Managing Blade Servers

This chapter includes the following sections:

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.

Recommendations for 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.

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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.

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.

Booting Blade Servers

Booting a Blade Server

If the **Boot Server** link is dimmed in the **Actions** area, you must shut down the server first.

Procedure

Step 1	In the **Navigation** pane, click the **Equipment** tab.
Step 2	On the **Equipment** tab, expand **Equipment** > **Chassis** > *Chassis Number* > **Servers**.
Step 3	Choose the server that you want to boot.
Step 4	In the **Work** pane, click the **General** tab.
Step 5	In the **Actions** area, click **Boot Server**.
Step 6	If the Cisco UCS Manager GUI displays a confirmation dialog box, click **Yes**.

After the server has booted, the **Overall Status** field on the **General** tab displays an OK status.

Booting a Server from the Service Profile

Procedure

Step 1	In the **Navigation** pane, click the **Servers** tab.
Step 2	On the **Servers** tab, expand **Servers** > **Service Profiles**.
Step 3	Expand the node for the organization where you want to create the service profile. If the system does not include multitenancy, expand the **root** node.
Step 4	Choose the service profile that requires the associated server to be booted.
Step 5	In the **Work** pane, click the **General** tab.
Step 6	In the **Actions** area, click **Boot Server**.
Step 7	If the Cisco UCS Manager GUI displays a confirmation dialog box, click **Yes**.
Step 8	Click **OK** in the **Boot Server** dialog box. After the server has booted, the **Overall Status** field on the **General** tab displays an ok status or an up status.

Determining the Boot Order of a Blade Server

Tip You can also view the boot order tabs from the **General** tab of the service profile associated with a server.

Procedure

Step 1	In the **Navigation** pane, click the **Equipment** tab.
Step 2	On the **Equipment** tab, expand **Equipment** > **Chassis** > *Chassis Number* > **Servers**.
Step 3	Click the server for which you want to determine the boot order.
Step 4	In the **Work** pane, click the **General** tab.
Step 5	If the **Boot Order Details** area is not expanded, click the **Expand** icon to the right of the heading.
Step 6	To view the boot order assigned to the server, click the **Configured Boot Order** tab.
Step 7	To view what will boot from the various devices in the physical server configuration, click the **Actual Boot Order** tab.
	Note The **Actual Boot Order** tab always shows "Internal EFI Shell" at the bottom of the boot order list.

Shutting Down Blade Servers

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.

If the **Shutdown Server** link is dimmed in the **Actions** area, the server is not running.

Procedure

Step 1	In the **Navigation** pane, click the **Equipment** tab.
Step 2	On the **Equipment** tab, expand **Equipment** > **Chassis** > *Chassis Number* > **Servers**.
Step 3	Choose the server that you want to shut down.
Step 4	In the **Work** pane, click the **General** tab.
Step 5	In the **Actions** area, click **Shutdown Server**.
Step 6	If the Cisco UCS Manager GUI displays a confirmation dialog box, click **Yes**.

After the server has been successfully shut down, the **Overall Status** field on the **General** tab displays a power-off status.

Shutting Down a Server from the Service Profile

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.

If the **Shutdown Server** link is dimmed in the **Actions** area, the server is not running.

Procedure

Step 1   In the **Navigation** pane, click the **Servers** tab.

Step 2   On the **Servers** tab, expand **Servers** > **Service Profiles**.

Step 3   Expand the node for the organization where you want to create the service profile.
If the system does not include multitenancy, expand the **root** node.

Step 4   Choose the service profile that requires the associated server to be shut down.

Step 5   In the **Work** pane, click the **General** tab.

Step 6   In the **Actions** area, click **Shutdown Server**.

Step 7   If the Cisco UCS Manager GUI displays a confirmation dialog box, click **Yes**.

After the server has been successfully shut down, the **Overall Status** field on the **General** tab displays a down status or a power-off status.

Resetting 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

Step 1   In the **Navigation** pane, click the **Equipment** tab.

Step 2   On the **Equipment** tab, expand **Equipment** > **Chassis** > *Chassis Number* > **Servers**.

Step 3   Choose the server that you want to reset.

Step 4   In the **Work** pane, click the **General** tab.

Step 5   In the **Actions** area, click **Reset**.

Step 6   In the **Reset Server** dialog box, do the following:

    a) Click the **Power Cycle** option.

    b) (Optional) Check the check box if you want Cisco UCS Manager to complete all management operations that are pending on this server.

    c) Click **OK**.

The reset may take several minutes to complete. After the server has been reset, the **Overall Status** field on the **General** tab displays an ok status.

Reacknowledging 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

Step 1 In the **Navigation** pane, click the **Equipment** tab.

Step 2 On the **Equipment** tab, expand **Equipment** > **Chassis** > *Chassis Number* > **Servers**.

Step 3 Choose the server that you want to acknowledge.

Step 4 In the **Work** pane, click the **General** tab.

Step 5 In the **Actions** area, click **Server Maintenance**.

Step 6 In the **Maintenance** dialog box, do the following:

a) Click **Re-acknowledge**.
b) Click **OK**.

Cisco UCS Manager disconnects the server and then builds the connections between the server and the fabric interconnect or fabric interconnects in the system. The acknowledgment may take several minutes to complete. After the server has been acknowledged, the **Overall Status** field on the **General** tab displays an OK status.

Removing a Server from a Chassis

Before You Begin

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

Procedure

Step 1 In the **Navigation** pane, click the **Equipment** tab.

Step 2 On the **Equipment** tab, expand **Equipment** > **Chassis** > *Chassis Number* > **Servers**.

Step 3 Choose the server that you want to remove from the chassis.

Step 4 In the **Work** pane, click the **General** tab.

Step 5 In the **Actions** area, click **Server Maintenance**.

Step 6 In the **Maintenance** dialog box, do the following:

a) Click **Decommission**.
b) Click **OK**.

The server is removed from the Cisco UCS configuration.

Step 7 Go to the physical location of the chassis and remove the server hardware from the slot.
For instructions on how to remove the server hardware, see the *Cisco UCS Hardware Installation Guide* for your chassis.

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 .

Decommissioning a Blade Server

Procedure

Step 1 In the **Navigation** pane, click the **Equipment** tab.

Step 2 On the **Equipment** tab, expand **Equipment** > **Chassis** > *Chassis Number* > **Servers**.

Step 3 Choose the server that you want to decommission.

Step 4 In the **Work** pane, click the **General** tab.

Step 5 In the **Actions** area, click **Server Maintenance**.

Step 6 In the **Maintenance** dialog box, do the following:

a) Click **Decommission**.

b) Click **OK**.

The server is removed from the Cisco UCS configuration.

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 .

Recommissioning a Blade Server

Procedure

Step 1 In the **Navigation** pane, click the **Equipment** tab.

Step 2 On the **Equipment** tab, click the **Chassis** node.

Step 3 In the **Work** pane, click the **Decommissioned** tab.

Step 4 On the row for each blade server that you want to recommission, do the following:

    a) In the **Recommission** column, check the check box.

    b) Click **Save Changes**

Step 5 If the Cisco UCS Manager GUI displays a confirmation dialog box, click **Yes**.

Step 6 (Optional) Monitor the progress of the server recommission and discovery on the **FSM** tab for the server.

What to Do Next

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Reacknowledging a Server Slot in a Chassis

Perform the following procedure if you decommissioned a blade server without removing the physical hardware from the chassis and you want Cisco UCS Manager to rediscover and recommission the server.

Procedure

Step 1 In the **Navigation** pane, click the **Equipment** tab.

Step 2 On the **Equipment** tab, expand **Equipment** > **Chassis** > *Chassis Number* > **Servers**.

Step 3 Choose the server whose slot you want to reacknowledge.

Step 4 If Cisco UCS Manager displays a **Resolve Slot Issue** dialog box, do one of the following:

Option	Description
The **here** link in the **Situation** area	Click this link and then click **Yes** in the confirmation dialog box. Cisco UCS Manager reacknowledges the slot and discovers the server in the slot.
OK	Click this button if you want to proceed to the **General** tab. You can use the **Reacknowledge Slot** link in the **Actions** area to have Cisco UCS Manager reacknowledge the slot and discover the server in the slot.

Removing a Non-Existent Blade Server from the Configuration Database

Perform the following procedure if you physically removed the server hardware without first decommissioning the server. You cannot perform this procedure if the server is physically present.

If you want to physically remove a server, see .

Procedure

Step 1   In the **Navigation** pane, click the **Equipment** tab.

Step 2   On the **Equipment** tab, expand **Equipment** > **Chassis** > *Chassis Number* > **Servers**.

Step 3   Choose the server that you want to remove from the configuration database.

Step 4   In the **Work** pane, click the **General** tab.

Step 5   In the **Actions** area, click **Server Maintenance**.

Step 6   In the **Maintenance** dialog box, do the following:

   a) Click **Remove**.

   b) Click **OK**.

Cisco UCS Manager removes all data about the server from its configuration database. The server slot is now available for you to insert new server hardware.

Turning the Locator LED for a Blade Server On and Off

Procedure

Step 1   In the **Navigation** pane, click the **Equipment** tab.

Step 2   On the **Equipment** tab, expand **Equipment** > **Chassis** > *Chassis Number* > **Servers**.

Step 3   Choose the server for which you want to turn the locator LED on or off.

Step 4   In the **Work** pane, click the **General** tab.

Step 5   In the **Actions** area, click one of the following:

   • **Turn on Locator LED**

   • **Turn off Locator LED**

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

Step 1	In the **Navigation** pane, click the **Equipment** tab.
Step 2	On the **Equipment** tab, expand **Equipment** > **Chassis** > *Chassis Number* > **Servers**.
Step 3	Choose the server for which you want to reset the CMOS.
Step 4	In the **Work** pane, click the **General** tab.
Step 5	In the **Actions** area, click **Recover Server**.
Step 6	In the **Recover Server** dialog box, do the following:

    a) Click **Reset CMOS**.
    b) Click **OK**.

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

Step 1	In the **Navigation** pane, click the **Equipment** tab.
Step 2	On the **Equipment** tab, expand **Equipment** > **Chassis** > *Chassis Number* > **Servers**.
Step 3	Choose the server for which you want to reset the CIMC.
Step 4	In the **Work** pane, click the **General** tab.
Step 5	In the **Actions** area, click **Recover Server**.
Step 6	In the **Recover Server** dialog box, do the following:

    a) Click **Reset CIMC (Server Controller)**.
    b) Click **OK**.

Recovering the Corrupt BIOS on a Blade Server

On rare occasions, an issue with a 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 server boots with the running version of the firmware for that server. This radio button may be dimmed if the BIOS does not require recovery or the option is not available for a particular 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

Step 1 In the **Navigation** pane, click the **Equipment** tab.

Step 2 On the **Equipment** tab, expand **Equipment** > **Chassis** > *Chassis Number* > **Servers**.

Step 3 Choose the server for which you want to recover the BIOS.

Step 4 In the **Work** pane, click the **General** tab.

Step 5 In the **Actions** area, click **Recover Server**.

Step 6 In the **Recover Server** dialog box, do the following:

  a) Click **Recover Corrupt BIOS**.

    Note If this option is not available for a specific server, follow the instructions to update and activate the BIOS for a server.

  b) Click **OK**.

Step 7 If the Cisco UCS Manager GUI displays a confirmation dialog box, click **Yes**.

Step 8 In the **Recover Corrupt BIOS** dialog box, do the following:

  a) Complete the following fields:

Name	Description
Version To Be Activated drop-down list	Choose the firmware version that you want to activate from the drop-down list.

  b) Click **OK**.

Viewing the POST Results for a Blade Server

You can view any errors collected during the Power On Self-Test process for a server and its adapters.

Procedure

Step 1 In the **Navigation** pane, click the **Equipment** tab.

Step 2 On the **Equipment** tab, expand **Equipment** > **Chassis** > *Chassis Number* > **Servers**.

Step 3 Choose the server for which you want to view the POST results.

Step 4 In the **Work** pane, click the **General** tab.

Step 5 In the **Actions** area, click **View POST Results**.
The **POST Results** dialog box lists the POST results for the server and its adapters.

Step 6 (Optional) Click the link in the **Affected Object** column to view the properties of that adapter.

Step 7 Click **OK** to close the **POST Results** dialog box.

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

Step 1 In the **Navigation** pane, click the **Equipment** tab.

Step 2 On the **Equipment** tab, expand **Equipment** > **Chassis** > *Chassis Number* > **Servers**.

Step 3 Choose the server that you want to issue the NMI.

Step 4 In the **Work** pane, click the **General** tab.

Step 5 In the **Actions** area, click **Server Maintenance**.

Step 6 In the **Maintenance** dialog box, do the following:

a) Click **Diagnostic Interrupt**.
b) Click **OK**.

Cisco UCS Manager sends an NMI to the BIOS or operating system.

Health LED Alarms

The blade health LED is located on the front of each Cisco UCS B-Series blade server. Cisco UCS Manager allows you to view the sensor faults that cause the blade health LED to change color from green to amber or blinking amber.

The health LED alarms display the following information:

Name	Description
Severity column	The severity of the alarm. This can be one of the following: • Critical—The blade health LED is blinking amber. This is indicated with a red dot. • Minor—The blade health LED is amber. This is indicated with an orange dot.
Description column	A brief description of the alarm.
Sensor ID column	The ID of the sensor the triggered the alarm.
Sensor Name column	The name of the sensor that triggered the alarm.

Viewing Health LED Alarms

Procedure

Step 1   In the **Navigation** pane, click the **Equipment** tab.

Step 2   On the **Equipment** tab, expand **Equipment** > **Chassis** > *Chassis Number* > **Servers**.

Step 3   Click the server for which you want to view health LED alarms.

Step 4   In the **Work** pane, click the **General** tab.

Step 5   In the **Actions** area, click **View Health LED Alarms**.
The **View Health LED Alarms** dialog box lists the health LED alarms for the selected server.

Step 6   Click **OK** to close the **View Health LED Alarms** dialog box.