



Managing the Server

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Overview to DHCP User Friendliness

The Dynamic Host Configuration Protocol (DHCP) enhancement ships with the addition of the hostname to the DHCP packet, which can either be interpreted or displayed at the DHCP server side. The hostname is now added in the options field of the DHCP packet, and sent in the DHCP DISCOVER packet which was initially sent to the DHCP server.

The default hostname of the server is changed from ucs-c2XX to CXXX-YYYYYY. Where XXX is the model number and YYYYYY is the serial number of the server. This unique string acts as a client identifier, and helps you track and map the IP addresses leased out to the CIMC from the DHCP server. The default serial number is provided by the manufacturer as a sticker/label on the server which helps you physically identify the server.

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 <i>drivenum</i> 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 <i>device1[,device2[,device3</i> <i>[,device4[,device5]]]</i>	Specifies the boot device options and order. You can select one or more of the following: <ul style="list-style-type: none"> • cdrom—Bootable CD-ROM • fdd—Floppy disk drive • hdd—Hard disk drive

	Command or Action	Purpose
		<ul style="list-style-type: none"> • 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	<p>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:</p> <ul style="list-style-type: none"> • 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 <i>watts</i> 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: <ul style="list-style-type: none"> • 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: <ul style="list-style-type: none"> • 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 <i>delay</i>	(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 #
```

Configuring Fan Policies

Fan Control Policies

Fan Control Policies enable you to control the fan speed to bring down server power consumption and noise levels. Prior to these fan policies, the fan speed increased automatically when the temperature of any server component exceeded the set threshold. To ensure that the fan speeds were low, the threshold temperatures of components are usually set to high values. While this behavior suited most server configurations, it did not address the following situations:

- **Maximum CPU performance**

For high performance, certain CPUs must be cooled substantially below the set threshold temperature. This required very high fan speeds which resulted in higher power consumption and increased noise levels.

- **Low power consumption**

To ensure the lowest power consumption, fans must run very slowly, and in some cases, stop completely on servers that support it. But slow fan speeds resulted in servers overheating. To avoid this situation, it is necessary to run fans at a speed that is moderately faster than the lowest possible speed.

With the introduction of fan policies, you can determine the right fan speed for the server, based on the components in the server. In addition, it allows you to configure the fan speed to address problems related to maximum CPU performance and low power consumption.

Following are the fan policies that you can choose from:

- **Balanced**

This is the default policy. This setting can cool almost any server configuration, but may not be suitable for servers with PCIe cards, since these cards overheat easily.

- **Performance**

This setting can be used for server configurations where maximum fan speed is required for high performance. With this setting, the fan speeds will run at the same speed or higher speed than that of the Balanced fan policy.

- **Low Power**

This setting is ideal for minimal configuration servers that do not contain any PCIe cards.

- **High Power**

This setting can be used for server configurations that require fan speeds ranging from 60 to 85%. This policy is ideal for servers that contain PCIe cards that easily overheat and have high temperatures. The minimum fan speed set with this policy varies for each server platform, but is approximately in the range of 60 to 85%.

- **Maximum Power**

This setting can be used for server configurations that require extremely high fan speeds ranging between 70% to 100%. This policy is ideal for servers that contain PCIe cards that easily overheat and have extremely high temperatures. The minimum fan speed set with this policy varies for each server platform, but is approximately in the range of 70 to 100%.

**Note**

Although you set a fan policy in CIMC, the actual speed that the fan runs at is determined by the configuration requirements of the server. For example, if you set the fan policy to **Balanced**, but the server includes PCIe cards that overheat easily, then the speed of the fans on the server is adjusted automatically. But the policy defined is retained as **Balanced**.

Configuring a Fan Policy

The fan policy determines the cooling requirements for your server. Prior to setting the fan policy, you must determine if your server includes PCIe cards that overheat easily.

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 # scope fan-policy	Enters the fan policy command mode.
Step 3	Server /chassis/fan-policy # set fan-policy	<p>Sets the fan policy for the server. It can be one of the following:</p> <ul style="list-style-type: none"> • balanced This is the default policy. This setting can cool almost any server configuration, but may not be suitable for servers with PCIe cards, since these cards overheat easily. • performance This setting can be used for server configurations where maximum fan speed is required for high performance. With this setting, the fan speeds will run at the same speed or higher speed than that of the balanced fan policy. • low-power This setting is ideal for minimal configuration servers that do not contain any PCIe cards. • high-power This setting can be used for server configurations that require fan speeds ranging from 60 to 85%. This policy is ideal for servers that contain PCIe cards that easily overheat and have high temperatures.

	Command or Action	Purpose
		<p>The minimum fan speed set with this policy varies for each server platform, but is approximately in the range of 60 to 85%.</p> <ul style="list-style-type: none"> • maximum-power <p>This setting can be used for server configurations that require extremely high fan speeds ranging between 70% to 100%. This policy is ideal for servers that contain PCIe cards that easily overheat and have extremely high temperatures. The minimum fan speed set with this policy varies for each server platform, but is approximately in the range of 70 to 100%.</p>
Step 4	Server /chassis/fan-policy # commit	Commits the changes to the server.

This example shows how to set the fan policy to maximum power for a server:

```
server # scope chassis
server /chassis # scope fan-policy
server /chassis/fan-policy # set fan-policy maximum-power
server /chassis/fan-policy* # commit
server /chassis/fan-policy # show detail
Fan policy: maximum-power
server /chassis/fan-policy #
```

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 a single hypervisor (HV) partition configuration. Prior versions had four virtual USB drives. Three were preloaded with Cisco UCS Server Configuration Utility, Cisco drivers and Cisco Host Upgrade Utility, and the fourth as user-installed hypervisor. A single HV partition configuration is also created when you upgrade to the latest version of CIMC or downgrade to the prior version, and reset the configuration.

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>

Card Management Feature in the Cisco Flexible Flash Controller

The Cisco Flexible Flash controller supports management of both single and two SD cards as a RAID-1 pair. With the introduction of card management, you can perform the following tasks:

Action	Description
Reset Cisco Flex Flash	Allows you to reset the controller.
Reset Partition Defaults	Allows you to reset the configuration in the selected slot to the default configuration.
Synchronize Card Configuration	Allows you to retain the configuration for an SD card that supports firmware version 253 and later.
Configure Operational Profile	Allows you to configure the SD cards on the selected Cisco Flexible Flash controller.

RAID Partition Enumeration

Non-RAID partitions are always enumerated from the primary card and the enumeration does not depend on the status of the primary card.

Following is the behavior of the RAID partition enumeration when there are two cards in the Cisco Flexible Flash controller:

Scenario	Behavior
Single card	RAID partitions are enumerated if the card is healthy, and if the mode is either Primary or Secondary-active .
Dual paired cards	RAID partitions are enumerated if one of the cards is healthy. When only one card is healthy, all read/write operations occur on this healthy card. You must use UCS SCU to synchronize the two RAID partitions.
Dual unpaired cards	If this scenario is detected when the server is restarting, then neither one of the RAID partitions is enumerated. If this scenario is detected when the server is running, when a user connects a new SD card, then the cards are not managed by the Cisco Flexible Flash controller. This does not affect the host enumeration. You must pair the cards to manage them. You can pair the cards using the Reset Partition Defaults or Synchronize Card Configuration options.

Upgrading from Single Card to Dual Card Mirroring with FlexFlash

You can upgrade from a single card mirroring to dual card mirroring with FlexFlash in one of the following methods:

- Add an empty FlexFlash to the server, and then upgrade the SD firmware version from prior versions to the latest version

For information on how to complete this task, see

- Upgrade the FlexFlash firmware to the latest version and then add an empty card to the server.

Prior to using either of these methods, you must keep in mind the following guidelines:

- To create RAID1 mirroring, the empty card that you want to add to the server must be of the exact size of the card that is already in the server. Identical card size is a must to set up RAID1 mirroring.
- Ensure that the card with valid data in the Hypervisor partition is marked as the primary healthy card. You can determine this state either in the CIMC GUI or from the CIMC CLI. To mark the state of the card as primary healthy, you can either use the **Reset Configuration** option in the CIMC GUI or run the **reset-config** command in the CIMC CLI. When you reset the configuration of a particular card, the secondary card is marked as secondary active unhealthy.
- In a Degraded RAID health state all read-write transactions are done on the healthy card. In this scenario, data mirroring does not occur. Data mirroring occurs only in the Healthy RAID state.
- Data mirroring is only applicable to RAID partitions. In the C-series servers, only Hypervisor partitions operate in the RAID mode.
- If you have not configured SD cards for use with prior versions, then upgrading to the latest version loads the latest 253 firmware and enumerates all four partitions to the host.

While upgrading versions of the FlexFlash, you may see the following error message:

```
Unable to communicate with Flexible Flash controller: operation ffCardsGet, status  
CY_AS_ERROR_INVALID_RESPONSE"
```

In addition, the card status may be shown as **missing**. This error occurs because you accidentally switched to an alternate release or a prior version, such as 1.4(x). In this scenario, you can either revert to the latest version, or you can switch back to the FlexFlash 1.4(x) configuration. If you choose to revert to the latest CIMC version, then the Cisco FlexFlash configuration remains intact. If you choose to switch back to the prior version configuration, you must reset the Flexflash configuration. In this scenario, you must be aware of the following:

- If multiple cards are present, and you revert to a prior version, then the second card cannot be discovered or managed.
- If the card type is SD253, then you must run the **reset-config** command twice from the CIMC CLI - once to reload the old firmware on the controller and to migrate SD253 to SD247 type, and the second time to start the enumeration.

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 <i>index</i> value is FlexFlash-0 .
Step 3	Server /chassis/flexflash # scope operational-profile	Enters the operational profile command mode.
Step 4	Server /chassis/flexflash/operational-profile # set raid-primary-member {slot1 slot2}	Specifies the slot in which the primary copy of the data resides. Important Currently, Cisco Flexible Flash cards are supported in slot 1 and slot 2. Therefore, you can specify slot1 or slot2 .
Step 5	Server /chassis/flexflash/operational-profile # set raid-secondary-role {active initializing}	The role of the secondary RAID. The currently supported value is active .
Step 6	Server /chassis/flexflash/operational-profile # set read-error-count-threshold	Specifies the number of read 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 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 7	Server /chassis/flexflash/operational-profile # set write-error-count-threshold	Specifies the number of 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 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).

	Command or Action	Purpose
Step 8	<pre>Server /chassis/flexflash/operational-profile # set virtual-drives-enabled <i>list</i></pre>	<p>Specifies a list of virtual drives to be made available to the server as a USB-style drive. The options are as follows:</p> <ul style="list-style-type: none"> • 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. <p>When specifying more than one option, you must enclose the list in quotation marks (").</p>
Step 9	<pre>Server /chassis/adapter # commit</pre>	Commits the transaction to the system configuration.

This example shows how to configure 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 read-error-count-threshold 100
Server /chassis/flexflash/operational-profile # set write-error-count-threshold 100
Server /chassis/flexflash/operational-profile *# set raid-primary-member slot1
Server /chassis/flexflash/operational-profile # set raid-secondary-role active
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.

After you upgrade to the latest version of CIMC or downgrade to a prior version, and reset the configuration, the server boots through the HV partition only. If the prior version has valid SCU data, then the server will boot through SCU in spite of single HV partition.

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: <ul style="list-style-type: none"> • 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 <i>index</i>	Enters the Cisco Flexible Flash controller command mode for the specified controller. At this time, the only permissible <i>index</i> 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 #
```

Resetting the Configuration of the Cards in the Cisco Flexible Flash Controller

You can reset the configuration of a selected slot in the Cisco Flexible Flash controller to the default configuration.

When you reset the configuration of the slots in the Cisco Flexible Flash card, the following situations occur:

- The card in the selected slot is marked as primary healthy.
- The card in the other slot is marked as secondary-active unhealthy.
- One RAID partition is created.
- The card read/write error counts and read/write threshold are set to 0.
- Host connectivity could be disrupted.

If you upgrade to the latest version and select reset configuration option, a single hypervisor (HV) partition is created, and the existing four partition configurations are erased. This may also result in data loss. You can retrieve the lost data only if you have not done any data writes into HV partition, and downgrade to prior version.

Before You Begin

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

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 <i>index</i> value is FlexFlash-0 .
Step 3	Server /chassis/flexflash # reset-partition-defaults primary slot ID	Resets the configuration of the selected slot to the default configuration.

This example shows how to reset the configuration from a slot to the default configuration:

```
Server# scope chassis
Server /chassis # scope flexflash FlexFlash-0
Server /chassis/flexflash # reset-partition-defaults slot1
```

This action will mark the slot1 as the healthy primary slot, and slot2 (if card exists) as unhealthy secondary active.

This operation may disturb the host connectivity as well.
Continue? [y|N] y

```
Server /chassis/flexflash/operational-profile #
```

Retaining the Configuration of the Flexible Flash Controller

You can copy the configuration of a given slot in the Cisco Flexible Flash card to the other slot. However, the slot from which the configuration is copied from must be of the SDK523 type. You can retain the configuration in the following situations:

- There are two unpaired FlexFlash
- The server is operating from a single FlexFlash, and an unpaired FlexFlash is in the other slot.
- One FlexFlash supports firmware version 253, and the other FlexFlash is unpartitioned.

Before You Begin

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

Procedure

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

	Command or Action	Purpose
Step 2	Server /chassis # scope flexflash <i>index</i>	Enters the Cisco Flexible Flash controller command mode for the specified controller. At this time, the only permissible <i>index</i> value is FlexFlash-0 .
Step 3	Server /chassis/flexflash # synchronize-card-configuration <i>primary slot ID</i>	Copies the configuration from the primary slot to the secondary slot.

This example shows how to copy the configuration from one slot to the other:

```
Server# scope chassis
Server /chassis # scope flexflash FlexFlash-0
Server /chassis/flexflash # synchronize-card-configuration slot1
```

This action will copy the config of slot1 to both the slots, mark slot1 as healthy, primary slot and slot2 (card must be present) as unhealthy secondary active. This operation may disturb the host connectivity as well.
Continue? [y|N] y

```
Server /chassis/flexflash/operational-profile #
```

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.
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.

Name	Description
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: <ul style="list-style-type: none"> • 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.	<p>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:</p> <ul style="list-style-type: none"> • 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	<p>Commits the transaction to the system configuration.</p> <p>Changes are applied on the next server reboot. If server power is on, you are prompted to choose whether to reboot now.</p>

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: <ul style="list-style-type: none"> • 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
```

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.

**Note**

This action is only available for some C-Series servers.

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 bios	Enters the BIOS command mode.
Step 2	Server /bios # restore-mfg-defaults	Restores the set up tokens to the manufacturing default values.

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

```
Server # scope bios
Server /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] N
Server /bios #
```

Updating Firmware on Server Components

**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 # scope firmware	Enters chassis command mode.
Step 3	Server /chassis/firmware # show detail	Displays the firmware update required on some components message.
Step 4	Server /chassis/firmware # update-all	Updates the firmware on the server components.

This example resets the server:

```
Server# scope chassis
Server /chassis # scope firmware
Server /chassis / firmware # show detail

Firmware update required on some components,
please run update-all (under chassis/firmware scope).

Server /chassis / firmware # update-all
```

