Spec Sheet

Cisco UCS B440 M2 Blade Server

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OVERVIEW

The Cisco® UCS B440 M2 Blade Server is a four-socket, full-width blade server that combines the performance of the Intel E7-4800/8800 series processors with up to four small form factor (SFF) hard disk drives (HDDs) or solid-state drives (SSDs), 32 DIMM slots that support up to 1 terabyte (TB) of memory, and two dual-port mezzanine card connections for up to 40 Gbps of redundant I/O throughput. The Cisco UCS B440 M2 server is designed to power the most demanding enterprise applications. The UCS B440 M2 server is shown in ***Figure 1***.

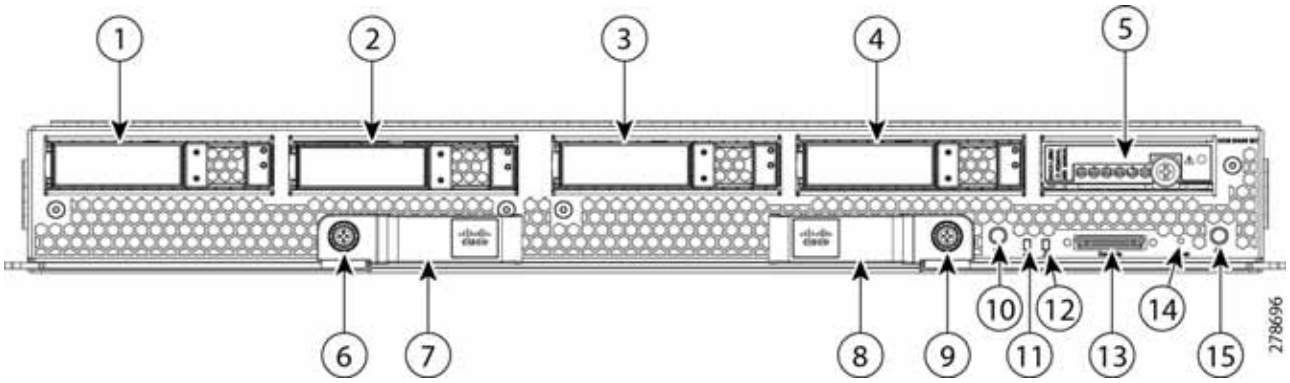
Figure 1 Cisco UCS B440 M2 Blade Server

DETAILED VIEWS

Chassis Front View

Figure 2 shows the front of the Cisco UCS B440 M2 Blade Server.

Figure 2 Chassis Front View



1	Hard drive bay 1	**9**	Right ejector thumbscrew
2	Hard drive bay 2	**10**	Power button and LED
3	Hard drive bay 3	**11**	Network link status LED
4	Hard drive bay 4	**12**	Blade health LED
5	RAID battery backup module (BBU)	**13**	Local console connection[1]
6	Left ejector thumbscrew	**14**	Reset button access
7	Left ejector handle	**15**	Beaconing button and LED
8	Right ejector handle		

Notes . . .

1. For more information regarding the KVM cable connection, see *ORDER OPTIONAL KVM CABLE on page 25*

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 6*.

Table 1 Capabilities and Features

Capability/Feature	Description
Chassis	The B440 M2 Blade Server mounts in a Cisco UCS 5100-series chassis
CPU	Either 2 or 4 Intel® Xeon® E7-4800 or E7-8800 series processors
Chipset	Intel® 7510 chipset
Memory	32 slots for registered DIMMs, up to 1 TB.
Expansion slots	Two dual-port mezzanine slots are provided
Storage controller	LSI SAS2108 6G SAS RAID controller ■ RAID 0 and 1 ■ RAID 5 and 6 are optionally available through a license key upgrade ■ Battery backup unit for 1 GB write cache is optionally available
Internal storage devices	Up to four optional front-accessible, hot-swappable hard disk drives (HDDs) or solid-state drives (SSDs).
Video	The server CIMC chip includes a Matrox G200 core. The first 8 MB of memory are allocated to the video core.
Interfaces	One front-accessible console connector (see *ORDER OPTIONAL KVM CABLE on page 25*)
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 B440 M2 Server:

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 B440 M2 Server

Product ID (PID)	Description
B440-BASE-M2	UCS B440 M2 Blade Server w/o CPU, memory, HDD, mezzanine

The B440-BASE-M2 base server:

- Does not include CPUs, memory DIMMs, SSDs, HDDs, or mezzanine cards.

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 E7-4800 or E7-8800 series CPUs
- Intel 7510 chipset
- Cache size of 18, 24, or 30 MB

Choose CPUs

The available CPUs are listed in ***Table 3***.

Table 3 Available CPUs: Intel Xeon E7-48xx/8867L Family

Product ID (PID)	Intel Number	Clock Freq (GHz)	Power (W)	Cache Size (MB)	Cores	QPI	Highest DDR3 DIMM Clock Support (MHz)
UCS-CPU-E78867L	E7-8867L	2.13	105	30	10	6.40	1333[1]
UCS-CPU-E78837	E7-8837	2.66	130	24	8	6.40	1333[1]
UCS-CPU-E74870	E7-4870	2.40	130	30	10	6.40	1333[1]
UCS-CPU-E74860	E7-4860	2.26	130	24	10	6.40	1333[1]
UCS-CPU-E74850	E7-4850	2.00	130	24	10	6.40	1333[1]
UCS-CPU-E74830	E7-4830	2.13	105	24	8	6.40	1333[1]
UCS-CPU-E74807	E7-4807	1.86	95	18	6	4.80	1333[2]

Notes . . .

1. Maximum operational speed = 1066 MHz
2. Maximum operational speed = 800 MHz

Approved Configurations

(1) Two-CPU Configuration

- Choose two identical CPUs from any one row in ***Table 3***.

(2) Four-CPU Configuration

- Choose four identical CPUs from any one row in ***Table 3***.

Caveats

- You must choose either two identical CPUs or four identical CPUs.

STEP 3 CHOOSE MEMORY

The standard memory features are:

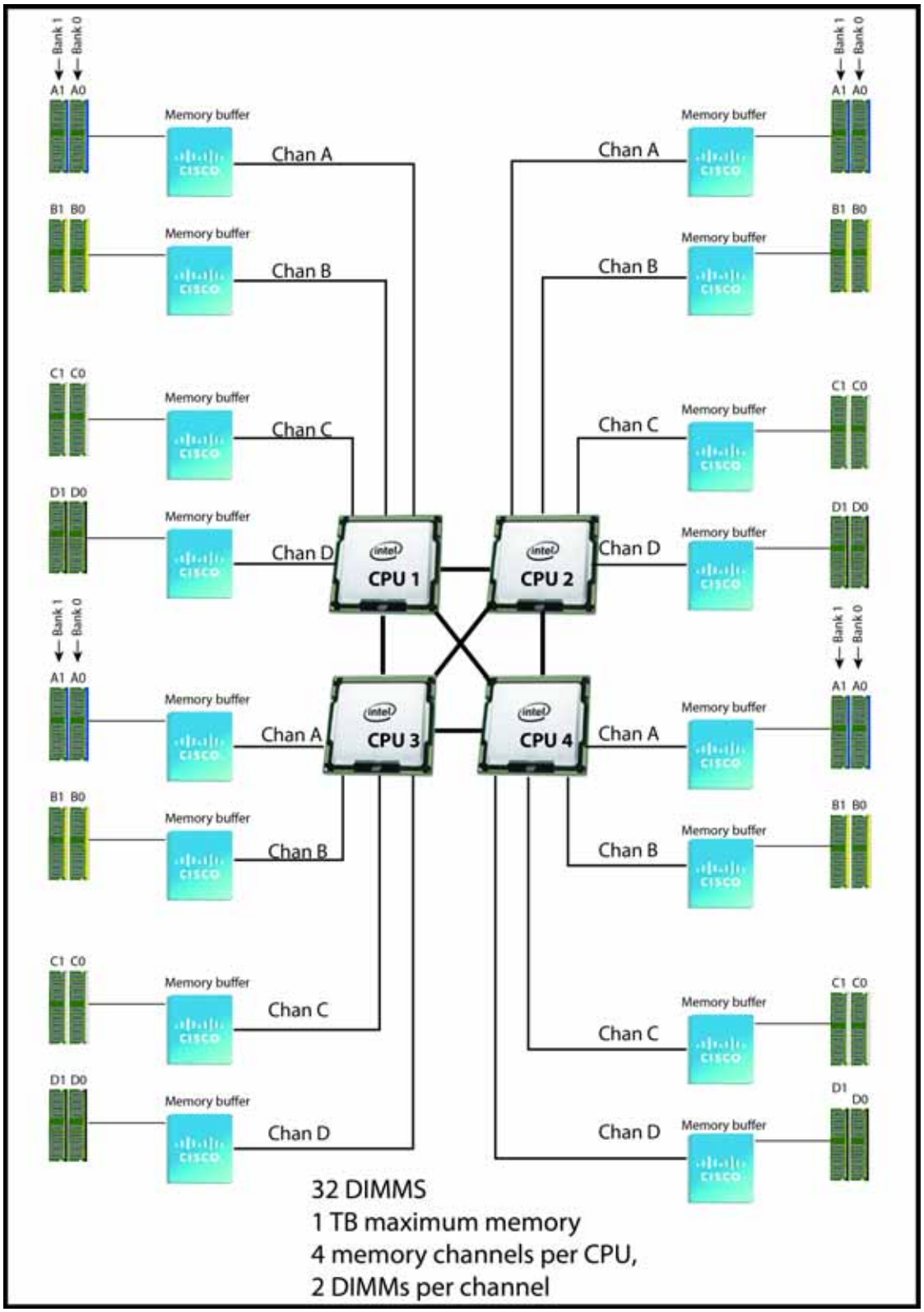
- DIMMs
  - Maximum memory bandwidth: 800 MHz for E7-4807, 1066 MHz for all other CPUs
  - Ranks per DIMM: 1, 2, or 4
  - Operational voltage: 1.35 V
  - Registered DIMM (RDIMM)
  - Mirroring option
  - Advanced error correcting code (ECC)
  - Double device data correction (DDDC)

NOTE: DDDC support applies to x4 DIMMs only.

- Each CPU controls four DDR3 channels. Each of the channels controls a matched pair of DIMMs. The maximum number of DIMMs that can be installed per CPU is 8 (4 DIMM kits). See ***Figure 3***.

NOTE: Memory mirroring is supported and settable using the UCSM Service Profile "Memory RAS Configuration" setting.

Figure 3 B440 M2 Memory Organization



Select DIMMs

DIMMs are available as two-DIMM kits. Each of the product IDs in *Table 4* specifies two DIMMs.

Table 4 Available DDR3 DIMMs

Product ID (PID)	PID Description	Voltage	Ranks/ DIMM
DIMM Pair Kit Options (2 DIMMs per kit)			
UCS-MR-2X041RX-C	2x4GB DDR3 1333-MHz RDIMM/PC3-10600/1R/x4/1.35v	1.35 V	1
UCS-MR-2X082RX-C	2x8GB DDR3 1333-MHz RDIMM/PC3-10600/2R/x4/1.35v	1.35 V	2
UCS-MR-2X164RX-D	2x16GB NHS DDR3-1333-MHz RDIMM/PC3-10600/4R/x4/1.35v	1.35 V	4
UCS-MR-2X324RX-C	2x32GB DDR3 1333-MHz RDIMM/PC3-10600/4R/x4/1.35V	1.35 V	4

Approved Configurations

(1) 2-CPU Configuration

- 16 DIMMs capacity total
- Select two or four DIMM kits (4 or 8 DIMMs) per CPU. The DIMMs for each CPU will be placed by the factory as shown in *Table 5*.

Table 5 2-CPU Configuration DIMM Placement

Number of DIMMs per CPU	DIMM Placement in Numbered/Colored DIMM Slots (see *Figure 6 on page 27*)
4[1]	(A0, A1) - blue slots; (C0, C1) - white slots
8[2]	(A0, A1) - blue slots; (C0, C1) - white slots (B0, B1) - yellow slots; (D0, D1) - black slots

Notes . . .

1. Two UCS-MR-2X041RX-C, UCS-MR-2X082RX-C, UCS-MR-2X164RX-D, or UCS-MR-2X324RX-C DIMM kits per CPU
2. Four UCS-MR-2X041RX-C, UCS-MR-2X082RX-C, UCS-MR-2X164RX-D, or UCS-MR-2X324RX-C DIMM kits per CPU, or one of these combinations: (1) Two UCS-MR-2X082RX-C and two UCS-MR-2X164RX-D DIMM kits per CPU, or (2) Two UCS-MR-2X082RX-C and two UCS-MR-2X324RX-C DIMM kits per CPU, or (3) Two UCS-MR-2X164RX-D and two UCS-MR-2X324RX-C DIMM kits per CPU.

(2) 4-CPU Configuration

- 32 DIMMs capacity total
- Select two or four DIMM kits (4 or 8 DIMMs) per CPU. The DIMMs for each CPU will be placed by the factory as shown in ***Table 6***..

Table 6 4-CPU Configuration DIMM Placement

Number of DIMMs per CPU	DIMM Placement in Numbered/Colored DIMM Slots (see *Figure 6 on page 27*)
4[1]	(A0, A1) - blue slots; (C0, C1) - white slots
8[2]	(A0, A1) - blue slots; (C0, C1) - white slots (B0, B1) - yellow slots; (D0, D1) - black slots

Notes . . .

1. Two UCS-MR-2X041RX-C, UCS-MR-2X082RX-C, UCS-MR-2X164RX-D, or UCS-MR-2X324RX-C DIMM kits per CPU
2. Four UCS-MR-2X041RX-C, UCS-MR-2X082RX-C, UCS-MR-2X164RX-D, or UCS-MR-2X324RX-C DIMM kits per CPU, or one of these combinations: (1) Two UCS-MR-2X082RX-C and two UCS-MR-2X164RX-D DIMM kits per CPU, or (2) two UCS-MR-2X082RX-C and two UCS-MR-2X324RX-C DIMM kits per CPU, or (3) two UCS-MR-2X164RX-D and two UCS-MR-2X324RX-C DIMM kits per CPU.

Caveats

- The only supported DIMM configurations are shown in ***Table 5 on page 11*** and ***Table 6***. The DIMMs are sold in matched pairs, which must be installed in pairs shown in the tables. Switching out one of the DIMMs within the matched pair will lead to memory errors.
- The B440 M2 server needs at least two DIMM pairs installed for each CPU for optimal performance
- DIMMs sold as kits are matched pairs and must remain together when installed in a particular pair of same-colored (blue, white, yellow, or black) pairs of slots.
- The DIMMs installed in slots for an absent CPU are not recognized.
- Memory DIMMs should be installed evenly across the installed CPUs, though it is not a requirement.
- Mixing DIMM speeds will cause the faster DIMMs to run at the speed of the slower DIMMs.
- Your selected CPU(s) can have some affect on performance. The CPUs must be of the same type.

STEP 4 CHOOSE HARD DISK DRIVES or SOLID-STATE DRIVES

The standard disk drive features are:

- Small form factor HDDs or SSDs
- Hot-pluggable
- Sled-mounted

Choose Drives

The available drives are listed in ***Table 7***.

Table 7 Available Hot-Pluggable Sled-Mounted HDDs or SSDs

Product ID (PID)	PID Description	Drive Type	Capacity
HDDs			
A03-D146GC2	146 GB 6 Gb SAS 15K RPM SFF HDD	SAS	146 GB
A03-D300GA2	300 GB 6 Gb SAS 10K RPM SFF HDD	SAS	300 GB
UCS-HDD300GI2F105	300 GB 6 Gb SAS 15K RPM SFF HDD	SAS	300 GB
A03-D600GA2	600 GB 6 Gb SAS 10K RPM SFF HDD	SAS	600 GB
UCS-HDD900GI2F106	900 GB 6 Gb SAS 10K RPM SFF HDD	SAS	900 GB
SSDs			
UCS-SD400G0KA2-G	400 GB SATA 2.5" Enterprise Value SSD	SATA	400 GB
UCS-SD300G0KA2-E	300 GB SATA 2.5" Enterprise Performance SSD	SATA	300 GB
UCS-SD200G0KA2-E	200 GB SATA 2.5" Enterprise Performance SSD	SATA	200 GB
UCS-SD100G0KA2-G	100 GB SATA 2.5" Enterprise Value SSD	SATA	100 GB

Approved Configurations

(1) Zero to Four Drives

- Select from 0 to 4 drives from ***Table 7***.

Caveats

- You can mix SAS/SATA drives, but not HDD/SSD drives. See ***STEP 5 CHOOSE RAID CONFIGURATION, page 14*** for available RAID configurations.
- You cannot mix HDDs and SSDs.

STEP 5 CHOOSE RAID CONFIGURATION

The B440 M2 server integrates the LSI SAS2108 6G SAS RAID controller.

Choose RAID Options

If desired, choose the RAID 5, 6 upgrade option and battery backup option listed in ***Table 8***. The BBU is an intelligent battery backup unit that protects disk write cache data during a power loss on the RAID controller for up to 72 hours. We recommend that you replace the BBU once per year or after 1,000 recharge cycles, whichever comes first.

Table 8 Available RAID Options

Product ID (PID)	PID Description
RAID Battery Backup Option	
N20-LBBU	Battery backup unit for 1 GB write cache
RAID Configuration	
N20-BRAID-K1	RAID upgrade supporting RAID 5 and 6

Caveats

- No RAID option will be effective if you have a mix of SAS and SATA drives.
- No RAID option is possible if you have no drives.
- You must have at least one drive installed in order to add an optional battery backup unit.

STEP 6 CHOOSE MEZZANINE OPTION CARD(S)

The standard PCIe card offerings are:

- Converged Network Adapters (CNA)

Choose a PCIe Option Card

The available PCIe option cards are listed in ***Table 9***.

Table 9 Available PCIe Option Cards

Product ID (PID)	PID Description
Converged Network Adapters (CNA)	
UCSB-MEZ-QLG-03[1]	Cisco UCS CNA M73KR-Q Qlogic Adapter
UCSB-MEZ-ELX-03[2]	Cisco UCS CNA M73KR-E Emulex Adapter
UCS-VIC-M82-8P	Cisco UCS VIC 1280 dual 40Gb capable Virtual Interface Card

Notes . . .

1. This new M73KR-Q adapter is the nearest equivalent replacement for the obsolete M72KR-Q adapter.
2. This new M73KR-E adapter is the nearest equivalent replacement for the obsolete M72KR-E adapter.

Approved Configurations

(1) Select at least one PCIe Mezzanine Cards (mandatory)

You must select at least one card and may select up to two cards.

NOTE: The server must be running UCS Manager v1.3 (N10-MGT005) or later to support two adapter cards.

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

STEP 7 CHOOSE OPERATING SYSTEM AND VALUE-ADDED SOFTWARE

Several operating systems and value-added software programs are available. Select as desired from ***Table 10***.

Table 10 OSs and Value-Added Software (for 4-CPU servers)

PID Description	Product ID (PID)
Microsoft Windows Server	
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-12-ST2S	Windows Server 2012 Standard (2 CPU/2 VMs)
MSWS-12-DC2S	Windows Server 2012 Datacenter (2 CPU/Unlimited VMs)
MSWS-12-ST2S-NS	Windows Server 2012 Standard (2 CPU/2 VMs) No Cisco SVC
MSWS-12-DC2S-NS	Windows Server 2012 Datacenter (2 CPU/Unlim VM) No Cisco Svc
SUSE Linux Enterprise Server	
SLES-1A	SLES/1yr subscription/svcs required/0 media
SLES-3A	SLES/3yr subscription/svcs required/0 media
UCS-SLES-TERMS	Acceptance of Terms, Standalone SLES License for UCS Servers
Red Hat Enterprise Linux	
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-4S-1G-1A	RHEL/4 Socket/1 Guest/1Yr Svcs Required
RHEL-4S-1G-3A	RHEL/4 Socket/1 Guest/3Yr Svcs Required
RHEL-4S-4G-1A	RHEL/4 Socket/4 Guest/1Yr Svcs Required
RHEL-4S-4G-3A	RHEL/4 Socket/4 Guest/3Yr Svcs Required
RHEL-4S-UG-1A	RHEL/4 Socket/U Guest/1Yr Svcs Required
RHEL-4S-UG-3A	RHEL/4 Socket/U Guest/3Yr Svcs Required
RHEL-HA-2S-1A	RHEL Option/High-Availability/2 Socket/1Yr Svcs Required
RHEL-HA-2S-3A	RHEL Option/High-Availability/2 Socket/3Yr Svcs Required

Table 10 OSs and Value-Added Software (for 4-CPU servers) *(continued)*

PID Description	Product ID (PID)
RHEL-HA-4S-1A	RHEL Option/High-Availability/4 Socket/1Yr Svcs Required
RHEL-HA-4S-3A	RHEL Option/High-Availability/4 Socket/3Yr Svcs Required
RHEL-RS-2S-1A	RHEL Option/Resilient Storage w/HA /2 Socket/1 Yr Svcs Reqd
RHEL-RS-2S-3A	RHEL Option/Resilient Storage w/HA /2 Socket/3 Yr Svcs Reqd
RHEL-RS-4S-1A	RHEL Option/Resilient Storage w/HA /4 Socket/1 Yr Svcs Reqd
RHEL-RS-4S-3A	RHEL Option/Resilient Storage w/HA /4 Socket/3 Yr Svcs Reqd
RHEL-SFS-2S-1A	RHEL Option/Scalable File System/2 Socket/1 Yr Svcs Required
RHEL-SFS-2S-3A	RHEL Option/Scalable File System/2 Socket/1 Yr Svcs Required
RHEL-SFS-4S-1A	RHEL Option/Scalable File System/4 Socket/1 Yr Svcs Required
RHEL-SFS-4S-3A	RHEL Option/Scalable File System/4 Socket/3 Yr Svcs Required
BMC	
BMC-002	BMC BladeLogic CM, Physical Server
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 Standard Edition, 10 Cores, Support Required
UCS-BMC-TERMS	Acceptance of Terms, Standalone BMC License for UCS Servers
VMWare 5	
VMW-VS5-STD-1A	VMware vSphere 5 Standard for 1 Processor, 1 Year, Support Rqd
VMW-VS5-STD-2A	VMware vSphere 5 Standard for 1 Processor, 2 Year, Support Rqd
VMW-VS5-STD-3A	VMware vSphere 5 Standard for 1 Processor, 3 Year, Support Rqd
VMW-VS5-STD-4A	VMware vSphere 5 Standard for 1 Processor, 4 Year, Support Rqd
VMW-VS5-STD-5A	VMware vSphere 5 Standard for 1 Processor, 5 Year, Support Rqd
VMW-VS5-ENT-1A	VMware vSphere 5 Enterprise for 1 Processor, 1 Year Support Rqd
VMW-VS5-ENT-2A	VMware vSphere 5 Enterprise for 1 CPU, 2 Yr Support Rqd
VMW-VS5-ENT-3A	VMware vSphere 5 Enterprise for 1 CPU, 3 Yr Support Rqd
VMW-VS5-ENT-4A	VMware vSphere 5 Enterprise for 1 Processor, 4 Year Support Rqd

Table 10 OSs and Value-Added Software (for 4-CPU servers) *(continued)*

PID Description	Product ID (PID)
VMW-VS5-ENT-5A	VMware vSphere 5 Enterprise for 1 CPU, 5 Yr Support Rqd
VMW-VS5-ENTP-1A	VMware vSphere 5 Enterprise Plus for 1 Processor, 1 Year Support Rqd
VMW-VS5-ENTP-2A	VMware vSphere 5 Enterprise Plus for 1 CPU, 2 Yr Support Rqd
VMW-VS5-ENTP-3A	VMware vSphere 5 Enterprise Plus for 1 Processor, 3 Year Support Rqd
VMW-VS5-ENTP-4A	VMware vSphere 5 Enterprise Plus for 1 Processor, 4 Year Support Rqd
VMW-VS5-ENTP-5A	VMware vSphere 5 Enterprise Plus for 1 Processor, 5 Year Support Rqd
VMW-VC5-STD-1A	VMware vCenter 5 Server Standard, 1 yr support required
VMW-VC5-STD-2A	VMware vCenter 5 Server Standard, 2 yr support required
VMW-VC5-STD-3A	VMware vCenter 5 Server Standard, 3 yr support required
VMW-VC5-STD-4A	VMware vCenter 5 Server Standard, 4 yr support required
VMW-VC5-STD-5A	VMware vCenter 5 Server Standard, 5 yr support required
UCS-VMW-TERMS	Acceptance of Terms, Standalone VMW License for UCS Servers

STEP 8 CHOOSE OPERATING SYSTEM MEDIA KIT

Choose the optional operating system media listed in ***Table 11***.

Table 11 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
MSWS-12-ST2S-RM	Windows Server 2012 Standard (2 CPU/2 VMs) Recovery Media
MSWS-12-DC2S-RM	Windows Server 2012 Datacenter (2 CPU/Unlimited VM) Rec Media

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) onsite parts replacement eight hours a day, five days a week.
- 90-day software warranty on media.
- Ongoing 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.

SMARTnet for UCS

For support of the entire Unified Computing System, Cisco offers the Cisco SMARTnet for UCS Service. This service provides expert software and hardware support to help sustain performance and high availability of the unified computing environment. Access to Cisco Technical Assistance Center (TAC) is provided around the clock, from anywhere in the world.

For 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 Cisco SMARTnet for UCS Service includes flexible hardware replacement options, including replacement in as little as two hours. There is also access to Cisco's extensive online technical resources to help maintain optimal efficiency and uptime of the unified computing environment. You can choose a desired service listed in ***Table 12***.

Table 12 Cisco SMARTnet for UCS Service

Product ID (PID)	On Site?	Description
CON-PREM-B440M2	Yes	ONSITE 24X7X2 UCS B440 M2 Blade Server
CON-OSP-B440M2	Yes	ONSITE 24X7X4 UCS B440 M2 Blade Server
CON-OSE-B440M2	Yes	ONSITE 8X5X4 UCS B440 M2 Blade Server
CON-OS-B440M2	Yes	ONSITE 8X5XNBD UCS B440 M2 Blade Server
CON-S2P-B440M2	No	SMARTNET 24X7X2 UCS B440 M2 Blade Server
CON-SNTP-B440M2	No	SMARTNET 24X7X4 UCS B440 M2 Blade Server
CON-SNTE-B440M2	No	SMARTNET 8X5X4 UCS B440 M2 Blade Server
CON-SNT-B440M2	No	SMARTNET 8X5XNBD UCS B440 M2 Blade Server

SMARTnet for UCS Hardware Only Service

For faster parts replacement than is provided with the standard Cisco Unified Computing System warranty, Cisco offers the Cisco SMARTnet for UCS Hardware Only Service. You can choose from two levels of advanced onsite parts replacement coverage in as little as four hours. SMARTnet for UCS Hardware Only Service provides remote access any time to Cisco support professionals who can determine if a return materials authorization (RMA) is required. You can choose a service listed in ***Table 13***.

Table 13 SMARTnet for UCS Hardware Only Service

Product ID (PID)	Service Level GSP	On Site?	Description
CON-UCW7-B440M2	UCW7	Yes	UC PLUS 24X7X4OS UCS B440 M2 Blade Server
CON-UCW5-B440M2	UCW5	Yes	UC PLUS 8X5XNBDOS UCS B440 M2 Blade Server

Unified Computing Partner Support Service

Cisco Partner Support Service (PSS) is a Cisco Collaborative Services service offering that is designed for partners to deliver their own branded support and managed services to enterprise customers. Cisco PSS provides partners with access to Cisco's support infrastructure and assets to help them:

- Expand their service portfolios to support the most complex network environments
- Lower delivery costs
- Deliver services that increase customer loyalty

Partner Unified Computing Support Options enable eligible Cisco partners to develop and consistently deliver high-value technical support that capitalizes on Cisco intellectual assets. This helps partners to realize higher margins and expand their practice.

PSS is available to all Cisco PSS partners, but requires additional specializations and requirements. For additional information, see the following URL:

www.cisco.com/go/partnerucssupport

The two Partner Unified Computing Support Options include:

- Partner Support Service for UCS
- Partner Support Service for UCS Hardware Only

Partner Support Service for UCS provides hardware and software support, including triage support for third party software, backed by Cisco technical resources and level three support. See ***Table 14***.

Table 14 Partner Support Service for UCS

Product ID (PID)	Service Level GSP	On Site?	Description
CON-PSJ1-B440M2	PSJ1	No	UCS SUPP PSS 8X5XNBD UCS B440 M2 Blade Server
CON-PSJ2-B440M2	PSJ2	No	UCS SUPP PSS 8X5X4 UCS B440 M2 Blade Server
CON-PSJ3-B440M2	PSJ3	No	UCS SUPP PSS 24X7X4 UCS B440 M2 Blade Server
CON-PSJ4-B440M2	PSJ4	No	UCS SUPP PSS 24X7X2 UCS B440 M2 Blade Server

Partner Support Service for UCS Hardware Only provides customers with replacement parts in as little as two hours. See ***Table 15***.

Table 15 Partner Support Service for UCS (Hardware Only)

Product ID (PID)	Service Level GSP	On Site?	Description
CON-PSW2-B440M2	PSW2	No	UCS W PL PSS 8X5X4 UCS B440 M2 Blade Server
CON-PSW3-B440M2	PSW3	No	UCS W PL PSS 24X7X4 UCS B440 M2 Blade Server
CON-PSW4-B440M2	PSW4	No	UCS W PL PSS 24X7X2 UCS B440 M2 Blade Server

Unified Computing Combined Support Service

Combined Services makes it easier to purchase and manage required services under one contract. SMARTnet services for UCS help increase the availability of your vital data center infrastructure and realize the most value from your unified computing investment. The more benefits you realize from the Cisco Unified Computing System (Cisco UCS), the more important the technology becomes to your business. These services allow you to:

- Optimize the uptime, performance, and efficiency of your UCS
- Protect your vital business applications by rapidly identifying and addressing issues
- Strengthen in-house expertise through knowledge transfer and mentoring
- Improve operational efficiency by allowing UCS experts to augment your internal staff resources
- Enhance business agility by diagnosing potential issues before they affect your operations

You can choose a service listed in ***Table 16***.

Table 16 UCS Computing Combined Support Service

Product ID (PID)	Service Level GSP	On Site?	Description
CON-NCF2-B440M2	NCF2	No	CMB SPT SVC 24X7X2 UCS B440 M2 Blade Server
CON-NCF2P-B440M2	NCF2P	Yes	CMB SPT SVC 24X7X2OS UCS B440 M2 Blade Server
CON-NCF4P-B440M2	NCF4P	Yes	CMB SPT SVC 24X7X4OS UCS B440 M2 Blade Server
CON-NCF4S-B440M2	NCF4S	Yes	CMB SPT SVC 8X5X4OS UCS B440 M2 Blade Server
CON-NCFCS-B440M2	NCFCS	Yes	CMB SPT SVC 8X5XNBDOS UCS B440 M2 Blade Server
CON-NCFE-B440M2	NCFE	No	CMB SPT SVC 8X5X4 UCS B440 M2 Blade Server
CON-NCFP-B440M2	NCFP	No	CMB SPT SVC 24X7X4 UCS B440 M2 Blade Server
CON-NCFT-B440M2	NCFT	No	CMB SPT SVC 8X5XNBD UCS B440 M2 Blade Server

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, which reduces the risk of any potential liabilities. This service also enables you to comply with regulatory, local, and federal requirements.

If your company has a need to control confidential, classified, sensitive, or proprietary data, you might want to consider one of the Drive Retention Services listed in ***Table 17***.

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

Table 17 Drive Retention Service Options

Service Description	Service Program Name	Service Level GSP	Service Level	Product ID (PID)
SMARTnet for UCS Service with Drive Retention	UCS DR	UCSD7	24x7x4 Onsite	CON-UCSD7-B440M2
		UCSD7	8x5xNBD Onsite	CON-UCSD5-B440M2

Table 17 Drive Retention Service Options *(continued)*

Service Description	Service Program Name	Service Level GSP	Service Level	Product ID (PID)
SMARTnet for UCS HW ONLY+Drive Retention	UCS HW+DR	UCWD7	24x7x4 Onsite	CON-UCWD7-B440M2
		UCWD5	8x5xNBD Onsite	CON-UCWD5-B440M2

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

http://www.cisco.com/en/US/services/ps2961/ps10312/Unified_Computing_Services_Overview.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

ORDER OPTIONAL KVM CABLE

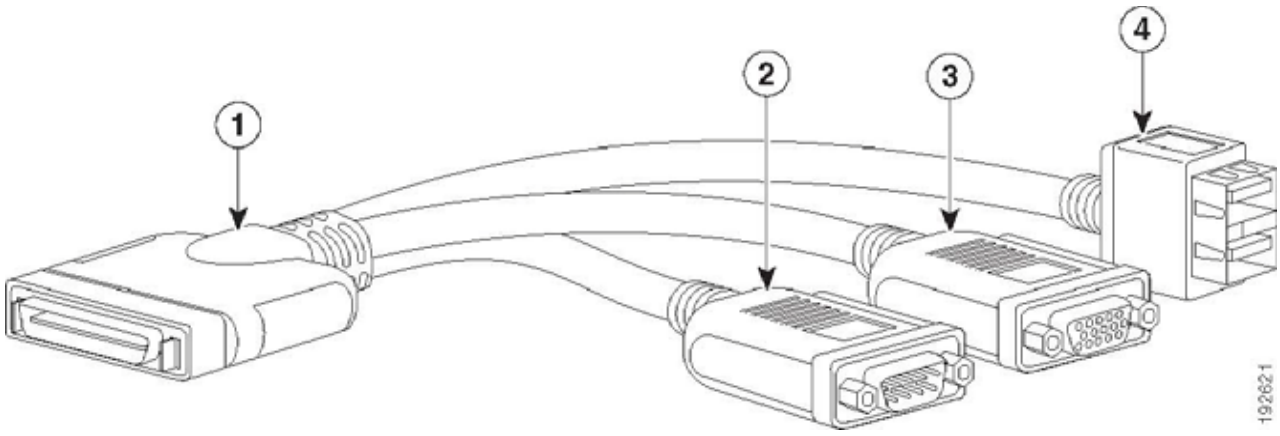
The KVM cable provides a connection into the server, providing a DB9 serial connector, a VGA connector for a monitor, and dual USB 2.0 ports for a keyboard and mouse. With this cable, you can create a direct connection to the operating system and the BIOS running on the server.

The KVM cable ordering information is listed in ***Table 18***.

Table 18 KVM Cable

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

Figure 4 KVM Cable



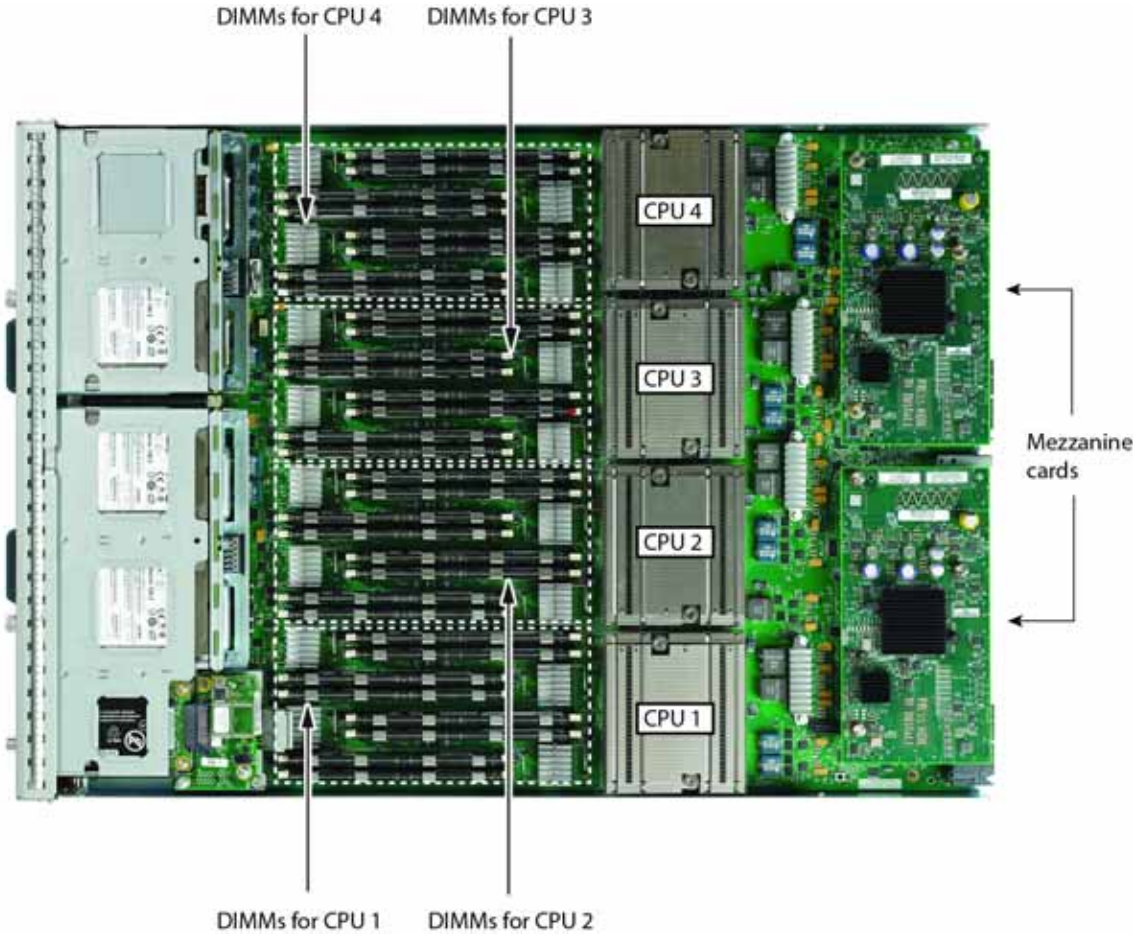
1	Connector (to server front panel)	**3**	VGA connector (for a monitor)
2	DB-9 serial connector	**4**	Two-port USB 2.0 connector (for a mouse and keyboard)

SUPPLEMENTAL MATERIAL

Motherboard

A top view of the B440 M2 motherboard is shown in ***Figure 5***.

Figure 5 B440 M2 Motherboard



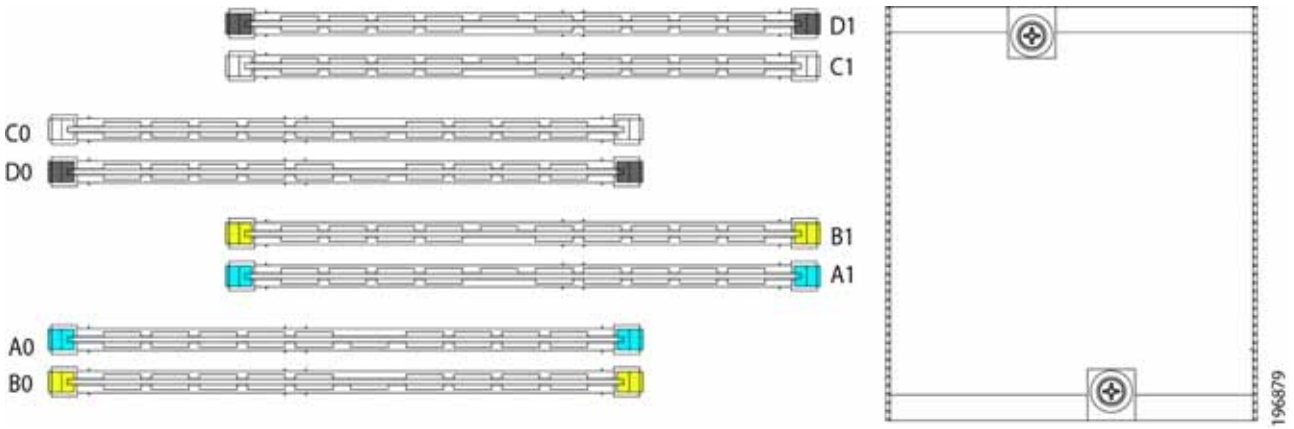
DIMM and CPU Layout

Each CPU controls four memory channels, as follows (refer to ***Figure 3 on page 10***):

- Channels A, B, C, and D
  - Bank 0: A0 (blue DIMM slot), C0 (white DIMM slot), B0 (yellow DIMM slot), D0 (black DIMM slot)
  - Bank 1: A1 (blue DIMM slot), C1 (white DIMM slot), B1 (yellow DIMM slot), D1 (black DIMM slot)

The DIMM and CPU physical layout is shown in ***Figure 6***. Each CPU is located to the right of the DIMMs it controls.

Figure 6 DIMM and CPU Layout



NOTE: DIMMs installed in slots for an absent CPU are not recognized.

Memory Population Recommendations

See ***Table 5 on page 11***. Note that DIMMs in slots of the same color must be electrically paired with each other, and should be populated with identically matched DIMMs that were ordered as a pair. Do not swap a paired DIMM with a DIMM that is not identical in manufacturer part number.

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

- There is only one DIMM slot (one bank) in each of the DDR channels. Therefore, all DIMM pairs in a B440 M2 server must be identical.
- Your selected CPU(s) can have some effect on performance. All CPUs in the server must be of the same type.
- Performance degradation can result from the following:
  - Mixing DIMM sizes and densities within a pair is not allowed and both DIMMs in the pair will be logically removed from the memory array

- Unevenly populating DIMMs between CPUs
- Populating channels with an odd number of total ranks (for example, mixing single-rank and dual-rank DIMMs)
- Using anything other than 4 or 8 DIMMs per CPU properly placed in the system

TECHNICAL SPECIFICATIONS

Dimensions and Weight

Table 19 UCS B200 M2 Dimensions and Weight[1]

Parameter	Value
Height	1.95 in. (50 mm)
Width	16.50 in.(419.1 mm)
Depth	24.4 in. (620 mm)
Weight	34.5 lbs (15.65 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/**.

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