Cisco UCS C250 M2 Extended Memory Rack-Mount Server

Overview

The Cisco® UCS C250 M2 Extended Memory Rack-Mount Server is a high-performance, memory-intensive, two-socket, 2 rack unit (2RU) rack-mount server designed to increase performance and capacity for demanding virtualization and large dataset workloads. It also can reduce the cost of smaller memory footprints.

Building on the success of the Cisco UCS C250 M1 server, the Cisco UCS C250 M2 server, shown in Figure 1, extends the capabilities of the Cisco Unified Computing System™, using Intel's latest Xeon 5600 Series multicore processors to deliver even better performance and efficiency.

Figure 1. Cisco UCS C250 M2 Extended Memory Rack-Mount Server

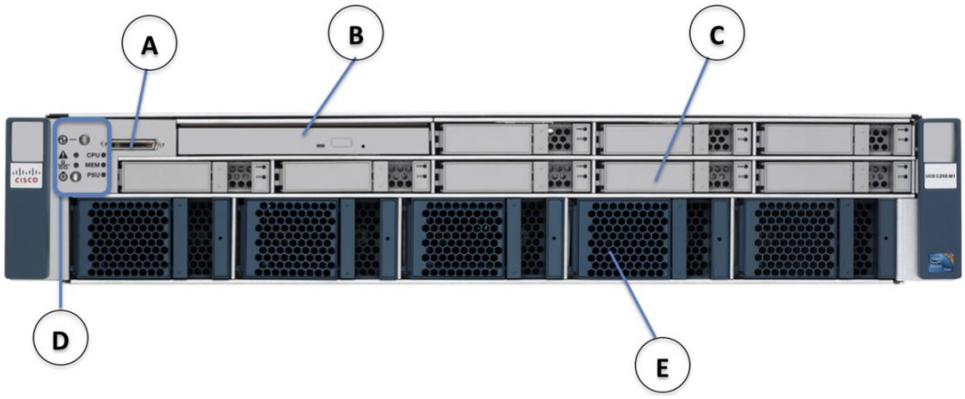
Contents:

Overview	Detailed Views	Base Unit Features	Configuring	Memory	HDD
Option Cards	RAID	Software	Services	Memory Notes	
PCIe Slot Notes	RAID Controller Notes	Physical Specs	Power Specs	Environmental Specs	

© 2011 Cisco and/or its affiliates. All rights reserved. This document is Cisco Public Information.

Detailed Views

Figure 2. Front View of the Cisco UCS C250 M2 Server

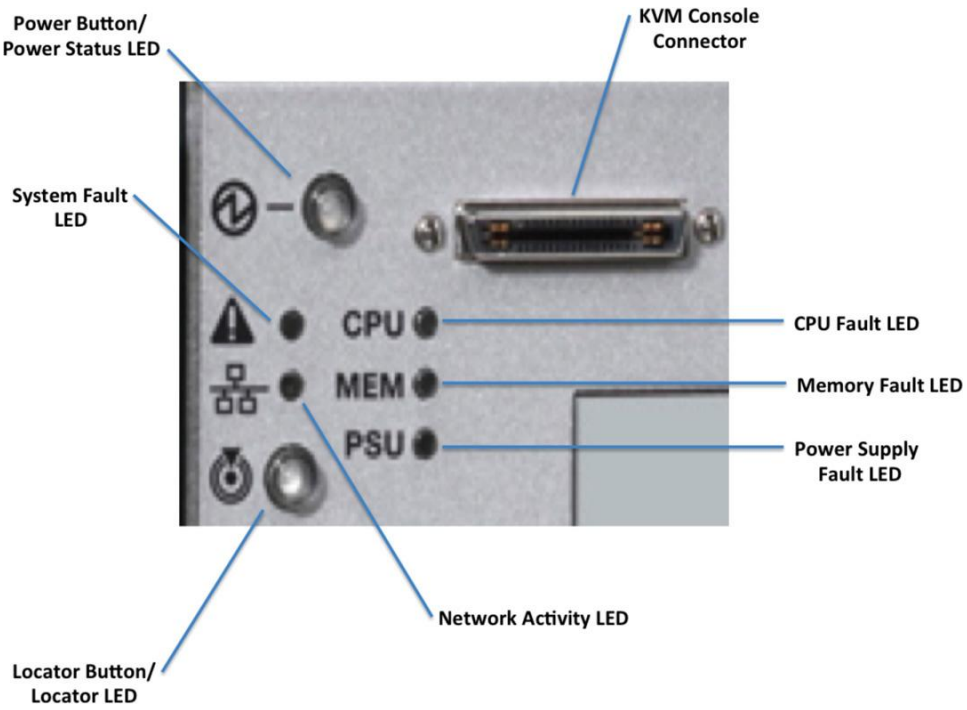


Front Panel Features			
A	Keyboard, Video, Monitor (KVM) Console Connector	**D**	System Status LED/Operator Panel
B	Slim-line 24x SATA DVD-RW (Standard)	**E**	5 x Hot Plug Redundant Fans
C	8 x SAS/SATA 2.5” HDD/SSD		

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

© 2011 Cisco and/or its affiliates. All rights reserved. This document is Cisco Public Information.

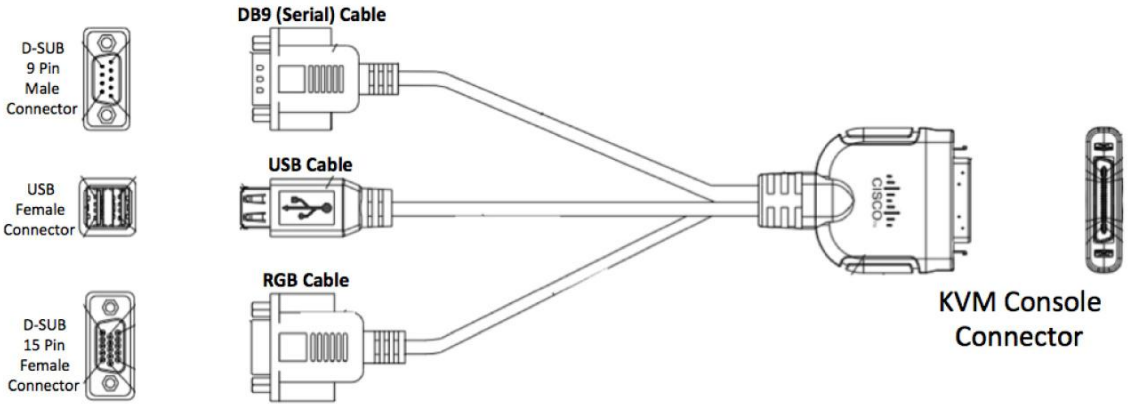
Figure 3. Detailed View of the Operator Panel on the Cisco UCS C250 M2 Server



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

© 2011 Cisco and/or its affiliates. All rights reserved. This document is Cisco Public Information.

Figure 4. KVM Console Connector on the Cisco UCS C250 M2 Server

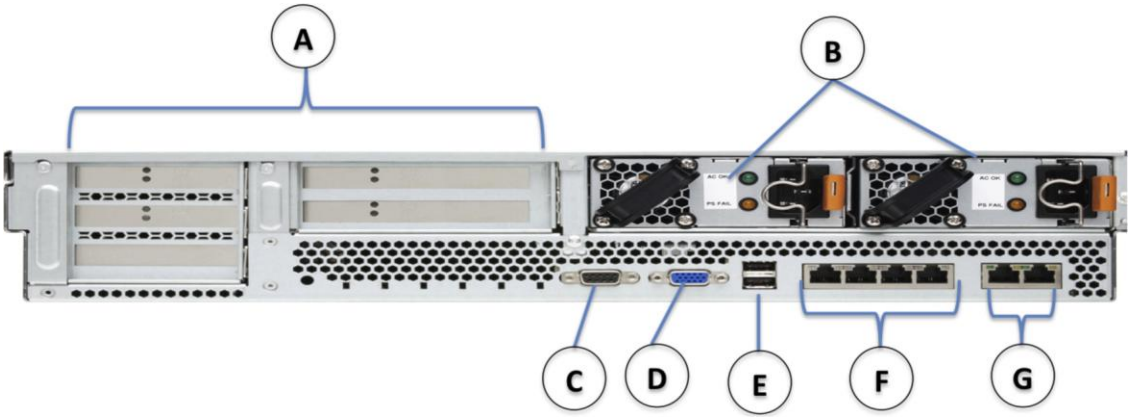


KVM Console Connector

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

© 2011 Cisco and/or its affiliates. All rights reserved. This document is Cisco Public Information.

Figure 5. Rear View of the Cisco UCS C250 M2 Server



Rear Panel Features			
A	5 x PCIe Slots	**E**	2 x USB 2.0 Ports
B	2 x Power Supplies	**F**	4 x 1GbE (1000BASE-T)
C	Serial Port (DB9)	**G**	Dual 10/100 Management Ports (RJ-45)
D	VGA Port		

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

© 2011 Cisco and/or its affiliates. All rights reserved. This document is Cisco Public Information.

Base Unit Features

Table 1. Feature Specifications for the Cisco UCS C250 M2 Server

Feature	Specification
CPU	Up to two Intel® Xeon® 5500 or 5600 Series processors
Chipset	Intel® 5520 (Tylersburg) chipset
Memory	48 DIMM slots (up to 384 GB)
NIC	Embedded Broadcom NetXtreme II 5709 Quad Port Gigabit Ethernet controller with TCP Offload Engine (TOE)
Expansion Slots	Five PCIe slots (*see PCIe Slot Notes for details*)
Storage Controller	Optional: LSI® 6G MegaRAID SAS 9261-8i Controller, Hardware RAID (*levels 0, 1, 5, 6, 10, 50 and 60*) or LSI SAS3081E-R PCIe Card (*levels 0, 1, 1E*)
Internal Storage Devices	Up to eight 2.5-inch 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 850W power supplies (N+1 or no redundancy)
Fans	Five 40mm redundant fans
Integrated Management Processor	Cisco Integrated Management Controller (CIMC) (With integrated video, KVM redirection, SIO, fan speed control, PECI, voltage monitoring)

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

© 2011 Cisco and/or its affiliates. All rights reserved. This document is Cisco Public Information.

Configuring the Cisco UCS C250 M2 Server

UCS C250 M2 base server (required)	R250-2480805W

STEP 1: Select the CPU type.

Select one or two CPU's from this list:

Intel Xeon 5600 Series

• 3.46 GHz Xeon X5690 130W CPU/12MB cache/6 cores/1333MHz	A01-X0115
• 3.33 GHz Xeon X5680 130W CPU/12MB cache/6 cores/1333MHz	A01-X0100
• 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

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

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

© 2011 Cisco and/or its affiliates. All rights reserved. This document is Cisco Public Information.

STEP 2: Select the memory type.

Select a minimum of eight and a maximum of 24 DIMM kits from the following list*:

- 8GB DDR3-1333MHz RDIMM/PC3-10600/2x4GB, 2R Kit — A02-M308GB1-2
- 16GB DDR3-1333MHz RDIMM/PC3-10600/2x8GB 2R Kit — A02-M316GB1-2
- 8GB DDR3-1333MHz RDIMM/PC3-10600/2x4GB 2RKit/Low-Dual Volt — A02-M308GB1-2-L
- 16GB DDR3-1333MHz RDIMM/PC3-10600/2x8GB 2R Kit/Low-Dual Volt — A02-M316GB1-2-L
- Factory Memory Mirroring Option — N01-MMIRROR

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

* 24 DIMM kits supported with two CPUs only.

STEP 3: Select the RAID controller option.

You must choose a RAID controller option if any HDD or SSD will be run on this server (maximum one). There is no onboard RAID on the Cisco UCS C250 M2 server. To ensure that your operating system is compatible with the RAID card you've selected, check the Hardware Compatibility List at: http://www.cisco.com/en/US/products/ps10477/prod_technical_reference_list.html

- LSI SAS 3081E-R PCIe Card — R250-PL003
  - Takes up one PCIe slot on a C250 server
  - Supports up to 8 SAS or SATA hard disk drives
  - No battery back-up option.
- LSI 6G MegaRAID 9261-8i PCIe Card — R2XX-PL003
  - Takes up one of five available PCIe slots
  - Supports up to eight SAS or SATA drives
  - Includes 512MB of Write Cache
  - Battery Back-Up Option Available
- Battery Back-up Option — R2XX-LBBU2

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

© 2011 Cisco and/or its affiliates. All rights reserved. This document is Cisco Public Information.

STEP 4: Select the 2.5-inch drive type. (optional)

You can select a maximum of eight drives from this list:

- 500GB SATA 7.2K RPM SFF HDD/hot plug/C-Series drive sled — R2XX-D500GCSATA

- 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 5: Select a factory-configured RAID setup. (optional)

Most customers prefer to configure their own RAID setup.

If you would prefer Cisco to configure the RAID, choose one of the following options:

- RAID 0 (Striping) — R2XX-RAID0
  Requires a minimum of one hard drive.
- RAID 1 (Mirroring) — R2XX-RAID1
  Requires exactly two hard drives with 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

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

© 2011 Cisco and/or its affiliates. All rights reserved. This document is Cisco Public Information.

STEP 6: Select option cards. (optional)

You can select a maximum of two PCIe cards.

• Cisco UCS P81E Virtual Interface Card/Dual port 10Gbps (Max. 2 Supported)	N2XX-ACPCI01
• Broadcom NetXtreme II 5709 Quad Port Ethernet PCIe Adapter Card with TCP Offload Engine (TOE) and iSCSI HBA	N2XX-ABPCI03
• 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
• Emulex LPe 12002, 8Gb, dual port Fibre Channel HBA	N2XX-AEPCI05
• Emulex LightPulse LPe11002 4-Gbps Fibre Channel PCIe Dual Channel HBA	N2XX-AEPCI03
• Emulex Converged Network Adapter/Dual port 10Gb	N2XX-AEPCI01
• Intel 10GbE Dual port Niantec Controller with Copper SFP+ Cable	N2XX-AIPCI01
• Intel Quad port GbE HBA	N2XX-AIPCI02
• Mellanox Connect X-2 EN with dual GbE SFP+ POA's	N2XX-AMPCI01
• 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

Note: Five slots available: Two are standard height, half-length x16-lane slots with x16 connectors.

Three are low-profile, half-length slots that are x8 lane with x16 connectors (PCIe G2).

The Cisco UCS C250 M2 server can host five PCIe option cards (including the RAID 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 customer's operating system is compatible with the card selected, please check the Hardware Compatibility List at: http://www.cisco.com/en/US/products/ps10477/prod_technical_reference_list.html.

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

© 2011 Cisco and/or its affiliates. All rights reserved. This document is Cisco Public Information.

STEP 7: Order a redundant power supply. (optional)

One power supply ships with the base server chassis. You can order one redundant power supply.

- 850W Power Supply Unit for C250 Rack Server R250-PSU2-850W

STEP 8: Select the power cords.

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

- 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

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

© 2011 Cisco and/or its affiliates. All rights reserved. This document is Cisco Public Information.

STEP 9: Order the cable management arm. (optional)

A rail kit ships with every Cisco UCS C250 M2 base server chassis. The cable management arm hooks onto the rail kit and is used for cable management.

- Cable Management Arm for R200-1032RAIL rail kit for C250 rack server R250-CBLARM

STEP 10: 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

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

© 2011 Cisco and/or its affiliates. All rights reserved. This document is Cisco Public Information.

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

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

© 2011 Cisco and/or its affiliates. All rights reserved. This document is Cisco Public Information.

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 11: 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

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

© 2011 Cisco and/or its affiliates. All rights reserved. This document is Cisco Public Information.

STEP 12: 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-R250W
- UC Mission Critical 24x7x2 On-site CON-UCM8-R250W

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-R250W
- UC Support 8X5X4 Not on-site CON-UCS2-R250W
- UC Support 24x7x4 Not on-site CON-UCS3-R250W
- UC Support 24x7x2 Not on-site CON-UCS4-R250W

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

© 2011 Cisco and/or its affiliates. All rights reserved. This document is Cisco Public Information.

- UC Support 8X5XNBD On-site CON-UCS5-R250W
- UC Support 8X5X4 On-site CON-UCS6-R250W
- UC Support 24x7x4 On-site CON-UCS7-R250W
- UC Support 24x7x2 On-site CON-UCS8-R250W

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-R250W
- UC Warranty Plus 8X5XNBD On- Site CON-UCW5-R250W

For more information, see
Unified Computing Warranty and Support Services.

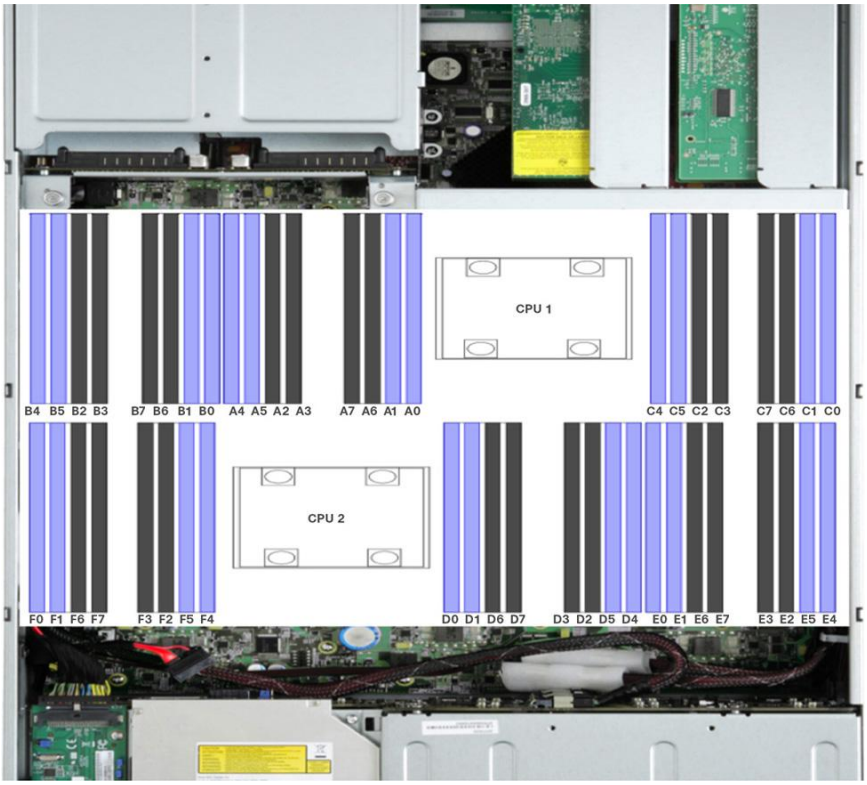
For a complete listing of available Services for Cisco Unified Computing System:
Unified Computing Services

© 2011 Cisco and/or its affiliates. All rights reserved. This document is Cisco Public Information.

Product Notes

Memory Notes

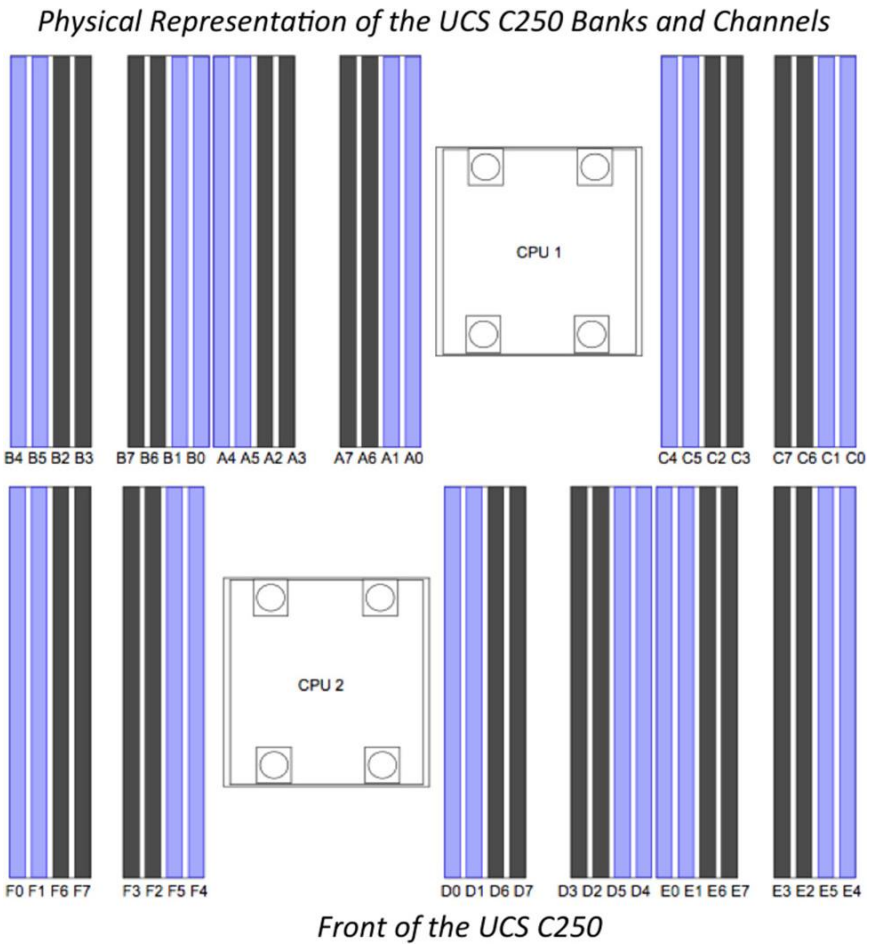
Figure 6. Top view of the UCS C250 M2 server



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

© 2011 Cisco and/or its affiliates. All rights reserved. This document is Cisco Public Information.

Figure 7. UCS 250 M2 CPU and associated memory.



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

© 2011 Cisco and/or its affiliates. All rights reserved. This document is Cisco Public Information.

General Memory Notes

- Each channel is identified by a letter - A, B, and C for CPU 1, and D, E, and F for CPU 2. Each channel has eight DIMM slots numbered 0 through 7.
- Each bank is identified by numbers, 0 through 7. For example, DIMM slots A1, B1, and C1 belong to bank 1, while A2, B2, C2 belong to bank 2.
- Figure 6 shows how DIMM slot banks and channels are physically arranged on the motherboard.

Cisco Extended Memory Technology

The Cisco UCS C250 M2 server uses Cisco extended memory technology. To improve performance, write operations are made simultaneously to both DIMMs of a matched pair. When considering the memory configuration of your server, consider the following items:

- Supported DIMM configurations and the total memory for each.
- The order in which DIMM pairs must be populated for each supported configuration. Find the column for the number of DIMMs in your configuration, and then read down the column to see which DIMM slots on each CPU must be populated for that configuration. Figure 7 shows DIMM slot positions.
- The two DIMMs within a DIMM pair must have the identical manufacturer, type, speed, and size. Cisco provides spare DIMMs for this product in matched pair kits.
- It is recommended you do not mix different sized DIMMs or DIMMs with different clock rates in the same server. This causes the memory system to operate at the speed of the slowest DIMMs that are installed.
- (Generation M2 only) Low-voltage (1.35V) DIMM pairs and standard-voltage DIMM pairs (1.5V) can be mixed in the same server. Note that this causes the system BIOS to default to standard-voltage operation (Performance mode).

Low-Voltage DIMM Considerations (Generation M2 Only)

The generation M2 of this server can be ordered with low-voltage (1.35V) DIMM pairs or standard-voltage (1.5V) DIMM pairs. Note the following:

- The two low-voltage DIMMs within a DIMM pair must have the identical manufacturer, type, speed, and size. Cisco provides spare DIMMs for this product in matched pair kits.
- Low-voltage DIMM pairs and standard-voltage DIMM pairs can be mixed in the same server. Note that this causes the system BIOS to default to standard-voltage operation (Performance mode). That is, the server cannot operate in Power Saving Mode unless all DIMM pairs in the server are low-voltage DIMMs.
- In generation M2 only, there is a setting in the BIOS Setup utility that you can use to change the DDR memory mode when the server has all low-voltage DIMMs installed.

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

© 2011 Cisco and/or its affiliates. All rights reserved. This document is Cisco Public Information.

Table 2. DIMM Configurations Supported on the Cisco UCS M250 M2 Server

Supported UCS C250 DIMM Configurations			
Total Memory for CPU1+CPU2	**CPU1 DIMMs**	**CPU2 DIMMs**	**Total Number of DIMMS**
60GB	Four 8GB pair-kits(eight 4GB DIMMs)	Four 8GB pair-kits(eight 4GB DIMMs)	16
80GB	Five 8GB pair-kits(ten 4GB DIMMs)	Five 8GB pair-kits(ten 4GB DIMMs)	20
96GB	Six 8GB pair-kits(twelve 4GB DIMMs)	Six 8GB pair-kits(twelve 4GB DIMMs)	24
128GB	Eight 8GB pair-kits(sixteen 4GB DIMMs)	Eight 8GB pair-kits(sixteen 4GB DIMMs)	32
128GB	Four 16GB pair-kits(eight 8GB DIMMs)	Four 16GB pair-kits(eight 8GB DIMMs)	16
144GB	Nine 8GB pair-kits(eighteen 4GB DIMMs)	Nine 8GB pair-kits(eighteen 4GB DIMMs)	36
160GB	Ten 8GB pair-kits(twenty 4GB DIMMs)	Ten 8GB pair-kits(twenty 4GB DIMMs)	40
192GB	Twelve 8GB pair-kits(twenty-four 4GB DIMMs)	Twelve 8GB pair-kits(twenty-four 4GB DIMMs)	48
192GB	Six 16GB pair-kits(twelve 8GB DIMMs)	Six 16GB pair-kits(twelve 8GB DIMMs)	24
256GB	Eight 8GB pair-kits(sixteen 4GB DIMMs) plus Four 16GB pair-kits (eight 8GB DIMMs)	Eight 8GB pair-kits (sixteen 4GB DIMMs) plus Four 16GB pair-kits (eight 8GB DIMMs)	48
320GB	Four 8GB pair-kits(eight 4GB DIMMs) plus Eight 16GB pair-kits(sixteen 8GB DIMMs)	Four 8GB pair-kits (eight 4GB DIMMs) plus Eight 16GB pair-kits(sixteen 8GB DIMMs)	48
384GB	Twelve 16GB pair-kits(twenty-four 8GB DIMMs)	Twelve 16GB pair-kits(twenty-four 8GB DIMMs)	48

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

© 2011 Cisco and/or its affiliates. All rights reserved. This document is Cisco Public Information.

Table 3. DIMM Slot Populations for Supported Configurations

DIMM Slot Populations for Supported Configurations																				
4 DIMM		**8 DIMM**		**12 DIMM**		**16 DIMM**		**20 DIMM**		**24 DIMM**		**32 DIMM**		**36 DIMM**		**40 DIMM**		**48 DIMM**	
CPU 1	CPU 2	CPU 1	CPU 2	CPU 1	CPU 2	CPU 1	CPU 2	CPU 1	CPU 2	CPU 1	CPU 2	CPU 1	CPU 2	CPU 1	CPU 2	CPU 1	CPU 2	CPU 1	CPU 2
		B1		B1	F0	B1	F0	B4	F0	B4	F0	B4	F0	B4	F0	B4	F0	B4	F0
								B5		B5	F1	B5	F1	B5	F1	B5	F1	B5	F1
														B2		B2		B2	F6
														B3		B3		B3	F7
															F3	B7		B7	F3
															F2	B6		B6	F2
								B1		B1	F5	B1	F5	B1	F5	B1	F5	B1	F5
		B0		B0	F1	B0	F1	B0	F1	B0	F4	B0	F4	B0	F4	B0	F4	B0	F4
A1	D0	A1	D0	A1	D0	A4	D0	A4	D0	A4	D0	A4	D0	A4	D0	A4	D0	A4	D0
						A5	D1	A5	D1	A5	D1	A5	D1	A5	D1	A5	D1	A5	D1
												A2	D6	A2		A2	D6	A2	D6
												A3	D7	A3		A3	D7	A3	D7
												A7	D3		D3	A7	D3	A7	D3
												A6	D2		D2	A6	D2	A6	D2
						A1	D5	A1	D5	A1	D5	A1	D5	A1	D5	A1	D5	A1	D5
A0	D1	A0	D1	A0	D1	A0	D4	A0	D4	A0	D4	A0	D4	A0	D4	A0	D4	A0	D4
			E0	C1	E0	C1	E0		E0	C4	E0	C4	E0	C4	E0	C4	E0	C4	E0
									E1	C5	E1	C5	E1	C5	E1	C5	E1	C5	E1
														C2			E6	C2	E6

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

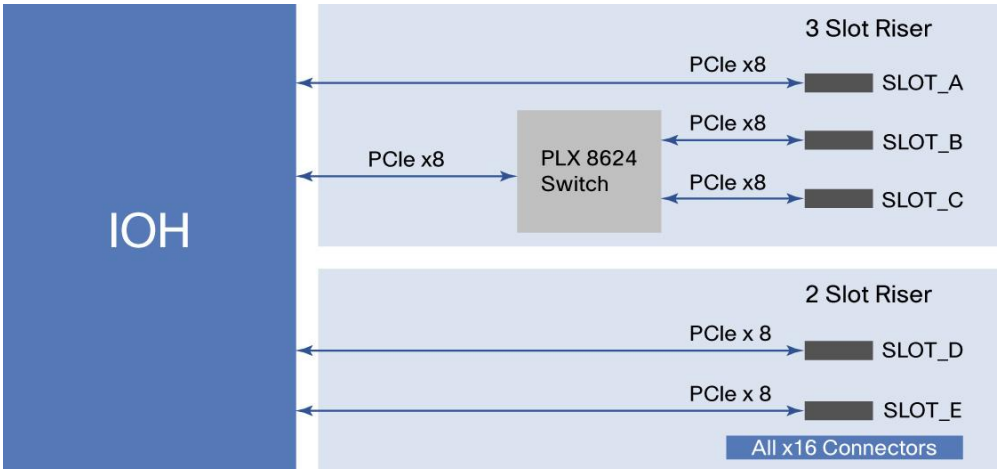
© 2011 Cisco and/or its affiliates. All rights reserved. This document is Cisco Public Information.

DIMM Slot Populations for Supported Configurations																			
4 DIMM		8 DIMM		12 DIMM		16 DIMM		20 DIMM		24 DIMM		32 DIMM		36 DIMM		40 DIMM		48 DIMM	
														C3			E7	C3	E7
															E3		E3	C7	E3
															E2		E2	C6	E2
								C1	E5	C1	E5	C1	E5	C1	E5	C1	E5	C1	E5
			E1	C0	E1	C0	E1	C0	E4	C0	E4	C0	E4	C0	E4	C0	E4	C0	E4

PCIe Slot Notes

As Figures 8 and 9 show, the Cisco UCS C250 M2 server has five PCIe slots available. Two are standard height, half-length x16-lane slots with x16 connectors. Three are low-profile, half-length slots that are x8-lane with x16 connectors (PCIe G2). The Cisco UCS C250 M2 server can host five PCIe option cards (including the MegaRAID card or LSI 3081E-R card).

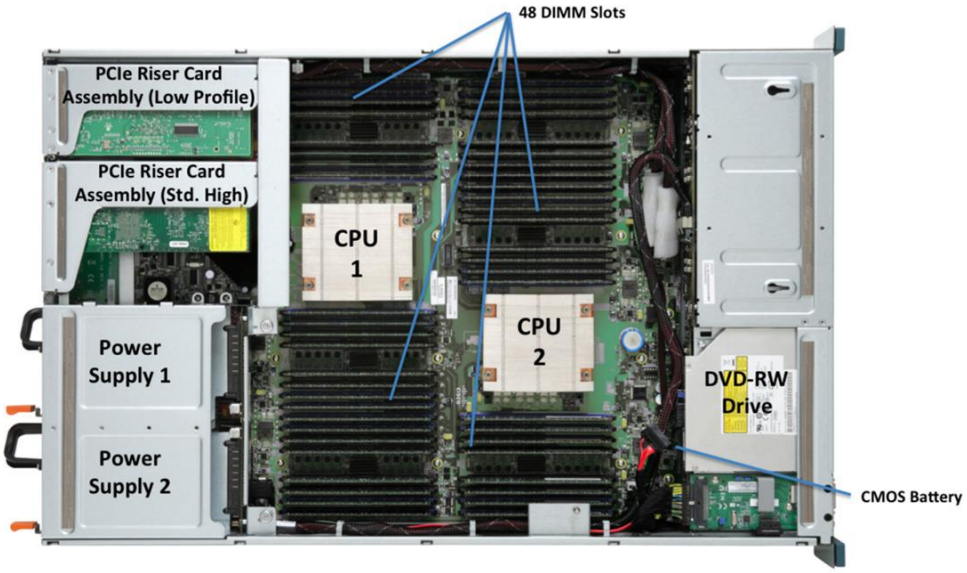
Figure 8. PCIe Slots on the Cisco UCS C250 M2 Server



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

© 2011 Cisco and/or its affiliates. All rights reserved. This document is Cisco Public Information.

Figure 9. Internal View of the Cisco UCS C250 M2 Server with PCIe and Other Slots



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

© 2011 Cisco and/or its affiliates. All rights reserved. This document is Cisco Public Information.

RAID Controller Notes

The LSI MegaRAID card can be installed in any of the PCIe slots on a UCS C250 server. The LSI MegaRAID card supports up to eight SAS/SATA drives on the Cisco UCS C250 M2 server.

The 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
- 8MB CFI Compliant Flash ROM and a 32kB 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 following site 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 LSISAS3081E-R card can be installed in any of the PCIe slots on a Cisco UCS C250 M2 server. This LSI card supports up to eight SAS/SATA drives on a Cisco UCS C250 M2 server.

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

© 2011 Cisco and/or its affiliates. All rights reserved. This document is Cisco Public Information.

This LSI SAS card (LSI® SAS3081E-R card) supports the following features:

- Form factor: PCIe low profile (H x L) = 2.5 x 6.60 inches
- LSI SAS1068E Controller
- 3 Gbps per port
- 8-lane 2.5 Gbps PCI Express
- Two internal Mini SAS SFF-8087 x4 Connectors
- Hardware RAID (levels 0, 1, 1E)
- Allows up to 244 total endpoint devices
- Low-profile MD2 form factor PCI card
- Fusion-MPT™ architecture providing over 140,000 I/Os per second

Refer to LSI® SAS3081E-R card Product Specification or visit the following site for a detailed description of this board: http://www.lsi.com/storage_home/products_home/host_bus_adapters/sas_hbas/internal/sas3081e-r/index.html#Product%20Brief.

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

© 2011 Cisco and/or its affiliates. All rights reserved. This document is Cisco Public Information.

Technical Specifications

Physical Dimensions Specifications

Table 4. Physical Dimension Specifications for the Cisco UCS C250 M2 Server

Specification	Value
Height	3.45 in. (8.75 cm)
Width	17.25 in. (43.82 cm)
Depth	29.30 in. (74.42 cm)
Weight	50.51 lbs (23.36 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 5. Power Specifications for the Cisco UCS C250 M2 Server

Parameter	Minimum	Maximum	Start Up VAC	Power Off VAC
Voltage	90 Vrms	264 Vrms	87.5VAC +/-5VAC	82VAC +/-4VAC
Frequency	47 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/.

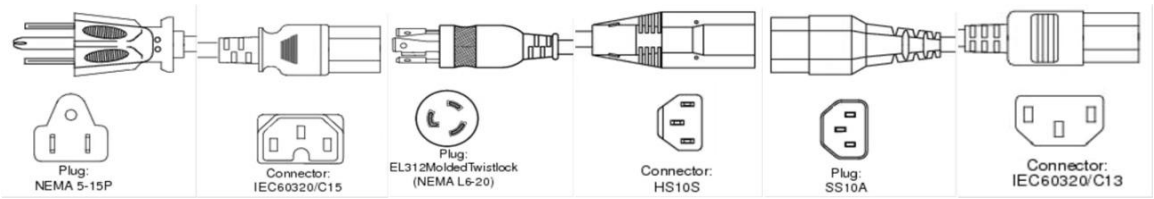
Contents: Overview | Detailed Views | Base Unit Features | Configuring | Memory | HDD | Option Cards | RAID | Software | Services | Memory Notes | PCIe Slot Notes | RAID Controller Notes | Physical Specs | Power Specs | Environmental Specs

© 2011 Cisco and/or its affiliates. All rights reserved. This document is Cisco Public Information.

Table 6. Plug and Connector Part Numbers for the Cisco UCS C250 M2 Server

Part Number	Description	Plug	Connector
CAB-9K12A-NA	125VAC 13A NEMA 5-15 PLUG	NEMA 5-15P	IEC60320/C15
CAB-AC-250V/13A	NEMA L6-20 250V/20A IEC320/C13 PLUG	NEMA L6-20	IEC60320/C13
CAB-C13-C14-JMPR	RECESSED RECEPTICAL AC	SS10A	HS10S
CAB-N5K6A-NA	200/240V 6A	NEMA 6-15P	IEC60320/C13
R2XXDMYMPWRCORD	NO POWER CORD	N/A	N/A

Figure 10. Plugs and Connectors for the Cisco UCS C250 M2 Server



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

© 2011 Cisco and/or its affiliates. All rights reserved. This document is Cisco Public Information.

Environmental Specifications

Table 7. Environmental Specifications for the Cisco UCS C250 M2 Server

Environment	Specification
Temperature operating	5°C to 35°C (41°F to 95°F)
Temperature nonoperating	-40°C to 65°C (-40°F to 149°F)
Altitude operating	0 to 3000 m (0 to 10,000 ft.); maximum ambient temperature decreases by 1°per 300m
Humidity nonoperating	5 -90%, noncondensing
Vibration nonoperating	0.51 Grms@ 2Hz-500Hz, 15 minutes per axis
Shock operating	Half-sine 2 G, 11 ms pulse, 100 pulses in each direction, on each of the three axes
Shock nonoperating	40 G max, 2.64 m/s velocity change. 104 in/s min velocity change with max configuration
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	Sound power: <83 Lwad (dB) at 70% fan speed or less, ambient temperature at 21-25°C

For More Information

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

Americas Headquarters
Cisco Systems, Inc.
San Jose, CA

Asia Pacific Headquarters
Cisco Systems (USA) Pte. Ltd.
Singapore

Europe Headquarters
Cisco Systems International BV Amsterdam,
The Netherlands

Cisco has more than 200 offices worldwide. Addresses, phone numbers, and fax numbers are listed on the Cisco Website at **www.cisco.com/go/offices.**

Cisco and the Cisco Logo are trademarks of Cisco Systems, Inc. and/or its affiliates in the U.S. and other countries. A listing of Cisco's trademarks can be found at www.cisco.com/go/trademarks. Third party trademarks mentioned are the property of their respective owners. The use of the word partner does not imply a partnership relationship between Cisco and any other company. (1005R)

Printed in USA C17-644231-00 05/11

© 2011 Cisco and/or its affiliates. All rights reserved. This document is Cisco Public Information.