



# Cisco UCS B200 M2 Blade Server

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#### PUBLICATION HISTORY

REV A	DECEMBER 1, 2011	INITIAL DRAFT
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## OVERVIEW

The Cisco UCS B200 M2 Blade Server (*Figure 1*) Server is a two-socket, half-width blade server, using Intel's Xeon 5500 and 5600 Series processors with 12 DIMM slots, one mezzanine slot to hold an adapter card, and up to two solid-state disk (SSD) drives or hard disk drives (HDDs). Up to eight half-width blade servers can be accommodated in the Cisco UCS 5108 Blade Server Chassis.

Figure 1 Cisco UCS B200 M2 Blade Server

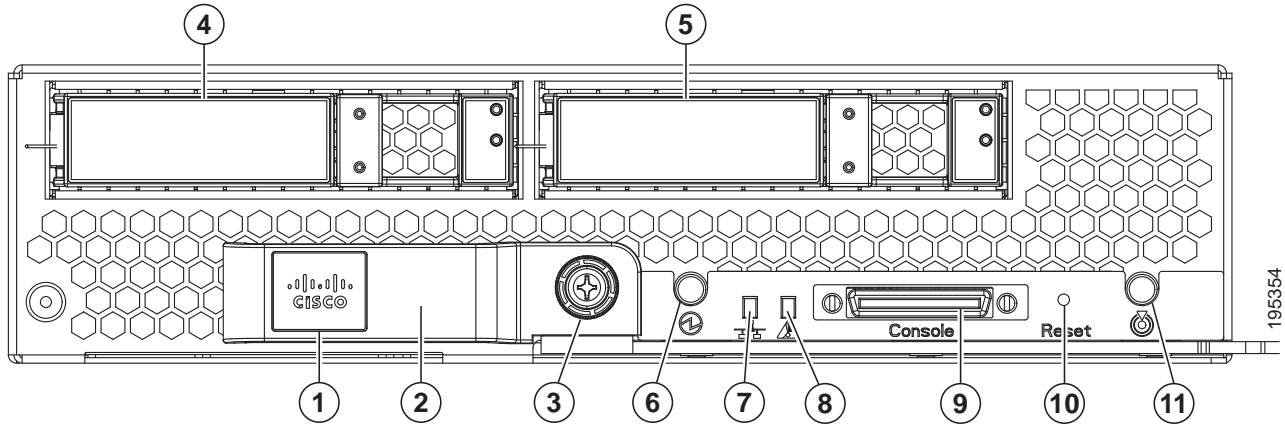


# DETAILED VIEWS

## Chassis Front View

Figure 2 is a detailed front view of the Cisco UCS B200 M2 Blade Server.

Figure 2 Chassis Front View



1	Asset tag (you can remove this tag and add your own)	7	Network link status LED
2	Blade ejector handle	8	Blade health LED
3	Ejector captive screw	9	Console connector <sup>1</sup>
4	Drive bay 1	10	Reset button access
5	Drive bay 2	11	Beaconing LED and button
6	Power button and LED		

Notes . . .

- 1. For information about the KVM device included in the chassis accessory kit that plugs into the console connector, see [ORDER OPTIONAL KVM CABLE on page 24](#).

## 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 on page 5*.

Table 1 Capabilities and Features

Capability/Feature	Description
Chassis	The B200 M2 Blade Server mounts in a Cisco UCS 5100-series chassis
CPU	Either 1 or 2 Intel® Xeon® 5500 or 5600 series processors
Chipset	Intel® 5500 chipset
Memory	12 slots for registered DIMMs (up to 192 GB)
Expansion slots	Accommodates one mezzanine adapter card
Storage controller	LSI Logic 1064e controller and integrated RAID  Factory-configured RAID support options: <ul style="list-style-type: none"> <li>■ RAID 0 and 1</li> </ul>
Internal storage devices	Up to two optional front-accessible, hot-swappable 2.5-inch small form factor (SFF) SAS or SATA solid-state disk (SSD) or hard disk (HDD) drives.
Video	The server CIMC chip includes a Matrox G200 core. The first 8 MB of memory are allocated to the video core. <ul style="list-style-type: none"> <li>■ 1280 x 1024 resolution</li> <li>■ 32-bit color depth</li> <li>■ 8 MB video memory</li> </ul>
Interfaces	<ul style="list-style-type: none"> <li>■ Front panel <ul style="list-style-type: none"> <li>• One console connector (see <i>ORDER OPTIONAL KVM CABLE on page 24</i>)</li> </ul> </li> </ul>
Power subsystem	Integrated in the Cisco UCS 5100 series chassis
Fans	Integrated in the Cisco UCS 5100 series chassis
Integrated management processor	The built-in Cisco Integrated Management Controller (CIMC) GUI or CLI interface enables you to monitor the server inventory, health, and system event logs.

## CONFIGURING the SERVER

Follow these steps to configure the Cisco UCS B200 Blade Server:

- *STEP 1 VERIFY BASE SKU, page 6*
- *STEP 2 CHOOSE CPU(S), page 7*
- *STEP 3 CHOOSE MEMORY, page 9*
- *STEP 4 CHOOSE HARD DISK DRIVES or SOLID STATE DRIVES, page 13*
- *STEP 5 CHOOSE A PCIe MEZZANINE CARD, page 14*
- *STEP 6 CHOOSE OPERATING SYSTEM, page 15*
- *STEP 7 CHOOSE OPERATING SYSTEM MEDIA KIT, page 18*
- *STEP 8 CHOOSE OPTIONAL VALUE-ADDED SOFTWARE, page 19*
- *STEP 9 CHOOSE SERVICE and SUPPORT LEVEL, page 20*

## STEP 1 VERIFY BASE SKU

Verify the product ID (PID) of the base server as shown in [Table 2](#).

Table 2 PID of the Base B200 M2 Blade Server

Product ID (PID)	Description
N20-B6625-1-UPG	UCS B200 M2 Blade Server w/o CPU, memory, HDD, mezzanine

The N20-B6625-1-UPG B200 M2 base server:

- Includes:
  - KVM cable
- Does not include:
  - CPUs
  - Memory
  - Disk drives
  - Mezzanine adapter card



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

## STEP 2 CHOOSE CPU(S)

The standard CPU features are:

- Intel Xeon 5600-series (Westmere-EP) or 5500-series (Nehalem) CPUs
- Intel 5500 chipset
- Cache size of 4, 8, or 12 MB

### Select CPUs

The available 5600-series CPUs are listed in [Table 3](#).

Table 3 Available Intel CPUs: Xeon Westmere-EP x56xx Family

Product ID (PID)	Intel Number	Clock Freq (GHz)	Power (W)	Cache Size (MB)	Cores	QPI	Highest DDR3 DIMM Clock Support (MHz) <sup>1</sup>
UCS-CPU-X5687	X5687	3.60	130	12	4	6.4 GT/s	1333
A01-X0115	X5690	3.46	130	12	6	6.4 GT/s	1333
A01-X0100	X5680	3.33	130	12	6	6.4 GT/s	1333
A01-X0117	X5675	3.06	95	12	6	6.4 GT/s	1333
A01-X0102	X5670	2.93	95	12	6	6.4 GT/s	1333
A01-X0105	X5650	2.66	95	12	6	6.4 GT/s	1333
A01-X0109	E5640	2.66	80	12	8	5.86 GT/s	1066
A01-X0120	E5649	2.53	80	12	6	5.86 GT/s	1333
UCS-CPU-E5645	E5645	2.40	80	12	6	5.86 GT/s	1333
A01-X0111	E5620	2.40	80	12	4	5.86 GT/s	1066
A01-X0106	L5640	2.26	60	4	6	5.86 GT/s	1333

#### Notes . . .

1. If higher or lower speed DIMMs are selected than what is shown in the table for a given CPU, the DIMMs will be clocked at the lowest common denominator of CPU clock and DIMM clock. For example:

Selecting lower-speed DIMMs: If you use an X5650 CPU (which can support up to 1333-MHz DIMMs) with 1066-MHz DIMMs, the DIMMs will be clocked at the lower speed of 1066 MHz.

Selecting higher-speed DIMMs: If you use 1333-MHz DIMMs with an E5620 (which can support up to 1066-MHz DIMMs), the DIMMs will be clocked at the lower speed of 1066 MHz.



The available 5500-series CPUs are listed in [Table 4](#).

**Table 4 Available Intel CPUs: Xeon Nehalem x55xx Family**

Product ID (PID)	Intel Number	Clock Freq (GHz)	Power (W)	Cache Size (MB)	Cores	QPI	Highest DDR3 DIMM Clock Support (MHz) <sup>1</sup>
N20-X00001	X5570	2.93	95	8	4	6.4 GT/s	1333
N20-X00006	X5550	2.66	95	8	4	6.4 GT/s	1333
N20-X00002	E5540	2.53	80	8	4	5.86 GT/s	1066
N20-X00003	E5520	2.26	80	8	4	5.86 GT/s	1066
N20-X00004	L5520	2.26	60	8	4	5.86 GT/s	1066

**Notes . . .**

1. If higher or lower speed DIMMs are selected than what is shown in the table for a given CPU, the DIMMs will be clocked at the lowest common denominator of CPU clock and DIMM clock. For example:

Selecting lower-speed DIMMs: if you use an X5570 CPU (which can support up to 1333-MHz DIMMs) with 1066-MHz DIMMs, the DIMMs will be clocked at the lower speed of 1066 MHz.

Selecting higher-speed DIMMs: If you use 1333-MHz DIMMs with an E5520 (which can support up to 1066-MHz DIMMs), the DIMMs will be clocked at the lower speed of 1066 MHz.

### Approved Configurations

#### (1) One-CPU Configuration

- Choose any one CPU from [Table 3](#) or [Table 4](#).

#### (2) Two-CPU Configuration

- Choose two identical CPUs from any one of the rows of [Table 3](#) or [Table 4](#).

### Caveats

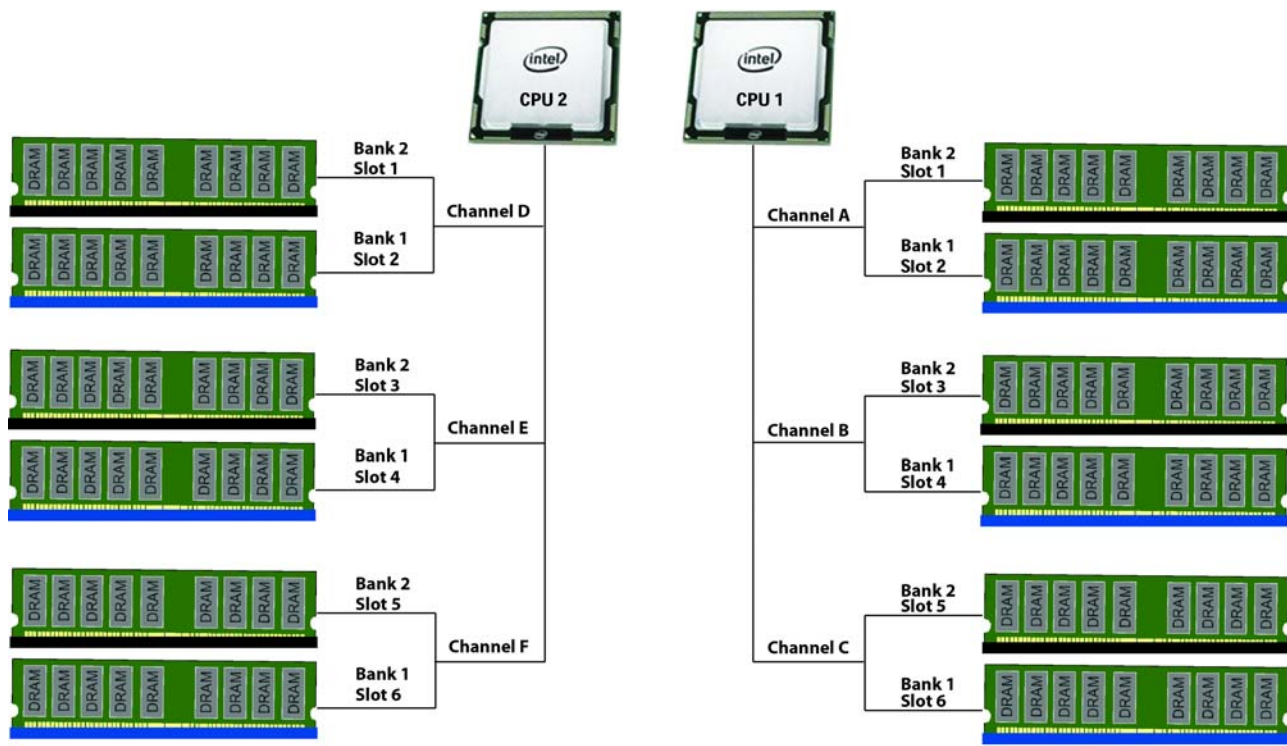
- You must select either one CPU or two identical CPUs.
- For optimal performance, select DIMMs with the highest clock speed for a given processor. If you select DIMMs whose speeds are lower or higher than that shown in the tables, suboptimal performance will result.

### STEP 3 CHOOSE MEMORY

The standard memory features are:

- DIMMs
  - Clock speed: 1333 or 1066 MHz
  - Ranks per DIMM: 1, 2, or 4
  - Operational voltage: 1.5 or 1.35 V
  - Registered
- DDR3 ECC registered DIMMs (RDIMMs), supporting Intel SDDC
- Memory is organized with three memory channels per CPU, with up to two DIMMs per channel, as shown in *Figure 3*.

Figure 3 B200 M2 Memory Organization



**3 memory channels per CPU, up to 2 DIMMs per channel**

- = Bank 1
- = Bank 2

## Choose 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 5](#).



**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.

The available memory DIMMs are listed in [Table 5](#).

Table 5 Available DDR3 DIMMs

Product ID (PID)	PID Description	Voltage	Ranks /DIMM
<b>DIMM Options</b>			
UCS-MR-1X0421RX-A	4GB DDR3-1333-MHz RDIMM/PC3-10600/1R/x4/dual voltage	1.35/1.5 V	1
UCS-MR-1X082RX-A	8GB DDR3-1333-MHz RDIMM/PC3-10600/2R/x4/dual voltage	1.35/1.5 V	2
A02-M316GB1-L	16GB DDR3-1333MHz RDIMM/PC3-10600/2R/dual voltage	1.35/1.5 V	2
<b>Memory Mirroring Option</b>			
N01-MMIRROR	Memory mirroring option		

Approved Configurations

(1) 1-CPU configuration without memory mirroring:

- Select from one to six DIMMs (note that there are six DIMM slots per CPU)

(2) 1-CPU configuration with memory mirroring:

- Select either two or four DIMMs. The DIMMs will be placed by the factory as shown in the following table:

Number of DIMMs	DIMM Placement in Channels (Channel C is not used with memory mirroring)
2	1 DIMM in Channel A, 1 DIMM in Channel B
4	2 DIMMs in Channel A, 2 DIMMs in Channel B

- Select the memory mirroring option (N01-MMIRROR) as shown in [Table 5 on page 10](#).

(3) 2-CPU configuration without memory mirroring:

- Select from one to six DIMMs per CPU (from two to twelve total DIMMs)

(4) 2-CPU configuration with memory mirroring:

- Select two or four DIMMs per CPU. The DIMMs will be placed by the factory as shown in the following table:

Number of DIMMs per CPU	DIMM Placement (Channels C and F are not used with memory mirroring)		Total DIMMs
2	CPU 1: 2 DIMMs in Channel A	CPU 2: 2 DIMMs in Channel D	4
4	CPU 1: 2 DIMMs in Channel A 2 DIMMs in Channel B	CPU 2: 2 DIMMs in Channel D 2 DIMMs in Channel E	8

- Select the memory mirroring option (N01-MMIRROR) as shown in [Table 5 on page 10](#).



**NOTE:** System performance is optimized when the DIMM type and quantity are equal for both CPUs.

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## Caveats

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### ■ DIMM voltage:

- You can mix dual voltage DIMMs (operate at either 1.5 V or 1.35 V) and single voltage DIMMs (operate at only 1.5 V).
- Dual-voltage DIMMs can be operated in either of these modes:
  - Power Saving Mode at a maximum speed of 1066 MHz
  - Performance Mode at a maximum speed of 1333 MHz

If you mix both types of DIMMs in your configuration, the server forces all DIMMs to operate in Performance Mode.

### ■ Memory mirroring:

If you select the Memory RAS option, be aware that it is available only with an even number of memory channels. For example, if you select six DIMMs and select Reliability/Availability/Serviceability (RAS), mirroring will go into effect on only two channels with two DIMMs per channel (you cannot implement RAS on three channels). In this case, two DIMMs would go unused.



**NOTE:** For memory mirroring, DIMM pairing across buses must be identical. If you only have two DIMMs, they need to be the same PID because you have one DIMM on each of two buses.

If you have four DIMMs in a 2-CPU system, for example, you can have two 4-GB and two 8-GB DIMMs. One 4-GB/8-GB DIMM pair would be located on Channel A of CPU 1, and one 4-GB/8-GB DIMM pair would be located on Channel D of CPU 2.

If you have four DIMMs in a 1-CPU system, for example, you can have two 4-GB and two 8-GB DIMMs. One 4-GB/8-GB DIMM pair would be located on Channel A of CPU 1, and one 4-GB/8-GB DIMM pair would be located on Channel B of CPU 1.

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For more information regarding memory, see [DIMM and CPU Layout on page 25](#).

## STEP 4 CHOOSE HARD DISK DRIVES or SOLID STATE DRIVES

The standard disk drive features are:

- 2.5-inch small form factor
- Hot-pluggable
- Sled-mounted

### Choose Drives

The available drives are listed in [Table 6](#).

Table 6 Available Hot-Pluggable Sled-Mounted HDDs and SSDs

Product ID (PID)	PID Description	Drive Type	Capacity
<b>HDDs</b>			
A03-D146GC2	146 GB SAS 15K RPM SFF HDD	SAS	146 GB
A03-D300GA2	300 GB 6 Gb SAS 10K RPM SFF HDD	SAS	300 GB
A03-D500GC3	500 GB 6 Gb SATA 7.2K RPM SFF HDD	SATA	500 GB
A03-D600GA2	600 GB 6 Gb SAS 10K RPM SFF HDD	SAS	600 GB
A03-D1TBSATA	1 TB SATA 7.2K RPM SFF HDD	SATA	1 TB
<b>SSDs</b>			
UCS-SSD100GI1F104	NEW 100GB SATA SSD SFF (STEC)	SATA	100 GB

### Approved Configurations

(1) Built-In LSI 1064E 4-port SAS 6.0G RAID Mezzanine card RAID controller

- Select up to two SAS or SATA drives listed in [Table 6](#).

### Caveats

- You cannot mix HDD and SSD drives. You cannot mix SAS and SATA drive types.

## STEP 5 CHOOSE A PCIe MEZZANINE CARD

The standard PCIe card offerings are:

- Converged Network Adapters (CNA)
- Network Interface Cards (NICs)

### Choose a PCIe Option Card

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The available PCIe option cards are listed in [Table 7](#).

Table 7 Available PCIe Option Cards

Product ID (PID)	PID Description
<b>Converged Network Adapters (CNA)</b>	
N20-AQ0002	UCS M71KR-Q QLogic Converged Network Adapter/PCIe/2port 10Gb
N20-AE0002	UCS M71KR-E Emulex Converged Network Adapter/PCIe/2port 10Gb
N20-AC0002	UCS M81KR Virtual Interface Card/PCIe/2-port 10Gb
N20-AQ0102	Cisco UCS CNA M72KR-Q QLogic Converged Network Adapter
N20-AE0102	Cisco UCS CNA M72KR-E Emulex Converged Network Adapter
N20-AI0102	Cisco UCS CNA M61KR-I Intel Converged Network Adapter
<b>Network Interface Cards (NICs)</b>	
N20-AB0002	Cisco UCS NIC M51KR-B Broadcom BCM57711 Network Adapter
N20AI0002	UCS 82598KR-CI 10-Gigabit Ethernet Adapter/PCIe/2-port 10Gb
N2XX-AQPCI05	Qlogic QLE2562, 8Gb dual port Fibre Channel HBA

### Approved Configurations

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#### (1) Select one PCIe Mezzanine Cards (mandatory)

You must select one card.

To help ensure that your operating system is compatible with the cards you have selected, please 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)

## STEP 6 CHOOSE OPERATING SYSTEM

Several operating systems are available from which to choose. Choose one of the operating systems listed in [Table 8](#).

Table 8 Operating Systems

PID Description	Product ID (PID)
<b>SUSE Linux Enterprise Server</b>	
SLES-1A	SLES/1yr subscription/svcs required/0 media
SLES-3A	SLES/3yr subscription/svcs required/0 media
<b>Red Hat Enterprise Linux</b>	
RHEL-2S-1G-1A	RHEL/2 Socket/1 Guest/1Yr Svcs Required
RHEL-2S-1G-3A	RHEL/2 Socket/1 Guest/3Yr Svcs Required
RHEL-2S-4G-1A	RHEL/2 Socket/4 Guest/1Yr Svcs Required
RHEL-2S-4G-3A	RHEL/2 Socket/4 Guest/3Yr Svcs Required
RHEL-2S-UG-1A	RHEL/2 Socket/U Guest/1Yr Svcs Required
RHEL-2S-UG-3A	RHEL/2 Socket/U Guest/3Yr Svcs Required
RHEL-2S-1G-1A-RS	RHEL/2 Socket/1 Guest/1Yr Subscription/Redhat Svcs Included
RHEL-2S-1G-3A-RS	RHEL/2 Socket/1 Guest/3Yr Subscription/Redhat Svcs Included
RHEL-2S-4G-3A-RS	RHEL/2 Socket/2 Guest/3Yr Subscription/Redhat Svcs Included
RHEL-2S-4G-1A-RS	RHEL/2 Socket/4 Guest/1Yr Subscription/Redhat Svcs Included
RHEL-2S-UG-1A-RS	RHEL/2 Socket/U Guest/1Yr Subscription/Redhat Svcs Included
RHEL-2S-UG-3A-RS	RHEL/2 Socket/U Guest/3Yr Subscription/Redhat Svcs Included
<b>RHEL Add-Ons</b>	
RHEL-HA-2S-1A	RHEL Option/High-Availability/2 Socket/1Yr Svcs Required
RHEL-RS-2S-1A	RHEL Option/Resilient w/Ha /2 Socket/1 Yr Svcs Required
RHEL-SFS-2S-1A	RHEL Option/Scalable File System/2 Socket/1 Yr Svcs Required
RHEL-HA-2S-3A	RHEL Option/High-Availability/2 Socket/3Yr Svcs Required
RHEL-RS-2S-3A	RHEL Option/Resilient Storage w/ HA /2 Socket/3 Yr Svcs Reqd
RHEL-SFS-2S-3A	RHEL Option/Scalable File System/2 Socket/3 Yr Svcs Required
RHEL-HA-2S-1A-RS	RHEL Option/High-Availability/2 Socket/1Yr Redhat Svcs Incl
RHEL-RS-2S-1A-RS	RHEL Option/Resilient Storage/2 Socket/1 Yr Redhat Svcs Incl



Table 8 Operating Systems *(continued)*

PID Description	Product ID (PID)
RHEL-SFS-2S-1A-RS	RHEL Option/Scalable File Sys/2 Socket/1 Yr Redhat Svcs Incl
RHEL-HA-2S-3A-RS	RHEL Option/High-Availability/2 Socket/3Yr Redhat Svcs Incl
RHEL-RS-2S-3A-RS	RHEL Option/Resilient Storage/2 Socket/3 Yr Redhat Svcs Incl
RHEL-SFS-2S-3A-RS	RHEL Option/Scalable File Sys/2 Socket/3 Yr Redhat Svcs Incl
<b>Windows Server</b>	
MSWS-08-STHV	Windows Svr 2008 ST media (1-4CPU, 5CAL)
MSWS-08-ENHV	Windows Svr 2008 EN media (1-8CPU, 25CAL)
MSWS-08R2-STHV	Windows Svr 2008 ST media R2 ST (1-4CPU, 5CAL)
MSWS-08R2-ENHV	Windows Svr 2008 EN media R2 EN (1-8CPU, 25CAL)
MSWS-08R2-DCHV2S	Windows Svr 2008 R2-2 CPU-Data Center
MSWS-08R2-DCHV4S	Windows Svr 2008 R2-4 CPU-Data Center
<b>VMWare Server</b>	
VMW-VS5-STD-1A	VMware vSphere 5 Standard for 1 Processor, 1 Year, Support R
VMW-VS5-STD-2A	VMware vSphere 5 Standard for 1 Processor, 2 Year, Support R
VMW-VS5-STD-3A	VMware vSphere 5 Standard for 1 Processor, 3 Year, Support R
VMW-VS5-STD-4A	VMware vSphere 5 Standard for 1 Processor, 4 Year, Support R
VMW-VS5-STD-5A	VMware vSphere 5 Standard for 1 Processor, 5 Year, Support R
VMW-VS5-ENT-1A	VMware vSphere 5 Enterprise for 1 Processor, 1 Year Support
VMW-VS5-ENT-2A	VMware vSphere 5 Enterprise for 1 CPU, 2 Yr Support
VMW-VS5-ENT-3A	VMware vSphere 5 Enterprise for 1 CPU, 3 Yr Support
VMW-VS5-ENT-4A	VMware vSphere 5 Enterprise for 1 Processor, 4 Year Support
VMW-VS5-ENT-5A	VMware vSphere 5 Enterprise for 1 CPU, 5 Yr Support
VMW-VS5-ENTP-1A	VMware vSphere 5 Enterprise Plus for 1 Processor, 1 Year, Support
VMW-VS5-ENTP-2A	VMware vSphere 5 Enterprise Plus for 1 CPU, 2 Yr Support
VMW-VS5-ENTP-3A	VMware vSphere 5 Enterprise Plus for 1 Processor, 3 Year, Support
VMW-VS5-ENTP-4A	VMware vSphere 5 Enterprise Plus for 1 Processor, 4 Year Support
VMW-VS5-ENTP-5A	VMware vSphere 5 Enterprise Plus for 1 Processor, 5 Year, Support
VMM-VCS5-ST-1A	VMware vCenter 5 Standard for 1 Processor, 1 Year, Support R
VMM-VCS5-ST-2A	VMware vCenter 5 Standard for 1 Processor, 2 Year, Support R

Table 8 Operating Systems *(continued)*

PID Description	Product ID (PID)
VMM-VCS5-ST-3A	VMware vCenter 5 Standard for 1 Processor, 3 Year, Support R
VMM-VCS5-ST-4A	VMware vCenter 5 Standard for 1 Processor, 4 Year, Support R
VMM-VCS5-ST-5A	VMware vCenter 5 Standard for 1 Processor, 5 Year, Support R

## STEP 7 CHOOSE OPERATING SYSTEM MEDIA KIT

Choose the optional operating system media listed in [Table 9](#).

Table 9 OS Media

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

## STEP 8 CHOOSE OPTIONAL VALUE-ADDED SOFTWARE

You can select from a variety of value-added software listed in [Table 9.s](#)

Table 10 Value Added Software

Product ID (PID)	PID Description
N1K-CSK9-UCS-404	Cisco Nexus 1000V VSM Virtual Appliance Software
BMC-012	BMC BPPM Per Server
BMC-SE-4C	BMC BladeLogic Standard Edition, 4 Cores, Support Required
BMC-SE-6C	BMC BladeLogic Standard Edition, 6 Cores, Support Required
BMC-SE-8C	BMC BladeLogic Standard Edition, 8 Cores, Support Required
BMC-SE-10C	BMC BladeLogic Standard Edition, 10 Cores, Support Required
BMC-AE-4C	BMC BladeLogic Advanced Edition, 4 Cores, Support Required
BMC-AE-6C	BMC BladeLogic Advanced Edition, 6 Cores, Support Required
BMC-AE-8C	BMC BladeLogic Advanced Edition, 8 Cores, Support Required
BMC-AE-10C	BMC BladeLogic Advanced Edition, 10 Cores, Support Required

## STEP 9 CHOOSE 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.

### 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 ensure that the unified computing environment runs at peak efficiency. If a problem arises that threatens business continuity, the TAM provides crisis management leadership, and your IT staff receives expedited access to Cisco's Technical Assistance Center (TAC).

Please note: This service has qualification criteria. Your company must have \$1.2M of UCS equipment, 200 blades and a single location to qualify for this service level. Choose the desired service listed in [Table 11](#).

**Table 11 Unified Computing Mission Critical Service**

Product ID (PID)	On Site?	Description
CON-UCM7-B200-M2	Yes	UC Mission Critical 24x7x4 On-site
CON-UCM8-B200-M2	Yes	UC Mission Critical 24x7x2 On-site

### 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. Access to Cisco Technical Assistance Center (TAC) is provided 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 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. You can choose a desired service listed in [Table 12](#).

**Table 12 UCS Computing Support Service**

Product ID (PID)	On Site?	Description
CON-UCS1-B200-M2	No	UC Support 8X5XNBD
CON-UCS2-B200-M2	No	UC Support 8X5X4
CON-UCS3-B200-M2	No	UC Support 24x7x4
CON-UCS4-B200-M2	No	UC Support 24x7x2
CON-UCS5-B200-M2	Yes	UC Support 8X5XNBD
CON-UCS6-B200-M2	Yes	UC Support 8X5X4
CON-UCS7-B200-M2	Yes	UC Support 24x7x4
CON-UCS8-B200-M2	Yes	UC Support 24x7x2

**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. You 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. You can choose a service listed in [Table 13](#).

**Table 13 UCS Computing Warranty Plus Service**

Product ID (PID)	On Site?	Description
CON-UCW2-B200-M2	No	UC Warranty Plus 8x5x4
CON-UCW3-B200-M2	No	UC Warranty Plus 24x7x4
CON-UCW4-B200-M2	No	UC Warranty Plus 24x7x2
CON-UCW5-B200-M2	Yes	UC Warranty Plus 8X5XNBD
CON-UCW6-B200-M2	Yes	UC Warranty Plus 8X5X4
CON-UCW7-B200-M2	Yes	UC Warranty Plus 24x7x4
CON-UCW8-B200-M2	Yes	UC Warranty Plus 24x7x2

## Unified Computing Drive Retention Service

With the Cisco Unified Computing Drive Retention (UCDR) service, you can obtain a new disk drive in exchange for a faulty drive without returning the faulty drive. In exchange for a Cisco replacement drive, you provide a signed Certificate of Destruction (CoD) confirming that the drive has been removed from the system listed, is no longer in service, and has been destroyed.

Sophisticated data recovery techniques have made classified, proprietary, and confidential information vulnerable, even on malfunctioning disk drives. The UCDR service enables you to retain your drives and ensures that the sensitive data on those drives is not compromised, thereby reducing 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 [Table 14](#).



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

Table 14 Drive Retention Service Options

Service Description	Service Program Name	Service Level GSP	Service Level	Product ID (PID)
UCS Mission Critical Support Service With Drive Retention	UC CRIT DR	UCMD7	24x7x4 Onsite	CON-UCMD7-B200-M2SFF
		UCMD8	24x7x2 Onsite	CON-UCMD8-B200-M2SFF
UCS Support Service With Drive Retention	UC SUPP DR	UCSD1	8x5xNBD	CON-UCSD1-B200-M2SFF
		UCSD2	8x5x4	CON-UCSD2-B200-M2SFF
		UCSD3	24x7x4	CON-UCSD3-B200-M2SFF
		UCSD4	24x7x2	CON-UCSD4-B200-M2SFF
		UCSD5	8x5xNBD Onsite	CON-UCSD5-B200-M2SFF
		UCSD6	8x5x4 Onsite	CON-UCSD6-B200-M2SFF
		UCSD7	24x7x4 Onsite	CON-UCSD7-B200-M2SFF
		UCSD8	24x7x2 Onsite	CON-UCSD8-B200-M2SFF

Table 14 Drive Retention Service Options (*continued*)

Service Description	Service Program Name	Service Level GSP	Service Level	Product ID (PID)
UCS Warranty Plus With Drive Retention	UC PLUS DR	UCWD2	8x5x4	CON-UCWD2-B200-M2SFF
		UCWD3	24x7x4	CON-UCWD3-B200-M2SFF
		UCWD4	24x7x2	CON-UCWD4-B200-M2SFF
		UCWD5	8x5xNBD Onsite	CON-UCWD5-B200-M2SFF
		UCWD6	8x5x4 Onsite	CON-UCWD6-B200-M2SFF
		UCWD7	24x7x4 Onsite	CON-UCWD7-B200-M2SFF
		UCWD8	24x7x2 Onsite	CON-UCWD8-B200-M2SFF

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

[http://www.cisco.com/en/US/services/ps2961/ps10312/ps10321/Cisco\\_UC\\_Warranty\\_Support\\_DS.pdf](http://www.cisco.com/en/US/services/ps2961/ps10312/ps10321/Cisco_UC_Warranty_Support_DS.pdf)

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

[http://www.cisco.com/en/US/products/ps10312/serv\\_group\\_home.html](http://www.cisco.com/en/US/products/ps10312/serv_group_home.html)



## ORDER OPTIONAL KVM CABLE

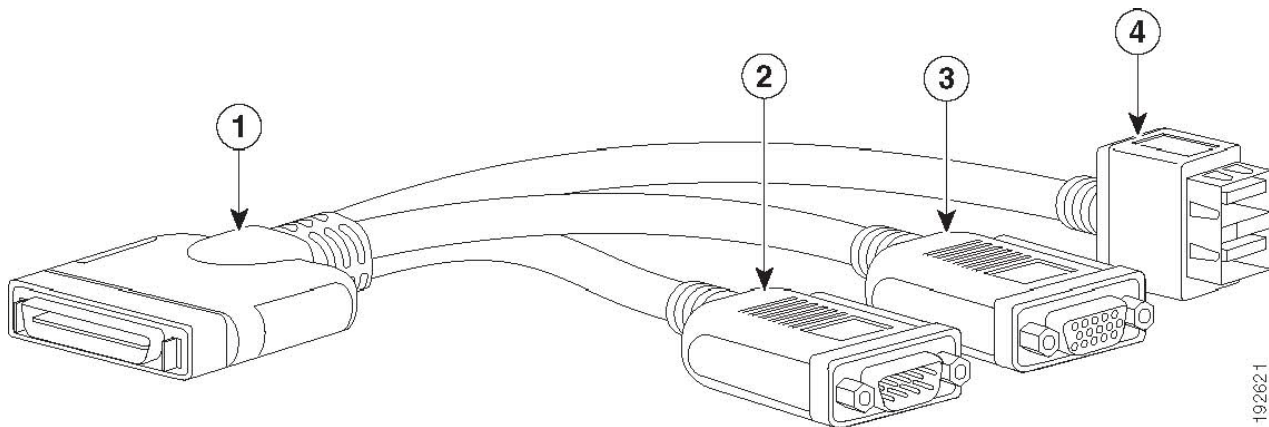
The KVM cable provides a connection into the server, providing a DB9 serial connector, a VGA connector for a monitor, and dual USB ports for a keyboard and mouse. With this cable, you can create a direct connection to the operating system and the BIOS running on the server.

The KVM cable ordering information is listed in [Table 15](#).

Table 15 KVM Cable

Product ID (PID)	PID Description
37-1016-01	KVM Cable

Figure 4 KVM Cable



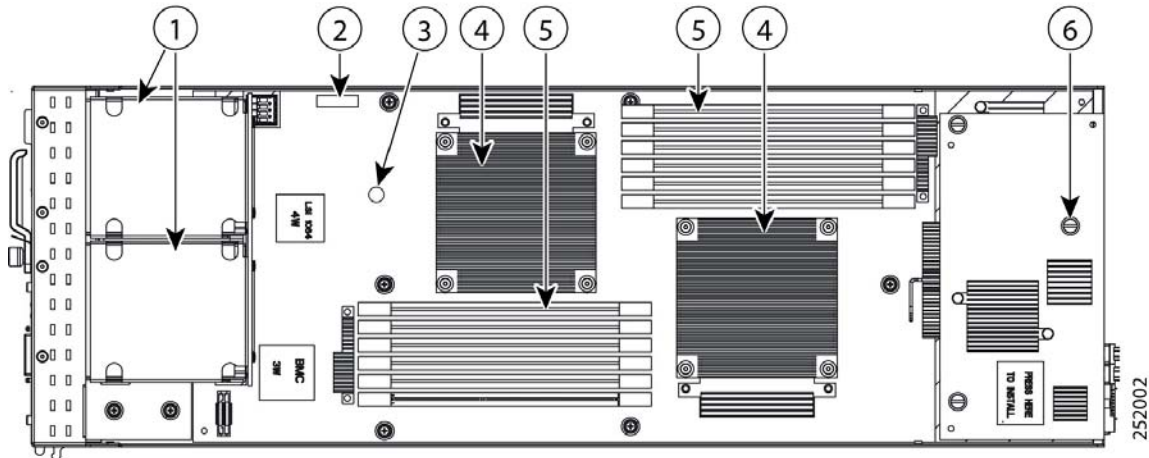
1	Connector (to server front panel)	3	VGA connector (for a monitor)
2	DB-9 serial connector	4	Two-port USB connector (for a mouse and keyboard)

# SUPPLEMENTAL MATERIAL

## Motherboard

A top view of the B200 M2 motherboard is shown in *Figure 5*.

Figure 5 B200 M2 Motherboard



1	Hard drive bays	4	CPU and heat sink
2	Battery	5	DIMM slots
3	Diagnostic button	6	Mezzanine adapter card

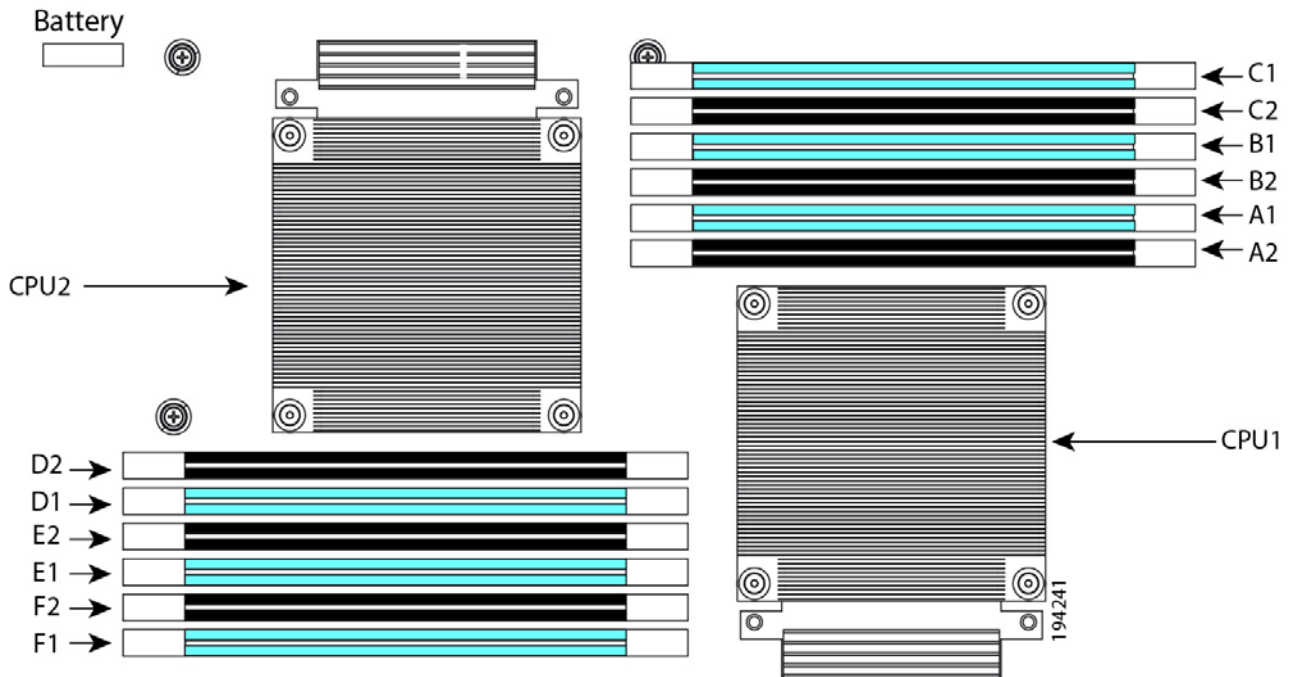
## DIMM and CPU Layout

Each CPU controls three memory channels, as follows (refer to *Figure 6 on page 26*):

- CPU1: Channels A, B, and C
  - Bank 1 - A1, B1, and C1 (blue DIMM slots)
  - Bank 2 - A2, B2, and C2 (black DIMM slots)
- CPU2: Channels D, E, and F
  - Bank 1 - D1, E1, and F1 (blue DIMM slots)
  - Bank 2 - D2, E2, and F2 (black DIMM slots)

The DIMM and CPU physical layout is shown in *Figure 6*. The 6 DIMM slots at the upper right are controlled by the CPU on the right (CPU1) and the 6 DIMM slots at the lower left are controlled by the CPU on the left (CPU2).

Figure 6 DIMM and CPU Layout



**NOTE:** The DIMMs at the upper right cannot communicate with the DIMMs at the lower left unless both CPUs are installed.

### Memory Population Recommendations

Table 16 shows the preferred order for installing upgrade DIMMs, and while other configurations may work, if problems arise, moving them to the preferred arrangement should help.

Table 16 Preferred DIMM Population Order

DIMMs per CPU	CPU 1 Installed Slots	CPU 2 Installed Slots
1	A1	D1
2	A1, B1	D1, E1
3	A1, B1, C1	D1, E1, F1
4	A1, A2, B1, C1	D1, D2, E1, F1
5	A1, A2, B1, B2, C1	D1, D2, E1, E2, F1
6	A1, A2, B1, B2, C1, C2	D1, D2, E1, E2, F1, F2

When considering the memory configuration of your server, you should observe the following:

- DIMMs within the blade server should all be the same type. This goes for both speed and size. Do not mix different sized DIMMs or DIMMs with different clock rates in the same blade server. Doing so will cause a significant loss of performance.
- Your selected CPU(s) can have some effect on performance.
- DIMMs can be run in a 1 DIMM per channel or a two DIMM per channel configuration. Each of these arrangements can provide different behavior.

# TECHNICAL SPECIFICATIONS

## Dimensions and Weight

Table 17 UCS B200 M2 Dimensions and Weight<sup>1</sup>

Parameter	Value
Height	1.95 in. (50 mm)
Width	8.00 in. (203 mm)
Depth	24.4 in. (620 mm)
Weight	13.5 lbs (6.1 kg)*

Notes . . .

1. The system weight given here is an estimate for a fully configured system and will vary depending on the number of CPUs, memory DIMMs, and other optional items.

## Power Specifications

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

[http://www.cisco.com/assets/cdc\\_content\\_elements/flash/dataCenter/cisco\\_ucs\\_power\\_calculator/](http://www.cisco.com/assets/cdc_content_elements/flash/dataCenter/cisco_ucs_power_calculator/).



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