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Introduction

 **Note:** Not all UC apps support all hardware options. [Click here for supported apps matrix.](#)

This web page describes supported compute, storage and network hardware for Virtualization of Cisco Unified Communications, including [UC on UCS](#) (Cisco Unified Communications on Cisco Unified Computing System). [Click here for a checklist](#) to design, quote and procure a virtualized UC solution that

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follows Cisco's support policy.

Cisco uses three different support models:

- **UC on UCS Tested Reference Configuration (TRC)**
- **UC on UCS Specs-based**
- **Third-party Server Specs-based**

"**TRC**" used by itself means "UC on UCS Tested Reference Configuration (TRC)". "**UC on UCS**" used by itself refers to both UC on UCS TRC and UC on UCS Specs-based.

"**Specs-based**" used by itself refers to the common rules of UC on UCS Specs-based and Third-party Server Specs-based.

Below is a comparison of the hardware support options. Note that the following are identical regardless of the support model chosen:

- Virtual machine (OVA) definitions
- VMware product, version and feature support
- VMware configuration requirements for UC
- Application/VM Co-residency policy (specifically regarding application mix, 3rd-party support, no reservations / oversubscription, virtual/physical sizing rules and max VM count per server).

	UC on UCS TRC	UC on UCS Specs-based	Third-Party Server Specs-based	Other hardware
Basic Approach	Configuration-based	Rules-based	Rules-based	Not supported - does not satisfy this page's policy.
Allowed for which UC apps?	Click here for supported apps matrix	Click here for supported apps matrix	Click here for supported apps matrix	Not supported
UC-required Virtualization Software	<ul style="list-style-type: none"> • Click here for general requirements. • VMware vCenter is optional. • One of the following is mandatory: <ul style="list-style-type: none"> ◆ Cisco UC Virtualization Foundation 	<ul style="list-style-type: none"> • Click here for general requirements. • VMware vCenter is mandatory. Also mandatory to capture Statistics Level 4 for 	<ul style="list-style-type: none"> • Click here for general requirements. • VMware vCenter is mandatory. Also mandatory to capture Statistics Level 4 	N/A - not supported.

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| <ul style="list-style-type: none"> ◆ VMware vSphere ◆ Click here for supported versions, editions, features, capacities and purchase options. | <p style="text-align: center;">maximum duration at each level.</p> <ul style="list-style-type: none"> • One of the following is mandatory: <ul style="list-style-type: none"> ◆ Cisco UC Virtualization Foundation ◆ VMware vSphere ◆ Click here for supported versions, editions, features and capacities and purchase options. | <p style="text-align: center;">for maximum duration at each level.</p> <ul style="list-style-type: none"> • VMware vSphere is mandatory: <ul style="list-style-type: none"> ◆ Click here for supported versions, features and capacities and purchase options. |
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Allowed Servers	Select Cisco UCS listed in Table 1 . Must follow all TRC rules in this policy.	Any Cisco UCS that satisfies this page's policy	Any 3rd-party server model that satisfies this page's policy	None
Required Level of Virtualization/Server Experience	Low/medium	High	High	N/A
Cisco-tested?	Joint validation of apps and server hardware by UC and UCS teams.	Generic server hardware validation by UCS team. Not jointly validated with UC apps by Cisco.	No server hardware validation by Cisco. Not jointly validated with UC apps by Cisco.	No Cisco testing (unsupported hardware)
Server Model, CPU and Component Choices	Less (customer accepts tradeoff of less hardware flexibility for more UC predictability).	More (customer assumes more test/design ownership to get more hardware flexibility)	More (customer assumes more test/design ownership to get more hardware flexibility)	None (unsupported hardware)
Does Cisco TAC support UC apps?	Yes, when all TRC rules in this policy are followed.	Yes, when all Specs-based rules in this policy are followed. Supported with	Yes, when all Specs-based rules in this policy are followed.	UC apps not supported when deployed on unsupported hardware.

UC_Virtualization_Supported_Hardware

	UC apps on C-Series DAS-only TRC: Supported with Guaranteed performance	performance Guidance only	Supported with performance Guidance only
	UC apps on C-Series FC SAN TRC or B-Series FC SAN TRC: Supported with Guaranteed performance provided all <u>shared storage requirements in this policy are met.</u>		
Does Cisco TAC support the server?	Yes. If used with UC apps, then all TRC rules in this policy must be followed.	Yes. If used with UC apps, then all UC on UCS Specs-based rules in this policy must be followed.	No. Cisco TAC supports products purchased from Cisco with a valid, paid-up maintenance contract. Also note UC apps also not supported when deployed on unsupported hardware.
Who designs/determines the server's BOM?	Customer wants Cisco to own	Customer wants to own, with assistance from Cisco	Customer wants to own N/A

For more details on Cisco UCS servers in general, see the following:

- [Cisco UCS B-Series Servers Documentation Roadmap](#)
- [Cisco UCS C-Series Servers Documentation Roadmap](#)
- [Cisco UCS C-Series Integrated Management Controller Documentation](#)
- [Cisco UCS Manager Documentation](#)
- [Cisco UCS home page](#)
- [Cisco UC on UCS solution home page](#)

UC on UCS Tested Reference Configurations

 **Note:** What does a TRC definition include?

- Definition of server model and local components (CPU, RAM, adapters, local storage) at the orderable part number level.
- Required RAID configuration (e.g. RAID5, RAID10, etc.) - including battery backup cache or SuperCap - when the TRC uses DAS storage
- Guidance on hardware installation and basic setup (e.g. [click here](#)).
 - ◆ [Click here for detailed Cisco UCS server documentation](#) regarding hardware configuration procedures.

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- ◆ Configuration of Virtual-to-physical network interface mapping is design-dependent and not included in TRC definition.
- ◆ Configuration of adapters (such as Cisco VIC, 3rd-party CNA / NIC / HBA) is design-dependent and not included in TRC definition.
- ◆ Configuration settings or step by step procedures for hardware BIOS, firmware, drivers, RAID setup are not included. [Click here for detailed Cisco UCS server documentation.](#)
- Design, installation and configuration of external hardware is not included in TRC definition, such as:
 - ◆ Network routing and switching (e.g. routers, gateways, MCUs, ethernet/FC/FCoE switches, Cisco Catalyst/Nexus/MDS, etc.)
 - ◆ QoS configuration of route/switch network devices
 - ◆ Cisco UCS B-Series chassis and switching components (e.g. Cisco UCS 6100/6200, Cisco UCS 2100/2200, Cisco UCS 5100)
 - ◆ Storage arrays (such as those from EMC, NetApp or other vendors)
- Configuration settings, patch recommendations or step by step procedures for VMware software are not included in TRC definition.
- Infrastructure solutions such as Vblock from Virtual Computing Environment may also be leveraged for configuration details not included in the TRC definition.

[Click here](#) for basic guidance on TRC hardware setup.

Table 1 - UC on UCS TRCs

 Note:

- Partners may find convenience bundle SKUs (hardware-only) for most TRCs at Cisco Commerce Build & Price: <http://apps.cisco.com/ccw/cpc/offers/uconucs>
- Usable physical RAM assumes 4GB for ESX 5.5.

"Size"	Tested Reference Configuration (TRC) and Part Numbers / SKUs / BOM	Form Factor, CPU Model and Specs	Capacity Available to VMs (using <u>required Sizing Rules</u>)
<div style="background-color: #4b0082; color: white; padding: 10px; text-align: center;"> Extra-Extra-Large (2XL) </div>	UCS B440 M2 TRC#1 Click here for BOM	<ul style="list-style-type: none"> ● Full-width Blade Server ● Quad E7-4870 (10-core / 2.4 GHz) ● 256 GB RAM ● Diskless - VMware + UC apps boot from FC SAN ● Cisco VIC (UCS M81KR) 	<ul style="list-style-type: none"> ● 40 total physical cores ("Full UC Performance" CPU type) ● 252 GB physical RAM ● Storage capacity dependent

Table 1 - UC on UCS TRCs

UC_Virtualization_Supported_Hardware

Extra-Large (XL)			
	<p>UCS C260 M2 TRC#1 <u>Click here for BOM</u></p>	<ul style="list-style-type: none"> • 2RU Rack-mount Server • Dual E7-2870 (10-core / 2.4 GHz) • 128 GB RAM • VMware + UC apps boot from DAS (2 logical volumes, each 8x 300 GB 10K disks, RAID5) • Ethernet ports on motherboard + 3rd-party NIC 	<ul style="list-style-type: none"> • on SAN/NAS. • 2x 10Gb ports for LAN+storage access. • 20 total physical cores ("Full UC Performance" CPU type) • 124 GB physical RAM • 2 volumes, each of 1.93 TB • 6x 1GbE ports for LAN access (not counting CIMC).
	<p>UCS B230 M2 TRC#1 <u>Click here for BOM</u></p>	<ul style="list-style-type: none"> • Half-width Blade Server • Dual E7-2870 (10-core / 2.4 GHz) • 128 GB RAM • Diskless - VMware + UC apps boot from FC SAN • Cisco VIC (UCS M81KR) 	<ul style="list-style-type: none"> • 20 total physical cores ("Full UC Performance" CPU type) • 124 GB physical RAM

Table 1 - UC on UCS TRCs

UC_Virtualization_Supported_Hardware

			<ul style="list-style-type: none"> • Storage capacity dependent on SAN/NAS. • 2x 10Gb ports for LAN+storage access.
<p style="text-align: center;">Large (L)</p>	<p style="text-align: center;">UCS C240 M3S (SFF) TRC#1 <u>Click here for BOM</u></p>	<ul style="list-style-type: none"> • 2RU Rack-mount Server • Dual E5-2680 (8-core, 2.7 GHz) • 96 GB RAM • VMware + UC apps boot from DAS (2 logical volumes, each 8x 300GB 15K SFF disks, RAID5) • Ethernet ports on motherboard + 3rd-party NICs 	<ul style="list-style-type: none"> • 16 total physical cores ("Full UC Performance" CPU type) • 92 GB physical RAM • Two volumes of 1.93 TB each • 12x 1GbE ports for LAN access (not counting CIMC)
	<p style="text-align: center;">UCS B200 M3 TRC#1 <u>Click here for BOM</u></p>	<ul style="list-style-type: none"> • Half-width Blade Server • Dual E5-2680 (8-core / 2.7 GHz) • 96 GB RAM • Diskless - VMware + UC apps boot from FC SAN • Cisco VIC 1240 	<ul style="list-style-type: none"> • 16 total physical cores ("Full UC Performance"

Table 1 - UC on UCS TRCs

UC_Virtualization_Supported_Hardware

			<ul style="list-style-type: none"> CPU type) • 92 GB physical RAM • Storage capacity dependent on SAN/NAS • 2x/4x 10GbE ports for LAN+storage access (dependent on IOM)
<p style="text-align: center;">Medium (M)</p>	<p style="text-align: center;">UCS C240 M3S (SFF) TRC#2 Click here for BOM</p> <p style="text-align: center;">(also used as server for Cisco Business Edition 7000])</p>	<ul style="list-style-type: none"> • 2RU Rack-mount Server • Dual E5-2640 (6-core, 2.50 GHz) • 64 GB RAM • VMware + UC apps boot from DAS (12x 300GB 10K SFF disks, two RAID5/5+1 volumes) • Ethernet ports on motherboard + pair of 3rd-party NICs 	<ul style="list-style-type: none"> • 12 total physical cores ("Full UC Performance" CPU type) • 60 GB physical RAM • Two volumes of 1.36 TB disk space • 12x 1GbE ports for LAN access (not counting CIMC)

Table 1 - UC on UCS TRCs

UC_Virtualization_Supported_Hardware

	<p>UCS C220 M3S (SFF) TRC#1 <u>Click here for BOM</u></p>	<ul style="list-style-type: none"> • 1RU Rack-mount Server • Dual E5-2643 (4-core, 3.3 GHz) • 64 GB RAM • VMware + UC apps boot from DAS (8x 300GB 15K SFF disks, RAID5) • Ethernet ports on motherboard + 3rd-party NICs 	<ul style="list-style-type: none"> • 8 total physical cores ("Full UC Performance" CPU type) • 60 GB physical RAM • 1.93 TB disk space • 6x 1GbE ports for LAN access (not counting CIMC)
<p>Small Plus (S+)</p>	<p>UCS C220 M3S (SFF) TRC#3 <u>Click here for BOM</u></p> <p>(also used as "High Density (HD)" Server for <u>Cisco Business Edition 6000</u>)</p>	<ul style="list-style-type: none"> • 1RU Rack-mount Server • Dual E5-2665 (8-core, 2.4 GHz) • 48 GB RAM • VMware + UC apps boot from DAS (8x 300GB 15K SFF disks, RAID5) • Ethernet ports on motherboard + 3rd-party NIC 	<ul style="list-style-type: none"> • 16 total physical cores ("Restricted UC Performance" CPU type) • 42 GB physical RAM • 1.93 TB disk space • 6x 1GbE ports for LAN access (not counting CIMC)

Table 1 - UC on UCS TRCs

UC_Virtualization_Supported_Hardware

Small (S)	<p>UCS C220 M3S (SFF) TRC#2 <u>Click here for BOM</u></p> <p>(also used as "Medium Density (MD)" Server for <u>Cisco Business Edition 6000</u>)</p>	<ul style="list-style-type: none"> • 1RU Rack-mount Server • Dual E5-2609 (4-core, 2.4 GHz) • 32 GB RAM • VMware + UC apps boot from DAS (4x 500GB 7.2K SFF disks, RAID10) • Ethernet ports on motherboard 	<ul style="list-style-type: none"> • 8 total physical cores ("Restricted UC Performance" CPU type) • 30 GB physical RAM • 929.46 GB • 2x 1GbE ports for LAN access (not counting CIMC)
Older (End of Sale) Configurations			
Medium (M)	<p>UCS C210 M2 TRC#1 <u>Click here for BOM</u></p> <p>UCS C210 M2 TRC#2 <u>Click here for BOM</u></p>	<ul style="list-style-type: none"> • 2RU Rack-mount Server • Dual E5640 (4-core, 2.66 GHz) • 48 GB RAM • VMware boots from DAS (2x 146/300 GB 15K, RAID1) • UC apps boot from DAS (8x 146/300 GB 15K, RAID5) • Ethernet ports on motherboard + 3rd-party NIC <ul style="list-style-type: none"> • 2RU Rack-mount Server • Dual E5640 (4-core, 2.66 GHz) • 48 GB RAM 	<ul style="list-style-type: none"> • 8 total physical cores ("Full UC Performance" CPU type) • 46 GB physical RAM • 947 GB • 6x 1GbE ports for LAN access (not counting CIMC) <ul style="list-style-type: none"> • 8 total physical cores

Table 1 - UC on UCS TRCs

UC_Virtualization_Supported_Hardware

- VMware boots from DAS (2x 146/300 GB 15K, RAID1)
- UC apps boot from FC SAN
- Ethernet ports on motherboard + 3rd-party NIC
- FC ports on 3rd-party HBA

- ("Full UC Performance" CPU type)
- 46 GB physical RAM
- 2x 4Gb FC ports for SAN access.
- 6x 1GbE ports for LAN access (not counting CIMC)

UCS C210 M2 TRC#3 [Click here for BOM](#)

- 2RU Rack-mount Server
- Dual E5640 (4-core, 2.66 GHz)
- 48 GB RAM
- Diskless - VMware + UC apps boot from FC SAN
- Ethernet ports on motherboard + 3rd-party NIC
- FC ports on 3rd-party HBA

- 8 total physical cores ("Full UC Performance" CPU type)
- 44 GB physical RAM
- 2x 4Gb FC ports for SAN access.
- 6x 1GbE ports for LAN access (not counting



UCS C210 M1 TRC#1
[Click here for BOM](#)

- 2RU Rack-mount Server
- Dual E5540 (4-core, 2.53 GHz)
- 12 GB RAM
- VMware boots from DAS (2x 146 GB 15K, RAID1)
- UC apps boot from DAS (4x 146 GB 15K, RAID5)
- Ethernet ports on motherboard + 3rd-party NIC

UCS C210 M1 TRC#2
[Click here for BOM](#)

- 2RU Rack-mount Server
- Dual E5540 (4-core, 2.53 GHz)
- 36 GB RAM
- VMware boots from DAS (2x 146 GB 15K, RAID1)
- UC apps boot from DAS (8x 146 GB 15K, RAID5)
- Ethernet ports on motherboard + 3rd-party NIC

CIMC)

- NOTE: Application co-residency NOT supported on this TRC. Single VM only.
- 8 total physical cores ("Full UC Performance" CPU type)
- 8 GB physical RAM
- 6x 1GbE ports for LAN access (not counting CIMC).

- 8 total physical cores ("Full UC Performance" CPU type)
- 32 GB physical RAM
- 947 GB disk space
- 6x 1GbE



UCS C210 M1 TRC#3
[Click here for BOM](#)

- 2RU Rack-mount Server
- Dual E5540 (4-core, 2.53 GHz)
- 36 GB RAM
- VMware boots from DAS (2x 146 GB 15K, RAID1)
- UC apps boot from FC SAN
- Ethernet ports on motherboard + 3rd-party NIC
- FC ports on 3rd-party HBA

UCS C210 M1 TRC#4
[Click here for BOM](#)

- 2RU Rack-mount Server
- Dual E5540 (4-core, 2.53 GHz)
- 36 GB RAM
- Diskless - VMware + UC apps boot from FC SAN
- Ethernet ports on motherboard + 3rd-party NIC
- FC ports on 3rd-party HBA

- ports for LAN access (not counting CIMC).
- 8 total physical cores ("Full UC Performance" CPU type)
- 32 GB physical RAM
- 2x 4Gb FC ports for SAN access.
- 6x 1GbE ports for LAN access (not counting CIMC).
- 8 total physical cores ("Full UC Performance" CPU type)
- 32 GB physical RAM
- 2x 4Gb FC

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UCS B200 M2 TRC#1 [Click here for BOM](#)

- Half-width Blade Server
- Dual E5640 (4-core / 2.66 GHz)
- 48 GB RAM
- VMware boot from DAS (2 disks RAID1)
- UC apps boot from FC SAN
- Cisco VIC (UCS M81KR)

UCS B200 M2 TRC#2 [Click here for BOM](#)

- Half-width Blade Server
- Dual E5640 (4-core / 2.66 GHz)
- 48 GB RAM
- Diskless - VMware + UC apps boot from FC SAN
- Cisco VIC (UCS M81KR)

- ports for SAN access.
- 6x 1GbE ports for LAN access (not counting CIMC).
- 8 total physical cores ("Full UC Performance" CPU type)
- 44 GB physical RAM
- Storage capacity dependent on SAN/NAS.
- 2x 10GbE ports for LAN+storage access.
- 8 total physical cores ("Full UC Performance" CPU type)
- 44 GB physical RAM
- Storage capacity



UCS B200 M1 TRC#1
[Click here for BOM](#)

- Half-width Blade Server
- Dual E5540 (4-core / 2.53 GHz)
- 36 GB RAM
- VMware boot from DAS (2 disks RAID1)
- UC apps boot from FC SAN
- 3rd-party CNA (UCS M71KR-Q)

- dependent on SAN/NAS.
- 2x 10GbE ports for LAN+storage access.
- 8 total physical cores ("Full UC Performance" CPU type)
- 32 GB physical RAM
- Storage capacity dependent on SAN/NAS.
- 2x 10GbE ports for LAN+storage access.

UCS B200 M1 TRC#2
[Click here for BOM](#)

- Half-width Blade Server
- Dual E5540 (4-core / 2.53 GHz)
- 36 GB RAM
- Diskless - VMware + UC apps boot from FC SAN
- 3rd-party CNA (UCS M71KR-Q)

- 8 total physical cores ("Full UC Performance" CPU type)
- 32 GB physical RAM
- Storage capacity dependent on SAN/NAS.
- 2x

			10GbE ports for LAN+storage access.
Small (S)	<p>UCS C200 M2 TRC#1 Click here for BOM</p> <p>(also used as older "Medium Density (MD)" Server for Cisco Business Edition 6000)</p>	<ul style="list-style-type: none"> • 1RU Rack-mount Server • Dual E5506 (4-core, 2.13 GHz) • 24 GB RAM • VMware + UC apps boot from DAS (4x 1TB 7.2K disks, RAID10) • Ethernet ports on motherboard + 3rd-party NIC 	<ul style="list-style-type: none"> • 8 total physical cores ("Restricted UC Performance" CPU type) • 20 GB physical RAM • 1.8 TB • 2x 1GbE ports for LAN access (not counting CIMC).


VMware Requirements

VMware virtualization software is required for Cisco TAC support.

- See the [Introduction](#) for basic virtualization software requirements, including what is optional and what is mandatory.
- For Cisco UCS, no UC applications run or install directly on the server hardware; all applications run only as virtual machines. Cisco UC does not support a physical, bare-metal, or nonvirtualized installation on Cisco UCS server hardware.

All UC virtualization deployments must align with the [VMware Hardware Compatibility List \(HCL\)](#).

All UC virtualization deployments must follow UC rules for supported VMware products, versions, editions and features [as described here](#).

 **Note:** For **UC on UCS Specs-based** and **Third-party Server Specs-based**, use of VMware vCenter is mandatory, and Statistics Level 4 logging is mandatory. [Click here](#) for how to configure VMware

vCenter to capture these logs. If not configured by default, Cisco TAC may request enabling these settings in order to troubleshoot problems.

"Can I use this server?"

UC virtualization hardware support is most dependent on the Intel CPU model and the [VMware Hardware Compatibility List \(HCL\)](#).

The server model only matters in the context of:

- whether or not it is on the [VMware HCL](#)
- what Intel CPU models does it carry (and are those CPU models allowed for UC virtualization)
- can its hardware component options satisfy all other requirements of this policy
- For additional considerations, see [TAC TechNote 115955](#).



Note:

- UC does not support every CPU model
- A given server model may not carry every (or any) CPU model that UC supports.
- Therefore your server model choices may be artificially limited by which CPUs the server models carry.

	UC on UCS TRC	UC on UCS Specs-based	Third-Party Server Specs-based	Not supported
Allowed Servers:	only Cisco Unified Computing System	any Cisco Unified Computing System server is supported as long as:	any 3rd-party server model is supported as long as:	The following are NOT supported :
<ul style="list-style-type: none"> • Vendors • Models / Generations • Form Factors 	B-Series Blade Servers and C-Series Rack-mount Servers listed in Table 1 are supported.	<ul style="list-style-type: none"> • it is on the VMware HCL for the version of VMware vSphere ESXi required by UC. • it carries a CPU model supported by UC (described later in this 	<ul style="list-style-type: none"> • it is on the VMware HCL for the version of VMware vSphere ESXi required by UC. • it carries a CPU model supported by UC (described later in this policy). 	<ul style="list-style-type: none"> • Cisco or 3rd-party server models that do not satisfy the rules of this policy. • Cisco 7800 Series Media Convergence Servers (MCS 7800) regardless of CPU model • Cisco UCS Express (SRE-V 9xx on ISR router hardware) • Cisco UCS E-Series Blade

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| <p><u>policy</u>).</p> <ul style="list-style-type: none"> • it satisfies all other requirements of this policy • Otherwise, any Cisco UCS model, generation, form factor (rack, blade) may be used. | <ul style="list-style-type: none"> • it satisfies all other requirements of this policy • Otherwise, any 3rd-party vendor, model, generation, form factor (rack, blade) may be used. | <p>Servers (E14x/16x on ISR router hardware) with CPUs that do not meet Processor policy requirements.</p> <ul style="list-style-type: none"> • For additional considerations, please see TAC TechNote 115955. |
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There are no UC-specific requirements.

UC apps will specify the required version of VMware vSphere ESXi. Customers should follow server vendor guidelines for what to use with this VMware version.

For Cisco UCS:

Server or Component "Embedded Software"

- **BIOS**
- **Firmware**
- **Drivers**

- UCS Software or UCS Manager Software in UCS 6x00 hardware: use the latest recommended version for the VMware vSphere ESXi version
- Other B-Series / C-Series BIOS, firmware, drivers: use the latest recommended version for the VMware vSphere ESXi version
- If "Intel Virtualization Technology" BIOS option is available, UC recommends enabling.
- If "Hyper-threading" BIOS option is available (and the CPU supports hyper-threading), UC recommends enabling.
 - ◆ Note that the resultant "Logical Cores" do not factor into UC sizing rules for co-residency. UC still requires mapping one physical core to one vcpu core (not to one "Logical Core").

Mechanical and Environmental



Note: Energy-saving features that cause reduction in CPU performance or real-time relocation/powering-down of virtual machines (such as **CPU throttling** or **VMware Dynamic Power Management**) are not supported.

Otherwise, there are no UC-specific requirements for form factor, rack mounting hardware, cable management hardware, power supplies, fans or cooling systems. Follow server vendor guidelines for these components.

If you use a Cisco UCS bundle SKU, note that the rail kit, cable management and power supply options may not match

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what is available with non-bundled Cisco UCS.

Redundant power supplies are highly recommended, particularly for **UC on UCS**.

For Cisco UCS, it is strongly recommended to use the Cisco default rail kit, unless you have different rack types such as telco racks or racks proprietary to another server vendor. Cisco does not sell any other types of rack-mounting hardware; you must purchase such hardware from a third party.

Processors / CPUs

Allowed vs. Supported CPU policies are different for UC on UCS Tested Reference Configuration, UC on UCS Specs-based and 3rd-party Server Specs-based.

Read the notes and BOTH CPU tables below to understand these support policy differences before locking in CPU parts choices.

Note:

- If an application has application-specific rules on its page on www.cisco.com/go/uc-virtualized, that rule takes precedence over this policy. Check EVERY app that will share a physical server before finalizing CPU choice.
- CPU architectures are NOT allowed for Specs-based until explicitly listed below. Until listed below, they are not allowed, even if believed to be "better" since "newer".
- Some CPU architectures, or CPU models within an architecture/family, are not a good fit for Collaboration requirements and will NEVER be allowed or listed below. Do not assume that all CPU architectures, or all models with an architecture, will be allowed.
- Collaboration application support for new CPU architectures/models may lag the release date from Intel and/or server vendors.
- Collaboration applications require minimum physical core speeds on allowed CPU architectures (normal not turbo). Higher capacity VM configurations will usually require higher minimum physical core speeds. Expect these speeds to be higher than what is required for many traditional business applications. Speeds need to be what is shown at ark.intel.com in the CPU model's description, or for Cisco UCS in the description of the CPU SKU. This is normal speed not "turbo". This speed may not be what is actually returned by running software such as OS CLIs.
- Slower-speed CPUs categorized as "Restricted UC Performance" are only allowed for certain VM configurations of certain Collaboration apps, and they are usually lower capacity points of those applications. Do not assume large capacity VMs are allowed on slow-speed CPUs.
- Physical CPU choices for UC on UCS Tested Reference Configurations are stricter. They are a subset of what is allowed for Specs-based. See CPU Table 2.
- Physical CPUs shipping as part of a Packaged Collaboration Solution like Cisco Business Edition may not be changed.

CPU Table 1 - Allowed Specs-based CPUs

CPU Architecture & Models	Full UC Performance CPUs	Restricted UC Performance CPUs
Shipping CPUs		
<u>Intel Xeon E7-2800v2, E7-4800v2 or E7-8800v2</u> (Brickland/Ivy Bridge-EX)	Any model with physical core speed 2.50 GHz or higher (normal not turbo). Some applications, or VMs of an application, may not support or require higher speed; click here and check each application's page . Must also follow all rules in Table 2 below.	Any model with physical core speed 2.00 GHz to 2.49 GHz (normal not turbo). Some applications, or VMs of an application, may not support or require higher speed; click here and check each application's page . Must also follow all rules in Table 2 below.
<u>Intel Xeon E7-2800, E7-4800 or E7-8800</u> (Westmere-EX)	Any model with physical core speed 2.40 GHz or higher (normal not turbo). Some applications, or VMs of an application, may not support or require higher speed; click here and check each application's page . Must also follow all rules in Table 2 below.	Any model with physical core speed 2.00 GHz to 2.39 GHz (normal not turbo). Some applications, or VMs of an application, may not support or require higher speed; click here and check each application's page . Must also follow all rules in Table 2 below.
<u>Intel Xeon E5-2600v3</u> (Haswell-EP) (note others like E5-16xx v3 not supported)	Any model with physical core speed 2.50 GHz or higher (normal not turbo). Some applications, or VMs of an application, may not support or require higher speed; click here and check each application's page . Must also follow all rules in Table 2 below.	Any model with physical core speed 2.00 GHz to 2.49 GHz (normal not turbo). Some applications, or VMs of an application, may not support or require higher speed; click here and check each application's page . Must also follow all rules in Table 2 below.
<u>Intel Xeon E5-2600v2 or E5-4600v2</u> (Ivy Bridge-EP and -4SEP) (note E5-16xx not supported)	Any model with physical core speed 2.50 GHz or higher (normal not turbo). Some applications, or VMs of an application, may not support or require higher speed; click here	Any model with physical core speed 2.00 GHz to 2.49 GHz (normal not turbo). Some applications, or VMs of an application,

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	<p>and check each application's page. Must also follow all rules in Table 2 below.</p>	<p>may not support or require higher speed; click here and check each application's page. Must also follow all rules in Table 2 below.</p>
<p>Intel Xeon E5-2600 or E5-4600 (Sandy Bridge-EP)</p>	<p>Any model with physical core speed 2.50 GHz or higher (normal not turbo). Some applications, or VMs of an application, may not support or require higher speed; click here and check each application's page. Must also follow all rules in Table 2 below.</p>	<p>Any model with physical core speed 2.00 GHz to 2.49 GHz (normal not turbo). Some applications, or VMs of an application, may not support or require higher speed; click here and check each application's page. Must also follow all rules in Table 2 below.</p>
<p>Intel Xeon E5-2400v2 (Ivy Bridge-EN - note E5-16xx not supported)</p>	<p>Not supported as a Full UC Performance CPU.</p>	<p>Any model with physical core speed 2.00 GHz or higher (normal not turbo). Some applications, or VMs of an application, may not support or require higher speed; click here and check each application's page. Must also follow all rules in Table 2 below.</p>
<p>Intel Xeon E5-2400 (Sandy Bridge-EN)</p>	<p>Not supported as a Full UC Performance CPU.</p>	<p>Any model with physical core speed 2.00 GHz or higher (normal not turbo). Some applications, or VMs of an application, may not support or require higher speed; click here and check each application's page. Must also follow all rules in Table 2 below.</p>
<p>Older (end of sale) CPUs</p>		
<p>Intel Xeon 7500 (Nehalem-EX)</p>	<p>Any model with minimum physical core speed of 2.53 GHz or higher. Some applications, or VMs of an application, may not support or require higher speed; click here and check each application's page. Must also follow all rules in Table 2 below.</p>	<p>Any model with minimum physical core speed of 2.00 GHz to 2.52 GHz. Some applications, or VMs of an application, may not support or require higher speed; click here and check each application's page. Must also follow all rules</p>

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		in Table 2 below. Note: not supported by majority of Collaboration apps. Recommend try shipping models.
<u>Intel Xeon 5600</u> (Westmere-EP)	Any model with minimum physical core speed of 2.53 GHz or higher. Some applications, or VMs of an application, may not support or require higher speed; click here and check each application's page . Must also follow all rules in Table 2 below.	Any model with minimum physical core speed of 2.00 GHz to 2.52 GHz. Some applications, or VMs of an application, may not support or require higher speed; click here and check each application's page . Must also follow all rules in Table 2 below. Note: not supported by majority of Collaboratoin apps. Recommend try shipping models.
For purposes of <u>sizing rules and co-residency</u> , virtualized UC apps see equivalent performance from one physical CPU core on any of the above architectures. E.g. UC apps perform equivalently on 1 physical core of 5600 at 2.53+ GHz or 1 physical core of E5-2600 at 2.50+ GHz or 1 physical core of E7-2800 at 2.40+ GHz.		

CPU Table 2 - Additional TRC and Specs-based rules for CPU

UC on UCS TRC	UC on UCS Specs-based	Third-party Server Specs-based	Not supported
Physical Sockets / CPU Quantity must exactly match what is listed in TRC Table 1 .	Customer choice (subject to what server model allows).		The following CPUs are NOT supported for UC: <ul style="list-style-type: none"> • Intel CPUs that are IN one of the supported architectures/families, but do NOT meet minimum physical core speeds, are not supported for UC. • Unlisted Intel CPU architectures/families (such as Intel Xeon 6500, E5-16xx, Core-i7, etc.) are NOT supported for UC. An Intel CPU architecture is not supported for UC unless listed in CPU Table 1. • Other CPU vendors such as
Physical CPU Vendor and CPU model Must either exactly match the TRC BOM's CPU model in TRC Table 1 or use a CPU model that satisfies the following requirements: <ul style="list-style-type: none"> • Same physical CPU core count as the TRC BOM's CPU model in 	See app links in table on http://www.cisco.com/go/uc-virtualized or Supported Applications for which CPU Types are allowed for a given VM configuration of a UC app. E.g. the Unified Communications Manager 7500 user VM configuration is only allowed on a Full UC Performance CPU.		

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Table 1.

- Same CPU architecture as the TRC BOM's CPU model in Table 1.
- Physical CPU core speed same or higher than that of the TRC BOM's CPU model in Table 1.

AMD are not supported for UC.

Cisco TAC is not obligated to troubleshoot UC app issues when deployed on unsupported hardware.

E.g. if the TRC BOM was tested with 2-socket Intel Xeon E5-2680 v1 (SandyBridge, 8-core, 2.7 GHz), then substitution of a pair of any other E5-2600 v1 with 8 cores and speed 2.7 Ghz or higher would be allowed and the server is still a TRC. Substitution with E5-2600 v2 or v3 would NOT be a TRC due to different architecture, and would make the server UC on UCS Specs-based.

Total physical CPU cores	Total <i>available</i> is fixed based on the CPU models in TRC <u>Table 1.</u>	Total <i>available</i> depends on which CPU model customer chooses vs. the physical server's socket count and the CPU model selected.
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Total *required* is based on:


- the sum of UC virtual machines' vCPUs
- and the UC sizing and co-residency rules (click here).

Per these policies, recall that **physical CPU cores may not be over-subscribed for UC VMs**

- I.e. **one physical CPU core must equal one VM vCPU core.**
- Hyper-threading on the CPU should be enabled when available, but the resulting Logical Cores do not change UC app rules. UC rules are based on 1:1 mapping of physical cores to vcpu, not Logical Cores to vcpu.

Cisco TAC is not obligated to troubleshoot UC app issues in deployments with insufficient physical processor cores or speed.

Memory / RAM

 **Note:** Virtualization software licenses such as Cisco UC Virtualization Foundation or VMware vSphere limit the amount of total vRAM that can be used (and therefore the amount of physical RAM that can be used for UC VMs, due to UC sizing rules). See [Unified Communications VMware Requirements](#) for these limits. In general larger deployments, or deployments with high VM counts, will require very high vRAM totals and will therefore need to use VMware vSphere instead of Cisco UC Virtualization Foundation. If using high-memory-capacity servers, use VMware vSphere instead to ensure use of all physical memory.

	UC on UCS TRC	Specs-based (UCS or 3rd-party Server)
	Total <i>available</i> is listed in Table 1 . Additional memory may be added.	Total <i>available</i> depends on the server chosen.
	Total <i>required</i> is dependent on the virtual machine quantity/size mix deployed on the hardware:	
Physical RAM	<ul style="list-style-type: none"> • 2-4 GB required for virtualization software, depending on version. See Memory/RAM section of General sizing rules. • plus the <u>sum of UC virtual machines' vRAM</u>. • while following <u>co-residency support policy rules</u>. Per these rules, recall that UC does not support physical memory oversubscription (1 GB of vRAM must equal 1 GB of physical RAM). Cisco TAC is not obligated to troubleshoot UC app issues if the deployment has insufficient physical RAM. 	
Memory Module/DIMM Speed and Population	<p>For what was tested in a TRC, see Table 1.</p> <p>Follow server vendor guidelines for optimum memory population for the memory capacity required by UC.</p> <ul style="list-style-type: none"> • For Cisco UCS, use the Specs Sheets at UCS Quick Catalog. E.g. for a UCS B200 M3 with 96GB total RAM, optimal is 4x8GB DIMM + 4x4GB DIMM. Using 6x16GB 	

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DIMM is not optimal.


Otherwise, there are no UC-specific requirements (primarily because UC does not support memory oversubscription).

- UC allows any DIMM speed (e.g. 1333 MHz, 1600 MHz, etc.).
- UC allows any memory hardware module size, density and quantity (including changing the DIMM population on a Tested Reference Configuration) as long as UC-required RAM capacity is met, and the server vendor supports the intended memory configuration.


Storage

To be supported for UC, all storage systems - whether TRC or specs-based - must meet the following requirements:

- Compatible with the VMware HCL and compatible with the supported server model used
- Host-level *kernel disk command latency* < 4ms (no spikes above) and *physical device command latency* < 20 ms (no spikes above). For NFS NAS, *guest latency* < 24 ms (no spikes above)
- Published vDisk capacity requirements of UC VMs.
 - ◊ For DAS-only TRCs (including Cisco Business Edition 6000, Thin Provisioning (either from VMware or from storage array) is **not** supported. Thick provisioning must be used.
 - ◊ For diskless TRCs and any Specs-based server, thin provisioning (either from VMware or from storage array) is allowed with the caveat that disk space must be available to the VM as needed. Running out of disk space due to thin provisioning will crash the application and corrupt the virtual disk (which may also prevent restore from backup on the virtual disk).
- Published IOPS capacity requirements of UC VMs (including excess capacity provisioned to handle IOPS spikes such as during Cisco Unified Communications Manager upgrades).
- Other storage system design requirements ([click here](#)).

 **Note:** UC on UCS TRCs using only DAS storage (such as C220 M3S TRC#1) have been pre-designed and tested to meet the above requirements for any UC with UC co-residency scenario that will fit on the TRC. Detailed capacity planning is not required unless deploying

- non-UC/3rd-party apps
- VM OVA templates created later than the TRC
- VM OVA templates with very large vDisks (300GB+).

 **Note:** All of the above requirements must be met for Cisco UC to function properly. Except for UC on UCS TRCs using DAS only, it is the customer's responsibility to design a storage system that meets the above requirements. Cisco TAC is not obligated to troubleshoot UC app issues when customer-provided storage is insufficient, overloaded or otherwise not meeting the above requirements.

See below for supported storage hardware options.

UC on UCS TRC

Specs-based (UCS or 3rd-party Server)

TRCs are only defined for:

Supported Storage Options

- **DAS-only** with UC-specified configuration (C260 M2, C240 M3S, C220 M3S, C210 M1/M2, C200 M2)
 - **FC SAN** with VMware local boot from DAS (B200 M1/M2, C210 M1/M2)
 - **Diskless / boot from FC SAN** (B440 M2, B230 M2, B200 M3, C210 M2)
 - ◆ (only supported with VMware vSphere ESXi 4.1+ and compatible UC app versions)
- **DAS** with customer-defined configuration (including local disks, external SAS, etc.)
 - **FC, iSCSI, FCoE or Infiniband SAN**
 - **Diskless / boot from SAN via above transport options** (only supported with VMware vSphere ESXi 4.1+ and compatible UC app versions).
 - **NFS NAS**

DAS Support Details

UC on UCS TRC

B-Series TRC

may use the disk size/speed listed in Table 1 BOMs, or any other orderable size/speed for the blade server (since local disks are only used to boot VMware).

C-Series TRC

Both must be same or higher than specs listed in Table 1.

E.g. for a TRC tested with 300 GB 10K rpm disks, then:

- 300GB 15K rpm is supported (faster)
- 146GB 10K rpm not supported (too small)
- 7.2K rpm disk of any size not supported (too slow)

TRC BOMs are updated as orderable disk drive options change. E.g. UCS C210 M2 TRC#1 was tested with 146GB 15K rpm disks, but due to 146GB disk EOL, the BOM now specifies 300GB 15K rpm disks (still supported as TRC since both size and speed are "same or higher" than what was tested).

Must exactly match what is listed in Table 1. E.g. if the TRC was tested with ten 2.5" SAS drives, then that must be used regardless of disk size or speed.

Specs-based (UCS or 3rd-party Server)

DAS is supported with customer-determined disk size, speed, quantity, technology, form factor and RAID configuration as long as:

- compatible with the VMware HCL and compatible with the server model used
- all UC latency, performance and capacity requirements are met. To ensure optimum UC app performance, **be sure to use Battery Backup cache or SuperCap on RAID controllers for DAS.**

Disk Size and Speed

Disk Quantity, Technology, Form Factor

RAID Configuration

RAID configuration, including physical-to-logical volume mapping, must exactly match [Table 1](#) and the RAID instructions in the document [Cisco Collaboration on Virtual Servers here](#).

SAN / NAS Support Details

- Applies to any TRC or Specs-based configuration connecting to FC, iSCSI, FCoE or NFS storage.
- No UC requirement to dedicate arrays or storage groups to UC (vs. non-UC), or to one UC app vs. other UC apps.
- The storage solution must be compatible with the server model used. E.g. for Cisco Unified Computing System: [Cisco UCS Interoperability](#)
- The storage solution must be compatible with the VMware HCL. For example, refer to the ?SAN/Storage? tab at <http://www.vmware.com/resources/compatibility/search.php?sourceid=ie7&rls=com.microsoft:en-us:IE-SearchBo>
- No UC requirements on disk size, speed, technology (SAS, SATA, FC disk), form factor or RAID configuration as long as requirements for compatibility, latency, performance and capacity are met. "Tier 1 Storage" is generally recommended for UC deployments. See the [UC Virtualization Storage System Design Requirements](#) for an illustration of a best practices storage array configuration for UC.
- There is no UC-specific requirement for NFS version. Use what VMware and the server vendor recommend for the vSphere ESXi version required by UC.
- Use of storage network and array "features" (such as thin provisioning or EMC Powerpath) is allowed.
- Otherwise any shared storage configuration is allowed as long as UC requirements for VMware HCL, server compatibility, latency, capacity and performance are met.

Removable Media

UC on UCS TRC

Specs-based (UCS or 3rd-party Server)

Boot from SD cards, USB flash or other

- | | |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> • Not allowed or supported by Cisco for apps or VMware vSphere ESXi. TRCs are only validated as either boot from DAS or diskless boot from FC SAN depending on Table 1. • Note all current TRCs are either diskless blades or C-Series DAS/HDD. SD cards in C-Series TRCs are used for convenience to get the UCS utilities (like SCU and HUU), in lieu of a DVD drive. | <ul style="list-style-type: none"> • Not allowed or supported by Cisco for apps. Must boot from DAS, SAN or NAS per Specs-based Storage requirements. • Allowed for VMware vSphere ESXi as long as supported by server vendor. Cisco Collaboration apps do not test, validate or troubleshoot these boot methods - work with server vendor if boot issues. |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

Otherwise, there are no UC-specific requirements or restrictions. The different methods of [installing UC apps into VMs](#) can leverage the following distribution types of Cisco UC software:

- Physical delivery of UC apps via ISO image file on DVD.
- Cisco eDelivery of UC apps via email with link to ISO image file download.


IO Adapters, Controllers and Devices for LAN Access and Storage Access

All adapters used (NIC, HBA, CNA, VIC, etc.) must be on the VMware Hardware Compatibility List for the version of vSphere ESXi required by UC.

	UC on UCS TRC	Specs-based (UCS or 3rd-party Server)
Physical Adapter Hardware (NIC, HBA, VIC, CNA)	<ul style="list-style-type: none"> • UCS B-Series TRC may use either the adapters listed in <u>Table 1 BOMs</u> or substitute with any other supported adapter for the blade server model. Which adapter "should" be used is dependent on deployment, design and UC apps. • For UCS C-Series TRC: <ul style="list-style-type: none"> ◆ must exactly match adapter vendor/model/technology (e.g. Intel i350 for 1GbE or QLogic QLE2462 for FC) listed in <u>Table 1 BOMs</u>. ◆ Allowed NIC quantity must be same or higher than what is listed in <u>Table 1 BOMs</u>. ◆ Allowed HBA/VIC/CNA quantity must exactly match <u>Table 1 BOMs</u>. ◆ Any other changes are not allowed for a UC on UCS TRC, but are allowed for UC on UCS Specs-based. 	<ul style="list-style-type: none"> • Only the following I/O Devices are supported: <ul style="list-style-type: none"> ◆ HBA for storage access <ul style="list-style-type: none"> ◇ Fibre Channel ? 2Gbps or faster ◇ InfiniBand ◆ NIC for LAN and/or shared storage access <ul style="list-style-type: none"> ◇ Ethernet ? 1Gbps or faster. Includes NFS and iSCSI for storage access. ◆ Cisco VIC or 3rd-party Converged Network Adapter for LAN and/or storage access <ul style="list-style-type: none"> ◇ FCoE - 10Gbps or faster

		<ul style="list-style-type: none"> ◆ RAID Controllers for DAS storage access <ul style="list-style-type: none"> ◇ SAS ◇ SAS SATA Combo ◇ SAS-RAID ◇ SAS/SATA-RAID ◇ SATA • The customer is also responsible for configuring redundant devices on the server (e.g. redundant NIC, HBA, VIA or CNA adapters). • There are no UC restrictions on hardware vendors for I/O Devices other than that VMware HCL and the server vendor/model must be compatible with them and support them.
<p>IO Capacity and Performance</p>	<p>In most cases detailed capacity planning is not required for LAN IO or storage access IO. TRC adapter choices have been made to accommodate the IO of all UC on UCS app co-residency scenarios that will fit on the TRC. For guidance on active vs. standby network ports, see the Cisco UC Design Guide and QoS Design Considerations for Virtual UC with UCS. It is the customer's responsibility to ensure the external LAN and storage access meet UC app design requirements.</p>	<ul style="list-style-type: none"> • LAN access adapters must be able to accommodate the LAN usage of UC VMs (described in UC app design guides). • Storage access adapters must be able to accommodate the storage IOPS (described in the Storage section of this policy). <p>Cisco TAC is not obligated to troubleshoot UC apps issues in a deployment with insufficient or overloaded I/O devices.</p>

UC on UCS TRC Bills of Material (BOMs)

 **Note:** Bundle SKUs for UC on UCS TRCs are listed in the [UC on UCS section of Cisco Commerce Build and Price tool](#).

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Do not assume that other UCS bundle SKUs on [Cisco Commerce Build and Price](#) can be used with UC on UCS. Before quoting one of these bundles, identify the BOM that it ships and see below:

- If the bundle meets TRC requirements on this page, it may be quoted for UC on UCS TRC.
- If the bundle does NOT meet TRC requirements but DOES meet Specs-based requirements, then it may be quoted for UC on UCS Specs-based only.
- If the bundle does NOT meet TRC requirements and also does NOT meet Specs-based requirements, then it may NOT be quoted for UC on UCS at all without modification.

B440 M2 TRC#1

2X-Large blade TRC.

This BOM was also quotable via fixed-configuration bundle UCS-B440M2-VCDL1.

Quantity	Cisco Part Number	Description
1	B440-BASE-M2UPG	UCS B440 M2 Blade Server w/o CPU, memory, HDD, mezzanine
4	UCS-CPU-E74870	2.4 GHz E7-4870 130W 10C CPU/30M Cache
16	UCS-MR-2X082RX-C	2X8GB DDR3-1333-MHz RDIMM/PC3-10600/dual rank/x2/1.35v
1	N20-AC0002	UCS M81KR Virtual Interface Card/PCIe/2-port 10Gb
32	UCS-MKIT-082RX-C	Auto-included: Mem kit for UCS-MR-2X082RX-C
4	N20-BBLKD	Auto-included: HDD slot blanking panel for UCS B-Series Blade Servers
4	N20-BHTS3	Auto-included: CPU heat sink for UCS B440 Blade Server
1	N20-LBLKU	Auto-included: Blanking panel for B440 M1 battery backup bay

B230 M2 TRC#1

Extra-Large blade TRC.

This BOM was also quotable via fixed-configuration bundle UCS-B230M2-VCDL1 (has extra RAM vs. minimum below).

Quantity	Cisco Part Number	Description
1	B230-BASE-M2UPG	UCS B230 M2 Blade Server w/o CPU, memory, SSD, mezzanine1
2	UCS-CPU-E72870	2.4 GHz E7-2870 130W 10C/30M Cache
8	UCS-MR-2X082RX-B	2X8GB DDR3-1333-MHz RDIMM/PC3-10600/dual rank/x4/1.35v
1	N20-AC0002	UCS M81KR Virtual Interface Card/PCIe/2-port 10Gb1
16	UCS-MKIT-082RX-B	Auto-included: Mem kit for UCS-MR-2X082RX-B
2	N20-BBLKD-7MM	Auto-included: UCS 7MM SSD Blank Filler
2	N20-BHTS6	Auto-included: CPU heat sink for UCS B230 Blade Server

B200 M3 TRC#1

Large blade TRC.

This configuration is also quotable as either UCUCS-EZ-B200M3 (single blade) or UCSB-EZ-UC-B200M3 (multiple blades with chassis and switching).

Quantity	Cisco Part Number	Description
1	UCSB-B200-M3-U	UCS B200 M3 Blade Server w/o CPU, mem, HDD, mLOM/mezz (UPG)
2	UCS-CPU-E5-2680	2.70 GHz E5-2680 130W 8C/20MB Cache/DDR3 1600MHz
8	UCS-MR-1X082RY-A	8GB DDR3-1600-MHz RDIMM/PC3-12800/dual rank/1.35v
8	UCS-MR-1X041RY-A	4GB DDR3-1600-MHz RDIMM/PC3-12800/single rank/1.35v Diskless
1	UCSB-MLOM-40G-01	VIC 1240 modular LOM for M3 blade servers Auto-included: UCS 2.5 inch HDD blanking panel
2	N20-BBLKD	
2	UCSB-HS-01-EP	Auto-included: Heat Sink for UCS B200 M3 server

C260 M2 TRC#1

Extra-Large TRC.


This configuration was also quotable as UCS-C260M2-VCD2.

Quantity	Cisco Part Number	Description
1	C260-BASE-2646	UCS C260 M2 Rack Server (w/o CPU, MRB, PSU)
2	UCS-CPU-E72870	2.4 GHz E7-2870 130W 10C/30M Cache
16	C260-MRBD-002	2 DIMM Memory Riser Board For C260
16	UCS-MR-2X041RX-C	2X4GB DDR3-1333-MHz RDIMM/PC3-10600/single rank/x1/1.35v
16	A03-D300GA2	300GB 6Gb SAS 10K RPM SFF HDD/hot plug/drive sled mounted
2	UCSC-DBKP-08E	8 Drive Backplane W/Expander For C-Series
1	R2XX-PL003	LSI 6G MegaRAID 9261-8i card (RAID 0,1,5,6,10,60) - 512WC
1	UCSC-BBU-11-C260	RAID battery backup for LSI Electr controller for C260
One of:		
1	<ul style="list-style-type: none"> • N2XX-AIPCI02 • Intel Quad port GbE Controller (E1G44ETG1P20) • UCSC-PCIE-IRJ45 • Intel i350 Quad Port 1Gb Adapter 	
2	UCSC-PSU2-1200	1200W 2u Power Supply For UCS
1	UCSC-RAIL-2U	2U Rail Kit for UCS C-Series servers DVD drive not provided nor supported on this model
1	UCS-SD-16G	16GB SD Card module for UCS Servers
1	UCSX-MLOM-001	Modular LOM For UCS

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32	UCS-MKIT-041RX-C	Auto-Included: Mem kit for UCS-MR-2X041RX-C
2	UCSC-HS-01-C260	Auto-Included: CPU HEAT SINK for UCS C260 M2 RACK SERVER
2	UCSC-PCIF-01F	Auto-Included: Full height PCIe filler for C-Series
2	UCSC-PCIF-01H	Auto-Included: Half height PCIe filler for UCS
2	UCSC-RC-P8M-C260	Auto-Included: .79m SAS RAID Cable for C260

C240 M3S (SFF) TRC#1

 **Note:** The C240 M3L (LFF) is only supported under UC on UCS Specs-based. This configuration is also available via bundle UCUCS-EZ-C240M3S. Note that the RAID controller shipped with this bundle depends on date of purchase.


Large TRC.

Quantity	Cisco Part Number	Description
1	UCSC-C240-M3S	UCS C240 M3 SFF w/o CPU, mem, HD, PCIe, w/ rail kit
2	UCS-CPU-E5-2680	2.70 GHz E5-2680 130W 8C/20MB Cache/DDR3 1600MHz
8	UCS-MR-1X082RY-A	8GB DDR3-1600-MHz RDIMM/PC3-12800/dual rank/1.35v
8	UCS-MR-1X041RY-A	4GB DDR3-1600-MHz RDIMM/PC3-12800/single rank/1.35v
16	UCS-HDD300GI2F105	300GB 6Gb SAS 15K RPM SFF HDD/hot plug/drive sled mounted
1	UCSC-SD-16G-C240	16GB SD Card Module for C240 Servers

One of:

1	<ul style="list-style-type: none"> • UCS-RAID-9266 • UCS-RAID-9266CV • UCS-RAID9271CV-8I 	<ul style="list-style-type: none"> • MegaRAID 9266-8i + battery backup for C240 and C220 • MegaRAID 9266CV-8i w/TFM + Super Cap • MegaRAID 9271CV Raid card with 8 internal SAS/SATA parts, S
		DVD drive not offered with C240 M3.
2	UCSC-PCIE-IRJ45	Intel i350 Quad Port 1Gb Adapter
2	UCSC-PSU2-1200	1200W 2u Power Supply For UCS
2	UCSC-HS-C240M3	Auto-included: Heat Sink for UCS C240 M3 Rack Server
1	UCSC-RAIL-2U	Auto-included: 2U Rail Kit for UCS C-Series servers
8	N20-BBLKD	Auto-included: UCS 2.5 inch HDD blanking panel
2	UCSC-PCIF-01F	Auto-included: Full height PCIe filler for C-Series


C240 M3S (SFF) TRC#2


 **Note:** The C240 M3L (LFF) is only supported under UC on UCS Specs-based. This configuration is also available as part of a Cisco Business Edition 7000 bundle BE7K-K9 or BE7K-K9-XU.

Medium TRC.

Quantity	Cisco Part Number	Description
1	UCSC-C240-M3S	UCS C240 M3 SFF w/o CPU, mem, HD, PCIe, w/ rail kit
2	UCS-CPU-E5-2640	2.50 GHz E5-2640/95W 6C/15MB Cache/DDR3 1333MHz
8	UCS-MR-1X082RY-A	8GB DDR3-1600-MHz RDIMM/PC3-12800/dual rank/1.35v
12	A03-D300GA2	300GB 6Gb SAS 10K RPM SFF HDD/hot plug/drive sled mounted
1	UCS-RAID9271CV-8I	MegaRAID 9271CV Raid card with 8 internal SAS/SATA parts, S
1	R2XX-RAID5	Enable RAID 5 Setting DVD drive not offered with C240 M3.
2	UCSC-PCIE-IRJ45	Intel i350 Quad Port 1Gb Adapter
2	UCSC-PSU2-1200	1200W 2u Power Supply For UCS
2	UCSC-HS-C240M3	Auto-included: Heat Sink for UCS C240 M3 Rack Server
1	UCSC-RAIL-2U	Auto-included: 2U Rail Kit for UCS C-Series servers
12	N20-BBLKD	Auto-included: UCS 2.5 inch HDD blanking panel
2	UCSC-PCIF-01F	Auto-included: Full height PCIe filler for C-Series

C220 M3S (SFF) TRC#1

 **Note:** This TRC is NOT supported for use with Cisco Business Edition 6000.

 **Note:** The C220 M3L (LFF) is only supported under UC on UCS Specs-based.

This configuration is also available as bundle UCUCS-EZ-C220M3S. Note that the RAID controller shipped with this bundle depends on date of purchase.

Medium TRC.

Quantity	Cisco Part Number	Description
1	UCSC-C220-M3S	UCS C220 M3 SFF w/o CPU, mem, HDD, PCIe, w/ rail kit
2	UCS-CPU-E5-2643	3.30 GHz E5-2643/130W 4C/10MB Cache/DDR3 1600MHz
8	UCS-MR-1X082RY-A	8GB DDR3-1600-MHz RDIMM/PC3-12800/dual rank/1.35v
8	UCS-HDD300GI2F105	300GB 6Gb SAS 15K RPM SFF HDD/hot plug/drive sled mounted


One of:

1	<ul style="list-style-type: none"> • UCS-RAID-9266 • UCS-RAID-9266CV • UCS-RAID9271CV-8I 	<ul style="list-style-type: none"> • MegaRAID 9266-8i + battery backup for C240 and C220 • MegaRAID 9266CV-8i w/TFM + Super Cap • MegaRAID 9271CV Raid card with 8 internal SAS/SATA parts, S
1	UCSC-SD-16G-C220	16GB SD Card Module for C220 Servers DVD drive not offered with C220 M3.
1	UCSC-PCIE-IRJ45	Intel i350 Quad Port 1Gb Adapter
2	UCSC-PSU-650W	650W power supply for C-series rack servers
2	UCSC-HS-C220M3	Auto-included: Heat Sink for UCS C220 M3 Rack Server
1	UCSC-RAIL1	Auto-included: 2U Rail Kit for C220 servers

C220 M3S (SFF) TRC#2 **Note:**

- This hardware configuration is supported for use as:
 - ◆ a "Medium Density (MD)" server for Cisco Business Edition 6000 (as auto-included option in a BE6K bundle)
 - ◆ a "Small TRC" for UC on UCS (as a separately ordered hardware-only bundle: UCSC-C220-M3SBE=)

The RAID controller shipped with the above bundles depends on the date purchased.

 **Note:** The C220 M3L (LFF) is only supported under UC on UCS Specs-based.

Small TRC.

Quantity	Cisco Part Number	Description
1	UCSC-C220-M3S	UCS C220 M3 SFF w/o CPU, mem, HDD, PCIe, w/ rail kit
2	UCS-CPU-E5-2609	2.4 GHz E5-2609/80W 4C/10MB Cache/DDR3 1066MHz
4	UCS-MR-1X082RY-A	8GB DDR3-1600-MHz RDIMM/PC3-12800/dual rank/1.35v
4	A03-D500GC3	500GB 6Gb SATA 7.2K RPM SFF hot plug/drive sled mounted
1	UCSC-SD-16G-C220	16GB SD Card Module for C220 Servers


One of:

1	<ul style="list-style-type: none"> • UCS-RAID-9266 • UCS-RAID-9266CV • UCS-RAID9271CV-8I 	<ul style="list-style-type: none"> • MegaRAID 9266-8i + battery backup for C240 and C220 • MegaRAID 9266CV-8i w/TFM + Super Cap • MegaRAID 9271CV Raid card with 8 internal SAS/SATA parts, S
		DVD drive not offered with C220 M3.
1	R2XX-RAID10	Enable RAID 10 Setting
1	UCSC-PSU-650W	650W power supply for C-series rack servers
4	N20-BBLKD	Auto-included: UCS 2.5 inch HDD blanking panel
2	UCSC-HS-C220M3	Auto-included: Heat Sink for UCS C220 M3 Rack Server
1	UCSC-PSU-BLKP	Auto-included: Power supply blanking panel/filler (same as San Mateo)
1	UCSC-RAIL1	Auto-included: 2U Rail Kit for C220 servers
1	UCSC-PCIF-01F	Auto-included: Full height PCIe filler for C-Series

C220 M3S (SFF) TRC#3 **Note:**

- This hardware configurations is supported for use as either:
 - ◆ a "High Density (HD)" server for Cisco Business Edition 6000 (as auto-included option in a BE6K bundle)
 - ◆ a "Small Plus TRC" for UC on UCS (as separately ordered hardware-only a la carte using BOM below)

The RAID controller shipped with above bundles is dependent on the date purchased.

 **Note:** The C220 M3L (LFF) is only supported under UC on UCS Specs-based.

Small Plus TRC.

Quantity	Cisco Part Number	Description
1	UCSC-C220-M3S	UCS C220 M3 SFF w/o CPU, mem, HDD, PCIe, w/ rail kit
2	UCS-CPU-E5-2665	2.40 GHz E5-2665/115W 8C/20MB Cache/DDR3 1600MHz
6	UCS-MR-1X082RY-A	8GB DDR3-1600-MHz RDIMM/PC3-12800/dual rank/1.35v
8	UCS-HDD300GI2F105	300GB 6Gb SAS 15K RPM SFF HDD/hot plug/drive sled mounted

One of:

1	<ul style="list-style-type: none"> • UCS-RAID-9266 • UCS-RAID-9266CV • UCS-RAID9271CV-8I 	<ul style="list-style-type: none"> • MegaRAID 9266-8i + battery backup for C240 and C220 • MegaRAID 9266CV-8i w/TFM + Super Cap • MegaRAID 9271CV Raid card with 8 internal SAS/SATA parts, S
		DVD drive not offered with C220 M3.
1	UCSC-PCIE-IRJ45	Intel i350 Quad Port 1Gb Adapter
2	UCSC-PSU-650W	650W power supply for C-series rack servers
2	UCSC-HS-C220M3	Auto-included: Heat Sink for UCS C220 M3 Rack Server
1	UCSC-RAIL1	Auto-included: 2U Rail Kit for C220 servers

End of Sale UC on UCS TRC Bills of Material (BOMs)

B200 M2 TRC#1

This BOM was also quotable via fixed-configuration bundle UCS-B200M2-VCS1. Memory and hard drives changes due to industry technology transitions not UC app requirements.

Quantity	Cisco Part Number	Description
1	N20-B6625-1	UCS B200 M2 Blade Server w/o CPU, memory, HDD, mezzanine
2	A01-X0109	2.66GHz Xeon E5640 80W CPU/12MB cache/DDR3 1066MHz

Either:

12	<ul style="list-style-type: none"> • N01-M304GB1 • A02-M304GB2-L • UCS-MR-1X041RX-A 	<ul style="list-style-type: none"> • 4GB DDR3-1333MHz RDIMM/PC3-10600/dual rank 1Gb DRAMs • 4GB DDR3-1333MHz RDIMM/PC3-10600/single rank/Low-Dual Volt • 4GB DDR3-1333-MHz RDIMM/PC3-10600/1R/1.35v
2	Either:	

UC_Virtualization_Supported_Hardware

- **A03-D146GC2** • 146GB 6Gb SAS 15K RPM SFF HDD/hot plug/drive sled
- **UCS-HDD300GI2F105** mounted
- 300GB 6Gb SAS 15K RPM SFF HDD/hot plug/drive sled mounted

1	N20-AC0002	UCS M81KR Virtual Interface Card/PCIe/2-port 10Gb1
2	N20-BHTS1	Auto-Included: CPU Heat Sink for UCS B200 M1 Blade Server

B200 M2 TRC#2

Memory and hard drives changes are due to industry transitions and not UC app requirements.

Quantity	Cisco Part Number	Description
1	N20-B6625-1	UCS B200 M2 Blade Server w/o CPU, memory, HDD, mezzanine
2	A01-X0109	2.66GHz Xeon E5640 80W CPU/12MB cache/DDR3 1066MHz

Either:

12	<ul style="list-style-type: none"> • N01-M304GB1 • 4GB DDR3-1333MHz RDIMM/PC3-10600/dual rank 1Gb DRAMs • A02-M304GB2-L • 4GB DDR3-1333MHz RDIMM/PC3-10600/single rank/Low-Dual Volt • UCS-MR-1X041RX-A • 4GB DDR3-1333-MHz RDIMM/PC3-10600/1R/1.35v 	Diskless
1	N20-AC0002	UCS M81KR Virtual Interface Card/PCIe/2-port 10Gb1
2	N20-BHTS1	Auto-Included: CPU Heat Sink for UCS B200 M1 Blade Server

B200 M1 TRC#1

This configuration was also quotable as UCS-B200M2-VCS1.

Quantity	Cisco Part Number	Description
1	N20-B6620-1	UCS B200 M1 Blade Server w/o CPU, memory, HDD, mezzanine
2	N20-X00002	2.53GHz Xeon E5540 80W CPU/8MB cache/DDR3 1066MHz
8	N01-M304GB1	4GB DDR3-1333MHz RDIMM/PC3-10600/dual rank 1Gb DRAMs
2	A03-D146GA2	146GB 6Gb SAS 10K RPM SFF HDD/hot plug/drive sled mounted
1	N20-AQ0002	UCS M71KR-Q QLogic Converged Network Adapter/PCIe/2port 10Gb
2	N20-BHTS1	Auto-included: CPU Heat Sink for UCS B200 M1 Blade Server

B200 M1 TRC#2

Quantity	Cisco Part Number	Description
1	N20-B6620-1	UCS B200 M1 Blade Server w/o CPU, memory, HDD, mezzanine
2	N20-X00002	2.53GHz Xeon E5540 80W CPU/8MB cache/DDR3 1066MHz
8	N01-M304GB1	4GB DDR3-1333MHz RDIMM/PC3-10600/dual rank 1Gb DRAMs Diskless
1	N20-AQ0002	UCS M71KR-Q QLogic Converged Network Adapter/PCIe/2port 10Gb
2	N20-BHTS1	Auto-included: CPU Heat Sink for UCS B200 M1 Blade Server

C210 M2 TRC#1

This configuration was also quotable as UCS-C210M2-VCD2. Memory and hard drives changes due to industry technology transitions not UC app requirements.

Quantity	Cisco Part Number	Description
1	R210-2121605W	UCS C210 M2 Srvr w/1PSU, w/o CPU, mem, HDD, DVD or PCIe card
2	A01-X0109	2.66GHz Xeon E5640 80W CPU/12MB cache/DDR3 1066MHz
Either:		
12	<ul style="list-style-type: none"> • N01-M304GB1 • A02-M304GB2-L • UCS-MR-1X041RX-A 	<ul style="list-style-type: none"> • 4GB DDR3-1333MHz RDIMM/PC3-10600/dual rank 1Gb DRAMs • 4GB DDR3-1333MHz RDIMM/PC3-10600/single rank/Low-Dual Volt • 4GB DDR3-1333-MHz RDIMM/PC3-10600/1R/1.35v
Either:		
10	<ul style="list-style-type: none"> • A03-D146GC2 • UCS-HDD300G12F105 	<ul style="list-style-type: none"> • 146GB 6Gb SAS 15K RPM SFF HDD/hot plug/drive sled mounted • 300GB 6Gb SAS 15K RPM SFF HDD/hot plug/drive sled mounted
1	R2XX-PL003	LSI 6G MegaRAID 9261-8i card (RAID 0,1,5,6,10,60) - 512WC
1	R2XX-LBBU2	Battery Back-up for 6G based LSI MegaRAID Card
1	R210-SASXPAND	SAS Pass-Thru Expander (srvr requiring > 8 HDDs) - C210 M1
Either:		
1	<ul style="list-style-type: none"> • N2XX-ABPCI03 • N2XX-ABPCI03-M3 • N2XX-AIPCI02 • UCSC-PCIE-IRJ45 	<ul style="list-style-type: none"> • Broadcom BCM5709 Quad Gig E card (10/100/1GbE) • Broadcom 5709 Quad Port 10/100/1Gb NIC w/TOE iSCSI for M3 Se • Intel Quad port GbE Controller (E1G44ETG1P20) • Intel Quad GbE adapter (i350)
1	Either:	
	<ul style="list-style-type: none"> • R2X0-PSU2-650W-SB • R2X0-PSU2-650W 	<ul style="list-style-type: none"> • 650W power supply, w/added 5A Standby for UCS C200 or C210

UC_Virtualization_Supported_Hardware

- 650W power supply unit for UCS C200 M1 or C210 M1 Rack Server

Either:

1	<ul style="list-style-type: none"> • R200-1032RAIL • R2XX-G31032RAIL 	<ul style="list-style-type: none"> • Rail Kit for the UCS 200, 210, C250 Rack Servers • Rail Kit for UCS C200, C210 Rack Servers (23.5 to 36")
1	R210-ODVDRW	DVD-RW Drive for UCS C210 M1 Rack Servers
6	N20-BBLKD	Auto-Included: HDD slot blanking panel for UCS B-Series Blade Servers
3	R200-PCIBLKF1	Auto-Included: PCIe Full Height blanking panel for UCS C-Series Rack Server
2	R210-BHTS1	Auto-Included: CPU heat sink for UCS C210 M1 Rack Server
1	R2X0-PSU2-650W	Auto-Included: 650W power supply unit for UCS C200 M1 or C210 M1 Server
1	SASCBLSHORT-003	Auto-Included: 2 Short SAS Cables for UCS C210 Server (for SAS Expander)

C210 M2 TRC#2

Memory and hard drives changes due to industry technology transitions not UC app requirements.

Quantity	Cisco Part Number	Description
1	R210-2121605W	UCS C210 M2 Srvr w/1PSU, w/o CPU, mem, HDD, DVD or PCIe card
2	A01-X0109	2.66GHz Xeon E5640 80W CPU/12MB cache/DDR3 1066MHz
Either:		
12	<ul style="list-style-type: none"> • N01-M304GB1 • A02-M304GB2-L • UCS-MR-1X041RX-A 	<ul style="list-style-type: none"> • 4GB DDR3-1333MHz RDIMM/PC3-10600/dual rank 1Gb DRAMs • 4GB DDR3-1333MHz RDIMM/PC3-10600/single rank/Low-Dual Volt • 4GB DDR3-1333-MHz RDIMM/PC3-10600/1R/1.35v
Either:		
2	<ul style="list-style-type: none"> • A03-D146GC2 • UCS-HDD300G12F105 	<ul style="list-style-type: none"> • 146GB 6Gb SAS 15K RPM SFF HDD/hot plug/drive sled mounted • 300GB 6Gb SAS 15K RPM SFF HDD/hot plug/drive sled mounted
1	R2XX-PL003	LSI 6G MegaRAID 9261-8i card (RAID 0,1,5,6,10,60) - 512WC
1	R2XX-LBBU2	Battery Back-up for 6G based LSI MegaRAID Card
1	Either:	
	<ul style="list-style-type: none"> • N2XX-ABPCI03 • N2XX-ABPCI03-M3 • N2XX-AIPCI02 	<ul style="list-style-type: none"> • Broadcom BCM5709 Quad Gig E card (10/100/1GbE) • Broadcom 5709 Quad Port 10/100/1Gb NIC w/TOE iSCSI for M3 Se

UC_Virtualization_Supported_Hardware

- **UCSC-PCIE-IRJ45** • Intel Quad port GbE Controller (E1G44ETG1P20)
- Intel Quad GbE adapter (i350)

Either:

- | | | |
|---|----------------------------|----------------------------------------------------------------------------------------------------------------|
| 1 | | <ul style="list-style-type: none"> • 650W power supply, w/added 5A Standby for UCS C200 or C210 |
| | • R2X0-PSU2-650W-SB | |
| | • R2X0-PSU2-650W | • 650W power supply unit for UCS C200 M1 or C210 M1 Rack Server |

Either:

- | | | |
|----|------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | | <ul style="list-style-type: none"> • R200-1032RAIL • Rail Kit for the UCS 200, 210, C250 Rack Servers • R2XX-G31032RAIL • Rail Kit for UCS C200, C210 Rack Servers (23.5 to 36") |
| 1 | R210-ODVDRW | DVD-RW Drive for UCS C210 M1 Rack Servers |
| 1 | N2XX-AQPCI03 | Qlogic QLE2462, 4Gb dual port Fibre Channel Host Bus Adapter |
| 14 | N20-BBLKD | Auto-Included: HDD slot blanking panel for UCS B-Series Blade Servers |
| 2 | R200-PCIBLKF1 | Auto-Included: PCIe Full Height blanking panel for UCS C-Series Rack Server |
| 2 | R210-BHTS1 | Auto-Included: CPU heat sink for UCS C210 M1 Rack Server |
| 1 | R210-SASCBL-002 | Auto-Included: Long SAS Cable for C210 (connects to SAS Extender) |
| 1 | R210-SASXTDR | Auto-Included: SAS Extender (servers requiring <= 8 HDDs) for UCS C210 M1 |
| 1 | R2X0-PSU2-650W | Auto-Included: 650W power supply unit for UCS C200 M1 or C210 M1 Server |

C210 M2 TRC#3

Memory and hard drives changes due to industry technology transitions not UC app requirements.

Quantity	Cisco Part Number	Description
1	R210-2121605W	UCS C210 M2 Srvr w/1PSU, w/o CPU, mem, HDD, DVD or PCIe card
2	A01-X0109	2.66GHz Xeon E5640 80W CPU/12MB cache/DDR3 1066MHz

Either:

- | | | |
|----|-------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 12 | | <ul style="list-style-type: none"> • N01-M304GB1 • 4GB DDR3-1333MHz RDIMM/PC3-10600/dual rank 1Gb DRAMs • A02-M304GB2-L • 4GB DDR3-1333MHz RDIMM/PC3-10600/single rank/Low-Dual Volt • UCS-MR-1X041RX-A • 4GB DDR3-1333-MHz RDIMM/PC3-10600/1R/1.35v |
| | | Diskless |
| 1 | R2XX-PL003 | LSI 6G MegaRAID 9261-8i card (RAID 0,1,5,6,10,60) - 512WC |
| 1 | R2XX-LBBU2 | Battery Back-up for 6G based LSI MegaRAID Card |
| 1 | Either: | |

- **N2XX-ABPCI03** • Broadcom BCM5709 Quad Gig E card (10/100/1GbE)
- **N2XX-ABPCI03-M3**

UC_Virtualization_Supported_Hardware

- **N2XX-AIPCI02** • Broadcom 5709 Quad Port 10/100/1Gb NIC w/TOE iSCSI for M3 Se
- **UCSC-PCIE-IRJ45** • Intel Quad port GbE Controller (E1G44ETG1P20)
- Intel Quad GbE adapter (i350)


Either:

- 1 • **R2X0-PSU2-650W-SB** • 650W power supply, w/added 5A Standby for UCS C200 or C210
- **R2X0-PSU2-650W** • 650W power supply unit for UCS C200 M1 or C210 M1 Rack Server

Either:

- 1 • **R200-1032RAIL** • Rail Kit for the UCS 200, 210, C250 Rack Servers
- **R2XX-G31032RAIL** • Rail Kit for UCS C200, C210 Rack Servers (23.5 to 36")
- 1 **R210-ODVDRW** DVD-RW Drive for UCS C210 M1 Rack Servers
- 1 **N2XX-AQPCI03** Qlogic QLE2462, 4Gb dual port Fibre Channel Host Bus Adapter
- 14 **N20-BBLKD** Auto-Included: HDD slot blanking panel for UCS B-Series Blade Servers
- 2 **R200-PCIBLKF1** Auto-Included: PCIe Full Height blanking panel for UCS C-Series Rack Server
- 2 **R210-BHTS1** Auto-Included: CPU heat sink for UCS C210 M1 Rack Server
- 1 **R210-SASCBL-002** Auto-Included: Long SAS Cable for C210 (connects to SAS Extender)
- 1 **R210-SASXTDR** Auto-Included: SAS Extender (servers requiring <= 8 HDDs) for UCS C210 M1
- 1 **R2X0-PSU2-650W** Auto-Included: 650W power supply unit for UCS C200 M1 or C210 M1 Server

C210 M1 TRC#1

 **Note:** Application co-residency not supported on this configuration - single VM only.
This BOM was also quotable as UCS-C210M1-VCD1.

Quantity	Cisco Part Number	Description
1	R210-2121605	UCS C210 M1 Rack Server w/1 PSU (w/o CPU, memory, HDD, DVD, PCIe cards)
2	N20-X00002	2.53GHz Xeon E5540 80W CPU/8MB cache/DDR3 1066MHz
6	N01-M302GB1	2GB DDR3-1333MHz RDIMM/PC3-10600/dual rank 1Gb DRAMs
6	A03-D146GA2	146GB 6Gb SAS 10K RPM SFF HDD/hot plug/drive sled mounted
1	R2XX-PL003	LSI 6G MegaRAID PCIe Card (RAID 0, 1, 5, 6, 10, 60) - 512WC
1	R2XX-LBBU2	Battery Back-up for 6G based LSI MegaRAID Card
1	R2X0-PSU2-650W	650W power supply unit for UCS C200 M1 or C210 M1 Rack Server
1	R250-SLDRAIL	Rail Kit for the C210 M1 Rack Server
1	R210-ODVDRW	DVD-RW Drive for UCS C210 M1 Rack Servers
10	N20-BBLKD	Auto-included: HDD slot blanking panel for UCS B-Series Blade Servers
4	R200-PCIBLKF1	Auto-included: PCIe Full Height blanking panel for UCS C-Series Rack Server
2	R210-BHTS1	Auto-included: CPU heat sink for UCS C210 M1 Rack Server

UC_Virtualization_Supported_Hardware

2	R210-SASCBL-002	Auto-included: Long SAS Cable for C210 (connects to SAS Extender)
1	R210-SASXTDR	Auto-included: SAS Extender (servers requiring <= 8 HDDs) for UCS C210 M1

C210 M1 TRC#2

This BOM was also quotable as UCS-C210M1-VCD2.

Quantity	Cisco Part Number	Description
1	R210-2121605	UCS C210 M1 Rack Server w/1 PSU (w/o CPU, memory, HDD, DVD, PCIe cards)
2	N20-X00002	2.53GHz Xeon E5540 80W CPU/8MB cache/DDR3 1066MHz
6	N01-M302GB1	2GB DDR3-1333MHz RDIMM/PC3-10600/dual rank 1Gb DRAMs
6	N01-M304GB1	4GB DDR3-1333MHz RDIMM/PC3-10600/dual rank 1Gb DRAMs
10	A03-D146GA2	146GB 6Gb SAS 10K RPM SFF HDD/hot plug/drive sled mounted
1	R2XX-PL003	LSI 6G MegaRAID PCIe Card (RAID 0, 1, 5, 6, 10, 60) - 512WC
1	R2XX-LBBU2	Battery Back-up for 6G based LSI MegaRAID Card
1	N2XX-ABPCI03	Broadcom BCM5709 Quad Gig E card (10/100/1GbE)
1	R2X0-PSU2-650W	650W power supply unit for UCS C200 M1 or C210 M1 Rack Server
1	R250-SLDRAIL	Rail Kit for the C210 M1 Rack Server
1	R210-ODVDRW	DVD-RW Drive for UCS C210 M1 Rack Servers
1	R210-SASXPAND	SAS Pass-Thru Expander (svr requiring > 8 HDDs) - C210 M1
1	N20-BBLKD	Auto-included: HDD slot blanking panel for UCS B-Series Blade Servers
1	R200-PCIBLKF1	Auto-included: PCIe Full Height blanking panel for UCS C-Series Rack Server
1	R210-BHTS1	Auto-included: CPU heat sink for UCS C210 M1 Rack Server
1	SASCBLSHORT-003	Auto-included: 2 Short SAS Cables for UCS C210 Server (for SAS Expander)

C210 M1 TRC#3

Quantity	Cisco Part Number	Description
1	R210-2121605	UCS C210 M1 Rack Server w/1 PSU (w/o CPU, memory, HDD, DVD, PCIe cards)
2	N20-X00002	2.53GHz Xeon E5540 80W CPU/8MB cache/DDR3 1066MHz
6	N01-M302GB1	2GB DDR3-1333MHz RDIMM/PC3-10600/dual rank 1Gb DRAMs
6	N01-M304GB1	4GB DDR3-1333MHz RDIMM/PC3-10600/dual rank 1Gb DRAMs
10	A03-D146GA2	146GB 6Gb SAS 10K RPM SFF HDD/hot plug/drive sled mounted
1	R2XX-PL003	LSI 6G MegaRAID PCIe Card (RAID 0, 1, 5, 6, 10, 60) - 512WC
1	R2XX-LBBU2	Battery Back-up for 6G based LSI MegaRAID Card
1	N2XX-ABPCI03	Broadcom BCM5709 Quad Gig E card (10/100/1GbE)
1	R2X0-PSU2-650W	650W power supply unit for UCS C200 M1 or C210 M1 Rack Server
1	R250-SLDRAIL	Rail Kit for the C210 M1 Rack Server


UC_Virtualization_Supported_Hardware

1	R210-ODVDRW	DVD-RW Drive for UCS C210 M1 Rack Servers
1	N2XX-AQPCI03	QLogic QLE2462, 4Gb dual port Fibre Channel Host Bus Adapter
14	N20-BBLKD	Auto-included: HDD slot blanking panel for UCS B-Series Blade Servers
2	R200-PCIBLKF1	Auto-included: PCIe Full Height blanking panel for UCS C-Series Rack Server
2	R210-BHTS1	Auto-included: CPU heat sink for UCS C210 M1 Rack Server
2	R210-SASCBL-002	Auto-included: Long SAS Cable for C210 (connects to SAS Extender)
1	SASCBLSHORT-003	Auto-included: 2 Short SAS Cables for UCS C210 Server (for SAS Expander)

C210 M1 TRC#4

Quantity	Cisco Part Number	Description
1	R210-2121605	UCS C210 M1 Rack Server w/1 PSU (w/o CPU, memory, HDD, DVD, PCIe cards)
2	N20-X00002	2.53GHz Xeon E5540 80W CPU/8MB cache/DDR3 1066MHz
6	N01-M302GB1	2GB DDR3-1333MHz RDIMM/PC3-10600/dual rank 1Gb DRAMs
6	N01-M304GB1	4GB DDR3-1333MHz RDIMM/PC3-10600/dual rank 1Gb DRAMs
1	R2XX-PL003	LSI 6G MegaRAID PCIe Card (RAID 0, 1, 5, 6, 10, 60) - 512WC
1	R2XX-LBBU2	Battery Back-up for 6G based LSI MegaRAID Card
1	N2XX-ABPCI03	Broadcom BCM5709 Quad Gig E card (10/100/1GbE)
1	R2X0-PSU2-650W	650W power supply unit for UCS C200 M1 or C210 M1 Rack Server
1	R250-SLDRAIL	Rail Kit for the C210 M1 Rack Server
1	R210-ODVDRW	DVD-RW Drive for UCS C210 M1 Rack Servers
1	N2XX-AQPCI03	QLogic QLE2462, 4Gb dual port Fibre Channel Host Bus Adapter
14	N20-BBLKD	Auto-included: HDD slot blanking panel for UCS B-Series Blade Servers
2	R200-PCIBLKF1	Auto-included: PCIe Full Height blanking panel for UCS C-Series Rack Server
2	R210-BHTS1	Auto-included: CPU heat sink for UCS C210 M1 Rack Server
2	R210-SASCBL-002	Auto-included: Long SAS Cable for C210 (connects to SAS Extender)
1	SASCBLSHORT-003	Auto-included: 2 Short SAS Cables for UCS C210 Server (for SAS Expander)

C200 M2 TRC#1

 **Note:** This TRC has special rules for allowed VM OVA templates and allowed co-residency. This configuration was also quotable as UCS-C200M2-VCD2.

When quoted as part of Cisco Business Edition 6000, it was also quotable as either UCS-C200M2-VCD2BE, UCS-C200M2-BE6K or UCS-C200M2-WL8 (in CMBE6K-UCL or CMBE6K-UWL).

Memory and hard drives changes due to industry technology transitions not UC app requirements.

UC_Virtualization_Supported_Hardware

Quantity	Cisco Part Number	Description
1	R200-1120402W	UCS C200 M2 Srvr w/1PSU, DVD w/o CPU, mem, HDD or PCIe card
2	A01-X0113	2.13GHz Xeon E5506 80W CPU/4MB cache/DDR3 800MHz

Either:

6	<ul style="list-style-type: none"> • N01-M304GB1 • A02-M304GB2-L • UCS-MR-1X041RX-A 	<ul style="list-style-type: none"> • 4GB DDR3-1333MHz RDIMM/PC3-10600/dual rank 1Gb DRAMs • 4GB DDR3-1333MHz RDIMM/PC3-10600/single rank/Low-Dual Volt • 4GB DDR3-1333-MHz RDIMM/PC3-10600/1R/1.35v
4	R200-D1TC03	Gen 2 1TB SAS 7.2K RPM
1	R200-PL004	LSI 6G MegaRAID 9260-4i card (C200 only)

Either:

1	<ul style="list-style-type: none"> • R2XX-LBBU • UCSC-LBBU02 	<ul style="list-style-type: none"> • Battery Back-up • Battery back unit for C200 LFF and SFF M2
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Either:

1	<ul style="list-style-type: none"> • R250-SLDRAIL • R200-1032RAIL • R2XX-G31032RAIL 	<ul style="list-style-type: none"> • Rail Kit for the UCS 200, 210, C250 Rack Servers • Rail Kit for the UCS 200, 210, C250 Rack Servers • Rail Kit for UCS C200, C210 Rack Servers (23.5 to 36")
2	R200-BHTS1	Included: CPU heat sink for UCS C200 M1 Rack Server
1	R200-PCIBLKF1	Included: PCIe Full Height blanking panel for UCS C-Series Rack Server
1	R200-SASCBL-001	Included: Internal SAS Cable for a base UCS C200 M1 Server

Either:

1	<ul style="list-style-type: none"> • R2X0-PSU2-650W-SB • R2X0-PSU2-650W 	<ul style="list-style-type: none"> • 650W power supply, w/added 5A Standby for UCS C200 or C210 • 650W power supply unit for UCS C200 M1 or C210 M1 Rack Server
1	R2XX-PSUBLKP	Included: Power supply unit blanking pnl for UCS 200 M1 or 210 M1

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