

Cisco UCS C210 M2 General-Purpose Rack-Mount Server

Overview

The Cisco® UCS C210 M2 server is a general purpose, two-socket, two rack-unit (2RU) rack-mount server that builds on the success of the UCS C210 M1 server. The UCS C210 M2 server (shown in Figure 1) extends the capabilities of the Cisco Unified Computing System™, using Intel's latest Xeon 5600 Series multicore processors with twelve (12) DIMM slots, five (5) PCIe slots, embedded dual-port gigabit Ethernet controller, and up to sixteen (16) 2.5-inch SAS/SATA hot swappable hard disk drives (HDD) or solid-state drives (SSD).

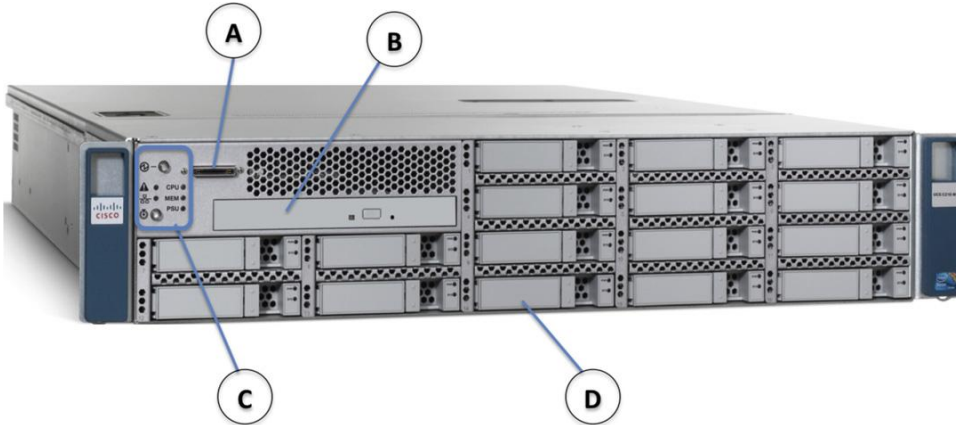
Figure 1. Cisco UCS C210 M2 General-Purpose Rack-Mount Server



Contents: Overview	Detailed Views	Base Unit Features	Configuring	Memory	HDD
Option Cards	RAID	Software	Services	Memory Notes	
PCIe Slot Notes	SAS Extender/Expander Notes		RAID Controller Notes		
Physical Specs	Power Specs	Environmental Specs			

Detailed Views

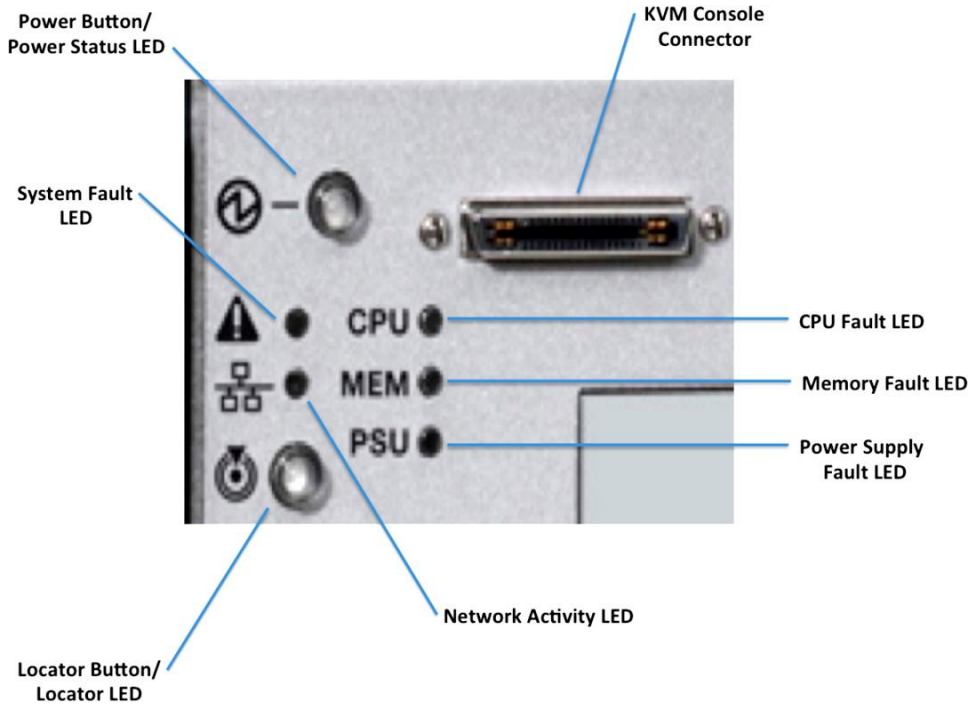
Figure 2. Front View of the Cisco UCS C210 M2 Server



Front Panel Features			
A	Keyboard, video, monitor (KVM), Console Connector	C	System Status LED/Operator Panel
B	Slim-line 24x SATA DVD-RW (Optional)	D	16 x SAS/SATA 2.5 inch hard disk drive(HDD)/solid-state drive (SSD)

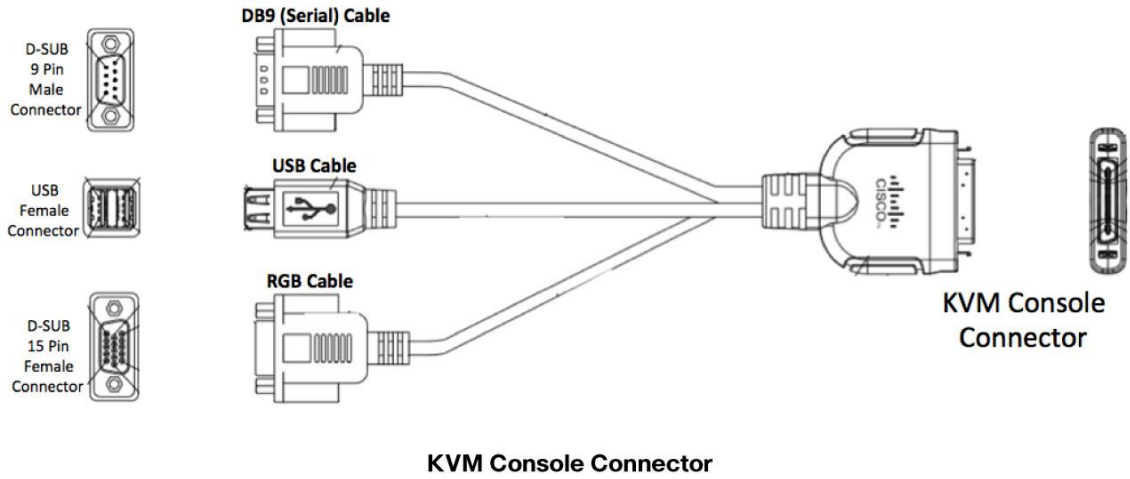
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Figure 3. Detailed View of the Operator Panel on the Cisco UCS C210 M2 Server



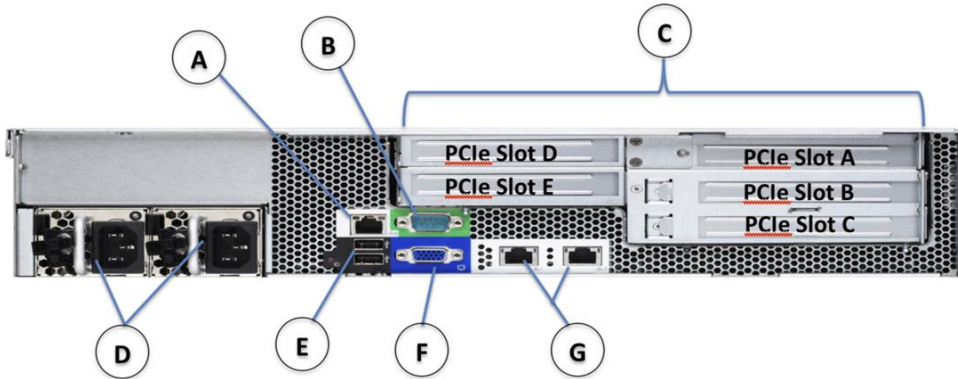
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Figure 4. Connectors and Cables for the KVM Console Connector on the Cisco UCS C210 M2 Server



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Figure 5. Rear View of the Cisco UCS C210 M2 Server



Rear Panel Features			
A	10/100 Management Port (RJ-45)	E	2 x USB 2.0 Ports
B	Serial Port (DB9)	F	VGA Port
C	5 x PCIe Slots	G	2 x 1GbE (1000BASE-T)
D	2 x Power Supplies		

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Base Unit Features

Table 1. Feature Specifications for the Cisco UCS C210 M2 Server

Feature	Specification
CPU	Up to two Intel® Xeon® 5500 or 5600 Series processors
Chipset	Intel® 5520 (Tylersburg) chipset
Memory	12 DIMM slots (up to 192 GB)
NIC	Embedded dual-port Intel 82576NS PCIe-based Gigabit Ethernet controller
Expansion Slots	Five PCIe slots (see PCIe Slot Notes for details)
Storage Controller	Onboard SATA RAID 0/1 integrated on motherboard Optional: LSI® 6G MegaRAID SAS 9261-8i Controller, Hardware RAID (levels 0, 1, 5, 6, 10, 50 and 60) or LSI 1064E Controller-based mezzanine card (levels 0, 1 and 1E), LSI® 6G MegaRAID SAS 9280-4i4e Controller
Internal Storage Devices	Up to 16 2.5-in. SAS/SATA hot-swappable hard disk drives (HDD) or solid-state drives (SSD)
Interfaces	Serial, USB, VGA, PCIe, RJ45, KVM console connector
Power Subsystem	Up to two 650W power supplies (N+1 or no redundancy)
Fans	Three 80mm redundant fans
Integrated Management Processor	Cisco Integrated Management Controller (CIMC) (with integrated video, KVM redirection, SIO, fan speed control, PECL, voltage monitoring)

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Configuring the Cisco UCS C210 M2 Server

UCS C210 M2 base server (must be selected)

R210-2121605W

STEP: 1 Select the CPU type.

Select one or two CPUs from the following list:

Intel Xeon 5600 Series

- 3.06 GHz Xeon X5675 95W CPU/12MB cache/6 cores/1333MHz A01-X0117
- 2.93 GHz Xeon X5670 95W CPU/12MB cache/6 cores/1333MHz A01-X0102
- 2.66 GHz Xeon X5650 95W CPU/12MB cache/6 cores/1333MHz A01-X0105

- 2.53 GHz Xeon E5649 80W CPU/12MB cache/6 cores/1333MHz A01-X0120
- 2.66 GHz Xeon E5640 80W CPU/12MB cache/4 cores/1066MHz A01-X0109
- 2.40 GHz Xeon E5620 80W CPU/12MB cache/4 cores/1066MHz A01-X0111
- 2.13 GHz Xeon E5606 80W CPU/8MB cache/4 cores/1066MHz A01-X0123

- 2.26 GHz Xeon L5640 60W CPU/4MB cache/6 cores/800MHz A01-X0106
- 2.13 GHz Xeon L5630 40W CPU/12MB cache/4 cores/1066MHz A01-X0107
- 1.86 GHz Xeon L5609 40W CPU/12MB cache/4 cores/1066MHz A01-X0108

Intel Xeon 5500 Series

- 2.93 GHz Xeon X5570 95W CPU/8MB cache/4 cores/1333MHz N20-X00001
- 2.66 GHz Xeon X5550 95W CPU/8MB cache/4 cores/1333MHz N20-X00006
- 2.53 GHz Xeon E5540 80W CPU/8MB cache/4 cores/1066MHz N20-X00002

- 2.26 GHz Xeon E5520 80W CPU/8MB cache/4 cores/1066MHz N20-X00003
- 2.13 GHz Xeon E5506 80W CPU/4MB cache/4 cores/800MHz A01-X0113
- 2.00 GHz Xeon E5504 80W CPU/4MB cache/4 cores/800MHz N20-X00009

- 2.26 GHz Xeon L5520 60W CPU/8MB cache/4 cores/1066MHz N20-X00004

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STEP: 2 Select the memory type.

Please refer to the [Memory Notes](#) section for allowable memory configurations and rules.

Select a minimum of one and a maximum of 12 DIMM kits:

• 4 GB DDR3-1333 MHz RDIMM/PC3-10600/dual rank 1Gb	N01-M304GB1
• 8 GB DDR3-1333 MHz RDIMM/PC3-10600/dual rank 2Gb	N01-M308GB2
• 4 GB DDR3-1333 MHz RDIMM/PC3-10600/dual rank/Low-Dual voltage	N01-M304GB1-L
• 4 GB DDR3-1333 MHz RDIMM/PC3-10600/single rank/Low-Dual voltage	A02-M304GB2-L
• 8 GB DDR3-1333 MHz RDIMM/PC3-10600/dual rank/Low-Dual Voltage	N01-M308GB2-L
• 16 GB DDR3-1066 MHz RDIMM/PC3-8500/quad rank/Low-Dual Voltage	A02-M316GB2-L
Factory Memory Mirroring Option	N01-MMIRROR

Note: Memory mirroring is only available when banks 1 and 2 are populated with identical DIMMs.

STEP: 3 Order the DVD-RW drive. (optional)

The DVD drive is not required. You can order a maximum of one drive.

- | | |
|--------------------------------|-------------|
| • DVD-RW Drive for C210 Server | R210-ODVDRW |
|--------------------------------|-------------|

STEP: 4 Order a SAS Expander as needed.

The SAS Extender comes standard with the UCS C210 M2 server chassis if you do not select an SAS Expander. The SAS Extender supports up to eight hard disk drives. You must order an SAS Expander if the system will have more than eight hard disk drives or plan to upgrade to over eight hard disk drives in the future. The SAS Expander option is not field upgradeable.

- | | |
|-----------------------|---------------|
| • SAS Expander Option | R210-SASXPAND |
|-----------------------|---------------|

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STEP: 5 Select the RAID controller option. (optional)

The default option is SATA RAID 0/1 controller (integrated on motherboard). Only four SATA drives are supported with the default option. SAS drives are not supported with the integrated RAID controller. If SAS drives are ordered, more than four drives or greater RAID functionality is required, one of the following options must be chosen.

If you order SAS drives and/or SATA advanced RAID options are required, one of the following options must be chosen.

- LSI 1064E Controller-Based Mezzanine Card R2X0-ML002
 - Used on the mezzanine slot inside the UCS C200 Server
 - Supports up to 4 SAS or SATA hard disk drives
 - No battery back-up available
 - Factory-configured RAID options
 - RAID 0 (Striping) R2XX-RAID0
Requires a minimum of one hard drive
 - RAID 1 (Mirroring) R2XX-RAID1
Requires exactly two hard drives with the same size, speed and capacity

- LSI 6G MegaRAID 9261-8i PCIe Card R2XX-PL003
 - Takes up one of five available PCIe slots
 - Supports up to sixteen SAS and/or SATA drives
 - Includes 512 MB of Write Cache
 - Battery Back-Up Option Available
 - Factory-configured RAID options:
 - RAID 0 (Striping) R2XX-RAID0
Requires a minimum of one hard drive
 - RAID 1 (Mirroring) R2XX-RAID1
Requires exactly two hard drives with the same size, speed and capacity
 - RAID 5 R2XX-RAID5
Requires a minimum of three HDDs, all with identical speed and capacity
 - RAID 6 R2XX-RAID6
Requires a minimum of four HDDs, all with identical speed and capacity
 - RAID 10 R2XX-RAID10
Requires a minimum of four HDDs, all with identical speed and capacity

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- LSI 6G MegaRAID 9280-4i4e PCIe Card UCSC-RAID-C-4i4e
 - Takes up one of two available PCIe slots
 - Supports up to four internal SAS or SATA drives (no mixing)
 - Supports external JBOD expansion
 - Battery Back-Up Option Available
 - Factory-configured RAID options:
 - RAID 0 (Striping) R2XX-RAID0
Requires a minimum of one hard drive
 - RAID 1 (Mirroring) R2XX-RAID1
Requires exactly two hard drives with the same size, speed and capacity
 - RAID 5 R2XX-RAID5
Requires a minimum of three HDDs, all with identical speed and capacity
 - RAID 6 R2XX-RAID6
Requires a minimum of four HDDs, all with identical speed and capacity
 - RAID 10 R2XX-RAID10
Requires a minimum of four HDDs, all with identical speed and capacity
- Battery Back-up Option (R2XX-LBBU can be used for all RAID cards) R2XX-LBBU2

To help ensure that the operating system is compatible with the RAID card you've selected, please check the Hardware Compatibility List at: http://www.cisco.com/en/US/products/ps10477/prod_technical_reference_list.html.

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STEP: 6 Select the 2.5-inch drive type. (optional)

The 2.5-inch drive is not required. You can select a maximum of 16 drives from this list:

- 500GB 6Gb SATA 7.2K RPM SFF HDD/hot plug/C-Series drive sled A03-D500GC3
- 1 TB 6Gb SATA 7.2K RPM SFF HDD/hot plug/C-Series drive sled A03-D1TBSATA

- 73GB 6Gb SAS 15K RPM SFF HDD/hot plug/drive sled mounted A03-D073GC2
- 146GB 6Gb SAS 10K RPM SFF HDD/hot plug/drive sled mounted A03-D146GA2

- 146GB 6Gb SAS 15K RPM SFF HDD/hot plug/drive sled mounted A03-D146GC2
- 300GB 6Gb SAS 10K RPM SFF HDD/hot plug/drive sled mounted A03-D300GA2
- 600GB 6Gb SAS 10K RPM SFF HDD/hot plug/drive sled mounted A03-D600GA2

Note: SAS and SATA drives can be mixed when using the MegaRAID controller.

STEP: 7 Select option cards. (optional)

You can select a maximum of two PCIe cards.

- Cisco UCS P81E Virtual Interface Card/Dual port 10Gbps (Max. 1 Supported) N2XX-ACPCI01

- Broadcom 5709 Dual port GbE card with TOE and iSCSI N2XX-ABPCI01
- Broadcom NetXtreme II 57711 Dual Port 10 GbE PCIe Adapter Card with TCP Offload Engine (TOE) and iSCSI HBA N2XX-ABPCI02
- Broadcom NetXtreme II 5709 Quad Port Ethernet PCIe Adapter Card with TCP Offload Engine (TOE) and iSCSI HBA N2XX-ABPCI03

- Emulex Converged Network Adapter/Dual port 10Gb N2XX-AEPCI01
- Emulex LightPulse LPe11002 4-Gbps Fibre Channel PCIe Dual Channel HBA N2XX-AEPCI03
- Emulex LPe 12002, 8Gb, dual port Fibre Channel HBA N2XX-AEPCI05

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- Intel 10GbE Dual port Niantec Controller with Copper SFP+ Cable N2XX-AIPCI01
- Intel Quad port GbE HBA N2XX-AIPCI02
- QLogic QLE8152 Dual Port 10-Gbps PCIe Converged Network Adapter (CNA) N2XX-AQPCI01
- QLogic SANblade QLE2462 Dual Port 4-Gbps FC-to-PCI Express HBA N2XX-AQPCI03
- QLogic QLE2562 8Gb Dual Port Fibre Channel HBA N2XX-AQPCI05

Notes: Five PCIe card slots available: All are standard height; two are full-length (slots A and D) and the other three are half-length slots.

Each slot is x 8 lane with x 16 connector (PCIe G2).

The Cisco UCS C210 M2 can host five PCIe option cards (including the MegaRAID card).

All option cards listed above are low-profile/half-length Cards. All cards above will fit in any slot.

To help ensure that your operating system is compatible with the card you've selected, please check the Hardware Compatibility List at: http://www.cisco.com/en/US/products/ps10477/prod_technical_reference_list.html.

STEP: 8 Order a redundant power supply. (optional)

One power supply ships with the base server chassis.

You can order one redundant power supply.

- 650W Power supply unit with added 5A Standby for C200/C210 R2X0-PSU2-650W-SB

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STEP: 9 Select the power cords.

You can select a maximum of two power cables from this list:

- | | |
|--|------------------|
| • Dummy PID for a NO power cord selection | R2XX-DMYMPWRCORD |
| • N5000 AC Power Cable, 6A, 250V, North America, 2.5m | CAB-N5K6A-NA |
| • N5000 AC Power Cable, 13A, 250V, North America, 2.5m | CAB-AC-250V/13A |
| • N5000 AC Power Cable, 6A, 250V, Power Strip Type | CAB-C13-C14-JMPR |
| • N5000 AC Power Cable, 10A, 250V, Argentina, 2.5m | SFS-250V-10A-AR |
| • N5000 AC Power Cable, 10A, 250V, Australia, 2.5m | CAB-9K10A-AU |
| • N5000 AC Power Cable, 10A, 250V, China, 2.5m | SFS-250V-10A-CN |
| • N5000 AC Power Cable, 10A, 250V, Europe, 2.5m | CAB-9K10A-EU |
| • N5000 AC Power Cable, 10A, 250V, India, 2.5m | SFS-250V-10A-ID |
| • N5000 AC Power Cable, 10A, 250V, Israel, 2.5m | SFS-250V-10A-IS |
| • N5000 AC Power Cable, 10A, 250V, Italy, 2.5m | CAB-9K10A-IT |
| • N5000 AC Power Cable, 10A, 250V, Switzerland, 2.5m | CAB-9K10A-SW |
| • N5000 AC Power Cable, 10A, 250V, United Kingdom, 2.5m | CAB-9K10A-UK |
| • N5000 Power Cord, 125VAC 15A NEMA 5-15 Plug, North America, 2.5m | CAB-9K12A-NA |
| • Power Cord, 3 PIN, Japan | CAB-JPN-3PIN |
| • Power cord jumper, C13-C14 connectors, 2m | CAB-C13-C14-2M |

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STEP: 10 Order a rail kit. (optional)

A rail kit is not included with the Cisco UCS C200 M2 base server chassis, however, you can order the following kit:

- Rail Kit for C200 and C210 Rack Servers R2XX-G31032RAIL

Note: This third-generation rail kit works in racks with square holes or 10-32 round holes and is shorter than the previous generation rail kit. The new R2XX-G31032RAIL measures 23.5 inches to 36 inches in length. By comparison, the previous version, R250-SLDRAIL, measured 27 inches to 37 inches in length.

STEP: 11 Order the cable management arm. (optional)

The cable management arm hooks onto the rail kit and is used for cable management.

- Cable Management Arm for R2XX-G31032RAIL rail kit for C200 and C210 R2XX-CMAG3-1032

STEP: 12 Order a trusted platform module. (optional)

The trusted platform module (TPM) is a microcontroller chip that can securely store artifacts used to authenticate the server platform. These artifacts can include passwords, certificates, and encryption keys. Windows® BitLocker™ Drive Encryption (BitLocker) is a data protection feature available in Windows Server® 2008.

BitLocker uses the enhanced security capabilities of a TPM. The TPM works with BitLocker to help protect user data and to ensure that a server running Windows Server 2008 has not been tampered with while the system was offline. Due to import licensing restrictions, the TPM cannot be shipped to Russia, Belarus and Kazakhstan.

- Trusted Platform Module R200-TPM1

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STEP: 13 Select the operating system. (optional)

A variety of operating system options are available.

SUSE Linux Enterprise Server

- SLES/1yr subscription/svcs required/0 media SLES-1A
- SLES/3yr subscription/svcs required/0 media SLES-3A

Red Hat Enterprise Linux

- RHEL/2 Socket/1 Guest/1Yr Svcs Required RHEL-2S-1G-1A
- RHEL/2 Socket/1 Guest/3Yr Svcs Required RHEL-2S-1G-3A
- RHEL/2 Socket/4 Guest/1Yr Svcs Required RHEL-2S-4G-1A
- RHEL/2 Socket/4 Guest/3Yr Svcs Required RHEL-2S-4G-3A
- RHEL/2 Socket/U Guest/1Yr Svcs Required RHEL-2S-UG-1A
- RHEL/2 Socket/U Guest/3Yr Svcs Required RHEL-2S-UG-3A
- RHEL/4 Socket/1 Guest/1Yr Svcs Required RHEL-4S-1G-1A
- RHEL/4 Socket/1 Guest/3Yr Svcs Required RHEL-4S-1G-3A
- RHEL/4 Socket/4 Guest/1Yr Svcs Required RHEL-4S-4G-1A
- RHEL/4 Socket/4 Guest/3Yr Svcs Required RHEL-4S-4G-3A
- RHEL/4 Socket/U Guest/1Yr Svcs Required RHEL-4S-UG-1A
- RHEL/4 Socket/U Guest/3Yr Svcs Required RHEL-4S-UG-3A

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RHEL Add-Ons

- High-Availability/2 Socket/1Yr Svcs Required RHEL-HA-2S-1A
- High-Availability/2 Socket/3Yr Svcs Required RHEL-HA-2S-3A
- High-Availability/4 Socket/1Yr Svcs Required RHEL-HA-4S-1A
- High-Availability/4 Socket/3Yr Svcs Required RHEL-HA-4S-3A
- Resilient Storage With Ha/2 Socket/1 Yr Svcs Required RHEL-RS-2S-1A
- Resilient Storage With Ha/2 Socket/3 Yr Svcs Required RHEL-RS-2S-3A
- Resilient Storage With Ha/4 Socket/1 Yr Svcs Required RHEL-RS-4S-1A
- Resilient Storage With Ha/4 Socket/3 Yr Svcs Required RHEL-RS-4S-3A

Windows Server

- Windows Svr 2008 ST media (1-4CPU, 5CAL) MSWS-08-STHV
- Windows Svr 2008 EN media (1-8CPU, 25CAL) MSWS-08-ENHV
- Windows Svr 2008 ST media R2 ST (1-4CPU, 5CAL) MSWS-08R2-STHV
- Windows Svr 2008 EN media R2 EN (1-8CPU, 25CAL) MSWS-08R2-ENHV

- Windows Svr 2008 R2-2 CPU-Data Center MSWS-08R2-DCHV2S
- Windows Svr 2008 R2-4 CPU-Data Center MSWS-08R2-DCHV4S

VMware Server

- VMware vSphere Advanced (1 CPU), 1yr 24x7 support VMW-VS-ADV-1A
- VMware vSphere Advanced (1 CPU), 3yr 24x7 support VMW-VS-ADV-3A
- VMware vSphere Enterprise (1 CPU), 1yr 24x7 support VMW-VS-ENT-1A
- VMware vSphere Enterprise (1 CPU), 3yr 24x7 support VMW-VS-ENT-3A
- VMware vSphere Enterprise Plus (1 CPU), 1yr 24x7 support VMW-VS-ENTP-1A
- VMware vSphere Enterprise Plus (1 CPU), 3yr 24x7 support VMW-VS-ENTP-3A

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Select an OS Media Kit. (optional)

- | | |
|---|-------------------|
| • RHEL 6 Media Only (Multilingual) | RHEL-6 |
| • SLES 11 media only (multilingual) | SLES-11 |
| • Windows Svr 2008 ST media | MSWS-08-STHV-RM |
| • Windows Svr 2008 EN media | MSWS-08-ENHV-RM |
| • Windows Svr 2008 ST media R2 ST (1-4CPU, 5CAL) | MSWS-08R2-STHV-RM |
| • Windows Svr 2008 EN media R2 EN (1-8CPU, 25CAL) | MSWS-08R2-ENHV-RM |
| • Windows Svr 2008 ST media R2 DC (1-8CPU, 25CAL) | MSWS-08R2-DCHV-RM |

STEP: 14 Select from a variety of value-added software. (optional)

- | | |
|--|------------------|
| • BMC BladeLogic CM for Virtualized Cisco Servers | BMC-001 |
| • BMC Blade Logic Compliance, VM Bundle, 2 Socket Server | BMC-001-COMP |
| • BMC BladeLogic CM for Physical Cisco Servers | BMC-002 |
| • BMC Blade Logic Compliance, Single OS | BMC-002-COMP |
| • BMC Bladelogic CM, Virtualized 4-Socket Server | BMC-003 |
| • BMC Blade Logic Compliance, VM Bundle, 4 Socket Server | BMC-003-COMP |
| • BMC BPPM Per Server | BMC-012 |
| • VMware vCenter Server Standard, 1yr 24x7 support | VMW-VCS-1A |
| • VMware vCenter Server Standard, 3yr 24x7 support | VMW-VCS-3A |
| • Nexus 1000V License PAK for 1 Virtual Ethernet module | N1K-VLEM-UCS-1 |
| • Nexus 1000V VSM Virtual Appliance Software | N1K-CSK9-UCS-404 |

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STEP: 15 **Select the appropriate Services. (optional)**

A variety of Service options are available, as listed here.

Unified Computing Mission Critical Service

This service delivers personalized technical account management, expedited technical support, and expert field support engineering for the Cisco Unified Computing System (UCS).

The Mission Critical Support Service provides a designated technical account manager (TAM) who acts as a strategic resource to help assure the unified computing environment runs at peak efficiency. Should a problem arise that threatens business continuity, the TAM provides crisis management leadership, and customer IT staff gets expedited access to Cisco's award-winning Technical Assistance Center (TAC).

Please note: This service has qualification criteria. There should be \$1.2M of UCS equipment, 200 blades and a single location to qualify for this service level.

- UC Mission Critical 24x7x4 On-site CON-UCM7-R210W
- UC Mission Critical 24x7x2 On-site CON-UCM8-R210W

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Unified Computing Support Service

For support of the entire Unified Computing System, Cisco offers the Cisco Unified Computing Support Service. This service provides expert software and hardware support to help sustain performance and high availability of the unified computing environment. Provided is the access to the award-winning Cisco Technical Assistance Center (TAC) around the clock, from anywhere in the world.

For UCS blade servers, there is Smart Call Home, which provides proactive, embedded diagnostics and real-time alerts. For systems that include the Unified Computing System Manager, the support service includes downloads of UCSM upgrades. The Unified Computing Support 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.

- UC Support 8X5XNBD Not on-site CON-UCS1-R210W
- UC Support 8X5X4 Not on-site CON-UCS2-R210W
- UC Support 24x7x4 Not on-site CON-UCS3-R210W
- UC Support 24x7x2 Not on-site CON-UCS4-R210W

- UC Support 8X5XNBD On-site CON-UCS5-R210W
- UC Support 8X5X4 On-site CON-UCS6-R210W
- UC Support 24x7x4 On-site CON-UCS7-R210W
- UC Support 24x7x2 On-site CON-UCS8-R210W

Unified Computing Warranty Plus Service

For faster parts replacement than is provided with the standard Cisco Unified Computing System warranty, Cisco offers the Cisco Unified Computing Warranty Plus Service. Customers can choose from several levels of advanced parts replacement coverage, including onsite parts replacement in as little as two hours. Warranty Plus provides remote access any time to Cisco support professionals who can determine if a return materials authorization (RMA) is required.

- UC Warranty Plus 24x7x4 CON-UCW3-R210W
- UC Warranty Plus 8X5XNBD On- Site CON-UCW5-R210W

For more information, see [Unified Computing Warranty and Support Services](#).

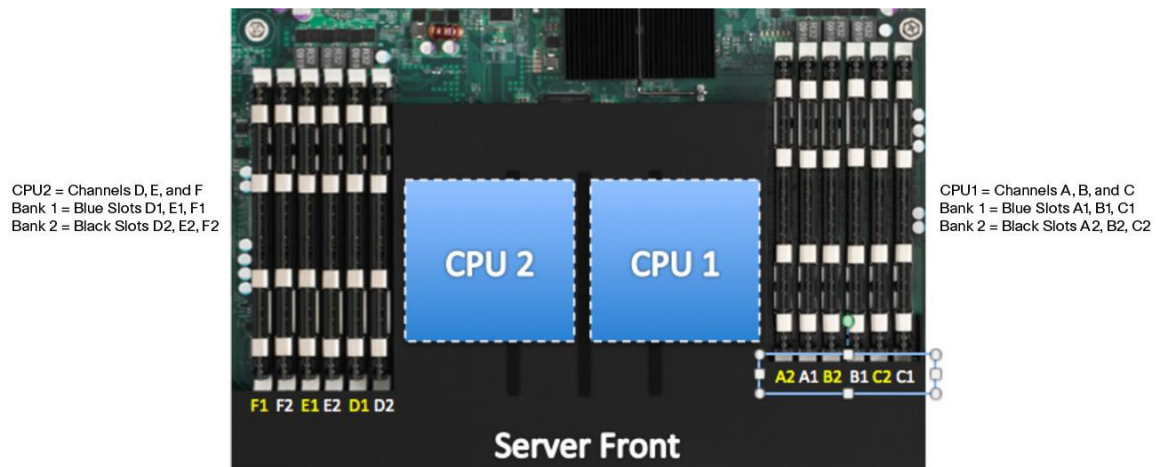
For a complete listing of available Services for Cisco Unified Computing System: [Unified Computing Services](#)

Contents: Overview	Detailed Views	Base Unit Features	Configuring	Memory	HDD
Option Cards	RAID	Software	Services	Memory Notes	
PCIe Slot Notes	SAS Extender/Expander Notes		RAID Controller Notes		
Physical Specs	Power Specs	Environmental Specs			

Product Notes

Memory Notes, allowable configurations, and rules/guidelines.

Figure 6. UCS C210 M2 server CPU and memory layout

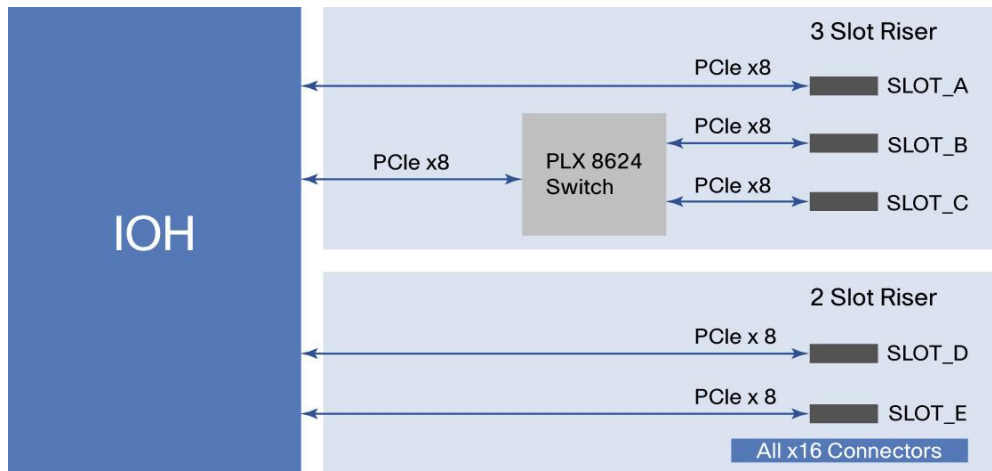


- When adding DIMMs to a channel, fill Bank 1 first (the blue slots). You can run 1 or 2 DIMMs per channel.
- DIMMs within a server should all be the same type, speed, and size. Mixing different DIMMs causes the server to set the memory speed to that of the slowest installed DIMMs.
- CPU 1 supports memory mirroring only when Channels A and B are populated with identical DIMMs. In this case, do not populate Channel C or memory mirroring will be automatically disabled.
- CPU 2 supports memory mirroring only when Channels D and E populated with identical DIMMs. In this case, do not populate Channel F or memory mirroring will be automatically disabled.
- If memory mirroring is used, the DRAM size is reduced by 50%. Memory sparing is not supported.
- For the list of currently supported DIMMs, see http://www.cisco.com/en/US/prod/ps10265/ps10493/c-series_part_numbers.html.

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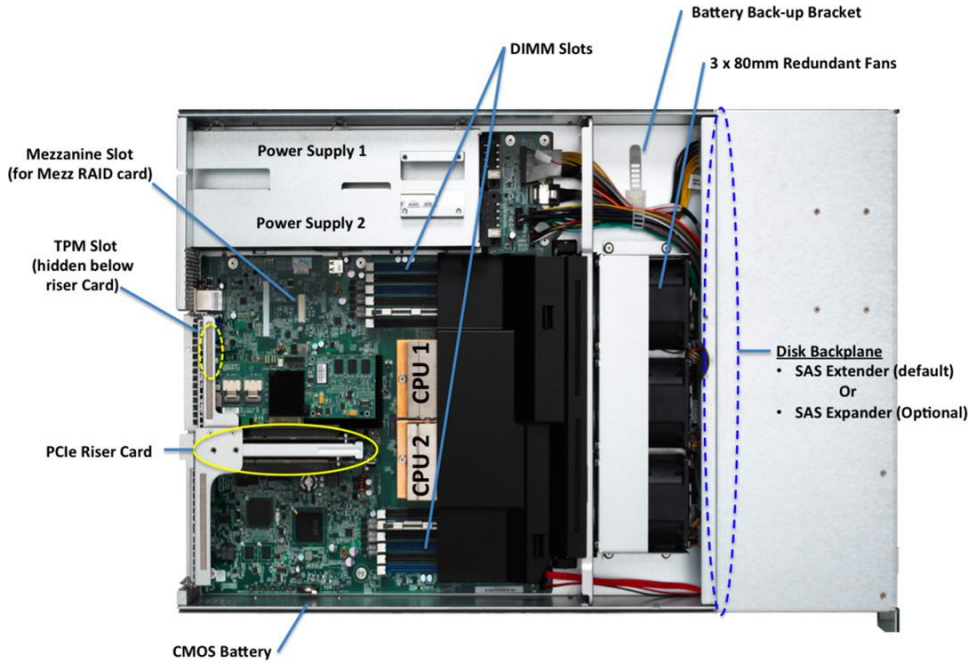
PCIe Slot Notes

Figure 7. PCIe Slots on the Cisco UCS C210 M2 Server



Contents: Overview	Detailed Views	Base Unit Features	Configuring	Memory	HDD
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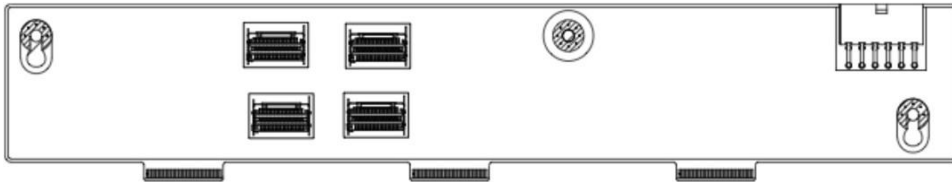
Figure 8. Internal View of the Cisco UCS C210 M2 Server with PCIe and Other Slots



Contents: Overview	Detailed Views	Base Unit Features	Configuring	Memory	HDD
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SAS Extender/Expander Notes

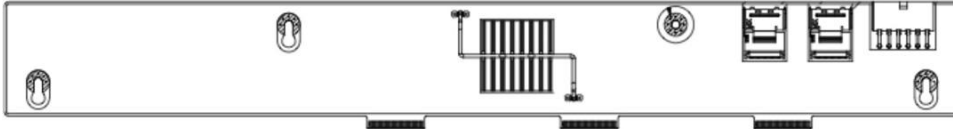
Figure 9. SAS Extender, the Default Option on the Cisco UCS C210 M2 Server



- The SAS extender is installed standard in this server.
- The extender has four mini-SAS SFF-8087 connectors, each providing connection for up to four drives. Each connector on the extender requires one internal long SAS cable to connect to the storage controller card.
- The extender supports connection for up to eight drives when using a single LSI MegaRAID card. Connector 1 provides connection for drives 1-4, connector 2 provides connection for drives 5-9. This configuration requires two cables.

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Figure 10. SAS Expander for the Cisco UCS C210 M2 Server



- The SAS expander is a factory-configurable option in this server. The expander is not a field-replaceable or field-upgradeable unit.
- The expander has two mini-SAS SFF-8087 connectors. One connector provides connection for up to 16 drives, and the second connector provides redundancy. Each connector on the expander requires one internal short SAS cable to connect to the storage controller card (these cables are orderable as a two-cable kit).
- The expander supports connection for up to 16 drives when using a single LSI MegaRAID card. This configuration requires two cables.
- The expander allows you to create a RAID group with up to 16 drives. This configuration requires two cables.

Contents: Overview	Detailed Views	Base Unit Features	Configuring	Memory	HDD
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RAID Controller Notes

The LSI MegaRAID Controller can be installed in the low-profile PCIe slot. The SAS riser card supports up to 16 SAS/SATA drives.

The LSI MegaRAID card (LSI® 6G MegaRAID SAS 9261-8i) supports the following features:

- Form factor: PCIe low-profile (H x L) = 2.536 x 6.60 inches
- LSI SAS2108 (Liberator) ROC (RAID-On-a-Chip) Controller, at 800MHz
- x8 PCI Express 2.0 host interface
- Two internal Mini SAS SFF-8087 x 4 connectors (horizontal mount)
- Eight channels of SAS/SATA at up to 6 Gbps
 - SAS rates of 6.0 Gbps and 3.0 Gbps
 - SATA rates of 3.0 Gbps and 1.5 Gbps
- Hardware RAID (levels 0, 1, 5, 6, 10, 50 and 60)
- Supports drive hot-plugging
- 5-Chip DDR2 on-board memory running at 800 MHz (64-bit with error-correcting code ECC) for enhanced hardware RAID performance
- 512 MB on-board DDR2-800 cache arranged as 64Mx16 devices (1 Gb capacity)
- iBBU support: direct connected iBBU07 RAID Battery Back-up module for DDR2 DIMM refresh support during a power failure
- 8-MB CFI Compliant Flash ROM and a 32 kB NVSRAM (nonvolatile SRAM) for disk and drive setup information storage
- System Enclosure Specification (SES) connectivity through I²C cable or SGPIO

Refer to LSI® MegaRAID SAS 9261-8i Product Specification or visit the link below for a detailed description of this board:

http://www.lsi.com/storage_home/products_home/internal RAID/megaraid_sas/value_line/megaraid_sas_9261-8i/index.html.

The LSI SAS1064E Controller-based mezzanine card can be installed in the mezzanine slot on a Cisco UCS C210 M2 server. The mezzanine card supports up to 4 SAS/SATA drives.

Contents:	Overview	Detailed Views	Base Unit Features	Configuring	Memory	HDD
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The LSI mezzanine card (LSI® 1064E Integrated Controller) supports the following features:

- Supports eight PCI Express lanes at a transfer rate up to 2.5 Gbps per lane, full duplex
- Automatically negotiates PCI Express link widths
 - Supports x8, x4, x1 link widths
- Power management support
- 4-port SAS/SATA Controller
 - Supports 2, 3, or 4-phy wide SAS port configurations
- Supports 1.5- and 3-Gbps SAS and SATA data transfer rates per port, full duplex
- Port independent auto-negotiation
- Compatible with SATA target devices
- Supports SSP, SMP, STP and SATA protocols
- Supports SGPIO (SFF-8485)

Refer to LSI® 1064E Controller-Based Mezzanine Card Product Specification or visit the following site for a detailed description of this board:

http://www.lsi.com/storage_home/products_home/standard_product_ics/sas_ics/lisas1064e/index.html.

The LSI MegaRAID card (LSI® 6G MegaRAID SAS 9280-4i4e) supports the following features:

- Form factor: PCIe MD2 low-profile (H x L) = 2.536 x 6.60 inches
- LSI SAS2108 6Gb/s ROC (RAID-On-a-Chip) Controller, at 800MHz
- x8 PCI Express 2.0 host interface
- One internal Mini SAS SFF-8087 x4 connector
- One external Mini SAS SFF8088 x4 connector
- Four internal + external 6Gb/s SATA + SAS ports
- Hardware RAID (levels 0, 1, 5, 6,10, 50, and 60)
- Supports external JBOD expansion
- Supports drive hot-plugging
- 512-MB on-board DDR2-800 cache memory
- An intelligent battery backup module option is available

Refer to LSI® MegaRAID SAS 9280-4i4e Product Specification or the following site for a detailed description of this board: <http://www.lsi.com/channel/products/storagecomponents/Pages/MegaRAIDSAS9280-4i4e.aspx>

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Technical Specifications

Physical Dimension Specifications

Table 2. Physical Dimension Specifications for the Cisco UCS C210 M2 Server

Specification	Value
Height	3.45 in. (8.75 cm)
Width	17.39 in. (44.16 cm)
Depth	28.35 in. (72.00 cm)
Weight	50.70 lbs (23.00 kg) [*]

^{*} Note: The system weight listed here is an estimate for a fully configured system and will vary depending on number of peripheral devices.

Power Specifications

Table 3. Power Specifications for the Cisco UCS C210 M2 Server

Parameter	Minimum	Nominal	Maximum	Start Up VAC	Power Off VAC
Voltage (115)	90 VRMS	100 VRMS	132 VRMS	85-90	75-85
Voltage (220)	180 VRMS	240 VRMS	264 VRMS		
Frequency	47 Hz	50/60 Hz	63 Hz		

Note: AC input connector is an IEC 320 C-14 15A/250VAC power inlet.

For configuration specific power specifications, use the Cisco UCS Power Calculator:

http://www.cisco.com/assets/cdc_content_elements/flash/dataCenter/cisco_ucs_power_calculator/.

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Environmental Specifications

Table 4. Environmental Specifications for the Cisco UCS C210 M2 Server

Environment	Specification
Temperature operating	10°C to 35°C (50°F to 95°F)
Temperature nonoperating	-40°C to 65°C (-40°F to 149°F)
Altitude operating	0 to 3000m (0 to 10,000 ft.); maximum ambient temperature decreases by 1° per 300m
Humidity non-operating	5 to 93%, noncondensing
Safety	UL60 950-1 No. 21CFR1040, CAN/CSA-C22.2 No. 60950-1, IRAM IEC60950-1, CB IEC60950-1, EN 60950-1, IEC 60950-1, GOST IEC60950-1, SABS/CB IEC6095-1, CCC*/CB GB4943-1995, CNS14336, CB IEC60950-1, AS/NZS 60950-1, GB4943
Emissions	47CFR Part 15 (CFR 47) Class A, AS/NZS CISPR22 Class A, CISPR2 2 Class A, EN55022 Class A, ICES003 Class A, VCCI Class A, EN61000-3-2, EN61000-3-3, KN22 Class A, CNS13438 Class A
Immunity	Verified to comply with EN55024, CISPR 24, KN 61000-4 Series, KN 24
Electrostatic discharge	Tested to ESD levels up to 15 kilovolts (kV) air discharge and up to 8 kV contact discharge without physical damage
Acoustic	<ul style="list-style-type: none">• Sound power: 65.5 dBA (6.8 Bels) at ambient temperature 23° C measured using the Dome Method• GOST MsanPiN 001-96

For More Information

Please visit <http://www.cisco.com/go/ucs>.



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