Managing the Server

This chapter includes the following sections:

Toggling the Locator LED

Before You Begin

You must log in with user or admin privileges to perform this task.

Procedure

	Command or Action	Purpose
Step 1	Server # **scope chassis**	Enters chassis command mode.
Step 2	Server /chassis # **set locator-led** {**on** | **off**}	Enables or disables the chassis locator LED.
Step 3	Server /chassis # **commit**	Commits the transaction to the system configuration.

This example disables the chassis locator LED and commits the transaction:

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

Server /chassis #
```

Toggling the Locator LED for a Hard Drive

Before You Begin

You must log in with user or admin privileges to perform this task.

Procedure

	Command or Action	Purpose
Step 1	Server # **scope chassis**	Enters chassis command mode.
Step 2	Server/chassis # **scope hdd**	Enters hard disk drive (HDD) command mode.
Step 3	Server /chassis/hdd # **set locateHDD** *drivenum* {**1** | **2**}	Where *drivenum* is the number of the hard drive whose locator LED you want to set. A value of 1 turns the LED on while a value of 2 turns the LED off.

This example turns on the locator LED on HDD 2:

```
Server# scope chassis
Server /chassis # scope hdd
Server /chassis/hdd # locateHDD 2 1
HDD Locate LED Status changed to 1
Server /chassis/hdd # show
Name                 Status               LocateLEDStatus
-------------------- -------------------- --------------------
HDD1_STATUS          present              TurnOFF
HDD2_STATUS          present              TurnON
HDD3_STATUS          absent               TurnOFF
HDD4_STATUS          absent               TurnOFF

Server /chassis/hdd #
```

Managing the Server Boot Order

Server Boot Order

Using CIMC, you can configure the order in which the server attempts to boot from available boot device types.

When you change the boot order configuration, CIMC sends the configured boot order to the BIOS the next time the server is rebooted. To implement the new boot order, reboot the server after making the configuration change. The new boot order will take effect on any subsequent reboot. The configured boot order is not sent again until the configuration is changed again.

Note The actual boot order will differ from the configured boot order if either of the following conditions occur:

- The BIOS encounters issues while trying to boot using the configured boot order.
- A user changes the boot order directly through the BIOS.

Configuring the Server Boot Order

Note Do not change the boot order while the host is performing BIOS power-on self test (POST).

Before You Begin

You must log in with user or admin privileges to perform this task.

Procedure

	Command or Action	Purpose
Step 1	Server# **scope bios**	Enters bios command mode.
Step 2	Server /bios # **set boot-order** *device1*[,*device2*[,*device3*[,*device4*[,*device5*]]]]	Specifies the boot device options and order. You can select one or more of the following: • cdrom—Bootable CD-ROM • fdd—Floppy disk drive • hdd—Hard disk drive • pxe—PXE boot • efi—Extensible Firmware Interface
Step 3	Server /bios # **commit**	Commits the transaction to the system configuration.

The new boot order will be used on the next BIOS boot.

This example sets the boot order and commits the transaction:

```
Server# scope bios
Server /bios # set boot-order hdd,cdrom,fdd,pxe,efi
Server /bios *# commit
Server /bios #  show detail
BIOS:
    Boot Order: HDD,CDROM,FDD,PXE,EFI

Server /bios #
```

What to Do Next

Reboot the server to boot with your new boot order.

Viewing the Actual Server Boot Order

The actual server boot order is the boot order actually used by the BIOS when the server last booted. The actual boot order can differ from the boot order configured in CIMC.

Procedure

	Command or Action	Purpose
Step 1	Server# **scope bios**	Enters bios command mode.
Step 2	Server /bios # **show actual-boot-order [detail]**	Displays the boot order actually used by the BIOS when the server last booted.

This example displays the actual boot order from the last boot:

```
Server# scope bios
Server /bios #  show actual-boot-order

Boot Order   Type                      Boot Device
------------ ------------------------- ------------------------------------
1            CD/DVD                    CD-ROM
2            CD/DVD                    Cisco   Virtual CD/DVD  1.18
3            Network Device (PXE)      Cisco NIC 23:0.0
4            Network Device (PXE)      MBA v5.0.5  Slot 0100
5            Network Device (PXE)      MBA v5.0.5  Slot 0101
6            Network Device (PXE)      MBA v5.0.5  Slot 0200
7            Network Device (PXE)      MBA v5.0.5  Slot 0201
8            Network Device (PXE)      Cisco NIC 22:0.0
9            Internal EFI Shell        Internal EFI Shell
10           FDD                       Cisco   Virtual HDD     1.18
11           FDD                       Cisco   Virtual Floppy  1.18

Server /bios #
```

Resetting the Server

Important If any firmware or BIOS updates are in progress, do not reset the server until those tasks are complete.

Before You Begin

You must log in with user or admin privileges to perform this task.

Procedure

	Command or Action	Purpose
Step 1	Server# **scope chassis**	Enters chassis command mode.
Step 2	Server /chassis # **power hard-reset**	After a prompt to confirm, resets the server.

This example resets the server:

```
Server# scope chassis
Server /chassis # power hard-reset
This operation will change the server's power state.
Continue?[y|N]
```

Shutting Down the Server

Important If any firmware or BIOS updates are in progress, do not shut down the server until those tasks are complete.

Before You Begin

You must log in with user or admin privileges to perform this task.

Procedure

	Command or Action	Purpose
Step 1	Server# **scope chassis**	Enters chassis mode.
Step 2	Server /chassis # **power shutdown**	Shuts down the server.

The following example shuts down the server:

```
Server# scope chassis
Server /chassis # power shutdown
```

Managing Server Power

Powering On the Server

Note If the server was powered off other than through the CIMC, the server will not become active immediately when powered on. In this case, the server will enter standby mode until the CIMC completes initialization.

Important If any firmware or BIOS updates are in progress, do not change the server power until those tasks are complete.

Before You Begin

You must log in with user or admin privileges to perform this task.

Procedure

	Command or Action	Purpose
Step 1	Server# **scope chassis**	Enters chassis command mode.
Step 2	Server /chassis # **power on**	Turns on the server.

This example turns on the server:

```
Server# scope chassis
Server /chassis # power on
This operation will change the server's power state.
Continue?[y|N]y

Server /chassis # show
Power Serial Number Product Name  UUID
----- ------------- ------------- ------------------------------------
on    Not Specified Not Specified 208F0100020F000000BEA80000DEAD00
```

Powering Off the Server

Important If any firmware or BIOS updates are in progress, do not power off the server until those tasks are complete.

Before You Begin

You must log in with user or admin privileges to perform this task.

Procedure

	Command or Action	Purpose
Step 1	Server# **scope chassis**	Enters chassis command mode.
Step 2	Server /chassis # **power off**	Turns off the server.

This example turns off the server:

```
Server# scope chassis
Server /chassis # power off
This operation will change the server's power state.
Continue?[y|N]y

Server /chassis # show
Power Serial Number Product Name  UUID
----- ------------- ------------- ------------------------------------
off   Not Specified Not Specified 208F0100020F000000BEA80000DEAD00
```

Power Cycling the Server

Important If any firmware or BIOS updates are in progress, do not power cycle the server until those tasks are complete.

Before You Begin

You must log in with user or admin privileges to perform this task.

Procedure

	Command or Action	Purpose
Step 1	Server# **scope** chassis	Enters chassis command mode.
Step 2	Server /chassis # **power cycle**	Power cycles the server.

This example power cycles the server:

```
Server# scope chassis
Server /chassis # power cycle
```

Configuring Power Policies

Viewing the Power Statistics

Procedure

	Command or Action	Purpose
Step 1	Server# **show power-cap [detail]**	Displays the server power consumption statistics and the power cap policy.

The displayed fields are described in the following table:

Name	Description
Current Consumption	The power currently being used by the server, in watts.
Maximum Consumption	The maximum number of watts consumed by the server since the last time it was rebooted.
Minimum Consumption	The minimum number of watts consumed by the server since the last time it was rebooted.
Minimum Configurable Limit	The minimum amount of power that can be specified as the peak power cap for this server, in watts.
Maximum Configurable Limit	The maximum amount of power that can be specified as the peak power cap for this server, in watts.

Additional fields are described in the following table:

Name	Description
Enable Power Capping	If power capping is enabled, the system monitors how much power is allocated to the server and takes the specified action if the server goes over its maximum allotment.
Peak Power	The maximum number of watts that can be allocated to this server. If the server requests more power than specified in this field, the system takes the action defined in the **Non-Compliance Action** field. Enter a number of watts within the range defined by the **Minimum Configurable Limit** field and the **Maximum Configurable Limit** field.

Name	Description
Non-Compliance Action	The action the system should take if power capping is enabled and the server requests more than its peak power allotment. This can be one of the following: • **force-power-reduction**—The server is forced to reduce its power consumption by any means necessary. This option is available only on some C-Series servers. • **none**—No action is taken and the server is allowed to use more power than specified in the **Peak Power** field. • **power-off-host**—The server is shut down. • **throttle**—Processes running on the server are throttled to bring the total power consumption down.

This example displays the detailed power statistics:

```
Server# show power-cap detail
    Cur Consumption (W): 247
    Max Consumption (W): 286
    Min Consumption (W): 229
    Minimum Configurable Limit (W): 285
    Maximum Configurable Limit (W): 1250
    Power Cap Enabled: yes
    Peak Power: 0
    Non Compliance Action: throttle

Server#
```

Power Capping Policy

The power capping policy determines how server power consumption is actively managed. When power capping is enabled, the system monitors how much power is allocated to the server and attempts to keep the power consumption below the allocated power. If the server exceeds its maximum allotment, the power capping policy triggers the specified non-compliance action.

Configuring the Power Cap Policy

Note This feature is not available on some servers.

Before You Begin

You must log in with admin privileges to perform this task.

Procedure

	Command or Action	Purpose
Step 1	Server# **scope power-cap**	Enters the power cap command mode.
Step 2	Server /power-cap # **set enabled** {**yes** | **no**}	Enables or disables the capping of power to the server.
Step 3	Server /power-cap # **set peak-power** *watts*	Specifies the maximum number of watts that can be allocated to this server. Enter a number of *watts* within the range defined by the **Minimum Configurable Limit** field and the **Maximum Configurable Limit** field of the **show power-cap detail** command output. These fields are determined by the server model. If the server requests more power than specified in this command, the system takes the action defined by the **set non-compliance-action** command.
Step 4	Server /power-cap # **set non-compliance-action** {**force-power-reduction** | **none** | **power-off-host** | **throttle**}	Specifies the action the system should take if power capping is enabled and the server requests more than its peak power allotment. This can be one of the following: • **force-power-reduction**—The server is forced to reduce its power consumption by any means necessary. This option is not available on some server models. • **none**—No action is taken and the server is allowed to use more power than specified in the peak power setting. • **power-off-host**—The server is shut down. • **throttle**—Processes running on the server are throttled to bring the total power consumption down.
Step 5	Server /power-cap # **commit**	Commits the transaction to the system configuration.

This example enables and configures a power cap policy and commits the transaction:

```
Server# scope power-cap
Server /power-cap # set enabled yes
Server /power-cap *# set peak-power 1000
Server /power-cap *# set non-compliance-action throttle
Server /power-cap *# commit
Server /power-cap #  show detail
    Cur Consumption (W): 688
    Max Consumption (W): 1620
    Min Consumption (W): 48
    Minimum Configurable Limit (W): 500
    Maximum Configurable Limit (W): 2000
    Power Cap Enabled: yes
    Peak Power: 1000
    Non Compliance Action: throttle

Server /power-cap #
```

Configuring the Power Restore Policy

The power restore policy determines how power is restored to the server after a chassis power loss.

Before You Begin

You must log in with admin privileges to perform this task.

Procedure

	Command or Action	Purpose
Step 1	Server# **scope chassis**	Enters the chassis command mode.
Step 2	Server /chassis # **set policy** {**power-off** | **power-on** | **restore-last-state**}	Specifies the action to be taken when chassis power is restored. Select one of the following: • **power-off**—Server power will remain off until manually turned on. This is the default action. • **power-on**—Server power will be turned on when chassis power is restored. • **restore-last-state**—Server power will return to the state before chassis power was lost. When the selected action is **power-on**, you can select a delay in the restoration of power to the server.
Step 3	Server /chassis # **set delay** {**fixed** | **random**}	(Optional) Specifies whether server power will be restored after a fixed or random time. The default is **fixed**. This command is accepted only if the power restore action is **power-on**.
Step 4	Server /chassis # **set delay-value** *delay*	(Optional) Specifies the delay time in seconds. The range is 0 to 240; the default is 0.
Step 5	Server /chassis # **commit**	Commits the transaction to the system configuration.

This example sets the power restore policy to power-on with a fixed delay of 180 seconds (3 minutes) and commits the transaction:

```
Server# scope chassis
Server /chassis # set policy power-on
Server /chassis *# set delay fixed
Server /chassis *# set delay-value 180
Server /chassis *# commit
Server /chassis #  show detail
Chassis:
    Power: on
    Serial Number: QCI1404A1IT
    Product Name: UCS C200 M1
    PID : R200-1120402
    UUID: 01A6E738-D8FE-DE11-76AE-8843E138AE04
    Locator LED: off
```

```
    Description: Testing power restore
    Power Restore Policy: power-on
    Power Delay Type: fixed
    Power Delay Value(sec): 180

Server /chassis #
```

Managing the Flexible Flash Controller

Cisco Flexible Flash

Some C-Series Rack-Mount Servers support an internal Secure Digital (SD) memory card for storage of server software tools and utilities. The SD card is hosted by the Cisco Flexible Flash storage adapter.

The SD storage is available to CIMC as four virtual USB drives. Three are preloaded with Cisco software and the fourth can hold a user-installed hypervisor or other content. The four virtual drives are as follows:

- Cisco UCS Server Configuration Utility (bootable)
- User-installed (may be bootable)
- Cisco drivers (not bootable)
- Cisco Host Upgrade Utility (bootable)

For information about the Cisco software utilities and packages, see the *Cisco UCS C-Series Servers Documentation Roadmap* at this URL:

http://www.cisco.com/go/unifiedcomputing/c-series-doc

Configuring the Flexible Flash Controller Properties

Before You Begin

- You must log in with admin privileges to perform this task.
- Cisco Flexible Flash must be supported by your platform.

Procedure

	Command or Action	Purpose
Step 1	Server# **scope chassis**	Enters the chassis command mode.
Step 2	Server /chassis # **scope flexflash** *index*	Enters the Cisco Flexible Flash controller command mode for the specified controller. At this time, the only permissible *index* value is **FlexFlash-0**.
Step 3	Server /chassis/flexflash # **scope operational-profile**	Enters the operational profile command mode.

	Command or Action	Purpose
Step 4	Server /chassis/flexflash/operational-profile # **set error-count-threshold**	Specifies the number of read/write errors that are permitted while accessing the Cisco Flexible Flash card. If the number of errors exceeds this threshold, the Cisco Flexible Flash card is disabled and you must reset it manually before CIMC attempts to access it again. To specify a read/write error threshold, enter an integer between 1 and 255. To specify that the card should never be disabled regardless of the number of errors encountered, enter 0 (zero).
Step 5	Server /chassis/flexflash/operational-profile # **set raid-primary-member** {**slot1** | **slot2**}	The slot in which the primary copy of the data resides. **Important** Currently, Cisco Flexible Flash cards are supported only in slot 1. Therefore, this field must be set to **slot1**.
Step 6	Server /chassis/flexflash/operational-profile # **set virtual-drives-enabled** *list*	Specifies a list of virtual drives to be made available to the server as a USB-style drive. The options are as follows: • **SCU**—The server can access the Cisco UCS Server Configuration Utility. • **DRIVERS**—The server can access the Cisco drivers volume. • **HV**—The server can access a user-installed hypervisor. • **HUU**—The server can access the Cisco Host Upgrade Utility. When specifying more than one option, you must enclose the list in quotation marks ('').
Step 7	Server /chassis/adapter # **commit**	Commits the transaction to the system configuration.

This example configures the properties of the flash controller:

```
Server# scope chassis
Server /chassis # scope flexflash FlexFlash-0
Server /chassis/flexflash # scope operational-profile
Server /chassis/flexflash/operational-profile # set error-count-threshold 100
Server /chassis/flexflash/operational-profile *# set raid-primary-member slot1
Server /chassis/flexflash/operational-profile *# set virtual-drives-enabled "SCU HUU"
Server /chassis/flexflash/operational-profile *# commit
Server /chassis/flexflash/operational-profile #
```

Booting from the Flexible Flash

You can specify a bootable virtual drive on the Cisco Flexible Flash card that will override the default boot priority the next time the server is restarted, regardless of the default boot order defined for the server. The specified boot device is used only once. After the server has rebooted, this setting is ignored.

Note Before you reboot the server, ensure that the virtual drive you select is enabled on the Cisco Flexible Flash card.

Before You Begin

- You must log in with admin privileges to perform this task.
- Cisco Flexible Flash must be supported by your platform.

Procedure

	Command or Action	Purpose
Step 1	Server# **scope bios**	Enters the BIOS command mode.
Step 2	Server /bios # **set boot-override** {**None** | **SCU** | **HV** | **HUU**}	The virtual drive from which the server attempts to boot the next time it is restarted. This can be one of the following: • **None**—The server uses the default boot order • **SCU**—The server boots from the Cisco UCS Server Configuration Utility • **HV**—The server boots from the hypervisor virtual drive • **HUU**—The server boots from the Cisco Host Upgrade Utility
Step 3	Server /bios # **commit**	Commits the transaction to the system configuration.

This example specifies that the server boots from the Cisco UCS Server Configuration Utility the next time it is restarted:

```
Server# scope bios
Server /bios # set boot-override SCU
Committing the boot override BIOS will try boot to
the specified boot device first. Failure to detect
the boot device BIOS will boot from the list
configured in the BIOS boot order.
Server /bios *# commit
Server /bios #
```

Resetting the Flexible Flash Controller

In normal operation, it should not be necessary to reset the Cisco Flexible Flash. We recommend that you perform this procedure only when explicitly directed to do so by a technical support representative.

Note This operation will disrupt traffic to the virtual drives on the Cisco Flexible Flash controller.

Before You Begin

- You must log in with admin privileges to perform this task.
- Cisco Flexible Flash must be supported by your platform.

Procedure

	Command or Action	Purpose
Step 1	Server# **scope chassis**	Enters the chassis command mode.
Step 2	Server /chassis # **scope flexflash** *index*	Enters the Cisco Flexible Flash controller command mode for the specified controller. At this time, the only permissible *index* value is **FlexFlash-0**.
Step 3	Server /chassis/flexflash # **reset**	Resets the Cisco Flexible Flash controller.

This example resets the flash controller:

```
Server# scope chassis
Server /chassis # scope flexflash FlexFlash-0
Server /chassis/flexflash # reset
This operation will reset Cisco Flexible Flash controller.
Host traffic to VDs on this device will be disrupted.
Continue?[y|N] y

Server /chassis/flexflash #
```

Configuring BIOS Settings

Viewing BIOS Status

Procedure

	Command or Action	Purpose
Step 1	Server# **scope bios**	Enters the BIOS command mode.
Step 2	Server /bios # **show detail**	Displays details of the BIOS status.

The BIOS status information contains the following fields:

Name	Description
BIOS Version	The version string of the running BIOS.
Boot Order	The order of bootable target types that the server will attempt to use.

Name	Description
Boot Override Priority	This can be None, SCU, HV, or HUU.
FW Update/Recovery Status	The status of any pending firmware update or recovery action.
FW Update/Recovery Progress	The percentage of completion of the most recent firmware update or recovery action.

This example displays the BIOS status:

```
Server# scope bios
Server /bios # show detail
    BIOS Version: "C460M1.1.2.2a.0 (Build Date: 01/12/2011)"
    Boot Order: EFI,CDROM,HDD
    Boot Override Priority:
    FW Update/Recovery Status: NONE
    FW Update/Recovery Progress: 100

Server /bios #
```

Configuring Main BIOS Settings

Before You Begin

You must log in with admin privileges to perform this task.

Procedure

	Command or Action	Purpose
Step 1	Server# **scope bios**	Enters the BIOS command mode.
Step 2	Server /bios # **scope main**	Enters the main BIOS settings command mode.
Step 3	Configure the BIOS settings.	The BIOS parameters available depend on the model of the server that you are using. For descriptions and information about the options for each BIOS setting, see one the following topics: • Main BIOS Parameters for C22 and C24 Servers • Main BIOS Parameters for C200 and C210 Servers • Main BIOS Parameters for C250 Servers • Main BIOS Parameters for C260 Servers • Main BIOS Parameters for C460 Servers
Step 4	Server /bios/main # **commit**	Commits the transaction to the system configuration. Changes are applied on the next server reboot. If server power is on, you are prompted to choose whether to reboot now.

This example configures the BIOS to pause the boot upon a critical POST error and commits the transaction:

```
Server# scope bios
Server /bios # scope main
Server /bios/main # set POSTErrorPause Enabled
Server /bios/main *# commit
Changes to BIOS set-up parameters will require a reboot.
Do you want to reboot the system?[y|N] n
Changes will be applied on next reboot.
Server /bios/main #
```

Configuring Advanced BIOS Settings

Note Depending on your installed hardware, some configuration options described in this topic may not appear.

Before You Begin

You must log in with admin privileges to perform this task.

Procedure

	Command or Action	Purpose
Step 1	Server# **scope bios**	Enters the BIOS command mode.
Step 2	Server /bios # **scope advanced**	Enters the advanced BIOS settings command mode.
Step 3	Configure the BIOS settings.	The BIOS parameters available depend on the model of the server that you are using. For descriptions and information about the options for each BIOS setting, see one the following topics: • Advanced BIOS Parameters for C22 and C24 Servers • Advanced BIOS Parameters for C200 and C210 Servers • Advanced BIOS Parameters for C250 Servers • Advanced BIOS Parameters for C260 Servers • Advanced BIOS Parameters for C460 Servers
Step 4	Server /bios/advanced # **commit**	Commits the transaction to the system configuration. Changes are applied on the next server reboot. If server power is on, you are prompted to choose whether to reboot now.

This example enables low voltage DDR memory mode and commits the transaction:

```
Server# scope bios
Server /bios # scope advanced
Server /bios/advanced # set LvDDRMode Enabled
Server /bios/advanced *# commit
Changes to BIOS set-up parameters will require a reboot.
Do you want to reboot the system?[y|N] n
```

```
Changes will be applied on next reboot.
Server /bios/advanced #
```

Configuring Server Management BIOS Settings

Before You Begin

You must log in with admin privileges to perform this task.

Procedure

	Command or Action	Purpose
Step 1	Server# **scope bios**	Enters the BIOS command mode.
Step 2	Server /bios # **scope server-management**	Enters the server management BIOS settings command mode.
Step 3	Configure the BIOS settings.	The BIOS parameters available depend on the model of the server that you are using. For descriptions and information about the options for each BIOS setting, see one the following topics: • Server Management BIOS Parameters for C22 and C24 Servers • Server Management BIOS Parameters for C200 and C210 Servers • Server Management BIOS Parameters for C250 Servers • Server Management BIOS Parameters for C260 Servers • Server Management BIOS Parameters for C460 Servers
Step 4	Server /bios/server-management # **commit**	Commits the transaction to the system configuration. Changes are applied on the next server reboot. If server power is on, you are prompted to choose whether to reboot now.

This example enables automatic detection of the BMC and commits the transaction:

```
Server# scope bios
Server /bios # scope server-management
Server /bios/server-management # set BMCPnP Enabled
Server /bios/server-management *# commit
Changes to BIOS set-up parameters will require a reboot.
Do you want to reboot the system?[y|N] n
Changes will be applied on next reboot.
Server /bios/server-management #
```

Restoring BIOS Defaults

Before You Begin

You must log in as a user with admin privileges to perform this task.

Procedure

	Command or Action	Purpose
Step 1	Server# **scope bios**	Enters the BIOS command mode.
Step 2	Server /bios # **bios-setup-default**	Restores BIOS default settings. This command initiates a reboot.

This example restores BIOS default settings:

```
Server# scope bios
Server /bios # bios-setup-default
This operation will reset the BIOS set-up tokens to factory defaults.
All your configuration will be lost.
Changes to BIOS set-up parameters will initiate a reboot.
Continue?[y|N]y
```