



Send document comments to ucs-docfeedback@cisco.com



Cisco UCS Server Configuration Utility, Release 2.0(1)

For Cisco UCS C-Series Servers

January 14, 2011

Americas Headquarters

Cisco Systems, Inc.
170 West Tasman Drive
San Jose, CA 95134-1706
USA
<http://www.cisco.com>
Tel: 408 526-4000
800 553-NETS (6387)
Fax: 408 527-0883

Text Part Number: OL-24212-01

THE SPECIFICATIONS AND INFORMATION REGARDING THE PRODUCTS IN THIS MANUAL ARE SUBJECT TO CHANGE WITHOUT NOTICE. ALL STATEMENTS, INFORMATION, AND RECOMMENDATIONS IN THIS MANUAL ARE BELIEVED TO BE ACCURATE BUT ARE PRESENTED WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED. USERS MUST TAKE FULL RESPONSIBILITY FOR THEIR APPLICATION OF ANY PRODUCTS.

THE SOFTWARE LICENSE AND LIMITED WARRANTY FOR THE ACCOMPANYING PRODUCT ARE SET FORTH IN THE INFORMATION PACKET THAT SHIPPED WITH THE PRODUCT AND ARE INCORPORATED HEREIN BY THIS REFERENCE. IF YOU ARE UNABLE TO LOCATE THE SOFTWARE LICENSE OR LIMITED WARRANTY, CONTACT YOUR CISCO REPRESENTATIVE FOR A COPY.

The following information is for FCC compliance of Class A devices: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio-frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case users will be required to correct the interference at their own expense.

The following information is for FCC compliance of Class B devices: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If the equipment causes interference to radio or television reception, which can be determined by turning the equipment off and on, users are encouraged to try to correct the interference by using one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Modifications to this product not authorized by Cisco could void the FCC approval and negate your authority to operate the product.

The Cisco implementation of TCP header compression is an adaptation of a program developed by the University of California, Berkeley (UCB) as part of UCB's public domain version of the UNIX operating system. All rights reserved. Copyright © 1981, Regents of the University of California.

NOTWITHSTANDING ANY OTHER WARRANTY HEREIN, ALL DOCUMENT FILES AND SOFTWARE OF THESE SUPPLIERS ARE PROVIDED "AS IS" WITH ALL FAULTS. CISCO AND THE ABOVE-NAMED SUPPLIERS DISCLAIM ALL WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING, WITHOUT LIMITATION, THOSE OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT OR ARISING FROM A COURSE OF DEALING, USAGE, OR TRADE PRACTICE.

IN NO EVENT SHALL CISCO OR ITS SUPPLIERS BE LIABLE FOR ANY INDIRECT, SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES, INCLUDING, WITHOUT LIMITATION, LOST PROFITS OR LOSS OR DAMAGE TO DATA ARISING OUT OF THE USE OR INABILITY TO USE THIS MANUAL, EVEN IF CISCO OR ITS SUPPLIERS HAVE BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

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

Any Internet Protocol (IP) addresses and phone numbers used in this document are not intended to be actual addresses and phone numbers. Any examples, command display output, network topology diagrams, and other figures included in the document are shown for illustrative purposes only. Any use of actual IP addresses or phone numbers in illustrative content is unintentional and coincidental.



CONTENTS

Preface	3
Audience	3
Organization	3
Related Documentation	3
Obtaining Documentation and Submitting a Service Request	4
4	
Introduction to Cisco UCS-Server Configuration Utility	1-1
Overview	1-1
New Features in UCS-SCU 2.0(1)	1-1
Getting Started with UCS-Server Configuration Utility	2-1
Supported Operating Systems	2-1
Supported Platforms	2-1
Hardware and Software Requirements	2-2
Obtaining the SCU .iso from cisco.com	2-2
Burning an .iso CD	2-3
Booting UCS-SCU from CD	2-3
Entering the Virtual KVM Console	2-3
Booting in the Virtual KVM Console	2-3
Exiting UCS-SCU	2-4
Using UCS-Server Configuration Utility	3-1
UCS-SCU Interface	3-1
License Agreement	3-1
Home Page	3-1
Accessing Help	3-2
Server Inventory	3-2
Server Health	3-3
Server Configuration	3-3
Boot Order Configuration	3-4
RAID Configuration	3-4
Supported RAID Devices	3-4
UCS-SCU RAID Configurations	3-6

- Firmware Update **3-8**
 - Minimum Requirements for Firmware Update **3-9**
- OS Install **3-11**
 - Windows Server 2003 and 2008 Operating System Installation **3-11**
 - Linux Server Series Operating System Installation **3-13**
- Diagnostic Tools **3-14**
 - Quick Test **3-15**
 - Comprehensive Test **3-15**
 - Quick Tasks **3-15**
 - Tests Suite **3-16**
 - Tests Log Summary **3-16**
- Logs **3-16**
 - System Logs **3-17**
 - System Event Log **3-17**



Preface

This preface describes the organization and conventions of the *Cisco UCS Server Configuration Utility, Release 2.0(1)*. It also provides information on how to obtain related documentation and submit a service request.

Audience

This guide is intended primarily for data center administrators with responsibilities and expertise in server, storage, and network administration and network security.

Organization

This guide is organized as follows:

Chapter	Title	Description
Chapter 1	Introduction to Cisco UCS-Server Configuration Utility	Provides an introduction to the utility and the features it provides.
Chapter 2	Getting Started with UCS-Server Configuration Utility	Contains information on getting started with the utility.
Chapter 3	Using UCS-Server Configuration Utility	Contains detailed instructions on using the utility.

Related Documentation

The documentation set for the Cisco Unified Computing System (UCS) C-Series rack-mount servers is described in the roadmap document at the following link:

[Cisco UCS C-Series Documentation Roadmap](#)

Send document comments to ucs-docfeedback@cisco.com

Obtaining Documentation and Submitting a Service Request

For information on obtaining documentation, submitting a service request, and gathering additional information, see the monthly *What's New in Cisco Product Documentation*, which also lists all new and revised Cisco technical documentation, at:

<http://www.cisco.com/en/US/docs/general/whatsnew/whatsnew.html>

Subscribe to the *What's New in Cisco Product Documentation* as a Really Simple Syndication (RSS) feed and set content to be delivered directly to your desktop using a reader application. The RSS feeds are a free service and Cisco currently supports RSS Version 2.0.



CHAPTER 1

Introduction to Cisco UCS-Server Configuration Utility

This chapter introduces the UCS-Server Configuration utility along with the features added in release 2.0(1).

This chapter contains the following sections:

[Overview, page 1-1](#)

[New Features in UCS-SCU 2.0\(1\), page 1-1](#)

Overview

The Cisco UCS-SCU (Server Configuration Utility) is an application that helps you manage various tasks on your server. The utility helps you easily set up and manage your servers from a single application.

UCS-SCU is intended for system administrators responsible for upgrading, troubleshooting, and configuring the UCS C-Series server. As a system administrator, you can use it to view server inventory, update a server with the most recent system software, configure the BIOS boot order, configure a RAID volume on attached hard drives, install an operating system, perform interactive offline diagnostics and view server health and logs.

New Features in UCS-SCU 2.0(1)

UCS-SCU reduces the complexity and time associated with setting up and maintaining Cisco C-series servers. Server deployment is made easier. The wizard automatically locates and retrieves the most recent drivers, BIOS, and firmware updates. It guides you through questions to help quickly configure the server through automatic recognition of server hardware, with minimal reboots and an automated unattended operating system installation.

UCS-SCU is packaged onto a single CD which contains its own operating system (Linux), a GUI, and supporting files for setup and deployment. The utility can be booted off a CD (physical or vMedia) and runs completely in a RAMDISK.

These are the new features introduced in UCS-SCU 2.0(1):

- **Interactive Offline Diagnostics**—Allows you to run the quick test and the comprehensive test to help identify sources of failure on your server.
- BIOS and CIMC update on C-460 servers.

Send document comments to ucs-docfeedback@cisco.com

- Improved method to install Windows 2008 operating system, using the WinPE boot.wim method.
- Support for assisted OS installation of new OSes—RHEL6 and SLES11-SP1.
- Application for updating drivers on C-series servers running the Windows operating system.
- A unified framework to perform the following:
 - **Server Inventory**—View an inventory of your server’s CPU, memory, power supplies, fans, IO, storage, BIOS and CIMC.
 - **Server Configuration**—Set the BIOS boot order and configure a RAID volume on attached hard drives of your server.
 - **Firmware Update**—Update your server with the most recent system software. You can get updates from a set URL, a network drive, or removable media. The firmware components that can be updated are - BIOS and CIMC.
 - **OS Installation**—Install the RHEL, SLES, and Windows operating systems in a fully unattended mode. The most recent drivers for all on-board components are added from the Tools and Drivers CD or from other supported locations during the operating system installation.
 - **Diagnostic Tools**—Allow you to run the Quick Test and Comprehensive Test to detect server failure.
 - **Server Health**—View the health of the subsystems on your server like CPUs, memory, power supplies, fans, storage, PCI devices, BIOS and CIMC.
 - **Server Logs**—View the System Log, System Event Log, and MCE Log of your server.



CHAPTER 2

Getting Started with UCS-Server Configuration Utility

This chapter helps you to get started with the UCS-Server Configuration Utility and contains the following sections:

- [Supported Operating Systems, page 2-1](#)
- [Supported Platforms, page 2-1](#)
- [Hardware and Software Requirements, page 2-2](#)
- [Obtaining the SCU .iso from cisco.com, page 2-2](#)
- [Booting UCS-SCU from CD, page 2-3](#)
- [Entering the Virtual KVM Console, page 2-3](#)
- [Booting in the Virtual KVM Console, page 2-3](#)
- [Exiting UCS-SCU, page 2-4](#)

Supported Operating Systems

UCS-SCU supports unattended installation of the following operating systems:

- Windows Server 2003 x86 R2/SP2 32-bit/64-bit (only on C200/C210/C250 servers)
- Windows Server 2008 64-bit SP1 / SP2 / R2
- Red Hat Enterprise Linux 64-bit 4.8 (only on C200/C210/C250 servers)
- Red Hat Enterprise Linux 64-bit 5.3 / 5.4
- Red Hat Enterprise Linux 64-bit 5.5
- Red Hat Enterprise Linux 64-bit 6.0
- Novell SUSE Linux Enterprise (SLES) 64-bit 10.3 / 11 service pack 1

Supported Platforms

The UCS-SCU is supported on the following Cisco platforms:

- C200-M1 and C200-M2
- C210-M1 and C210-M2

Send document comments to ucs-docfeedback@cisco.com

- C250-M1 and C250-M2
- C460-M1

Hardware and Software Requirements

The following are the minimum hardware and software requirements for UCS-SCU 2.0(1):

- **CD-ROM Drive**—A USB, IDE, or SATA CD/DVD-ROM drive is required to be able to boot and run the UCS-SCU. The CD/DVD-ROM drive is a prerequisite for operating system installation. You can also use the virtual media option in the CIMC KVM to boot UCS-SCU
- **Mouse**—Some functions require a standard mouse (PS/2 or USB) for navigation.
- **USB Disk on Key device**—Some functions require a USB disk on key, for example, saving UCS-SCU logs.
- **RAM**—A minimum of 1 GB RAM. If the available RAM is less than the minimum recommended value, UCS-SCU will not function properly.
- **Network Adapter**—Some optional functions, like downloading the most recent system update packages and OS drivers from support.cisco.com require network access. Any single on-board NIC adapter connection is supported.
- **RAID Cards**—RAID configuration and OS installation are supported on select controllers.

Obtaining the SCU .iso from cisco.com

To find the ISO file download for your server online follow these steps:

-
- Step 1** See the following URL <http://www.cisco.com/cisco/software/navigator.html>
 - Step 2** Click **Unified Computing** in the middle column.
 - Step 3** Click **Cisco UCS C-Series Rack-Mount Servers** in the right-hand column.
 - Step 4** Click the name of your model of server in the right-hand column.
 - Step 5** Click **Software on Chassis** in the right-hand column.
 - Step 6** Click **Unified Computing System (UCS) Server Configuration Utility**.
 - Step 7** Click the release number that you are downloading.
 - Step 8** Click **Download Now** to download the ISO file.
 - Step 9** Verify the information on the next page, then click **Proceed With Download**. If prompted, use your cisco.com credentials to log in.
 - Step 10** Continue through the subsequent screens to accept the license agreement and browse to a location where you want to save the utilities zip file.
 - Step 11** Extract the contents of the SCU zip file and note the location to which the SCU ISO file is saved.
-

Send document comments to ucs-docfeedback@cisco.com

Burning an .iso CD

To boot the UCS-SCU ISO image from a CD drive, you will need to make and use an .iso CD. You cannot simply copy the file from Cisco.com to a CD. To create an .iso CD, you must burn it using an application that burns .iso CDs.

To burn an .iso file, follow these steps:

-
- Step 1** Obtain an .iso file from Cisco.com as described in the previous section.
 - Step 2** Create an .iso CD.
-

Booting UCS-SCU from CD

To boot the application on your server, follow these steps:

-
- Step 1** Insert the Cisco UCS Server Configuration Utility CD on to your system.
 - Step 2** Restart the server, and press **F6** to enter boot selection menu and then select CDROM drive as boot device.
 - Step 3** Use the arrow keys to select Cisco Virtual CD/DVD, and then press **Enter**.
 - Step 4** The server boots using the UCS-SCU image and starts the application.
-

Entering the Virtual KVM Console

To enter the virtual KVM console, follow these steps:

-
- Step 1** Log in to CIMC.
 - Step 2** Click **Launch KVM Console**. The Virtual KVM Console displays with the SCU home page.
-

Booting in the Virtual KVM Console

To boot in the virtual KVM console, follow these steps:

-
- Step 1** Place the .iso image file in your desktop.
 - Step 2** Log in to CIMC from your desktop.
 - Step 3** Click **Launch KVM Console**.
 - Step 4** Click Tools -> Launch virtual media -> Add Image to map the UCS-SCU iso to vmedia.
 - Step 5** Reboot the server, and press **F6** when the server starts to select boot order.

Send document comments to ucs-docfeedback@cisco.com

- Step 6** Use the arrow keys to select Cisco Virtual CD/DVD 1.17, and then press **Enter**.
- Step 7** The server boots using the UCS-SCU image and starts the application.
-

Exiting UCS-SCU

There are two ways you can exit the application:

- Use the **Reboot** button on the SCU toolbar. When you use the SCU toolbar, the virtual KVM Console no longer boots SCU.

-
- Step 1** Remove the .iso disk from the disk drive.
- Step 2** Click **Reboot**, and then click **Yes** to confirm reboot of your server.
-



CHAPTER 3

Using UCS-Server Configuration Utility

This chapter provides information on using the UCS-Server Configuration Utility and contains the following sections:

[UCS-SCU Interface, page 3-1](#)

[Server Inventory, page 3-2](#)

[Server Health, page 3-3](#)

[Server Configuration, page 3-3](#)

[Firmware Update, page 3-8](#)

[OS Install, page 3-11](#)

[Diagnostic Tools, page 3-14](#)

[Logs, page 3-16](#)

UCS-SCU Interface

UCS-SCU is a bootable application that can be used to perform operations such as update server firmware, setup BIOS and CIMC, configure RAID logical volume, install operating systems, and perform diagnostics on Cisco Rack servers. It is designed to run on one server at a time. You can launch the application through physical or virtual media.

This section contains the following topics:

[License Agreement, page 3-1](#)

[Home Page, page 3-1](#)

[Accessing Help, page 3-2](#)

License Agreement

After UCS-SCU boots up, the first interface is the End User License Agreement. Select **I Accept** and click **Next** to agree to this license, or click **Cancel** to exit the application.

Home Page

The UCS-SCU home page consists of the following:

Send document comments to ucs-docfeedback@cisco.com

- **Navigation Pane**—The navigation pane on the left hand provides a tree for easy navigation.
- **Content Pane**—The content pane is the primary area for information and interaction.
- **Tests Summary Pane** (for Diagnostic Tools)—Provides details of tests passed, tests in queue and tests failed.
- **Toolbar**—The toolbar on the left hand top corner has a set of icons that allow you to access the following:
 - **Network Configuration**—Configures the IP address, DNS and Subnet mask and Cisco.com credentials. This configuration will be used to connect to Cisco.com or other network share locations to access the OS installation drivers or firmware for firmware update. Click the icon to enter details of the network configuration and click Configure.
 - **Probe Server**—Performs a server health check. Once complete, you can select the Server Health and check for the changes/faults.
 - **Save Logs**—Logs can be saved to a USB with this option.
 - **Refresh**—This will refresh the content area, if supported.
 - **Reboot**—Reboots the server.

Accessing Help

To access the Cisco UCS-SCU online help, click the **Help** tab in the right hand corner.

Server Inventory

You can use the server inventory functionality to perform an inventory of your server. You can view details like server summary, server properties and an inventory of subsystems on your server like CPU, memory, power supplies, fans, IO devices, storage, BIOS and CIMC.

To view the inventory of your server, follow these steps:

-
- Step 1** Click the **Server Inventory** tab on the left navigation pane.
 - Step 2** Click the **Server Information** tab on the left navigation pane. The server properties and server summary appear.
 - Step 3** Click the **Inventory** tab to view an inventory of your server's subsystems, like CPU, memory, power supplies, fans, IO devices, storage, BIOS, and CIMC.
-

[Table 3-1](#) explains the various subsystem details you can view.

Table 3-1 Server Inventory Properties

Subsystem	Description
CPU	View the socket name, status, number of cores, number of threads, vendor, version, cores enabled, and signature of the CPUs on your server.
Memory	View the size, data width, locator, speed, and serial number of the DIMMs on your server.

Send document comments to ucs-docfeedback@cisco.com

Table 3-1 Server Inventory Properties

Subsystem	Description
Power Supplies	View the input power, output power (in watts), part number, version, serial number, and product name of the power supply units on your server.
Fans	View the status, power state, and speed of the fans on your server.
IO Devices	View the type, vendor, description, and MAC address/serial number of the IO devices on your server.
Storage	View the type, description, vendor, size, BUS information, and serial number of the storage devices on your server.
BIOS	View the vendor, version, physical ID, size, capacity, and boot order of the BIOS on your server.
CIMC	View the IP address, MAC address, firmware version, and IPMI version of the CIMC on your server.

Server Health

Using this functionality you can view the health of all the subsystems of your server (like memory, processor, power supply, hard disk, fans, chipset and CIMC) along with the status and message of a specific subsystem.

To view the health of your server, follow these steps:

-
- Step 1** Click the **Server health** tab in the left navigation pane. The server health displays in the right hand content pane, along with the status and message for a specific subsystem.
 - Step 2** To view the latest status of the subsystem, click **Probe Server** from the toolbar. Click on server health again to refresh the page after clicking on probe server
 - Step 3** Click the line corresponding to a subsystem to view details of your server health in the Server Health Details pane.
-



Note

The message column in the server health pane displays the first issue corresponding to the subsystem. In case the subsystem has multiple issues, they will show up below in the Server Health Details.

Server Configuration

You can configure your server's BIOS boot order settings and perform RAID configuration using the Server Configuration function. To enter this function area, from the left navigation pane, click **Server Configuration**.

This section contains the following topics:

[Boot Order Configuration, page 3-4](#)

[RAID Configuration, page 3-4](#)

[Supported RAID Devices, page 3-4](#)

Send document comments to ucs-docfeedback@cisco.com

Boot Order Configuration

SCU displays a list of all bootable devices on the server. To set the BIOS boot order of your server, follow these steps:

-
- Step 1** Click **Server Configuration** in the left navigation pane, and then click **Boot order Configuration**. You will be able to choose the devices you want to participate in the boot order configuration using the arrow keys between the **Device Types** and **Boot Order** column.
 - Step 2** Highlight a device in the **Boot Order** column, click the up or down arrow keys to arrange the server boot order you prefer, and click **Apply**.
 - Step 3** Click **Apply**.
 - Step 4** The Boot Order is saved on this server.
 - Step 5** To reset the boot order click **Reset**.



Note

If the system has multiple boot devices under each component, for example, if the system has multiple bootable hard disks under the same controller or CD drives, SCU will not display this information. You will have to enter the BIOS and configure the order of these subcomponents manually.

RAID Configuration

You can use RAID Configuration to configure your systems' on-board or SAS add-in RAID.

If your system has multiple RAID controllers, UCS-SCU displays a list of all available RAID cards on the RAID Configurations page. The RAID levels supported by SCU are RAID 0, 1, 5 and 6.

Supported RAID Devices

The RAID devices supported by UCS-SCU are the following:

- Intel I/O Controller Hub 10 RAID (ICH10R)/Embedded MegaRAID
- LSI MegaRAID SAS 8708EM2
- LSI 1064E Controller Based Mezzanine Adapter
- LSI MegaRAID 9261-8i PCIe RAID Controller
- LSI SAS3081E-R PCIe RAID Controller
- LSI 9260-8i RAID Controller
- LSI MegaRAID SAS 9260-4i
- LSI MegaRAID SAS 9240-8i



Note

The UCS-SCU RAID configuration utility detects the physical drivers only once when you enter this function area. Do not remove or add hard disk drivers while navigating within this function area.

Send document comments to ucs-docfeedback@cisco.com**Note**

On C200 servers, ICH10R should be configured in SWRAID mode for RAID configuration to function. If ICH10R is configured in enhanced mode, the controller is not be visible for RAID configuration.

**Note**

Some LSI RAID controllers take time to complete the operation during RAID configuration. SCU does not have any control over this issue. As a workaround, you can either recreate the RAID or wait for the operation to complete.

Send document comments to ucs-docfeedback@cisco.com

UCS-SCU RAID Configurations

This section contains the following topics:

[Automatic Setup With Redundancy, page 3-6](#)

[Automatic Setup Without Redundancy, page 3-6](#)

[Create Custom or Multiple RAID Arrays, page 3-6](#)

UCS-SCU supports three types of RAID configurations:

Automatic Setup With Redundancy

Automatic setup with redundancy requires at least two hardware drives. If your server has two drives, UCS-SCU creates RAID 1. If it has more than two drives, UCS-SCU recommends creating RAID 5. If the controller does not support RAID 5, RAID 1 is created.



Note

The common parameters, except for total size, are the default values for the controller.

Automatic Setup Without Redundancy

Automatic setup without redundancy requires one or more hard drives. UCS-SCU creates RAID 0 with this option. To configure RAID using the automatic setup with or without redundancy, follow these steps:

-
- Step 1** Click **Server Configuration** in the left navigation pane and then click **RAID configuration**. The RAID Configuration page displays.
 - Step 2** Click the **Configure** button displayed next to the device. The RAID Configuration page displays. You can also view properties of the device by clicking Show Details.
 - Step 3** On the RAID Configuration page, the following options appear:
 - Automatic Setup with Redundancy
 - Automatic Setup without Redundancy
 - Create Custom or multiple RAID arrays
 - Step 4** Select either the first or second option and click **Create Array**. A pop-up displays upon completion of this task.
-

Create Custom or Multiple RAID Arrays

When you select Create Custom or Multiple RAID arrays, UCS-SCU displays a window in which you can select physical hard disks. Only unconfigured good disks can be used for RAID configuration. Disks that are already part of RAID will not be available for RAID configuration. Clear the configuration to make all the disks' statuses Unconfigured Good. You can use the Clear configuration option to remove these disks from existing RAID, but be extra careful here as the data on the existing RAID will be lost if you clear the configuration.

To create custom or multiple RAID arrays, follow these steps:

Send document comments to ucs-docfeedback@cisco.com

-
- Step 1** Click **Server Configuration** in the left navigation pane and then click RAID configuration. The RAID Configuration page displays.
- Step 2** Click the **Configure** button displayed next to the device. The RAID Configuration page appears. You can also view properties of the device by clicking Show Details.
- Step 3** On the RAID Configuration page, the following options appear:
- Automatic Setup with Redundancy
 - Automatic Setup without Redundancy
 - Create Custom or multiple RAID arrays
- Step 4** Select the third option (Create Custom or multiple RAID arrays) and click **Create Array**. The Select Drives for Logical Drive page appears.
- Step 5** Select the **Unconfigured Good** physical drives that you want to include in the RAID array.



Note If you choose to clear configuration, all the old configurations applied to the list are lost.

- Step 6** Check the Status column to verify that the drive is Unconfigured Good.
- Step 7** Click **Next**. The Select Hotspare Drives page appears.
- Step 8** Select the required physical drives to be used as global hot spare drives and click **Next**. The Define Array Attributes page displays.
- Step 9** Select the required array attributes from the drop-down list and click **Next**. The summary page displays.
- Step 10** Click **Create Array**.



Note UCS-SCU does not support the creation of nested RAID levels (RAID 10, 50, 60). However, you can configure these RAID levels by logging in to the LSI controller BIOS. We do not currently certify this method.

[Table 3-2](#) explains the various disk status conditions.

Table 3-2 Disk Status Conditions

Status Condition	Description
Online	The drive is already used in another array.
Global Hotspare	The drive will be used to repair any array in the system that had a drive failure, if the failed drive is equal to, or smaller than the hot spare drive.
Unconfigured Good	The drive is unused or available.
Ready	The drive is online and operating correctly.
Offline	The drive is offline or absent. No actions can be performed on the drive until it is back online.

Send document comments to ucs-docfeedback@cisco.com

Table 3-2 *Disk Status Conditions*

Status Condition	Description
Unconfigured Bad	The drive is not operational and needs to be replaced. Disks with a status of "Unconfigured bad" cannot be used for RAID configurations.
Foreign	The drive is part of an array created on a different controller, or created within one enclosure and moved to another on the same controller. It can be used to create a new array after clearing configuration.

Table 3-3 explains the RAID array attributes.

Table 3-3 *RAID Array Attributes*

Option	Description
RAID level	RAID 0 (Data striping), 1 (Disk Mirroring), 5 (Data Striping with Striped Parity), 6 (Distributed Parity and Disk Striping).
Stripe size	Size of the data stripe across all disks. Each physical disk has a smaller stripe of data. The sum of all the stripes equals the stripe size.
Read policy	No Read Ahead, Read Ahead, Adaptive. Read Ahead will read additional consecutive stripes. Adaptive will turn on Read Ahead for sequential reads and turn it off for random reads.
Write policy	Write Through or Write Back. With Write Through, I/O completion for write operations is signaled when the data is written to the disk. With Write Back, I/O completion is signaled when the data is transferred to cache.
Cache policy	Direct I/O or Cached I/O. Choose Direct I/O for uncached read and write operations. Choose Cached I/O to cache all write operations and check the cache first for read operations
Size	Logical drive size. The maximum value depends on RAID level selected and the physical disks size involved.

Firmware Update

The Firmware Update functionality allows you to locate and download the most recent BIOS and CIMC firmware update packages. This feature is supported on the C200, C210, C460 and C250 systems.

To get started with the Get System Updates feature, follow these steps:

-
- Step 1** Click **Firmware Update** in the left navigation pane.
- Step 2** Select from the following options from the firmware update toolbar:
- From www.cisco.com (recommended)—To get the most recent update package from the Cisco support website.
 - From boot media—To get the most recent update package from the boot media.
 - From USB disk on key—To browse a USB key for the update package.

Send document comments to ucs-docfeedback@cisco.com

**Note**

LOM (LAN on motherboard), Intel, P81E Virtual Interface Card and and Broadcom cards are supported while using the first option (www.cisco.com).

This section contains the following topics:

[Minimum Requirements for Firmware Update, page 3-9](#)

[Scenario 1: Updating firmware when your server has an Internet connection, page 3-9](#)

[Scenario 2: Updating firmware from SCU boot media, page 3-10](#)

[Scenario 3: Updating firmware From USB disk on key, page 3-10](#)

[Scenario 4: Updating firmware From Network, page 3-10](#)

Minimum Requirements for Firmware Update

In order to support the BIOS and CIMC update, the following minimum requirements should be met:

- BIOS/CIMC version should be 1.1.1 on C200/C210.
- BIOS/CIMC version should be 1.1.1d on C250.
- CIMC 1.2.1a and BIOS 1.2.1.0 on C460.

The Get System Updates functionality is disabled if the above-mentioned criteria are not met.

Scenario 1: Updating firmware when your server has an Internet connection

If your server has an Internet connection, UCS-SCU helps you locate and download the current server system firmware package from the Cisco support website. To update the firmware on your system, follow these steps:

- Step 1** Make sure your server has Internet connectivity.
- Step 2** Boot the server with UCS-SCU, and accept the end user license.
- Step 3** Click **Firmware Update** in the left navigation pane.
- Step 4** Click **Select From cisco.com (recommended)** on the Firmware Update page. The Network Configuration page displays.
- Step 5** Select the appropriate options on the Network Connection page for your server, and click **Configure**. A pop-up window displays a confirmation message.
- Step 6** Click the **Select All** checkbox.
- Step 7** Click **Apply** to start the firmware update process.

**Note**

UCS-SCU can detect all available system firmware update packages. The most recent version is recommended.

Send document comments to ucs-docfeedback@cisco.com

**Note**

Do not power off or reboot server during firmware update. After the firmware update process completes, click **Reboot** to restart your server.

Scenario 2: Updating firmware from SCU boot media

If your server does not have an Internet connection, you can download firmware update packages from the SCU CD. To update server firmware from the SCU boot media, follow these steps:

- Step 1** Click **Firmware Update** in the left navigation pane.
- Step 2** Click **From SCU boot media** on the Firmware Update page.
- Step 3** Click the **Select All** checkbox.
- Step 4** Click **Apply** to start the firmware update process.

Scenario 3: Updating firmware From USB disk on key

In this scenario, you can use a USB key or USB hard disk drive. You must manually download the most recent drivers from <http://www.cisco.com> and copy them to a USB key. To update firmware using this method, follow these steps:

- Step 1** Click **Firmware Update** in the left navigation pane.
- Step 2** Click **From USB disk on key** on the Firmware Update page.
- Step 3** Click the **Select All** checkbox.
- Step 4** Click **Apply** to start the firmware update process.

Scenario 4: Updating firmware From Network

In this scenario, you can update firmware from a network location. To update firmware using this method, follow these steps:

- Step 1** Click Firmware Update in the left navigation pane.
- Step 2** Click **From Network** on the Firmware Update page. The Network Configuration page appears.
- Step 3** Enter the network configuration details and click **Configure**. If the network is configured, a confirmation message displays.

Send document comments to ucs-docfeedback@cisco.com

OS Install

The unattended operating system installation function helps you install the Microsoft Windows, SuSE Linux, and RedHat Linux operating system families. UCS-SCU has integrated device drivers including RAID drivers to seamlessly install operating systems on supported RAID logical arrays without additional load driver steps or devices such as the USB. All UCS-SCU supported operating systems are organized into three groups: Windows, RHEL, and SUSE.

This section contains the following topics:

[Windows Server 2003 and 2008 Operating System Installation, page 3-11](#)

[Linux Server Series Operating System Installation, page 3-13](#)

Windows Server 2003 and 2008 Operating System Installation

For unattended Windows Server 2003 and 2008 OS installation, follow these steps:

-
- Step 1** To enter the unattended OS installation function area, click **OS Install** in the left navigation pane. The OS Install page appears.
 - Step 2** Click the Windows radio button and choose an operating system from the drop-down list. For Windows 2008 operating system, an additional edition drop-down list displays.
 - Step 3** Click **Next**.
 - Step 4** On the Set Installation Partition page, select a disk from the Select Disk drop-down list to create a partition.
 - Step 5** If your server has more disk controllers such as SATA, SAS, or RAID, click **Select Disk** to choose an active disk. UCS-SCU switches to the corresponding disk that is under the selected disk controller.
 - To create a new partition on disk free space, click **New**.
 - To remove a partition, click **Delete**.
 - To change a partition size, click **Edit**.
 - Step 6** If you have multiple arrays created under the same controller, UCS-SCU marks the array chosen for OS installation as the primary bootable array.
 - Step 7** Click **Next**.
 - Step 8** Enter the following information in the subsequent screens:
 - Region and Location
 - Windows 2003 server series—UCS-SCU prompts you to select Time Zone, Windows Language and additional language
 - Windows 2008—You can select the Time Zone.
 - Personalization
 - Enter server owner name, organization, license information and license type.
 - Name and password
 - On Windows 2003 server series you must set the server computer name and administrator password.

Send document comments to ucs-docfeedback@cisco.com

- On Windows 2008 server series you must set the server computer name. Because administrator password is reset when Windows 2008 installation completes, UCS-SCU does not request a Windows administrator password.
- Network Settings—Enter the network configuration settings for the onboard network adapters that will be detected by the operating system during installation.



Note

These settings will not affect the network settings for the CIMC. We recommend that you set different IP addresses for the OS and CIMC. The "network interface" column lists each network adapter detected by the UCS-SCU. Your operating system may have a different name after you install the operating system.

- Get Update Drivers—This section allows you to select the source from where UCS-SCU can download server driver packages. The selected drivers are installed to the operating system by UCS-SCU.

Choose one of the following options:

- **From www.cisco.com**—To get the most recent drivers from the Cisco support website, select this option. Ensure that the server is only connected to one network during the download.
- **From SCU boot media**—Directly use the driver packages that are stored in the Tools and Drivers CD. UCS-SCU selects this option as default.
- **From my network**—UCS-SCU can download a driver package stored on a network share folder. You must manually download the most recent drivers from <http://www.cisco.com> and copy them to your network share.
- **From USB Disk on Key or Hard Drive**—UCS-SCU can get the drivers stored on a USB key or USB hard disk drive. You must manually download the most recent drivers from <http://www.cisco.com> and copy them to a USB key.
- Choose Drivers to Install—UCS-SCU displays all available drivers downloaded from the driver source. Uncheck the drivers that you do not want to install. If you want to install an operating system on a RAID volume, you can deselect the driver for the appropriate RAID controller. The path to the selected drivers will be stored and will then be used to download and install the drivers during the operating system installation.

UCS-SCU can load third-party drivers by selecting the checkbox—Please select if you want to add additional drivers from a different location.

- Step 9** Remove the UCS-SCU CD and insert the required operating system CD.

Windows 2003 Server Series

For unattended installation of the Windows 2003 operating system, follow these steps:

- Step 1** Insert the Windows 2003 operating system CD, and click **Next** for UCS-SCU to apply all settings.
- Step 2** After completing this process, UCS-SCU prompts you to reboot the server.
- Step 3** Leave the operating system CD in the CD-ROM, while the system completes the OS installation after this reboot.

Send document comments to ucs-docfeedback@cisco.com

Windows 2008

For unattended installation of the Windows 2008 operating system, follow these steps:

-
- Step 1** Insert the Windows 2008 OS DVD and a USB key with at least 10 MB free space on which UCS-SCU can store server drivers temporarily. The answer file unattended.xml is also stored in the USB during installation.
 - Step 2** Click **Next** to apply all settings.
 - Step 3** Click **Restart** to reboot the server.
 - Step 4** During server POST, press **F2** to enter the server BIOS configuration interface.



-
- Note** You can use only virtual USB drives for OS installation on the C460 M1. Both physical and virtual are supported on all other platforms.
-

Linux Server Series Operating System Installation

For unattended Linux operating system installation, follow these steps:

-
- Step 1** Click **OS Install** in the left navigation pane. The OS Install page appears.
 - Step 2** Click either the RHEL or SLES radio button, choose an operating system from the drop-down list and click **Next**.
 - Step 3** On the Set Installation Partition page, select a disk from the Select Disk drop-down list to create a partition.
 - Step 4** If the server has more disk controllers such as SATA, SAS, or RAID controller, click **Select disk to choose active disk controller**. UCS-SCU switches to the corresponding disk that is under the selected disk controller and displays a recommended default partition.
 - Step 5** Click **New** to create a new partition on disk free space. Click **Delete** to remove a partition, or click **Edit** to change partition size. Partition Root and Swap are necessary. If you miss them, SCU generates an alert message. SCU displays a suggested partition solution. Accept it if you are not familiar with Linux partition.
 - Step 6** If you have multiple arrays created under the same controller, UCS-SCU marks the array that is chosen for OS installation as primary bootable array.
 - Step 7** Enter the following information in the subsequent screens:
 - Basic configuration—Edit the following items on the Basic Configuration page:
 - Root Password
 - Default language
 - Keyboard
 - Time Zone
 - Additional Languages
 - Package Selection—Select all Linux packages that you want to install on your server.

Send document comments to ucs-docfeedback@cisco.com

- Network Settings—Enter the network configuration settings for the onboard network adapters that will be detected by the operating system during installation.



Note

These settings do not affect the network settings for the CIMC. We recommend that you set different IP addresses for the operating system and CIMC.

The network interface column lists each network adapter detected by the UCS-SCU. Your operating system may have a different name after you install the operating system.

- Get Update Drivers—This section allows you to select the source from which the UCS-SCU can download server driver packages. Those drivers are installed to the operating system by UCS-SCU.

Choose one of the following options:

- **From www.cisco.com**—You can get the most recent drivers from the Cisco support website by selecting this option. Please check that the server is only connected to one network during the download.
- **From SCU boot media**—Directly use the driver packages stored in the Tools and Drivers CD. Although this CD may not contain the most recent driver packages, this option is the fastest. UCS-SCU selects this as a default option.
- **From my network**—UCS-SCU can download a driver package stored on a network share folder. You must manually download the most recent drivers from <http://www.cisco.com> and copy it to your network share.
- **From USB stick on Key**—UCS-SCU can get the drivers stored on a USB key or USB hard disk drive. You must manually download the most recent drivers from <http://www.cisco.com> and copy them to the USB key.
- Network Location—Enter the login and location information for the network share where the update packages are located.
- Choose Drivers to Install—UCS-SCU displays all available drivers that downloaded from the driver source. Uncheck the drivers that you do not want to install. If you want to install an operating system on a RAID volume, you can select the driver for the appropriate RAID controller. The path to the selected drivers will be stored and will then be used to download and install the drivers during the operating system installation.

- Step 8** Insert OS CD—Insert the Linux Server OS CD and click **Next**. UCS-SCU starts to apply all settings. Reboot the server after the process completes. You should leave the OS CD in the CD-ROM. The server will complete all the operating system installation steps after this reboot.

Diagnostic Tools

You can use diagnostics tools to diagnose hardware problems with your Cisco servers. The user interface displays the status of the test run and examines log files for troubleshooting hardware issues.

This section contains the following topics:

[Quick Test, page 3-15](#)

[Comprehensive Test, page 3-15](#)

[Quick Tasks, page 3-15](#)

[Tests Suite, page 3-16](#)

Send document comments to ucs-docfeedback@cisco.com

[Tests Log Summary, page 3-16](#)

Quick Test

You can run these tests quickly to determine any hardware issue. These tests usually take 20-30 minutes to run and test limited functionality for a few subsystems like memory, CPU and disks. The comprehensive test provides more exhaustive diagnostics.

To run the quick test follow these steps:

-
- Step 1** Click **Diagnostic Tools** from the left navigation pane.
 - Step 2** Click **Tests**.
 - Step 3** Click the **Quick Test** collapsible button to view the types of quick tests available for you to run.
 - Step 4** Click a subsystem (like memory, video, or network).
 - Step 5** On the content pane, click **Run Tests**.
 - Step 6** If you click Run Tests, the test is run and the status displays in the Tests Status area.
-

Comprehensive Test

The Comprehensive test can run for hours and usually runs when quick tests cannot diagnose the issue with your server. They are designed to test multiple hardware components and find issues that may be caused due to multiple components on your server.

The individual tests run can be customized to test some user-defined conditions. You can also select a group of tests to be run.

To run the comprehensive test, follow these steps:

-
- Step 1** Click **Diagnostic Tools** from the left navigation pane.
 - Step 2** Click **Tests**.
 - Step 3** Click the **Comprehensive Test** collapsible button to view the types of comprehensive tests available for you to run.
 - Step 4** Click a subsystem (like processor, memory, or network).
 - Step 5** On the content pane, click **Run Tests**.
 - Step 6** If you click Run Tests, the test is run and the status displays in the Tests Status area.

Quick Tasks

Quick Tasks allow you to get started with diagnostic tools immediately. You can run all the tests (Quick/Comprehensive) from here and report the details to Cisco to troubleshoot the logs and provide information about problems with your system. To use this feature, follow these steps:

-
- Step 1** Click **Diagnostic Tools** from the left navigation pane.

Send document comments to ucs-docfeedback@cisco.com

- Step 2** Click **Quick Tasks**.
- Step 3** Click either **Run Quick Tests** or **Run Comprehensive Test** from the toolbar. The status appears in the **Test Status** pane. You can also view detailed test results under **Tests log summary**.

Tests Suite

Use the Test Suite functionality to run a specific set of tests you added. To run the tests suite, you should have added specific tests you want to run in advance:

To run the test suite, follow these steps:

-
- Step 1** Click **Tests Suite** from the left navigation pane.
- Step 2** Select the tests you want to run by clicking the required checkboxes.
- Step 3** Click **Run Tests Suite** to run the tests you added to the test suite. The status appears in the **Tests Status** pane along with the name, suite ID, Result, start time and end time.
-

Tests Log Summary

Use the Tests Log Summary functionality to examine the test logs for troubleshooting. To view the Tests Log summary, follow these steps:

-
- Step 1** Click **Diagnostic Tools** on the left navigation pane.
- Step 2** Click **Tests Log Summary** on the left navigation pane.
- Step 3** Select a filter from the filter drop-down and click **Go**. The status, result, start time, and end time of the test displays.
- Step 4** For more details, click a specific log entry (for example, click **memory test**). The Log, Error Log (if the test failed) and the analysis of the specific test displays in the content pane.
-

Logs

The Logs functionality allows you to take corrective action by examining your server's logs. UCS-SCU provides three types of logs:

- System logs
- System event logs

This section contains the following topics:

[System Logs, page 3-17](#)

[System Event Log, page 3-17](#)

Send document comments to ucs-docfeedback@cisco.com

System Logs

The system log file displays events that are logged by the operating system components. These events are often predetermined by the operating system itself. System log files display information about device changes, device drivers, system changes, events, operations, and more.

To view the system logs, follow these steps:

-
- Step 1** Click **Logs** on the left navigation pane.
 - Step 2** Click **System Logs**.
 - Step 3** Select a filter from the filter drop-down list.
 - Step 4** Click **Go**. The system log displays.
-

System Event Log

The system event log file displays events that are logged by your server.

To view the system event logs follow these steps:

-
- Step 1** Click **Logs** on the left navigation pane.
 - Step 2** Click **System Event Logs**.
 - Step 3** Select a filter from the filter drop-down list.
 - Step 4** Click **Go**. The system event log displays.

Send document comments to ucs-docfeedback@cisco.com

Send document comments to ucs-docfeedback@cisco.com



INDEX

B

booting in vKVM 3
booting UCS-SCU 2
burning an .iso CD 2

C

configure a server 3

E

entering vKVM 3
exiting UCS-SCU 3

H

hardware and software requirements 2

I

integrated features in UCS-SCU 1

L

Linux OS installation 13
Logs 17

O

OS installation 11

R

RAID configuration 4
automatic setup with redundancy 6
automatic setup without redundancy 6
create custom or multiple RAID arrays 6
related documentation 3

S

save logs 17
setting BIOS boot order 4
supported operating systems 1
supported platforms 1
supported RAID devices 4

U

UCS documentation 3
UCS-SCU interface 1
updating firmware 9, 10

W

Windows OS installation 11
exiting UCS-SCU 4

Send document comments to ucs-docfeedback@cisco.com