Overview

This chapter includes the following sections:

Overview of the Cisco UCS C-Series Rack-Mount Servers

Following are the Cisco UCS C-Series rack-mount servers:

- Cisco UCS C200 Rack-Mount Server
- Cisco UCS C210 Rack-Mount Server
- Cisco UCS C250 Rack-Mount Server
- Cisco UCS C460 Rack-Mount Server

Note To determine which Cisco UCS C-Series rack-mount servers are supported by this firmware release, see the *Release Notes for Cisco Integrated Management Controller*.

UCS C200 Rack-Mount Server

The Cisco UCS C200 server is a high-density, two-socket, 1 RU rack-mount server. This server is built for production-level network infrastructure, web services, and mainstream data centers, and branch and remote-office applications.

UCS C210 Rack-Mount Server

The Cisco UCS C210 server is a general-purpose, two-socket, 2 RU rack-mount server. It is designed to balance performance, density, and efficiency for storage-intensive workloads. This server is built for applications such as network file and appliances, storage, database, and content-delivery.

UCS C250 Rack-Mount Server

The Cisco UCS C250 server is a high-performance, memory-intensive, two-socket, 2 RU rack-mount server. It is designed to increase performance, and it has the capacity for demanding virtualization and large-data-set workloads. The C250 server can also reduce the cost of smaller memory footprints.

UCS C460 Rack-Mount Server

The UCS C460 server is a high-density, 4U rack-mount server. Supporting one to four multi-core processors, it is built for heavy workload applications like data warehousing, ERP, and large-scale virtualization.

Overview of the Server Software

The Cisco UCS C-Series Rack-Mount Server ships with two major software systems installed.

CIMC Firmware

Cisco Integrated Management Controller (CIMC) is a separate management module built into the motherboard. A dedicated ARM-based processor, separate from the main server CPU, runs the CIMC firmware. The system ships with a running version of the CIMC firmware. You can update the CIMC firmware, but no initial installation is needed.

Server OS

The main server CPU runs an OS such as Windows or Linux. The server ships with a pre-installed OS, but you can install a different OS using the DVD drive or over the network. You can use CIMC to install the new OS using the KVM console and vMedia.

Note Use product-specific installation documentation when installing an OS.

Cisco Integrated Management Controller

The Cisco Integrated Management Controller (CIMC) is the management service for the C-Series servers. CIMC runs within the server.

Management Interfaces

You can use a web-based GUI or SSH-based CLI to access, configure, administer, and monitor the server. Almost all tasks can be performed in either interface, and the results of tasks performed in one interface are displayed in another. However, you cannot do the following:

- Use CIMC GUI to invoke CIMC CLI
- View a command that has been invoked through CIMC CLI in CIMC GUI
- Generate CIMC CLI output from CIMC GUI

Tasks You Can Perform in CIMC

You can use CIMC to perform the following server management tasks:

- Power on, power off, power cycle, reset and shut down the server

- Toggle the locator LED

- Configure the server boot order

- View server properties and sensors

- Manage remote presence

- Create and manage local user accounts, and enable remote user authentication through Active Directory

- Configure network-related settings, including NIC properties, IPv4, VLANs, and network security

- Configure communication services, including HTTP, SSH, and IPMI Over LAN

- Manage certificates

- Configure platform event filters

- Update CIMC firmware

- Monitor faults, alarms, and server status

No Operating System or Application Provisioning or Management

CIMC provisions servers, and as a result, exists below the operating system on a server. Therefore, you cannot use it to provision or manage operating systems or applications on servers. For example, you cannot do the following:

- Deploy an OS, such as Windows or Linux

- Deploy patches for software, such as an OS or an application

- Install base software components, such as anti-virus software, monitoring agents, or backup clients

- Install software applications, such as databases, application server software, or web servers

- Perform operator actions, including restarting an Oracle database, restarting printer queues, or handling non-CIMC user accounts

- Configure or manage external storage on the SAN or NAS storage

CIMC CLI

The CIMC CLI is a command-line management interface for Cisco UCS C-Series servers. You can launch the CIMC CLI and manage the server by the serial port or over the network by SSH or Telnet. By default, Telnet access is disabled.

A user of the CLI will be one of three roles: admin, user (can control, cannot configure), and read-only.

Note To recover from a lost admin password, see the Cisco UCS C-Series server installation and service guide for your platform.

Command Modes

The CLI is organized into a hierarchy of command modes, with the EXEC mode being the highest-level mode of the hierarchy. Higher-level modes branch into lower-level modes. You use the **scope** command to move from higher-level modes to modes in the next lower level , and the **exit** command to move up one level in the mode hierarchy. The **top** command returns to the EXEC mode.

Note   Most command modes are associated with managed objects. The **scope** command does not create managed objects and can only access modes for which managed objects already exist.

Each mode contains a set of commands that can be entered in that mode. Most of the commands available in each mode pertain to the associated managed object. Depending on your assigned role, you may have access to only a subset of the commands available in a mode; commands to which you do not have access are hidden.

The CLI prompt for each mode shows the full path down the mode hierarchy to the current mode. This helps you to determine where you are in the command mode hierarchy and can be an invaluable tool when you need to navigate through the hierarchy.

Command Mode Table

The following table lists the main command modes, the commands used to access each mode, and the CLI prompt associated with each mode.

Table 1: Main Command Modes and Prompts

Mode Name			Commands Used to Access	Mode Prompt
EXEC			**top** command from any mode	#
	bios		**scope bios** command from EXEC mode	/bios #
	certificate		**scope certificate** command from EXEC mode	/certificate #
	chassis		**scope chassis** command from EXEC mode	/chassis #
	cimc		**scope cimc** command from EXEC mode	/cimc #
		firmware	**scope firmware** command from cimc mode	/cimc/firmware #
		import-export	**scope import-export** command from cimc mode	/cimc/import-export #
		log	**scope log** command from cimc mode	/cimc/log #
		server	**scope server** *index* command from log mode	/cimc/log/server #
		network	**scope network** command from cimc mode	/cimc/network #
		ipblocking	**scope ipblocking** command from network mode	/cimc/network/ipblocking #

Mode Name			Commands Used to Access	Mode Prompt
		tech-support	**scope tech-support** command from cimc mode	/cimc/tech-support #
	fault		**scope fault** command from EXEC mode	/fault #
		pef	**scope pef** command from fault mode	/fault/pef #
		trap-destination	**scope trap-destination** command from fault mode	/fault/trap-destination #
	http		**scope http** command from EXEC mode	/http #
	ipmi		**scope ipmi** command from EXEC mode	/ipmi #
	kvm		**scope kvm** command from EXEC mode	/kvm #
	ldap		**scope ldap** command from EXEC mode	/ldap #
	sel		**scope sel** command from EXEC mode	/sel #
	sensor		**scope sensor** command from EXEC mode	/sensor #
	sol		**scope sol** command from EXEC mode	/sol #
	ssh		**scope ssh** command from EXEC mode	/ssh #
	user		**scope user** *user-number* command from EXEC mode	/user #
	user-session		**scope user-session** *session-number* command from EXEC mode	/user-session #
	vmedia		**scope vmedia** command from EXEC mode	/vmedia #

Complete a Command

You can use the Tab key in any mode to complete a command. Partially typing a command name and pressing Tab causes the command to be displayed in full, or to the point where another keyword must be chosen or an argument value must be entered.

Command History

The CLI stores all previously used commands in the current session. You can step through the previously used commands by using the Up Arrow or Down Arrow keys. The Up Arrow key steps to the previous command in the history, and the Down Arrow key steps to the next command in the history. If you get to the end of the history, pressing the Down Arrow key does nothing.

All commands in the history can be entered again by simply stepping through the history to recall the desired command and pressing Enter. The command is entered as if you had manually typed it. You can also recall a command and change it before you enter it.

Committing, Discarding, and Viewing Pending Commands

When you enter a configuration command in the CLI, the command is not applied until you enter the **commit** command. Until committed, a configuration command is pending and can be discarded by entering a **discard** command. When any command is pending, an asterisk (*) appears before the command prompt. The asterisk disappears when you enter the **commit** command, as shown in this example:

```
Server# scope chassis
Server /chassis # set locator-led off
Server /chassis *# commit
Server /chassis #
```

You can accumulate pending changes in multiple command modes and apply them together with a single **commit** command. You can view the pending commands by entering the **show configuration pending** command in any command mode.

Note Committing multiple commands together is not an atomic operation. If any command fails, the successful commands are applied despite the failure. Failed commands are reported in an error message.

Command Output Formats

Most CLI **show** commands accept an optional **detail** keyword that causes the output information to be displayed as a list rather than a table. You can configure either of two presentation formats for displaying the output information when the **detail** keyword is used. The format choices are as follows:

- Default—For easy viewing, the command output is presented in a compact list.

  This example shows command output in the default format:

```
Server /chassis # set cli output default
Server /chassis # show hdd detail
Name HDD_01_STATUS:
    Status : present
Name HDD_02_STATUS:
    Status : present
Name HDD_03_STATUS:
    Status : present
Name HDD_04_STATUS:
    Status : present

Server /chassis #
```

- YAML—For easy parsing by scripts, the command output is presented in the YAML™ (YAML Ain't Markup Language) data serialization language, delimited by defined character strings.

  This example shows command output in the YAML format:

```
Server /chassis # set cli output yaml
Server /chassis # show hdd detail
---
    name: HDD_01_STATUS
    hdd-status: present

---
    name: HDD_02_STATUS
    hdd-status: present

---
```

```
        name: HDD_03_STATUS
        hdd-status: present

---
        name: HDD_04_STATUS
        hdd-status: present

...

Server /chassis #
```

For detailed information about YAML, see http://www.yaml.org/about.html.

In most CLI command modes, you can enter **set cli output default** to configure the default format, or **set cli output yaml** to configure the YAML format.

Online Help for the CLI

At any time, you can type the **?** character to display the options available at the current state of the command syntax. If you have not typed anything at the prompt, typing ? lists all available commands for the mode you are in. If you have partially typed a command, typing ? lists all available keywords and arguments available at your current position in the command syntax.