1, 5, 6, 10, 50, 60, and JBOD mode. Supports running mixed RAID and JBOD mode.</td>
</tr>
<tr>
<td></td>
<td>- 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).</td>
</tr>
<tr>
<td>UCS-C-SAS-M5</td>
<td>Cisco 12G Modular SAS HBA</td>
</tr>
<tr>
<td></td>
<td>- Supports up to 14 internal SAS HDDs and SAS/SATA SSDs</td>
</tr>
<tr>
<td></td>
<td>- 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.</td>
</tr>
<tr>
<td><strong>Controllers for External Drives</strong></td>
<td></td>
</tr>
<tr>
<td>UCS-C-9400-8E</td>
<td>Cisco 12G 9400-8e 12G SAS HBA for external JBOD attach (select up to two)</td>
</tr>
<tr>
<td><strong>RAID Configuration Options</strong> <em>(not available for Cisco 12G SAS HBA or embedded software RAID)</em></td>
<td></td>
</tr>
<tr>
<td>R2XX-SRAID0</td>
<td>Enable Single Disk Raid 0 Setting</td>
</tr>
<tr>
<td>R2XX-RAID0</td>
<td>Factory preconfigured RAID striping option</td>
</tr>
<tr>
<td></td>
<td>Enable RAID 0 Setting. Requires a minimum of one hard drive.</td>
</tr>
<tr>
<td>R2XX-RAID1</td>
<td>Factory preconfigured RAID mirroring option</td>
</tr>
<tr>
<td></td>
<td>Enable RAID 1 Setting. Requires exactly two drives with the same size, speed, capacity.</td>
</tr>
<tr>
<td>R2XX-RAID5</td>
<td>Factory preconfigured RAID option</td>
</tr>
<tr>
<td></td>
<td>Enable RAID 5 Setting. Requires a minimum of three drives of the same size, speed, capacity.</td>
</tr>
<tr>
<td>R2XX-RAID6</td>
<td>Factory preconfigured RAID option</td>
</tr>
<tr>
<td></td>
<td>Enable RAID 6 Setting. Requires a minimum of four drives of the same size, speed, capacity.</td>
</tr>
<tr>
<td>R2XX-RAID10</td>
<td>Factory preconfigured RAID option</td>
</tr>
<tr>
<td></td>
<td>Enable RAID 10 Setting. Requires a minimum of four drives of the same size, speed, capacity.</td>
</tr>
</tbody>
</table>
NOTE:
- Although RAID levels 50 and 60 are not orderable from the factory, they are supported for selected controllers as shown in Table 10.
- For Cisco SAS 9400-8e 12G SAS HBA external drive enclosure support, see the enclosure section of the compatibility list at the following link:
  https://www.broadcom.com/support/storage/interop-compatibility/

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

Approved Configurations

- The Cisco 12G SAS RAID controller upgrade option supports up to 14 internal drives with RAID 0, 1, 5, 6, 10, 50, 60, and JBOD mode support.
- The Cisco 12G SAS HBA supports up to 14 internal drives with JBOD support.
- The external drive PCIe controller card is the Cisco 12G 9400-8e SAS HBA. Up to two of these can be installed simultaneously with the Cisco 12G SAS Modular RAID controller card (UCSC-RAID-M5) or Cisco 12 Gbps Modular SAS HBA (UCSC-SAS-M5).

See Table 11 for a summary of the supported controller configuration option.

### Table 11  Supported Controller Configurations

<table>
<thead>
<tr>
<th># of CPUs</th>
<th>Embedded RAID</th>
<th>Cisco 12G SAS RAID Controller or Cisco 12G SAS HBA (only one can be installed at a time)</th>
<th>Cisco 12G 9400-8e 12G SAS HBA</th>
<th>MAX# Drives Supported</th>
<th>RAID Support</th>
<th>Internal Drive Types Allowed</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Not allowed</td>
<td>Installed in a dedicated slot</td>
<td>Installed in a dedicated slot</td>
<td>Up to two installed in rear PCIe slots</td>
<td>14 internal, 8 or 16 external</td>
<td>0,1,10,5.6.50 ,60, JBOD (12G SAS RAID), JBOD (SAS HBA)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Only one of the above can be installed at a time</td>
</tr>
<tr>
<td>2</td>
<td>Not allowed</td>
<td>Installed in a dedicated slot</td>
<td>Installed in a dedicated slot</td>
<td>Up to two installed in rear PCIe slots</td>
<td>14 internal, 8 or 16 external</td>
<td>0,1,10,5.6.50 ,60, JBOD (12G SAS RAID), JBOD (SAS HBA)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Only one of the above can be installed at a time</td>
</tr>
</tbody>
</table>
**STEP 6  SELECT DRIVES**

The standard disk drive features are:
- 3.5-inch large form factor
- Hot-pluggable
- Drives come mounted in sleds

Select Front-Facing Drives for UCSC-C240-M5L

The available drives are listed in *Table 12*.

**Table 12  Available Hot-Pluggable Sled-Mounted Front Facing Drives**

<table>
<thead>
<tr>
<th>Product ID (PID)</th>
<th>PID Description</th>
<th>Drive Type</th>
<th>Capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>HDDs (10K RPM)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>UCS-HY18TB10K4KN</td>
<td>1.8 TB 12G SAS 10K RPM LFF HDD (4K)</td>
<td>SAS</td>
<td>1.8 TB</td>
</tr>
<tr>
<td>UCS-HY12TB10K12N</td>
<td>1.2 TB 12G SAS 10K RPM LFF HDD</td>
<td>SAS</td>
<td>1.2 TB</td>
</tr>
<tr>
<td><strong>HDDs (7.2K RPM)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>UCS-HD1T7KL12N</td>
<td>1TB 12G SAS 7.2K RPM LFF HDD</td>
<td>SAS</td>
<td>1 TB</td>
</tr>
<tr>
<td>UCS-HD2T7KL12N</td>
<td>2 TB 12G SAS 7.2K RPM LFF HDD</td>
<td>SAS</td>
<td>2 TB</td>
</tr>
<tr>
<td>UCS-HD4T7KL12N</td>
<td>4 TB 12G SAS 7.2K RPM LFF HDD</td>
<td>SAS</td>
<td>4 TB</td>
</tr>
<tr>
<td>UCS-HD6T7KL4KN</td>
<td>6 TB 12G SAS 7.2K RPM LFF HDD (4K)</td>
<td>SAS</td>
<td>6 TB</td>
</tr>
<tr>
<td>UCS-HD8T7KL4KAN</td>
<td>8 TB 12G SAS 7.2K RPM LFF HDD (4K)</td>
<td>SAS</td>
<td>8 TB</td>
</tr>
<tr>
<td>UCS-HD10T7KL4KAN</td>
<td>10 TB 12G SAS 7.2K RPM LFF HDD (4K)</td>
<td>SAS</td>
<td>10 TB</td>
</tr>
<tr>
<td>UCS-HD10T7KLEM</td>
<td>10 TB 12G SAS 7.2K RPM LFF HDD (512e)</td>
<td>SAS</td>
<td>10 TB</td>
</tr>
<tr>
<td>UCS-HD12T7KL4KN</td>
<td>12TB-12G SAS 7.2K RPM LFF HDD(4K)</td>
<td>SAS</td>
<td>12 TB</td>
</tr>
<tr>
<td>UCS-HD14T7KL4KN</td>
<td>14TB 12G SAS 7.2K RPM LFF HDD(4K)</td>
<td>SAS</td>
<td>14 TB</td>
</tr>
<tr>
<td>UCS-HD16TW7KL4KN</td>
<td>16TB 12G SAS 7.2K RPM LFF HDD(4K)</td>
<td>SAS</td>
<td>16 TB</td>
</tr>
<tr>
<td>UCS-HD18TW7KL4KN</td>
<td>18TB 12G SAS 7.2K RPM LFF HDD(4K)</td>
<td>SAS</td>
<td>18 TB</td>
</tr>
<tr>
<td>UCS-HD14TT7KL4KN</td>
<td>14TB 12G SAS 7.2K RPM LFF HDD(4K)</td>
<td>SAS</td>
<td>14 TB</td>
</tr>
<tr>
<td>UCS-HD16TT7KL4KN</td>
<td>16TB 12G SAS 7.2K RPM LFF HDD(4K)</td>
<td>SAS</td>
<td>16 TB</td>
</tr>
<tr>
<td>UCS-HD1T7KL6GN</td>
<td>1 TB 6G SATA 7.2K RPM LFF HDD</td>
<td>SATA</td>
<td>1 TB</td>
</tr>
<tr>
<td>UCS-HD2T7KL6GN</td>
<td>2 TB 6G SATA 7.2K RPM LFF HDD</td>
<td>SATA</td>
<td>2 TB</td>
</tr>
<tr>
<td>UCS-HD4T7KL6GN</td>
<td>4 TB 6G SATA 7.2K RPM LFF HDD</td>
<td>SATA</td>
<td>4 TB</td>
</tr>
<tr>
<td>UCS-HD6T7KL6GN</td>
<td>6TB 6G SATA 7.2K RPM LFF HDD (512e)</td>
<td>SATA</td>
<td>6 TB</td>
</tr>
</tbody>
</table>
## CONFIGURING the SERVER

Table 12: Available Hot-Pluggable Sled-Mounted Front Facing Drives

<table>
<thead>
<tr>
<th>Product ID (PID)</th>
<th>PID Description</th>
<th>Drive Type</th>
<th>Capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>UCS-HD8T7K6GAN</td>
<td>8 TB 6G SATA 7.2K RPM LFF HDD (512e)</td>
<td>SATA</td>
<td>8 TB</td>
</tr>
<tr>
<td>UCS-HD10T7K6GN</td>
<td>10 TB 6G SATA 7.2K RPM LFF HDD (512e)</td>
<td>SATA</td>
<td>10 TB</td>
</tr>
<tr>
<td>UCS-HD10T7K6GAN</td>
<td>10 TB 6G SATA 7.2K RPM LFF HDD (512e)</td>
<td>SATA</td>
<td>10 TB</td>
</tr>
<tr>
<td>UCS-HD12T7K6GN</td>
<td>12 TB 6G SATA 7.2K RPM LFF HDD (512e)</td>
<td>SATA</td>
<td>12 TB</td>
</tr>
</tbody>
</table>

### SAS/SATA SSDs

#### Enterprise Performance SSDs (High endurance, supports up to 10X or 3X DWPD (drive writes per day))

<table>
<thead>
<tr>
<th>SAS SSDs</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>UCS-HY400G123X-EP</td>
<td>400 GB 3.5in Enterprise performance 12G SAS SSD (3X endurance)</td>
<td>SAS</td>
<td>400 GB</td>
</tr>
<tr>
<td>UCS-HY800G123X-EP</td>
<td>800 GB 3.5in Enterprise performance 12G SAS SSD (3X endurance)</td>
<td>SAS</td>
<td>800 GB</td>
</tr>
<tr>
<td>UCS-HY16T123X-EP</td>
<td>1.6 TB 3.5in Enterprise performance 12G SAS SSD (3X endurance)</td>
<td>SAS</td>
<td>1.6 TB</td>
</tr>
</tbody>
</table>

#### SATA SSDs

<table>
<thead>
<tr>
<th>SATA SSDs</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>UCS-HY480G63X-EP</td>
<td>480GB 3.5in Enterprise performance 6G SATA SSD(3X endurance S4600/S4610)</td>
<td>SATA</td>
<td>480 GB</td>
</tr>
<tr>
<td>UCS-HY960G63X-EP</td>
<td>960GB 3.5in Enterprise performance 6G SATA SSD(3X endurance S4600/S4610)</td>
<td>SATA</td>
<td>960 GB</td>
</tr>
<tr>
<td>UCS-HY19T63X-EP</td>
<td>1.9TB 3.5in Enterprise performance 6G SATA SSD(3X endurance S4600/S4610)</td>
<td>SATA</td>
<td>1.9 TB</td>
</tr>
</tbody>
</table>

#### Enterprise Value SATA SSDs (Low endurance, supports up to 1X DWPD (drive writes per day))

<table>
<thead>
<tr>
<th>Enterprise Value SATA SSDs</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>UCS-HY240G61X-EV</td>
<td>240 GB 3.5 inch Enterprise Value 6G SATA SSD (Samsung PM863A/PM883)</td>
<td>SATA</td>
<td>240 GB</td>
</tr>
<tr>
<td>UCS-HY480G61X-EV</td>
<td>480 GB 3.5 inch Enterprise Value 6G SATA SSD (Intel 3520)</td>
<td>SATA</td>
<td>480 GB</td>
</tr>
<tr>
<td>UCS-HY960G61X-EV</td>
<td>960 GB 3.5 inch Enterprise Value 6G SATA SSD (Samsung PM863A/PM883)</td>
<td>SATA</td>
<td>960 GB</td>
</tr>
<tr>
<td>UCS-HY19TM1X-EV</td>
<td>1.9TB 3.5 inch Enterprise Value 6G SATA SSD</td>
<td>SATA</td>
<td>1.9 TB</td>
</tr>
</tbody>
</table>

### Self-Encrypted Drives (SED)

<table>
<thead>
<tr>
<th>Self-Encrypted Drives (SED)</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>UCS-SD400GBCNK9</td>
<td>400 GB Enterprise performance SAS LFF SSD (10X FWPD, SED) (Micron 650DC)</td>
<td>SAS</td>
<td>400 GB</td>
</tr>
<tr>
<td>UCS-SD800GBCNK9</td>
<td>800 GB Enterprise performance SAS LFF SSD (10X FWPD, SED) (Micron 650DC)</td>
<td>SAS</td>
<td>800 GB</td>
</tr>
<tr>
<td>UCS-HD4T12GNK9</td>
<td>4 TB 7.2K rpm LFF HDD (SED)</td>
<td>SAS</td>
<td>4 TB</td>
</tr>
<tr>
<td>UCS-HD6T12GANK9</td>
<td>6 TB 7.2K rpm LFF HDD (4K format, SED)</td>
<td>SAS</td>
<td>6 TB</td>
</tr>
<tr>
<td>UCS-HD12T7KL4NK9</td>
<td>12TB 7.2K rpm LFF HDD 4K format SED</td>
<td>SAS</td>
<td>12 TB</td>
</tr>
<tr>
<td>UCS-HY600G15NK9</td>
<td>600 GB 12G SAS 15K RPM LFF HDD (SED)</td>
<td>SAS</td>
<td>600 GB</td>
</tr>
<tr>
<td>UCS-SD19TBEM2NK9</td>
<td>1.9TB Enterprise value SATA SSD (1X , SED)</td>
<td>SATA</td>
<td>1.9 TB</td>
</tr>
</tbody>
</table>

### PCIe/NVMe SFF 2.5" drives

<table>
<thead>
<tr>
<th>PCIe/NVMe SFF 2.5&quot; drives</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>UCSC-NVMEHY-H800</td>
<td>800 GB HGST SN200 NVMe High Perf. High Endurance (HGST)</td>
<td>NVMe</td>
<td>800 GB</td>
</tr>
</tbody>
</table>

Cisco UCS C240 M5 Rack Server (Large Form Factor Disk Drive Model) 31
Table 12  Available Hot-Pluggable Sled-Mounted Front Facing Drives

<table>
<thead>
<tr>
<th>Product ID (PID)</th>
<th>PID Description</th>
<th>Drive Type</th>
<th>Capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>UCSC-NVMEHY-H1600</td>
<td>1.6 TB HGST SN200 NVMe High Perf. High Endurance (HGST)</td>
<td>NVMe</td>
<td>1.6 TB</td>
</tr>
<tr>
<td>UCSC-NVMEHY-H3200</td>
<td>3.2 TB HGST SN200 NVMe High Perf. High Endurance (HGST)</td>
<td>NVMe</td>
<td>3.2 TB</td>
</tr>
</tbody>
</table>

**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 is as follows:
   - Windows: Minimum release Win2012 and later
   - Linux: Minimum release RHEL 6.5 and later
   - VMware supports 4k native drives starting from ESXi 6.7; All earlier versions of ESXi support 512e format drives only
   - 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 write centric IO applications. Supports endurance of 10 or 3 DWPD (drive writes 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). Also, 4K sector format drives are now supported with VMware 6.7
5. If you choose one or two SFF NVMe drives, drive slots 1 and 2 at the front of the chassis are reserved for these drives (see Figure 2 on page 4 for drive slot numbering).

**NOTE:** When retrofitting front facing drives with spare NVMe drives, you must order the following along with the spare drives:
- UCSC-PCI-2C-240M5 (Riser 2C)
- CBL-NVME-C240LFF= (C240 M5 Front NVMe cable (1) LFF)

Caveats

- 2.5-inch SFF NVMe drives are connected directly to the CPU, not managed by the RAID controller.
- You can mix HDDs and SSDs as long as you keep all HDDs in their own RAID volume and all SSDs in their own RAID volume.
- You can mix SAS HDDs and SAS/SATA SSDs when using the Cisco 12G SAS RAID Controller or Cisco 12G SAS HBA.
- If you order any SFF NVMe drives, you must also order two CPUs.
Mixing of HGST and Intel P45XX/P46XX NVMe drives are NOT supported. However, Intel P48XX (Optane) can be mixed with the HGST NVMe drives as long as customers are able to get the performance they are looking for.

SED drives can be mixed with the non-SED drives in Table 12 on page 30.

Select Rear-Facing Drives for UCSC-C240-M5L

The available rear-facing drives for the UCSC-C240-M5L are listed in Table 13.

Table 13 Available Hot-Pluggable Sled-Mounted Rear-Facing Drive

<table>
<thead>
<tr>
<th>Product ID (PID)</th>
<th>PID Description</th>
<th>Drive Type</th>
<th>Capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>HDDs (15K RPM)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>UCS-HD300G15K12N</td>
<td>300 GB 12G SAS 15K RPM SFF HDD</td>
<td>SAS</td>
<td>300 GB</td>
</tr>
<tr>
<td>UCS-HD600G15K12N</td>
<td>600 GB 12G SAS 15K RPM SFF HDD</td>
<td>SAS</td>
<td>600 GB</td>
</tr>
<tr>
<td>UCS-HD900G15K12N</td>
<td>900 GB 12G SAS 15K RPM SFF HDD</td>
<td>SAS</td>
<td>900 GB</td>
</tr>
<tr>
<td><strong>HDDs (10K RPM)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>UCS-HD300G10K12N</td>
<td>300 GB 12G SAS 10K RPM SFF HDD</td>
<td>SAS</td>
<td>300 GB</td>
</tr>
<tr>
<td>UCS-HD600G10K12N</td>
<td>600 GB 12G SAS 10K RPM SFF HDD</td>
<td>SAS</td>
<td>600 GB</td>
</tr>
<tr>
<td>UCS-HD12TB10K12N</td>
<td>1.2 TB 12G SAS 10K RPM SFF HDD</td>
<td>SAS</td>
<td>1.2 TB</td>
</tr>
<tr>
<td>UCS-HD18TB10K4KN</td>
<td>1.8 TB 12G SAS 10K RPM SFF HDD (4K)</td>
<td>SAS</td>
<td>1.8 TB</td>
</tr>
<tr>
<td>UCS-HD24TB10K4KN</td>
<td>2.4 TB 12G SAS 10K RPM SFF HDD (4K)</td>
<td>SAS</td>
<td>2.4 TB</td>
</tr>
<tr>
<td><strong>HDDs (7.2K RPM)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>UCS-HD1T7K12N</td>
<td>1 TB 12G SAS 7.2K RPM SFF HDD</td>
<td>SAS</td>
<td>1 TB</td>
</tr>
<tr>
<td>UCS-HD2T7K12N</td>
<td>2 TB 12G SAS 7.2K RPM SFF HDD</td>
<td>SAS</td>
<td>2 TB</td>
</tr>
<tr>
<td>UCS-HD1T7K6GAN</td>
<td>1 TB 6G SATA 7.2K RPM SFF HDD</td>
<td>SAS</td>
<td>1 TB</td>
</tr>
<tr>
<td><strong>SAS/SATA SSDs</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Enterprise Performance SSDs (High endurance, supports up to 10X or 3X DWPD (drive writes per day))</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>UCS-SD960G63X-EP</td>
<td>960GB 2.5in Enterprise performance 6GSATA SSD(3X endurance)</td>
<td>SATA</td>
<td>960 GB</td>
</tr>
<tr>
<td>UCS-SD19T63X-EP</td>
<td>1.9TB 2.5in Enterprise performance 6GSATA SSD(3X endurance)</td>
<td>SATA</td>
<td>1.9 TB</td>
</tr>
<tr>
<td>UCS-SD480G63X-EP</td>
<td>480GB 2.5 inch Enterprise performance 6GSATA SSD(3X endurance)</td>
<td>SATA</td>
<td>480 GB</td>
</tr>
<tr>
<td>UCS-SD19TM3X-EP</td>
<td>1.9TB 2.5in Enterprise performance 6GSATA SSD(3X endurance)</td>
<td>SATA</td>
<td>1.9 TB</td>
</tr>
<tr>
<td>UCS-SD480GM3X-EP</td>
<td>480GB 2.5 inch Enterprise Performance 6GSATA SSD(3X endurance)</td>
<td>SATA</td>
<td>480 GB</td>
</tr>
<tr>
<td>UCS-SD960GM3X-EP</td>
<td>960GB 2.5in Enterprise performance 6GSATA SSD(3X endurance)</td>
<td>SATA</td>
<td>960 GB</td>
</tr>
<tr>
<td>UCS-SD400G123X-EP</td>
<td>400 GB 2.5 inch Enterprise performance 12G SAS SSD(3X DWPD)</td>
<td>SAS</td>
<td>400 GB</td>
</tr>
<tr>
<td>UCS-SD800G123X-EP</td>
<td>800 GB 2.5 inch Enterprise performance 12G SAS SSD(3X DWPD)</td>
<td>SAS</td>
<td>800 GB</td>
</tr>
<tr>
<td>UCS-SD16T123X-EP</td>
<td>1.6 TB 2.5 inch Enterprise performance 12G SAS SSD(3X DWPD)</td>
<td>SAS</td>
<td>1.6 TB</td>
</tr>
</tbody>
</table>
## CONFIGURING the SERVER

**Table 13  Available Hot-Pluggable Sled-Mounted Rear-Facing Drive**

<table>
<thead>
<tr>
<th>Product ID (PID)</th>
<th>PID Description</th>
<th>Drive Type</th>
<th>Capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>UCS-SD32T123X-EP</td>
<td>3.2 TB 2.5 inch Enterprise performance 12G SAS SSD (3X DWPD)</td>
<td>SAS</td>
<td>3.2 TB</td>
</tr>
<tr>
<td>UCS-SD16H123X-EP</td>
<td>1.6 TB 2.5 inch Enterprise performance 12G SAS SSD (3X endurance)</td>
<td>SAS</td>
<td>1.6 TB</td>
</tr>
<tr>
<td>UCS-SD800GK3X-EP</td>
<td>800 GB 2.5 inch Enterprise Performance 12G SAS SSD (3X endurance)</td>
<td>SAS</td>
<td>800 GB</td>
</tr>
<tr>
<td>UCS-SD16TK3X-EP</td>
<td>1.6 TB 2.5 inch Enterprise Performance 12G SAS SSD (3X endurance)</td>
<td>SAS</td>
<td>1.6 TB</td>
</tr>
<tr>
<td>UCS-SD32TK3X-EP</td>
<td>3.2 TB 2.5 inch Enterprise Performance 12G SAS SSD (3X endurance)</td>
<td>SAS</td>
<td>3.2 TB</td>
</tr>
<tr>
<td></td>
<td>Enterprise Value SSDs (Low endurance, supports up to 1X DWPD (drive writes per day))</td>
<td></td>
<td></td>
</tr>
<tr>
<td>UCS-SD480G6I1X-EV</td>
<td>480 GB 2.5 inch Enterprise Value 6G SATA SSD (Intel S4500/S4150)</td>
<td>SATA</td>
<td>480 GB</td>
</tr>
<tr>
<td>UCS-SD960G6I1X-EV</td>
<td>960 GB 2.5 inch Enterprise Value 6G SATA SSD (Intel S4500/S4150)</td>
<td>SATA</td>
<td>960 GB</td>
</tr>
<tr>
<td>UCS-SD38T6I1X-EV</td>
<td>3.8 TB 2.5 inch Enterprise Value 6G SATA SSD (Intel S4500/S4150)</td>
<td>SATA</td>
<td>3.8 TB</td>
</tr>
<tr>
<td>UCS-SD120GM1X-EV</td>
<td>120 GB 2.5 inch Enterprise Value 6G SATA SSD (Micron 5100/5200)</td>
<td>SATA</td>
<td>120 GB</td>
</tr>
<tr>
<td>UCS-SD240GM1X-EV</td>
<td>240 GB 2.5 inch Enterprise Value 6G SATA SSD (Micron 5100/5200)</td>
<td>SATA</td>
<td>240 GB</td>
</tr>
<tr>
<td>UCS-SD480GM1X-EV</td>
<td>480 GB 2.5 inch Enterprise Value 6G SATA SSD (Micron 5100/5200)</td>
<td>SATA</td>
<td>480 GB</td>
</tr>
<tr>
<td>UCS-SD480G121X-EV</td>
<td>480 GB 2.5 inch Enterprise Value 12G SAS SSD (Toshiba PM4)</td>
<td>SATA</td>
<td>480 GB</td>
</tr>
<tr>
<td>UCS-SD960G6I1X-EV</td>
<td>960 GB 2.5 inch Enterprise Value 6G SATA SSD (Samsung PM863A/PM883)</td>
<td>SATA</td>
<td>960 GB</td>
</tr>
<tr>
<td>UCS-SD960GM1X-EV</td>
<td>960 GB 2.5 inch Enterprise Value 6G SATA SSD (Micron 5100/5200)</td>
<td>SATA</td>
<td>960 GB</td>
</tr>
<tr>
<td>UCS-SD960G121X-EV</td>
<td>960 GB 2.5 inch Enterprise Value 12G SAS SSD (Toshiba PM4)</td>
<td>SATA</td>
<td>960 GB</td>
</tr>
<tr>
<td>UCS-SD16TM1X-EV</td>
<td>1.6 TB 2.5 inch Enterprise Value 6G SATA SSD (Micron 5100/5200)</td>
<td>SATA</td>
<td>1.6 TB</td>
</tr>
<tr>
<td>UCS-SD19T61X-EV</td>
<td>1.9 TB 2.5 inch Enterprise Value 6G SATA SSD (Samsung PM863A/PM883)</td>
<td>SATA</td>
<td>1.9 TB</td>
</tr>
<tr>
<td>UCS-SD19TM1X-EV</td>
<td>1.9 TB 2.5 inch Enterprise Value 6G SATA SSD (Micron 5100/5200)</td>
<td>SATA</td>
<td>1.9 TB</td>
</tr>
<tr>
<td>UCS-SD19TB121X-EV</td>
<td>1.9 TB 2.5 inch Enterprise Value 12G SAS SSD (Toshiba PM4)</td>
<td>SATA</td>
<td>1.9 TB</td>
</tr>
<tr>
<td>UCS-SD38T61X-EV</td>
<td>3.8 TB 2.5 inch Enterprise Value 6G SATA SSD (Samsung PM863A/PM883)</td>
<td>SATA</td>
<td>3.8 TB</td>
</tr>
<tr>
<td>UCS-SD38TM1X-EV</td>
<td>3.8 TB 2.5 inch Enterprise Value 6G SATA SSD (Micron 5100/5200)</td>
<td>SATA</td>
<td>3.8 TB</td>
</tr>
<tr>
<td>UCS-SD38TB121X-EV</td>
<td>3.8 TB 2.5 inch Enterprise Value 12G SAS SSD (Toshiba PM4)</td>
<td>SATA</td>
<td>3.8 TB</td>
</tr>
<tr>
<td>UCS-SD76T61X-EV</td>
<td>7.6 TB 2.5 inch Enterprise Value 6G SATA SSD</td>
<td>SATA</td>
<td>7.6 TB</td>
</tr>
<tr>
<td>UCS-SD76TM1X-EV</td>
<td>7.6 TB 2.5 inch Enterprise Value 6G SATA SSD (Micron 5100/5200)</td>
<td>SATA</td>
<td>7.6 TB</td>
</tr>
<tr>
<td>UCS-SD960GH61X-EV</td>
<td>960 GB 2.5 inch Enterprise Value 12G SAS SSD</td>
<td>SAS</td>
<td>960 GB</td>
</tr>
<tr>
<td>UCS-SD960GK1X-EV</td>
<td>960 GB 2.5 inch Enterprise Value 12G SAS SSD</td>
<td>SAS</td>
<td>960 GB</td>
</tr>
<tr>
<td>UCS-SD19TK1X-EV</td>
<td>1.9 TB 2.5 inch Enterprise Value 12G SAS SSD</td>
<td>SAS</td>
<td>1.9 TB</td>
</tr>
<tr>
<td>UCS-SD38TK1X-EV</td>
<td>3.8 TB 2.5 inch Enterprise Value 12G SAS SSD</td>
<td>SAS</td>
<td>3.8 TB</td>
</tr>
<tr>
<td>UCS-SD76TK1X-EV</td>
<td>7.6 TB 2.5 inch Enterprise Value 12G SAS SSD</td>
<td>SAS</td>
<td>7.6 TB</td>
</tr>
<tr>
<td>UCS-SD15TK1X-EV</td>
<td>15.3 TB 2.5 inch Enterprise Value 12G SAS SSD</td>
<td>SAS</td>
<td>15.3 TB</td>
</tr>
</tbody>
</table>

**Self-Encrypted Drives (SED)**

1. See Cisco UCS C240 M5 Rack Server (Large Form Factor Disk Drive Model)
### Available Hot-Pluggable Sled-Mounted Rear-Facing Drive

<table>
<thead>
<tr>
<th>Product ID (PID)</th>
<th>PID Description</th>
<th>Drive Type</th>
<th>Capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>UCS-HD600G15NK9</td>
<td>600 GB 12G SAS 15K RPM SFF HDD (SED) FIPS140-2</td>
<td>SAS</td>
<td>600 GB</td>
</tr>
<tr>
<td>UCS-HD24T10NK9</td>
<td>2.4 TB 12G SAS 10K RPM SFF HDD (4K) (SED) FIPS140-2</td>
<td>SAS</td>
<td>2.4 TB</td>
</tr>
<tr>
<td>UCS-HD18T10NK9</td>
<td>1.8 TB 12G SAS 10K RPM SFF HDD (4K format, SED) FIPS140-2</td>
<td>SAS</td>
<td>1.8 TB</td>
</tr>
<tr>
<td>UCS-HD12T10NK9</td>
<td>1.2 TB 12G SAS 10K RPM SFF HDD (SED) FIPS140-2</td>
<td>SAS</td>
<td>1.2 TB</td>
</tr>
</tbody>
</table>

### SAS SSD

#### Enterprise performance
- UCS-SD800GBHNK9: 800 GB Enterprise performance SAS SSD (10X FWPD, SED) FIPS140-2
- UCS-SD38TB2HTNK9: 3.8TB Enterprise value 12G SAS SSD (1X FWPD, SED) FIPS140-2

#### Enterprise value
- UCS-SD960GBE1NK9: 960 GB Enterprise value SATA SSD (1X FWPD, SED) Non FIPS
- UCS-SD960GBM2NK9: 960GB Enterprise value SATA SSD (1X, SED)
- UCS-SD38TBEM2NK9: 3.8TB Enterprise value SATA SSD (1X, SED)
- UCS-SD76TBEM2NK9: 7.6 TB Enterprise value SATA SSD (1X, SED)

### SATA SSD
- UCS-SD960GBE1NK9: 960 GB Enterprise value SATA SSD (1X FWPD, SED) Non FIPS
- UCS-SD960GBM2NK9: 960GB Enterprise value SATA SSD (1X, SED)
- UCS-SD38TBEM2NK9: 3.8TB Enterprise value SATA SSD (1X, SED)
- UCS-SD76TBEM2NK9: 7.6 TB Enterprise value SATA SSD (1X, SED)

### PCIe/NVMe LFF (2.5-inch) drives

<table>
<thead>
<tr>
<th>Product ID (PID)</th>
<th>PID Description</th>
<th>Drive Type</th>
<th>Capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>UCSC-NVMEHW-H800</td>
<td>Cisco 2.5in U.2 800GB HGST SN200 NVMe High Perf. High Endurance</td>
<td>NVMe</td>
<td>800 GB</td>
</tr>
<tr>
<td>UCSC-NVMEHW-H1600</td>
<td>Cisco 2.5in U.2 1.6 TB HGST SN200 NVMe High Perf. High Endurance</td>
<td>NVMe</td>
<td>1.6 TB</td>
</tr>
<tr>
<td>UCSC-NVMEHW-H3200</td>
<td>Cisco 2.5in U.2 3.2 TB HGST SN200 NVMe High Perf. High Endurance</td>
<td>NVMe</td>
<td>3.2 TB</td>
</tr>
<tr>
<td>UCSC-NVMEHW-H6400</td>
<td>Cisco 2.5in U.2 6.4 TB HGST SN200 NVMe High Perf. High Endurance</td>
<td>NVMe</td>
<td>6.4 TB</td>
</tr>
<tr>
<td>UCSC-NVMEHW-H7680</td>
<td>Cisco 2.5in U.2 7.7 TB HGST SN200 NVMe High Perf. High Value Endurance</td>
<td>NVMe</td>
<td>7.7 TB</td>
</tr>
<tr>
<td>UCSC-NVMEZ2-12TBV</td>
<td>Cisco 2.5in U.2 2.0TB Intel P4510 NVMe High Perf. Value Endurance</td>
<td>NVMe</td>
<td>2.0 TB</td>
</tr>
<tr>
<td>UCSC-NVMEHW-I8000</td>
<td>Cisco 2.5in U.2 8TB Intel P4510 NVMe High Perf. Value Endurance</td>
<td>NVMe</td>
<td>8.0 TB</td>
</tr>
<tr>
<td>UCSC-NVMEXPB-1375</td>
<td>Cisco 2.5in 375 GB Intel Optane NVMe Extreme Performance SSD</td>
<td>NVMe</td>
<td>375 GB</td>
</tr>
<tr>
<td>UCSC-NVMEXP-I750</td>
<td>Cisco 2.5in 750 GB Intel Optane NVMe Extreme Performance</td>
<td>NVMe</td>
<td>750 GB</td>
</tr>
<tr>
<td>UCSC-NVMEZ2-11000</td>
<td>Cisco 2.5in U.2 1.0 TB Intel P4510 NVMe High Perf. Value Endurance</td>
<td>NVMe</td>
<td>1.0 TB</td>
</tr>
<tr>
<td>UCSC-NVMEZ2-11600</td>
<td>Cisco 2.5in U.2 1.6TB Intel P4610 NVMe High Perf. High Endurance</td>
<td>NVMe</td>
<td>1.6 TB</td>
</tr>
<tr>
<td>UCSC-NVMEZ2-13200</td>
<td>Cisco 2.5in U.2 3.2TB Intel P4610 NVMe High Perf. High Endurance</td>
<td>NVMe</td>
<td>3.2 TB</td>
</tr>
<tr>
<td>UCSC-NVMEZ2-14000</td>
<td>Cisco 2.5in U.2 4.0TB Intel P4510 NVMe High Perf. Value Endurance</td>
<td>NVMe</td>
<td>4.0 TB</td>
</tr>
</tbody>
</table>

**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.
CONFIGURING the SERVER

Notes:
1. 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).

2. If you choose one or two front-facing PCIe SSD or NVMe drives, drive slots 1 and 2 at the front of the chassis are reserved for these drives (see Figure 2 on page 4 for drive slot numbering).

---

**NOTE:** When retrofitting rear facing drives with spare NVMe drives, you must order the following along with the spare drives:
- UCSC-PCI-2C-240M5 (Riser 2C) or UCSC-PCI-2B-240M5 (Riser 2B)
- UCSC-RNVME-240M5= (C240 M5 Rear NVMe CBL(1) kit, Rear NVMe CBL, backplane SFF&LFF)

---

Caveats

- 2.5-inch SFF NVMe drives are connected directly to the CPU, not managed by the RAID controller.
- You can mix HDDs and SSDs as long as you keep all HDDs in their own RAID volume and all SSDs in their own RAID volume.
- You can mix SAS HDDs and SAS/SATA SSDs when using the Cisco 12G SAS RAID Controller or Cisco 12G SAS HBA.
- If you order any SFF NVMe drives, you must also order two CPUs.
- Mixing of HGST and Intel NVMe drives is NOT supported
- SED drives can be mixed with the non-SED drives in Table 13 on page 33
STEP 7  SELECT PCIe OPTION CARD(s)

The standard PCIe card offerings are:
- Modular LAN on Motherboard (mLOM)
- Virtual Interface Cards (VICs)
- Network Interface Cards (NICs)
- PCIe - Accelerators/Smart NICs
- Host Bus Adapters (HBAs)
- UCS NVMe/PCIe Add-in Storage Cards

Select PCIe Option Cards

The available PCIe option cards are listed in Table 14.

Table 14  Available PCIe Option Cards

<table>
<thead>
<tr>
<th>Product ID (PID)</th>
<th>PID Description</th>
<th>Location</th>
<th>Electrical slot</th>
<th>Card Height¹</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Modular LAN on Motherboard (mLOM)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>UCSC-MLOM-C100-04</td>
<td>Cisco UCS VIC 1497 Dual Port 100G QSFP28 CNA mLOM</td>
<td>mLOM</td>
<td>x16</td>
<td>N/A</td>
</tr>
<tr>
<td>UCSC-MLOM-C25Q-04</td>
<td>Cisco UCS VIC 1457 Quad Port 25G SFP28 mLOM</td>
<td>mLOM</td>
<td>x16</td>
<td>N/A</td>
</tr>
<tr>
<td>UCSC-MLOM-C40Q-03</td>
<td>Cisco UCS VIC 1387 Dual Port 40Gb QSFP+ CNA</td>
<td>mLOM</td>
<td>x8</td>
<td>N/A</td>
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<tr>
<td>UCSC-MLOM-IRJ45</td>
<td>Intel i350 Quad Port 1GBase-T NIC</td>
<td>mLOM</td>
<td>x8</td>
<td>N/A</td>
</tr>
<tr>
<td><strong>Virtual Interface Card (VICs)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>UCSC-PCIE-C100-04</td>
<td>Cisco UCS VIC 1495 Dual Port 100G QSFP28 CNA PCIe</td>
<td>Riser 1 or 2</td>
<td>x16</td>
<td>HHHL</td>
</tr>
<tr>
<td>UCSC-PCIE-C40Q-03</td>
<td>Cisco VIC 1385 Dual Port 40Gb QSFP+ CNA w/RDMA</td>
<td>Riser 1 or 2</td>
<td>x16</td>
<td>HHHL</td>
</tr>
<tr>
<td>UCSC-PCIE-C25Q-04</td>
<td>Cisco VIC 1455 VIC PCIe - Quad Port 10/25G SFP28</td>
<td>Riser 1 or 2</td>
<td>x16</td>
<td>HHHL</td>
</tr>
<tr>
<td><strong>Network Interface Cards (NICs)</strong></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td><strong>1 Gb NICs</strong></td>
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<td></td>
</tr>
<tr>
<td>UCSC-PCIE-IRJ45</td>
<td>Intel i350 Quad Port 1GBase-T NIC</td>
<td>Riser 1 or 2</td>
<td>x8</td>
<td>HHHL</td>
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<tr>
<td><strong>10 Gb NICs</strong></td>
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<tr>
<td>N2XX-AIPCI01</td>
<td>Intel X520 Dual Port 10Gb SFP+ NIC</td>
<td>Riser 1 or 2</td>
<td>x8</td>
<td>HHHL</td>
</tr>
<tr>
<td>UCSC-PCIE-ID10GC</td>
<td>Intel X550-T2 Dual Port 10GbBase-T NIC</td>
<td>Riser 1 or 2</td>
<td>x8</td>
<td>HHHL</td>
</tr>
<tr>
<td>UCSC-PCIE-ID10GF</td>
<td>Intel X710-DA2 Dual Port 10Gb SFP+ NIC</td>
<td>Riser 1 or 2</td>
<td>x8</td>
<td>HHHL</td>
</tr>
<tr>
<td>UCSC-PCIE-IQ10GF</td>
<td>Intel X710 Quad Port 10Gb SFP+ NIC</td>
<td>Riser 1 or 2</td>
<td>x8</td>
<td>HHHL</td>
</tr>
</tbody>
</table>
## Table 14 Available PCIe Option Cards (continued)

<table>
<thead>
<tr>
<th>Product ID (PID)</th>
<th>PID Description</th>
<th>Location</th>
<th>Electrical slot</th>
<th>Card Height¹</th>
</tr>
</thead>
<tbody>
<tr>
<td>UCSC-PCIE-IQ10GC</td>
<td>Intel X710 Quad Port 10GBase-T NIC</td>
<td>Riser 1 or 2</td>
<td>x8</td>
<td>HHHL</td>
</tr>
<tr>
<td><strong>25 Gb NICs</strong></td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>UCSC-PCIE-QD25GF</td>
<td>Qlogic QL41212H Dual Port 25Gb NIC</td>
<td>Riser 1 or 2</td>
<td>x8</td>
<td>HHHL</td>
</tr>
<tr>
<td>UCSC-PCIE-ID25GF</td>
<td>Intel XXV710 Dual Port 25Gb SFP28 NIC</td>
<td>Riser 1 or 2</td>
<td>x8</td>
<td>HHHL</td>
</tr>
<tr>
<td>UCSC-P-M4D25GF</td>
<td>Mellanox MCX4121A-ACAT dual port 10/25G SFP28 NIC</td>
<td>Riser 1 or 2</td>
<td>x8</td>
<td>HHHL</td>
</tr>
<tr>
<td>UCSC-P-M5D25GF</td>
<td>Mellanox CX-5 EN MCX512A-ACAT 2x25/10GbE SFP PCIe NIC</td>
<td>Riser 1 or 2</td>
<td>x8</td>
<td>HHHL</td>
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<tr>
<td><strong>40 Gb NICs</strong></td>
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<td></td>
</tr>
<tr>
<td>UCSC-PCIE-QD40GF</td>
<td>Qlogic QL45412H Dual Port 40Gb NIC</td>
<td>Riser 1 or 2</td>
<td>x16</td>
<td>HHHL</td>
</tr>
<tr>
<td>UCSC-PCIE-ID40GF</td>
<td>Intel XL710 Dual Port 40Gb QSFP+ NIC</td>
<td>Riser 1 or 2</td>
<td>x8</td>
<td>HHHL</td>
</tr>
<tr>
<td><strong>100 Gb NICs</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>UCSC-PCIE-QS100GF</td>
<td>Qlogic QLE45611HLCU single port 100G NIC</td>
<td>Riser 1 or 2</td>
<td>x16</td>
<td>HHHL</td>
</tr>
<tr>
<td>UCSC-P-M5D100GF</td>
<td>Mellanox CX-5 MCX516A-CDAT 2x100GbE QSFP PCIe NIC</td>
<td>Riser 1 or 2</td>
<td>x16</td>
<td>HHHL</td>
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<tr>
<td>UCSC-P-M5S100GF</td>
<td>Mellanox CX-5 MCX515A-CCAT 1x100GbE QSFP PCIe NIC</td>
<td>Riser 1 or 2</td>
<td>x16</td>
<td>HHHL</td>
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<td>UCSC-P-IQAT8970</td>
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<td>x 16</td>
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<td>Riser 1 or 2</td>
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<td>UCSC-NVME-H32003</td>
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Table 14  Available PCIe Option Cards (continued)

<table>
<thead>
<tr>
<th>Product ID (PID)</th>
<th>PID Description</th>
<th>Location</th>
<th>Electrical slot</th>
<th>Card Height¹</th>
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</thead>
<tbody>
<tr>
<td>UCSC-NVME-H38401</td>
<td>Cisco AIC 3.8TB HGST SN260 NVMe Extreme Performance High Endurance</td>
<td>Riser 1 or 2</td>
<td>x8</td>
<td>HHHL</td>
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<tr>
<td>UCSC-NVME-H76801</td>
<td>Cisco AIC 7.7TB HGST SN260 NVMe Extreme Performance Value Endurance³</td>
<td>Riser 1 or 2</td>
<td>x8</td>
<td>HHHL</td>
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Notes:
1. HHHL= Half Height Half Length
2. HHHL PCIe NVMe cards are not bootable.
3. Qlogic/Emulex HBAs ship with FC optics installed in the HBA.

Caveats

■ For 1-CPU systems:
  – Only PCIe slots 1 and 2 on PCIe riser 1A are available for a 1-CPU system. All three slots (1, 2, and 3) on PCIe riser 1B are available for a 1-CPU system. Slots 1, 2, and 3 are to the left when looking at the rear of the server. Slot 1 is the bottom slot.
  – The PCIe slots on riser 2 are not supported on 1-CPU systems. The riser 2 slots are full-height PCIe slots 4, 5, and 6 (see Figure 3 on page 5). These are the slots on the right when looking at the rear of the server. Slot 4 is the 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 or 1B.
  – 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 14 on page 37 for the selection of plug-in and mLOM VIC cards. See also Table 1 on page 7 and Riser Card Configuration and Options, page 81 for the PCIe slot physical descriptions.

■ For 2-CPU systems:
  – Six PCIe slots are available, three on PCIe riser 1 or riser 1B (PCIe slots 1, 2, and 3) and three on PCIe riser 2A, 2B or 2C (PCIe slots 4, 5, and 6).
  – 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 14 on page 37 for the selection of plug-in and mLOM VIC cards. See also Table 1 on page 7 and Riser Card Configuration and Options, page 81 for the PCIe slot physical descriptions.
  – If GPUs are installed in slots 2 (Riser 1 or 1B) and 5 (Riser 2A or 2B), the NCSI capability automatically switches over to slots 1 (Riser 1 or 1B) and 4 (Riser 2A or 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 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](http://www.cisco.com/en/US/products/ps10477/prod_technical_reference_list.html)
CONFIGURING the SERVER

### PCIe Card Configuration with 2 CPU

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

<table>
<thead>
<tr>
<th>PCIe Card Type</th>
<th>Primary Slot</th>
<th>Secondary Slot</th>
<th>Alternate Slot</th>
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<tr>
<td>Laguna Beach Plus RAID card</td>
<td>Midplane Slot</td>
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<tr>
<td>Talledega RAID card</td>
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<tr>
<td>PCIe Switch card</td>
<td>10</td>
<td>None</td>
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<tr>
<td>Cisco x16 VIC (Clearlake)</td>
<td>1</td>
<td>2</td>
<td>8, 5</td>
</tr>
<tr>
<td>Nvidia and AMD GPUs</td>
<td>2</td>
<td>8</td>
<td>10, 1</td>
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<tr>
<td>Other 16x PCIe I/O card</td>
<td>8</td>
<td>10</td>
<td>2, 1</td>
</tr>
<tr>
<td>Other 8x PCIe I/O card</td>
<td>9</td>
<td>5</td>
<td>8, 2, 10, 1</td>
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<tr>
<td>Cisco x16 VIC (Bodaga)</td>
<td>1</td>
<td>2</td>
<td>8</td>
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</tbody>
</table>

**NOTE:**

- Primary Slots are first priorities
- 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.
- 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**

- For list of supported optics and cables for VIC1385, VIC 1387, VIC 1440, VIC 1455, VIC 1457, VIC 1495 and VIC 1497 refer to VIC 1300 and VIC 1400 series data sheet at the following links:

Select

- NIC Interoperability with Cisco Cables/Optics. *(Table 15.0 to 15.0.c)*
- NIC Interoperability with Intel Cables/Optics. *(Table 15.1)*

Table 16.0 10G NIC Interoperability with Cables/Optics

<table>
<thead>
<tr>
<th>Cisco Product ID (PID)</th>
<th>UCSC-PCIE-ID10GF</th>
<th>UCSC-PCIE-IQ10GF</th>
<th>UCSC-PCIE-ID10GC</th>
<th>UCSC-PCIE-IQ10GC</th>
<th>N2XX-AIPCI01</th>
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<tr>
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<td>SFP-H10GB-CU3M</td>
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### Table 16.0 10G NIC Interoperability with Cables/Optics

<table>
<thead>
<tr>
<th>Cisco Product ID (PID)</th>
<th>UCSC-PCIE-ID10GF</th>
<th>UCSC-PCIE-IQ10GF</th>
<th>UCSC-PCIE-ID10GC</th>
<th>UCSC-PCIE-IQ10GC</th>
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### Table 16.0.a 25G NIC Interoperability with Cables/Optics

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<th>UCSC-PCIE-QD25GF</th>
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### CONFIGURING the SERVER

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### Table 16.0.a 25G NIC Interoperability with Cables/Optics

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<th>UCSC-PCIE-ID25GF</th>
<th>UCSC-P-M5D25GF</th>
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### 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        | ✓                | ✓              | ✓                | ✓              |
| SFP-10/25G-CSR-S       | ✓                | ✓              | ✓                | ✓              |

### Table 16.0.b 40G NIC Interoperability with Cables/Optics

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<tr>
<td>QSFP-H40G-AOC3M</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>QSFP-H40G-AOC5M</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>QSFP-H40G-AOC7M</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>QSFP-H40G-AOC10M</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Cisco Optical Transceivers</td>
<td></td>
<td></td>
</tr>
<tr>
<td>QSFP-40G-SR4</td>
<td>✓</td>
<td></td>
</tr>
</tbody>
</table>
Table 16.0.b 40G NIC Interoperability with Cables/Optics

<table>
<thead>
<tr>
<th>Cisco Product ID (PID)</th>
<th>UCSC-PCIE-QS100GF</th>
<th>UCSC-P-M5S100GF</th>
<th>UCSC-P-M5D100GF</th>
</tr>
</thead>
<tbody>
<tr>
<td>QSFP-40G-SR4-S</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>QSFP-40G-SR-BD</td>
<td></td>
<td></td>
<td>✓</td>
</tr>
</tbody>
</table>

Table 16.0.c 100G NIC Interoperability with Cables/Optics

<table>
<thead>
<tr>
<th>Cisco Product ID (PID)</th>
<th>UCSC-PCIE-QS100GF</th>
<th>UCSC-P-M5S100GF</th>
<th>UCSC-P-M5D100GF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cisco Direct Attach Cables (DAC)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>QSFP-100G-AOC5M</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>QSFP-100G-AOC7M</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>QSFP-100G-AOC10M</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>QSFP-100G-CU3M</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>QSFP-100G-CU5M</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Cisco Optical Transceivers</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>QSFP-100G-LR4-S</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>QSFP-100G-SR4-S</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>QSFP-40/100-SRBD</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

Table 16.1 NIC Interoperability with Intel Cables/Optics

<table>
<thead>
<tr>
<th>Intel Product ID (PID)</th>
<th>N2XX-AIPCI01</th>
<th>UCSC-PCIE-ID10GF</th>
<th>UCSC-PCIE-IQ10GF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intel DACs</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>XDACBL1M</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>XDACBL3M</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>XDACBL5M</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Intel Optical Transceivers</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E10GSFPSR</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>E10GSFPLR</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

a. *: Compiled from testing conducted by Cisco TMG and Vendors.
b. Refer to the these links for additional Connectivity Options.

<table>
<thead>
<tr>
<th>Intel:</th>
<th>Marvell/Qlogic:</th>
<th>Mellanox:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Speed White Paper</td>
<td>45000 series Interoperability Matrix</td>
<td></td>
</tr>
</tbody>
</table>
STEP 9 ORDER GPU CARDS (OPTIONAL)

Select GPU Options

The available GPU PCIe options are listed in Table 17.

<table>
<thead>
<tr>
<th>Product ID (PID)</th>
<th>PID Description</th>
<th>Card Size</th>
<th>Maximum cards Per node</th>
</tr>
</thead>
<tbody>
<tr>
<td>UCSC-GPU-V100</td>
<td>NVIDIA V100 16GB</td>
<td>Full-Height Dual-Width</td>
<td>2</td>
</tr>
<tr>
<td>UCSC-GPU-V100-32</td>
<td>NVIDIA V100 32GB</td>
<td>Full-Height Dual-Width</td>
<td>2</td>
</tr>
<tr>
<td>UCSC-GPU-P4</td>
<td>NVIDIA P4</td>
<td>Low Profile Single-Width</td>
<td>6</td>
</tr>
<tr>
<td>UCSC-GPU-T4-16</td>
<td>NVIDIA T4 16GB</td>
<td>Low Profile Single-Width</td>
<td>6</td>
</tr>
<tr>
<td>UCSC-GPU-M10</td>
<td>NVIDIA M10</td>
<td>Full-Height Dual Width</td>
<td>2</td>
</tr>
<tr>
<td>UCSC-GPU-M60</td>
<td>NVIDIA M60</td>
<td>Full-Height Dual-Width</td>
<td>2</td>
</tr>
</tbody>
</table>

Notes:
1. Refer to C240 M5 GPU Card Installation for more details and for the additional information related to GPU card slots, refer to PCIe Card Configuration with 2 CPU, page 41

CAUTION:
- When using the GPU cards, The maximum allowable operating temperature for NVIDIA P100 is 28°C (82°F), NVIDIA V100 GPU is 28°C (82°F) for the 24 SFF SKU and for the 8 SFF SKU, NVIDIA M60, M10 GPU is 35°C (95.0°F).

NOTE:
- All GPU cards must be procured from Cisco as there is a unique SBIOS ID required by CIMC and UCSM
- All GPU cards require two CPUs and a minimum of two power supplies in the server. 1600W power supplies are recommended. 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
Caveats

- NVIDIA M10 and M60 can support only less than 1TB of total memory in the server.
- GPUs cannot be mixed.
- Slot 5 on riser card 2 is the required slot for the first GPU
- Slot 2 on riser card 1 is the secondary slot for a second GPU
- The following NVIDIA GPUs are not supported with 2nd Generation Intel® Xeon® Processor.
  - NVIDIA Tesla P4

Refer to Table 18 for the PCIe slot usage for the following PCIe cards installed in riser 1 and riser 2:

- External RAID
- VIC
- NIC
- HBA
- GPU
- NVMe HHHL

Table 18 PCIe Slot Usage in Riser 1 (slots 1, 2, 3) and Riser 2 (slots 4, 5, 6)

<table>
<thead>
<tr>
<th>Riser Combinations</th>
<th>Total Riser Slots Available</th>
<th>Riser Slots Available for GPUs</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1-CPU System</td>
<td>2-CPU System</td>
</tr>
<tr>
<td>1A only</td>
<td>Slots 1 and 2</td>
<td>Slots 1, 2, and 3</td>
</tr>
<tr>
<td>1B only</td>
<td>Slots 1, 2, and 3</td>
<td>Slots 1, 2, and 3</td>
</tr>
<tr>
<td>1A and 2A</td>
<td>Slots 1 and 2</td>
<td>Slots 1, 2, 3, 4, 5, and 6</td>
</tr>
<tr>
<td>1A and 2B</td>
<td>Slots 1 and 2</td>
<td>Slots 1, 2, 3, 4, 5, and 6</td>
</tr>
<tr>
<td>1A and 2C</td>
<td>Slots 1 and 2</td>
<td>Slots 1, 2, 3, 4, 5, and 6</td>
</tr>
<tr>
<td>1A and 2D</td>
<td>Slots 1 and 2</td>
<td>Slots 1, 2, 3, 4, 5, and 6</td>
</tr>
<tr>
<td>1B and 2A</td>
<td>Slots 1 and 2</td>
<td>Slots 1, 2, 3, 4, 5, and 6</td>
</tr>
<tr>
<td>1B and 2B</td>
<td>Slots 1 and 2</td>
<td>Slots 1, 2, 3, 4, 5, and 6</td>
</tr>
<tr>
<td>1B and 2C</td>
<td>Slots 1 and 2</td>
<td>Slots 1, 2, 3, 4, 5, and 6</td>
</tr>
<tr>
<td>1B and 2D</td>
<td>Slots 1 and 2</td>
<td>Slots 1, 2, 3, 4, 5, and 6</td>
</tr>
</tbody>
</table>
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 81.
**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 offers multiple power output options. This allows users to “right-size” based on server configuration, which improves power efficiency, lowers overall energy costs, and helps 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>
<thead>
<tr>
<th>Product ID (PID)</th>
<th>PID Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>UCSC-PSU1-770W</td>
<td>770W power supply for C-Series Servers</td>
</tr>
<tr>
<td>UCSC-PSU1-1050W</td>
<td>1050W AC power supply for C-Series servers</td>
</tr>
<tr>
<td>UCSC-PSUV2-1050DC</td>
<td>1050W DC power supply for C-Series servers</td>
</tr>
<tr>
<td>UCSC-PSU1-1600W</td>
<td>1600W AC Power Supply for C-Series servers</td>
</tr>
<tr>
<td>UCSC-PSU1-1050ELV</td>
<td>Cisco UCS 1050W AC Power Supply for Rack Server Low Line</td>
</tr>
</tbody>
</table>

Notes:
1. PSU supported on C240/C240/HX

**NOTE:** In a server with two power supplies, both power supplies must be identical.
STEP 11 SELECT INPUT POWER CORD(s)

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

Table 20 Available Power Cords

<table>
<thead>
<tr>
<th>Product ID (PID)</th>
<th>PID Description</th>
<th>Images</th>
</tr>
</thead>
<tbody>
<tr>
<td>R2XX-DMYMPWRCORD</td>
<td>No power cord (dummy PID to allow for a no power cord option)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>CAB-48DC-40A-8AWG</td>
<td>C-Series -48VDC PSU Power Cord, 3.5M, 3 Wire, 8AWG, 40A</td>
<td><img src="image1.png" alt="Image" /></td>
</tr>
<tr>
<td>CAB-N5K6A-NA</td>
<td>N5000 AC Power Cable, 6A, 250V, North America, 2.5m</td>
<td><img src="image2.png" alt="Image" /></td>
</tr>
<tr>
<td>CAB-AC-L620-C13</td>
<td>AC Power Cord, NEMA L6-20 - C13, 2M/6.5ft</td>
<td><img src="image3.png" alt="Image" /></td>
</tr>
<tr>
<td>CAB-C13-CBN</td>
<td>CABASY, WIRE, JUMPER CORD, 27” L, C13/C14, 10A/250V</td>
<td><img src="image4.png" alt="Image" /></td>
</tr>
<tr>
<td>CAB-C13-C14-2M</td>
<td>CABASY, WIRE, JUMPER CORD, PWR, 2 Meter, C13/C14, 10A/250V</td>
<td><img src="image5.png" alt="Image" /></td>
</tr>
</tbody>
</table>
### Table 20 Available Power Cords

<table>
<thead>
<tr>
<th>Product ID (PID)</th>
<th>PID Description</th>
<th>Images</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAB-C13-C14-AC</td>
<td>CORD,PWR,JMP,IEC60320/C14,IEC60320/C13, 3.0M</td>
<td><img src="image1.png" alt="Image of CAB-C13-C14-AC" /></td>
</tr>
<tr>
<td>CAB-250V-10A-AR</td>
<td>Power Cord, 250V, 10A, Argentina</td>
<td><img src="image2.png" alt="Image of CAB-250V-10A-AR" /></td>
</tr>
<tr>
<td>CAB-9K10A-AU</td>
<td>Power Cord, 250VAC 10A 3112 Plug, Australia</td>
<td><img src="image3.png" alt="Image of CAB-9K10A-AU" /></td>
</tr>
<tr>
<td>CAB-250V-10A-CN</td>
<td>AC Power Cord - 250V, 10A - PRC</td>
<td><img src="image4.png" alt="Image of CAB-250V-10A-CN" /></td>
</tr>
<tr>
<td>CAB-9K10A-EU</td>
<td>Power Cord, 250VAC 10A CEE 7/7 Plug, EU</td>
<td><img src="image5.png" alt="Image of CAB-9K10A-EU" /></td>
</tr>
<tr>
<td>CAB-250V-10A-ID</td>
<td>Power Cord, SFS, 250V, 10A, India</td>
<td><img src="image6.png" alt="Image of CAB-250V-10A-ID" /></td>
</tr>
<tr>
<td>CAB-250V-10A-IS</td>
<td>Power Cord, SFS, 250V, 10A, Israel</td>
<td><img src="image7.png" alt="Image of CAB-250V-10A-IS" /></td>
</tr>
</tbody>
</table>
Table 20  Available Power Cords

<table>
<thead>
<tr>
<th>Product ID (PID)</th>
<th>PID Description</th>
<th>Images</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAB-9K10A-IT</td>
<td>Power Cord, 250VAC 10A CEI 23-16/VII Plug, Italy</td>
<td><img src="image1.png" alt="Image" /></td>
</tr>
<tr>
<td>CAB-9K10A-SW</td>
<td>Power Cord, 250VAC 10A MP232 Plug, Switzerland</td>
<td><img src="image2.png" alt="Image" /></td>
</tr>
<tr>
<td>CAB-9K10A-UK</td>
<td>Power Cord, 250VAC 10A BS1363 Plug (13 A fuse), UK</td>
<td><img src="image3.png" alt="Image" /></td>
</tr>
<tr>
<td>CAB-9K12A-NA¹</td>
<td>Power Cord, 125VAC 13A NEMA 5-15 Plug, North America</td>
<td><img src="image4.png" alt="Image" /></td>
</tr>
<tr>
<td>CAB-250V-10A-BR</td>
<td>Power Cord - 250V, 10A - Brazil</td>
<td><img src="image5.png" alt="Image" /></td>
</tr>
<tr>
<td>CAB-C13-C14-2M-JP</td>
<td>Power Cord C13-C14, 2M/6.5ft Japan PSE mark</td>
<td><img src="image6.png" alt="Image" /></td>
</tr>
<tr>
<td>CAB-9K10A-KOR¹</td>
<td>Power Cord, 125VAC 13A KSC8305 Plug, Korea</td>
<td><img src="image7.png" alt="Image" /></td>
</tr>
<tr>
<td>CAB-ACTW</td>
<td>AC Power Cord (Taiwan), C13, EL 302, 2.3M</td>
<td><img src="image8.png" alt="Image" /></td>
</tr>
<tr>
<td>CAB-JPN-3PIN</td>
<td>Japan, 90-125VAC 12A NEMA 5-15 Plug, 2.4m</td>
<td><img src="image9.png" alt="Image" /></td>
</tr>
<tr>
<td>CAB-48DC-40A-INT</td>
<td>-48VDC PSU PWR Cord, 3.5M, 3 Wire, 8AWG, 40A (INT)</td>
<td><img src="image10.png" alt="Image" /></td>
</tr>
</tbody>
</table>
## Table 20  Available Power Cords

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

**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 OPTIONAL REVERSIBLE CABLE MANAGEMENT ARM

Select a Tool-less Rail Kit

Select a tool-less rail kit from Table 21.

Table 21 Tool-less Rail Kit Options

<table>
<thead>
<tr>
<th>Product ID (PID)</th>
<th>PID Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>UCSC-RAILB-M4</td>
<td>Ball Bearing Rail Kit for C240 M5 Rack Servers</td>
</tr>
<tr>
<td>UCSC-RAIL-NONE</td>
<td>No rail kit option</td>
</tr>
</tbody>
</table>

Select an Optional Reversible Cable Management Arm

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

Table 22 Cable Management Arm

<table>
<thead>
<tr>
<th>Product ID (PID)</th>
<th>PID Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>UCSC-CMA-M4</td>
<td>Reversible CMA for ball bearing rail kit</td>
</tr>
</tbody>
</table>

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


NOTE: If you plan to rackmount your UCS C240 M5 server, you must order a tool-less rail kit. The same rail kits and CMAs are used for C240 M4 and C240 M5 servers.
STEP 13 MANAGEMENT CONFIGURATION (OPTIONAL)

By default, the C240 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 23. In Dedicated NIC mode, the CIMC can be accessed only through the dedicated management port. See Chassis Rear View, page 5 for the location of the management port.

To change the default NIC mode to Cisco Card Mode, select the UCSC-CCARD-01 PID shown in Table 23. 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


Table 23 Management Configuration Ordering Information

<table>
<thead>
<tr>
<th>Product ID (PID)</th>
<th>PID Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>UCSC-DLOM-01</td>
<td>Dedicated Mode BIOS setting for C-Series Servers</td>
</tr>
<tr>
<td>UCSC-CCARD-01</td>
<td>Cisco Card Mode BIOS setting for C-Series Servers</td>
</tr>
</tbody>
</table>

In addition, the optional software PIDS listed in Table 32 on page 64 can be ordered for setting the server to operate in various modes.
STEP 14 SELECT SERVER BOOT MODE (OPTIONAL)

By default, the C240 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 24.

<table>
<thead>
<tr>
<th>Product ID (PID)</th>
<th>PID Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>UCSC-LBIOS-01</td>
<td>Legacy Boot Mode BIOS setting for C-Series Servers</td>
</tr>
</tbody>
</table>
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 25.

Table 25 Security Devices

<table>
<thead>
<tr>
<th>Product ID (PID)</th>
<th>PID Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>UCSX-TPM2-001</td>
<td>Trusted Platform Module 1.2 SPI-based for UCS Servers</td>
</tr>
<tr>
<td>UCSX-TPM2-002</td>
<td>Trusted Platform Module 2.0 for UCS servers</td>
</tr>
<tr>
<td>UCSX-TPM2-002B</td>
<td>Trusted Platform Module 2.0 M5 UCS svr (FIPS 140-2 Compliant)</td>
</tr>
<tr>
<td>UCSC-INT-SW01</td>
<td>C220 M5 and C240 M5 Chassis Intrusion Switch</td>
</tr>
</tbody>
</table>

**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 SELECT LOCKING SECURITY BEZEL (OPTIONAL)

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

Select the locking bezel from Table 26.

Table 26  Locking Bezel Option

<table>
<thead>
<tr>
<th>Product ID (PID)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>UCSC-BZL-C240M5</td>
<td>C240 M5 Security Bezel</td>
</tr>
</tbody>
</table>
STEP 17 ORDER CISCO SD CARD MODULE (OPTIONAL)

Order one or two matching SD cards. See Figure 5 on page 76 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)

<table>
<thead>
<tr>
<th>Product ID (PID)</th>
<th>PID Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>UCS-SD-128G</td>
<td>128 GB SD Card for UCS Servers</td>
</tr>
<tr>
<td>UCS-SD-64G-S</td>
<td>64 GB SD Card for UCS Servers</td>
</tr>
<tr>
<td>UCS-SD-32G-S</td>
<td>32 GB SD Card for UCS Servers</td>
</tr>
</tbody>
</table>

Caveats

- Install either one or two SD cards
- Do not mix SD card sizes
- You cannot mix SD cards with an internal M.2 SATA SSD (see ORDER M.2 SATA SSDs (OPTIONAL), page 60).
**STEP 18 ORDER M.2 SATA SSDs (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

<table>
<thead>
<tr>
<th>Product ID (PID)</th>
<th>PID Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>UCS-M2-240GB</td>
<td>240 GB M.2 SATA SSD</td>
</tr>
<tr>
<td>UCS-M2-960GB</td>
<td>960 GB M.2 SATA SSD</td>
</tr>
</tbody>
</table>

### Table 29 Mini Storage Carrier/Boot-Optimized RAID Controller

<table>
<thead>
<tr>
<th>Product ID (PID)</th>
<th>PID Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>UCS-MSTOR-M2</td>
<td>Mini Storage Carrier for M.2 SATA (holds up to 2 M.2 SATA SSDs)</td>
</tr>
<tr>
<td>UCS-M2-HWRAID</td>
<td>Cisco Boot optimized M.2 RAID controller (holds up to 2 M.2 SATA SSDs)</td>
</tr>
</tbody>
</table>

---

**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 4.2(1) and later. The name of the controller in the software is MSTOR-RAID.
- The SATA M.2 drives can boot in UEFI mode only. Legacy boot mode is not supported.
- Hot-plug replacement is not supported. The server must be powered off.
- The boot-optimized RAID controller is 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 19 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

<table>
<thead>
<tr>
<th>Product ID (PID)</th>
<th>PID Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>UCS-MSD-32G</td>
<td>32GB Micro-SD Card for UCS servers</td>
</tr>
</tbody>
</table>

**NOTE:**
- The microSD card mounts internally on riser 1 or riser 1B, so you must order either UCSC-PCI-1-C240M5 or UCSC-PCI-1B-C240M5 when you order a micro-SD card.
- Flexutil user partition does not support OS installation. The user partition must be used for storage only.
STEP 20 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

<table>
<thead>
<tr>
<th>Product ID (PID)</th>
<th>PID Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>UCS-USBFLSHB-16GB</td>
<td>UCS Servers 16 GB Flash USB Drive</td>
</tr>
</tbody>
</table>

See Figure 5 on page 76 for the location of the USB connector.
**STEP 21 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

<table>
<thead>
<tr>
<th>Product ID (PID)</th>
<th>PID Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>IMC Supervisor</td>
<td></td>
</tr>
<tr>
<td>CIMC-SUP-BASE-K9</td>
<td>IMC Supervisor One-time Site Installation License</td>
</tr>
<tr>
<td>CIMC-SUP-B01</td>
<td>IMC Supervisor-Branch Mgt SW for C-Series &amp; E-Series up to 100 Svrs</td>
</tr>
<tr>
<td>CIMC-SUP-B02</td>
<td>IMC Supervisor-Branch Mgt SW for C and E-Series up to 250 Svrs</td>
</tr>
<tr>
<td>CIMC-SUP-B10</td>
<td>IMC Supervisor-Branch Mgt SW for C and E-Series up to 1K Svrs</td>
</tr>
<tr>
<td>CIMC-SUP-B25</td>
<td>IMC Supervisor Branch Mgt SW for C and E-Series 25 Svrs</td>
</tr>
<tr>
<td>CIMC-SUP-A01</td>
<td>IMC Supervisor Adv-Branch Mgt SW for C and E-Series 100 Svrs</td>
</tr>
<tr>
<td>CIMC-SUP-A02</td>
<td>IMC Supervisor Adv-Branch Mgt SW for C and E-Series 250 Svrs</td>
</tr>
<tr>
<td>CIMC-SUP-A10</td>
<td>IMC Supervisor Adv-Branch Mgt SW for C and E-Series 1000 Svrs</td>
</tr>
<tr>
<td>CIMC-SUP-A25</td>
<td>IMC Supervisor Adv-Branch Mgt SW for C and E-Series 250 Svrs</td>
</tr>
<tr>
<td>EVAL-CIMC-SUP-BAS</td>
<td>EVAL: IMC Supervisor One-time Site Installation License</td>
</tr>
<tr>
<td>EVAL-CIMC-SUP</td>
<td>EVAL: IMC Supervisor-Branch Mgt SW for C/E-Series - 50 Svrs</td>
</tr>
</tbody>
</table>

**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

<table>
<thead>
<tr>
<th>Product ID (PID)</th>
<th>PID Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>VMW-VCS-STD-1A</td>
<td>VMware vCenter 6 Server Standard, 1 yr support required</td>
</tr>
<tr>
<td>VMW-VCS-STD-3A</td>
<td>VMware vCenter 6 Server Standard, 3 yr support required</td>
</tr>
<tr>
<td>VMW-VCS-STD-5A</td>
<td>VMware vCenter 6 Server Standard, 5 yr support required</td>
</tr>
<tr>
<td>VMW-VCS-FND-1A</td>
<td>VMware vCenter 6 Server Foundation (4 Host), 1 yr supp reqd</td>
</tr>
<tr>
<td>VMW-VCS-FND-3A</td>
<td>VMware vCenter 6 Server Foundation (4 Host), 3 yr supp reqd</td>
</tr>
<tr>
<td>VMW-VCS-FND-5A</td>
<td>VMware vCenter 6 Server Foundation (4 Host), 5 yr supp reqd</td>
</tr>
</tbody>
</table>

### Table 34  Operating System

<table>
<thead>
<tr>
<th>Product ID (PID)</th>
<th>PID Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>MSWS-19-DC16C</td>
<td>Windows Server 2019 Data Center (16 Cores/Unlimited VMs)</td>
</tr>
<tr>
<td>MSWS-19-DC16C-NS</td>
<td>Windows Server 2019 DC (16 Cores/Unlim VMs) - No Cisco SVC</td>
</tr>
<tr>
<td>MSWS-19-ST16C</td>
<td>Windows Server 2019 Standard (16 Cores/2 VMs)</td>
</tr>
<tr>
<td>MSWS-19-ST16C-NS</td>
<td>Windows Server 2019 Standard (16 Cores/2 VMs) - No Cisco SVC</td>
</tr>
<tr>
<td>RHEL-2S2V-1A</td>
<td>Red Hat Enterprise Linux (1-2 CPU,1-2 VN); 1-Yr Support Req</td>
</tr>
<tr>
<td>RHEL-2S2V-3A</td>
<td>Red Hat Enterprise Linux (1-2 CPU,1-2 VN); 3-Yr Support Req</td>
</tr>
<tr>
<td>RHEL-2S2V-5A</td>
<td>Red Hat Enterprise Linux (1-2 CPU,1-2 VN); 5-Yr Support Req</td>
</tr>
<tr>
<td>RHEL-VDC-2SUV-1A</td>
<td>RHEL for Virt Datacenters (1-2 CPU, Unlim VN) 1 Yr Supp Req</td>
</tr>
<tr>
<td>RHEL-VDC-2SUV-3A</td>
<td>RHEL for Virt Datacenters (1-2 CPU, Unlim VN) 3 Yr Supp Req</td>
</tr>
<tr>
<td>RHEL-VDC-2SUV-5A</td>
<td>RHEL for Virt Datacenters (1-2 CPU, Unlim VN) 5 Yr Supp Req</td>
</tr>
<tr>
<td>RHEL-2S2V-1S</td>
<td>Red Hat Enterprise Linux (1-2 CPU,1-2 VN); Prem 1-Yr SnS</td>
</tr>
<tr>
<td>RHEL-2S2V-3S</td>
<td>Red Hat Enterprise Linux (1-2 CPU,1-2 VN); Prem 3-Yr SnS</td>
</tr>
<tr>
<td>RHEL-2S-HA-1S</td>
<td>RHEL High Availability (1-2 CPU); Premium 1-yr SnS</td>
</tr>
<tr>
<td>RHEL-2S-HA-3S</td>
<td>RHEL High Availability (1-2 CPU); Premium 3-yr SnS</td>
</tr>
<tr>
<td>RHEL-2S-RS-1S</td>
<td>RHEL Resilient Storage (1-2 CPU); Premium 1-yr SnS</td>
</tr>
<tr>
<td>RHEL-2S-RS-3S</td>
<td>RHEL Resilient Storage (1-2 CPU); Premium 3-yr SnS</td>
</tr>
</tbody>
</table>
### Table 34 (continued)

<table>
<thead>
<tr>
<th>Operating System</th>
<th>PID Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>RHEL</strong></td>
<td></td>
</tr>
<tr>
<td>RHEL-2S-SFS-1S</td>
<td>RHEL Scalable File System (1-2 CPU); Premium 1-yr SnS</td>
</tr>
<tr>
<td>RHEL-2S-SFS-3S</td>
<td>RHEL Scalable File System (1-2 CPU); Premium 3-yr SnS</td>
</tr>
<tr>
<td>RHEL-VDC-2SUV-1S</td>
<td>RHEL for Virt Datacenters (1-2 CPU, Unlim VN) 1 Yr SnS Req'd</td>
</tr>
<tr>
<td>RHEL-VDC-2SUV-3S</td>
<td>RHEL for Virt Datacenters (1-2 CPU, Unlim VN) 3 Yr SnS Req'd</td>
</tr>
<tr>
<td><strong>Red Hat SAP</strong></td>
<td></td>
</tr>
<tr>
<td>RHEL-SAP-2S2V-1S</td>
<td>RHEL for SAP Apps (1-2 CPU, 1-2 VN); Prem 1-Yr SnS Req'd</td>
</tr>
<tr>
<td>RHEL-SAP-2S2V-3S</td>
<td>RHEL for SAP Apps (1-2 CPU, 1-2 VN); Prem 3-Yr SnS Req'd</td>
</tr>
<tr>
<td>RHEL-SAPSP-3S</td>
<td>RHEL SAP Solutions Premium - License with 3 Years of SnS</td>
</tr>
<tr>
<td>RHEL-SAPSS-3S</td>
<td>RHEL SAP Solutions Standard - License with 3 Years of SnS</td>
</tr>
<tr>
<td><strong>VMware</strong></td>
<td></td>
</tr>
<tr>
<td>VMW-VSP-STD-1A</td>
<td>VMware vSphere 6 Standard (1 CPU), 1-yr, Support Required</td>
</tr>
<tr>
<td>VMW-VSP-STD-3A</td>
<td>VMware vSphere 6 Standard (1 CPU), 3-yr, Support Required</td>
</tr>
<tr>
<td>VMW-VSP-STD-5A</td>
<td>VMware vSphere 6 Standard (1 CPU), 5-yr, Support Required</td>
</tr>
<tr>
<td>VMW-VSP-EPL-3A</td>
<td>VMware vSphere 6 Ent Plus (1 CPU), 3-yr, Support Required</td>
</tr>
<tr>
<td>VMW-VSP-EPL-1A</td>
<td>VMware vSphere 6 Ent Plus (1 CPU), 1-yr, Support Required</td>
</tr>
<tr>
<td>VMW-VSP-EPL-5A</td>
<td>VMware vSphere 6 Ent Plus (1 CPU), 5-yr, Support Required</td>
</tr>
<tr>
<td><strong>SUSE</strong></td>
<td></td>
</tr>
<tr>
<td>SLES-2S2V-1A</td>
<td>SUSE Linux Enterprise Svr (1-2 CPU,1-2 VM); 1-Yr Support Req</td>
</tr>
<tr>
<td>SLES-2SUV-1A</td>
<td>SUSE Linux Enterprise Svr (1-2 CPU,Unl VM); 1-Yr Support Req</td>
</tr>
<tr>
<td>SLES-2S2V-3A</td>
<td>SUSE Linux Enterprise Svr (1-2 CPU,1-2 VM); 3-Yr Support Req</td>
</tr>
<tr>
<td>SLES-2SUV-3A</td>
<td>SUSE Linux Enterprise Svr (1-2 CPU,Unl VM); 3-Yr Support Req</td>
</tr>
<tr>
<td>SLES-2S2V-5A</td>
<td>SUSE Linux Enterprise Svr (1-2 CPU,1-2 VM); 5-Yr Support Req</td>
</tr>
<tr>
<td>SLES-2SUV-5A</td>
<td>SUSE Linux Enterprise Svr (1-2 CPU,Unl VM); 5-Yr Support Req</td>
</tr>
<tr>
<td>SLES-2S2V-1S</td>
<td>SUSE Linux Enterprise Svr (1-2 CPU,1-2 VM); Prio 1-Yr SnS</td>
</tr>
<tr>
<td>SLES-2SUV-1S</td>
<td>SUSE Linux Enterprise Svr (1-2 CPU,Unl VM); Prio 1-Yr SnS</td>
</tr>
<tr>
<td>SLES-2S2V-3S</td>
<td>SUSE Linux Enterprise Svr (1-2 CPU,1-2 VM); Prio 3-Yr SnS</td>
</tr>
<tr>
<td>SLES-2SUV-3S</td>
<td>SUSE Linux Enterprise Svr (1-2 CPU,Unl VM); Prio 3-Yr SnS</td>
</tr>
<tr>
<td>SLES-2S2V-5S</td>
<td>SUSE Linux Enterprise Svr (1-2 CPU,1-2 VM); Prio 5-Yr SnS</td>
</tr>
<tr>
<td>SLES-2SUV-5S</td>
<td>SUSE Linux Enterprise Svr (1-2 CPU,Unl VM); Prio 5-Yr SnS</td>
</tr>
<tr>
<td>Product ID (PID)</td>
<td>PID Description</td>
</tr>
<tr>
<td>-----------------</td>
<td>-----------------</td>
</tr>
<tr>
<td>SLES-2S-HA-1S</td>
<td>SUSE Linux High Availability Ext (1-2 CPU); 1yr SnS</td>
</tr>
<tr>
<td>SLES-2S-HA-3S</td>
<td>SUSE Linux High Availability Ext (1-2 CPU); 3yr SnS</td>
</tr>
<tr>
<td>SLES-2S-HA-5S</td>
<td>SUSE Linux High Availability Ext (1-2 CPU); 5yr SnS</td>
</tr>
<tr>
<td>SLES-2S-GC-1S</td>
<td>SUSE Linux GEO Clustering for HA (1-2 CPU); 1yr SnS</td>
</tr>
<tr>
<td>SLES-2S-GC-3S</td>
<td>SUSE Linux GEO Clustering for HA (1-2 CPU); 3yr SnS</td>
</tr>
<tr>
<td>SLES-2S-GC-5S</td>
<td>SUSE Linux GEO Clustering for HA (1-2 CPU); 5yr SnS</td>
</tr>
<tr>
<td>SLES-2S-LP-1S</td>
<td>SUSE Linux Live Patching Add-on (1-2 CPU); 1yr SnS Required</td>
</tr>
<tr>
<td>SLES-2S-LP-3S</td>
<td>SUSE Linux Live Patching Add-on (1-2 CPU); 3yr SnS Required</td>
</tr>
<tr>
<td>SLES-2S-LP-1A</td>
<td>SUSE Linux Live Patching Add-on (1-2 CPU); 1yr Support Req</td>
</tr>
<tr>
<td>SLES-2S-LP-3A</td>
<td>SUSE Linux Live Patching Add-on (1-2 CPU); 3yr Support Req</td>
</tr>
</tbody>
</table>

**SLES and SAP**

<table>
<thead>
<tr>
<th>Product ID (PID)</th>
<th>PID Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SLES-SAP-2S2V-1A</td>
<td>SLES for SAP Apps (1-2 CPU, 1-2 VM); 1-Yr Support Req</td>
</tr>
<tr>
<td>SLES-SAP-2SUV-1A</td>
<td>SLES for SAP Apps (1-2 CPU, Unl VM); 1-Yr Support Req</td>
</tr>
<tr>
<td>SLES-SAP-2S2V-3A</td>
<td>SLES for SAP Apps (1-2 CPU, 1-2 VM); 3-Yr Support Req</td>
</tr>
<tr>
<td>SLES-SAP-2SUV-3A</td>
<td>SLES for SAP Apps (1-2 CPU, Unl VM); 3-Yr Support Req</td>
</tr>
<tr>
<td>SLES-SAP-2S2V-5A</td>
<td>SLES for SAP Apps (1-2 CPU, 1-2 VM); 5-Yr Support Req</td>
</tr>
<tr>
<td>SLES-SAP-2SUV-5A</td>
<td>SLES for SAP Apps (1-2 CPU, Unl VM); 5-Yr Support Req</td>
</tr>
<tr>
<td>SLES-SAP-2S2V-1S</td>
<td>SLES for SAP Apps (1-2 CPU, 1-2 VM); Priority 1-Yr SnS</td>
</tr>
<tr>
<td>SLES-SAP-2SUV-1S</td>
<td>SLES for SAP Apps (1-2 CPU, Unl VM); Priority 1-Yr SnS</td>
</tr>
<tr>
<td>SLES-SAP-2S2V-3S</td>
<td>SLES for SAP Apps (1-2 CPU, 1-2 VM); Priority 3-Yr SnS</td>
</tr>
<tr>
<td>SLES-SAP-2SUV-3S</td>
<td>SLES for SAP Apps (1-2 CPU, Unl VM); Priority 3-Yr SnS</td>
</tr>
<tr>
<td>SLES-SAP-2S2V-5S</td>
<td>SLES for SAP Apps (1-2 CPU, 1-2 VM); Priority 5-Yr SnS</td>
</tr>
<tr>
<td>SLES-SAP-2SUV-5S</td>
<td>SLES for SAP Apps (1-2 CPU, Unl VM); Priority 5-Yr SnS</td>
</tr>
</tbody>
</table>
STEP 22 SELECT OPERATING SYSTEM MEDIA KIT

Select the optional operating system media listed in Table 35.

Table 35 OS Media

<table>
<thead>
<tr>
<th>Product ID (PID)</th>
<th>PID Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>MSWS-19-ST16C-RM</td>
<td>Windows Server 2019 Stan (16 Cores/2 VMs) Rec Media DVD Only</td>
</tr>
<tr>
<td>MSWS-19-DC16C-RM</td>
<td>Windows Server 2019 DC (16 Cores/Unlim VM) Rec Media DVD Only</td>
</tr>
</tbody>
</table>
**STEP 23 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](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 36.

**Table 36 Cisco SNTC for UCS Service (PID UCSC-C240-M5L)**

<table>
<thead>
<tr>
<th>Service SKU</th>
<th>Service Level GSP</th>
<th>On Site?</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CON-PREM-CC240M5L</td>
<td>C2P</td>
<td>Yes</td>
<td>SNTC 24X7X2OS</td>
</tr>
<tr>
<td>CON-UCSD8-CC240M5L</td>
<td>UCSD8</td>
<td>Yes</td>
<td>UC SUPP DR 24X7X2OS*</td>
</tr>
<tr>
<td>CON-C2PL-CC240M5L</td>
<td>C2PL</td>
<td>Yes</td>
<td>LL 24X7X2OS**</td>
</tr>
<tr>
<td>CON-OSP-CC240M5L</td>
<td>C4P</td>
<td>Yes</td>
<td>SNTC 24X7X4OS</td>
</tr>
<tr>
<td>CON-UCSD7-CC240M5L</td>
<td>UCSD7</td>
<td>Yes</td>
<td>UCS DR 24X7X4OS*</td>
</tr>
<tr>
<td>CON-C4PL-CC240M5L</td>
<td>C4PL</td>
<td>Yes</td>
<td>LL 24X7X4OS**</td>
</tr>
<tr>
<td>CON-USD7L-CC240M5L</td>
<td>USD7L</td>
<td>Yes</td>
<td>LLUCS HW DR 24X7X4OS***</td>
</tr>
<tr>
<td>CON-OSE-CC240M5L</td>
<td>C4S</td>
<td>Yes</td>
<td>SNTC 8X5X4OS</td>
</tr>
</tbody>
</table>
CONFIGURING the SERVER

An enhanced offer over traditional Smart Net Total Care which provides onsite-troubleshooting expertise to aid in the diagnostics and isolation of hardware issue within our customers’ Cisco Unified Computing System (UCS) environment. It is delivered by a Cisco Certified field engineer (FE) in collaboration with remote TAC engineer and Virtual Internet working Support Engineer (VISE). You can choose a desired service listed in Table 37.

**Smart Net Total Care for Cisco UCS Onsite Troubleshooting Service**

An enhanced offer over traditional Smart Net Total Care which provides onsite-troubleshooting expertise to aid in the diagnostics and isolation of hardware issue within our customers’ Cisco Unified Computing System (UCS) environment. It is delivered by a Cisco Certified field engineer (FE) in collaboration with remote TAC engineer and Virtual Internet working Support Engineer (VISE). You can choose a desired service listed in Table 37.

An enhanced offer over traditional Smart Net Total Care which provides onsite-troubleshooting expertise to aid in the diagnostics and isolation of hardware issue within our customers’ Cisco Unified Computing System (UCS) environment. It is delivered by a Cisco Certified field engineer (FE) in collaboration with remote TAC engineer and Virtual Internet working Support Engineer (VISE). You can choose a desired service listed in Table 37.

### Table 36 Cisco SNTC for UCS Service (PID UCSC-C240-M5L)

<table>
<thead>
<tr>
<th>Service SKU</th>
<th>Service Level GSP</th>
<th>On Site?</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CON-UCSD6-CC240M5L</td>
<td>UCSD6</td>
<td>Yes</td>
<td>UC SUPP DR 8X5X4OS*</td>
</tr>
<tr>
<td>CON-SNCO-CC240M5L</td>
<td>SNCO</td>
<td>Yes</td>
<td>SNTC 8x7xNCDOSS****</td>
</tr>
<tr>
<td>CON-OS-CC240M5L</td>
<td>CS</td>
<td>Yes</td>
<td>SNTC 8X5XNBDOS</td>
</tr>
<tr>
<td>CON-UCSD5-CC240M5L</td>
<td>UCSD5</td>
<td>Yes</td>
<td>UCS DR 8X5XNBDOS*</td>
</tr>
<tr>
<td>CON-S2P-CC240M5L</td>
<td>S2P</td>
<td>No</td>
<td>SNTC 24X7X2</td>
</tr>
<tr>
<td>CON-S2PL-CC240M5L</td>
<td>S2PL</td>
<td>No</td>
<td>LL 24X7X2**</td>
</tr>
<tr>
<td>CON-SNTP-CC240M5L</td>
<td>SNTP</td>
<td>No</td>
<td>SNTC 24X7X4</td>
</tr>
<tr>
<td>CON-SNTPL-CC240M5L</td>
<td>SNTPL</td>
<td>No</td>
<td>LL 24X7X4**</td>
</tr>
<tr>
<td>CON-SNTE-CC240M5L</td>
<td>SNTE</td>
<td>No</td>
<td>SNTC 8X5X4</td>
</tr>
<tr>
<td>CON-SNC-CC240M5L</td>
<td>SNC</td>
<td>No</td>
<td>SNTC 8x7xNCD****</td>
</tr>
<tr>
<td>CON-SNT-CC240M5L</td>
<td>SNT</td>
<td>No</td>
<td>SNTC 8X5XNBD</td>
</tr>
<tr>
<td>CON-SW-CC240M5L</td>
<td>SW</td>
<td>No</td>
<td>SNTC NO RMA</td>
</tr>
</tbody>
</table>

*Includes Drive Retention (see **UCS Drive Retention Service, page 74**)

**Includes Local Language Support (see **Local Language Technical Support for UCS, page 75** - Only available in China and Japan

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

****Available in China Only

### Table 37 SNTC for Cisco UCS Onsite Troubleshooting Service (PID UCSC-C240-M5L)

<table>
<thead>
<tr>
<th>Service SKU</th>
<th>Service Level GSP</th>
<th>On Site?</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CON-OSPT-CC240M5L</td>
<td>OSPT</td>
<td>Yes</td>
<td>24X7X4OS Trblshltg</td>
</tr>
<tr>
<td>CON-OSPTD-CC240M5L</td>
<td>OSPTD</td>
<td>Yes</td>
<td>24X7X4OS TrblshltgDR*</td>
</tr>
<tr>
<td>CON-OSPTL-CC240M5L</td>
<td>OSPTL</td>
<td>Yes</td>
<td>24X7X4OS TrblshltgLL**</td>
</tr>
</tbody>
</table>
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:
You can choose a desired service listed in Table 38.

<table>
<thead>
<tr>
<th>Service SKU</th>
<th>Service Level GSP</th>
<th>On Site?</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CON-OPTLD-CC240M5L</td>
<td>OPTLD</td>
<td>Yes</td>
<td>24X7X4OS TrblshtgLLD***</td>
</tr>
</tbody>
</table>

*Includes Drive Retention (see UCS Drive Retention Service, page 74)

**Includes Local Language Support (see Local Language Technical Support for UCS, page 75) - Only available in China and Japan

***Includes Local Language Support and Drive Retention – Only available in China and Japan
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 39.

Table 39  SNTC for UCS Hardware Only Service (PID UCSC-C240-M5L)

<table>
<thead>
<tr>
<th>Service SKU</th>
<th>Service Level GSP</th>
<th>On Site?</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CON-UCW7-CC240M5L</td>
<td>UCW7</td>
<td>Yes</td>
<td>UCS HW 24X7X4OS</td>
</tr>
<tr>
<td>CON-UCWD7-CC240M5L</td>
<td>UCWD7</td>
<td>Yes</td>
<td>UCS HW+DR 24X7X4OS*</td>
</tr>
<tr>
<td>CON-UCW7L-CC240M5L</td>
<td>UCW7L</td>
<td>Yes</td>
<td>LL UCS 24X7X4OS**</td>
</tr>
<tr>
<td>CON-UWD7L-CC240M5L</td>
<td>UWD7L</td>
<td>Yes</td>
<td>LL UCS DR 24X7X4OS***</td>
</tr>
<tr>
<td>CON-UCW5-CC240M5L</td>
<td>UCW5</td>
<td>Yes</td>
<td>UCS HW 8X5XNBDOS</td>
</tr>
<tr>
<td>CON-UCWD5-CC240M5L</td>
<td>UCWD5</td>
<td>Yes</td>
<td>UCS HW+DR 8X5XNBDOS*</td>
</tr>
</tbody>
</table>

*Includes Drive Retention (see *UCS Drive Retention Service, page 74*)

**Includes Local Language Support (see *Local Language Technical Support for UCS, page 75*) - 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 40.

Table 40 PSS for UCS (PID UCSC-C240-M5L)

<table>
<thead>
<tr>
<th>Service SKU</th>
<th>Service Level GSP</th>
<th>On Site?</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CON-PSJ8-CC240M5L</td>
<td>PSJ8</td>
<td>Yes</td>
<td>UCS PSS 24X7X2 OS</td>
</tr>
<tr>
<td>CON-PSJ7-CC240M5L</td>
<td>PSJ7</td>
<td>Yes</td>
<td>UCS PSS 24X7X4 OS</td>
</tr>
<tr>
<td>CON-PSJD7-CC240M5L</td>
<td>PSJD7</td>
<td>Yes</td>
<td>UCS PSS 24X7X4 DR*</td>
</tr>
<tr>
<td>CON-PSJ6-CC240M5L</td>
<td>PSJ6</td>
<td>Yes</td>
<td>UCS PSS 8X5X4 OS</td>
</tr>
<tr>
<td>CON-PSJD6-CC240M5L</td>
<td>PSJD6</td>
<td>Yes</td>
<td>UCS PSS 8X5X4 DR*</td>
</tr>
<tr>
<td>CON-PSJ4-CC240M5L</td>
<td>PSJ4</td>
<td>No</td>
<td>UCS SUPP PSS 24X7X2</td>
</tr>
<tr>
<td>CON-PSJ3-CC240M5L</td>
<td>PSJ3</td>
<td>No</td>
<td>UCS SUPP PSS 24X7X4</td>
</tr>
<tr>
<td>CON-PSJ2-CC240M5L</td>
<td>PSJ2</td>
<td>No</td>
<td>UCS SUPP PSS 8X5X4</td>
</tr>
<tr>
<td>CON-PSJ1-CC240M5L</td>
<td>PSJ1</td>
<td>No</td>
<td>UCS SUPP PSS 8X5XNBD</td>
</tr>
</tbody>
</table>

*Includes Drive Retention (see UCS Drive Retention Service, page 74)

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 41.

Table 41 PSS for UCS Hardware Only (PID UCSC-C240-M5L)

<table>
<thead>
<tr>
<th>Service SKU</th>
<th>Service Level GSP</th>
<th>On Site?</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CON-PSW7-CC240M5L</td>
<td>PSW7</td>
<td>Yes</td>
<td>UCS W PSS 24X7X4 OS</td>
</tr>
<tr>
<td>CON-PSWD7-CC240M5L</td>
<td>PSWD7</td>
<td>Yes</td>
<td>UCS W PSS 24X7X4 DR*</td>
</tr>
<tr>
<td>CON-PSW6-CC240M5L</td>
<td>PSW6</td>
<td>Yes</td>
<td>UCS W PSS 8X5X4 OS</td>
</tr>
<tr>
<td>CON-PSWD6-CC240M5L</td>
<td>PSWD6</td>
<td>Yes</td>
<td>UCS W PSS 8X5X4 DR*</td>
</tr>
<tr>
<td>CON-PSW4-CC240M5L</td>
<td>PSW4</td>
<td>No</td>
<td>UCS W PL PSS 24X7X2</td>
</tr>
<tr>
<td>CON-PSW3-CC240M5L</td>
<td>PSW3</td>
<td>No</td>
<td>UCS W PL PSS 24X7X4</td>
</tr>
<tr>
<td>CON-PSW2-CC240M5L</td>
<td>PSW2</td>
<td>No</td>
<td>UCS W PL PSS 8X5X4</td>
</tr>
</tbody>
</table>

*Includes Drive Retention (see UCS Drive Retention Service, page 74)
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 42

Table 42 Combined Support Service for UCS (PID UCSC-C240-M5L)

<table>
<thead>
<tr>
<th>Service SKU</th>
<th>Service Level GSP</th>
<th>On Site?</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CON-NCFT2P-CC240M5L</td>
<td>NCF2P</td>
<td>Yes</td>
<td>CMB SVC 24X7X2OS</td>
</tr>
<tr>
<td>CON-NCF4P-CC240M5L</td>
<td>NCF4P</td>
<td>Yes</td>
<td>CMB SVC 24X7X4OS</td>
</tr>
<tr>
<td>CON-NCFS-CC240M5L</td>
<td>NCFCS</td>
<td>Yes</td>
<td>CMB SVC 24X7X4OS</td>
</tr>
<tr>
<td>CON-NCFCS-CC240M5L</td>
<td>NCFCS</td>
<td>Yes</td>
<td>CMB SVC 24X7X4OS</td>
</tr>
<tr>
<td>CON-NCF2-CC240M5L</td>
<td>NCF2</td>
<td>No</td>
<td>CMB SVC 24X7X2</td>
</tr>
<tr>
<td>CON-NCFP-CC240M5L</td>
<td>NCFS</td>
<td>No</td>
<td>CMB SVC 24X7X4</td>
</tr>
<tr>
<td>CON-NCFE-CC240M5L</td>
<td>NCFE</td>
<td>No</td>
<td>CMB SVC 24X7X4</td>
</tr>
<tr>
<td>CON-NCFT-CC240M5L</td>
<td>NCFT</td>
<td>No</td>
<td>CMB SVC 24X7X4</td>
</tr>
<tr>
<td>CON-NCFW-CC240M5L</td>
<td>NCFW</td>
<td>No</td>
<td>CMB SVC 24X7X4</td>
</tr>
</tbody>
</table>

UCS Drive Retention Service

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

Sophisticated data recovery techniques have made classified, proprietary, and confidential information vulnerable, even on malfunctioning disk drives. The Drive Retention service enables you to retain your drives and ensures that the sensitive data on those drives is not compromised, which reduces the risk of any potential liabilities. This service also enables you to comply with regulatory, local, and federal requirements.
If your company has a need to control confidential, classified, sensitive, or proprietary data, you might want to consider one of the Drive Retention Services listed in the above tables (where available).

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

### Local Language Technical Support for UCS

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

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


<table>
<thead>
<tr>
<th>Service Description</th>
<th>Service Program Name</th>
<th>Service Level GSP</th>
<th>Service Level</th>
<th>Product ID (PID)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SMARTnet for UCS</td>
<td>UCS DR</td>
<td>UCSD7</td>
<td>24x7x4 Onsite</td>
<td>CON-UCSD7-C240M5LF</td>
</tr>
<tr>
<td>Service with Drive Retention</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SMARTnet for UCS HW</td>
<td>UCS HW+DR</td>
<td>UCSD5</td>
<td>8x5xNBD Onsite</td>
<td>CON-UCSD5-C240M5LF</td>
</tr>
<tr>
<td>ONLY+Drive Retention</td>
<td></td>
<td>UCSD7</td>
<td>24x7x4 Onsite</td>
<td>CON-UCWD7-C240M5LF</td>
</tr>
<tr>
<td></td>
<td></td>
<td>UCSD5</td>
<td>8x5xNBD Onsite</td>
<td>CON-UCWD5-C240M5LF</td>
</tr>
</tbody>
</table>

For more service and support information, see the following URL:

For a complete listing of available services for Cisco Unified Computing System, see this URL:
SUPPLEMENTAL MATERIAL

Chassis

An internal view of the C240 M5 chassis with the top cover removed is shown in Figure 5.

Figure 5   C240 M5 LFF With Top Cover Off

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Front-facing drive bays.</td>
</tr>
<tr>
<td>2</td>
<td>Cooling Fan modules (six, hot-swappable)</td>
</tr>
<tr>
<td>3</td>
<td>DIMM sockets on motherboard (up to 12 per CPU; total 24).</td>
</tr>
<tr>
<td></td>
<td>Not visible under air baffle in this view.</td>
</tr>
<tr>
<td>11</td>
<td>Power supplies (hot-swappable, redundant as 1+1).</td>
</tr>
<tr>
<td>12</td>
<td>Rear 2.5-inch drive bays</td>
</tr>
<tr>
<td>13</td>
<td>Trusted platform module (TPM) socket on motherboard (not visible in this view)</td>
</tr>
</tbody>
</table>

Cisco UCS C240 M5 Rack Server (Large Form Factor Disk Drive Model)
| 4 | CPUs and heatsinks (one or two). Not visible under air baffle in this view | 14 | PCIe riser 2 (PCIe slots 4, 5, 6), with the following options:  
- 2A—Slots 4 (x8), 5 (x16), and 6 (x16).  
- 2B—With slots 4 (x8), 5 (x16), and 6 (x8); includes one PCIe cable connector for rear NVMe SSDs.  
- 2C—With slots 4 (x8), 5 (x8), and 6 (x8); includes one PCIe cable connector for rear-facing NVMe SSDs, plus one PCIe cable connector for front-facing NVMe SSDs.  
- 2D—With slots 4 (x16), 5 (x8), and 6 (x8); includes one PCIe cable connector for rear NVMe SSDs. |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>Supercap power module (RAID backup battery) mounting location on air baffle</td>
<td>15</td>
<td>Micro-SD card socket on PCIe riser 1</td>
</tr>
</tbody>
</table>
| 6 | Internal, vertical USB 3.0 port on motherboard | 16 | PCIe riser 1 (PCIe slot 1, 2, 3), with the following options:  
- 1A—Slots 1 (x8), 2 (x16), 3 (x8); slot 2 requires CPU2.  
- 1B—Slots 1 (x8), 2 (x8), 3 (x8); all slots supported by CPU1. |
| 7 | 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. | 17 | Modular LOM (mLOM) card bay on chassis floor (x16 PCIe lane), not visible in this view |
| 8 | Chassis intrusion switch (optional) | 18 | Cisco modular RAID controller PCIe slot (dedicated slot) |
| 9 | PCIe cable connectors for NVMe SSDs, only on these PCIe riser 2 options:  
- 2B: One connector for two rear NVMe SSDs  
- 2C: One connector for two rear NVMe SSDs plus one connector for two front-facing NVMe SSDs  
- 2D: One connector for rear NVMe SSDs. (This riser version is available only in the NVMe-optimized server UCSC-C240-M5SN). | 19 | RTC battery on motherboard (not visible in this view) |
| 10 | Rear-drive backplane assembly | 20 | Securing clips for GPU cards on air baffle |
RAID Option ROM (OPROM) Settings

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

Figure 7 Example BIOS Screen for OPROM

![Example BIOS Screen for OPROM](image-url)
To Create a RAID Group

1. While the server is booting, wait for the prompt and press function key F2 as shown in Figure 8.

Figure 8   Function Key F2 Prompt

In a few seconds, you will see the screen that allows you to set up a RAID group for the primary SATA controller (see Figure 9).

Figure 9   Screen to Configure Primary SATA RAID Group
(2) Press Ctrl+M to start the RAID group creation process for the primary SATA controller (for drives 1-4, as shown in Figure 10 on page 81). Or, do nothing and wait for the next screen, which allows you to create a RAID group for the secondary SATA (sSATA) controller see Figure 10.

Figure 10   Screen to Configure Secondary SATA (sSATA) RAID Group

(3) Press Ctrl+M to start the RAID group creation process for the secondary SATA (sSATA) controller (for drives 5-8, as shown in Figure 10 on page 81).

Riser Card Configuration and Options

The two riser cards are shown in Figure 11.

Figure 11   Riser Card 1 (slots 1, 2, and 3) and Riser Card 2 (slots 4, 5, and 6)
The two riser card 1 options are shown in Table 44. The riser card 2 options are shown in Table 45 on page 83.

### Table 44 Riser Card 1 Slot required

<table>
<thead>
<tr>
<th>Slot #</th>
<th>Height</th>
<th>Length</th>
<th>Electrical</th>
<th>NCSI</th>
<th>Physical</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>Full</td>
<td>Half</td>
<td>x8</td>
<td>No</td>
<td>CPU2</td>
</tr>
<tr>
<td>2</td>
<td>Full</td>
<td>Full</td>
<td>x16</td>
<td>Yes</td>
<td>CPU1</td>
</tr>
<tr>
<td>1</td>
<td>Full</td>
<td>Half</td>
<td>x8</td>
<td>Yes</td>
<td>CPU1</td>
</tr>
</tbody>
</table>

### Riser Card 1 (option 1A, PID UCSC-PCI-1-C240M5)

3. No GPUs are supported on this riser. There is no GPU power connector in this version. Use riser version 1A for GPU cards.

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.
3. No GPUs are supported on this riser. There is no GPU power connector in this version. Use riser version 1A for GPU cards.
### Table 45 Riser Card 2 Slots

<table>
<thead>
<tr>
<th>Slot #</th>
<th>Height</th>
<th>Length</th>
<th>Electrical</th>
<th>NCSI</th>
<th>Physical</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>Full</td>
<td>Full</td>
<td>x8</td>
<td>No</td>
<td>CPU2</td>
</tr>
<tr>
<td>5</td>
<td>Full</td>
<td>Full¹</td>
<td>x16</td>
<td>Yes²</td>
<td>CPU2</td>
</tr>
<tr>
<td>4</td>
<td>Full</td>
<td>3/4</td>
<td>x16</td>
<td>Yes²</td>
<td>CPU2</td>
</tr>
</tbody>
</table>

**Riser Card 2 (option 2A, PID UCSC-PCI-2A-240M5)**

![Riser Card 2 (option 2A, PID UCSC-PCI-2A-240M5)](image1)

**Riser Card 2 (option 2B, PID UCSC-PCI-2B-240M5)**

![Riser Card 2 (option 2B, PID UCSC-PCI-2B-240M5)](image2)

<table>
<thead>
<tr>
<th>Slot #</th>
<th>Height</th>
<th>Length</th>
<th>Electrical</th>
<th>NCSI</th>
<th>Physical</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>Full</td>
<td>Full</td>
<td>x8</td>
<td>No</td>
<td>CPU2</td>
</tr>
<tr>
<td>5</td>
<td>Full</td>
<td>Full¹</td>
<td>x16</td>
<td>Yes²</td>
<td>CPU2</td>
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<tr>
<td>4</td>
<td>Full</td>
<td>Half</td>
<td>x8</td>
<td>Yes²</td>
<td>CPU2</td>
</tr>
</tbody>
</table>

**X2 Rear NVMe connector**

One x8 NVMe PCIe connector, split into two x4 rear SFF

---

Cisco UCS C240 M5 Rack Server (Large Form Factor Disk Drive Model) 83
Table 45  Riser Card 2 Slots

<table>
<thead>
<tr>
<th>Slot #</th>
<th>Height</th>
<th>Length</th>
<th>Electrical</th>
<th>NCSI</th>
<th>Physical</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>Full</td>
<td>Full</td>
<td>x8</td>
<td>No</td>
<td>CPU2</td>
</tr>
<tr>
<td>5</td>
<td>Full</td>
<td>Full</td>
<td>x8</td>
<td>Yes²</td>
<td>CPU2</td>
</tr>
<tr>
<td>4</td>
<td>Full</td>
<td>3/4</td>
<td>x8</td>
<td>Yes²</td>
<td>CPU2</td>
</tr>
</tbody>
</table>

**Riser Card 2 (option 2C, PID UCSC-PCI-2C-240M5)**

Ships standard with UCSC-C240-M5SN; not supported with any other chassis version.

**Riser Card 2 (option 2D, PID UCSC-PCI-2D-240M5)**

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.
Serial Port Details

The pinout details of the rear RJ-45 serial port connector are shown in Figure 12.

Figure 12  Serial Port (Female RJ-45 Connector) Pinout

Serial Port (RJ-45 Female Connector)
KVM CABLE

The KVM cable provides a connection into the server, providing a DB9 serial connector, a VGA connector for a monitor, and dual USB 2.0 ports for a keyboard and mouse. With this cable, you can create a direct connection to the operating system and the BIOS running on the server.

The KVM cable ordering information is listed in Table 46.

Table 46  KVM Cable

<table>
<thead>
<tr>
<th>Product ID (PID)</th>
<th>PID Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>N20-BKVM</td>
<td>KVM cable for server console port</td>
</tr>
</tbody>
</table>

Figure 13  KVM Cable

<table>
<thead>
<tr>
<th></th>
<th>Connector (to server front panel)</th>
<th></th>
<th>VGA connector (for a monitor)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Connector (for a monitor)</td>
<td>3</td>
<td>Two-port USB 2.0 connector (for a mouse and keyboard)</td>
</tr>
</tbody>
</table>
This section lists the upgrade and service-related parts for the UCS C240 M5 server. Some of these parts are configured with every server.

Table 47  Spare Parts

<table>
<thead>
<tr>
<th>Product ID (PID)</th>
<th>PID Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>KVM Cable</td>
<td></td>
</tr>
<tr>
<td>N20-BKVM=</td>
<td>KVM local IO cable for UCS servers console port</td>
</tr>
<tr>
<td>CPU Accessories</td>
<td></td>
</tr>
<tr>
<td>UCSC-HS-C240M5=</td>
<td>Heat sink for UCS C240 M5 rack servers 150W CPUs &amp; below</td>
</tr>
<tr>
<td>UCSC-HS2-C240M5=</td>
<td>Heat sink for UCS C240 M5 rack servers CPUs above 150W</td>
</tr>
<tr>
<td>UCS-CPU-TIM=</td>
<td>Single CPU thermal interface material syringe for M5 server HS seal¹</td>
</tr>
<tr>
<td>UCSX-HSCK=</td>
<td>UCS Processor Heat Sink Cleaning Kit (when replacing a CPU)²</td>
</tr>
<tr>
<td>UCS-CPUAT=</td>
<td>CPU Assembly Tool for M5 Servers</td>
</tr>
<tr>
<td>UCS-M5-CPU-CAR=</td>
<td>UCS M5 CPU Carrier</td>
</tr>
<tr>
<td>M.2 SATA SSD</td>
<td></td>
</tr>
<tr>
<td>UCS-MSTOR-SD=</td>
<td>SD module (holds up to 2 SD cards)</td>
</tr>
<tr>
<td>UCS-MSTOR-M2=</td>
<td>M.2 module (holds up to 2 M.2 SATA drives)</td>
</tr>
<tr>
<td>UCS-M2-HWRAID=</td>
<td>Cisco Boot optimized M.2 RAID controller (holds up to 2 M.2 SATA SSDs)</td>
</tr>
<tr>
<td>Memory</td>
<td></td>
</tr>
<tr>
<td>UCS-ML-X64G4RT-H=</td>
<td>64 GB DDR4-2933-MHz LRDIMM/4Rx4 (8Gb) 1.2v</td>
</tr>
<tr>
<td>UCS-MR-X64G2RT-H=</td>
<td>64 GB DDR4-2933-MHz RDIMM/2Rx4 (16Gb) 1.2v</td>
</tr>
<tr>
<td>Drives (Front facing)</td>
<td></td>
</tr>
<tr>
<td>HDDs</td>
<td></td>
</tr>
<tr>
<td>HDDs (10K RPM)</td>
<td></td>
</tr>
<tr>
<td>UCS-HY18TB10K4KN=</td>
<td>1.8 TB 12G SAS 10K RPM LFF HDD (4K)</td>
</tr>
<tr>
<td>UCS-HY12TB10K12N=</td>
<td>1.2 TB 12G SAS 10K RPM LFF HDD</td>
</tr>
<tr>
<td>HDDs (7.2K RPM)</td>
<td></td>
</tr>
<tr>
<td>UCS-HD1T7KL12N=</td>
<td>1TB 12G SAS 7.2K RPM LFF HDD</td>
</tr>
<tr>
<td>UCS-HD2T7KL12N=</td>
<td>2 TB 12G SAS 7.2K RPM LFF HDD</td>
</tr>
<tr>
<td>UCS-HD4T7KL12N=</td>
<td>4 TB 12G SAS 7.2K RPM LFF HDD</td>
</tr>
<tr>
<td>Product ID (PID)</td>
<td>PID Description</td>
</tr>
<tr>
<td>-------------------------</td>
<td>---------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>UCS-HD6T7KL4KN=</td>
<td>6 TB 12G SAS 7.2K RPM LFF HDD (4K)</td>
</tr>
<tr>
<td>UCS-HD8T7K4KAN=</td>
<td>8 TB 12G SAS 7.2K RPM LFF HDD (4K)</td>
</tr>
<tr>
<td>UCS-HD10T7KL4KN=</td>
<td>10 TB 12G SAS 7.2K RPM LFF HDD (4K)</td>
</tr>
<tr>
<td>UCS-HD12T7KL4KN=</td>
<td>12 TB 12G SAS 7.2K RPM LFF HDD (4K)</td>
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<td>UCS-HD14T7KL4KN=</td>
<td>14 TB 12G SAS 7.2K RPM LFF HDD (4K)</td>
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<tr>
<td>UCS-HD10T7KLEM</td>
<td>10 TB 12G SAS 7.2K RPM LFF HDD (512e)</td>
</tr>
<tr>
<td>UCS-HD1T7KL6GN=</td>
<td>1 TB 6G SATA 7.2K RPM LFF HDD</td>
</tr>
<tr>
<td>UCS-HD2T7KL6GN=</td>
<td>2 TB 6G SATA 7.2K RPM LFF HDD</td>
</tr>
<tr>
<td>UCS-HD4T7KL6GN=</td>
<td>4 TB 6G SATA 7.2K RPM LFF HDD</td>
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<tr>
<td>UCS-HD8T7K6GAN=</td>
<td>8 TB 6G SATA 7.2K RPM LFF HDD (512e)</td>
</tr>
<tr>
<td>UCS-HD6T7KL6GN=</td>
<td>6 TB 6G SATA 7.2K RPM LFF HDD (512e)</td>
</tr>
<tr>
<td>UCS-HD10T7KL6GN=</td>
<td>10 TB 6G SATA 7.2K RPM LFF HDD (512e)</td>
</tr>
<tr>
<td>UCS-HD10T7K6GAN=</td>
<td>10 TB 6G SATA 7.2K RPM LFF HDD (512e)</td>
</tr>
<tr>
<td>UCS-HD12T7KL6GN=</td>
<td>12 TB 6G SATA 7.2K RPM LFF HDD (512e)</td>
</tr>
</tbody>
</table>

**SAS/SATA SSDs**

**Enterprise Performance SSDs (High endurance, supports up to 10X or 3X DWPD (drive writes per day))**

**SAS SSDs**

- UCS-HY400G123X-EP= 400GB 3.5in Enterprise performance 12G SAS SSD (3X endurance)
- UCS-HY800G123X-EP= 800 GB 3.5in Enterprise performance 12G SAS SSD (3X endurance)
- UCS-HY16T123X-EP= 1.6 TB 3.5in Enterprise performance 12G SAS SSD (3X endurance)

**SATA SSDs**

- UCS-HY480G63X-EP= 480GB 3.5in Enterprise performance 6G SATA SSD (3X endurance) (Intel S4600/S4610)
- UCS-HY19T63X-EP= 1.9TB 3.5in Enterprise performance 6G SATA SSD (3X endurance) (Intel S4600/S4610)

**Enterprise Value SATA SSDs (Low endurance, supports up to 1X DWPD (drive writes per day))**

- UCS-HY240G61X-EV= 240 GB 2.5 inch Enterprise Value 6G SATA SSD (Samsung PM863a/PM883)
Table 47  Spare Parts

<table>
<thead>
<tr>
<th>Product ID (PID)</th>
<th>PID Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>UCS-HY480G61X-EV=</td>
<td>480 GB 2.5 inch Enterprise Value 6G SATA SSD (Intel 3520)</td>
</tr>
<tr>
<td>UCS-HY960G61X-EV=</td>
<td>960 GB 2.5 inch Enterprise Value 6G SATA SSD (Samsung PM863a/PM883)</td>
</tr>
<tr>
<td>UCS-HY19TM1X-EV=</td>
<td>1.9TB 3.5 inch Enterprise Value 6G SATA SSD</td>
</tr>
</tbody>
</table>

**Self-Encrypted Drives (SED)**

**HDDs**
- UCS-HY600G15NK9= 600 GB 12G SAS 15K RPM LFF HDD (SED)
- UCS-HD4T12GK9= 4 TB 7.2k RPM LFF HDD (SED)
- UCS-HD6T12GK9= 6 TB 7.2k RPM LFF HDD (4K format, SED)
- UCS-HD12T7KL4NK9= 12 TB 7.2 K RPM LFF HDD (4K format SED)

**SSDs**
- UCS-SD400GBCNK9= 400 GB Enterprise performance SAS LFF SSD (10X FWPD, SED) (Micron 650DC)
- UCS-SD800GBCNK9= 800 GB Enterprise performance SAS LFF SSD (10X FWPD, SED) (Micron 650DC)
- UCS-SD76T61X-EV= 7.6 TB 2.5 inch Enterprise Value 6G SATA SSD
- UCS-SD19TBEM2NK9= 1.9TB Enterprise value SATA SSD (1X, SED)
- UCS-SD960GK1X-EV= 960 GB 2.5 inch Enterprise Value 12G SAS SSD
- UCS-SD19TK1X-EV= 1.9 TB 2.5 inch Enterprise Value 12G SAS SSD
- UCS-SD38TK1X-EV= 3.8 TB 2.5 inch Enterprise Value 12G SAS SSD
- UCS-SD76TK1X-EV= 7.6 TB 2.5 inch Enterprise Value 12G SAS SSD
- UCS-SD15TK1X-EV= 15.3 TB 2.5 inch Enterprise Value 12G SAS SSD

**PCle/NVMe LFF 2.5” drives**
- UCSC-NVMEHY-H800= 800 GB HGST SN200 NVMe High Perf. High Endurance (HGST)
- UCSC-NVMEHY-H1600= 1.6 TB HGST SN200 NVMe High Perf. High Endurance (HGST)
- UCSC-NVMEHWY H3200= 3.2 TB HGST SN200 NVMe High Perf. High Endurance (HGST)

**Drives (Rear Facing)**

**HDDs**

**HDDs (15K RPM)**
- UCS-HD300G15K12N= 300 GB 12G SAS 15K RPM SFF HDD
### Table 47  Spare Parts

<table>
<thead>
<tr>
<th>Product ID (PID)</th>
<th>PID Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>UCS-HD600G15K12N=</td>
<td>600 GB 12G SAS 15K RPM SFF HDD</td>
</tr>
<tr>
<td>UCS-HD900G15K12N=</td>
<td>900 GB 12G SAS 15K RPM SFF HDD</td>
</tr>
<tr>
<td><strong>HDDs (10K RPM)</strong></td>
<td></td>
</tr>
<tr>
<td>UCS-HD300G10K12N=</td>
<td>300 GB 12G SAS 10K RPM SFF HDD</td>
</tr>
<tr>
<td>UCS-HD600G10K12N=</td>
<td>600 GB 12G SAS 10K RPM SFF HDD</td>
</tr>
<tr>
<td>UCS-HD12TB10K12N=</td>
<td>1.2 TB 12G SAS 10K RPM SFF HDD</td>
</tr>
<tr>
<td>UCS-HD18TB10K4KN=</td>
<td>1.8 TB 12G SAS 10K RPM SFF HDD (4K)</td>
</tr>
<tr>
<td>UCS-HD24TB10K4KN=</td>
<td>2.4 TB 12G SAS 10K RPM SFF HDD (4K)</td>
</tr>
<tr>
<td><strong>HDDs (7.2K RPM)</strong></td>
<td></td>
</tr>
<tr>
<td>UCS-HD1T7K12N=</td>
<td>1 TB 12G SAS 7.2K RPM SFF HDD</td>
</tr>
<tr>
<td>UCS-HD2T7K12N=</td>
<td>2 TB 12G SAS 7.2K RPM SFF HDD</td>
</tr>
<tr>
<td>UCS-HD1T7K6GAN=</td>
<td>1 TB 6G SATA 7.2K RPM SFF HDD</td>
</tr>
<tr>
<td><strong>SAS/SATA SSDs</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Enterprise Performance SSDs (High endurance, supports up to 10X or 3X DWPD (drive writes per day))</strong></td>
<td></td>
</tr>
<tr>
<td>UCS-SD960G63X-EP=</td>
<td>960GB 2.5in Enterprise performance 6GSATA SSD(3X endurance)</td>
</tr>
<tr>
<td>UCS-SD19T63X-EP=</td>
<td>1.9TB 2.5in Enterprise performance 6GSATA SSD(3X endurance)</td>
</tr>
<tr>
<td>UCS-SD480G63X-EP=</td>
<td>480GB 2.5 inch Enterprise performance 6GSATA SSD(3X endurance)</td>
</tr>
<tr>
<td>UCS-SD19TM3X-EP=</td>
<td>1.9TB 2.5in Enterprise performance 6GSATA SSD(3X endurance)</td>
</tr>
<tr>
<td>UCS-SD480GM3X-EP=</td>
<td>480GB 2.5in Enterprise Performance 6GSATA SSD(3X endurance)</td>
</tr>
<tr>
<td>UCS-SD960GM3X-EP=</td>
<td>960GB 2.5in Enterprise performance 6GSATA SSD(3X endurance)</td>
</tr>
<tr>
<td>UCS-SD400G123X-EP=</td>
<td>400 GB 2.5 inch Enterprise performance 12G SAS SSD(3X DWPD)</td>
</tr>
<tr>
<td>UCS-SD800G123X-EP=</td>
<td>800 GB 2.5 inch Enterprise performance 12G SAS SSD(3X DWPD)</td>
</tr>
<tr>
<td>UCS-SD16T123X-EP=</td>
<td>1.6 TB 2.5 inch Enterprise performance 12G SAS SSD(3X DWPD)</td>
</tr>
<tr>
<td>UCS-SD32T123X-EP=</td>
<td>3.2 TB 2.5 inch Enterprise performance 12G SAS SSD(3X DWPD)</td>
</tr>
<tr>
<td>UCS-SD16H123X-EP=</td>
<td>1.6 TB 2.5 inch Enterprise performance 12G SAS SSD(3X endurance)</td>
</tr>
<tr>
<td>UCS-SD800GK3X-EP=</td>
<td>800 GB 2.5in Enterprise Performance 12G SAS SSD(3X endurance)</td>
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<tr>
<td>UCS-SD16TK3X-EP=</td>
<td>1.6 TB 2.5in Enterprise Performance 12G SAS SSD(3X endurance)</td>
</tr>
<tr>
<td>UCS-SD32TK3X-EP=</td>
<td>3.2 TB 2.5in Enterprise Performance 12G SAS SSD(3X endurance)</td>
</tr>
<tr>
<td><strong>Cisco UCS C240 M5 Rack Server (Large Form Factor Disk Drive Model)</strong></td>
<td><strong>90</strong></td>
</tr>
</tbody>
</table>
### Table 47  Spare Parts

<table>
<thead>
<tr>
<th>Product ID (PID)</th>
<th>PID Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Enterprise Value SSDs (Low endurance, supports up to 1X DWPD (drive writes per day))</strong></td>
<td></td>
</tr>
<tr>
<td>UCS-SD480G6l1X-EV=</td>
<td>480GB 2.5 inch Enterprise Value 6G SATA SSD (Intel S4500/S4150)</td>
</tr>
<tr>
<td>UCS-SD960G6l1X-EV=</td>
<td>960GB 2.5 inch Enterprise Value 6G SATA SSD (Intel S4500/S4150)</td>
</tr>
<tr>
<td>UCS-SD38T6l1X-EV=</td>
<td>3.8TB 2.5 inch Enterprise Value 6G SATA SSD (Intel S4500/S4150)</td>
</tr>
<tr>
<td>UCS-SD120GM1X-EV=</td>
<td>120 GB 2.5 inch Enterprise Value 6G SATA SSD (Micron 5100/5200)</td>
</tr>
<tr>
<td>UCS-SD240GM1X-EV=</td>
<td>240 GB 2.5 inch Enterprise Value 6G SATA SSD (Micron 5100/5200)</td>
</tr>
<tr>
<td>UCS-SD480GM1X-EV=</td>
<td>480 GB 2.5 inch Enterprise Value 6G SATA SSD (Micron 5100/5200)</td>
</tr>
<tr>
<td>UCS-SD480G121X-EV=</td>
<td>480 GB 2.5 inch Enterprise Value 12G SAS SSD (Toshiba PM4)</td>
</tr>
<tr>
<td>UCS-SD960G6l1X-EV=</td>
<td>960 GB 2.5 inch Enterprise Value 6G SATA SSD (Samsung PM863A/PM883)</td>
</tr>
<tr>
<td>UCS-SD960GM1X-EV=</td>
<td>960 GB 2.5 inch Enterprise Value 6G SATA SSD (Micron 5100/5200)</td>
</tr>
<tr>
<td>UCS-SD960G121X-EV=</td>
<td>960 GB 2.5 inch Enterprise Value 12G SAS SSD (Toshiba PM4)</td>
</tr>
<tr>
<td>UCS-SD16TM1X-EV=</td>
<td>1.6 TB 2.5 inch Enterprise Value 6G SATA SSD (Micron 5100/5200)</td>
</tr>
<tr>
<td>UCS-SD19T6l1X-EV=</td>
<td>1.9 TB 2.5 inch Enterprise Value 6G SATA SSD (Samsung PM863A/PM883)</td>
</tr>
<tr>
<td>UCS-SD19TM1X-EV=</td>
<td>1.9 TB 2.5 inch Enterprise Value 6G SATA SSD (Micron 5100/5200)</td>
</tr>
<tr>
<td>UCS-SD19TB121X-EV=</td>
<td>1.9 TB 2.5 inch Enterprise Value 12G SAS SSD (Toshiba PM4)</td>
</tr>
<tr>
<td>UCS-SD38T6l1X-EV=</td>
<td>3.8TB 2.5 inch Enterprise Value 6G SATA SSD (Samsung PM863A/PM883)</td>
</tr>
<tr>
<td>UCS-SD38TM1X-EV=</td>
<td>3.8TB 2.5 inch Enterprise Value 6G SATA SSD (Micron 5100/5200)</td>
</tr>
<tr>
<td>UCS-SD38TB121X-EV=</td>
<td>3.8TB 2.5 inch Enterprise Value 12G SAS SSD (Toshiba PM4)</td>
</tr>
<tr>
<td>UCS-SD76TM1X-EV=</td>
<td>7.6 TB 2.5 inch Enterprise Value 6G SATA SSD (Micron 5100/5200)</td>
</tr>
<tr>
<td>UCS-SD960GH61X-EV=</td>
<td>960 GB 2.5 inch Enterprise Value 12G SAS SSD</td>
</tr>
<tr>
<td><strong>Self-Encrypted Drives (SED)</strong></td>
<td></td>
</tr>
<tr>
<td>UCS-HD600G15NK9=</td>
<td>600 GB 12G SAS 15K RPM SFF HDD (SED)</td>
</tr>
<tr>
<td>UCS-HD24T10NK9=</td>
<td>2.4 TB 12G SAS 10K RPM SFF HDD (4K) SED</td>
</tr>
<tr>
<td>UCS-HD18T10NK9=</td>
<td>1.8 TB 12G SAS 10K RPM SFF HDD (4K format, SED)</td>
</tr>
<tr>
<td>UCS-HD12T10NK9=</td>
<td>1.2 TB 12G SAS 10K RPM SFF HDD (SED)</td>
</tr>
<tr>
<td>UCS-SD960GBE1NK9=</td>
<td>960 GB Enterprise Value SATA SSD (1X FWPD, SED)</td>
</tr>
<tr>
<td>UCS-SD800GBHNNK9=</td>
<td>800 GB Enterprise performance SAS SSD (10X FWPD, SED)</td>
</tr>
</tbody>
</table>
### Table 47  Spare Parts

<table>
<thead>
<tr>
<th>Product ID (PID)</th>
<th>PID Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PCle/NVMe LFF (2.5-inch) drives</strong>&lt;sup&gt;2&lt;/sup&gt;</td>
<td></td>
</tr>
<tr>
<td>UCSC-NVMEHW-H800=</td>
<td>U.2 800 GB HGST SN200 NVMe High Perf. High Endurance (HGST)</td>
</tr>
<tr>
<td>UCSC-NVMEHW-H1600=</td>
<td>U.2 1.6 TB HGST SN200 NVMe High Perf. High Endurance (HGST)</td>
</tr>
<tr>
<td>UCSC-NVMEHW-H3200=</td>
<td>U.2 3.2 TB HGST SN200 NVMe High Perf. High Endurance (HGST)</td>
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<tr>
<td>UCSC-NVMEHW-H6400=</td>
<td>U.2 6.4 TB HGST SN200 NVMe High Perf. High Endurance (HGST)</td>
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<tr>
<td>UCSC-NVMEHW-H7680=</td>
<td>U.2 7.7 TB HGST SN200 NVMe High Perf. Value Endurance (HGST)</td>
</tr>
<tr>
<td>UCSC-NVMEHW-I8000=</td>
<td>Cisco 2.5&quot; U.2 8TB Intel P4510 NVMe High Perf. Value Endurance</td>
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<tr>
<td>UCSC-NVMEXPB-I375=</td>
<td>375GB 2.5in Intel Optane NVMe Extreme Performance SSD</td>
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<tr>
<td>UCSC-NVMEXP-I750=</td>
<td>750GB 2.5in Intel Optane NVMe Extreme Perf</td>
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<tr>
<td>UCSC-NVME2H-I1000=</td>
<td>Cisco 2.5&quot; U.2 1.0 TB Intel P4510 NVMe High Perf. Value Endu</td>
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<tr>
<td>UCSC-NVME2H-I1600=</td>
<td>Cisco 2.5in U.2 1.6TB Intel P4610 NVMe High Perf. High Endurance</td>
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<tr>
<td>UCSC-NVME2H-I3200=</td>
<td>Cisco 2.5in U.2 3.2TB Intel P4610 NVMe High Perf. High Endurance</td>
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<tr>
<td>UCSC-NVME2H-I4000=</td>
<td>Cisco 2.5in U.2 4.0TB Intel P4510 NVMe High Perf. Value Endurance</td>
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<tr>
<td>CBL-NVME-C240LFF=</td>
<td>C240 M5 Front NVMe cable (1) LFF</td>
</tr>
<tr>
<td>UCSC-RNVME-240M5=</td>
<td>C240 M5 Rear NVMe CBL(1) kit, Rear NVMe CBL, backplane SFF&amp;LFF</td>
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<tr>
<td><strong>RAID Controllers</strong></td>
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<tr>
<td>UCSC-9400-8E=</td>
<td>Cisco 9400-8E 12G SAS HBA for external JBOD attach</td>
</tr>
<tr>
<td>UCSC-RSAS-240M5X=</td>
<td>C240 Rear UCS-RAID-M5HD SAS cbl(1)kitinclfan,bkpln</td>
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<td><strong>Modular LAN on Motherboard (mLOM)</strong></td>
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<tr>
<td>UCSC-MLOM-C100-04=</td>
<td>Cisco UCS VIC 1497 Dual Port 100G QSFP28 CNA mLOM</td>
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<tr>
<td>UCSC-MLOM-C25Q-04=</td>
<td>Cisco UCS VIC 1457 Quad Port 25G SFP28 mLOM</td>
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<tr>
<td>UCSC-MLOM-C40Q-03=</td>
<td>Cisco UCS VIC 1387 Dual Port 40Gb QSFP+ CNA</td>
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<tr>
<td>UCSC-MLOM-IRJ45=</td>
<td>Intel i350 Quad Port 1GBase-T NIC</td>
</tr>
<tr>
<td><strong>Converged Network Adapters (CNAs)</strong></td>
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<tr>
<td>UCSC-PCIE-C100-04=</td>
<td>Cisco UCS VIC 1495 Dual Port 100G QSFP28 CNA PCIe</td>
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<tr>
<td>UCSC-PCIE-C40Q-03=</td>
<td>Cisco UCS VIC 1385 Dual Port 40Gb QSFP+ CNA w/RDMA</td>
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<tr>
<td>UCSC-PCIE-C25Q-04=</td>
<td>Cisco UCS VIC 1455 Quad Port 10/25G SFP28 CNA PCIE</td>
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<td><strong>Network Interface Cards (NICs)</strong></td>
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<tr>
<td>1 Gb NICs</td>
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Table 47 Spare Parts

<table>
<thead>
<tr>
<th>Product ID (PID)</th>
<th>PID Description</th>
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<tbody>
<tr>
<td>UCSC-PCIE-IRJ45=</td>
<td>Intel i350 Quad Port 1GBase-T NIC</td>
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<tr>
<td>10 Gb NICs</td>
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<tr>
<td>N2XX-AIPCI01=</td>
<td>Intel X520 Dual Port 10Gb SFP+ NIC</td>
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<tr>
<td>UCSC-PCIE-ID10GC=</td>
<td>Intel X550-T2 Dual Port 10GBase-T NIC</td>
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<tr>
<td>UCSC-PCIE-ID10GF=</td>
<td>Intel X710-DA2 Dual Port 10Gb SFP+ NIC</td>
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<tr>
<td>UCSC-PCIE-IQ10GF=</td>
<td>Intel X710 Quad Port 10Gb SFP+ NIC</td>
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<tr>
<td>UCSC-PCIE-IQ10GC=</td>
<td>Intel X710 Quad Port 10GBase-T NIC</td>
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<td>25 Gb NICs</td>
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<tr>
<td>UCSC-PCIE-QD25GF=</td>
<td>Qlogic QL41212H Dual Port 25Gb NIC</td>
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<tr>
<td>UCSC-PCIE-ID25GF=</td>
<td>Intel XXV710 Dual Port 25Gb SFP28 NIC</td>
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<tr>
<td>UCSC-P-M4D25GF=</td>
<td>Mellanox MCX4121A-ACAT dual port 10/25G SFP28 NIC</td>
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<td>40 Gb NICs</td>
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<tr>
<td>UCSC-PCIE-QD40GF=</td>
<td>Qlogic QL45412H Dual Port 40Gb NIC</td>
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<tr>
<td>UCSC-PCIE-ID40GF=</td>
<td>Intel XL710 Dual Port 40Gb QSFP+ NIC</td>
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<td>100 Gb NICs</td>
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<tr>
<td>UCSC-PCIE-QS100GF=</td>
<td>Qlogic QLE45611HLCU single port 100G NIC</td>
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<td>Host Bus Adapters (HBAs)</td>
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<tr>
<td>UCSC-PCIE-QD16GF=</td>
<td>Qlogic QLE2692 Dual Port 16G Fibre Channel HBA</td>
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<tr>
<td>UCSC-PCIE-BD16GF=</td>
<td>Emulex LPe31002 Dual Port 16G Fibre Channel HBA</td>
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<tr>
<td>UCSC-PCIE-QD32GF=</td>
<td>Qlogic QLE2742 Dual Port 32G Fibre Channel HBA</td>
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<tr>
<td>UCSC-PCIE-BS32GF=</td>
<td>Emulex LPe32000-M2 Single Port 32G Fibre Channel HBA</td>
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<tr>
<td>UCSC-PCIE-BD32GF=</td>
<td>Emulex LPe32002-M2 Dual Port 32G Fibre Channel HBA</td>
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<td>UCS NVMe/PCIe Add in Cards</td>
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<td>UCSC-F-H16003=</td>
<td>Cisco HHHL AIC 1.6TB HGST SN250 NVMe Extreme Performance High Endurance</td>
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<td>UCSC-NVME-H32003=</td>
<td>Cisco HHHL AIC 3.2TB HGST SN260 NVMe Extreme Performance High Endurance</td>
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<td>UCSC-NVME-H64003=</td>
<td>Cisco HHHL AIC 6.4TB HGST SN260 NVMe Extreme Performance High Endurance</td>
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<tr>
<td>UCSC-NVME-H38401=</td>
<td>Cisco HHHL AIC 3.8TB HGST SN260 NVMe Extreme Performance High Endurance</td>
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### Table 47  Spare Parts

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<th>Product ID (PID)</th>
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<tr>
<td>UCSC-NVME-H76801=</td>
<td>Cisco HHHL AIC 7.7TB HGST SN260 NVMeExtreme Performance Value Endurance</td>
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<tr>
<td><strong>Other</strong></td>
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<tr>
<td>UCS-P40CBL-C240M5=</td>
<td>C240 M5 NVIDIA P40 Cable / M60</td>
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<tr>
<td>UCS-P100CBL-240M5=</td>
<td>C240 M5 NVIDIA P100 / V100 / Cable</td>
</tr>
<tr>
<td>UCS-M10CBL-C240M5=</td>
<td>C240 M5 NVIDIA M10 Cable</td>
</tr>
<tr>
<td>CBL-SC-MR12GM5P=</td>
<td>Super Cap cable for UCSC-RAID-M5HD</td>
</tr>
<tr>
<td>UCSC-SCAP-M5=</td>
<td>Super Cap for Cisco 12G Modular RAID controller</td>
</tr>
<tr>
<td>PACK-QSFP-SFP=</td>
<td>Packaging for QSFP 40G and SFP 10G</td>
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<tr>
<td><strong>SD Cards</strong></td>
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</tr>
<tr>
<td>UCS-SD-32G-S=</td>
<td>32 GB SD Card for UCS servers</td>
</tr>
<tr>
<td>UCS-SD-64G-S=</td>
<td>64 GB SD Card for UCS servers</td>
</tr>
<tr>
<td>UCS-SD-128G=</td>
<td>128GB SD Card for UCS servers</td>
</tr>
<tr>
<td><strong>GPU PCIe Cards</strong></td>
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<tr>
<td>UCSC-GPU-V100 =</td>
<td>NVIDIA V100 16GB</td>
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<tr>
<td>UCSC-GPU-V100-32 =</td>
<td>NVIDIA V100 32GB</td>
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<td>UCSC-GPU-P4 =</td>
<td>NVIDIA P4 8GB</td>
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<tr>
<td>UCSC-GPU-T4-16 =</td>
<td>NVIDIA T4 16GB</td>
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<td>UCSC-GPU-M10 =</td>
<td>NVIDIA M10</td>
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<tr>
<td>UCSC-GPU-M60 =</td>
<td>NVIDIA M60</td>
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<tr>
<td><strong>Power Supply</strong></td>
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<tr>
<td>UCSC-PSU1-770W=</td>
<td>770W AC power supply for C-Series Servers</td>
</tr>
<tr>
<td>UCSC-PSU1-1050W=</td>
<td>1050W AC power supply for C-Series servers</td>
</tr>
<tr>
<td>UCSC-PSUV2-1050DC=</td>
<td>1050W DC power supply for C-Series servers</td>
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<tr>
<td>UCSC-PSU1-1600W=</td>
<td>1600W AC power supply for C-Series servers</td>
</tr>
<tr>
<td>UCSC-PSU-M5BLK=</td>
<td>Power Supply Blanking Panel for M5 servers</td>
</tr>
<tr>
<td>UCSC-BBLKD-L2=</td>
<td>C-Series M5 LFF drive blanking panel</td>
</tr>
<tr>
<td><strong>Power Cables</strong></td>
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</tr>
<tr>
<td>CAB-48DC-40A-8AWG=</td>
<td>C-Series -48VDC PSU Power Cord, 3.5M, 3 Wire, 8AWG, 40A</td>
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## Table 47  Spare Parts

<table>
<thead>
<tr>
<th>Product ID (PID)</th>
<th>PID Description</th>
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<tbody>
<tr>
<td>CAB-AC-L620-C13=</td>
<td>AC Power Cord, NEMA L6-20 - C13, 2M/6.5ft</td>
</tr>
<tr>
<td>CAB-C13-CBN=</td>
<td>CABASY, WIRE, JUMPER CORD, 27” L, C13/C14, 10A/250V</td>
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<tr>
<td>CAB-C13-C14-2M=</td>
<td>CABASY, WIRE, JUMPER CORD, PWR, 2 Meter, C13/C14,10A/250V</td>
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<tr>
<td>CAB-C13-C14-AC=</td>
<td>CORD, PWR, JMP, IEC60320/C14, IEC6 0320/C13, 3.0M</td>
</tr>
<tr>
<td>CAB-250V-10A-AR=</td>
<td>Power Cord, 250V, 10A, Argentina</td>
</tr>
<tr>
<td>CAB-9K10A-AU=</td>
<td>Power Cord, 250VAC 10A 3112 Plug, Australia</td>
</tr>
<tr>
<td>CAB-250V-10A-CN=</td>
<td>AC Power Cord - 250V, 10A - PRC</td>
</tr>
<tr>
<td>CAB-9K10A-EU=</td>
<td>Power Cord, 250VAC 10A CEE 7/7 Plug, EU</td>
</tr>
<tr>
<td>CAB-250V-10A-ID=</td>
<td>Power Cord, SFS, 250V, 10A, India</td>
</tr>
<tr>
<td>CAB-250V-10A-IS=</td>
<td>Power Cord, SFS, 250V, 10A, Israel</td>
</tr>
<tr>
<td>CAB-9K10A-IT=</td>
<td>Power Cord, 250VAC 10A CEI 23-16/VII Plug, Italy</td>
</tr>
<tr>
<td>CAB-9K10A-SW=</td>
<td>Power Cord, 250VAC 10A MP232 Plug, Switzerland</td>
</tr>
<tr>
<td>CAB-9K10A-UK=</td>
<td>Power Cord, 250VAC 10A BS1363 Plug (13 A fuse), UK</td>
</tr>
<tr>
<td>CAB-9K12A-NA=</td>
<td>Power Cord, 125VAC 13A NEMA 5-15 Plug, North America</td>
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<tr>
<td>CAB-250V-10A-BR=</td>
<td>Power Cord - 250V, 10A - Brazil</td>
</tr>
<tr>
<td>CAB-C13-C14-2M-JP=</td>
<td>Power Cord C13-C14, 2M/6.5ft Japan PSE mark</td>
</tr>
<tr>
<td>CAB-9K10A-KOR=</td>
<td>Power Cord, 125VAC 13A KSC8305 Plug, Korea</td>
</tr>
<tr>
<td>CAB-ACTW=</td>
<td>AC Power Cord (Taiwan), C13, EL 302, 2.3M</td>
</tr>
<tr>
<td>CAB-JPN-3PIN=</td>
<td>Japan, 90-125VAC 12A NEMA 5-15 Plug, 2.4m</td>
</tr>
<tr>
<td>CAB-C13-C14-IN=</td>
<td>Power Cord Jumper, C13-C14 Connectors, 1.4 Meter Length, India</td>
</tr>
<tr>
<td>CAB-C13-C14-3M-IN=</td>
<td>Power Cord Jumper, C13-C14 Connectors, 3 Meter Length, India</td>
</tr>
</tbody>
</table>

### CMA

UCSC-CMA-M5=  Reversible CMA for C240 M5 rack servers

### USB Drive

UCS-USBFLSHB-16GB=  UCS Servers 16 GB Flash USB Drive (optional)

### TPM

UCSX-TPM2-001=  Trusted Platform Module 1.2 for UCS Servers

UCSX-TPM2-002=  Trusted Platform Module 2.0 for UCS servers
### Table 47  Spare Parts

<table>
<thead>
<tr>
<th>Product ID (PID)</th>
<th>PID Description</th>
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<tbody>
<tr>
<td>UCSC-INT-SW01=</td>
<td>C220 M5 and C240 M5 Chassis Intrusion Switch</td>
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<tr>
<td><strong>Bezel</strong></td>
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<tr>
<td>UCSC-BZL-C240M5=</td>
<td>C240 M5 Security Bezel</td>
</tr>
<tr>
<td><strong>Software/Firmware</strong></td>
<td></td>
</tr>
<tr>
<td><strong>IMC Supervisor</strong></td>
<td></td>
</tr>
<tr>
<td>CIMC-SUP-BASE-K9=</td>
<td>IMC Supervisor One-time Site Installation License</td>
</tr>
<tr>
<td>CIMC-SUP-B01=</td>
<td>IMC Supervisor-Branch Mgt SW for C-Series &amp; E-Series up to 100 Svrs</td>
</tr>
<tr>
<td>CIMC-SUP-B02=</td>
<td>IMC Supervisor-Branch Mgt SW for C &amp; E-Series up to 250 Svrs</td>
</tr>
<tr>
<td>CIMC-SUP-B10=</td>
<td>IMC Supervisor-Branch Mgt SW for C &amp; E-Series up to 1K Svrs</td>
</tr>
<tr>
<td>CIMC-SUP-B25=</td>
<td>IMC Supervisor Branch Mgt SW for C &amp; E-Series 25 Svrs</td>
</tr>
<tr>
<td>CIMC-SUP-A01=</td>
<td>IMC Supervisor Adv-Branch Mgt SW for C &amp; E-Series 100 Svrs</td>
</tr>
<tr>
<td>CIMC-SUP-A02=</td>
<td>IMC Supervisor Adv-Branch Mgt SW for C &amp; E-Series 250 Svrs</td>
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<tr>
<td>CIMC-SUP-A10=</td>
<td>IMC Supervisor Adv-Branch Mgt SW for C &amp; E-Series 1000 Svrs</td>
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<tr>
<td>CIMC-SUP-A25=</td>
<td>IMC Supervisor Adv-Branch Mgt SW for C &amp; E-Series 250 Svrs</td>
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<tr>
<td>EVAL-CIMC-SUP=</td>
<td>EVAL: IMC Supervisor-Branch Mgt SW for C/E-Series - 50 Svrs</td>
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<tr>
<td>EVAL-CIMC-SUP-BAS=</td>
<td>EVAL: IMC Supervisor One-time Site Installation License</td>
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<tr>
<td><strong>UCS Multi-Domain Manager</strong></td>
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<tr>
<td>UCS-MDMGR-1S=</td>
<td>UCS Central Per Server License</td>
</tr>
<tr>
<td><strong>NOTE:</strong> 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=</td>
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<tr>
<td><strong>VMware vCenter</strong></td>
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<tr>
<td>VMW-VCS-STD-1A=</td>
<td>VMware vCenter 6 Server Standard, 1 yr support required</td>
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<tr>
<td>VMW-VCS-STD-3A=</td>
<td>VMware vCenter 6 Server Standard, 3 yr support required</td>
</tr>
<tr>
<td>VMW-VCS-STD-5A=</td>
<td>VMware vCenter 6 Server Standard, 5 yr support required</td>
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<tr>
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<td>VMware vCenter 6 Server Foundation (3 Host), 1 yr supp reqd</td>
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<td>VMware vCenter 6 Server Foundation (3 Host), 3 yr supp reqd</td>
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<tr>
<td>RHEL-2S2V-1A=</td>
<td>Red Hat Enterprise Linux (1-2 CPU,1-2 VN); 1-Yr Support Req</td>
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### SPARE PARTS

#### Table 47  Spare Parts

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<thead>
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<th>Product ID (PID)</th>
<th>PID Description</th>
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<tr>
<td>RHEL-2S2V-3A=</td>
<td>Red Hat Enterprise Linux (1-2 CPU, 1-2 VN); 3-Yr Support Req</td>
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<td>Red Hat Enterprise Linux (1-2 CPU, 1-2 VN); Prem 1-Yr SnS</td>
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<td>RHEL-2S2V-3S=</td>
<td>Red Hat Enterprise Linux (1-2 CPU, 1-2 VN); Prem 3-Yr SnS</td>
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<tr>
<td>RHEL-2S-HA-1S=</td>
<td>RHEL High Availability (1-2 CPU); Premium 1-yr SnS</td>
</tr>
<tr>
<td>RHEL-2S-HA-3S=</td>
<td>RHEL High Availability (1-2 CPU); Premium 3-yr SnS</td>
</tr>
<tr>
<td>RHEL-2S-RS-1S=</td>
<td>RHEL Resilient Storage (1-2 CPU); Premium 1-yr SnS</td>
</tr>
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<td>RHEL-2S-RS-3S=</td>
<td>RHEL Resilient Storage (1-2 CPU); Premium 3-yr SnS</td>
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<tr>
<td>RHEL-2S-SFS-1S=</td>
<td>RHEL Scalable File System (1-2 CPU); Premium 1-yr SnS</td>
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<tr>
<td>RHEL-2S-SFS-3S=</td>
<td>RHEL Scalable File System (1-2 CPU); Premium 3-yr SnS</td>
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<td>Red Hat Enterprise Linux (1-2 CPU, 1-2 VN); 5-Yr Support Req</td>
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<td>RHEL-2S-HA-1A=</td>
<td>RHEL High Availability (1-2 CPU); 1-Yr Support Reqd</td>
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<tr>
<td>RHEL-2S-HA-3A=</td>
<td>RHEL High Availability (1-2 CPU); 3-Yr Support Reqd</td>
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<td>RHEL-2S-HA-5A=</td>
<td>RHEL High Availability (1-2 CPU); 5-Yr Support Reqd</td>
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<td>RHEL-2S-RS-1A=</td>
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<td>RHEL Resilient Storage (1-2 CPU); Premium 3-yr SnS Reqd</td>
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<td><strong>Red Hat SAP</strong></td>
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<tr>
<td>RHEL-SAP-2S2V-1S=</td>
<td>RHEL for SAP Apps (1-2 CPU, 1-2 VN); Prem 1-Yr SnS</td>
</tr>
<tr>
<td>RHEL-SAP-2S2V-3S=</td>
<td>RHEL for SAP Apps (1-2 CPU, 1-2 VN); Prem 3-Yr SnS</td>
</tr>
<tr>
<td>RHEL-SAPH-2S2V-1S=</td>
<td>RHEL for SAP Hana (1-2 CPU, 1-2 VN); Prem 1-Yr SnS</td>
</tr>
<tr>
<td>RHEL-SAPH-2S2V-3S=</td>
<td>RHEL for SAP Hana (1-2 CPU, 1-2 VN); Prem 3-Yr SnS</td>
</tr>
<tr>
<td>RHEL-SAPHHAP2S-1S=</td>
<td>RHEL for SAP Hana, HA, SmartM (1-2 CPU &amp; VN); Prem 1Yr SnS Reqd</td>
</tr>
<tr>
<td>RHEL-SAPHHAP2S-3S=</td>
<td>RHEL for SAP Hana, HA, SmartM (1-2 CPU &amp; VN); Prem 3Yr SnS Reqd</td>
</tr>
<tr>
<td><strong>VMware</strong></td>
<td></td>
</tr>
<tr>
<td>VMW-VSP-STD-1S=</td>
<td>VMware vSphere 6 Standard (1 CPU), 1-yr VMware SnS Reqd</td>
</tr>
<tr>
<td>VMW-VSP-STD-3S=</td>
<td>VMware vSphere 6 Standard (1 CPU), 3-yr VMware SnS Reqd</td>
</tr>
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</table>

Cisco UCS C240 M5 Rack Server (Large Form Factor Disk Drive Model)
<table>
<thead>
<tr>
<th>Product ID (PID)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>VMW-VSP-EPL-1S=</td>
<td>VMware vSphere 6 Ent Plus (1 CPU), 1-yr VMware SnS Reqd</td>
</tr>
<tr>
<td>VMW-VSP-EPL-3S=</td>
<td>VMware vSphere 6 Ent Plus (1 CPU), 3-yr VMware SnS Reqd</td>
</tr>
<tr>
<td>VMW-VSP-STD-1A=</td>
<td>VMware vSphere 6 Standard (1 CPU), 1-yr, Support Required</td>
</tr>
<tr>
<td>VMW-VSP-STD-3A=</td>
<td>VMware vSphere 6 Standard (1 CPU), 3-yr, Support Required</td>
</tr>
<tr>
<td>VMW-VSP-STD-5A=</td>
<td>VMware vSphere 6 Standard (1 CPU), 5-yr, Support Required</td>
</tr>
<tr>
<td>VMW-VSP-EPL-3A=</td>
<td>VMware vSphere 6 Ent Plus (1 CPU), 3-yr, Support Required</td>
</tr>
<tr>
<td>VMW-VSP-EPL-1A=</td>
<td>VMware vSphere 6 Ent Plus (1 CPU), 1-yr, Support Required</td>
</tr>
<tr>
<td>VMW-VSP-EPL-5A=</td>
<td>VMware vSphere 6 Ent Plus (1 CPU), 5-yr, Support Required</td>
</tr>
<tr>
<td>RHEL-SAP-2S2V-1S=</td>
<td>RHEL for SAP Apps (1-2 CPU, 1-2 VN); Prem 1-Yr SnS Reqd</td>
</tr>
<tr>
<td>RHEL-SAP-2S2V-3S=</td>
<td>RHEL for SAP Apps (1-2 CPU, 1-2 VN); Prem 3-Yr SnS Reqd</td>
</tr>
<tr>
<td>RHEL-SAPSP-3S=</td>
<td>RHEL SAP Solutions Premium - License with 3 Years of SnS</td>
</tr>
<tr>
<td>RHEL-SAPSS-3S=</td>
<td>RHEL SAP Solutions Standard - License with 3 Years of SnS</td>
</tr>
<tr>
<td>SLES-2S2V-1A=</td>
<td>SUSE Linux Enterprise Svr (1-2 CPU,1-2 VM); 1-Yr Support Req</td>
</tr>
<tr>
<td>SLES-2SUV-1A=</td>
<td>SUSE Linux Enterprise Svr (1-2 CPU,Unl VM); 1-Yr Support Req</td>
</tr>
<tr>
<td>SLES-2S2V-3A=</td>
<td>SUSE Linux Enterprise Svr (1-2 CPU,1-2 VM); 3-Yr Support Req</td>
</tr>
<tr>
<td>SLES-2SUV-3A=</td>
<td>SUSE Linux Enterprise Svr (1-2 CPU,Unl VM); 3-Yr Support Req</td>
</tr>
<tr>
<td>SLES-2S2V-5A=</td>
<td>SUSE Linux Enterprise Svr (1-2 CPU,1-2 VM); 5-Yr Support Req</td>
</tr>
<tr>
<td>SLES-2SUV-5A=</td>
<td>SUSE Linux Enterprise Svr (1-2 CPU,Unl VM); 5-Yr Support Req</td>
</tr>
<tr>
<td>SLES-2S2V-1S=</td>
<td>SUSE Linux Enterprise Svr (1-2 CPU,1-2 VM); Prio 1-Yr SnS</td>
</tr>
<tr>
<td>SLES-2SUV-1S=</td>
<td>SUSE Linux Enterprise Svr (1-2 CPU,Unl VM); Prio 1-Yr SnS</td>
</tr>
<tr>
<td>SLES-2S2V-3S=</td>
<td>SUSE Linux Enterprise Svr (1-2 CPU,1-2 VM); Prio 3-Yr SnS</td>
</tr>
<tr>
<td>SLES-2SUV-3S=</td>
<td>SUSE Linux Enterprise Svr (1-2 CPU,Unl VM); Prio 3-Yr SnS</td>
</tr>
<tr>
<td>SLES-2S2V-5S=</td>
<td>SUSE Linux Enterprise Svr (1-2 CPU,1-2 VM); Prio 5-Yr SnS</td>
</tr>
<tr>
<td>SLES-2SUV-5S=</td>
<td>SUSE Linux Enterprise Svr (1-2 CPU,Unl VM); Prio 5-Yr SnS</td>
</tr>
<tr>
<td>SLES-2S-HA-1S=</td>
<td>SUSE Linux High Availability Ext (1-2 CPU); 1yr SnS</td>
</tr>
<tr>
<td>SLES-2S-HA-3S=</td>
<td>SUSE Linux High Availability Ext (1-2 CPU); 3yr SnS</td>
</tr>
<tr>
<td>SLES-2S-HA-5S=</td>
<td>SUSE Linux High Availability Ext (1-2 CPU); 5yr SnS</td>
</tr>
</tbody>
</table>
Table 47  Spare Parts

<table>
<thead>
<tr>
<th>Product ID (PID)</th>
<th>PID Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SLES-2S-GC-1S=</td>
<td>SUSE Linux GEO Clustering for HA (1-2 CPU); 1yr SnS</td>
</tr>
<tr>
<td>SLES-2S-GC-3S=</td>
<td>SUSE Linux GEO Clustering for HA (1-2 CPU); 3yr SnS</td>
</tr>
<tr>
<td>SLES-2S-GC-5S=</td>
<td>SUSE Linux GEO Clustering for HA (1-2 CPU); 5yr SnS</td>
</tr>
<tr>
<td>SLES-2S-LP-1S=</td>
<td>SUSE Linux Live Patching Add-on (1-2 CPU); 1yr SnS Required</td>
</tr>
<tr>
<td>SLES-2S-LP-3S=</td>
<td>SUSE Linux Live Patching Add-on (1-2 CPU); 3yr SnS Required</td>
</tr>
</tbody>
</table>

Notes:
1. This part is included with the purchase of option or spare CPU or CPU processor kits.
2. If you choose one or two front-facing PCIe SSD or NVMe drives, drive slots 1 and 2 at the front of the chassis are reserved for these drives (see Figure 2 on page 4 for drive slot numbering).

Please refer to “Cisco UCS C240 M5 Server Installation and Service Guide” for installation procedures. See this link:
Memory Support for CPU Classes and CPU Modes

For 2nd Generation Intel® Xeon® Scalable Processors:

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

For Configurations Using Only DIMMs

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

For Configurations Using DIMMs and PMEMs in App Direct Mode

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

For Configurations Using DIMMs and PMEMs in Memory or Mixed Mode

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

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

The allowable 4608 limit for PMEM capacity is not reached in this case.
- CPU PIDs not ending in “L” or “M” support capacities up to 1024 GB per CPU using:
  - 6 x 128 GB DIMMs as cache and 2 x 512 GB PMEMs as memory, or
  - 6 x 256 GB DIMMs as cache and 2 x 512 GB PMEMs as memory

For Intel® Xeon® Scalable Processors:
- DIMMs are supported; PMEMs are not supported
- CPU PIDs ending in “M” support DIMM capacities up to 1536 GB per CPU (using 12 x 128 GB DIMMs).
- All other CPU PIDs support DIMM capacities up to 768 GB per CPU (using 6 x 128 GB DIMMs or 12 x 64 GB DIMMs)
UPGRADING or REPLACING CPUs

NOTE: Before servicing any CPU, do the following:
- Decommission and power off the server.
- Slide the C240 M5 LFF server out from the rack.
- Remove the top cover.

To replace an existing CPU, follow these steps:

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

(2) Order the appropriate replacement CPU from Table 4 on page 14

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

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 14

(3) Order one heat sink for each new CPU. Order PID UCSC-HS-C240M5= for CPUs that dissipate 150 W or less. Order PID UCSC-HS2-C240M5= for CPUs that dissipate more than 150 W.
UPGRADING or REPLACING MEMORY

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


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 PMEMs, follow these steps:

(1) Order new DIMMs or PMEMs as needed from Table 5 on page 22.

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

Figure 14 Replacing Memory
(3) Press evenly on both ends of the DIMM/PMEM until it clicks into place in its slot.

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

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

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


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

<table>
<thead>
<tr>
<th>EOS option PID</th>
<th>Description</th>
<th>EOL bulletin link</th>
</tr>
</thead>
<tbody>
<tr>
<td>DRIVES</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HDDs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Enterprise Value SSDs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EOS option PID</td>
<td>Description</td>
<td>EOL bulletin link</td>
</tr>
<tr>
<td>----------------</td>
<td>-----------------------------------------------------------------------------</td>
<td>----------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>NVMe</td>
<td></td>
<td></td>
</tr>
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</table>
## Table 48  EOL Products

<table>
<thead>
<tr>
<th>EOS option PID</th>
<th>Description</th>
<th>EOL bulletin link</th>
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</table>

### Enterprise Performance SSDs

<table>
<thead>
<tr>
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<th>Description</th>
<th>EOL bulletin link</th>
</tr>
</thead>
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### EOL Products

<table>
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<tr>
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<th>Description</th>
<th>EOL bulletin link</th>
</tr>
</thead>
<tbody>
<tr>
<td>GPU</td>
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</tr>
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</table>

**Microsoft Windows server**

<table>
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<th>Description</th>
<th>EOL bulletin link</th>
</tr>
</thead>
</table>
## DISCONTINUED EOL PRODUCTS

### Table 48  EOL Products

<table>
<thead>
<tr>
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<th>Description</th>
<th>EOL bulletin link</th>
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</thead>
<tbody>
<tr>
<td><strong>OS Media</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>CPU</strong></td>
<td></td>
<td></td>
</tr>
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</table>
## EOL Products

<table>
<thead>
<tr>
<th>EOS option PID</th>
<th>Description</th>
<th>EOL bulletin link</th>
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</thead>
</table>
### Table 48  EOL Products

<table>
<thead>
<tr>
<th>EOS option PID</th>
<th>Description</th>
<th>EOL bulletin link</th>
</tr>
</thead>
</table>
## Table 48  EOL Products

<table>
<thead>
<tr>
<th>EOS option PID</th>
<th>Description</th>
<th>EOL bulletin link</th>
</tr>
</thead>
</table>

### MEMORY

<table>
<thead>
<tr>
<th>EOS option PID</th>
<th>Description</th>
<th>EOL bulletin link</th>
</tr>
</thead>
</table>
NEBS Compliance

When configured with choices from the specific set of components shown in *Table 49*, the UCS C240 M5 server meets Network Equipment Building Standards (NEBS) Level 1 and Level 3 compliance. For specific configuration rules, see the applicable sections of this document.

<table>
<thead>
<tr>
<th>Component Category</th>
<th>Description</th>
<th>Product ID (PID)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPUs</td>
<td>2.1 GHz 8160T/150W 24C/33.00MB Cache/DDR4 2666MHz</td>
<td>UCS-CPU-8160T</td>
</tr>
<tr>
<td></td>
<td>2.0 GHz 6138T/125W 20C/27.50MB Cache/DDR4 2666MHz</td>
<td>UCS-CPU-6138T</td>
</tr>
<tr>
<td>Memory</td>
<td>16GB DDR4-2666-MHz RDIMM/PC4-23100/single rank/x4/1.2v</td>
<td>UCS-MR-X16G1RS-H</td>
</tr>
<tr>
<td></td>
<td>32GB DDR4-2666-MHz RDIMM/PC4-23100/dual rank/x4/1.2v</td>
<td>UCS-MR-X32G2RS-H</td>
</tr>
<tr>
<td>Drive</td>
<td>1.2 TB 12G SAS 10K RPM SFF HDD</td>
<td>UCS-HD12TB10K12N</td>
</tr>
<tr>
<td></td>
<td>900GB 12G SAS 15K RPM SFF HDD</td>
<td>UCS-HD900G15K12N</td>
</tr>
<tr>
<td></td>
<td>600GB 12G SAS 15K RPM SFF HDD</td>
<td>UCS-HD600G15K12N</td>
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<td></td>
<td>600GB 12G SAS 10K RPM SFF HDD</td>
<td>UCS-HD600G10K12N</td>
</tr>
<tr>
<td></td>
<td>300GB 12G SAS 10K RPM SFF HDD</td>
<td>UCS-HD300G10K12N</td>
</tr>
<tr>
<td></td>
<td>3.8TB 2.5 inch Enterprise Value 12G SAS SSD</td>
<td>UCS-SD38TB121X-EV</td>
</tr>
<tr>
<td></td>
<td>1.9TB 2.5 inch Enterprise Value 12G SAS SSD</td>
<td>UCS-SD19TB121X-EV</td>
</tr>
<tr>
<td></td>
<td>960GB 2.5 inch Enterprise Value 12G SAS SSD</td>
<td>UCS-SD960G121X-EV</td>
</tr>
<tr>
<td></td>
<td>480 GB 2.5 inch Enterprise Value 12G SAS SSD</td>
<td>UCS-SD480G121X-EV</td>
</tr>
<tr>
<td>NVMe</td>
<td>1TB 2.5in U.2 Intel P4501 NVMe Med. Perf. Value Endurance</td>
<td>UCSC-NVMELW-I1000</td>
</tr>
<tr>
<td>RAID Controller</td>
<td>Cisco 12G Modular RAID controller with 2GB cache (supports max 16 drives) (Laguna Beach)</td>
<td>UCSC-RAID-M5</td>
</tr>
<tr>
<td>PCIe Cards</td>
<td>Cisco VIC 1387 Dual Port 40Gb QSFP CNA MLOM (Claremont)</td>
<td>UCSC-MLOM-C40Q-03</td>
</tr>
<tr>
<td></td>
<td>Intel i350 quad-port 1G copper MLOM</td>
<td>UCSC-MLOM-IRJ45</td>
</tr>
<tr>
<td></td>
<td>Cisco VIC 1385 Dual Port 40Gb QSFP+ CNA w/RDMA (Clearlake)</td>
<td>UCSC-PCIE-C40Q-03</td>
</tr>
<tr>
<td></td>
<td>Intel X520 dual-port 10G SFP+</td>
<td>N2XX-AIPCI01</td>
</tr>
<tr>
<td></td>
<td>Qlogic QLE2692 dual port 16G FC</td>
<td>UCSC-PCIE-QD16GF</td>
</tr>
<tr>
<td></td>
<td>Intel XXV710-DA2 10-dual-port 25G NIC</td>
<td>UCSC-PCIE-ID25GF</td>
</tr>
<tr>
<td>TPM</td>
<td>Trusted Platform Module 2.0 for UCS servers</td>
<td>UCSX-TPM2-002</td>
</tr>
<tr>
<td>Power Supply</td>
<td>1050W AC power supply for C-Series servers</td>
<td>UCSC-PSU1-1050W</td>
</tr>
<tr>
<td></td>
<td>1050W DC power supply for C-Series servers</td>
<td>UCSC-PSUV2-1050DC</td>
</tr>
</tbody>
</table>
## TECHNICAL SPECIFICATIONS

### Dimensions and Weight

Table 50  UCS C240 M5 Dimensions and Weight

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Height</td>
<td>3.43 in. (8.70 cm)</td>
</tr>
<tr>
<td>Width (including slam latches)</td>
<td>17.65 in. (44.8 cm)</td>
</tr>
<tr>
<td>Including handles:</td>
<td>18.96 in (48.2 cm)</td>
</tr>
<tr>
<td>Depth</td>
<td>29.0 in. (73.8 cm)</td>
</tr>
<tr>
<td>Including handles:</td>
<td>30.18 in (76.6 cm)</td>
</tr>
<tr>
<td>Front Clearance</td>
<td>3 in. (76 mm)</td>
</tr>
<tr>
<td>Side Clearance</td>
<td>1 in. (25 mm)</td>
</tr>
<tr>
<td>Rear Clearance</td>
<td>6 in. (152 mm)</td>
</tr>
<tr>
<td>Weight(^1)</td>
<td></td>
</tr>
<tr>
<td>Maximum (12 front HDDs, 2 rear HDDs, 2 CPUs, 24 DIMMs, 2 power supplies)</td>
<td>66.0 lbs (29.0 kg)</td>
</tr>
<tr>
<td>Minimum (1 HDD, 1 CPU, 1 DIMM, 1 power supply)</td>
<td>41.5 lbs (18.8 kg)</td>
</tr>
<tr>
<td>Bare (0 HDD, 0 CPU, 0 DIMM, 1 power supply)</td>
<td>38.8 lbs (17.6 kg)</td>
</tr>
</tbody>
</table>

**Notes:**
1. 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:

- 770 W (AC) power supply (see Table 51)
- 1050 W (AC) power supply (see Table 52)
- 1050 W V2 (DC) power supply (see Table 53)
- 1600 W (AC) power supply (see Table 54)

Table 51  UCS C240 M5 Power Specifications (770 W AC power supply)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Input Connector</td>
<td>IEC320 C14</td>
</tr>
<tr>
<td>Input Voltage Range (V rms)</td>
<td>100 to 240</td>
</tr>
<tr>
<td>Maximum Allowable Input Voltage Range (V rms)</td>
<td>90 to 264</td>
</tr>
<tr>
<td>Frequency Range (Hz)</td>
<td>50 to 60</td>
</tr>
<tr>
<td>Maximum Allowable Frequency Range (Hz)</td>
<td>47 to 63</td>
</tr>
<tr>
<td>Maximum Rated Output (W)</td>
<td>770</td>
</tr>
<tr>
<td>Maximum Rated Standby Output (W)</td>
<td>36</td>
</tr>
<tr>
<td>Nominal Input Voltage (V rms)</td>
<td>100 120 208 230</td>
</tr>
<tr>
<td>Nominal Input Current (A rms)</td>
<td>8.8 7.4 4.2 3.8</td>
</tr>
<tr>
<td>Maximum Input at Nominal Input Voltage (W)</td>
<td>855 855 855 846</td>
</tr>
<tr>
<td>Maximum Input at Nominal Input Voltage (VA)</td>
<td>882 882 882 872</td>
</tr>
<tr>
<td>Minimum Rated Efficiency (%)&lt;sup&gt;1&lt;/sup&gt;</td>
<td>90 90 90 91</td>
</tr>
<tr>
<td>Minimum Rated Power Factor&lt;sup&gt;1&lt;/sup&gt;</td>
<td>0.97 0.97 0.97 0.97</td>
</tr>
<tr>
<td>Maximum Inrush Current (A peak)</td>
<td>15</td>
</tr>
<tr>
<td>Maximum Inrush Current (ms)</td>
<td>0.2</td>
</tr>
<tr>
<td>Minimum Ride-Through Time (ms)&lt;sup&gt;2&lt;/sup&gt;</td>
<td>12</td>
</tr>
</tbody>
</table>

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

Table 52  UCS C240 M5 1050 W (AC) Power Supply Specifications

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Input Connector</td>
<td>IEC320 C14</td>
</tr>
<tr>
<td>Input Voltage Range (V rms)</td>
<td>100 to 240</td>
</tr>
<tr>
<td>Maximum Allowable Input Voltage Range (V rms)</td>
<td>90 to 264</td>
</tr>
<tr>
<td>Frequency Range (Hz)</td>
<td>50 to 60</td>
</tr>
</tbody>
</table>
Table 52  UCS C240 M5 1050 W (AC) Power Supply Specifications

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum Allowable Frequency Range (Hz)</td>
<td>47 to 63</td>
</tr>
<tr>
<td>Maximum Rated Output (W)</td>
<td>800</td>
</tr>
<tr>
<td></td>
<td>1050</td>
</tr>
<tr>
<td>Maximum Rated Standby Output (W)</td>
<td>36</td>
</tr>
<tr>
<td>Nominal Input Voltage (V rms)</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td>120</td>
</tr>
<tr>
<td></td>
<td>208</td>
</tr>
<tr>
<td></td>
<td>230</td>
</tr>
<tr>
<td>Nominal Input Current (A rms)</td>
<td>9.2</td>
</tr>
<tr>
<td></td>
<td>7.6</td>
</tr>
<tr>
<td></td>
<td>5.8</td>
</tr>
<tr>
<td></td>
<td>5.2</td>
</tr>
<tr>
<td>Maximum Input at Nominal Input Voltage (W)</td>
<td>889</td>
</tr>
<tr>
<td></td>
<td>889</td>
</tr>
<tr>
<td></td>
<td>1167</td>
</tr>
<tr>
<td></td>
<td>1154</td>
</tr>
<tr>
<td>Maximum Input at Nominal Input Voltage (VA)</td>
<td>916</td>
</tr>
<tr>
<td></td>
<td>916</td>
</tr>
<tr>
<td></td>
<td>1203</td>
</tr>
<tr>
<td></td>
<td>1190</td>
</tr>
<tr>
<td>Minimum Rated Efficiency (%)</td>
<td>90</td>
</tr>
<tr>
<td></td>
<td>90</td>
</tr>
<tr>
<td></td>
<td>90</td>
</tr>
<tr>
<td></td>
<td>91</td>
</tr>
<tr>
<td>Minimum Rated Power Factor</td>
<td>0.97</td>
</tr>
<tr>
<td></td>
<td>0.97</td>
</tr>
<tr>
<td></td>
<td>0.97</td>
</tr>
<tr>
<td></td>
<td>0.97</td>
</tr>
<tr>
<td>Maximum Inrush Current (A peak)</td>
<td>15</td>
</tr>
<tr>
<td>Maximum Inrush Current (ms)</td>
<td>0.2</td>
</tr>
<tr>
<td>Minimum Ride-Through Time (ms)</td>
<td>12</td>
</tr>
</tbody>
</table>

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

Table 53  UCS C240 M5 1050 W (DC) Power Supply Specifications

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Input Connector</td>
<td>Molex 42820</td>
</tr>
<tr>
<td>Input Voltage Range (V rms)</td>
<td>-48</td>
</tr>
<tr>
<td>Maximum Allowable Input Voltage Range (V rms)</td>
<td>-40 to -72</td>
</tr>
<tr>
<td>Frequency Range (Hz)</td>
<td>NA</td>
</tr>
<tr>
<td>Maximum Allowable Frequency Range (Hz)</td>
<td>NA</td>
</tr>
<tr>
<td>Maximum Rated Output (W)</td>
<td>1050</td>
</tr>
<tr>
<td>Maximum Rated Standby Output (W)</td>
<td>36</td>
</tr>
<tr>
<td>Nominal Input Voltage (V rms)</td>
<td>-48</td>
</tr>
<tr>
<td>Nominal Input Current (A rms)</td>
<td>24</td>
</tr>
<tr>
<td>Maximum Input at Nominal Input Voltage (W)</td>
<td>1154</td>
</tr>
<tr>
<td>Maximum Input at Nominal Input Voltage (VA)</td>
<td>1154</td>
</tr>
<tr>
<td>Minimum Rated Efficiency (%)</td>
<td>91</td>
</tr>
</tbody>
</table>
TECHNICAL SPECIFICATIONS

For configuration-specific power specifications, use the Cisco UCS Power Calculator at this URL: http://ucspowercalc.cisco.com

Table 53  UCS C240 M5 1050 W (DC) Power Supply Specifications

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum Rated Power Factor¹</td>
<td>NA</td>
</tr>
<tr>
<td>Maximum Inrush Current (A peak)</td>
<td>15</td>
</tr>
<tr>
<td>Maximum Inrush Current (ms)</td>
<td>0.2</td>
</tr>
<tr>
<td>Minimum Ride-Through Time (ms)²</td>
<td>5</td>
</tr>
</tbody>
</table>

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

Table 54  UCS C240 M5 1600 W (AC) Power Supply Specifications

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Input Connector</td>
<td>IEC320 C14</td>
</tr>
<tr>
<td>Input Voltage Range (V rms)</td>
<td>200 to 240</td>
</tr>
<tr>
<td>Maximum Allowable Input Voltage Range (V rms)</td>
<td>180 to 264</td>
</tr>
<tr>
<td>Frequency Range (Hz)</td>
<td>50 to 60</td>
</tr>
<tr>
<td>Maximum Allowable Frequency Range (Hz)</td>
<td>47 to 63</td>
</tr>
<tr>
<td>Maximum Rated Output (W)</td>
<td>1600</td>
</tr>
<tr>
<td>Maximum Rated Standby Output (W)</td>
<td>36</td>
</tr>
<tr>
<td>Nominal Input Voltage (V rms)</td>
<td>100 120 208 230</td>
</tr>
<tr>
<td>Nominal Input Current (A rms)</td>
<td>NA NA 8.8 7.9</td>
</tr>
<tr>
<td>Maximum Input at Nominal Input Voltage (W)</td>
<td>NA NA 1778 1758</td>
</tr>
<tr>
<td>Maximum Input at Nominal Input Voltage (VA)</td>
<td>NA NA 1833 1813</td>
</tr>
<tr>
<td>Minimum Rated Efficiency (%)'¹</td>
<td>NA NA 90 91</td>
</tr>
<tr>
<td>Minimum Rated Power Factor²</td>
<td>NA NA 0.97 0.97</td>
</tr>
<tr>
<td>Maximum Inrush Current (A peak)</td>
<td>30</td>
</tr>
<tr>
<td>Maximum Inrush Current (ms)</td>
<td>0.2</td>
</tr>
<tr>
<td>Minimum Ride-Through Time (ms)²</td>
<td>12</td>
</tr>
</tbody>
</table>

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

**Table 55  Cisco UCS C240 M5 Extended Operating Temperature Hardware Configuration Limits**

<table>
<thead>
<tr>
<th>Platform</th>
<th>ASHRAE A3 (5°C to 40°C)²</th>
<th>ASHRAE A4 (5°C to 45°C)³</th>
</tr>
</thead>
<tbody>
<tr>
<td>Processors:</td>
<td>155W+</td>
<td>155W+ and 105W+ (4 or 6 Cores)</td>
</tr>
<tr>
<td>Memory:</td>
<td>LRDIMMs</td>
<td>LRDIMMs</td>
</tr>
<tr>
<td>Storage:</td>
<td>M.2 SATA SSDs</td>
<td>M.2 SATA SSDs</td>
</tr>
<tr>
<td></td>
<td>NVMe SSDs</td>
<td>NVMe SSDs</td>
</tr>
<tr>
<td>Peripherals:</td>
<td>PCIe NVMe SSDs</td>
<td>PCIe NVMe SSDs</td>
</tr>
<tr>
<td></td>
<td>GPUs</td>
<td>GPUs</td>
</tr>
<tr>
<td></td>
<td>VICs (Slots 1 and 4)</td>
<td>VICs (Slots 1 and 4)</td>
</tr>
<tr>
<td></td>
<td>NICs (Slots 1 and 4)</td>
<td>NICs (Slots 1 and 4)</td>
</tr>
<tr>
<td></td>
<td>HBAs (Slots 1 and 4)</td>
<td>HBAs (Slots 1 and 4)</td>
</tr>
</tbody>
</table>

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

The environmental specifications for the C240 M5 LFF server are listed in Table 56.

Table 56  UCS C240 M5 LFF Environmental Specifications

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Minimum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating Temperature</td>
<td>10°C to 35°C (50°F to 95°F) with no direct sunlight</td>
</tr>
<tr>
<td></td>
<td>Maximum allowable operating temperature derated</td>
</tr>
<tr>
<td></td>
<td>1°C/300 m (1°F/547 ft) above 950 m (3117 ft)</td>
</tr>
<tr>
<td>Extended Operating Temperature</td>
<td>5°C to 40°C (41°F to 104°F) with no direct sunlight</td>
</tr>
<tr>
<td></td>
<td>Maximum allowable operating temperature derated</td>
</tr>
<tr>
<td></td>
<td>1°C/175 m (1°F/319 ft) above 950 m (3117 ft)</td>
</tr>
<tr>
<td></td>
<td>5°C to 45°C (41°F to 113°F) with no direct sunlight</td>
</tr>
<tr>
<td></td>
<td>Maximum allowable operating temperature derated</td>
</tr>
<tr>
<td></td>
<td>1°C/125 m (1°F/228 ft) above 950 m (3117 ft)</td>
</tr>
<tr>
<td></td>
<td>System performance may be impacted when operating in the extended</td>
</tr>
<tr>
<td></td>
<td>operating temperature range.</td>
</tr>
<tr>
<td></td>
<td>Operation above 40°C is limited to less than 1% of annual operating</td>
</tr>
<tr>
<td></td>
<td>hours.</td>
</tr>
<tr>
<td></td>
<td>Hardware configuration limits apply to extended</td>
</tr>
<tr>
<td></td>
<td>operating temperature range.</td>
</tr>
<tr>
<td>Non-Operating Temperature</td>
<td>-40°C to 65°C (-49°F to 149°F)</td>
</tr>
<tr>
<td></td>
<td>Maximum rate of change (operating and non-operating)</td>
</tr>
<tr>
<td></td>
<td>20°C/hr (36°F/hr)</td>
</tr>
<tr>
<td>Operating Relative Humidity</td>
<td>8% to 90% and 24°C (75°F) maximum dew-point temperature,</td>
</tr>
<tr>
<td></td>
<td>non-condensing environment</td>
</tr>
<tr>
<td>Non-Operating Relative Humidity</td>
<td>5% to 95% and 33°C (91°F) maximum dew-point temperature,</td>
</tr>
<tr>
<td></td>
<td>non-condensing environment</td>
</tr>
<tr>
<td>Operating Altitude</td>
<td>0 m to 3050 m (0 to 10,000 ft)</td>
</tr>
<tr>
<td>Non-Operating Altitude</td>
<td>0 m to 12,000 m (0 to 39,370 ft.)</td>
</tr>
<tr>
<td>Sound Power level, Measure</td>
<td>5.8</td>
</tr>
<tr>
<td>A-weighted per ISO7779 LWAd (Bels)</td>
<td>Operation at 73°F (23°C)</td>
</tr>
<tr>
<td>Sound Pressure level, Measure</td>
<td>43</td>
</tr>
<tr>
<td>A-weighted per ISO7779 LpAm (dBA)</td>
<td>Operation at 73°F (23°C)</td>
</tr>
</tbody>
</table>
Compliance Requirements

The regulatory compliance requirements for C-Series servers are listed in Table 57.

Table 57  UCS C-Series Regulatory Compliance Requirements

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