Managing the Server

This chapter includes the following sections:

Toggling the Server 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 server server ID**	Enters server command mode.
Step 2	Server /server # **set locator-led** {**on** | **off**}	Enables or disables the server locator LED.
Step 3	Server /server # **commit**	Commits the transaction to the system configuration.

Example

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

```
Server# scope server 1
Server /server # set locator-led off
```

```
Server /server *# commit

Server /server #
```

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 server** {**1** | **2**}	Enters server command mode of server 1 or 2.
Step 2	Server /server # **scope sensor**	Enters sensor command.
Step 3	Server /server/sensor # **scope hdd**	Enters hard disk drive (HDD) command mode.
Step 4	Server /server/sensor/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.

Example

This example turns on the locator LED on HDD 2:

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

Server /server/sensor/hdd #
```

Managing the Server Boot Order

Server Boot Order

Using Cisco IMC, you can configure the order in which the server attempts to boot from available boot device types. In the legacy boot order configuration, Cisco IMC allows you to reorder the device types but not the devices within the device types. With the precision boot order configuration, you can have a linear ordering of the devices. In the web UI or CLI you can change the boot order and boot mode, add multiple devices under each device types, rearrange the boot order, set parameters for each device type.

When you change the boot order configuration, Cisco IMC sends the configured boot order to BIOS the next time that server is rebooted. To implement the new boot order, reboot the server after you make the configuration change. The new boot order takes effect on any subsequent reboot. The configured boot order remains until the configuration is changed again in Cisco IMC or in the BIOS setup.

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

- BIOS encounters issues while trying to boot using the configured boot order.
- A user changes the boot order directly through BIOS.
- BIOS appends devices that are seen by the host but are not configured from the user.

Note When you create a new policy using the configure boot order feature, BIOS tries to map this new policy to the devices in the system. It displays the actual device name and the policy name to which it is mapped in the **Actual Boot Order** area. If BIOS cannot map any device to a particular policy in Cisco IMC, the actual device name is stated as **NonPolicyTarget** in the **Actual Boot Order** area.

Note When you upgrade Cisco IMC to the latest version 2.0(x) for the first time, the legacy boot order is migrated to the precision boot order. During this process, previous boot order configuration is erased and all device types configured before updating to 2.0 version are converted to corresponding precision boot device types and some dummy devices are created for the same device types. you can view these devices in the **Configured Boot Order** area in the web UI. To view these devices in the CLI, enter **show boot-device** command. During this the server's actual boot order is retained and it can be viewed under actual boot order option in web UI and CLI.

When you downgrade Cisco IMC prior to 2.0(x) verison the server's last legacy boot order is retained, and the same can be viewed under **Actual Boot Order** area. For example:

- If you configured the server in a legacy boot order in 2.0(x) version, upon downgrade a legacy boot order configuration is retained.
- If you configured the server in a precision boot order in 2.0(x), upon downgrade the last configured legacy boot order is retained.

Important

- S3260 M4 servers support both Legacy and Precision Boot order configuration through Web UI and CLI.
- Boot order configuration prior to 2.0(x) is referred as legacy boot order. If your running version is 2.0(x), then you cannot configure legacy boot order through web UI, but you can configure through CLI and XML API. In the CLI, you can configure it by using **set boot-order HDD,PXE** command. Even though, you can configure legacy boot order through CLI or XML API, in the web UI this configured boot order is not displayed.
- Legacy and precision boot order features are mutually exclusive. You can configure either legacy or precision boot order. If you configure legacy boot order, it disables all the precision boot devices configured. If you configure precision boot order, then it erases legacy boot order configuration.

Viewing the Boot Device Detail

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 server** {**1** | **2**}	Enters server command mode of server 1 or 2.
Step 2	Server /server# **scope bios**	Enters BIOS command mode.
Step 3	Server /serve/bios # **show boot-device [detail]**.	Displays the detailed information of the boot devices.

Example

This example displays the details of the created bootable devices:

```
Server# scope server 1
Server /server # scope bios
Server /server/bios # show boot-device
Boot Device          Device Type  Device State       Device Order
-------------------- ------------ ------------------ ----------------
TestUSB              USB          Enabled            1
TestPXE              PXE          Enabled            2
Server /server/bios # show boot-device detail
Boot Device TestSAN:
    Device Type: SAN
    Device State: Enabled
    Device Order: 1
```

```
    Slot Id:
    Lun Id:
Boot Device TestUSB:
    Device Type: USB
    Device State: Enabled
    Device Order: 2
    Sub Type: HDD
Boot Device TestPXE:
    Device Type: PXE
    Device State: Enabled
    Device Order: 3
    Slot Id: L
    Port Number: 1
```

Configuring the Precision 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 server** {**1** | **2**}	Enters server command mode of server 1 or 2.
Step 2	Server /server# **scope bios**	Enters BIOS command mode.
Step 3	Server /server/bios # **create-boot-device**[*device name*] [*device type*].	Creates a bootable device that BIOS chooses to boot. This can be one of the following: • **HDD**—Hard disk drive • **PXE**—PXE boot • **SAN** boot • **iSCSI** boot • **USB** • **Virtual Media** • **PCHStorage** • **UEFISHELL**
Step 4	Server /server/bios # **scope boot-device** *created boot device name*.	Enters the management of the created bootable devices.

	Command or Action	Purpose
Step 5	Server /server/bios/boot-device # **set** *values*	Specifies the property values for particular bootable device. You can set one or more of the following: • cli— CLI options • state— Whether the device will be visible by BIOS. By default the device is disabled. **Note** If enabled, the device will overwrite the legacy boot order configuration. • slot— Slot id where the device is plugged in. • port— Port of the slot in which the device is present. • LUN— Logical unit in a slot where the device is present. • sub-type—Sub device type under a certain device type. • order—The order of the device in the available list of devices.
Step 6	Server /server/bios /boot-device # **commit**	Commits the transaction to the system configuration.

Example

This example configures the boot order, creates a boot device, set the attributes of the new device and commit the transaction:

```
Server# scope server 1
Server /server # scope bios
Server /server/bios #  create boot-device TestPXE PXE
Server /server/bios #  scope boot-device TestPXE
Server /server/bios /boot-device #  set state Enabled
Server /server/bios /boot-device #  set slot L
Server /server/bios /boot-device #  set port 1
Server /server/server/bios /boot-device #  set order 1
Server /bios /boot-device #  commit
Enabling boot device will overwrite Legacy Boot Order configuration
Continue?[y|N]y
Server /server/bios /boot-device #  y
Commiting device configuration
Server /server/bios/boot-device # show detail
BBIOS:
    BIOS Version: server-name.2.0.7c.0.071620151216
    Backup BIOS Version: server-name.2.0.7c.0.071620151216
    Boot Order: (none)
    Boot Override Priority:
```

```
    FW Update/Recovery Status: None, OK
    UEFI Secure Boot: disabled
    Configured Boot Mode: Legacy
    Actual Boot Mode: Legacy
    Last Configured Boot Order Source: CIMC

Server /server/bios/boot-device # show boot-device detail
Boot Device TestPXE:
    Device Type: PXE
    Device State: Enabled
    Device Order: 1
    Slot Id: L
    Port Number: 1
```

What to do next

Reboot the server to boot with your new boot order.

Modifying the Attributes of a Boot Device

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 server** {**1** | **2**}	Enters server command mode of server 1 or 2.
Step 2	Server /server# **scope bios**	Enters BIOS command mode.
Step 3	Server /server/bios # **scope boot-device** *created boot device name*.	Enters the management of the created bootable devices.
Step 4	Server /server/bios /boot-device # **set state** {*Enabled*|*Disabled*}.	Enables or disables the device. The default state is disabled. **Note** If enabled, the device will overwrite the legacy boot order configuration.
Step 5	Server /server/bios /boot-device* # **set order** {*Index* | *1-50*}.	Specifies the order of booting for particular device in the device list. Enter a number between 1 and 50 based on the total number of created device.

	Command or Action	Purpose
		Note When you set the boot device order individually, it is not assured that the order appears in the way it was set. So, it is recommended that to set the order for multiple devices in a single execution, use **re-arrange-boot-device** command.
Step 6	Server /server/bios /boot-device* # **set port** {*value* | *1-255* }.	Specifies the port of the slot in which the device is present. Enter a number between 1 and 255.
Step 7	Server /server/bios /boot-device* # **commit**	Commits the transaction to the system configuration.

Example

This example modifies the attributes of an existing device:

```
Server# scope server 1
Server /server # scope bios
Server /server/bios *# scope boot-device scu-device-hdd
Server /server/bios/boot-device # set status enabled
Server /server/bios/boot-device *# set order 2
Server /server/bios/boot-device *# set port 1
Server /server/bios/boot-device *# commit
Enabling boot device will overwrite boot order Level 1 configuration
Continue?[y|N]y
Server /server/bios/boot-device #
```

Rearranging Device 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 server** {**1** | **2**}	Enters server command mode of server 1 or 2.
Step 2	Server /server# **scope bios**	Enters BIOS command mode.
Step 3	Server /server/bios # **rearrange boot-device**[*device name*]:[*position*].	Rearranges the selected boot devices in a single execution.

Example

This example rearranges the selected boot devices:

```
Server# scope server 1
Server /server # scope bios
Server /server/bios # rearrange-boot-device  TestPXE:1,TestUSB:2
 Server /server/bios # show boot-device
Boot Device          Device Type  Device State       Device Order
-------------------- ------------ ------------------ ----------------
TestPXE              PXE          Disabled           1
TestUSB              USB          Disabled           2

Server /server/bios #
```

Reapplying Boot Order Configuration

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 server** {**1** | **2**}	Enters server command mode of server 1 or 2.
Step 2	Server /server# **scope bios**	Enters BIOS command mode.
Step 3	Server /server/bios # **re-apply**.	Re-applies the boot order to BIOS, if the last configured boot order source is BIOS..

Example

This example reapplies the boot order to BIOS:

```
Server# scope server 1
Server /server # scope bios
Server /server/bios # re-apply
Server /server/bios #
```

What to do next

Reboot the host after reapplying the boot order to BIOS.

Deleting an Existing Boot Device

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 server** {**1** | **2**}	Enters server command mode of server 1 or 2.
Step 2	Server /server# **scope bios**	Enters BIOS command mode.
Step 3	Server /server/bios # **remove-boot-device** *device name*	Deletes the particular device from the boot order.

Example

This example deletes the selected device from the device list:

```
Server# scope server 1
Server /server # scope bios
Server /server/bios # remove-boot-device scu-device-hdd
Server /server/bios #
```

Overview to UEFI Secure Boot

You can use Unified Extensible Firmware Interface (UEFI) secure boot to ensure that all the EFI drivers, EFI applications, option ROM or operating systems prior to loading and execution are signed and verified for authenticity and integrity, before you load and execute the operating system. You can enable this option using either web UI or CLI. When you enable UEFI secure boot mode, the boot mode is set to UEFI mode and you cannot modify the configured boot mode until the UEFI boot mode is disabled.

Note If you enable UEFI secure boot on a nonsupported OS, on the next reboot, you cannot boot from that particular OS. If you try to boot from the previous OS, an error is reported and recorded the under system software event in the web UI. You must disable the UEFI secure boot option using Cisco IMC to boot from your previous OS.

Important Also, if you use an unsupported adapter, an error log event in Cisco IMC SEL is recorded. The error messages is displayed that says:

System Software event: Post sensor, System Firmware error. EFI Load Image Security Violation. [0x5302] was asserted .

UEFI secure boot is supported on the following components:

Components	Types
Supported OS	• Windows Server 2012 • Windows Server 2012 R2
QLogic PCI adapters	• 8362 dual port adapter • 2672 dual port adapter
Fusion-io	
LSI	• LSI MegaRAID SAS 9240-8i • LSI MegaRAID SAS 9220-8i • LSI MegaRAID SAS 9265CV-8i • LSI MegaRAID SAS 9285CV-8e • LSI MegaRAID SAS 9285CV-8e • LSI MegaRAID SAS 9266-8i • LSI SAS2008-8i mezz • LSI Nytro card • RAID controller for UCS Storage (SLOT-MEZZ) • Host Bus Adapter (HBA)

Enabling or Disabling UEFI Secure Boot Mode

Before you begin

You must be logged in as admin to perform this task.

Procedure

	Command or Action	Purpose
Step 1	Server # **scope server** {**1** | **2**}	Enters server command mode of server 1 or 2.
Step 2	Server /server# **scope bios**	Enters BIOS command mode.

	Command or Action	Purpose
Step 3	Server /server/bios # **set secure-boot** { **enable** | **disable** }	Enables or disables UEFI secure boot. **Note** If enabled, the boot mode is set to UEFI secure mode. You cannot modify configure boot mode until UEFI secure boot mode is disabled.
Step 4	(Optional) Server /server/bios # **show detail**	Displays the details of the BIOS settings.

Example

The following examples show how to enable or disable secure boot and commit the transaction:

```
Server# scope server 1
Server /server # scope bios
Server /server/bios # set secure-boot enable
Setting Value : enable
Commit Pending.
Server /server/bios *# commit
UEFI Secure boot state changed successfully. Execute 'show detail' command to check the
current status
Server /server/bios # show detail
BIOS:
    BIOS Version: server-name.2.0.7c.0.071620151216
    Backup BIOS Version: server-name.2.0.8.0.071620152203
    Boot Order: (none)
    Boot Override Priority:
    FW Update/Recovery Status: None, OK
    UEFI Secure Boot: enabled
    Configured Boot Mode: Legacy
    Actual Boot Mode: Legacy
    Last Configured Boot Order Source: CIMC
Server /server/bios #
Server /server/bios #
```

```
erver# scope server 1
Server /server # scope bios
Server /server/bios # set secure-boot disable
Setting Value : disable
Commit Pending.
Server /server/bios *# commit
UEFI Secure boot state changed successfully. Execute 'show detail' command to check the
current status
Server /server/bios # show detail
BIOS:
    BIOS Version: server-name.2.0.7c.0.071620151216
    Backup BIOS Version: server-name.2.0.8.0.071620152203
    Boot Order: (none)
    Boot Override Priority:
    FW Update/Recovery Status: None, OK
    UEFI Secure Boot: disabled
    Configured Boot Mode: Legacy
    Actual Boot Mode: Legacy
    Last Configured Boot Order Source: CIMC
Server /server/bios #
```

What to do next

Reboot the server to have your configuration boot mode settings take place.

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 Cisco IMC.

Procedure

	Command or Action	Purpose
Step 1	Server # **scope server** {**1** | **2**}	Enters server command mode of server 1 or 2.
Step 2	Server /server# **scope bios**	Enters BIOS command mode.
Step 3	Server /server/bios # **show actual-boot-order [detail]**	Displays the boot order actually used by the BIOS when the server last booted.

Example

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

```
Server# scope server 1
Server /server # scope bios
Server /server/bios #  show actual-boot-order

Boot Order   Boot Device                          Device Type     Boot Policy
------------ ----------------------------------- --------------- --------------------
1            Cisco CIMC-Mapped vDVD1.22          VMEDIA          NIHUUCIMCDVD
2            Cisco vKVM-Mapped vDVD1.22          VMEDIA          dvd
3            Cisco vKVM-Mapped vHDD1.22          VMEDIA          dvd2
4            Cisco CIMC-Mapped vHDD1.22          VMEDIA          dvd3
5            (Bus 14 Dev 00)PCI RAID Adapter     HDD             NonPolicyTarget
6            "P1: INTEL SSDSC2BB120G4      "     PCHSTORAGE      NonPolicyTarget
7            "UEFI: Built-in EFI Shell "         EFI             NonPolicyTarget
8            "P0: INTEL SSDSC2BB120G4      "     PCHSTORAGE      NonPolicyTarget
9            Cisco vKVM-Mapped vFDD1.22          VMEDIA          NonPolicyTarge

Server /server/bios #
```

Configuring a Server to Boot With a One-Time Boot Device

You can configure a server to boot from a particular device only for the next server boot, without disrupting the currently configured boot order. Once the server boots from the one time boot device, all its future reboots occur from the previously configured boot order.

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 the BIOS command mode.
Step 2	Server# /bios **show boot-device**	Displays the list of available boot drives.
Step 3	Server# /bios **set one-time-boot-device** *device-order*	Sets the boot order. **Note** The host boots to the one time boot device even when configured with a disabled advanced boot device.
Step 4	Server# /bios * **commit**	Commits the transaction.
Step 5	(Optional) Server# /bios **show detail**	Displays the BIOS details.

Example

This example shows how to configure a server to boot with a one-time boot device:

```
Server scope bios
Server /bios # show boot-device
Boot Device                    Device Type  Device State       Device Order
------------------------------ ------------ ------------------ ----------------
KVMDVD                         VMEDIA       Enabled            1
vkvm                           VMEDIA       Enabled            2

Server /bios # set one-time-boot-device KVMDVD
Server /bios *# 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 # show detail
BIOS:
    BIOS Version: "C240M3.3.0.0.9 (Build Date: 10/02/16)"
    Boot Order: (none)
    FW Update/Recovery Status: None, OK
    UEFI Secure Boot: disabled
    Configured Boot Mode: Legacy
    Actual Boot Mode: Legacy
    Last Configured Boot Order Source: CIMC
    One time boot device: KVMDVD
Server /bios #
```

Assigning User-defined Server Description and Asset Tag

Procedure

	Command or Action	Purpose
Step 1	Server# **scope chassis**	Enters chassis command mode.

	Command or Action	Purpose
Step 2	Server /chassis # **set description** <*Server Description*>	Enters the server description.
Step 3	Server /chassis* # **set asset-tag** <*Asset Tag*>	Enters the asset tag.
Step 4	Server /chassis* # **commit**	Commits the transaction.
Step 5	(Optional) Server /chassis # **show detail**	Displays the server details.

Example

This example shows how to assign user-defined server description and asset tag:

```
Server# scope chassis
Server/chassis # set description DN1-server
Server/chassis* # set asset-tag powerpolicy
Server /chassis* # commit
Server /chassis # show detail
Chassis:
    Power: on
    Serial Number: FCH1834V23X
    Product Name: UCS C220 M4S
    PID : UCSC-C220-M4S
    UUID: 414949AC-22D6-4D0D-B0C0-F7950E9217C1
    Locator LED: off
    Description: DN1-server
    Asset Tag: powerpolicy
Server /chassis #
```

Managing Server Power

Powering On the Server

Note If the server was powered off other than through the Cisco IMC, the server will not become active immediately when powered on. In this case, the server will enter standby mode until the Cisco IMC 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 the chassis command mode.
Step 2	Server /chassis # **scope server** {**1** | **2**}	Enters server command mode of server 1 or 2.
Step 3	Server /chassis/server # **power on**	Powers on the server.
Step 4	At the prompt, enter **y** to confirm.	Power on the server.

Example

This example shows how to power on the server:

```
Server# scope chassis
Server# /chassis scope server 1
Server /chassis/server # power on
This operation will change the server's power state.
Do you want to continue with power control for Server 1 ?[y|N] y

Server /chassis/server # show
Server ID Power Serial Number Product Name  PID              UUID

--------- ----- ------------- ------------- ----------------
-------------------------------------
1         On    FCH1848794D   UCS S3260M4     UCSC-C3X60-SVRNB
60974271-A514-484C-BAE3-A5EE4FD16E06

Server /chassis/server#
```

Powering Off the Server

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 the chassis command mode.
Step 2	Serve /chassis # **scope server 1**	Enters the server command mode.
Step 3	Server /chassis/server # **power off**	Powers off the server.
Step 4	At the prompt, enter **y** to confirm.	Power off the server.

Example

This example shows how to power off the server:

```
Server# scope chassis
Server# /chassis scope server 1
Server /chassis/server # power off
This operation will change the server's power state.
Do you want to continue with power control for Server 1 ?[y|N] y

Server /chassis/server # show
Server ID Power Serial Number Product Name  PID              UUID

--------- ----- ------------- ------------- ----------------
-----------------------------------
1         Off   FCH1848794D   UCS S3260     UCSC-C3X60-SVRNB
60974271-A514-484C-BAE3-A5EE4FD16E06

Server /chassis/server#
```

Powering Cycling the Server

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 the chassis command mode.
Step 2	Serve /chassis # **scope server 1**	Enters the server command mode.
Step 3	Server /chassis/server # **power cycle**	Power off and then powers on the server.
Step 4	At the prompt, enter **y** to confirm.	Power off and then powers on the server.

Example

This example shows how to power cycle the server:

```
Server# scope chassis
Server# /chassis scope server 1
Server /chassis/server # power cycle
This operation will change the server's power state.
Do you want to continue with power control for Server 1 ?[y|N] y

Server /chassis/server # show
Server ID Power Serial Number Product Name  PID              UUID
```

```
--------- ----- ------------- ------------- ----------------
-----------------------------------
1         On    FCH1848794D   UCS S3260     UCSC-C3X60-SVRNB
60974271-A514-484C-BAE3-A5EE4FD16E06

Server /chassis/server#
```

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 /server # **scope server** {**1** | **2**}	Enters server command mode of server 1 or 2.
Step 2	server /server # **scope bmc**	Enters bmc command mode.
Step 3	Server /server/bmc # **scope power-restore-policy**	Enters the power restore policy command mode.
Step 4	Server /server/bmc/power-restore-policy # **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 5	(Optional) Server /server/bmc/power-restore-policy # **set delay** {**fixed** | **random**}	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 6	(Optional) Server /server/bmc/power-restore-policy # **set delay-value** *delay*	Specifies the delay time in seconds. The range is 0 to 240; the default is 0.

	Command or Action	Purpose
Step 7	Server /CIMC/power-restore-policy # **commit**	Commits the transaction to the system configuration.

Example

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 server 1
Server /server # scope bmc
Server /server/bmc # Scope  power-restore-policy
Server /server/bmc/power-restore-policy # set policy power-on
Server /server/bmc/power-restore-policy *# commit
Server /server/bmc/power-restore-policy # set delay fixed
Server /server/bmc/power-restore-policy *# set delay-value 180
Server /server/bmc/power-restore-policy *# commit
Server /server/bmc/power-restore-policy #  show detail
Power Restore Policy:
    Power Restore Policy: power-on
    Power Delay Type: fixed
    Power Delay Value(sec): 180

Server /server/bmc/power-restore-policy #
```

Power Characterization

The chassis power characterization range is calculated and derived from individual server node power characterization status, and from the power requirements of all the unmanageable components of the chassis.

This range varies for each configuration, so you need to run the power characterization every time a configuration changes.

To help you use the power characterization range appropriately for the different power profiles, the system represents the chassis' minimum power as auto profile minimum and custom profile minimum. However, custom power profile minimum is the actual minimum power requirement of the current chassis configuration. For more information see the section Run Power Characterization.

Power Profiles

Note Power Management is available only on some C-series servers.

Power capping determines how server power consumption is actively managed. When you enable power capping option, the system monitors power consumption and maintains the power below the allocated power limit. If the server cannot maintain the power limit or cannot bring the platform power back to the specified power limit within the correction time, power capping performs actions that you specify in the Action field under the Power Profile area.

You can configure multiple profiles with the following combinations: automatic and thermal profiles; and custom and thermal profiles. These profiles are configured by using either the web user interface, command

line interface, or XML API. In the web UI, the profiles are listed under the Power Capping area. In the CLI, the profiles are configured when you enter the **power-cap-config** command. You can configure the following power profiles for power capping feature:

- Automatic Power Limiting Profile
- Custom Power Limiting Profile
- Thermal Power Limiting Profile

Automatic power limiting profile sets the power limit of the individual server boards based on server priority selected by you, or as detected by the system, based on the server utilization sensor (which is known as manual or dynamic priority selection). The limiting values are calculated within the manageable chassis power budget and applied to the individual server, and the priority server is allocated with its maximum power limiting value, while the other server with the remaining of the manageable power budget. Power limiting occurs at each server board platform level that affects the overall chassis power consumption.

Custom power limiting profile allows you to set an individual server board's power limit from the Web UI or command line interface within the chassis power budget. In this scenario you can specify an individual server power limit.

Thermal power profile allows you to enable thermal failure power capping, which means you can set a specific platform temperature threshold and it sets P (min-x) as the power limit to be applied on the temperature threshold.

Enabling Chassis Global Power Capping

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 chassis**	Enters the chassis command mode.
Step 2	Server /chassis # **scope power-cap-config**	Enters power cap configuration command mode.
Step 3	Server /chassis/power-cap-config # **set pow-cap-enable** {**yes** | **no**}	Enables or disables the power configuration.
Step 4	Server /chassis/power-cap-config *# **set chassis-budget***power limit*	Sets the chassis power limit.
Step 5	Server /chassis/power-cap-config *# **commit**	Commits the transaction to the system.
Step 6	(Optional) Server /chassis/power-cap-config # **show detail**	Displays the chassis power configuration details.

Example

The following example shows how to enable chassis global power capping:

```
Server # scope chassis
Server /chassis # scope power-cap-config
Server /chassis/power-cap-config # set pow-cap-enable yes
Server /chassis/power-cap-config *# set chassis-budget 1000
Server /chassis/power-cap-config *# commit
Server /chassis/power-cap-config # show detail
Chassis :
    Power Capping: yes
    Power Characterization Status: Completed
    Chassis Minimum (W): 756
    Chassis Maximum (W): 1089
    Chassis Budget (W): 1000
    Chassis Manageable Power Budget (W): 530
    Auto Balance Minimum Power Budget (W) : 966
Server 1 :
    Power Characterization Status: Completed
    Platform Minimum (W): 163
    Platform Maximum (W): 362
    Memory Minimum (W): 1
    Memory Maximum (W): 0
    CPU Minimum (W): 95
    CPU Maximum (W): 241
Server 2 :
    Power Characterization Status: Completed
    Platform Minimum (W): 136
    Platform Maximum (W): 253
    Memory Minimum (W): 1
    Memory Maximum (W): 0
    CPU Minimum (W): 57
    CPU Maximum (W): 139
Server /chassis/power-cap-config #
```

Enabling Auto Balance Profile

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 chassis**	Enters chassis command mode.
Step 2	Server /chassis # **scope power-cap-config**	Enters power cap configuration command mode.
Step 3	Server /chassis/power-cap-config # **scope power-profile auto_balance**	Enters auto balance power profile command mode.
Step 4	Server /chassis/power-cap-config/power-profile # **set enabled** {**yes** | **no**}	Enables or disables the power profile.
Step 5	Server /chassis/power-cap-config/power-profile *# **set priority-selection** {**dynamic** | **manual**}	Sets the priority type to the chosen value.

	Command or Action	Purpose
Step 6	Server /chassis/power-cap-config/power-profile *# **set priority-server-id** {**1** | **2**}	Assigns priority to the chosen server.
Step 7	Server /chassis/power-cap-config/power-profile *# **set corr-time** *Value*	Sets the correction time in which the platform power should be brought back to the specified power limit before taking the action specified in the **Action** mode. The range is from 1 and 600 seconds. The default is 1 seconds.
Step 8	Server /chassis/power-cap-config/power-profile *# **set allow-throttle** {**yes** | **no**}	Enables or disables the system to maintain the power limit by forcing the processor to use the throttling state (T-state) and memory throttle.
Step 9	Server /chassis /power-cap-config# **set susp-pd** {*h:m-h:m* | |*ll,Mo,Tu,We,Th,Fr,Sa,Su.*}	Specifies the time period that the power capping profile will not be active.
Step 10	Server /chassis/power-cap-config/power-profile *# **commit**	Commits the transaction to the system configuration.
Step 11	(Optional) Server /chassis/power-cap-config/power-profile # **show detail**	Displays the auto balance power profile details.

Example

The following example shows how to enable auto balance profile and setting the priority selection:

```
Setting Priority Using Dynamic Option
Server # scope chassis
Server /chassis # scope power-cap-config
Server /chassis/power-cap-config # scope power-profile auto_balance
Server /chassis/power-cap-config/power-profile # set enabled yes
Server /chassis/power-cap-config/power-profile *# set priority-selection dynamic
Server /chassis/power-cap-config/power-profile *# set corr-time 1
Server /chassis/power-cap-config/power-profile *# set allow-throttle yes
Server /chassis/power-cap-config/power-profile *# set susp-pd "2:0-4:30|All"
Server /chassis/power-cap-config/power-profile *# commit
Server /chassis/power-cap-config/power-profile # show detail
Profile Name : auto_balance
    Enabled: yes
    Priority Selection: dynamic
    Priority Server: 2
    Server1 Power Limit: 362
    Server2 Power Limit: 253
   Suspend Period: 2:0-4:30|All
    Exception Action: alert
    Correction Time: 1
    Throttling: no
Server /chassis/power-cap-config/power-profile #

Setting Priority Using the Manual Option
```

```
Server # scope chassis
Server /chassis # scope power-cap-config
Server /chassis/power-cap-config # scope power-profile auto_balance
Server /chassis/power-cap-config/power-profile # set enabled yes
Server /chassis/power-cap-config/power-profile *# set priority-selection manual
Server /chassis/power-cap-config/power-profile *# set priority-server-id 1
Server /chassis/power-cap-config/power-profile *# set corr-time 1
Server /chassis/power-cap-config/power-profile *# set allow-throttle yes
Server /chassis/power-cap-config/power-profile *# set susp-pd "2:0-4:30|All"
Server /chassis/power-cap-config/power-profile *# commit
Server /chassis/power-cap-config/power-profile # show detail
Profile Name : auto_balance
    Enabled: yes
    Priority Selection: manual
    Priority Server: 1
    Server1 Power Limit: 362
    Server2 Power Limit: 253
    Suspend Period: 2:0-4:30|All
    Exception Action: alert
    Correction Time: 1
    Throttling: no
Server /chassis/power-cap-config/power-profile #
```

Disabling Auto Balance Power Profile

Procedure

	Command or Action	Purpose
Step 1	Server # **scope chassis**	Enters the chassis command mode.
Step 2	Server /chassis # **scope power-cap-config**	Enters the power cap configuration mode.
Step 3	Server /chassis/power-cap-config # **scope power-profile auto_balance**	Enters the auto balance power profile mode.
Step 4	Server /chassis/power-cap-config/power-profile # **set enabled no**	Disables the auto balance power profile.
Step 5	Server /chassis/power-cap-config/power-profile # **commit**	Commits the transaction to the system configuration.

Example

This example shows how to disable the auto balance profile:

```
Server # scope chassis
Server /chassis # scope power-cap-config
Server /chassis/power-cap-config # scope power-profile auto_balance
Server /chassis/power-cap-config/power-profile # set enabled no
Server /chassis/power-cap-config/power-profile *# commit
```

Enabling Custom Profile on Server

Procedure

	Command or Action	Purpose
Step 1	Server # **scope chassis**	Enters the chassis command mode.
Step 2	Server /chassis # **scope power-cap-config**	Enters the power cap configuration mode.
Step 3	Server /chassis/power-cap-config # **scope power-profile custom**	Enters the custom power profile mode.
Step 4	Server /chassis/power-cap-config/power-profile # **set enabled yes**	Enables the custom power profile.
Step 5	Server /chassis/power-cap-config/power-profile *# **set power-limit** *value*	Specifies the power limit. Enter a value within the specified range.
Step 6	Server /chassis/power-cap-config/power-profile *# **set corr-time** *value*	Sets the correction time in which the platform power should be brought back to the specified power limit before taking the action specified in the **Action** mode. The range is from 1 and 600 seconds. The default is 1 seconds
Step 7	Server /chassis/power-cap-config/power-profile *# **set allow-throttle yes**	Enables the system to maintain the power limit by forcing the processor to use the throttling state (T-state) and memory throttle.
Step 8	Server /chassis/power-cap-config/power-profile *# **commit**	Commits the transaction to the system configuration.
Step 9	At the prompt, enter the server ID for which you want to apply the custom power profile.	
Step 10	Server /chassis/power-cap-config/power-profile # **show detail**	Displays the power profile details.

Example

This example shows how to enable the custom profile on any server node:

```
Server # scope chassis
Server /chassis # scope power-cap-config
Server /chassis/power-cap-config # scope power-profile custom
Server /chassis/power-cap-config/power-profile # set enabled yes
Server /chassis/power-cap-config/power-profile *# set power-limit 253
Server /chassis/power-cap-config/power-profile *# set corr-time 1
Server /chassis/power-cap-config/power-profile *# set allow-throttle no
```

```
Server /chassis/power-cap-config/power-profile *# commit
Please enter server Id for which 'custom' power profile setting needs to be done
[1|2]?2
Server /chassis/power-cap-config/power-profile # show detail
Profile Name : custom
Server Id  1:
    Enabled: no
    Power Limit: N/A
    Suspend Period:
    Exception Action: alert
    Correction Time: 1
    Throttling: no
Server Id  2:
    Enabled: yes
    Power Limit: 253
    Suspend Period:
    Exception Action: alert
    Correction Time: 1
    Throttling: yes
```

Disabling Custom Profile on Server

Procedure

	Command or Action	Purpose
Step 1	Server # **scope chassis**	Enters the chassis command mode.
Step 2	Server /chassis # **scope power-cap-config**	Enters the power cap configuration mode.
Step 3	Server /chassis/power-cap-config # **scope power-profile custom**	Enters the custom power profile mode.
Step 4	Server /chassis/power-cap-config/power-profile # **set enabled no**	Disables the custom power profile.
Step 5	Server /chassis/power-cap-config/power-profile *# **commit**	Commits the transaction to the system configuration.
Step 6	At the prompt, enter the server ID for which you want to disable the custom power profile.	
Step 7	Server /chassis/power-cap-config/power-profile # **show detail**	Displays the power profile details.

Example

This example shows how to disable the custom profile on any server node:

```
Server # scope chassis
Server /chassis # scope power-cap-config
Server /chassis/power-cap-config # scope power-profile custom
Server /chassis/power-cap-config/power-profile # set enabled no
Server /chassis/power-cap-config/power-profile *# commit
Please enter server Id for which 'custom' power profile setting needs to be done
[1|2]?2
```

```
Server /chassis/power-cap-config/power-profile # show detail
Profile Name : custom
Server Id  1:
    Enabled: no
    Power Limit: N/A
    Suspend Period:
    Exception Action: alert
    Correction Time: 1
    Throttling: no
Server Id  2:
    Enabled: no
    Power Limit: 253
    Suspend Period:
    Exception Action: alert
    Correction Time: 1
    Throttling: yes
```

Enabling Thermal Profile on Server

Procedure

	Command or Action	Purpose
Step 1	Server # **scope chassis**	Enters the chassis command mode.
Step 2	Server /chassis # **scope power-cap-config**	Enters the power cap configuration mode.
Step 3	Server /chassis/power-cap-config # **scope power-profile thermal**	Enters the thermal power profile mode.
Step 4	Server /chassis/power-cap-config/power-profile # **set enabled yes**	Enables or disables the thermal power profile.
Step 5	Server /chassis/power-cap-config/power-profile *# **set temperature** *value*	Enter power in watts within the range specified. Enter the temperature in Celsius.
Step 6	Server /chassis/power-cap-config/power-profile *# **commit**	Commits the transaction to the system configuration.
Step 7	At the prompt, enter the server ID for which you want to enable the thermal power profile.	
Step 8	Server /chassis/power-cap-config/power-profile # **show detail**	Displays the power profile details.

Example

This example shows how to enable the thermal profile on any server node:

```
Server # scope chassis
Server /chassis # scope power-cap-config
Server /chassis/power-cap-config # scope power-profile thermal
Server /chassis/power-cap-config/power-profile # set enabled yes
Server /chassis/power-cap-config/power-profile *# set temperature 26
```

```
Server /chassis/power-cap-config/power-profile *# commit
Please enter server Id for which 'thermal' power profile setting needs to be done
[1|2]?1
Server /chassis/power-cap-config/power-profile # show detail
Profile Name : thermal
Server Id 1:
    Enabled: yes
    Temperature Threshold (deg C): 26
    Power Limit: 163
```

Disabling Thermal Profile on Server

Procedure

	Command or Action	Purpose
Step 1	Server # **scope chassis**	Enters the chassis command mode.
Step 2	Server /chassis # **scope power-cap-config**	Enters the power cap configuration mode.
Step 3	Server /chassis/power-cap-config # **scope power-profile thermal**	Enters the thermal power profile mode.
Step 4	Server /chassis/power-cap-config/power-profile # **set enabled no**	Disables the thermal power profile.
Step 5	Server /chassis/power-cap-config/power-profile *# **commit**	Commits the transaction to the system configuration.
Step 6	At the prompt, enter the server ID for which you want to disable the thermal power profile.	
Step 7	Server /chassis/power-cap-config/power-profile # **show detail**	Displays the power profile details.

Example

This example shows how to disable the thermal profile on any server node:

```
Server # scope chassis
Server /chassis # scope power-cap-config
Server /chassis/power-cap-config # scope power-profile thermal
Server /chassis/power-cap-config/power-profile # set enabled no
Server /chassis/power-cap-config/power-profile *# commit
Please enter server Id for which 'thermal' power profile setting needs to be done
[1|2]?1
Server /chassis/power-cap-config/power-profile # show detail
Profile Name : thermal
Server Id 1:
    Enabled: no
    Temperature Threshold (deg C): 26
    Power Limit: 163
Server Id 2:
    Enabled: no
    Temperature Threshold (deg C): 0
    Power Limit: N/A
```

```
Server /chassis/power-cap-config/power-profile #
```

Viewing Power Cap Configuration Details

Procedure

	Command or Action	Purpose
Step 1	Server # **scope chassis**	Enters the chassis command mode.
Step 2	Server /chassis # **scope power-cap-config**	Enters the power cap configuration mode.
Step 3	Server /chassis/power-cap-config # **show detail**	Displays the power characterization status of the chassis and servers.

Example

This example shows how to view power cap configuration details:

```
Server # scope chassis
Server /chassis # scope power-cap-config
Server /chassis/power-cap-config # show detail
Chassis :
    Power Capping: yes
    Power Characterization Status: Completed
    Chassis Minimum (W): 756
    Chassis Maximum (W): 1089
    Chassis Budget (W): 1000
    Chassis Manageable Power Budget (W): 530
    Auto Balance Minimum Power Budget (W) : 966
    Auto Balance Efficient Budget (W): 1901
Server 1 :
    Power Characterization Status: Completed
    Platform Minimum (W): 163
    Platform Efficient (W): 396
    Platform Maximum (W): 362
    Memory Minimum (W): 1
    Memory Maximum (W): 0
    CPU Minimum (W): 95
    CPU Maximum (W): 241
Server 2 :
    Power Characterization Status: Completed
    Platform Minimum (W): 136
    Platform Efficient (W): 584
    Platform Maximum (W): 253
    Memory Minimum (W): 1
    Memory Maximum (W): 0
    CPU Minimum (W): 57
    CPU Maximum (W): 139
Server /chassis/power-cap-config #
```

Viewing Power Monitoring Details

Procedure

	Command or Action	Purpose
Step 1	Server # **scope chassis**	Enters the chassis command mode.
Step 2	Server /chassis # **show power-monitoring**	Displays the power monitoring details.

Example

This example shows how to view power monitoring details:

```
Server # scope chassis
Server /chassis # show power-monitoring
Chassis :
Current (W)  Minimum (W)  Maximum (W)  Average (W)  Period
------------ ------------ ------------ ------------ ------------
408          311          471          392          0days 9:5...
Server 1 :
Domain     Current (W)  Minimum (W)  Maximum (W)  Average (W)  Period
---------- ------------ ------------ ------------ ------------ ------------
Platform   68           61           178          68           0days 21:...
CPU        30           28           133          30           0days 21:...
Memory     1            0            1            1            0days 21:...
Server 2 :
Domain     Current (W)  Minimum (W)  Maximum (W)  Average (W)  Period
---------- ------------ ------------ ------------ ------------ ------------
Platform   97           62           200          100          1days 7:1:2
CPU        46           16           140          48           1days 7:1:2
Memory     1            0            1            1            1days 7:1:2
Server /chassis/server/pid-catalog #
```

Viewing CUPS Utilization Details

Procedure

	Command or Action	Purpose
Step 1	Server # **scope chassis**	Enters the chassis command mode.
Step 2	Server /chassis # **show cups-utilization**	Displays the server utilization value on all the available CPUs.

Example

This example shows how to view CUPS utilization details:

```
Server # scope chassis
Server /chassis # show cups-utilization
Server 1 :
CPU Utilization (%)  Memory Utilization (%)  I/O Utilization (%)  Overall Utilization (%)
```

```
-------------------- ----------------------- -------------------- ------------------------
0                    0                       0                    0
Server 2 :
CPU Utilization (%)  Memory Utilization (%)  I/O Utilization (%)  Overall Utilization (%)
-------------------- ----------------------- -------------------- ------------------------
7                    0                       0                    8
```

Resetting the Server

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 the chassis command mode.
Step 2	Serve /chassis # **scope server 1**	Enters the server command mode.
Step 3	Server /chassis/server # **power hard-reset**	Reset the server, this is equivalent to pressing the reset button on the front panel or IPMI reset.
Step 4	At the prompt, enter **y** to confirm.	Reset the server, this is equivalent to pressing the reset button on the front panel or IPMI reset.

Example

This example shows how to power hard reset the server:

```
Server# scope chassis
Server# /chassis scope server 1
Server /chassis/server # power hard-reset
This operation will change the server's power state.
Do you want to continue with power control for Server 1 ?[y|N] y

Server /chassis/server # show
Server ID Power Serial Number Product Name  PID              UUID

--------- ----- ------------- ------------- ----------------
-----------------------------------
1         Off   FCH1848794D   UCS S3260     UCSC-C3X60-SVRNB
60974271-A514-484C-BAE3-A5EE4FD16E06

Server /chassis/server#
```

Shutting Down the Server

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 the chassis command mode.
Step 2	Serve /chassis # **scope server 1**	Enters the server command mode.
Step 3	Server /chassis/server # **power shutdown**	Shuts down the host OS and powers off the server.
Step 4	At the prompt, enter **y** to confirm.	Shuts down the host OS and powers off the server.

Example

This example shows how to shutdown the server:

```
Server# scope chassis
Server# /chassis scope server 1
Server /chassis/server # power shutdown
This operation will change the server's power state.
Do you want to continue with power control for Server 1 ?[y|N] y

Server /chassis/server # show
Server ID Power Serial Number Product Name  PID              UUID

--------- ----- ------------- ------------- ----------------
-----------------------------------
1         Off   FCH1848794D   UCS S3260     UCSC-C3X60-SVRNB
60974271-A514-484C-BAE3-A5EE4FD16E06

Server /chassis/server#
```

Configuring DIMM Black Listing

DIMM Black Listing

In Cisco IMC, the state of the Dual In-line Memory Module (DIMM) is based on SEL event records. A DIMM is marked bad if the BIOS encounters a non-correctable memory error or correctable memory error with 16000 error counts during memory test execution during BIOS post. If a DIMM is marked bad, it is considered a non-functional device.

If you enable DIMM blacklisting, Cisco IMC monitors the memory test execution messages and blacklists any DIMM that encounters memory errors at any given point of time in the DIMM SPD data. This allows the host to map out those DIMMs.

DIMMs are mapped out or blacklisted only when Uncorrectable errors occur. When a DIMM gets blacklisted, other DIMMs in the same channel are ignored or disabled, which means that the DIMM is no longer considered bad.

Note DIMMs do not get mapped out or blacklisted for 16000 Correctable errors.

Enabling DIMM Black Listing

Before you begin

You must be logged in as an administrator.

Procedure

	Command or Action	Purpose
Step 1	Server # **scope server** {**1** | **2**}	Enters server command mode of server 1 or 2.
Step 2	Server /server # **scope dimm-blacklisting** /	Enters the DIMM blacklisting mode.
Step 3	Server /server/dimm-blacklisting # **set enabled** {**yes** | **no**}	Enables or disables DIMM blacklisting.
Step 4	Server /server/dimm-blacklisting* # **commit**	Commits the transaction to the system configuration.

Example

The following example shows how to enable DIMM blacklisting:

```
Server # scope server 1
Server /server # scope dimm-blacklisting
Server /server/dimm-blacklisting # set enabled yes
Server /server/dimm-blacklisting* # commit
Server /server/dimm-blacklisting #
```

```
Server /server/dimm-blacklisting # show detail

DIMM Blacklisting:
      Enabled: yes
Server /server/dimm-blacklisting #
```

Configuring BIOS Settings

Viewing BIOS Status

Procedure

	Command or Action	Purpose
Step 1	Server # **scope server** {**1** | **2**}	Enters server command mode of server 1 or 2.
Step 2	Server /sever # **scope bios**	Enters the BIOS command mode.
Step 3	Server /sever/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.
Backup BIOS Version	The backup version string of the BIOS.
Boot Order	The legacy boot order of bootable target types that the server will attempt to use.
Boot Override Priority	This can be None, or HV.
FW Update/Recovery Status	The status of any pending firmware update or recovery action.
UEFI Secure Boot	Enables or Disables UEFI secure boot.
Configured Boot Mode	The boot mode in which h BIOS will try to boot the devices.
Actual Boot Mode	The actual boot mode in which BIOS booted the devices.
Last Configured Boot Order Source	The last configured boot order source by BIOS.

Example

This example displays the BIOS status:

```
Server# scope server 1
Server /sever # scope bios
Server /sever/bios # show detail
Server /sever/bios # show detail
BIOS:
    BIOS Version: server-name.2.0.7c.0.071620151216
    Backup BIOS Version: server-name.2.0.7c.0.071620151216
    Boot Order: (none)
    Boot Override Priority:
    FW Update/Recovery Status: None, OK
    UEFI Secure Boot: disabled
    Configured Boot Mode: Legacy
    Actual Boot Mode: Legacy
    Last Configured Boot Order Source: CIMC
Server /sever/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 server** {**1** | **2**}	Enters server command mode of server 1 or 2.
Step 2	Server /server # **scope bios**	Enters the BIOS command mode.
Step 3	Server /server /bios # **scope main**	Enters the main BIOS settings command mode.
Step 4	Server /server /bios # **set TPMAdminCtrl** {**Disbaled** | **Enabled**}	Enables or disables TPM support.
Step 5	Server /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.

Example

This example configures the main BIOS parameter and commits the transaction:

```
Server /server # scope server 1
Server/server # scope bios
Server /server/bios # scope main
Server /server/bios/main # set TPMAdminCtrl Enabled
Server /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 /server/bios/main #
```

Configuring Advanced 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 server** {**1** | **2**}	Enters server command mode of server 1 or 2.
Step 2	Server /sever # **scope bios**	Enters the BIOS command mode.
Step 3	Server /sever/bios # **scope advanced**	Enters the advanced BIOS settings command mode.
Step 4	Configure the BIOS settings.	BIOS Parameters by Server Model
Step 5	Server /sever/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.

Example

This example enables all the USB drives and commits the transaction:

```
Server# scope server 1
Server/sever # scope bios
Server /sever/bios # scope advanced
Server /sever/bios/advanced # set AllUsbDevices Enabled
Server /sever/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 /sever/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 server** {**1** | **2**}	Enters server command mode of server 1 or 2.
Step 2	Server /sever # **scope bios**	Enters the BIOS command mode.

	Command or Action	Purpose
Step 3	Server /sever/bios # **scope server-management**	Enters the server management BIOS settings command mode.
Step 4	Configure the BIOS settings.	BIOS Parameters by Server Model
Step 5	Server /sever/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.

Example

This example enables the OS watchdog timer and commits the transaction:

```
Server# scope bios
Server /sever # scope bios
Server /sever/bios # scope server-management
Server /sever/bios/server-management # set OSBootWatchdogTimer Enabled
Server /sever/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 /sever/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 server** {**1** | **2**}	Enters server command mode of server 1 or 2.
Step 2	Server /sever # **scope bios**	Enters the BIOS command mode.
Step 3	Server /sever/bios # **bios-setup-default**	Restores BIOS default settings. This command initiates a reboot.

Example

This example restores BIOS default settings:

```
Server# scope bios
Server/sever # scope bios
Server /sever/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
```

Entering BIOS Setup

Before you begin

- The server must be powered on.
- You must log in as a user with admin privileges to perform this task.

Procedure

	Command or Action	Purpose
Step 1	Server # **scope server** {**1** | **2**}	Enters server command mode of server 1 or 2.
Step 2	Server /sever # **scope bios**	Enters the BIOS command mode.
Step 3	Server /sever/bios # **enter-bios-setup**	Enters BIOS setup on reboot.

Example

This example enables you to enter BIOS setup:

```
Server# scope server 1
Server /sever # scope bios
Server /sever/bios # enter-bios-setup
This operation will enable Enter BIOS Setup option.
Host must be rebooted for this option to be enabled.
Continue?[y|N]y
```

Restoring BIOS Manufacturing Custom Defaults

In instances where the components of the BIOS no longer function as desired, you can restore the BIOS set up tokens to the manufacturing default values.

Before you begin

- You must log in with admin privileges to perform this task.
- The server must be powered off.

Procedure

	Command or Action	Purpose
Step 1	Server # **scope server** {**1** | **2**}	Enters server command mode of server 1 or 2.
Step 2	Server /sever # **scope bios**	Enters the BIOS command mode.

	Command or Action	Purpose
Step 3	Server /sever/bios # **restore-mfg-defaults**	Restores the set up tokens to the manufacturing default values.

Example

This example shows how to restore the BIOS set up tokens to the manufacturing default values:

```
Server # scope bios
Server /sever/bios # restore-mfg-defaults
This operation will reset the BIOS set-up tokens to manufacturing defaults.
The system will be powered on.
Continue? [y|n] y
Server /sever/bios #
```

BIOS Profiles

On the Cisco UCS server, default token files are available for every server platform, and you can configure the value of these tokens using the Graphic User Interface (GUI), CLI interface, and the XML API interface. To optimize server performance, these token values must be configured in a specific combination.

Configuring a BIOS profile helps you to utilize pre-configured token files with the right combination of the token values. Some of the pre-configured profiles that are available are virtualization, high-performance, low power, and so on. You can download the various options of these pre-configured token files from the Cisco website and apply it on the servers through the BMC.

You can edit the downloaded profile to change the value of the tokens or add new tokens. This allows you to customize the profile to your requirements without having to wait for turnaround time.

Activating a BIOS Profile

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 the BIOS command mode.
Step 2	Server# /bios **scope bios-profile**	Enters the BIOS profile command mode.
Step 3	Server# /bios/bios-profile **activate** *virtualization*	You are prompted to back up the BIOS configuration. Enter **y**.
Step 4	You are prompted to reboot the system to apply the changes to the BIOS set-up parameters. Enter **y**.	Initiates the system reboot.

Example

This example activates the specified BIOS profile:

```
Server # scope bios
Server /bios # scope bios-profile
Server /bios/bios-profile # activate virtualization
It is recommended to take a backup before activating a profile.
Do you want to take backup of BIOS configuration?[y/n] y
backup-bios-profile succeeded.
bios profile "virtualization" deleted
Changes to BIOS set-up parameters will require a reboot.
Do you want to reboot the system?[y|N]y
A system reboot has been initiated.
Server /bios/bios-profile #
```

Taking a Back-Up of a BIOS Profile

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 the BIOS command mode.
Step 2	Server# /bios **scope bios-profile**	Enters the BIOS profile command mode.
Step 3	Server# /bios/bios-profile **backup**	Displays a message that the backup of the BIOS profile was successful.

Example

This example backs up a BIOS profile:

```
Server # scope bios
Server /bios # scope bios-profile
Server /bios/bios-profile # backup
backup-bios-profile succeeded.
Server /bios #
```

Deleting a BIOS Profile

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 the BIOS command mode.
Step 2	Server# /bios **scope bios-profile**	Enters the BIOS profile command mode.
Step 3	Server# /bios/bios-profile **delete** *BIOS profile*	Deletes the specified BIOS profile.

Example

This example deletes the specified BIOS profile:

```
Server # scope bios
Server /bios # scope bios-profile
Server /bios/bios-profile # delete performance
Server /bios/bios-profile #
```

Displaying BIOS Profiles

Procedure

	Command or Action	Purpose
Step 1	Server# **scope bios**	Enters the BIOS command mode.
Step 2	Server# /bios **show bios-profile**	Displays all the BIOS profiles.

Example

This example displays all the BIOS profiles:

```
Server # scope bios
Server /bios # show bios-profile
ID     Name             Active
------ ---------------- -------- --------
1      performance      yes
2      virtualization   no
3      none             no
4      cisco_backup     no
Server /bios #scope bios-profile
Server /bios #
```

Displaying Information of a BIOS Profile

Procedure

	Command or Action	Purpose
Step 1	Server# **scope bios**	Enters the BIOS command mode.
Step 2	Server# /bios **scope bios-profile**	Displays all the BIOS profiles.

	Command or Action	Purpose
Step 3	Server# /bios/bios-profile **info** *performance*	Displays information of the BIOS profile such as token name, profile value, and active value.

Example

This example displays information of the specified BIOS profile:

```
Server # scope bios
Server /bios # scope bios-profile
Server /bios/bios-profile # info performance

TOKEN NAME                      PROFILE VALUE        ACTUAL VALUE
=====================================================================
 TPMAdminCtrl                    Enabled              Enabled
 ASPMSupport                     Disabled             Disabled
Server /bios/bios-profile #
```

Displaying details of the BIOS Profile

Procedure

	Command or Action	Purpose
Step 1	Server# **scope bios**	Enters the BIOS command mode.
Step 2	Server# /bios **scope bios-profile**	Enters the BIOS profile command mode.
Step 3	Server# /bios/bios-profile **show detail**	Displays the details of BIOS profile.

Example

This example displays the details of the BIOS profile:

```
Server # scope bios
Server /bios # scope bios-profile
Server /bios/bios-profile # show detail
Active Profile: Virtualization
Install Status: bios profile install done
Server /bios/bios-profile #
```

Viewing Product ID (PID) Catalog Details

Procedure

	Command or Action	Purpose
Step 1	Server # **scope chassis**	Enters chassis command mode.
Step 2	Server /chassis # **scope server** {**1** | **2**}	Enters server command mode of server 1 or 2.

	Command or Action	Purpose
Step 3	Server /chassis/server # **show cpu-pid**	Displays the CPU PID details.
Step 4	Server /chassis/server # **show dimm-pid**	Displays the memory PID details.
Step 5	Server /chassis/server # **show pciadapter-pid**	Displays the PCI adapters PID details.
Step 6	Server /chassis/server # **show hdd-pid**	Displays the HDD PID details.

Example

This example shows how to create view PID details

```
Server # scope chassis
Server /chassis # scope server 1
Viewing CPU PID details
Server /chassis/server # show cpu-pid
Socket Product ID           Model
------ -------------------- ----------------------------------------
CPU1   UCS-CPU-E52660B      Intel(R) Xeon(R) CPU E5-2660 v2 @ 2.2...
CPU2   UCS-CPU-E52660B      Intel(R) Xeon(R) CPU E5-2660 v2 @ 2.2...
Viewing memory PID details
Server /chassis/server # show dimm-pid
Name               Product ID           Vendor ID  Capacity  Speed
------------------ -------------------- ---------- --------- ------
DIMM_A1            UNKNOWN              NA         Failed    NA
DIMM_A2            UNKNOWN              NA         Ignore... NA
DIMM_B1            UCS-MR-1X162RZ-A     0xCE00     16384 MB  1866
DIMM_B2            UCS-MR-1X162RZ-A     0xCE00     16384 MB  1866
DIMM_C1            UCS-MR-1X162RZ-A     0xCE00     16384 MB  1866
DIMM_C2            UCS-MR-1X162RZ-A     0xCE00     16384 MB  1866
DIMM_D1            UCS-MR-1X162RZ-A     0xCE00     16384 MB  1866
DIMM_D2            UCS-MR-1X162RZ-A     0xCE00     16384 MB  1866
DIMM_E1            UCS-MR-1X162RZ-A     0xCE00     16384 MB  1866
DIMM_E2            UCS-MR-1X162RZ-A     0xCE00     16384 MB  1866
DIMM_F1            UCS-MR-1X162RZ-A     0xCE00     16384 MB  1866
DIMM_F2            UCS-MR-1X162RZ-A     0xCE00     16384 MB  1866
DIMM_G1            UCS-MR-1X162RZ-A     0xCE00     16384 MB  1866
DIMM_G2            UCS-MR-1X162RZ-A     0xCE00     16384 MB  1866
DIMM_H1            UCS-MR-1X162RZ-A     0xCE00     16384 MB  1866
DIMM_H2            UCS-MR-1X162RZ-A     0xCE00     16384 MB  1866
Viewing PCI adapters PID details
Server /chassis/server # show pciadapter-pid
Slot   Product ID           Vendor ID  Device ID   SubVendor ID  SubDevice ID
------ -------------------- ---------- ----------- ------------- -------------
1      UCSC-MLOM-CSC-02     0x1137     0x0042      0x1137        0x012e
Viewing HDD PID details
Server /chassis/server # show hdd-pid
Disk Controller  Product ID           Vendor     Model
---- ----------- -------------------- ---------- ------------
1    SBMezz1     UCSC-C3X60-HD6TB     SEAGATE    ST6000NM0014
2    SBMezz1     UCSC-C3X60-HD6TB     SEAGATE    ST6000NM0014
3    SBMezz1     UCSC-C3X60-HD6TB     SEAGATE    ST6000NM0014
4    SBMezz1     UCSC-C3X60-HD6TB     SEAGATE    ST6000NM0014
5    SBMezz1     UCSC-C3X60-HD6TB     SEAGATE    ST6000NM0014
6    SBMezz1     UCSC-C3X60-HD6TB     SEAGATE    ST6000NM0014
7    SBMezz1     UCSC-C3X60-HD6TB     SEAGATE    ST6000NM0014
8    SBMezz1     UCSC-C3X60-HD6TB     SEAGATE    ST6000NM0014
9    SBMezz1     UCSC-C3X60-HD6TB     SEAGATE    ST6000NM0014
10   SBMezz1     UCSC-C3X60-HD6TB     SEAGATE    ST6000NM0014
```

```
11   SBMezz1     UCSC-C3X60-HD6TB     SEAGATE    ST6000NM0014
12   SBMezz1     UCSC-C3X60-HD6TB     SEAGATE    ST6000NM0014
13   SBMezz1     UCSC-C3X60-HD6TB     SEAGATE    ST6000NM0014
14   SBMezz1     UCSC-C3X60-HD6TB     SEAGATE    ST6000NM0014
201  SBMezz1     UCSC-C3X60-12SSD     ATA        INTEL SSD...
202  SBMezz1     UCSC-C3X60-12SSD     ATA        INTEL SSD...

Server /chassis/server #
```

Uploading and Activating PID Catalog

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 chassis**	Enters the chassis command mode.
Step 2	Server /chassis # **scope pid-catalog**	Enters the server PID catalog command mode.
Step 3	Server /chassis/pid-catalog # **upload-pid-catalog** *remote-protocol IP address PID Catalog file*	Specifies the protocol to connect to the remote server. It can be one of the following types: • TFTP • FTP • SFTP • SCP • HTTP

	Command or Action	Purpose
		Note The Cisco UCS C-Series server now supports fingerprint confirmation of the server when you update firmware through a remote server. This option is available only if you choose SCP or SFTP as the remote server type. If you chose SCP or SFTP as the remote server type while performing this action, a prompt with the message Server (RSA) key fingerprint is <server_finger_print _ID> Do you wish to continue? Click y or n depending on the authenticity of the server fingerprint. The fingerprint is based on the host's public key and helps you to identify or verify the host you are connecting to. Initiates the upload of the PID catalog.
Step 4	(Optional) Server /chassis/pid-catalog # **show detail**	Displays the status of the upload.
Step 5	Server /chassis/pid-catalog # **exit**	Returns to the chassis command mode.
Step 6	Server /chassis # **scope server** {**1** | **2**}	Enters server command mode of server 1 or 2.
Step 7	Server /chassis/server # **scope pid-catalog**	Enters server PID catalog command mode.
Step 8	Server /chassis/server/pid-catalog # **activate**	Activates the uploaded PID catalog.
Step 9	(Optional) Server /chassis/server/pid-catalog # **show detail**	Displays the status of the activation.

Example

This example shows how to upload and activate PID catalog:

```
Server # scope chassis
Server /chassis # scope pid-catalog
Uploading PID catalog
Server /chassis/pid-catalog # upload-pid-catalog tftp 172.22.141.66
pid-ctlg-2_0_12_78_01.tar.gz
upload-pid-catalog initialized.
Please check the status using "show detail".
Server /chassis/pid-catalog # show detail
    Upload Status: Upload Successful
Activating the uploaded PID catalog
Server /chassis/pid-catalog # exit
Server /chassis # scope server 2
Server /chassis/server # scope pid-catalog
```

```
Server /chassis/server/pid-catalog # activate
Successfully activated PID catalog
Server /chassis/server/pid-catalog # show detail
    Upload Status:
    Activation Status: Activation Successful
    Current Activated Version: 2.0(12.78).01
Server /chassis/server/pid-catalog #
```