Cisco UCS Platform Emulator User Guide, Release 2.2(1bPE1)

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C O N T E N T S

Preface

This preface includes the following sections:

Audience

This guide is intended primarily for data center administrators with responsibilities and expertise in one or more of the following:

- Server administration
- Storage administration
- Network administration
- Network security

Conventions

Text Type	Indication
GUI elements	GUI elements such as tab titles, area names, and field labels appear in **this font**. Main titles such as window, dialog box, and wizard titles appear in **this font**.
Document titles	Document titles appear in *this font*.
TUI elements	In a Text-based User Interface, text the system displays appears in `this font`.
System output	Terminal sessions and information that the system displays appear in `this font`.

Text Type	Indication
CLI commands	CLI command keywords appear in **this font**. Variables in a CLI command appear in *this font*.
[ ]	Elements in square brackets are optional.
{x | y | z}	Required alternative keywords are grouped in braces and separated by vertical bars.
[x | y | z]	Optional alternative keywords are grouped in brackets and separated by vertical bars.
string	A nonquoted set of characters. Do not use quotation marks around the string or the string will include the quotation marks.
< >	Nonprinting characters such as passwords are in angle brackets.
[ ]	Default responses to system prompts are in square brackets.
!, #	An exclamation point (!) or a pound sign (#) at the beginning of a line of code indicates a comment line.

Note   Means *reader take note*. Notes contain helpful suggestions or references to material not covered in the document.

Tip   Means *the following information will help you solve a problem*. The tips information might not be troubleshooting or even an action, but could be useful information, similar to a Timesaver.

Caution   Means *reader be careful*. In this situation, you might perform an action that could result in equipment damage or loss of data.

Timesaver   Means *the described action saves time*. You can save time by performing the action described in the paragraph.

> ⚠️ **Warning**   IMPORTANT SAFETY INSTRUCTIONS
>
> This warning symbol means danger. You are in a situation that could cause bodily injury. Before you work on any equipment, be aware of the hazards involved with electrical circuitry and be familiar with standard practices for preventing accidents. Use the statement number provided at the end of each warning to locate its translation in the translated safety warnings that accompanied this device.
>
> SAVE THESE INSTRUCTIONS

Related Cisco UCS Documentation

Documentation Roadmaps

For a complete list of all B-Series documentation, see the *Cisco UCS B-Series Servers Documentation Roadmap* available at the following URL: http://www.cisco.com/go/unifiedcomputing/b-series-doc.

For a complete list of all C-Series documentation, see the *Cisco UCS C-Series Servers Documentation Roadmap* available at the following URL: http://www.cisco.com/go/unifiedcomputing/c-series-doc.

Other Documentation Resources

An ISO file containing all B and C-Series documents is available at the following URL: http://www.cisco.com/cisco/software/type.html?mdfid=283853163&flowid=25821. From this page, click **Unified Computing System (UCS) Documentation Roadmap Bundle**.

The ISO file is updated after every major documentation release.

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Documentation Feedback

To provide technical feedback on this document, or to report an error or omission, please send your comments to ucs-docfeedback@cisco.com. We appreciate your feedback.

C H A P T E R 1

New and Changed Information

This chapter includes the following sections:

- New and Changed Information, page 1

New and Changed Information

The following tables provide an overview of the significant new features and behavioral changes to the Cisco UCS Platform Emulator. The tables do not provide an exhaustive list of all changes or of the new features in each release.

Table 1: New Features and Significant Behavioral Changes in Cisco UCS, Release 2.2.(1aPE1)

New or Changed Feature	Description
Direct connect rack	Connecting rack servers to the switch in **Direct Connect Rack** mode is now supported. Added a new tab called **Direct Connect Rack** under the **Navigation Pane** of the **UCS Platform Emulator Control Panel.**
Stripped-down firmware image	From release UCS PE 2.2 (1bPE1) onwards, download of only the stripped-down version of UCS firmware is supported. The stripped-down version is approximately 50 KB in size with essential firmware upgrade information.
Download from local file system	Download of UCS Manager firmware from a local file system is now supported.

New or Changed Feature	Description
SmartPlay bundles	Supports the following SmartPlay Bundles: 1 B200_Entry_Plus_UCS_SP7_B200EP 2 B200_Entry_UCS_SP7_B200E 3 B200_Performance_UCS_SP7_B200P 4 B200_Value_Plus_UCS_SP7_B200VP 5 B200_Value_UCS_SP7_B200V 6 B420_Value_UCS_SP7_b420v 7 SWM_C220_Value_Plus_UCS_SP7_c220VP 8 SWM_C220_Value_UCS_SP7_C220V 9 SWM_C240_Performance_UCS_SP7_C240P 10 SWM_C240_Value_UCS_SP7_C240P
Random statistics generation	Statistics are generated for the following component: • Compute servers—motherboard temperature stats, motherboard power stats, and processor environment stats
SD card support	SD card slot in Compute servers is now supported. You can now upgrade the SD card firmware.
Dynamically inducing and clearing faults	Inducing and clearing faults using Command Line Interface (CLI) and observing the fault behavior in the Cisco UCS Manager GUI is now supported.
Second-level boot order support	The Second-level boot order feature is now supported. You can specify this feature in the service profile of the UCS servers during association.
user-space NIC (usNIC)	The user-space NIC (usNIC) feature is now supported. You can specify this feature in the service profile of the UCS servers during association.

Table 2: New Features and Significant Behavioral Changes in Cisco UCS, Release 2.1(2aPE1)

New or Changed Feature	Description
Auto Install feature supported	Firmware download and upgrade is now supported. New firmware can be downloaded either from the Cisco Developer Network or any other source and installed on the Platform Emulator. Upgrade of installed firmware is supported only for B-Series and C-Series components such as bios, adaptor, CIMC, and storage controller. Installation can also be done using Host Firmware Pack and Auto Install feature.
Single Wire Management	Added new tab called **Single Wire Management** under the **Navigation Pane** of the **UCS Platform Emulator Control Panel**
Templates	Added new tab called **Templates** under **Hardware Catalog** of the **Emulator Settings** tab. Templates are pre-configured blade and rack servers with loaded equipments. You can drag and drop the templates on either a rack box or chassis. The templates merge with the present configuration and fail only when: • There is an overflow of connections for FEXs • The template configuration is unable to occupy the slot in the chassis
Adding multiple objects in a single instance	Options to add multiple objects in a single drag and drop instance of equipments.
Range of slot numbers	Option to enter slot range while adding: • DIMM, HDD, CPU, or PSU on rack servers and chassis • Fans on chassis
Secure import of configuration supported	Import of a configuration from a live-UCS system using https is supported.
Random statistics generation	Statistics are randomly for the following components: • Fabric Interconnect—envstats, Psu input-stats, sysstats, Network stats • Chassis—Fan Stats, Psu input-stats • FEX—envstats

New or Changed Feature	Description
New rack-mount server support	Added support for the following rack-mount servers: • Cisco UCS C260 M2 Rack Server • Cisco UCS C460 M2 Rack Server • Cisco UCS C420 M3 Rack Server
New blade server support	Added support for Cisco UCS B-420 M3 Blade Server
New network adapter support	Added support for the following network adapters: • Cisco UCS CNA M73KR-E Emulex Adapter • Cisco UCS CNA M73KR-Q Qlogic Adapter
SmartPlay bundles	Added a new icon under the working pane of **Startup Inventory** page.
Moved Hardware Inventory Menu Tab	Moved **Hardware Inventory** Menu Tab from the **Navigation Pane** to **Emulator Settings** Menu Tab

Table 3: New Features and Significant Behavioral Changes in Cisco UCS, Release 2.1(1aPE1) and Release 2.1(1aPE2)

New or Changed Feature	Description
Cluster support	Added cluster support with dual-fabric interconnects simulated on the same virtual machine.
Validation option	Added a validate configuration option in the GUI.
Backup and Restore	Added backup and restore configuration options.
Unified port support	Added unified port support for the Cisco UCS 6248UP and Cisco 6296UP fabric interconnects.

New or Changed Feature	Description
New rack-mount server support	Added support for the following rack-mount servers: • Cisco UCS C200 M1 High-Density Rack-Mount Server • Cisco UCS C200 M2 High-Density Rack-Mount Server • Cisco UCS C210 M1 General-Purpose Rack-Mount Server • Cisco UCS C210 M2 General-Purpose Rack-Mount Server • Cisco UCS C250 M1 Extended-Memory Rack-Mount Server • Cisco UCS C250 M2 Extended-Memory Rack-Mount Server • Cisco UCS C220 Rack Server • Cisco UCS C240 Rack Server • Cisco UCS C22 Rack Server • Cisco UCS C24 Rack Server
New blade server support	Added support for the following blade servers: • Cisco UCS B-22 Blade Server • Cisco UCS B-250 Blade Server • Cisco UCS B-440 Blade Server
New network adapter support	Added support for the following network adapters: • Cisco UCS VIC M828P Virtual Interface Card • Cisco UCS VIC 1240 Virtual Interface Card • Cisco UCS VIC 1225 Virtual Interface Card • Emulex OCe11102-F Converged Network Adapter • Qlogic QLE8242 Converged Network Adapter • Broadcom NetXtreme II
New Fabric Extender (FEX) support	Added support for the Cisco Nexus 2232PP Fabric Extender. Added an automatic rack server to fabric extender configuration.

New or Changed Feature	Description
VM Console	Added information to use the vm console to change network settings and to change the cluster status.
Database Persistence Settings	Added requirement to use the Cisco UCS Platform Emulator GUI only to change the persistent settings for the database (to reset or to preserve the database upon a restart).
Launching UCSPE	Added information to launch UCSPE using VMplayer, VMfusion, VMware vSphere Hypervisor (ESXi) , and Microsoft Hyper-V - on Windows or Linux.
System Requirements	Updated requirements.
Known Issues	Removed limitation about high availability mode.

Table 4: New Features and Significant Behavioral Changes in Cisco UCS, Release 2.0(2s)

New or Changed Feature	Description
Enhanced fabric interconnect high availability support	Added an option to switch between standalone and cluster modes for the emulated fabric interconnects.
New blade server	Added support for the Cisco UCS B200 M3.
New fabric interconnects	Added support for the Cisco UCS 6248 and 6296 fabric interconnects.
New I/O module	Added support for the Cisco UCS 2208XP I/O module.
Enhanced connectivity between I/O modules and fabric interconnects	Added support for 1, 2, 4, or 8 uplinks from an I/O module to a fabric interconnect.

C H A P T E R **2**

Overview

This chapter includes the following sections:

Information About Cisco UCS Platform Emulator

Cisco UCS Platform Emulator is the Cisco UCS Manager application bundled into a virtual machine (VM). The VM includes software that emulates hardware communications for the Cisco Unified Computing System (Cisco UCS) hardware that is configured and managed by Cisco UCS Manager.

For example, you can use Cisco UCS Platform Emulator to create and test a supported Cisco UCS configuration, or to duplicate an existing Cisco UCS environment for troubleshooting or development purposes.

Note For the latest hardware and software feature information, prerequisites, limitations, and caveats, see the release notes for Cisco UCS Platform Emulator.

Cisco UCS Platform Emulator Control Panel

Navigation Pane

The **Navigation** pane displays on the left side of the Cisco UCS Platform Emulator Control Panel. This pane enables you to navigate to all components in the Cisco UCS Platform Emulator.

UCS MANAGER Menu Tab

The items in this menu tab provide access to Cisco UCS Manager and its functionality within Cisco UCS Platform Emulator.

EMULATOR SETTINGS Menu Tab

The items in this menu tab enable you to configure the settings for Cisco UCS Platform Emulator.

RESTART Menu Tab

The items in this menu tab enable you to access the restart options for Cisco UCS Platform Emulator.

Work Pane

The **Work** pane displays on the right side of Cisco UCS Platform Emulator Control Panel. The **Work** pane includes a content area that displays information related to the menu item selected in the **Navigation** pane. You can view and modify information in the **Work** pane.

CHAPTER 3

Installing and Running Cisco UCS Platform Emulator Using the VM Console

This chapter includes the following sections:

IP Address for Cisco UCS Platform Emulator

Cisco UCS Platform Emulator supports both DHCP and static IP. By default, Cisco UCS Platform Emulator is configured to use the local network to obtain an IP address via DHCP. If your network does not include a DHCP server, you must assign a static IP address to Cisco UCS Platform Emulator.

After the initial installation completes, Cisco UCS Platform Emulator displays the management IP address in the VM console. If you assign a static IP address, the IP address persists across VM reboots. If the IP address was assigned by DHCP server, the IP address persists across VM reboots for the duration of the lease.

Installing and Launching Cisco UCS Platform Emulator

Note The VM performs a one-time installation process the first time it starts up. Allow the installation to complete before you reboot the VM.

Procedure

Step 1 Extract the Cisco UCS Platform Emulator .zip file and .ova file to a folder.

Step 2 Open or import the unzipped Cisco UCS Platform Emulator into a supported hypervisor, as required by the hypervisor.
Do not continue with the next step until the VM has finished booting.

Step 3 (Optional) If you want to use DHCP for Cisco UCS Platform Emulator, enter the IP address from the VM console window in a supported Mozilla-based web browser to start Cisco UCS Platform Emulator.

Step 4 (Optional) If you want to assign a static IP address to Cisco UCS Platform Emulator, do the following:
Note Steps 4 f), g), and h) should be repeated three times - one for each of the three interfaces.

 a) In the VM console window, at the **cisco-ucspe login** prompt, enter config and press Enter.
 b) At the **Password** prompt, enter config and press Enter.
 c) At the **Select** prompt, enter a to change the network settings to use a statically assigned IP address.
 d) At the **Change settings** prompt, enter y and press Enter.
 e) At the **Use DHCP?** prompt, enter n and press Enter.
 f) At the **Enter IP address** prompt, enter the static IP address and press Enter.
 g) At the **Enter netmask** prompt, enter your netmask and press Enter.
 h) At the **Enter default gateway** prompt, enter your default gateway and press Enter.

After you enter the default gateway, the network interface reinitializes with your settings and the system becomes accessible via the new IP address. To cancel an entry and return to the menu, press Ctrl+C.

Launching Cisco UCS Platform Emulator Using Hypervisors

You can launch Cisco UCS Platform Emulator using VMplayer, VMfusion, VMware vSphere Hypervisor (ESXi), and Microsoft Hyper-V.

Launching Cisco UCS Platform Emulator Using Hypervisors With An `.ova` File

Using VMplayer on Microsoft Windows and Linux, Release 5.0:

1 Download the VMware OVF Tool, Release 3.0.1 from VMware. You can download the tool from the website.

2 When the download is complete, open your terminal or command prompt, navigate to where the VMware OVF Tool was installed and run the following to convert the image to a VMX file:
```
ovftool <path_to_ova\UCSPE.ova> <path_to_store_converted_image\UCSPE.vmx>
```

The conversion begins and a progress window is displayed. When finished, you can use VMware player to open the converted image and launch Cisco UCS Platform Emulator.

3 From the File menu on the VMware Player menu bar, select Open a Virtual Machine.

4 Browse to the folder where the VMX file was converted and double-click the VMX file to launch Cisco UCS Platform Emulator.

Launching Cisco UCS Platform Emulator Using Hypervisors With A `.zip` File

The `.zip` file contains the VMX and VMDK files that can be used directly with VMware Player, VMware Workstation and VMware Fusion.

1 Download the `.zip` file.

2 Extract the `.zip` file to a folder.

3 Click **Open a Virtual Machine** and browse to the extracted files. Select the VMX file and click **Open.**.

4 To install in vSphere, the VMDK files must be processed with VMware Converter Standalone, then deployed to vCenter directly.

5 Open VMware Converter Standalone.

6 In the **Converter** view pane, select.**Convert Machine**

7 Set the source type as **VMware Workstation** or **Other Virtual Machine.**

8 Select the VMX file from the folder. Click **Next.**

9 Enter the destination information for the vCenter Server.

10 Select a destination cluster resource, and suitable datastore.

11 Click on **Finish**

12 When the conversion completes successfuly, power on the VM.

Launching Cisco UCS Platform Emulator Using Microsoft Hyper-V With A `.zip` File

Note This task applies to the .zip file only; for example, `Cisco_UCS_Platform_Emulator_2.1.3aPE1.zip`. Cisco UCS Platform Emulator is delivered as an `.ova` file and as a `.zip` file. Each file contains the VMX and VMDK files that can be used directly with VMware Player, VMware Workstation and VMware Fusion.

1 Download the `.zip` file.

2 Extract the `.zip` file to a folder.

3 Download the StarWind V2V converter from www.starwindsoftware.com. Install the converter in Microsoft Windows.

4 Launch the StarWind converter and convert the VMDK file into VHD format. Use the Microsoft Virtual PC growable image as the destination image format.

5 Copy the VHD files to any Hyper-V server and using the Hyper-v Manager to create a new virtual machine using the existing VHD files with the following parameters:

- Name the Virtual Machine: Cisco UCS Platform Emulator 2.1(1aPE1)

- Assign startup memory to 2048MB

- Networking Connection – Leave at not connected

- Connect Virtual Hard Disk – Set to attach a virtual hard disk later

- After the Virtual Machine is created, edit the settings:

  - Delete the DVD Drive

  - Assign each of the 4 VHDs to IDE controllers 0 and 1. (0:0, 0:1, 1:0 & 1:1)

  - Delete the existing Network Adapter

  - Create 3 NICS each using Legacy Network Adapter type and associate to your vSwitch

  - Change the BIOS boot to IDE

6 Power on the VM.

Launching Cisco UCS Platform Emulator Using VMware Fusion on Mac OS X With An .ova File

If you are running VMware Fusion 4 or below, you can use the VMware OVF Tool to convert the image to the VMware runtime file format (.vmx). VMware Fusion 5 can import the .ova image file without conversion.

1 From the File menu on the VMware Fusion menu bar, select Import. The Import Library window displays a dialog box for browsing to the location of the .ovf file.

2 Browse to the .ova file and click Open.

3 Type the name for the imported virtual machine in the Save As text box and indicate where to save it. The default destination is the Virtual Machines folder created by VMware Fusion.

4 Click Import. A status bar indicates the progress of the import process.

When the import is complete, the virtual machine appears in the virtual machine library and in a separate virtual machine window.

Launching Cisco UCS Platform Emulator Using VMware Workstation on Microsoft Windows and Linux With An .ova File

You can directly import an .ova file into VMware Workstation 8.

1 From the File menu on the VMware Workstation 8 menu bar, select Open.

2 Browse to the .ovf or .ova file and click Open.

3 Type a name for the virtual machine, browse to the directory for the virtual machine files, and click Import.

Launching Cisco UCS Platform Emulator Using VMware vSphere ESXi 5.0 With An .ova File

Connect to your VMware Vcenter or VMware vSphere ESXi using the vSphere client.

1 From the File menu in the Vcenter or ESXi menu bar, select Deploy OVF Template.

2 Browse to the .ova file and click Open.

Changing the Static IP Address

✎

Note   If clustering is disabled, you must set a static IP address.

Procedure

Step 1   If necessary log into the console window for the Cisco UCS Platform Emulator VM, as follows:

a) At the `cisco-ucspe login` prompt, enter config and press Enter.

b) At the `Password` prompt, enter config and press Enter.

Step 2   At the `Setup` prompt, enter a.

Step 3   At the `Change settings` prompt, enter y and press Enter.

Step 4   At the `Use DHCP?` prompt, enter n and press Enter.

Step 5   At the `Enter IP address` prompt, enter the static IP address and press Enter.

Step 6   At the `Enter netmask` prompt, enter your netmask and press Enter.

Step 7   At the `Enter default gateway` prompt, enter your default gateway and press Enter. The network interface reinitializes with your settings and the system becomes accessible via the new IP address. To cancel an entry and return to the menu, press Ctrl+C.

Step 8   Repeat Steps 5, 6, and 7 for each interface.

Changing the Cluster Status Using the VM Console

You can use the Cisco UCS Platform Emulator VM console to change the cluster status. The console window for the Cisco UCS Platform Emulator VM supports a single CLI session.

✎

Note   If clustering is disabled, you must set a static IP address.

Procedure

Step 1   (Optional) If the VM console window displays the **Select** prompt, type x to exit the menu.

Step 2   At the **cisco-ucspe login** prompt, type config and press Enter.

Step 3   At the **Password** prompt, type config and press Enter.
The VM console window displays the configuration menu.

Step 4   At the **Select** prompt, type h and press Enter.
The VM console window displays a confirmation message.

Step 5   At the **Change Cluster State (yes/no)?** prompt, type yes and press Enter.

Note Changing the cluster status restarts the Cisco UCS Platform Emulator and Cisco UCS Manager and removes all configurations and databases. This option also removes all hardware configurations performed in the Cisco UCS Platform Emulator control panel and also changes the database persistence setting to **Reset** the database.

Modifying Network Settings Using the VM Console

You can use the Cisco UCS Platform Emulator VM console to change some network settings. The console window for the Cisco UCS Platform Emulator VM supports a single CLI session.

Procedure

Step 1 (Optional) If the VM console window displays the **Select** prompt, type x to exit the menu.

Step 2 At the **cisco-ucspe login** prompt, type config and press Enter.

Step 3 At the **Password** prompt, type config and press Enter.
The VM console window displays the configuration menu.

Step 4 At the **Select** prompt, type a and press Enter.
The VM console window displays a confirmation message.

Step 5 At the **Change settings?** prompt, type yes and press Enter.
Note Changing network settings restarts the Cisco UCS Platform Emulator and Cisco UCS Manager.

Restarting and Rebooting Cisco UCS Platform Emulator Using the VM Console

You can use the Cisco UCS Platform Emulator VM console to restart and reboot UCSPE.

Note If you restart or reboot using the VM console, the Cisco UCS Manager database will only be reset if the persistent setting is configured to reset the database. You can only configure the persistent setting in the Cisco UCS Platform Emulator GUI (**Emulator Settings** > **Database Persistence** > **Preserve** or **Reset**).

Procedure

Step 1 (Optional) If the VM console window displays the **Select** prompt, type x to exit the menu.

Step 2 At the **cisco-ucspe login** prompt, type config and press Enter.

Step 3 At the **Password** prompt, type config and press Enter.
The VM console window displays the configuration menu.

Step 4 (Optional) At the **Select** prompt, type b and press Enter to restart Cisco UCS Platform Emulator with the settings in the Cisco UCS Platform Emulator GUI (**Emulator Settings** > **Database Persistence** > **Preserve** or **Reset**).
The VM console window displays a confirmation message. This option does not clear the Cisco UCS Manager database and configurations; however, this option clears the Cisco UCS Platform Emulator database. Hardware configurations performed in the Cisco UCS Platform Emulator control panel remain.

Step 5 (Optional) At the **Select** prompt, type i and press Enter to perform a factory reset.
The VM console window displays a confirmation message. This option reverts Cisco UCS Platform Emulator settings and configurations to the factory settings. All user-configured files and configurations are lost.

Step 6 (Optional) At the **Select** prompt, type j and press Enter to reboot Cisco UCS Platform Emulator.
The VM console window displays a confirmation message. This option reboots the Cisco UCS Platform Emulator VM console.

Step 7 (Optional) At the **Select** prompt, type k and press Enter to shutdown Cisco UCS Platform EmulatorVM console.
The VM console window displays a confirmation message.

Step 8 (Optional) At the **Select** prompt, type x and press Enter to exist the menu.
The VM console window displays a confirmation message.

Starting the Cisco UCS Manager CLI Using the VM Console

You can use the supported commands from the Cisco UCS Manager CLI to configure and manage the hardware in your Cisco UCS Platform Emulator environment. The console window for the Cisco UCS Platform Emulator VM supports a single CLI session.

For information about Cisco UCS Manager CLI commands, see the *Cisco UCS Manager CLI Configuration Guide* and the *Cisco UCS Manager CLI Command Reference*. You can access these documents through the *Cisco UCS B-Series Servers Documentation Roadmap* available at the following URL: http://www.cisco.com/go/unifiedcomputing/b-series-doc .

Note Cisco UCS Platform Emulator does not support Cisco UCS Manager CLI commands for unsupported features or within the **connect nxos** or **connect local-mgmt** scopes

Procedure

Step 1 (Optional) If the VM console window displays the **Select** prompt, type x to exit the menu.

Step 2 At the **cisco-ucspe login** prompt, type cliuser and press Enter.

Step 3 At the **Password** prompt, type cliuser and press Enter.
The VM console window displays the **cisco-ucspe#** prompt, which is the equivalent of the top-level scope in the Cisco UCS Manager CLI.

Preserving and Resetting the Database

This setting determines whether the Cisco UCS Platform Emulator configuration, persists after you restart Cisco UCS Platform Emulator or reboot the VM. These settings do not change the persistence of the hardware inventory.

Note   Changes to this setting do not take effect until you restart the Cisco UCS Platform Emulator application.

Procedure

Step 1   In the **Navigation** pane, click the **Emulator Settings** menu tab.

Step 2   Click **Database Persistence**.

Step 3   Click one of the following radio buttons:

- **Preserve UCS Database upon Restart**
- **Reset UCS Database upon Restart**

Step 4   Click **Submit**.

What to Do Next

Restart the Cisco UCS Platform Emulator application, as described in .

Restarting and Shutting Down Cisco UCS Platform Emulator Using the Control Panel

This chapter includes the following sections:

Restarting Cisco UCS Platform Emulator

Procedure

Step 1 In the **Navigation** pane, click the **Restart** menu tab.

Step 2 Click **Restart UCSPE**.

Step 3 In the **Are you sure you want to restart UCS Emulator with Current Settings now?** field of the **Work** pane, click one of the following radio buttons:

- **Yes**—To restart Cisco UCS Platform Emulator with current settings.

- **No**—To cancel the action.

Step 4 Click **Restart UCS Emulator with Current Settings**.

Persisting Settings During a Cisco UCS Platform Emulator Restart

When Cisco UCS Platform Emulator restarts, the database either persists or is reset depending on the persistence setting made in the Cisco UCS Platform Emulator GUI . By default, this procedure erases all settings and configuration in the database, including pools, policies, and service profiles. However, you can configure Cisco UCS Platform Emulator to preserve the database upon restart using the Cisco UCS Platform Emulator GUI (**Emulator Settings** > **Database Persistence** > **Preserve** or **Reset**).

Procedure

In the Navigation pane, click Emulator Settings > Database Persistence, click one of the following radio buttons:

- **Yes**—To restart the Cisco UCS Platform Emulator and reset the database to erase all settings and configuration.

- **No**—To cancel the action.

Restarting Cisco UCS Platform Emulator and Performing a Factory Reset

By default, when Cisco UCS Platform Emulator restarts, the database is erased, any hardware that you added to Cisco UCS Manager within Cisco UCS Platform Emulator is deleted, and all configurations and settings are returned to the factory defaults.

Procedure

Step 1	In the **Navigation** pane, click the **Restart** menu tab.
Step 2	Click **Factory Reset**.
Step 3	In the **Are you sure you want to perform Factory Reset now?** field of the **Work** pane, click one of the following radio buttons: • **Yes**—To restart the Cisco UCS Platform Emulator and erase all hardware, settings, and configuration • **No**—To cancel the action.
Step 4	Click **Perform Factory Reset**.

Rebooting the Cisco UCS Platform Emulator VM

Rebooting the VM from the Cisco UCS Platform Emulator ensures a clean shutdown of the Cisco UCS Platform Emulator before the VM reboots.

Note   If clustering is disabled, you must set a static IP address.

Procedure

Step 1   In the **Navigation** pane, click the **Restart** menu tab.

Step 2   Click **Reboot VM**.

Step 3   In the **Are you sure you want to reboot Virtual Machine now?** field of the **Work** pane, click one of the following radio buttons:

- **Yes**—To shutdown the Cisco UCS Platform Emulator and reboot the VM

- **No**—To cancel the action.

Step 4   Click **Reboot Virtual Machine**.

Shutting Down the Cisco UCS Platform Emulator VM

Shutting down the VM from the Cisco UCS Platform Emulator ensures a clean shutdown of the Cisco UCS Platform Emulator.

Procedure

Step 1   In the **Navigation** pane, click the **Restart** menu tab.

Step 2   Click **Shutdown VM**.

Step 3   In the **Are you sure you want to shut down Virtual Machine now?** field of the **Work** pane, click one of the following radio buttons:

- **Yes**—To shutdown the VM

- **No**—To cancel the action.

Step 4   Click **Shut Down Virtual Machine**.

Configuring Cisco UCS Platform Emulator

This chapter includes the following sections:

Status Summary Page

The **Status Summary** page displays the current status and a summary of the Cisco UCS Platform Emulator settings. These settings are updated when you modify any of the Cisco UCS Platform Emulator settings.

Runtime Status Area

This area provides information about the current status of Cisco UCS Platform Emulator. The number in parentheses shows the number of instances of the processes that are running. This example is for a cluster setting. For a non-cluster (standalone setting), everything will be (1) and the SAM Controller will not be running.

Name	Description
Emulator field	Running(1)
UCS Manager field	Running(2)
Blade AG field	Running(2)

Name	Description
RsdAG field	Running(2)
PortAG field	Running(2)
StatsAG field	Running(2)
NicAG field	Running(2)
DeosAG field	Running(2)
HostagentAG field	Running(2)
ExtvmmAG field	Running(2)
SAM Controller field	Running(2)
Available Memory field	The memory currently available to Cisco UCS Platform Emulator.
Current Mgmt IP field	The current management IP address.
Netmask field	The netmask configured for Cisco UCS Platform Emulator.
Gateway field	The gateway configured for Cisco UCS Platform Emulator.

Management IP Settings Area

This area provides details of the management IP address configured for Cisco UCS Platform Emulator.

Name	Description
Ping field	Used to ping a server.

Emulator Startup Settings Area

This area provides details of the fabric interconnect configuration for Cisco UCS Platform Emulator.

Name	Description
High-Availability Mode field	The number of fabric interconnects configured for Cisco UCS Platform Emulator. This can be one of the following: • High availability cluster configuration with two fabric interconnects • Single standalone fabric interconnect

Name	Description
Persistent DB Mode field	Whether the database is preserved or erased when Cisco UCS Platform Emulator is restarted.
# of Fabric Interconnect Uplinks field	The number of uplinks between the chassis and the fabric interconnects.

Emulator Hardware Config Area

Name	Description
Startup Config URL field	The location where the startup configuration for Cisco UCS Platform Emulator is stored.

Viewing the Cisco UCS Platform Emulator Current Status and Settings

Procedure

Step 1 In the **Navigation** pane, click the **Emulator Settings** menu tab.

Step 2 Click **Status Summary**.

Step 3 In the **Work** pane, review the current status and settings of Cisco UCS Platform Emulator.

Ping the Management IP Address Using the Control Panel

You can ping the management IP address to verify that it is accessible from the control panel.

Procedure

Step 1 In the **Navigation** pane, click the **Emulator Settings** menu tab.

Step 2 Click **Management IP**.

Step 3 In the **Ping Test** area:

    a) In the **Ping to this IP** field, enter the IP address you want to ping.

    b) In the **Number of pings** field, enter the number of times you want Cisco UCS Platform Emulator to ping the IP address.

    c) Click **Start Ping**.

Modifying the Cisco UCS Manager High Availability Setting

The High Availability setting determines which of the following configurations is emulated by Cisco UCS Platform Emulator:

- High availability cluster configuration with two fabric interconnects

- Single standalone fabric interconnect

Note   Changes to this setting do not take effect until you restart the Cisco UCS Platform Emulator. If you restart or reboot Cisco UCS Platform Emulator, the Cisco UCS Manager database will only be reset if the persistent setting is configured to reset the database. You can only configure the persistent setting in the Cisco UCS Platform Emulator GUI (**Emulator Settings** > **Database Persistence** > **Preserve** or **Reset**).

Procedure

Step 1   In the **Navigation** pane, click the **Emulator Settings** menu tab.

Step 2   Click **High Availability**.

Step 3   Click one of the following radio buttons:

- **Dual Fabric Interconnect, HA**

- **Single Fabric Interconnect, no HA**

Step 4   Click **Submit**.

What to Do Next

Restart the VM and reset the database, as described in .

Modifying the Cisco UCS Manager Single Wire Management Setting

In **Single Wire Management** mode, the servers can be managed using only one wired connection to the adaptor. You can perform a full reset of Cisco UCS Platform Emulator database using **Single Wire Management**. The server platform slots supported by **Single Wire Management** are:

Server platform	Slots
C460	1

Server platform	Slots
C260	7
C220	1
C240	2
C22	1
C24	1
C420	4

Note Changes to this setting do not take effect until you restart the Cisco UCS Platform Emulator. If you restart or reboot Cisco UCS Platform Emulator, the Cisco UCS Manager database will only be reset if the persistent setting is configured to reset the database. You can only configure the persistent setting in the Cisco UCS Platform Emulator GUI (**Emulator Settings** > **Database Persistence** > **Preserve** or **Reset**).

Procedure

Step 1 In the **Navigation** pane, click the **Emulator Settings** menu tab.

Step 2 Click **Single Wire Management**.

Step 3 Click one of the following radio buttons:

   • **Single Wire Management, On**

   • **Single Wire Management, Off**

Step 4 Click **Submit**.

What to Do Next

Restart the VM and reset the database, as described in .

Modifying the Cisco UCS Manager Direct Connect Rack Setting

In **Direct Connect Rack** mode, the servers are directly connected to the switch with no intermediate Fabric Extender (FEX) connectivity. The rack server platform slots supported by **Direct Connect Rack** are:

Adaptor	Rack Server Model	Adaptor Slots
UCSC-PCIE-CSC-02	C460	1

Adaptor	Rack Server Model	Adaptor Slots
UCSC-PCIE-CSC-02	C260	7
UCSC-PCIE-CSC-02	C220	1
UCSC-PCIE-CSC-02	C240	2
UCSC-PCIE-CSC-02	C22	1
UCSC-PCIE-CSC-02	C24	1
UCSC-PCIE-CSC-02	C420	4

Note Changing the **Direct Connect Rack** setting resets the Cisco UCS Platform Emulator database. Also, once the **Direct Connect Rack** option is enabled, it automatically enables the **Single Wire Management** mode. Changing the settings do not take effect until you restart the Cisco UCS Platform Emulator. If you restart or reboot the Cisco UCS Platform Emulator, the Cisco UCS Manager database will reset if the persistent setting is configured to reset the database. You can configure the persistent settings only in the Cisco UCS Platform Emulator GUI (**Emulator Settings** > **Database Persistence** > **Preserve** or **Reset**).

Procedure

Step 1 In the **Navigation** pane, click the **Emulator Settings** menu tab.

Step 2 Click **Direct Connect Rack.**

Step 3 Click one of the following radio buttons:

- **Direct Connect Rack, On**
- **Direct Connect Rack, Off**

Step 4 Click **Submit.**

What to Do Next

Restart the VM and reset the database, as described in Persisting Settings During a Cisco UCS Platform Emulator Restart, .

Modifying the Cisco UCS Platform Emulator Startup Configuration Source

This setting determines which hardware inventory configuration is loaded into Cisco UCS Platform Emulator when it restarts. By default, the current hardware inventory configured in Cisco UCS Platform Emulator is loaded.

For example, you can use this setting to ensure that multiple Cisco UCS Platform Emulator VMs have the same hardware inventory configuration. You can maintain the hardware inventory in a one Cisco UCS Platform Emulator and configure the other Cisco UCS Platform Emulator VMs to use that hardware inventory.

Note   Changes to this setting do not take effect until you restart Cisco UCS Platform Emulator and reset the database. If you restart or reboot Cisco UCS Platform Emulator, the Cisco UCS Manager database will only be reset if the persistent setting is configured to reset the database. You can only configure the persistent setting in the Cisco UCS Platform Emulator GUI (**Emulator Settings** > **Database Persistence** > **Preserve** or **Reset**).

Before You Begin

If you plan to load the hardware inventory configuration from another Cisco UCS Platform Emulator, you must save that hardware inventory to ensure that it is available as a file.

If you plan to load the hardware inventory configuration from a web server, you must export the hardware inventory from an existing Cisco UCS Platform Emulator and store it on the web server.

Make sure that the Cisco UCS Platform Emulator cluster state setting is the same as the source cluster setting.

Procedure

Step 1   In the **Navigation** pane, click the **Emulator Settings** menu tab.

Step 2   Click **Startup Config URL**.

Step 3   To use the local hardware inventory configuration, click the **Use Local Startup Inventory** radio button.

Step 4   To load the startup configuration from another Cisco UCS Platform Emulator, do the following:

a)   Click the **Load From Another UCSPE** radio button.

b)   Complete the following fields:

Name	Description
Host field	The management IP address of the Cisco UCS Platform Emulator from which you want to load the startup configuration.
Port field	Port 80, the web server port used by Cisco UCS Platform Emulator.
File field	The name of the saved hardware inventory configuration file in the other Cisco UCS Platform Emulator that you want to load into this Cisco UCS Platform Emulator on start up.

Step 5 To load the startup inventory from a web server, do the following:

a) Click the **Load From External URL** radio button.

b) In the **External URL** field, enter the URL for the hardware inventory configuration file.
The URL should use a format such as `http://IP_Address/File_Name`. For example,
`http://209.165.202.129/ucspe_hardware_sample.xml`

Step 6 Click **Submit**.

What to Do Next

Restart the VM and reset the database, as described in Persisting Settings During a Cisco UCS Platform Emulator Restart, on page 18.

Modifying the Fabric Interconnect Emulation Settings

This setting determines which fabric interconnect is used by Cisco UCS Platform Emulator and the number of uplinks between the chassis and fabric interconnects.

Note Changes to this setting do not take effect until you restart Cisco UCS Platform Emulator and reset the database. If you restart or reboot Cisco UCS Platform Emulator, the Cisco UCS Manager database will only be reset if the persistent setting is configured to reset the database. You can only configure the persistent setting in the Cisco UCS Platform Emulator GUI (**Emulator Settings** > **Database Persistence** > **Preserve** or **Reset**).

Procedure

Step 1 In the **Navigation** pane, click the **Emulator Settings** menu tab.

Step 2 Click **Fabric Interconnect**.

Step 3 From the **Number of Uplinks** drop-down list, choose the number of uplinks between the chassis and fabric interconnects.
The Cisco UCS 6100 Series fabric interconnects support 2 uplinks to 4 uplinks, and the Cisco UCS 6200 Series fabric interconnects support up to 8 uplinks.

Step 4 From the **Fabric Interconnect** drop-down list, choose which fabric interconnect you want to use in Cisco UCS Platform Emulator.

Step 5 Click **Submit**.

What to Do Next

Restart the VM and reset the database, as described in Persisting Settings During a Cisco UCS Platform Emulator Restart, on page 18.

C H A P T E R **6**

Configuring the Hardware Inventory

This chapter includes the following sections:

Hardware Inventory

The inventory of supported hardware components is stored in the Hardware Catalog. This catalog is drawn from the Capability Catalog that is included in Cisco UCS Platform Emulator. It contains the inventory of the supported components that you can use to build a chassis in Cisco UCS Platform Emulator, including servers, DIMMs, and adapters. If a component is not included in the Hardware Catalog, it is not supported by Cisco UCS Platform Emulator.

The Hardware Catalog does not include fabric interconnects. You need to configure fabric interconnects and the links between the chassis and the fabric interconnect in the emulator settings. For more information, see Modifying the Fabric Interconnect Emulation Settings, on page 28.

Startup Hardware Inventory Icons

The following table contains the icons above the **Stash** and **Chassis** areas on the **Startup Hardware Inventory** page.

Icon	Description	Description
	Add New Chassis	Adds a chassis to the hardware inventory.
	Load a Saved Configuration	Loads a previously saved hardware inventory configuration. After you restart Cisco UCS Platform Emulator, this configuration overwrites and replaces the current hardware inventory.
	Import XML File	Imports an XML file that contains hardware inventory configuration data from a file on the local disk. After you restart Cisco UCS Platform Emulator, this configuration overwrites and replaces the current hardware inventory.
	Import Equipment from Live Cisco UCS	Imports the hardware inventory configuration from a live Cisco UCS domain. After you restart Cisco UCS Platform Emulator, this configuration overwrites and replaces the current hardware inventory.
	Restart Emulator with this Hardware Setup	Restarts Cisco UCS Platform Emulator to enable the emulated Cisco UCS Manager to discover the new hardware inventory configuration.
	Save Configuration	Saves the current hardware inventory configuration. A file with this name displays in the **Load previously saved configuration** list.
	Export Configuration as XML file	Exports the current hardware inventory configuration as an XML file then opens a new browser tab and displays the contents of the XML file.
	Validate the present Configuration	Validates the configuration.
	SmartPlay Bundles	Provides predefined configurations to update installed firmware. Upgrade of installed firmware is supported only for B-Series and C-Series components.

Inventory Stash Area

The **Stash** area is a virtual lab desk where you can place a blade server after you remove it from, or before you insert it into a chassis. You can change the components of a server in the **Stash** area, such as the DIMMs or CPU, before you insert the server into a chassis. You can drag and drop servers into the **Stash** area from the **Chassis** area (after ejection) or from the **Hardware Catalog** table below. If a server in the **Stash** area was removed from a chassis, Cisco UCS Platform Emulator tracks the chassis and slot from which the server was removed and reinserts it back into the same location when you drag and drop the server back into the **Chassis** area. For rack servers, you can place a server in the **Stash** area, change or add components, and then drag and drop the server on the **Rack Servers** area.

You can drag and drop servers into the **Stash** area from the **Chassis** area or from the Hardware Catalog table below. If a server in the **Stash** area was removed from a chassis, Cisco UCS Platform Emulator tracks the chassis and slot from which the server was removed and reinserts it back into the same location when you drag and drop the server back into the **Chassis** area.

Stash Area Icons

Icon	Description
	Collapses all elements of the **Stash** area.
	Expands all elements of the **Stash** area.
	Removes all servers and components from the **Stash** area.

Chassis Area

The **Chassis** area holds all of the chassis in Cisco UCS Platform Emulator. By default, the **Chassis** area includes one chassis. You can add more chassis at any time.

While you can modify servers in the **Chassis** area, we recommend that you drag the server from a chassis and drop it in the **Stash** area and modify the server components there. When you drag the server back to the **Chassis** area, Cisco UCS Platform Emulator returns it to the same chassis and slot from which it was removed.

Chassis Area Icons

Icon	Description
	Collapses all elements of the **Chassis** area.
	Expands all elements of the **Chassis** area.
	Makes a duplicate of this chassis.
	Disconnects the chassis from the fabric interconnect, but does not remove it from the hardware inventory.
	Removes the chassis from the hardware inventory.

Viewing the Hardware Catalog

Procedure

Step 1 In the **Navigation** pane, click the **Emulator Settings** menu tab.

Step 2 Click **Hardware Catalog**.

Step 3 In the **Work** pane, click one or more of the following tabs to view the components supported in the current release:

- **Blades**
- **CPU**
- **DIMM**
- **HDD**
- **I/O Adapters**

- **Fans**

- **PSU**

- **Rack Servers**

- **Templates**

Manually Configuring the Hardware Inventory

Adding a New Chassis

Procedure

Step 1 In the **Navigation** pane, click the **Emulator Settings** menu tab.

Step 2 Click **Start-up Inventory**.

Step 3 On the **Startup Hardware Inventory** page, click the **Add New Chassis** icon on the top icon bar.

Step 4 In the **ID** field, enter an unused number that you want to assign to the chassis.

Step 5 In the **Name** field, enter a name for the chassis.

Step 6 Click **Add**.
Cisco UCS Platform Emulator adds a **Chassis** area for the new chassis.

What to Do Next

Add servers to the chassis.

Creating a New Blade Server

We recommend that you create a new blade server in the **Stash** area. Blade servers that are moved from the startup inventory table to the **Stash** area do not include any components, such as DIMMs, adapters, or fans. You must add those components and build your blade server before you insert the blade server in a chassis. After you have added all desired components to the blade server, you can drag it over to and drop it into a chassis.

Procedure

Step 1   In the **Navigation** pane, click the **Emulator Settings** menu tab.

Step 2   Click **Start-up Inventory**.

Step 3   On the **Startup Hardware Inventory** page, click the **Blades** tab.

Step 4   Click in the row for the desired blade server and, holding the mouse button down, drag the blade server to the **Stash** area and drop it into that area.

Step 5   Add the components that you want to include in the blade server, as follows:

  a) Click on the tab for the component you want to add to the blade server.

  b) Click in the row for the desired configuration for the component and, holding the mouse button down, drag the component to the **Stash** area and drop it on top of the blade server.

  c) If prompted, enter the desired slot number for the component and press Enter.

  d) Repeat Steps a through c until you have added all desired components to the blade server.

Step 6   Add the blade server to a chassis:

  a) Click on the blade server in the **Stash** area and, holding the mouse button down, drag the component to the appropriate **Chassis** area and drop it into that area.

  b) In the **Enter Server Slot** field, enter the number of the empty slot where you want to insert the blade server and press Enter.
      Dual-slot blade servers can only be added to odd numbered slots. If desired, click the **Expand All** icon in the **Chassis** area to view which slots are occupied.

  c) In the **Enter Server Slot** field, enter the number of the empty slot where you want to insert the blade server and press Enter.
      Dual-slot blade servers can only be added to odd numbered slots. If desired, click the **Expand All** icon in the **Chassis** area to view which slots are occupied.

Step 7   Click the **Validate** icon in the Startup Hardware Inventory area to ensure that all necessary components for a server are added. Missing components are displayed if the component is missing on the server.

Creating a New Rack-Mount Server

We recommend you to create a new rack-mount server in the **Stash** area However, you can also drag-drop the rack-server from the catalog to the **Rack Server** area. The UCS Platform Emulator supports only Cisco Nexus 2232 Fabric Extender (FEX) for Rack connectivity.

Other components such as DIMMs, adapters, or fans are not included automatically. After you have added all desired components to the rack-mount server in the **Stash** area, you can drag it and drop it into a **Rack Servers** area. You can also configure the empty rack-mount server dropped directly on the **Rack Servers** area, then add components. When you drop the first rack-mount server on the **Stash** area or **Rack Servers** area, one or two FEXs are automatically added to the inventory depending on the Cluster state—If the cluster state is HA: two FEXs; if the cluster state is stand-alone: one FEX. When you drop a rack-mount server on the**Rack Servers** area, then connections between the rack-mount server and the FEX are applied on the rack-mount server and its adapters by the backend of the Cisco UCS Platform Emulator GUI. Similarly, when all FEX ports are occupied, then on the addition of a rack-mount server directly to the **Rack Servers** area, or the addition of an adapter to a rack-mount server, or the shifting of a rack-mount server from the stash, will

cause connection overflows. This occurrence creates new FEXs for the future but the action will fail to complete. If this situation occurs, you will need to perform the action again to make new connections by default to these FEXs.

Note You cannot individually select the Cisco Nexus 2232PP Fabric Extender. This is automatically added when you create a rack-mount server.

Procedure

Step 1 In the **Navigation** pane, click the **Emulator Settings** menu tab.

Step 2 Click **Start-up Inventory**.

Step 3 On the **Startup Hardware Inventory** page, click the **Rack Servers** tab.

Step 4 Click in the row for the desired rack-mount server and, holding the mouse button down, drag the rack-mount server to the **Stash** area and drop it into that area.

Step 5 Add the components that you want to include in the rack-mount server, as follows:

   a) Click on the tab for the component you want to add to the rack-mount server.

   b) Click in the row for the desired configuration for the component and, holding the mouse button down, drag the component to the **Stash** area and drop it on top of the rack-mount server.

   c) If prompted, enter the desired slot number for the component and press Enter.

   d) Repeat Steps a through c until you have added all desired components to the rack-mount server.

Step 6 Add the rack-mount server to a Rack Servers area:

   a) Click on the rack-mount server in the **Stash** area and, holding the mouse button down, drag and drop the component to the appropriate **Rack Servers** area.

   b) In the **Enter Server Slot** field, enter the number of the empty slot where you want to insert the rack-mount server and press Enter.
   Dual-slot rack-mount servers can only be added to odd numbered slots. If desired, click the **Expand All** icon in the **Chassis** area to view which slots are occupied.

Modifying Server Components

We recommend that you eject the server that you wish to modify from the chassis into the **Stash** area, modify the components as desired, then reinsert it into a chassis.

Procedure

Step 1 In the **Navigation** pane, click the **Emulator Settings** menu tab.

Step 2 Click **Start-up Inventory**.

Step 3 Move the server you want to modify to the **Stash** area as follows:

   a) In the appropriate **Chassis** area, click the **+** icon to expand the **Servers**.

   b) Click the **-** icon next to the slot that holds the server you want to modify.

    c) In the **Eject Server?** field, click the green checkmark icon.
       Cisco UCS Platform Emulator ejects the server from the chassis and moves it to the **Stash** area.

Step 4 Add components to the server, as follows:

    a) Click on the tab for the component you want to add to the server.

    b) Click in the row for the desired configuration for the component and, holding the mouse button down, drag the component to the **Stash** area and drop it on top of the server.

    c) If prompted, enter the desired slot number for the component and press Enter.
       If the slot is occupied, Cisco UCS Platform Emulator replaces the existing component with the new one.

    d) If prompted, enter the desired range for the component and press Enter.
       If the slot is occupied, Cisco UCS Platform Emulator replaces the existing component with the new one.

       Note You can enter slot range only while adding DIMM, HDD, CPU, or PSU on rack servers and chassis or while adding fans on chassis. The input for the range must be in the format [a-b]. It is not valid for adaptors.

    e) Repeat Steps a through c until you have modified all desired components in the server.

Step 5 Reinsert the server into the chassis from which you ejected it, as follows:

    a) In the **Stash** area, click on the + icon within the field for the server you want to reinsert.

    b) In the **Reinsert Server?** field, click the green checkmark icon.
       Cisco UCS Platform Emulator removes the server from the **Stash** area and reinserts the server into the chassis and slot from which you ejected it.

       Tip If you prefer, you can also drag the server from the **Stash** and drop it into another chassis with an available slot.

Duplicating a Chassis

Procedure

Step 1 In the **Navigation** pane, click the **Emulator Settings** menu tab.

Step 2 Click **Start-up Inventory**.

Step 3 In the **Chassis** area for the chassis you want to duplicate, click the **Duplicate this Chassis** icon on the icon bar.

Step 4 In the **ID** field, enter an unused number that you want to assign to the chassis.

Step 5 In the **Name** field, enter a name for the chassis.

Step 6 Click **Add**.
Cisco UCS Platform Emulator adds a **Chassis** area with identical hardware components to the original chassis.

Disconnecting a Chassis from the Fabric Interconnect

This procedure does not remove the chassis from the hardware inventory. It is the equivalent of uncabling the chassis from the fabric interconnects.

Note The chassis is not disconnected from the fabric interconnect until you restart the Cisco UCS Platform Emulator application.

Procedure

Step 1 In the **Navigation** pane, click the **Emulator Settings** menu tab.

Step 2 Click **Start-up Inventory**.

Step 3 In the **Chassis** area for the chassis you want to connect, click the **Disconnect this Chassis from Switch** icon on the icon bar.

Step 4 In the **Disconnect this Chassis from Fabric Interconnect** field, click the green checkmark icon to confirm.

Step 5 Click the **Restart the Emulator with this Hardware Setup** icon on the icon bar to restart the Cisco UCS Platform Emulator application and have this change take effect.

Connecting a Chassis to the Fabric Interconnect

This procedure is the equivalent of cabling the chassis to the fabric interconnects.

Note The chassis is not connected to the fabric interconnect until you restart the Cisco UCS Platform Emulator application.

Procedure

Step 1 In the **Navigation** pane, click the **Emulator Settings** menu tab.

Step 2 Click **Start-up Inventory**.

Step 3 In the **Chassis** area for the chassis you want to connect, click the **Connect this Chassis to Fabric Interconnect** icon on the icon bar.

Step 4 In the **Connect this Chassis to Fabric Interconnect** field, click the green checkmark icon to confirm.

Step 5 Click the **Restart the Emulator with this Hardware Setup** icon on the icon bar to restart the Cisco UCS Platform Emulator application and have this change take effect.

Removing a Chassis from the Hardware Inventory

With this procedure, Cisco UCS Platform Emulator removes the chassis and all servers in the chassis from the hardware inventory.

Note   The chassis and its servers are not removed from the hardware inventory until you restart the Cisco UCS Platform Emulator application.

Procedure

Step 1   In the **Navigation** pane, click the **Emulator Settings** menu tab.

Step 2   Click **Start-up Inventory**.

Step 3   In the **Chassis** area for the chassis you want to remove, click the **Remove this Chassis** icon on the icon bar.

Step 4   In the **Remove this Chassis** field, click the green checkmark icon to confirm.

Step 5   Click the **Restart the Emulator with this Hardware Setup** icon on the icon bar to restart the Cisco UCS Platform Emulator application and have this change take effect.

Emptying the Stash Area

Procedure

Step 1   In the **Navigation** pane, click the **Emulator Settings** menu tab.

Step 2   Click **Start-up Inventory**.

Step 3   In the **Stash** area, click the **Empty Stash** icon on the icon bar.

Step 4   In the **Empty Stash?** field, click the green icon to confirm that you want to empty the stash.
Cisco UCS Platform Emulator removes all servers and other components from the **Stash** area.

Configuring Hardware Inventory using SmartPlay and Templates

Configuring Hardware Inventory using SmartPlay Bundles

Procedure

Step 1 In the **Navigation** pane, click the **Emulator Settings** menu tab.

Step 2 Click **Start-up Inventory**.

Step 3 On the **Startup Hardware Inventory** page, click the **SmartPlay Bundles** icon on the top icon bar.

Step 4 Select the desired SmartPlay Bundle from the drop-down list that you want to assign to the chassis.

Step 5 Click **Submit**.
Cisco UCS Platform Emulator replaces the existing configuration with the SmartPlay Bundle configuration including Fabric Interconnect.

Configuring Hardware Inventory using Templates

Procedure

Step 1 In the **Navigation** pane, click the **Emulator Settings** menu tab.

Step 2 Click **Start-up Inventory**.

Step 3 On the **Startup Hardware Inventory** page, click the **Templates** tab in the **Work** pane.

Step 4 From the list of templates, drag and drop the desired template on either the Chassis or Rack servers area.

- To configure hardware inventory for blade components, you must drag and drop the template in the **Chassis** area.
  Note An error is shown if no slots are available on the chassis.

- To configure hardware inventory for rack components, you must drag and drop the template in the **Rack servers** area.

Step 5 Click **Submit**.
Cisco UCS Platform Emulator replaces the existing configuration with the template configuration.

Using Existing Hardware Inventory Configurations

Importing a Hardware Inventory Configuration File

You can import a hardware configuration file that you exported from one Cisco UCS Platform Emulator into another Cisco UCS Platform Emulator. You cannot import a backup file from a Cisco UCS domain. If you want to import the configuration from a Cisco UCS domain, see .

Before You Begin

Changes to this setting do not take effect until you restart Cisco UCS Platform Emulator and reset the database. If you restart or reboot Cisco UCS Platform Emulator, the Cisco UCS Manager database will only be reset if the persistent setting is configured to reset the database. You can only configure the persistent setting in the Cisco UCS Platform Emulator GUI (**Emulator Settings** > **Database Persistence** > **Preserve** or **Reset**).

Procedure

Step 1 In the **Navigation** pane, click the **Emulator Settings** menu tab.

Step 2 Click **Start-up Inventory**.

Step 3 On the **Startup Hardware Inventory** page, click the **Import XML File** icon on the icon bar.

Step 4 Click**Browse** and navigate to the file that you want to load into the Cisco UCS Platform Emulator.

Step 5 Click **Load File**.

Step 6 Restart the Cisco UCS Platform Emulator VM to overwrite and replace the existing hardware inventory configuration with the new one, as follows:

  a) On the **Startup Hardware Inventory** page, click the **Restart Emulator with this Hardware Setup** icon on the icon bar.

  b) In the **Are you sure you want to reset UCSM Database and Restart UCS Emulator now?** field, click the **Yes** radio button.

  c) Click **Reset UCSM Database and Restart UCS Emulator**.

Importing the Equipment from a Cisco UCS Domain

Before You Begin

Changes to this setting do not take effect until you restart Cisco UCS Platform Emulator and reset the database. If you restart or reboot Cisco UCS Platform Emulator, the Cisco UCS Manager database will only be reset if the persistent setting is configured to reset the database. You can only configure the persistent setting in the Cisco UCS Platform Emulator GUI (**Emulator Settings** > **Database Persistence** > **Preserve** or **Reset**).

Note Importing a configuration using HTTPS is now supported. If HTTPS is disabled on a Cisco UCS domain, enable HTTPS redirection.

Procedure

Step 1 In the **Navigation** pane, click the **Emulator Settings** menu tab.

Step 2 Click **Start-up Inventory**.

Step 3 On the **Startup Hardware Inventory** page, click the **Import Equipment from Live UCS** icon on the icon bar.

Step 4 In the **Cisco UCS Server** field, enter the web link for the Cisco UCS Manager GUI of the Cisco UCS domain from which you want to import the equipment.

The default web link is `http://UCSManager_IP:port` , where *UCSManager_IP* represents the IP address assigned to Cisco UCS Manager. This IP address can be one of the following:

- Cluster configuration: `UCSManager_IP` represents the virtual or cluster IP address assigned to Cisco UCS Manager. Do not use the IP addresses assigned to the management port on the fabric interconnects.

- Standalone configuration: `UCSManager_IP` represents the IP address for the management port on the fabric interconnect

And where *port* represents the port used to access the Cisco UCS Manager GUI. By default, this port is 80 for HTTP access and 443 for HTTPS access.

Step 5 Enter a valid user name and password for the Cisco UCS domain.
Any user with read-only or higher privileges can access the hardware inventory configuration.

Step 6 Click **Load**.

Step 7 Restart the Cisco UCS Platform Emulator VM to overwrite and replace the existing hardware inventory configuration with the new one, as follows:

a) On the **Startup Hardware Inventory** page, click the **Restart Emulator with this Hardware Setup** icon on the icon bar.

b) In the **Are you sure you want to reset UCSM Database and Restart UCS Emulator now?** field, click the **Yes** radio button.

c) Click **Reset UCSM Database and Restart UCS Emulator**.

Loading a Saved Hardware Inventory Configuration

If you restart or reboot Cisco UCS Platform Emulator, the Cisco UCS Manager database will only be reset if the persistent setting is configured to reset the database. You can only configure the persistent setting in the Cisco UCS Platform Emulator GUI (**Emulator Settings** > **Database Persistence** > **Preserve** or **Reset**).

Procedure

Step 1   In the **Navigation** pane, click the **Emulator Settings** menu tab.

Step 2   Click **Start-up Inventory**.

Step 3   On the **Startup Hardware Inventory** page, click the **Load a Saved Configuration** icon on the icon bar.
Note   Only a user created configuration file is shown when you try to load a configuration file.

Step 4   In the menu below, click the link for the hardware inventory configuration you want to load into the Cisco UCS Platform Emulator.

Step 5   Restart the Cisco UCS Platform Emulator VM to overwrite and replace the existing hardware inventory configuration with the new one, as follows:

a) On the **Startup Hardware Inventory** page, click the **Restart Emulator with this Hardware Setup** icon on the icon bar.

b) In the **Are you sure you want to reset UCSM Database and Restart UCS Emulator now?** field, click the **Yes** radio button.

c) Click **Reset UCSM Database and Restart UCS Emulator**.

Saving the Current Hardware Inventory Configuration

You can save the current hardware inventory configuration from the **Startup Hardware Inventory** page to use in another Cisco UCS Platform Emulator VM or as a backup for the current VM. The configuration is saved as an XML file.

Procedure

Step 1   In the **Navigation** pane, click the **Emulator Settings** menu tab.

Step 2   Click **Start-up Inventory**.

Step 3   On the **Startup Hardware Inventory** page, click the **Save Configuration** icon on the icon bar.

Step 4   In the **File Name** field, enter a name for the configuration file.
The file name must include only alphanumeric chars only, dashes (-) and underscores (_). It cannot include spaces.

Step 5   Click **Save**.
The configuration file is saved in Cisco UCS Platform Emulator and added to the saved configuration list.

Exporting the Hardware Inventory Configuration as an XML File

You can save the exported XML file with the hardware inventory configuration and then import it into another Cisco UCS Platform Emulator or place it on a web server to use as a start up configuration.

Procedure

Step 1 In the **Navigation** pane, click the **Emulator Settings** menu tab.

Step 2 Click **Start-up Inventory**.

Step 3 On the **Startup Hardware Inventory** page, click the **Export Configuration as XML File** icon on the icon bar.
Cisco UCS Platform Emulator opens a new browser tab and displays the contents of the hardware inventory configuration as an XML file.

CHAPTER 7

Accessing Features in Cisco UCS Platform Emulator

This chapter includes the following sections:

Starting the Cisco UCS Manager GUI from the Cisco UCS Platform Emulator Control Panel

You can use the Cisco UCS Manager GUI to configure and manage the hardware in your Cisco UCS Platform Emulator environment.

For information about Cisco UCS Manager GUI commands, see the *Cisco UCS Manager GUI Configuration Guide*. You can access this document through the *Cisco UCS B-Series Servers Documentation Roadmap* available at the following URL: http://www.cisco.com/go/unifiedcomputing/b-series-doc .

Procedure

Step 1 In the **Navigation** pane, click the **UCS Manager** menu tab.

Step 2 Click **UCS Manager Home**.

Step 3 In the **Work** pane, click **Launch UCS Manager**.

Step 4 If a **Security** dialog box displays, do the following:

a) (Optional) Check the check box to accept all content from the IP address for Cisco UCS Platform Emulator.

b) Click **Yes** to accept the certificate and continue.

Step 5 In the **Login** dialog box, do the following:

a) In the **User Name** field, enter config.

b) In the **Password** field, enter config.

c) Click **Login**.

Accessing the Cisco Developer Network

The Cisco Developer Network provides information, documentation, and support resources for developers working with Cisco UCS. You can also access information and documentation for the Cisco UCS Manager XML API from the Cisco Developer Network.

Note Internet access is required in order to access the Cisco UCS Platform Emulator.

Procedure

Step 1 In the **Navigation** pane, click the **UCS Manager** menu tab.

Step 2 Click **UCS CDN**.

Accessing goUCS

Information About goUCS

goUCS is an application that allows you to view the communication between Cisco UCS Manager GUI and Cisco UCS. This communication is through the Cisco UCS Manager XML API. goUCS parses the Cisco UCS Manager GUI's log file and extracts the XML documents sent to Cisco UCS. goUCS also allows you to substitute attribute values in captured XML documents in order to customize commands. goUCS can greatly simplify UCS integration since programmers can mimick the Cisco UCS Manager GUI operations and customize them if necessary.

goUCS enables you to automate any action that can be performed in the Cisco UCS Manager GUI, including:

- Query for data

- Modify existing objects in the Cisco UCS domain

- Complete complex tasks in a single transaction, such as the following:

  ◦ Create ten service profiles from a service profile template

  ◦ Associate each of those service profiles with a server

  ◦ Power on each of the servers

Downloading goUCS

Note   Cisco UCS Platform Emulator must have access to the internet to download goUCS.

Procedure

Step 1   In the **Navigation** pane, click the **UCS Manager** menu tab.

Step 2   Click **GoUCS Tool Download**.

Step 3   In the **Work** pane, review the information and follow the instructions to download goUCS.

Accessing Cisco UCS PowerTool

Information about Cisco UCS PowerTool

Cisco UCS PowerTool is a Microsoft PowerShell command line toolkit and interface to Cisco UCS. You can use Cisco UCS PowerTool to integrate, automate, and orchestrate all aspects of Cisco UCS management within the data center, including network, storage and hypervisor management.

Cisco UCS includes over 100 PowerShell command-lets ("cmdlets") that enable you to integrate and automate Cisco UCS with Microsoft products and many third party products.

Downloading Cisco UCS PowerTool

Note   Cisco UCS Platform Emulator must have access to the internet to download Cisco UCS PowerTool.

Procedure

Step 1   In the **Navigation** pane, click the **UCS Manager** menu tab.

Step 2   Click **GoUCS Tool Download**.

Step 3   In the **Work** pane, review the information and follow the instructions to download Cisco UCS PowerTool.

CHAPTER **8**

Using the Managed Object Browser

This chapter includes the following sections:

Information About the Managed Object Browser

The Managed Object Browser, or Visore, that you can access through Cisco UCS Platform Emulator provides you with a graphical view of the managed objects in the XML database. You can also use the Managed Object Browser to find out what type of data Cisco UCS stores in the database for each type of managed object. In addition, since the Managed Object Browser uses the Cisco UCS Manager XML API to query the runtime managed objects and display the results, it also enables you to see the query that was used to obtain the information from the database.

For example, you can use the Managed Object Browser to see which service profiles have been configured and the XML query that was used to access that information in the database. You can also use it to view the type of data stored in the database about servers, such as the number of cores, the type of adapter, or the number of CPUs. You can then use that information when you design or debug a Cisco UCS domain.

Tip   You can also connect to and run queries with the Managed Object Browser on a running Cisco UCS domain through the following URL: `http://UCSManager_IP:port_number/visore.html`.

Managed Object Browser Page

Filter Area

The filter form is case sensitive. This area supports all simple Cisco UCS Manager XML API operations.

Name	Description
Class or DN field	Object class name or full distinguished name of a managed object.
Property field	The property of the managed object on which you want to filter the results. If you leave the **Property** field empty, the search returns all instances of the specific class.
Op drop-down list	Operator for the values of the property on which you want to filter the results. The following are valid operators are: • ==—equal to • **!=**—not equal to • **<**—less than • **>**—greater than • ≤—less than or equal to • ≥—greater than or equal to • **between** • **wildcard** • **anybit** • **allbits**
Val1 field	The first value for the property on which you want to filter.
Val2 field	The second value on which you want to filter.

Display XML of Last Query Link

The **Display XML of last query** link displays the full Cisco UCS Manager XML API translation of the most recent query run in the Managed Object Browser.

Results Area

You can bookmark any query results page in your browser to view the results again because the query is encoded in the URL.

Note Many of the managed objects are only used internally and are not generally applicable to Cisco UCS Manager program development.

Name	Description
Pink background	Separates individual managed object instances and displays the class name of the object below it.

Name	Description
Blue or green background	Indicates the property names of the managed object.
Yellow or beige background	Indicates the value of a property name.
dn property	Absolute address of each managed object in the object model.
dn link	When clicked, displays all managed objects with that dn.
Class name link	When clicked, displays all managed objects of that class.
Left arrow	When clicked, takes you to the parent object of the managed object.
Right arrow	When clicked, takes you to the child objects of the managed object.
Question mark	Links you to the XML API documentation for the managed object.

Running a Query in the Managed Object Browser

Procedure

Step 1 In the **Navigation** pane, click the **UCS Manager** menu tab.

Step 2 Click **Managed Object Browser**.

Step 3 In the **Work** pane, In the **Class or DN** field, type the class or DN of the managed object you want to query. This is the only required field in a query. For information about the available classes or DNs, see the Cisco UCS Manager XML API documentation.

Example:
If you want to search on all instances of the blade class in the object model, enter computeBlade in the **Class or DN** field. However, if you want to limit the query to a specific server, such as blade server 1 in chassis 1, enter sys/chassis-1/blade-1.

Step 4 (Optional) If you want to filter the results of your query, complete the following fields:

Name	Description
Property field	Enter a property of the managed object on which you want to filter the results of the search. For example, if you are querying computeBlade, you could enter association.

Name	Description
Op drop-down list	Choose the operator on which you want to filter the values for the property. This can be: ==, !=, <, >, ≤, ≥, between, wildcard, anybit, allbits • ==—equal to • !=—not equal to • <—less than • >—greater than • ≤—less than or equal to • ≥—greater than or equal to • **between** • **wildcard** • **anybit** • **allbits**
Val1 field	Enter an available value for the property entered in the **Property** field. For example, if you are filtering on the association property, you could enter unassociated.
Val2 field	Enter an available second value for the property entered in the **Property** field.

Step 5   Click **Run Query**

C H A P T E R **9**

Accessing the Cisco UCS Manager XML API Documentation

This chapter includes the following sections:

Information About the Cisco UCS Manager XML API

The Cisco UCS Manager XML API is a programmatic interface to Cisco Unified Computing System (UCS). The API accepts XML documents through HTTP or HTTPS. Developers can use any programming language to generate XML documents that contain the API methods. Configuration and state information for Cisco UCS is stored in a hierarchical tree structure known as the management information tree, which is completely accessible through the XML API.

The Cisco UCS Manager XML API supports operations on a single object or an object hierarchy. A single API call can make changes to a single attribute of an object such as the power state of a blade, or many objects such as chassis, blades, adapters, policies, and other configurable components.

The API operates in forgiving mode. Missing attributes are substituted with default values (if applicable) that are maintained in the internal data management engine (DME). The DME ignores incorrect attributes. If multiple managed objects (MOs) are being configured (for example, virtual NICs), and any of the MOs cannot be configured, the API stops its operation. It rolls back the management information tree to its prior state (before the operation) and returns an error.

Updates to MOs and properties conform to the existing object model, ensuring backward compatibility. If existing properties are changed during a product upgrade, they are managed during the database load after the upgrade. New properties are assigned default values.

Operation of the API is transactional and terminates on a single data model. Cisco UCS is responsible for all endpoint communication, such as state updates; users cannot communicate directly to endpoints. In this way, developers are relieved from the task of administering isolated, individual component configurations.

The API model includes the following programmatic entities:

- Classes—Define the properties and states of objects in the management information tree.

- Methods—Actions that the API performs on one or more objects.

- Types—Object properties that map values to the object state (for example, `equipmentPresence`).

A typical request comes into the DME and is placed in the transactor queue in FIFO order. The transactor gets the request from the queue, interprets the request, and performs an authorization check. After the request is confirmed, the transactor updates the management information tree. This complete operation is done in a single transaction.

Full event subscription is enabled. After subscribing, any event notification is sent along with its type of state change.

Information About the Cisco UCS Manager XML API Documentation

The Cisco UCS Manager XML API documentation that you can access through the Cisco UCS Platform Emulator provides information about the Cisco UCS Manager information model

When you view the XML API documentation, the navigation frames on the left list the following information:

- Managed objects
- Methods
- Types
- Fault rules
- Finite State Machine (FSM) rules

For more information about the Cisco UCS Manager XML API, see the Cisco UCS Manager XML API Programmer's Guide.

Accessing the Cisco UCS Manager XML API Documentation

Procedure

Step 1 In the **Navigation** pane, click the **UCS Manager** menu tab.

Step 2 Click **XML API Docs**.
The XML API docs are displayed in the **Work** pane. The links provide navigation through the information model.

Saving the Cisco UCS Manager XML API Schema and Samples

Cisco provides the Cisco UCS Manager XML API schema and samples for you use as a reference when programming with the Cisco UCS Manager XML API.

Procedure

Step 1 In the **Navigation** pane, click the **UCS Manager** menu tab.

Step 2 Click **API Schema & Samples**.

Step 3 Follow the prompts to save and extract the files to a location on your hard drive.