

For Cisco Business Edition 6000 9.x, refer to the "[Implementing BE 6000 9.x](#)".

For BE 6000 8.6 and earlier, please refer to the following sections below.

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Installation, Upgrade, and Migration of UC Applications on Cisco UCS C200 Rack-Mount Servers

Cisco supports running UC Applications on Cisco UCS C200 Rack-Mount Servers.

System Requirements


To run UC Applications on Cisco UCS C200 Rack-Mount Servers, your system must meet the requirements listed in [Table 1](#).

Table 1 System Requirements

This parameter...	...Must be this value to meet the Cisco supported configuration.
Supported Virtual Machine Configuration	See http://www.cisco.com/go/uc-virtualized Use the Cisco-provided OVA template to create VMs, to ensure that the VMs are correctly configured. Refer to the " Supported Applications - OVA/OVF Templates " section.
IOPS per virtual machine (VM)	See http://www.cisco.com/go/uc-virtualized
	None


CPU and RAM oversubscription	
VMware version	ESXi 4.0 Update 1 or later Note Ensure that you use ESXi, rather than ESX, to run UC Applications on Cisco UCS C200 Rack-Mount Servers. However, the rack server can be part of a VMware vCenter that includes ESX hosts. Refer to [1]VMware Requirements

To operate UC Applications on Cisco UCS C200 Rack-Mount Servers successfully, you should have the experience and skills to manage a host server running VMware ESXi. If you do not have this experience and want to obtain the required information quickly, consider using VMware GO, a Web-based application that facilitates VMware installations. For more information, refer to the VMware GO documentation.

 **Note:** Even if you use VMware GO, you still need to use the supported VMware configuration on UC Applications on Cisco UCS C200 Rack-Mount Servers, which are documented at both <http://www.cisco.com/go/swonly> and <http://www.cisco.com/go/uc-virtualized>.

UC Applications on Cisco UCS C200 Rack-Mount Servers External Media

UC Applications on Cisco UCS C200 Rack-Mount Servers uses "soft media" such as ISO or FLP (virtual floppy) for procedures that require external media (such as installation and upgrade). Physical external devices such as USB drives are not supported.

 **Note:** Backup and restore are not supported on soft media.

The virtual USB interface is not supported on VMware. The following are examples of differences in external media support between MCS servers and UC Applications on Cisco UCS C200 Rack-Mount Servers:

- Install logs cannot get dumped to a USB key. These logs get dumped to a file through the serial port of the VM.
- The answer file generated by the Answer File Generator (platformConfig.xml) cannot get read from a USB key to perform an unattended installation. Instead, you must put the answer file into a FLP image to be mounted in the floppy drive.
- USB tape drive backup is not supported. Use SFTP instead.
- Music On Hold through a USB connection is not supported. Use a Cisco 7800 Series Media Convergence Server instead.
- Cisco Messaging Interface (CMI) for Message Waiting Indication (MWI) is not supported over the serial port. Use a Cisco 7800 Series Media Convergence Server instead.

Installing UC Applications on Cisco UCS C200 Rack-Mount Servers

The following sections describe how to perform a fresh installation of UC Applications on Cisco UCS C200 Rack-Mount Servers:

Configuration Checklist for Installing and Configuring the Server

Table 7 provides a checklist of the major steps required to install and configure UC Applications on Cisco UCS C200 Rack-Mount Servers. The Related Documentation column contains references to documentation that is related to the step.

Table 7 Configuration Checklist for Installing and Configuring the Server

	Configuration Steps	Related Documentation
Step 1	Prepare to install the server.	<u><i>Preparing To Install</i></u>
Step 2	Physically install and connect the server.	<u><i>Cisco UCS C200 Installation and Service Guide</i></u>
Step 3	Power on the server and Configure Cisco Integrated Management Controller (CIMC) for remote management.	<u><i>Cisco UCS C200 Installation and Service Guide</i></u>
Step 4	If you purchased the Cisco UCS C-Series Rack-Mount Server server separately from UC Applications on Cisco UCS C200 Rack-Mount Servers, configure the RAID settings to the following specifications: <ul style="list-style-type: none"> • RAID 10 array for logical drive 0 • RAID 10 volume of 4 drives 	<u><i>Cisco UCS C200 Installation and Service Guide</i></u>
Step 5	If you purchased the Cisco UCS C-Series Rack-Mount Server server separately from UC Applications on Cisco UCS C200 Rack-Mount Servers, configure the BIOS to the following specifications: <ul style="list-style-type: none"> • Disable Quiet Mode • Enable Enhanced SATA for CDROM access • Configure the following boot order: <p>?SATA5:Optiarc DVD first</p> <p>?PCI Raid Adapter second</p> 	<u><i>Cisco UCS C200 Installation and Service Guide</i></u>
Step 6	Install and configure VMware ESXi. Refer to Table 6 for the supported versions of VMware ESXi.	<u><i>Cisco UCS C-Series Servers VMware Installation Guide</i></u> VMware ESXi documentation
Step 7	Install vSphere Client.	

		vSphere Client documentation
Step 8	Install and configure virtual machines (VMs).	<u><i>Cisco Business Edition 6000 OVA/OVF Templates</i></u>
Step 9	Install UC Applications on VMs.	

Preparing To Install

This section describes how to prepare to install a UC Application on Cisco UCS C200 Rack-Mount Servers server in a standalone configuration, meaning that it is not in a data center.

You should allocate the following resources before installation:

- Space in a rack to receive a 2 RU Cisco UCS C-Series Rack-Mount Server
- 3 Ethernet ports on a switch close to the Cisco UCS C-Series Rack-Mount Server:
 - ? One port for the CIMC
 - ? Two ports for the LAN on motherboard (LOM) NICs
- Optionally, up to four IP addresses for the Broadcom NIC, if your server has it
- An IP address for the CIMC management port
- An IP address for the virtual host. This is the Cisco UCS C-Series Rack-Mount Server's IP address and is used by ESXi.
- A maximum of four IP addresses for the LAN on motherboard (LOM) NICs
- A hostname, and optionally configure DNS for the virtual hosts' hostname
- IP addresses for the VMs

Configuring RAID

If you purchased the Cisco UCS C-Series Rack-Mount Server server separately from UC Applications on Cisco UCS C200 Rack-Mount Servers, configure the RAID settings to the following specifications:

- RAID 10 array for logical drive 0
- RAID 10 volume of 4 drives

Follow this procedure to perform this task:

Step 1 Boot the server and watch for the F2 prompt during bootup.

Step 2 Press F2 when prompted to enter the BIOS Setup utility.

Step 3 On the Main page of the BIOS Setup utility, verify or set Quiet Boot to Disabled. This allows non-default messages, prompts, and POST messages to display during bootup

instead of the Cisco logo screen.

Step 4 Press F10 to save your changes and exit the utility.

Step 5 During server bootup, press Ctrl+Y to enter the preboot CLI.


Step 6 Enter the following commands to determine the current RAID configuration:

-ldinfo -l0 -a0


The required configuration is four drives in a RAID 10 array for logical drive 0. If the RAID configuration is wrong, continue with this procedure.

 **Note:** Do not continue with this procedure if RAID is configured correctly.

Step 7 Enter the command **-cfgclr -a0** to clear the RAID configuration.

 **Caution:** Clearing the RAID configuration deletes all data on the hard drives.

Step 8 Determine the Device ID of the enclosure that contains the disk drives by entering the command **-encinfo -a0 -page 20**.

 **Note:** For UCS C200 M2 Rack-Mount Servers with 4 drives, the Device ID is typically 252. If this is not the case, please use the Enclosure ID obtained from the output of **encinfo**.

Step 9 Determine the starting slot number in the enclosure that you identified by entering the command **-pdinfo -physdrv [deviceID:0] -a0**.

If this command generates meaningful output, the drives start at slot zero. If it generates an error, the drives start at slot one.

 **Note:** UCS C200 M2 Rack-Mount Servers with 4 drives, the drives start at slot zero.

Step 10 Configure the RAID array by entering the following command:

```
-CfgSpanAdd -r10 -Array0[enclosureID:0,enclosureID:1]  
-Array1[enclosureID:2,enclosureID:3] -a0
```

Step 11 If the hard drives did not have a RAID configuration previously, you are done configuring RAID. If the hard drives had a RAID configuration before, continue with this procedure.

Step 12 Enter the following command to initialize the logical volumes.

```
-ldinit -start -full -l0 -a0 (l0 is the letter l and the number 0, not the number 10)
```

This clears data on the drives and initializes the new array. Allow this command to finish running before exiting the Preboot CLI.

Step 13 If you want to do so, you can enter the following command to display the progress of the command you entered in Step 12:

```
-ldinit -showprog -l0 -a0
```

When the display command in Step 13 reports that no initialization is running, it is safe to quit the Preboot CLI.

Step 14 After configuring the two logical volumes, you can exit the Preboot CLI by entering **q**.

Tip If you can't get to the Preboot CLI even after Quiet Boot is disabled (in other words, if you have no Ctrl+Y option and that key sequence isn't working), you can configure RAID 10 by using the WebBios (Ctrl+H). To use the Web Bios, you must have a USB Keyboard and a USB mouse, rather than a PS2 keyboard and mouse. Use 2 drive groups (DGs) with DG0 containing Disks 0,1 and DG1 containing Disks 2,3.

Installing vSphere Client

When the virtual host is available on the network, you can browse to its IP address to bring up a web-based interface. The vSphere Client is Windows-based, so the download and install must be performed from a Windows PC.

Once the vSphere Client is installed, you can run it and log into the virtual host using the virtual host's name or IP address, the root login ID, and the password you configured.

You can join the host to a vCenter if you want to manage it through vCenter.

Creating Virtual Machines

Cisco provides a VM template for you to download and transfer to your virtual host. Use this template to create the VMs for UC Applications on Cisco UCS C200 Rack-Mount Servers installation.

Before you deploy the template and create VMs, you should have a hostname and IP address allocated for each new VM.

Follow these steps to create a VM and prepare to install UC Applications on Cisco UCS C200 Rack-Mount Servers on it:

Step 1 Download the VM template for your application.

See the "[Cisco Business Edition 6000 OVA/OVF Templates](#)" section for more information.

Step 2 Upload the template to a datastore on the Cisco UCS C-Series Rack-Mount Server.

Step 3 Make this template available to the Cisco UCS C-Series Rack-Mount Server.

Step 4 Deploy the template file using vSphere Client. Enter the following information for the new VM:

- hostname
- datastore?Select datastore

Step 5 Complete creating the VM.

At this point a new VM has been created with the correct amount of RAM, number of CPUs, size and number of disks for the intended application.

Step 6 Install UC Applications on the VM. See the [Installing UC Applications on a VM](#) section for more information.

Installing UC Applications on a VM

Follow this procedure to install UC Applications on a new VM:

Step 1 In vSphere Client, edit the VM to force entry into BIOS setup the next time the VM reboots.

Step 2 Make the UC Applications installation media available to the VM DVD-ROM drive.

Step 3 Power on the VM, then in BIOS setup, promote CD ROM to boot before the hard drive.

Step 4 Complete booting the VM.

The UC Applications installation program starts. For information about performing the installation, see the installation guides for the applications

Differences When Running UC in a Virtual Environment

- **Licensing Model for Virtualized UC Applications**
- **How to Dump Install Logs to the Serial Port of the Virtual Machine**
- **How to Use the AFG with the Virtual Floppy Drive**
- **VMware Tools**
- BIOS boot order: read the Release Notes for the OVA that you are deploying for instructions on how to set the BIOS boot order.

Migrating To UC Applications on Cisco UCS C200 Rack-Mount Servers

Migrating from a Media Convergence Server (MCS server) to a UC Applications on Cisco UCS C200 Rack-Mount Servers server follows a procedure that is very similar to replacing server hardware, which is described in the document *Replacing a Single Server or Cluster for UC Applications*.

Table 8 provides an overview of the migration process and references to other pertinent documentation.

Table 8 Migrating to UC Applications on Cisco UCS C200 Rack-Mount Servers Process Overview

Configuration Steps		Related Procedures and Topics
Step 1	<p>Review the document <i>Replacing a Single Server or Cluster for UC Applications</i>.</p> <p>This document describes how to replace server hardware, which is very similar to migrating from an MCS server to a UC Applications on Cisco UCS C200 Rack-Mount Servers server. You should perform the document's pre-replacement and post-replacement tasks, and review the procedures for installing UC Applications and migrating data.</p>	<i>Replacing a Single Server or Cluster for UC Applications</i>
Step 2	Upgrade the MCS server to a UC Application.	<i>Cisco Unified Communications Operating System Administration Guide</i>
Step 3	<p>If the UCS VM will use a different IP address or hostname than the MCS server, change the IP address and hostname of the MCS server to the values that the UCS VM will use.</p> <p>This is required for DRS backup and restore to work.</p>	Refer to the topic "Changing the Cluster IP Addresses for Publisher Servers That Are Defined by Host Name" in the <i>Changing the IP Address and Host Name for UC Applications</i> guide.
Step 4	Perform a DRS backup on the MCS server.	<i>Disaster Recovery System Administration Guide</i>

<p>Step 5</p>	<p>Use the Answer File Generator to generate a license MAC for the UC Applications on Cisco UCS C200 Rack-Mount Servers server. The license MAC is required to obtain licenses for the server.</p> <p>After you obtain the license MAC, you can rehost the licenses for your new server.</p>	<p><u>Licensing model for Virtualized UC Applications</u></p>
<p>Step 6</p>	<p>[[Create the virtual machine (VM) on the UC Applications on Cisco UCS C200 Rack-Mount Servers server that will be used as the replacement for the MCS node.]]</p>	<p><u>Implementing Cisco Business Edition 6000</u></p>
<p>Step 7</p>	<p>Install the same release of UC Applications on Cisco UCS C200 Rack-Mount Servers server that you installed on the MCS server.</p>	<p><u>Implementing Cisco Business Edition 6000</u></p>
<p>Step 8</p>	<p>Perform a DRS restore to restore the data backed up from the MCS server to the UC Applications on Cisco UCS C200 Rack-Mount Servers server.</p>	<p><u>Disaster Recovery System Administration Guide</u></p>
<p>Step 9</p>	<p>Upload the new licenses to the UC Applications on Cisco UCS C200 Rack-Mount Servers server.</p> <p>If you did not obtain licenses for the new server already, you must request the licenses first.</p> <p>Note The previous license will no longer be valid. However, you have 30 additional days in which to use your previous license. Refer to "<u>Obtaining Rehosted Licenses When You Change License MAC Parameters</u>" section.</p>	<p><u>Cisco Unified Communications Operating System Administration Guide</u></p>

VMware Support

Consider the following, when using UC Applications on Cisco UCS C200 Rack-Mount Servers:

- For details about VMware feature support, refer to [VMware Requirements](#)
- NIC teaming is configured at the VMware virtual switch.
- Hardware SNMP and syslog move to VMware and UCS Manager.
- Install logs are written only to the virtual serial port.
- Basic UPS Integration, as used with a Cisco 7800 Series Media Convergence Server, is not supported.
- Boot order is controlled by the BIOS of the VMware VM.
- Hardware BIOS, firmware, and drivers must be the required level and configured for compatibility with UC Application-supported VMware product and version.
- Hardware MIBs are not supported.

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- Hardware Failure alert and Hardware failure syslog messages are not available.
- CLI does not support hardware information.
- SNMP Hardware agent does not run on VMware.
- Real-Time Management Tool Client?Hardware alerts are not generated. The scope is limited to Virtual Machine and not to Physical Machine.
- CDP reports as a Virtual Machine.
- Certain kinds of Cisco UCS C-Series Rack-Mount Server hardware alerts are only available via CIM alerting, and must be viewed in VMware vCenter or an equivalent CIM-compliant console.

For more information on the Cisco UCS C-Series Rack-Mount Server, go to the following URL:

http://www.cisco.com/en/US/docs/unified_computing/ucs/c/sw/gui/config/guide/1.1.1/b_Cisco_UCS_C-Series_Servers_I

To view the list of product installation and configuration guides for Cisco UCS C-Series Integrated Management Controller, go to the following URL:

http://www.cisco.com/en/US/products/ps10739/products_installation_and_configuration_guides_list.html

To view the list of product installation and configuration guides for Cisco UCS Manager, go to following URL:

http://www.cisco.com/en/US/products/ps10281/products_installation_and_configuration_guides_list.html

Performing Daily Operations on UC Applications on Cisco UCS C200 Rack-Mount Servers

Daily operations for UC Applications on Cisco UCS C200 Rack-Mount Servers software applications are identical to when the application is installed on an MCS server.

There are some differences in hardware management and monitoring, because UC Applications on Cisco UCS C200 Rack-Mount Servers operates in a virtual environment. For more information, see the "[Related Documentation](#)" section.

Monitoring Hardware from the VM

Applications running in a VM have no ability to monitor the physical hardware. Any hardware monitoring must be done from the CIMC, ESXi plugins, vCenter, or by physical inspection (for flashing LEDs, etc.).

Monitoring from CIMC

The CIMC provides the following hardware monitoring:

- An overview of CPU, memory and power supply health
- An overview of hardware inventory, including CPUs, memory, power supplies and storage

- Monitoring of sensors for power supplies, fans, temperature and voltage
- A system event log that contains BIOS and sensor entries

Monitoring from vSphere Client and vCenter

The vSphere Client provides the following monitoring features:

- When you are logged into vCenter, the vSphere Client displays hardware and system alarms defined on the Alarms tab.
- VM resource usage displays on the Virtual Machines tab, and on the Performance tab for each VM.
- Host performance and resource usage display on the Performance tab for the Host.
- When ESXi is used standalone (without vCenter), hardware status and resource usage are available, but alarming is not possible.

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