



Managing Blade Servers

This chapter includes the following sections:

- [Blade Server Management, page 1](#)
- [Guidelines for Removing and Decommissioning Blade Servers, page 2](#)
- [Booting a Blade Server, page 2](#)
- [Shutting Down a Blade Server, page 3](#)
- [Power Cycling a Blade Server, page 4](#)
- [Performing a Hard Reset on a Blade Server, page 4](#)
- [Avoiding Unexpected Server Power Changes, page 5](#)
- [Acknowledging a Blade Server, page 6](#)
- [Removing a Blade Server from a Chassis, page 7](#)
- [Decommissioning a Blade Server, page 7](#)
- [Turning On the Locator LED for a Blade Server, page 8](#)
- [Turning Off the Locator LED for a Blade Server, page 8](#)
- [Resetting the CMOS for a Blade Server, page 8](#)
- [Resetting the CIMC for a Blade Server, page 9](#)
- [Recovering the Corrupt BIOS on a Blade Server, page 10](#)
- [Issuing an NMI from a Blade Server, page 10](#)

Blade Server Management

You can manage and monitor all blade servers in a Cisco UCS domain through Cisco UCS Manager. Some blade server management tasks, such as changes to the power state, can be performed from the server and service profile.

The remaining management tasks can only be performed on the server.

If a blade server slot in a chassis is empty, Cisco UCS Manager provides information, errors, and faults for that slot. You can also reacknowledge the slot to resolve server mismatch errors and to have Cisco UCS Manager rediscover the blade server in the slot.

Guidelines for Removing and Decommissioning Blade Servers

Consider the following guidelines when deciding whether to remove or decommission a blade server using Cisco UCS Manager:

Decommissioning a Blade Server

Decommissioning is performed when a blade server is physically present and connected but you want to temporarily remove it from the configuration. Because it is expected that a decommissioned blade server will be eventually recommissioned, a portion of the server's information is retained by Cisco UCS Manager for future use.

Removing a Blade Server

Removing is performed when you physically remove a blade server from the server by disconnecting it from the chassis. You cannot remove a blade server from Cisco UCS Manager if it is physically present and connected to a chassis. Once the physical removal of the blade server is completed, the configuration for that blade server can be removed in Cisco UCS Manager.

During removal, active links to the blade server are disabled, all entries from databases are removed, and the server is automatically removed from any server pools that it was assigned to during discovery.



Note

Only those servers added to a server pool automatically during discovery will be removed automatically. Servers that have been manually added to a server pool have to be removed manually.

If you need to add a removed blade server back to the configuration, it must be reconnected and then rediscovered. When a server is reintroduced to Cisco UCS Manager it is treated like a new server and is subject to the deep discovery process. For this reason, it's possible that Cisco UCS Manager will assign the server a new ID that may be different from the ID that it held before.

Booting a Blade Server

Before You Begin

Associate a service profile with a blade server or server pool.

Procedure

	Command or Action	Purpose
Step 1	UCS-A# <code>scope org org-name</code>	Enters organization mode for the specified organization. To enter the root organization mode, type <code>/</code> as the <code>org-name</code> .

	Command or Action	Purpose
Step 2	UCS-A /org # scope service-profile <i>profile-name</i>	Enters organization service profile mode for the specified service profile.
Step 3	UCS-A /org/service-profile # power up	Boots the blade server associated with the service profile.
Step 4	UCS-A /org/service-profile # commit-buffer	Commits the transaction to the system configuration.

The following example boots the blade server associated with the service profile named ServProf34 and commits the transaction:

```
UCS-A# scope org /
UCS-A /org* # scope service-profile ServProf34
UCS-A /org/service-profile* # power up
UCS-A /org/service-profile* # commit-buffer
UCS-A /org/service-profile #
```

Shutting Down a Blade Server

When you use this procedure to shut down a server with an installed operating system, Cisco UCS Manager triggers the OS into a graceful shutdown sequence.

Before You Begin

Associate a service profile with a blade server or server pool.

Procedure

	Command or Action	Purpose
Step 1	UCS-A# scope org <i>org-name</i>	Enters organization mode for the specified organization. To enter the root organization mode, type / as the <i>org-name</i> .
Step 2	UCS-A /org # scope service-profile <i>profile-name</i>	Enters organization service profile mode for the specified service profile.
Step 3	UCS-A /org/service-profile # power down	Shuts down the blade server associated with the service profile.
Step 4	UCS-A /org/service-profile # commit-buffer	Commits the transaction to the system configuration.

The following example shuts down the blade server associated with the service profile named ServProf34 and commits the transaction:

```
UCS-A# scope org /
UCS-A /org # scope service-profile ServProf34
UCS-A /org/service-profile # power down
```

```
UCS-A /org/service-profile* # commit-buffer
UCS-A /org/service-profile #
```

Power Cycling a Blade Server

Procedure

	Command or Action	Purpose
Step 1	UCS-A# scope server <i>chassis-num</i> / <i>server-num</i>	Enters chassis server mode for the specified blade server.
Step 2	UCS-A /chassis/server # cycle { cycle-immediate cycle-wait }	Power cycles the blade server. Use the cycle-immediate keyword to immediately begin power cycling the blade server; use the cycle-wait keyword to schedule the power cycle to begin after all pending management operations have completed.
Step 3	UCS-A# commit-buffer	Commits the transaction to the system configuration.

The following example immediately power cycles blade server 4 in chassis 2 and commits the transaction:

```
UCS-A# scope server 2/4
UCS-A /chassis/server # cycle cycle-immediate
UCS-A /chassis/server* # commit-buffer
UCS-A /chassis/server #
```

Performing a Hard Reset on a Blade Server

When you reset a server, Cisco UCS Manager sends a pulse on the reset line. You can choose to gracefully shut down the operating system. If the operating system does not support a graceful shut down, the server is power cycled. The option to have Cisco UCS Manager complete all management operations before it resets the server does not guarantee that these operations will be completed before the server is reset.



Note

If you are trying to boot a server from a power-down state, you should not use **Reset**.

If you continue the power-up with this process, the desired power state of the servers will become out of sync with the actual power state and the servers may unexpectedly shut down at a later time. To safely reboot the selected servers from a power-down state, click **Cancel** then select the **Boot Server** action.

Procedure

	Command or Action	Purpose
Step 1	UCS-A# scope server <i>chassis-num</i> / <i>server-num</i>	Enters chassis server mode for the specified server.

	Command or Action	Purpose
Step 2	UCS-A /chassis/server # reset { hard-reset-immediate hard-reset-wait }	Performs a hard reset of the blade server. Use the hard-reset-immediate keyword to immediately begin hard resetting the server; use the hard-reset-wait keyword to schedule the hard reset to begin after all pending management operations have completed.
Step 3	UCS-A /server # commit-buffer	Commits the transaction to the system configuration.

The following example performs an immediate hard reset of blade server 4 in chassis 2 and commits the transaction:

```
UCS-A# scope server 2/4
UCS-A /chassis/server # reset hard-reset-immediate
UCS-A /chassis/server* # commit-buffer
UCS-A /chassis/server #
```

Avoiding Unexpected Server Power Changes

If a server is not associated with a service profile, you can use any available means to change the server power state, including the physical Power or Reset buttons on the server.

If a server is associated with, or assigned to, a service profile, you should only use the following methods to change the server power state:

- In Cisco UCS Manager GUI, go to the **General** tab for the server or the service profile associated with the server and select **Boot Server** or **Shutdown Server** from the **Actions** area.
- In Cisco UCS Manager CLI, scope to the server or the service profile associated with the server and use the **power up** or **power down** commands.



Important

Do *not* use any of the following options on an associated server that is currently powered off:

- **Reset** in the GUI
- **cycle cycle-immediate** or **reset hard-reset-immediate** in the CLI
- The physical Power or Reset buttons on the server

If you reset, cycle, or use the physical power buttons on a server that is currently powered off, the server's actual power state may become out of sync with the desired power state setting in the service profile. If the communication between the server and Cisco UCS Manager is disrupted or if the service profile configuration changes, Cisco UCS Manager may apply the desired power state from the service profile to the server, causing an unexpected power change.

In Cisco UCS release 2.0.1, power synchronization issues can lead to unexpected server shut downs or restarts as shown below:

Desired Power State in Service Profile	Current Server Power State	Server Power State After Communication Is Disrupted
Up	Powered Off	Powered On
Down	Powered On	Powered Off

Starting in Cisco UCS release 2.0.2, power synchronization issues can lead to an unexpected server restart, as shown below:

Desired Power State in Service Profile	Current Server Power State	Server Power State After Communication Is Disrupted
Up	Powered Off	Powered On
Down	Powered On	Powered On Note Running servers are not shut down regardless of the desired power state in the service profile.

Acknowledging a Blade Server

Perform the following procedure if you need to have Cisco UCS Manager rediscover the server and all endpoints in the server. For example, you can use this procedure if a server is stuck in an unexpected state, such as the discovery state.

Procedure

	Command or Action	Purpose
Step 1	UCS-A# acknowledge server <i>chassis-num</i> / <i>server-num</i>	Acknowledges the specified blade server.
Step 2	UCS-A# commit-buffer	Commits the transaction to the system configuration.

The following example acknowledges server 4 in chassis 2 and commits the transaction:

```
UCS-A# acknowledge server 2/4
UCS-A* # commit-buffer
UCS-A #
```

Removing a Blade Server from a Chassis

Before You Begin

Physically remove the server from its chassis before performing the following procedure.

Procedure

	Command or Action	Purpose
Step 1	UCS-A# remove server <i>chassis-num</i> / <i>server-num</i>	Removes the specified blade server.
Step 2	UCS-A# commit-buffer	Commits the transaction to the system configuration.

The following example removes blade server 4 in chassis 2 and commits the transaction:

```
UCS-A# remove server 2/4
UCS-A* # commit-buffer
UCS-A #
```

What to Do Next

If you physically re-install the blade server, you must re-acknowledge the slot to have Cisco UCS Manager rediscover the server.

For more information, see [Acknowledging a Blade Server, on page 6](#).

Decommissioning a Blade Server

Procedure

	Command or Action	Purpose
Step 1	UCS-A# decommission server <i>chassis-num</i> / <i>server-num</i>	Decommissions the specified blade server.
Step 2	UCS-A# commit-buffer	Commits the transaction to the system configuration.

The following example decommissions blade server 4 in chassis 2 and commits the transaction:

```
UCS-A# decommission server 2/4
UCS-A* # commit-buffer
UCS-A #
```

Turning On the Locator LED for a Blade Server

Procedure

	Command or Action	Purpose
Step 1	UCS-A# scope server <i>chassis-num / server-num</i>	Enters chassis server mode for the specified chassis.
Step 2	UCS-A /chassis/server # enable locator-led	Turns on the blade server locator LED.
Step 3	UCS-A /chassis/server # commit-buffer	Commits the transaction to the system configuration.

The following example turns on the locator LED for blade server 4 in chassis 2 and commits the transaction:

```
UCS-A# scope server 2/4
UCS-A /chassis/server # enable locator-led
UCS-A /chassis/server* # commit-buffer
UCS-A /chassis/server #
```

Turning Off the Locator LED for a Blade Server

Procedure

	Command or Action	Purpose
Step 1	UCS-A# scope server <i>chassis-num / server-num</i>	Enters chassis mode for the specified chassis.
Step 2	UCS-A /chassis/server # disable locator-led	Turns off the blade server locator LED.
Step 3	UCS-A /chassis/server # commit-buffer	Commits the transaction to the system configuration.

The following example turns off the locator LED for blade server 4 in chassis 2 and commits the transaction:

```
UCS-A# scope chassis 2/4
UCS-A /chassis/server # disable locator-led
UCS-A /chassis/server* # commit-buffer
UCS-A /chassis/server #
```

Resetting the CMOS for a Blade Server

On rare occasions, troubleshooting a server may require you to reset the CMOS. This procedure is not part of the normal maintenance of a server.

Procedure

	Command or Action	Purpose
Step 1	UCS-A# scope server <i>chassis-num / server-num</i>	Enters chassis server mode for the specified chassis.
Step 2	UCS-A /chassis/server # reset-cmos	Resets the CMOS for the blade server.
Step 3	UCS-A /chassis/server # commit-buffer	Commits the transaction to the system configuration.

The following example resets the CMOS for blade server 4 in chassis 2 and commits the transaction:

```
UCS-A# scope server 2/4
UCS-A /chassis/server # reset-cmos
UCS-A /chassis/server* # commit-buffer
UCS-A /chassis/server #
```

Resetting the CIMC for a Blade Server

On rare occasions, such as an issue with the current running firmware, troubleshooting a server may require you to reset the CIMC. This procedure is not part of the normal maintenance of a server. After you reset the CIMC, the server boots with the running version of the firmware for that server.

If the CIMC is reset, the power monitoring functions of Cisco UCS become briefly unavailable for as long as it takes for the CIMC to reboot. While this usually only takes 20 seconds, there is a possibility that the peak power cap could be exceeded during that time. To avoid exceeding the configured power cap in a very low power-capped environment, consider staggering the rebooting or activation of CIMCs.

Procedure

	Command or Action	Purpose
Step 1	UCS-A# scope server <i>chassis-num / server-num</i>	Enters chassis server mode for the specified chassis.
Step 2	UCS-A /chassis/server # scope CIMC	Enters chassis server CIMC mode
Step 3	UCS-A /chassis/server/CIMC # reset	Resets the CIMC for the blade server.
Step 4	UCS-A /chassis/server/CIMC # commit-buffer	Commits the transaction to the system configuration.

The following example resets the CIMC for blade server 4 in chassis 2 and commits the transaction:

```
UCS-A# scope server 2/4
UCS-A /chassis/server # scope CIMC
UCS-A /chassis/server/cimc # reset
UCS-A /chassis/server/cimc* # commit-buffer
UCS-A /chassis/server/cimc #
```

Recovering the Corrupt BIOS on a Blade Server

On rare occasions, an issue with a blade server may require you to recover the corrupted BIOS. This procedure is not part of the normal maintenance of a server. After you recover the BIOS, the blade server boots with the running version of the firmware for that server.

Before You Begin



Important

Remove all attached or mapped USB storage from a server before you attempt to recover the corrupt BIOS on that server. If an external USB drive is attached or mapped from vMedia to the server, BIOS recovery fails.

Procedure

	Command or Action	Purpose
Step 1	UCS-A# scope server <i>chassis-id / server-id</i>	Enters chassis server mode for the specified blade server in the specified chassis.
Step 2	UCS-A /chassis/server # recover-bios <i>version</i> [ignorecompcheck]	Loads and activates the specified BIOS version. To activate the firmware without making sure that it is compatible first, include the ignorecompcheck keyword. We recommend that you use this option only when explicitly directed to do so by a technical support representative.
Step 3	UCS-A /chassis/server # commit-buffer	Commits the transaction.

The following example shows how to recover the BIOS:

```
UCS-A# scope server 1/7
UCS-A /chassis/server # recover-bios S5500.0044.0.3.1.010620101125
UCS-A /chassis/server* # commit-buffer
UCS-A /chassis/server #
```

Issuing an NMI from a Blade Server

Perform the following procedure if the system remains unresponsive and you need Cisco UCS Manager to issue a Non Maskable Interrupt (NMI) to the BIOS or operating system from the CIMC. This action creates a core dump or stack trace, depending on the operating system installed on the server.

Procedure

	Command or Action	Purpose
Step 1	UCS-A# scope server [<i>chassis-num/server-num dynamic-uuid</i>]	Enters server mode for the specified server.
Step 2	UCS-A /chassis/server # diagnostic-interrupt	
Step 3	UCS-A /chassis/server* # commit-buffer	Commits any pending transactions.

The following example sends an NMI from server 4 in chassis 2 and commits the transaction:

```
UCS-A# scope server 2/4
UCS-A /chassis/server # diagnostic-interrupt
UCS-A /chassis/server* # commit-buffer
UCS-A /chassis/server #
```

