Cisco UCS S3260 Server Integration with Cisco UCS Manager, Release 3.2

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Preface

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`.
CLI commands	CLI command keywords appear in **this font**. Variables in a CLI command appear in *this font*.
[ ]	Elements in square brackets are optional.

Text Type	Indication
{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.

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

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

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.

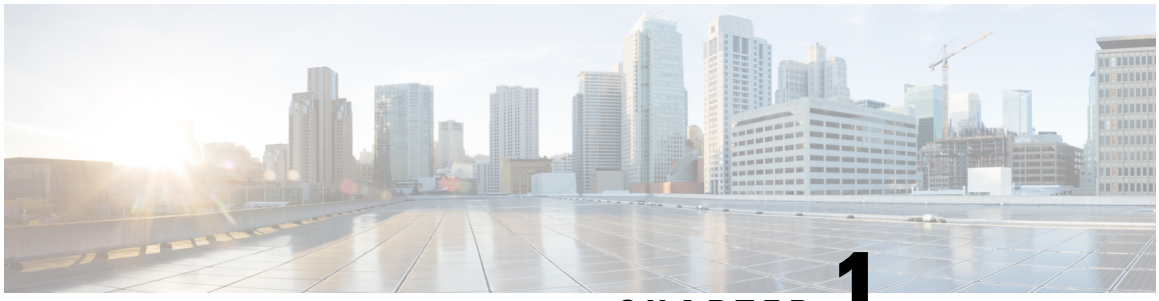
For information on supported firmware versions and supported UCS Manager versions for the rack servers that are integrated with the UCS Manager for management, refer to Release Bundle Contents for Cisco UCS Software.

Other Documentation Resources

Follow Cisco UCS Docs on Twitter to receive document update notifications.

Documentation Feedback

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



CHAPTER 1

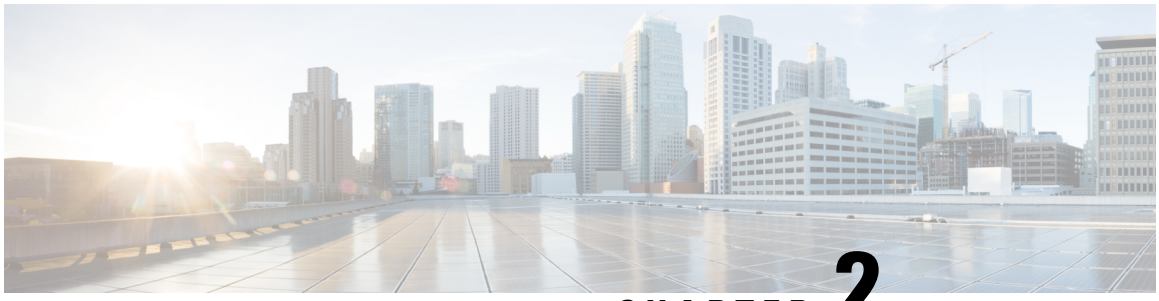
New and Changed Information

New and Changed Information for This Release

The following table provides an overview of the significant changes to this guide for this current release. The table does not provide an exhaustive list of all changes made to this guide or of all new features in this release.

Table 1: New Features and Changed Behavior in Cisco UCS Manager, 3.2(3a)

Feature	Description	Where Documented
6G-12G Mixed Mode	**6G-12G Mixed Mode** is available for **SAS Expander Configuration Policy**.	Creating Sas Expander Configuration Policy, on page 55
Single Path support for UCS S3260 Dual Pass Through (UCS-S3260-DHBA) controller	In Cisco UCS S3260 M5 servers, Cisco UCS Manager enables single path access to disks by configuring a single DiskPort per disk slot.	Disk Zoning Policies, on page 48
Extended support for Cisco UCS S3260 M5 Server	Cisco UCS Manager support for the UCS S3260 M5 rack-mount server.	About the Cisco UCS S3260 System, on page 3



CHAPTER 2

Overview

About the Cisco UCS S3260 System

The Cisco UCS S3260 is a dense storage rack server with dual server nodes, optimized for large data sets used in environments such as Big data, cloud, object storage, and content delivery. It belongs to the Cisco UCS S-Series rack-mount servers product family.

Beginning with Cisco UCS Manager Release 3.1(3), Cisco UCS C3260/C3X60 is renamed to Cisco UCS S3260. You may still see certain components in the system labeled as C3260/C3X60. For this release, the terms S3260 and C3260/C3X60 are used interchangeably. Both, S3260 and C3260/C3X60, refer to the same hardware component.

Cisco UCS Manager Release 3.2(3) introduces Cisco UCS S3260 M5 server. Cisco UCS S3260 M5 server integrates with Cisco UCS Manager the same way Cisco UCS S3260 does. The information and procedures in this document can be used for both Cisco UCS S3260 M4 and Cisco UCS S3260 M5 servers.

The Cisco UCS S3260 system is designed to operate in a standalone environment and as part of the Cisco Unified Computing System with Cisco UCS Manager integration. It assumes almost the same characteristics of its predecessor, Cisco UCS C3160, but with the following additional features:

- System IO Controllers (SIOC) with Cisco VIC 1300 Series Embedded Chip supporting dual-port 40Gbps
- Support of up to two server modules
- Capability to operate in a standalone mode and with Cisco UCS Manager
- Individual hard disk drives (HDD) can be assigned to either server in the dedicated or shared mode

In addition, one of the server slots in the Cisco UCS S3260 system can be utilized by a storage expansion module for an additional four 3.5" drives. The server modules can also accommodate two solid state drives (SSD) for internal storage dedicated to that module. The chassis supports Serial Attached SCSI (SAS) expanders that can be configured to assign the 3.5" drives to individual server modules.

Beginning with release 3.1(3), Cisco UCS S3260 system supports the following:

- Server SIOC Connectivity functionality
- Second RAID controller in the optional I/O expander module
- Dual HBA Controller

Note If a Cisco UCS S3260 system has Dual HBA Controller then you cannot downgrade Cisco UCS Manager to any release earlier than 3.1(3).

In a Cisco UCS S3260 system, both servers should have either dual RAID controllers or dual HBA controllers. Mixing the controller types is not supported.

Cisco UCS S3260 system supports Server SIOC Connectivity functionality. Using this functionality, you can configure the data path through both the primary and auxiliary SIOCs when the chassis has single server and dual SIOCs set up. For more details, see Server SIOC Connectivity Functionality, on page 11.

Cisco UCS S3260 system supports Second RAID controller in the optional I/O expander module that attaches to the top of the server node. You cannot downgrade Cisco UCS Manager, BMC, CMC, and BIOS to any release earlier than 3.1(3) depending on the number of disk zoned to the controllers :

Controller Configuration	Is Downgrade Possible?
Two controllers in the server (one in optional I/O expander) or one controller in the server (in optional I/O expander) and at least one disk is zoned to the controller in the optional I/O expander.	No
Two controllers in the server (one in optional I/O expander) or one controller in the server (in optional I/O expander) and at least one disk is pre-provisioned to controller in the optional I/O expander.	No
Two controllers in the server (one in optional I/O expander) or one controller in the server (in any slot) and disk are not zoned or pre-prvosioned to the controller in optional I/O expander.	Yes

License Requirement

ETH_PORT_ACTIVATION_PKG (for 6200 FI series), 40G_ETH_PORT_ACTIVATION_PKG (for 6300 FI - 6332), 10G_PORT_ACTIVATION_PKG (for 6300 FI - 6332-16UP), licenses are used when S3260 system is connected to FI as appliance (appliance port) or Cisco UCS Manager managed node (server port).

For more information on license requirement, refer *Server License Management* chapter in *Cisco UCS Manager Server Management Guide*.

How to Use This Guide

Cisco UCS S3260 systems managed through Cisco UCS Manager support most of the features that are supported by other S-Series Rack Servers managed through Cisco UCS Manager. Cisco UCS S3260 systems also introduce some new features and management capabilities to Cisco UCS Manager. These features and management capabilities are detailed in the following chapters of this guide:

- Overview—Provides detailed information about the architecture of the Cisco UCS S3260 system and its connectivity when managed through Cisco UCS Manager.
- Migration to Cisco UCS Manager-Managed Cisco UCS S3260—Describes the steps required to migrate either a standalone Cisco UCS C3160 or a standalone Cisco UCS S3260 server to a Cisco UCS Manager-managed Cisco UCS S3260 server.
- System Related Policies—Describes the chassis discovery policy and chassis connectivity policy that are applicable to Cisco UCS S3260 systems.
- Chassis Profiles—Provides detailed information about Chassis Profiles and Chassis Profile Templates, which can now be used to define the storage, firmware and maintenance characteristics of a Cisco UCS S3260 chassis.
- Storage Management—Describes the new storage components in a Cisco UCS S3260 system, and how to manage them.
- Firmware Management—Provides detailed information about Chassis Firmware Packages and the endpoints of Cisco UCS S3260 on which firmware can be updated manually.
- Chassis Management—Provides detailed information about the management of the Cisco UCS S3260 chassis.
- Server Management—Provides detailed information about the management of the Cisco UCS S3260 Server Node.
- SIOC Management—Provides detailed information about the management of the System Input/Output controllers (SIOCs) that are part of a Cisco UCS S3260 chassis.

All features and configuration tasks that are supported by Cisco UCS Manager Release 3.1 and later releases are described in the configuration guides that are listed in the following table. These guides must be used with this quick reference guide for Cisco UCS S3260 systems.

Cisco UCS S3260 System Architectural Overview

Architectural Overview

Figure 1: Cisco UCS S3260 System Overall Architecture Diagram

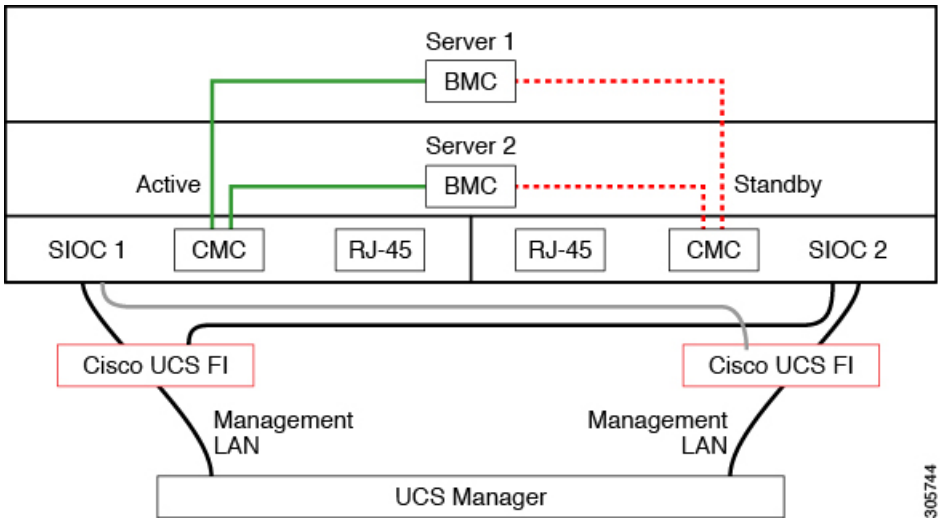
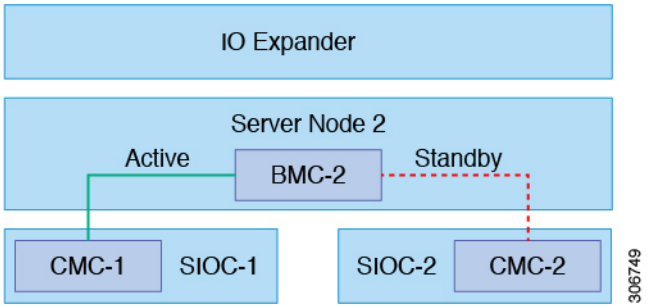


Figure 2: Cisco UCS S3260 System (with Single node Dual SIOC) Overall Architecture Diagram



The system uses a chassis management controller (CMC) to manage the server nodes. Each system I/O controller (SIOC) module contains an onboard CMC. If you have two SIOCs, the two CMCs act in an active/standby organization. The CMC in the SIOC that you log into with the Cisco IMC interface becomes the active CMC and it allows you to manage the BMCs in both server nodes.

All user interfaces run only on the active CMC. Configuration changes are automatically synchronized between the active and the standby CMCs.

When you power-cycle the system, the CMC in SIOC 1 is the active CMC by default. The active CMC will fail over to the standby CMC when any of the following conditions occur:

- The active CMC is rebooted or fails.
- The SIOC with active CMC is removed.
- Network connectivity is lost on the active CMC.

Building Blocks and Connectivity

The Cisco UCS S3260 chassis has a modular architecture consisting of the following modules:

Base Chassis

Contains four power supplies, eight fans, and a rail kit.

Server Node

One or two server nodes, each with two CPUs, 128, 256, or 512 GB of DIMM memory, and a RAID card in pass-through mode or a RAID card with a 1 GB or 4 GB cache.

System I/O Controller (SIOC) (Release 3.2(3) and earlier)

One or two System I/O Controllers, each of which includes a 1300-series VIC. The Cisco UCS S3260 SIOC has an integrated Cisco UCS VIC 1300 Series chip onboard, so there is no removable adapter card.

Optional Drive Expansion Node

Choice of either 4 x 4 TB drives (total capacity: 16TB), 4 x 6 TB drives (total capacity: 24 TB), or 4 x 10 TB drives (total capacity: 40TB).

Solid-State Boot Drives

Up to two SSDs per server node.

Cisco UCS Fabric Connectivity

The Cisco UCS S3260 chassis can be connected in one of the following ways:

- Direct connection to the fabric interconnects.
- Connectivity using FEX.

Direct Connection to Cisco UCS Fabric Interconnects

1. **Cisco UCS 6200 Series Fabric Interconnects**: The SIOCs can be connected directly to the 6248 FI ports. The SIOC uplink can be connected to an FI port in one of two ways:
   - 10G connectivity to a single FI port using a QSA cable
   - 4*10G port channel connectivity to 4 FI ports using a break-out cable
2. **Cisco UCS 6300 Series Fabric Interconnects**: The SIOC uplink can be connected directly to a 6300 Series FI port through a single 40G connection.

Connectivity using FEX

N2348UPQ and 2232 FEX: The SIOCs can be connected directly to the FEX ports through a single 10G connection using a QSA connector.

Deployment Options

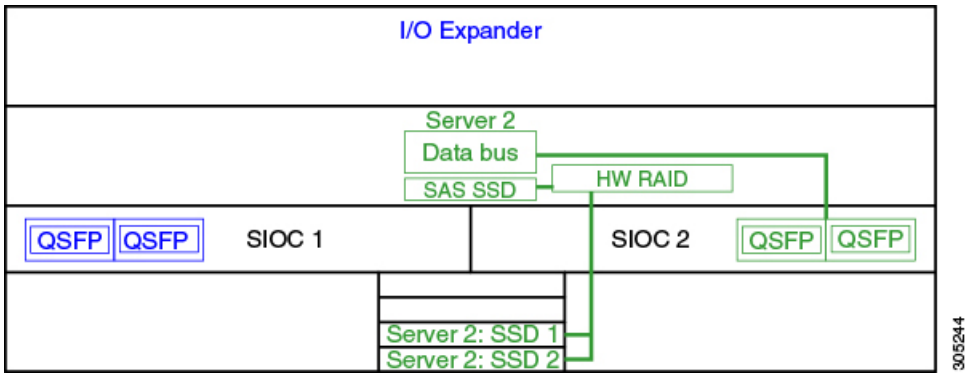
The following sections describe the three main deployment options for Cisco UCS S3260 systems—single and dual server connectivity.

Single Server Connectivity

The following illustration shows the associations for a single-server system:

- The data bus in server node 2 connects through SIOC 2.
- Server 2 SSDs 1 and 2 can be controlled by a RAID controller card in server node 2.

Figure 3: Single Server with I/O Expander



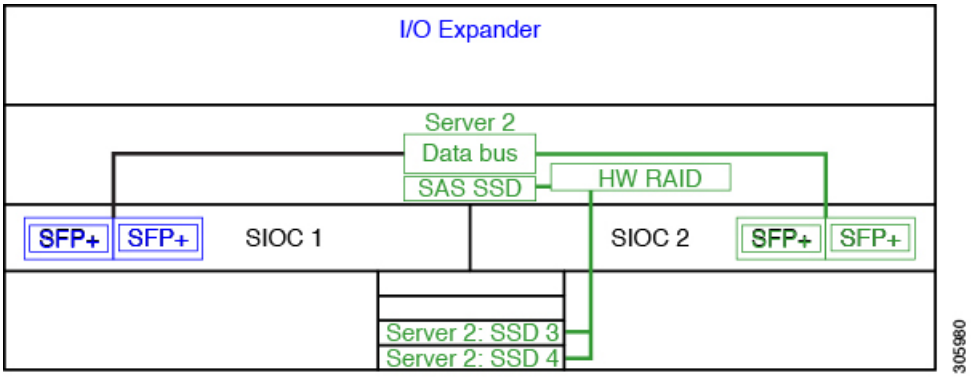
Single Server Connectivity (with Server SIOC Connectivity Functionality)

When a Cisco UCS S3260 system has single server and dual SIOCs, users can enable the Server SIOC Connectivity functionality. The following illustration shows the associations for a single-server system with Server SIOC Connectivity functionality enabled:

- The data bus in server node 2 connects through both the primary and auxiliary SIOCs.

Note Primary SIOC for server 1 is SIOC 1 and for Server 2 is SIOC 2. Auxiliary SIOC for server 1 is SIOC 2 and for server 2 is SIOC 1.

Figure 4: Single Server Single SIOC with Server SIOC Connectivity Functionality

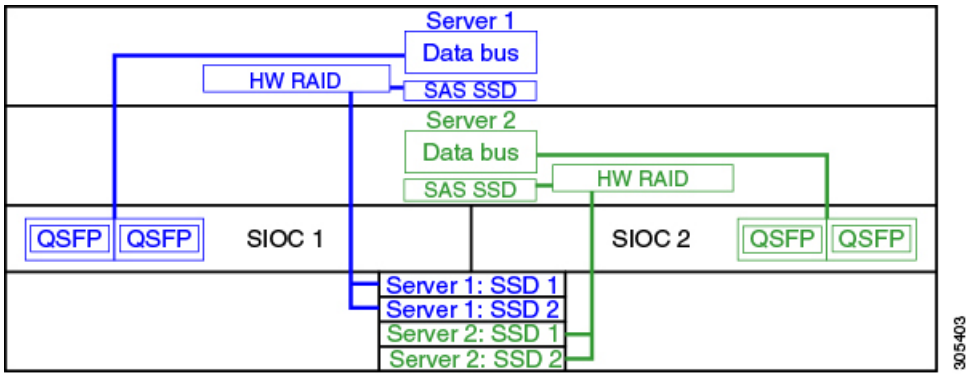


Dual Server Connectivity

In this mode of deployment, each server slot contains an independent server blade. The redundant server nodes along with the various components such as SAS SSDs provide high availability.

The following illustration shows a dual server system. For Cisco UCS C3X60 M3 server nodes, the PCH controller for Server 1 controls SSD1 and SSD2, and the PCH controller for Server 2 controls SSD3 and SSD4. For Cisco UCS C3X60 M4 server nodes, the RAID controller card on the servers controls the respective SSDs.

Figure 5: Dual Server System



Important For detailed information on storage controller considerations for a Cisco UCS S3260 system such as storage controllers supported for the various server nodes and the associated service notes, please refer to the "Storage Controllers" section in the *Cisco UCS S3260 Storage Server Installation and Service Guide.*

Management Through Cisco UCS Manager

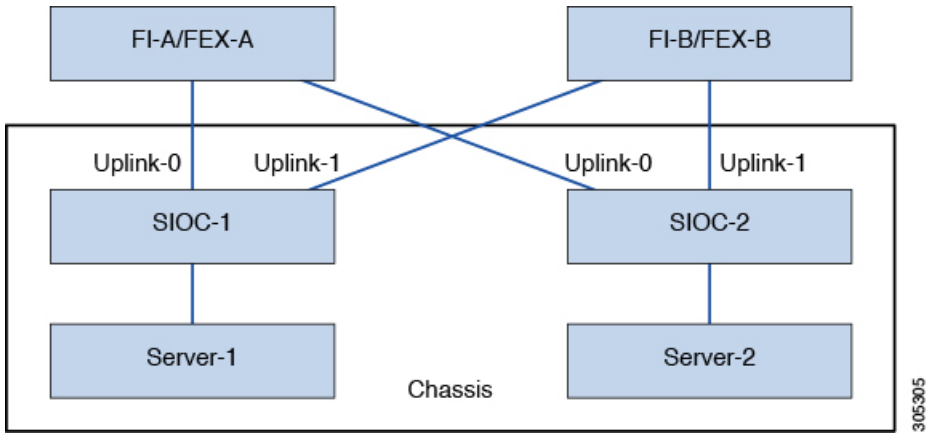
The Cisco UCS S3260 system can operate in either standalone mode or can be managed by Cisco UCS Manager.

Note UCS mini 6324 does not support Cisco UCS Manager integration of Cisco UCS S3260.

Dual Server Connectivity

The following illustration describes the connectivity for a Cisco UCS S3260 system with dual servers managed by Cisco UCS Manager:

Figure 6: Cisco UCS S3260 System with Cisco UCS Manager

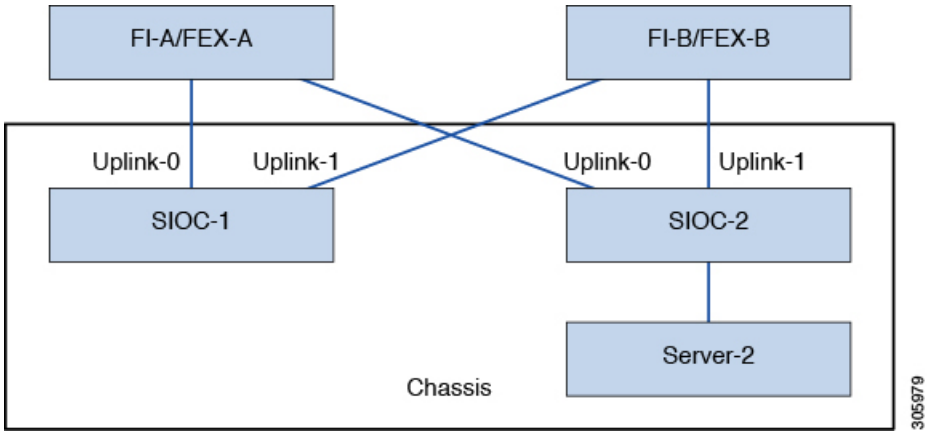


The 40G ports on the SIOCs can be connected to either a fabric interconnects or a FEX module. On each SIOC, one port can be connected to the primary fabric interconnect/FEX and the other port can be connected to the subordinate fabric interconnect/FEX. Traffic from each SIOC can reach fabric interconnects and FEXs.

Single Server and Single SIOC Connectivity

The following illustration describes the connectivity for a Cisco UCS S3260 system with single server and single SIOC managed by Cisco UCS Manager without Server SIOC Connectivity functionality :

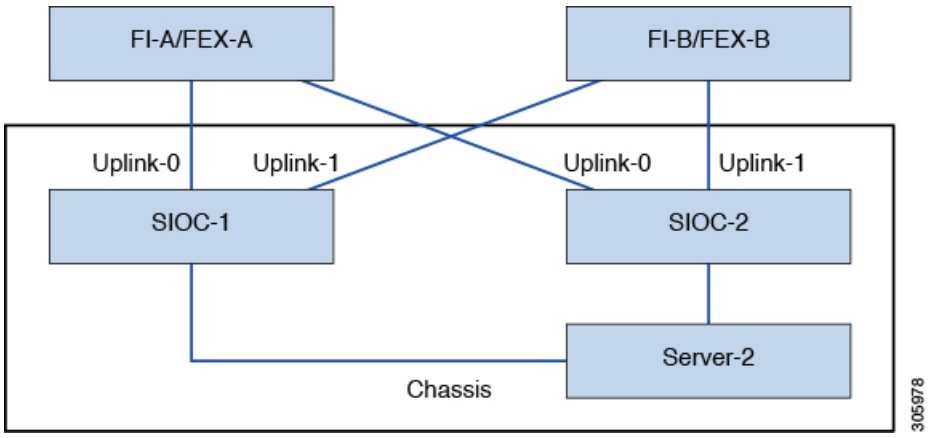
Figure 7: Cisco UCS S3260 System with Cisco UCS Manager (Single Server Single SIOC without Server SIOC Connectivity Functionality)



Single Server and Dual SIOC Connectivity (with Server SIOC Connectivity Functionality)

The following illustration describes the connectivity for a Cisco UCS S3260 system with single server and dual SIOCs managed by Cisco UCS Manager with the Server SIOC Connectivity functionality:

Figure 8: Cisco UCS S3260 System with Cisco UCS Manager (Single Server Single SIOC with Server SIOC Connectivity Feature)



Server SIOC Connectivity Functionality

Beginning with release 3.1(3), Cisco UCS S3260 system supports Server SIOC Connectivity functionality. Using this functionality, you can configure the data path through both the primary and auxiliary SIOCs when the chassis has single server and dual SIOCs set up.

Note Primary SIOC for server 1 is SIOC 1 and for Server 2 is SIOC 2. Auxiliary SIOC for server 1 is SIOC 2 and for server 2 is SIOC 1.

You can configure Server SIOC Connectivity functionality through chassis profile using **Compute Conn Policy** by selecting **single-server-dual-sioc** option.

Prerequisites for Server SIOC Connectivity Functionality

This functionality works only under the following conditions:

- Cisco UCS S3260 system is running release 3.1(3) or later.
- Associated BIOS, BMC and CMC firmware are running 3.1(3) or later.
- Chassis has single server and dual SIOCs.

Workflow - Cisco UCS Manager Upgrade

After Cisco UCS Manager is upgraded to release 3.1(3) or later release, chassis discovery is triggered and UCSM gets the operational state of Server SIOC Connectivity feature. User can now enable the feature using the **single-server-dual-sioc** option available for **Compute Conn Policy** under chassis profile.

Note Any change to Compute Connection Policy settings raises a pending-event. Chassis profile association starts automatically only after you acknowledge the pending-event.

In GUI, once **Compute Conn Policy** property is set to **single-server-dual-sioc**, then Cisco UCS Manager displays a message, warning that this operation causes server reboot. After acknowledging the message, chassis association is triggered. When Server SIOC Connectivity configuration is successfully deployed, Cisco UCS Manager automatically triggers server deep discovery.

In CLI, once **Compute Conn Policy** property is set to **single-server-dual-sioc**, run the **apply pending-changes immediate** command to start association.

Once **Compute Conn Policy** is set to **single-server-dual-sioc**, you cannot downgrade Cisco UCS Manager to any release earlier than 3.1(3). Similarly, Cisco UCS Manager prevents BMC, CMC, and BIOS downgrade to any release earlier than 3.1(3).

Conditions Impacting the Functionality when single-server-dual-sioc Option is Enabled

- Server Replacement - When the server is replaced, the blade slot mismatch is detected. When you acknowledge the slot, server deep discovery is triggered followed by service profile association. When service profile association is triggered, then there can be the following two situations:

  1. When BIOS/BMC firmware is specified in the host firmware. If the BIOS/BMC firmware support Single Server Dual SIOC connectivity, then the service profile association process continues. If the BIOS/BMC firmware do not support Single Server Dual SIOC connectivity, then the association raises a config-issue.
  2. When BIOS/BMC firmware is not specified in the host firmware. Cisco UCS Manager checks if the running BIOS/BMC version support Single Server Dual SIOC connectivity. If the feature is not supported, then a config-issue is raised.

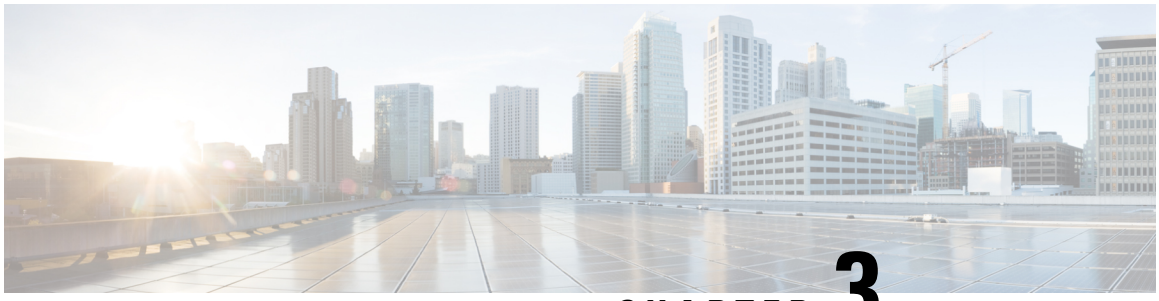
- SIOC Replacement - If the replaced SIOC is running 3.1(3) or later, then a user acknowledgment message is displayed when one of the SIOC is seated. Once you acknowledge SIOC action, then Cisco UCS Manager establishes the connectivity between the FI and the SIOC. In addition to that Cisco UCS Manager re-acknowledges the server that has the data path connectivity through this SIOC. The VNICs configured for the server are also re-acknowledged. See SIOC Removal or Replacement, on page 97 for more information.

  If the replaced SIOC is running an earlier firmware version, then Cisco UCS Manager automatically changes the **Server SIOC Connectivity** operational state to **single-server-single-sioc**. You may update the firmware of the replaced SIOC by re-triggering chassis profile association.

- SIOC Removal - When any SIOC is removed, Cisco UCS Manager marks the SIOC and the corresponding adapter unit created under the server as missing.

- Adding Server in Chassis - When a new server is added in the chassis with this functionality enabled, then server discovery fails.

- Chassis/Server Disassociation - Server SIOC Connectivity functionality is not disabled if a server or chassis is disassociated.



CHAPTER 3

Migration to UCSM-Managed Cisco UCS S3260

This chapter includes the following sections:

Migration to UCSM Managed Cisco UCS S3260

Note Direct migration of Cisco UCS C3160 to UCSM managed Cisco UCS S3260 is not supported. First migrate standalone Cisco UCS C3160 to standalone Cisco UCS S3260 and then to UCSM managed Cisco UCS S3260.

Migrating Standalone Cisco UCS C3160 to UCSM Managed Cisco UCS S3260

To migrate standalone Cisco UCS C3160 to UCSM Managed Cisco UCS S3260:

1. Standalone Cisco UCS C3160 to Standalone Cisco UCS Cisco UCS S3260
2. Standalone Cisco UCS Cisco UCS S3260 to UCSM managed Cisco UCS S3260
3. Configure Server Ports Using Cisco UCS Manager

Migrating Standalone Cisco UCS Cisco UCS S3260 to UCSM Managed Cisco UCS S3260

To migrate standalone Cisco UCS Cisco UCS S3260 to UCSM Managed Cisco UCS S3260:

1. Standalone Cisco UCS Cisco UCS S3260 to UCSM managed Cisco UCS S3260
2. Configure Server Ports Using Cisco UCS Manager

Migrating Standalone Cisco UCS C3160 Server to Cisco UCS S3260 Server

To migrate Cisco UCS C3160 server to Cisco UCS S3260 Server, see Upgrading to Cisco UCS S3260 System With C3X60 M4 Server Nodes.

Migrating Standalone 3260 to UCSM Managed 3260

Prerequisites for Migrating Standalone Cisco UCS S3260 to UCSM Managed Cisco UCS S3260

Ensure that the following conditions are met before starting the migrating procedure:

- For M4 server, if the system is running an earlier version, download and run the Cisco UCS S3260 Host Upgrade Utility (HUU) for release 2.0(9) or later. Use the Host Upgrade Utility User Guide for release 2.0(9) or later for instructions on downloading and using the utility, see the instructions in the guide for your release: HUU Guides.
- For M5 server, download and run the Cisco UCS S3260 Host Upgrade Utility (HUU) for release 3.2(3) or later. Use the Host Upgrade Utility User Guide for release 3.2(3) or later for instructions on downloading and using the utility, see the instructions in the guide for your release: HUU Guides.
- Up to five IP addresses, either configured in your DHCP server or manually entered for static IP addresses. See System IP Addresses, on page 18 for more information.
- It is recommended to make a note of the existing system configurations before migrating to UCSM managed Cisco UCS S3260. These configurations can include the following:
  - Server UUID
  - Storage configuration
  - Network configuration
  - Boot policy
  - Number of vNICs
  - vNIC placements
  - MAC addresses
  - MTU

  You can create these configurations again using Cisco UCS Manager after the migration.
- If the system boot volume is created out of chassis HDD, then perform Booting From Chassis HDD, on page 15.

Booting From Chassis HDD

Before you begin

Before migrating to UCSM Managed Cisco UCS S3260, perform this procedure only if the system boot volume is created out of chassis HDD.

Procedure

Step 1 Associate the chassis with a chassis profile in which **Disk Zoning Policy** is set to **Preserve Config**.

For more information, see *Creating a Chassis Profile with the Wizard* for GUI procedure or *Creating a Chassis Profile* for CLI procedure.

Step 2 Within the service profile for the server, create a storage profile with a LUN using the **Prepare Claim Local LUN** option.

Note the name of the LUN. For more information on storage profiles, see http://www.cisco.com/c/en/us/td/docs/unified_computing/ucs/ucs-manager/GUI-User-Guides/Storage-Mgmt/3-1/b_UCSM_GUI_Storage_Management_Guide_3_1/b_UCSM_GUI_Storage_Management_Guide_3_1_chapter_010000.html#d1049e1627a1635.

Step 3 After associating the service profile, go to the storage profile on the service profile and select **Reclaim orphaned LUN** and choose the LUN (LUN on the chassis HDDs) for reclaim.

Step 4 In the boot policy, define the local LUN with the same name as noted in step 2.

What to do next

Proceed to Migrating from Standalone Cisco UCS S3260 to UCSM Managed Cisco UCS S3260, on page 15.

Migrating from Standalone Cisco UCS S3260 to UCSM Managed Cisco UCS S3260

Important If the system is running an earlier version than 2.0(13), perform the following procedure to migrate standalone Cisco UCS S3260 to UCSM managed Cisco UCS S3260.

Procedure

Step 1 Use the Cisco UCS S3260 HUU for 2.0(13) to upgrade the entire system to Cisco IMC release 2.0(13). Run the HUU for all the server nodes in Cisco UCS S3260 system.

Step 2 Shut down and remove power from the entire chassis. You must disconnect all power cords to completely remove power.

Step 3 Connect a keyboard and monitor to the system:

1. Connect a KVM cable (Cisco PID N20-BKVM) to the external KVM connector on the server node at the rear of the system.
2. Connect a VGA monitor and a USB keyboard to the connectors on the KVM cable.

Step 4 Connect power cords and then power on the system. Watch for the prompt to press F8.

Step 5 When prompted, press **F8** to enter the Cisco IMC Configuration Utility.

Step 6 Configure the networking properties for your desired IP addresses, NIC mode, and NIC redundancy.

1. Be aware of the Cisco UCS S3260 system requirement to set as many as five IP addresses. See System IP Addresses, on page 18 for more information. At this point in the procedure, the system requires three addresses:
   - One management IP address
   - One CMC address for the each SIOC
   - One BMC address for each server nodes

   Note If you use a DHCP server, the addresses are defined by the DHCP server. If you disable DHCP, you must set your own static management IP addresses and network settings.
2. Make networking settings using the Cisco IMC Configuration Utility, which you opened by pressing F8 during boot. See *Setting Up the System Using the Cisco IMC Configuration Utility* at http://www.cisco.com/c/en/us/td/docs/unified_computing/ucs/s/hw/S3260/install/S3260.html.
3. If you want to set static IP addresses for the CMC and BMC controllers, you will be directed to use the Cisco IMC management interface. See *Setting Static CMC and BMC Internal IP Addresses* at http://www.cisco.com/c/en/us/td/docs/unified_computing/ucs/s/hw/S3260/install/S3260.html.

Step 7 Upgrade the remaining system components to Cisco IMC release 2.0(13) or later by using the Cisco UCS Host Upgrade Utility.

Use the Host Upgrade Utility User Guide for release 2.0(13) or later for instructions on downloading and using the utility: HUU Guides

After the upgrade completes, Cisco UCS S3260 system is ready for UCSM integration.

Step 8 Watch for the prompt to press F8 and when prompted, press **F8** to enter the Cisco IMC Configuration Utility.

Step 9 Refer Resetting Cisco IMC to Factory Defaults to set the server to factory defaults or perform the following steps to use the utility to set the server controller to factory defaults:

1. Press **F1** to go to the second screen of the utility.
2. Select the **Chassis Controller Configuration** option under Factory Default. **Do not** select **Server Controller Configuration**.
3. Press **F10** to save changes and reboot the BMC.
4. Wait for the reboot to complete (approximately five minutes).

Step 10 Connect the 40G ports on the SIOCs to either a fabric Interconnect or a FEX module.

On each SIOC, one port is attached to FI-A/FEX-A and the other port is attached to FI-B/FEX-B. Traffic from each SIOC can reach both FIs/FEXs. Refer Cisco UCS S3260 System Architectural Overview, on page 6.

What to do next

Configure the server ports. Refer Configuring Server Ports Using Cisco UCS Manager, on page 18.

Migrating from Standalone Cisco UCS S3260 to UCSM Managed Cisco UCS S3260 [2.0(13) or later version]

Important If the system is already running 2.0(13) or later version, perform the following procedure to migrate standalone Cisco UCS S3260 to UCSM managed Cisco UCS S3260.

Procedure

Step 1 Shut down and remove power from the entire chassis. You must disconnect all power cords to completely remove power.

Step 2 Connect a keyboard and monitor to the system:

1. Connect a KVM cable (Cisco PID N20-BKVM) to the external KVM connector on the server node at the rear of the system.
2. Connect a VGA monitor and a USB keyboard to the connectors on the KVM cable.

Step 3 Connect power cords and then power on the system. Watch for the prompt to press F8.

Step 4 When prompted, press **F8** to enter the Cisco IMC Configuration Utility.

Step 5 Refer Resetting Cisco IMC to Factory Defaults to set the server to factory defaults or perform the following steps to use the utility to set the server controller to factory defaults:

1. Press **F1** to go to the second screen of the utility.
2. Select the **Chassis Controller Configuration** option under Factory Default. **Do not** select **Server Controller Configuration**.
3. Press **F10** to save changes and reboot the BMC.
4. Wait for the reboot to complete (approximately five minutes).

Step 6 Connect the 40G ports on the SIOCs to either a fabric Interconnect or a FEX module.

On each SIOC, one port is attached to FI-A/FEX-A and the other port is attached to FI-B/FEX-B. Traffic from each SIOC can reach both FIs/FEXs. Refer Cisco UCS S3260 System Architectural Overview, on page 6.

What to do next

Configure the server ports. Refer Configuring Server Ports Using Cisco UCS Manager, on page 18.

System IP Addresses

A Cisco UCS S3260 system can have up to five IP addresses:

Note All controllers present in the system must have IP addresses assigned in order to communicate with each other. All IP addresses can be assigned by your DHCP server, or you can assign static IP addresses.

- Management IP—This is the overall system virtual IP address. You log into this address when you access the system's Cisco IMC interface through your LAN connection to the active chassis management controller in SIOC 1 or SIOC 2.
- SIOC 1 CMC IP—This is the internal address for the chassis management controller (CMC) in SIOC 1. This address can be assigned by your DHCP server or you can set a static address by using the Cisco IMC interface.
- SIOC 2 CMC IP—This is the internal address for the CMC in SIOC 2 (if installed). This address can be assigned by your DHCP server or you can set a static address by using the Cisco IMC interface.
- Server 1 BMC IP—This is the internal address for the board management controller (BMC) in server node 1. This address can be assigned by your DHCP server or you can set a static address by using the Cisco IMC interface.
- Server 2 BMC IP—This is the internal address for the BMC in server node 2 (if installed). This address can be assigned by your DHCP server or you can set a static address by using the Cisco IMC interface.

Configuring Server Ports Using Cisco UCS Manager

Perform the following procedure to configure Ethernet ports as server ports. After the ports are configured as server ports, the migration process is complete.

Note If the Ethernet ports connected to standalone Cisco UCS S3260 were already configured as appliance ports, then re-configure them as server ports.

Procedure

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

Step 2 Expand **Equipment** > **Fabric Interconnects** > ***Fabric_Interconnect_Name*** > **Fixed Module** > **Ethernet Ports**.

Step 3 Click a port under the **Ethernet Ports** node.

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

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

Step 6 From the drop-down list, choose **Configure as Server Port**.

What to do next

This completes the migration process. Cisco UCS Manager automatically discovers the S3260 Chassis. Chassis Discovery Policy, on page 21 provides more information about chassis discovery. Server Management, on page 83 provides more information how to use the Cisco UCS Manager to manage the server.

You can recreate configurations that existed in the standalone Cisco UCS S3260 by using Cisco UCS Manager. Cisco UCS Manager configuration guides listed under How to Use This Guide, on page 5 provide detailed information.

Migrating from UCSM Managed Cisco UCS S3260 M4 to UCSM Managed Cisco UCS S3260 M5

Before you begin

Ensure that the following conditions are met before starting the migrating procedure:

- If the system is running an earlier version, download and run the Cisco UCS S3260 Host Upgrade Utility (HUU) for release 3.2(3) or later. Use the Host Upgrade Utility User Guide for release 3.2(3) or later for instructions on downloading and using the utility, see the instructions in the guide for your release: HUU Guides.

Procedure

Step 1 Decommission the Cisco UCS S3260 M4 server from the chassis.

Refer Decommissioning a Cisco UCS S3260 Server Node, on page 89.

Step 2 Shut down and remove power from the entire system. You must disconnect all power cords to completely remove power.

Step 3 Remove the existing M4 server node and replace it with a new M5 server node in either server bay.

Step 4 Connect power cords and then power on the system.

What to do next

You must re-acknowledge the slot for Cisco UCS Manager to rediscover the server.

Migrating from UCSM Managed Cisco UCS S3260 to Standalone Cisco UCS S3260

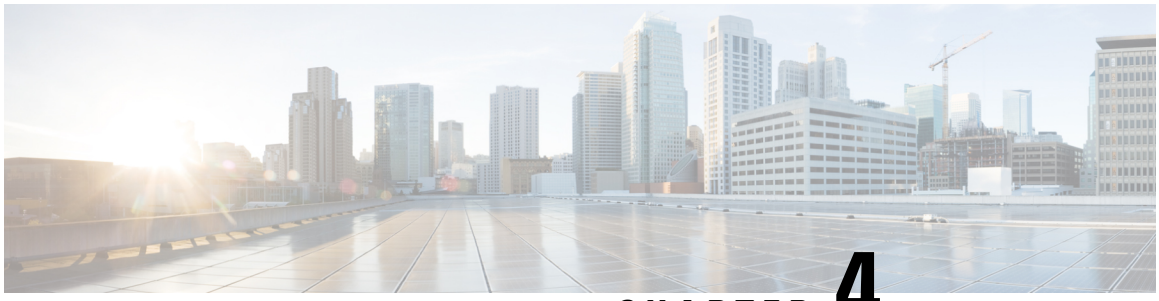
Procedure

Step 1 Decommission the chassis. See *Decommissioning a Chassis* procedure in *Chassis Management* chapter.

Step 2 Disconnect the SIOC cables.

What to do next

This completes the migration process. The chassis can now be used in standalone mode. For further configuration, see the Configuration guides for Cisco UCS S3260 system to manage the server. Cisco UCS S3260 system configuration guides are located at: http://www.cisco.com/c/en/us/support/servers-unified-computing/ucs-c-series-integrated-management-controller/products-installation-and-configuration-guides-list.html.



CHAPTER 4

Equipment Related Policies

Chassis Discovery Policy

The chassis discovery policy determines how the system reacts when you add a new Cisco UCS S3260 chassis or an existing standalone Cisco UCS S3260 chassis to a Cisco UCS system. Cisco UCS S3260 System Architectural Overview, on page 6 describes the connectivity for a Cisco UCS S3260 system managed by Cisco UCS Manager. Cisco UCS Manager uses the settings in the chassis discovery policy to determine whether to group links from the system I/O controllers (SIOCs) to the fabric interconnects in fabric port channels.

To add a previously standalone Cisco UCS S3260 chassis to a Cisco UCS system, you must first configure it to factory default. You can then connect both SIOCs on the chassis to both fabric interconnects. After you connect the SIOCs on the chassis to the fabric interconnects, and mark the ports as server ports, chassis discovery begins.

Server Discovery

Cisco UCS Manager automatically discovers the Cisco UCS S3260 server nodes after the Cisco UCS S3260 chassis is discovered.

Note Server discovery fails if the SIOC corresponding to the server is not present.

Link Grouping

When you connect a Cisco UCS S3260 chassis through a FEX to a Cisco UCS 6200 Series fabric interconnect or directly to a Cisco UCS 6300 Series fabric interconnect, Cisco UCS Manager ignores the **Port Channel** preference and the SIOCs operate in the non-port channel mode.

When you connect a Cisco UCS S3260 chassis directly to a Cisco UCS 6200 Series fabric interconnect, you can use link grouping to determine whether all of the links from the SIOC to the fabric interconnect are grouped into a fabric port channel during chassis discovery. If the link grouping preference is set to **Port Channel**, all of the links from the SIOC to the fabric interconnect are grouped in a fabric port channel. If set to **None**, links from the SIOC are pinned to the fabric interconnect.

Set the link grouping preference to **Port Channel** if the Cisco UCS S3260 chassis is connected to a Cisco UCS 6200 Series fabric interconnect through a 4x10G breakout cable. If this is not done, chassis discovery will not complete.

Set the link grouping preference to **None** if the Cisco UCS S3260 chassis is connected to a fabric interconnect through a single 10G cable.

After changing the **Link Group Preference** value in the Cisco UCS Manager GUI, Decommission and then Recommission the Cisco UCS S3260 chassis for the change to take effect.

In the Cisco UCS domain, if there are other chassis operating in **Port Channel** mode, do the following:

1. Discover the chassis in the Cisco UCS system with the **Link Group Preference** set to **Port Channel**
2. Change the link aggregation preference for the Cisco UCS S3260 chassis through Chassis Connectivity Policy
3. Decommission the chassis
4. Recommission the chassis

Configuring the Chassis/FEX Discovery Policy

Procedure

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

Step 2 Click the **Equipment** node.

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

Step 4 Click the **Global Policies** subtab.

Step 5 In the **Chassis/FEX Discovery Policy** area, specify the action and the link grouping preference.

1. From the **Action** drop-down list, select the minimum threshold for the number of links between the chassis or FEX and the fabric interconnect.
2. For the **Link Grouping Preference** radio button, select whether the links from the IOMs or FEXes to the fabric interconnects are grouped in a port channel.
3. For the **Backplane Speed Preference** radio button, select the speed preference. The 40G backplane setting is not applicable for 22xx IOMs.

Step 6 Click **Save Changes**.

What to do next

To customize fabric port channel connectivity for a specific chassis, configure the chassis connectivity policy.

Chassis Connectivity Policy

The chassis connectivity policy determines whether a specific chassis is included in a fabric port channel after chassis discovery. This policy is helpful for users who want to configure one or more chassis differently from what is specified in the global chassis discovery policy.

By default, the chassis connectivity policy is set to global. This means that connectivity control is configured when the chassis is newly discovered, using the settings configured in the chassis discovery policy. Once the chassis is discovered, the chassis connectivity policy controls whether the connectivity control is set to none or port channel.

Note The chassis connectivity policy is created by Cisco UCS Manager only when the hardware configuration supports fabric port channels.

The following table displays the various connectivity and media type support for FC/FCoE.

Table 2: Connectivity and Media Type Support for FC/FCoE

FI	Connectivity	Supported	Port-Channel	FC/FCoE
Cisco UCS 6454 Fabric Interconnect	Direct Connect– 10 GB – QSA	Yes Not using Breakout	No	Yes
Cisco UCS 6454 Fabric Interconnect	Direct Connect– 25G SFP 28	Yes Not using Breakout	Yes	Yes
Cisco UCS 6454 Fabric Interconnect	2232 FEX - 10 GB - QSA	Yes	No	Yes
63xx	Direct Connect 40 GB	Yes	No	Yes
63xx	Direct Connect– 10 GB – QSA	Yes Not using Breakout	No	Yes
63xx	Direct Connect 4x10 GB – Breakout	No	N/A	N/A
63xx	2348UPQ FEX - 10 GB – QSA	Yes	No	Yes
63xx	2348UPQ FEX - 4x10 GB - Breakout	No	N/A	N/A
62xx	Direct Connect – 4x10 GB - Breakout Cable	Yes	Policy driven, but non-port-channel will not be a supported configuration	No

FI	Connectivity	Supported	Port-Channel	FC/FCoE
62xx	Direct Connect – 10 GB – QSA	Yes	Policy driven	Yes, if non-port-channel Chassis Discovery Policy
62xx	2232 FEX - 10 GB - QSA	Yes	No	Yes
62xx	2232xx - 4x10 GB - Breakout Cable	No	N/A	N/A
6324	Direct Connect - 40 GB	No	N/A	N/A
6324	Direct Connect - 10 GB – QSA	No	N/A	N/A

Configuring a Chassis Connectivity Policy

Caution Changing the connectivity mode for a chassis results in decommissioning and recommissioning the chassis. Traffic will be disrupted during this time.

Procedure

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

Step 2 Expand **Equipment** > **Chassis**.

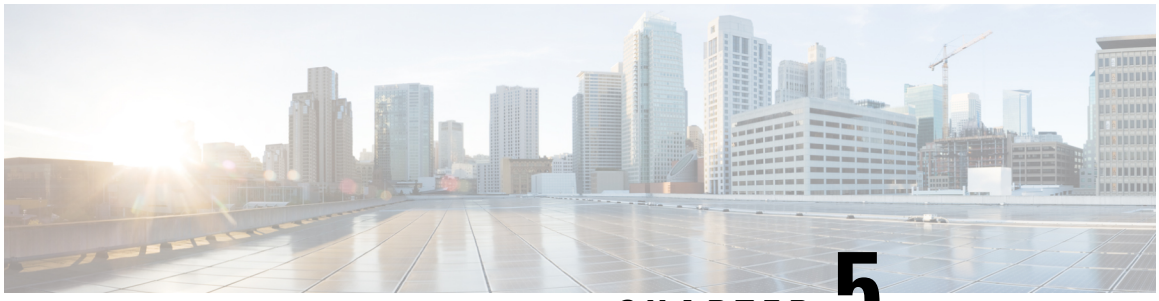
Step 3 Click the chassis for which you want to configure the connectivity between the SIOCs and fabric interconnects.

Step 4 In the **Work** pane, click the **Connectivity Policy** tab.

Step 5 For each SIOC in the chassis, choose one of the following values in the **Admin State** field for the chassis and fabric connectivity:

- **None**—No links are grouped in a port channel
- **Port Channel**—All links from an IOM to a fabric interconnect are grouped in a port channel.
- **Global**—The chassis inherits this configuration from the chassis discovery policy. This is the default value.

Step 6 Click **Save Changes**.



CHAPTER 5

Chassis Profiles

Chassis Profiles in Cisco UCS Manager

A chassis profile defines the storage, firmware, and maintenance characteristics of a chassis. You can create a chassis profile for the Cisco UCS S3260 chassis. When a chassis profile is associated to a chassis, Cisco UCS Manager automatically configures the chassis to match the configuration specified in the chassis profile.

Important At any given time, each S3260 chassis can be associated with only one chassis profile. Similarly, each chassis profile can be associated with only one S3260 chassis at a time.

A chassis profile includes the following information:

- **Chassis definition**—Defines the specific chassis to which the profile is assigned.
- **Maintenance policy**—Includes the maintenance policy to be applied to the profile.
- **Firmware specifications**—Defines the chassis firmware package that can be applied to a chassis through this profile.
- **Disk zoning policy**—Includes the zoning policy to be applied to the storage disks.
- **Compute Connection policy** — Defines the data path between the primary, auxiliary SIOC, and server.

Guidelines and Recommendations for Chassis Profiles

In addition to any guidelines or recommendations that are specific to the policies included in chassis profiles and chassis profile templates, such as the disk zoning policy, adhere to the following guidelines and recommendations that impact the ability to associate a chassis profile with a chassis:

- Each S3260 chassis can be associated with only one chassis profile. Similarly, each chassis profile can be associated with only one S3260 chassis at a time.
- Chassis profiles are supported only on the Cisco UCS S3260 chassis. The Cisco UCS 5108 blade server chassis does not support chassis profiles and cannot be associated to a chassis profile.
- For Cisco UCS S3260 chassis, S-Series server software bundles earlier than Cisco UCS Manager Release 3.1(2) are not supported.

Creating a Chassis Profile with the Wizard

Procedure

Step 1 In the **Navigation** pane, click **Chassis**.

Step 2 Expand **Chassis** > **Chassis Profiles**.

Step 3 Expand the node for the organization where you want to create the chassis profile.

If the system does not include multitenancy, expand the **root** node.

Step 4 Right-click the organization and select **Create Chassis Profile**.

Step 5 In the **Identify Chassis Profile** panel, specify the chassis profile **Name** and click **Next**.

This name can be between 1 and 16 alphanumeric characters. You cannot use spaces or any special characters other than - (hyphen), _ (underscore), : (colon), and . (period), and you cannot change this name after the object is saved.

You can provide an optional description for this chassis profile.

Note To create a chassis profile quickly, you can click **Finish** after specifying the name. Cisco UCS Manager creates a new chassis profile with the specified name and all system default values.

Step 6 (Optional) In the **Chassis Maintenance Policy** panel, specify the maintenance policy, then click **Next**.

You can create a new maintenance policy from this panel. Creating a Chassis Maintenance Policy, on page 35 provides more information about creating a chassis maintenance policy.

Step 7 (Optional) In the **Chassis Assignment** panel, specify the following, and then click **Next**.

a) Specify the **Chassis Assignment** from the drop-down list.

You can specify **Chassis Assignment** as one of the following:

- **Assign Later**—Allows you to assign a chassis after you have created and configured the chassis profile.

- **Select existing Chassis**—Displays a table of available, unassociated chassis that you can use to select the chassis which will be assigned to the chassis profile.

  To restrict the migration of the chassis profile after it has been associated with a chassis, check the **Restrict Migration** check box.

  If you choose not to restrict migration, Cisco UCS Manager does not perform any compatibility checks on the new chassis before migrating the existing chassis profile. If the chassis types are not similar, the association might fail.

b) To associate a **Chassis Firmware Package** with this chassis profile, expand the **Chassis Firmware Package** area and specify a chassis firmware package.

   You can create a chassis firmware package from this panel. Creating a Chassis Firmware Package, on page 63 provides more information about creating a chassis firmware package.

c) To associate a **Compute Connection Policy** with this chassis profile, expand the **Compute Connection Policy** area and specify a compute connection policy. See Server SIOC Connectivity Functionality, on page 11 for more details on **Compute Connection Policy** and Server SIOC Connectivity functionality.

   You can create a compute connection policy from this panel. Creating a Compute Connection Policy, on page 37 provides more information about creating a compute connection policy.

Step 8 (Optional) In the **Disk Zoning Policy** panel, specify the disk zoning policy, then click **Next**.

You can create a disk zoning policy from this panel. Creating a Disk Zoning Policy, on page 49 provides more information about creating a disk zoning policy.

Note If you do not select a disk zoning policy, the default disk zoning policy is used. **Preserve Config** is selected by default in the default disk zoning policy.

Step 9 (Optional) In the **Sas Expander Configuration Policy** panel, specify the SAS Expander Configuration policy, then click **Next**.

You can create a Sas Expander Configuration policy from this panel. Creating Sas Expander Configuration Policy, on page 55 provides more information about creating a Sas Expander Configuration policy.

Note If you do not select a Sas Expander Configuration policy, the default Sas Expander Configuration policy is used. **No Change** is selected by default in the default Sas Expander Configuration policy.

Step 10 Click **Finish**.

Renaming a Chassis Profile

When you rename a chassis profile, the following occurs:

- Event logs and audit logs that reference the previous name for the chassis profile are retained under that name.
- A new audit record is created to log the rename operation.
- All records of faults against the chassis profile under its previous name are transferred to the new chassis profile name.

Note You cannot rename a chassis profile with pending changes.

Procedure

Step 1 In the **Navigation** pane, click **Chassis**.

Step 2 Expand **Chassis** > **Chassis Profiles**.

Step 3 Expand the node for the organization that includes the chassis profile you want to rename.

If the system does not include multitenancy, expand the **root** node.

Step 4 Click the chassis profile you want to rename.

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

Step 6 In the **Actions** area, click **Rename Chassis Profile**.

Step 7 In the **Rename Chassis Profile** dialog box, enter the new name for the chassis profile in the **New Name** field.

This name can be between 1 and 16 alphanumeric characters. You cannot use spaces or any special characters other than - (hyphen), _ (underscore), : (colon), and . (period), and you cannot change this name after the object is saved.

Step 8 Click **OK**.

Cloning a Chassis Profile

Procedure

Step 1 In the **Navigation** pane, click **Chassis**.

Step 2 Expand **Chassis** > **Chassis Profiles**.

Step 3 Expand the node for the organization that includes the chassis profile you want to clone.

If the system does not include multitenancy, expand the **root** node.

Step 4 Right-click the chassis profile you want to clone and select **Create a Clone**.

Step 5 In the **Create Clone From Chassis Profile** dialog box:

a) Enter the name you want to use for the new profile in the **Clone Name** field.

This name can be between 1 and 16 alphanumeric characters. You cannot use spaces or any special characters other than - (hyphen), _ (underscore), : (colon), and . (period), and you cannot change this name after the object is saved.

This name must be unique within the organization or sub-organization in which you are creating the chassis profile.

b) (Optional) Select the organization or sub-organization in which you want to create the chassis profile.

c) Click **OK**.

Step 6 Navigate to the chassis profile you just created and make sure that all options are correct.

Deleting a Chassis Profile

Procedure

Step 1 In the **Navigation** pane, click **Chassis**.
Step 2 Expand **Chassis** > **Chassis Profiles**.
Step 3 Right-click the chassis profile that you want to delete and select **Delete**.
Step 4 If a confirmation dialog box displays, click **Yes**.
Step 5 Click **OK**.

Chassis Profile Association

Associating a Chassis Profile with a Chassis

Follow this procedure if you did not associate the chassis profile with a chassis when you created it or to change the chassis with which a chassis profile is associated.

Procedure

Step 1 In the **Navigation** pane, click **Chassis**.
Step 2 Expand **Chassis** > **Chassis Profiles**.
Step 3 Expand the node for the organization that contains the chassis profile that you want to associate with a new chassis.

If the system does not include multitenancy, expand the **root** node.

Step 4 Right-click the chassis profile that you want to associate with a chassis and select **Change Chassis Profile Association**.
Step 5 In the **Associate Chassis Profile** dialog box, select the **Select existing Chassis** option from the drop-down list.

This displays a table of available, unassociated chassis that you can use to select the chassis which will be assigned to the chassis profile.

Step 6 In the **Select** column of the table of available chassis, click the radio button for the chassis that you want to associate with this chassis profile.
Step 7 (Optional) To restrict the migration of the chassis profile after it has been associated with a chassis, check the **Restrict Migration** check box.

If you choose not to restrict migration, Cisco UCS Manager does not perform any compatibility checks on the new chassis before migrating the existing chassis profile. If the hardware of both chassis are not similar, the association might fail.

Step 8 Click **OK**.

Disassociating a Chassis Profile from a Chassis

Procedure

Step 1 In the **Navigation** pane, click **Chassis**.

Step 2 Expand **Chassis** > **Chassis Profiles**.

Step 3 Expand the node for the organization that contains the chassis profile that you want to disassociate from a chassis.

If the system does not include multitenancy, expand the **root** node.

Step 4 Right-click the chassis profile you want to disassociate from a chassis and select **Disassociate Chassis Profile**.

Step 5 In the **Disassociate Chassis Profile** dialog box, click **Yes** to confirm.

Step 6 (Optional) Monitor the status and FSM for the chassis to confirm that the disassociation is complete.

Chassis Profile Template

Chassis Profile Templates

With a chassis profile template, you can quickly create several chassis profiles with the same basic parameters, such as the maintenance policy and the disk zoning policy.

Tip If you need only one chassis profile with similar values to an existing chassis profile, you can clone a chassis profile in the Cisco UCS Manager GUI.

For example, if you need several chassis profiles with similar values, you can create a chassis profile template, either manually or from an existing chassis profile. You can then use the template to create the chassis profiles.

Cisco UCS supports the following types of chassis profile templates:

Initial template

Chassis profiles created from an initial template inherit all the properties of the template. Chassis profiles created from an initial chassis profile template are bound to the template. However, changes to the initial template do not automatically propagate to the bound chassis profiles. If you want to propagate changes to bound chassis profiles, unbind and rebind the chassis profile to the initial template.

Updating template

Chassis profiles created from an updating template inherit all the properties of the template and remain connected to the template. Any changes to the template automatically update the chassis profiles created from the template.

Creating a Chassis Profile Template

Procedure

Step 1 In the **Navigation** pane, click **Chassis**.

Step 2 Expand **Chassis** > **Chassis Profile Templates**.

Step 3 Expand the node for the organization where you want to create the chassis profile template.

If the system does not include multitenancy, expand the **root** node.

Step 4 Right-click the organization and choose **Create Chassis Profile Template**.

Step 5 In the **Identify Chassis Profile Template** panel, specify the chassis profile **Name** and **Type**, and then click **Next**.

You can provide an optional description for this chassis profile template.

Note To create a chassis profile template quickly, you can click **Finish** after specifying the name. Cisco UCS Manager creates a new chassis profile template with the specified name and all system default values.

Step 6 (Optional) In the **Chassis Maintenance Policy** panel, specify the chassis maintenance policy, then click **Next**.

You can create a new chassis maintenance policy from this panel.

Step 7 (Optional) In the **Policies** panel, specify the following, then click **Next**.

a) To associate a **Chassis Firmware Package**, expand the **Chassis Firmware Package** area and specify a chassis firmware package.

You can create a chassis firmware package from this panel. Creating a Chassis Firmware Package, on page 63 provides more information about creating a chassis firmware package.

b) To associate a **Compute Connection Policy**, expand the **Compute Connection Policy** area and specify a compute connection policy. See Server SIOC Connectivity Functionality, on page 11 for more details on **Compute Connection Policy** and Server SIOC Connectivity functionality.

You can create a compute connection policy from this panel. Creating a Compute Connection Policy, on page 37 provides more information about creating a compute connection policy.

Step 8 (Optional) In the **Disk Zoning Policy** panel, specify the disk zoning policy, then click **Next**

You can create a disk zoning policy from this panel.

Step 9 Click **Finish**.

Creating One or More Chassis Profiles from a Chassis Profile Template

Procedure

Step 1 In the **Navigation** pane, click **Chassis**.

Step 2 Expand **Chassis** > **Chassis Profile Templates**.

Step 3 Expand the node for the organization that contains the chassis profile template that you want to use as the basis for your chassis profiles.

If the system does not include multitenancy, expand the **root** node.

Step 4 Right-click the chassis profile template from which you want to create the profiles and select **Create Chassis Profiles From Template**.

Step 5 In the **Create Chassis Profiles From Template** dialog box, complete the following fields:

Name	Description
Naming Prefix field	The prefix to use for the template name. When the system creates the chassis profile, it appends a unique numeric identifier to this prefix. This number begins with the number specified in the **Name Suffix Starting Number** field. Enter between 1 and 29 alphanumeric characters. You cannot use spaces or any special characters other than - (hyphen), _ (underscore), : (colon), and . (period).
Name Suffix Starting Number field	The first unique numeric identifier that is assigned as a suffix to a chassis profile **Naming Prefix**.
Number of Instances field	The number of chassis profiles to create. Enter a number between 1 and 255. For example, if you specify the **Naming Prefix** as **`MyProfile`**, the **Name Suffix Starting Number** as 1, and the **Number of Instances** as 2, the first chassis profile would be called MyProfile1 and the second would be MyProfile2.
Chassis Profile Template field	The name of the chassis profile template.

Step 6 Click **OK**.

Creating a Chassis Profile Template from a Chassis Profile

Procedure

Step 1 In the **Navigation** pane, click **Chassis**.

Step 2 Expand **Chassis** > **Chassis Profiles**.

Step 3 Expand the node for the organization that contains the chassis profile that you want to use as the basis for your template.

If the system does not include multitenancy, expand the **root** node.

Step 4 Right-click the chassis profile from which you want to create the template and select **Create a Chassis Profile Template**.

Step 5 In the **Create Template From Chassis Profile** dialog box, complete the following fields:

Name	Description
Template Name field	The name of the chassis profile template
Org drop-down list	Select the organization that you want this template to be associated with.
Type field	The type of template. This can be one of the following: • **Initial Template**—Any chassis profiles created from this template are not updated if the template changes. • **Updating Template**—Any chassis profiles created from this template are updated if the template changes.

Step 6 Click **OK**.

Cloning a Chassis Template Profile

Procedure

Step 1 In the **Navigation** pane, click **Chassis**.

Step 2 Expand **Chassis** > **Chassis Profile Templates**.

Step 3 Expand the node for the organization that includes the chassis template profile you want to clone.

If the system does not include multitenancy, expand the **root** node.

Step 4 Right-click the chassis template profile you want to clone and select **Create a Clone**.

Step 5 In the **Create Clone From Chassis Template Profile** dialog box:

a) Enter the name you want to use for the new profile in the **Clone Name** field.

This name can be between 1 and 16 alphanumeric characters. You cannot use spaces or any special characters other than - (hyphen), _ (underscore), : (colon), and . (period), and you cannot change this name after the object is saved.

This name must be unique within the organization or sub-organization in which you are creating the chassis template profile.

b) (Optional) Select the organization or sub-organization in which you want to create the chassis template profile.

c) Click **OK**.

Step 6 Navigate to the chassis template profile you just created and make sure that all options are correct.

Changing the Maintenance Policy for a Chassis Profile Template

Procedure

Step 1 In the **Navigation** pane, click **Chassis**.

Step 2 Expand **Chassis** > **Chassis Profile Templates**.

Step 3 Expand the node for the organization that includes the chassis profile template whose chassis maintenance policy you want to change.

If the system does not include multitenancy, expand the **root** node.

Step 4 Click the chassis profile template you want to modify.

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

Step 6 In the **Actions** area, click **Change Chassis Maintenance Policy**

Step 7 In the **Change Chassis Maintenance Policy** dialog box, specify the chassis maintenance policy from the **Chassis Maintenance Policy** drop-down list, then click **OK**.

You can create a new maintenance policy from this panel.

Binding a Chassis Profile to a Chassis Profile Template

You can bind a chassis profile to a chassis profile template. When you bind the chassis profile to a template, Cisco UCS Manager configures the chassis profile with the values defined in the chassis profile template. If the existing chassis profile configuration does not match the template, Cisco UCS Manager reconfigures the chassis profile. You can only change the configuration of a bound chassis profile through the associated template.

Procedure

Step 1 In the **Navigation** pane, click **Chassis**.

Step 2 Expand **Chassis** > **Chassis Profiles**.

Step 3 Expand the node for the organization that includes the chassis profile that you want to bind.

If the system does not include multi-tenancy, expand the **root** node.

Step 4 Click the chassis profile that you want to bind.

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

Step 6 In the **Actions** area, click **Bind to a Template**.

Step 7 In the **Bind to a Chassis Profile Template** dialog box, do the following:

a) From the **Chassis Profile Template** drop-down list, choose the template to which you want to bind the chassis profile.

b) Click **OK**.

Unbinding a Chassis Profile from a Chassis Profile Template

Procedure

Step 1 In the **Navigation** pane, click **Chassis**.

Step 2 Expand **Chassis** > **Chassis Profiles**.

Step 3 Expand the node for the organization that includes the chassis profile that you want to unbind.

If the system does not include multi-tenancy, expand the **root** node.

Step 4 Click the chassis profile that you want to unbind.

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

Step 6 In the **Actions** area, click **Unbind from the Template**.

Step 7 If a confirmation dialog box displays, click **Yes**.

Chassis Maintenance Policy

Creating a Chassis Maintenance Policy

Procedure

Step 1 In the **Navigation** pane, click **Chassis**.

Step 2 Expand **Chassis** > **Policies**.

Step 3 Expand the node for the organization where you want to create the policy.

If the system does not include multitenancy, expand the **root** node.

Step 4 Right-click **Chassis Maintenance Policies** and choose **Create Chassis Maintenance Policy**.

Step 5 In the **Create Chassis Maintenance Policy** dialog box, complete the following fields:

Name	Description
Name field	The name of the policy. This name can be between 1 and 16 alphanumeric characters. You cannot use spaces or any special characters other than - (hyphen), _ (underscore), : (colon), and . (period), and you cannot change this name after the object is saved.

Name	Description
Description field	A description of the policy. Cisco recommends including information about where and when to use the policy. Enter up to 256 characters. You can use any characters or spaces except ` (accent mark), \ (backslash), ^ (carat), " (double quote), = (equal sign), > (greater than), < (less than), or ' (single quote).
Reboot Policy field	When a chassis profile is associated with a chassis, or when changes are made to a chassis profile that is already associated with a chassis, you must power cycle the chassis to complete the process. The **Reboot Policy** field determines when the power cycle occurs for chassis associated with any chassis profiles that include this chassis maintenance policy. Chassis profiles and chassis profile templates support only one reboot policy: **User Ack**—The user must power cycle the chassis manually after the chassis profile association is complete or changes are made.

Step 6 Click **OK**.

What to do next

Include the policy in a chassis profile or chassis profile template.

Changing the Maintenance Policy for a Chassis Profile

Procedure

Step 1 In the **Navigation** pane, click **Chassis**.

Step 2 Expand **Chassis** > **Chassis Profiles**.

Step 3 Expand the node for the organization that includes the chassis profile whose maintenance policy you want to change.

If the system does not include multitenancy, expand the **root** node.

Step 4 Right-click the chassis profile you want to modify and select **Change Chassis Maintenance Policy**.

Step 5 In the **Change Chassis Maintenance Policy** dialog box, specify the chassis maintenance policy from the **Chassis Maintenance Policy** drop-down list, then click **OK**.

You can create a new chassis maintenance policy from this panel.

Note The chassis profile will immediately reboot when disruptive changes are applied.

Deleting a Chassis Maintenance Policy

Procedure

Step 1 In the **Navigation** pane, click **Chassis**.
Step 2 Expand **Chassis** > **Policies** > ***Organization_Name***.
Step 3 Expand **Chassis Maintenance Policies**.
Step 4 Right-click the chassis maintenance policy you want to delete and choose **Delete**.
Step 5 If a confirmation dialog box displays, click **Yes**.

Compute Connection Policy

Compute Connection Policy is used to store the user configuration of the server SIOC connectivity. The configuration settings are done using the property **Server SIOC Connectivity**, which can be set to:

- **single-server-single-sioc** (default) - The data path is configured through one SIOC when the chassis has single server and single SIOC or dual server and dual SIOCs.
- **single-server-dual-sioc** - When enabled, you can configure the data path through both the primary and auxiliary SIOCs when the chassis has single server and dual SIOCs. See Server SIOC Connectivity Functionality, on page 11 for more details.

Creating a Compute Connection Policy

Procedure

Step 1 In the **Navigation** pane, click **Chassis**.
Step 2 Expand **Chassis** > **Policies** > ***Organization_Name***.
Step 3 Right-click **Compute Connection Policies** and select **Create Compute Connection Policy**.
Step 4 In the **Create Compute Connection Policy** pane, enter the following:

- **Name** - Enter a name for the policy.
- **Description** - A brief description of the policy.
- **Server SIOC Connectivity** - Select one of the following:
  - **single-server-single-sioc** (default) - The data path is configured through one SIOC when the chassis has single server and single SIOC or dual server and dual SIOCs.

- **single-server-dual-sioc** - When enabled, you can configure the data path through both the primary and auxiliary SIOCs when the chassis has single server and dual SIOCs. See Server SIOC Connectivity Functionality, on page 11 for more details.

Step 5 Click **OK**.

Note In GUI, once **Compute Conn Policy** property is set to **single-server-dual-sioc**, then Cisco UCS Manager displays a message, warning that this operation causes server reboot. After acknowledging the message, chassis association is triggered. When Server SIOC Connectivity configuration is successfully deployed, Cisco UCS Manager automatically triggers server deep discovery.

Associating a Compute Connection Policy to Chassis Profile

Procedure

Step 1 In the **Navigation** pane, click **Chassis**.

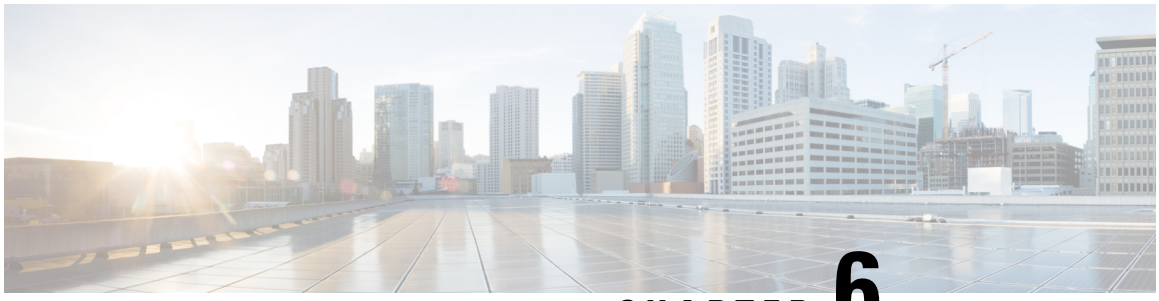
Step 2 Expand **Chassis** > **Chassis Profiles** > ***Chassis_Profile_Name***.

Step 3 Select the **Policies** tab.

Step 4 Expand **Compute Connection Policies** area.

Step 5 Select a policy from the **Compute Connection Policies** drop-down list.

Step 6 Click **Save Changes**.



CHAPTER 6

Cisco UCS S3260 System Storage Management

Storage Server Features and Components Overview

Storage Server Features

The following table summarizes the Cisco UCS S3260 system features:

Table 3: Cisco UCS S3260 System Features

Feature	Description
Chassis	Four rack unit (4RU) chassis
Processors	• Cisco UCS S3260 M3 server nodes: Two Intel Xeon E5-2600 v2 Series processors inside each server node. • Cisco UCS S3260 M4 server nodes: Two Intel Xeon E5-2600 v4 Series processors inside each server node. • Cisco UCS S3260 M5 server nodes: Two Intel Skylake 2S-EP processors inside each server node.
Memory	Up to 16 DIMMs inside each server node.
Multi-bit error protection	This system supports multi-bit error protection.

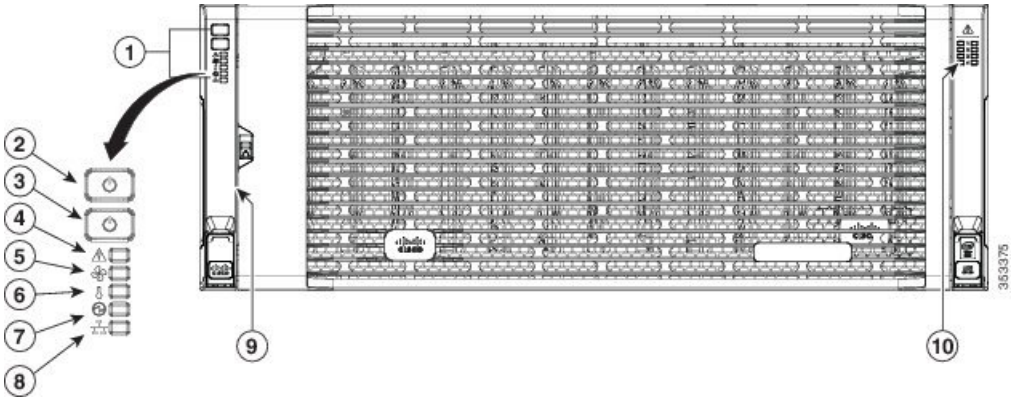
Feature	Description
Storage	The system has the following storage options: • Up to 56 top-loading 3.5-inch drives • Up to four 3.5-inch, rear-loading drives in the optional drive expander module • Up to four 2.5-inch, rear-loading SAS solid state drives (SSDs) • One 2.5-inch, NVMe drive inside the server node **Note** This is applicable for S3260 M4 servers only. • Two 7 mm NVMe drive inside the server node **Note** This is applicable for S3260 M5 servers only. • Two 15 mm NVMe drive supported for IO Expander
Disk Management	The system supports up to two storage controllers: • One dedicated mezzanine-style socket for a Cisco storage controller card inside each server node
RAID Backup	The supercap power module (SCPM) mounts to the RAID controller card.
PCIe I/O	The optional I/O expander provides two 8x Gen 3 PCIe expansion slots. Release 3.2(3) and later supports the following for S3260 M5 servers: • Intel X550 dual-port 10GBase-T • Qlogic QLE2692 dual-port 16G Fiber Channel HBA • N2XX-AIPCI01 Intel X520 Dual Port 10Gb SFP+ Adapter

Feature	Description
Network and Management I/O	The system can have one or two system I/O controllers (SIOCs). These provide rear-panel management and data connectivity. • Two SFP+ 40 Gb ports each SIOC. • One 10/100/1000 Ethernet dedicated management port on each SIOC. The server nodes each have one rear-panel KVM connector that can be used with a KVM cable, which provides two USB, one VGA DB-15, and one serial DB-9 connector.
Power	Two or four power supplies, 1050 W each (hot-swappable and redundant as 2+2).
Cooling	Four internal fan modules that pull front-to-rear cooling, hot-swappable. Each fan module contains two fans. In addition, there is one fan in each power supply.

Front Panel Features

The following image shows the front panel features for the Cisco UCS S3260 system:

Figure 9: Front Panel Features



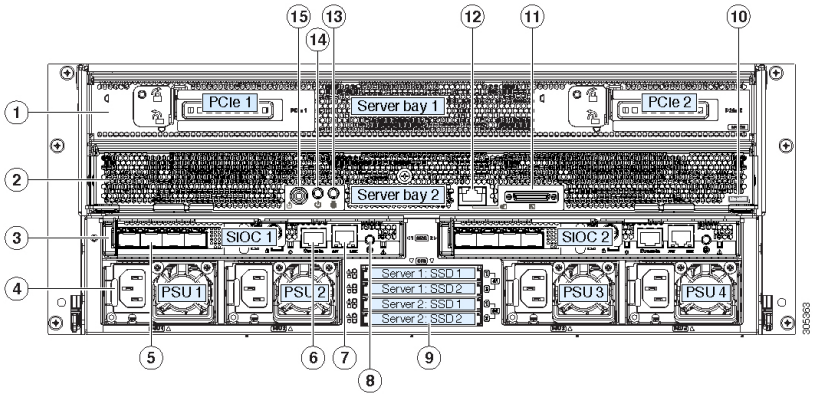
1	Operations panel	6	Temperature status LED
2	System Power button/LED	7	Power supply status LED
3	System unit identification button/LED	8	Network link activity LED

4	System status LED	9	Pull-out asset tag (not visible under front bezel)
5	Fan status LED	10	Internal-drive status LEDs

Rear Panel Features

The following image shows the rear panel features for the Cisco UCS S3260 system:

Figure 10: Front Panel Features



Disk Slots

1	Server bay 1 • (Optional) I/O expander, as shown (with Cisco UCS S3260 M4 and M5 server node only) • (Optional) server node • (Optional) drive expansion module	8	Not used at this time

2	Server bay 2 • (Optional) server node (Cisco UCS S3260 M4 and M5 shown) (Optional) drive expansion module	9	Not used at this time
3	System I/O controller (SIOC) • SIOC 1 is required if you have a server node in server bay 1 • SIOC 2 is required if you have server node in server bay 2	10	Solid state drive bays (up to four 2.5-inch SAS SSDs) • SSDs in bays 1 and 2 require a server node in server bay 1 • SSDs in bays 3 and 4 require a server node in server bay 2
4	Power supplies (four, redundant as 2+2)	11	Cisco UCS S3260 M4 server node label (M4 SVRN) **Note** This label identifies a Cisco UCS S3260 M4 and M5 server node. The Cisco UCS S3260 M3 server node does not have a label.
5	40-Gb SFP+ ports (two on each SIOC)	12	KVM console connector (one each server node). Used with a KVM cable that provides two USB, one VGA, and one serial connector
6	Chassis Management Controller (CMS) Debug Firmware Utility port (one each SIOC)	13	Server node unit identification button/LED

7	10/100/1000 dedicated management port, RJ-45 connector (one each SIOC)	14	Server node power button
		15	Server node reset button (resets chipset in the server node

Storage Server Components

Server Nodes

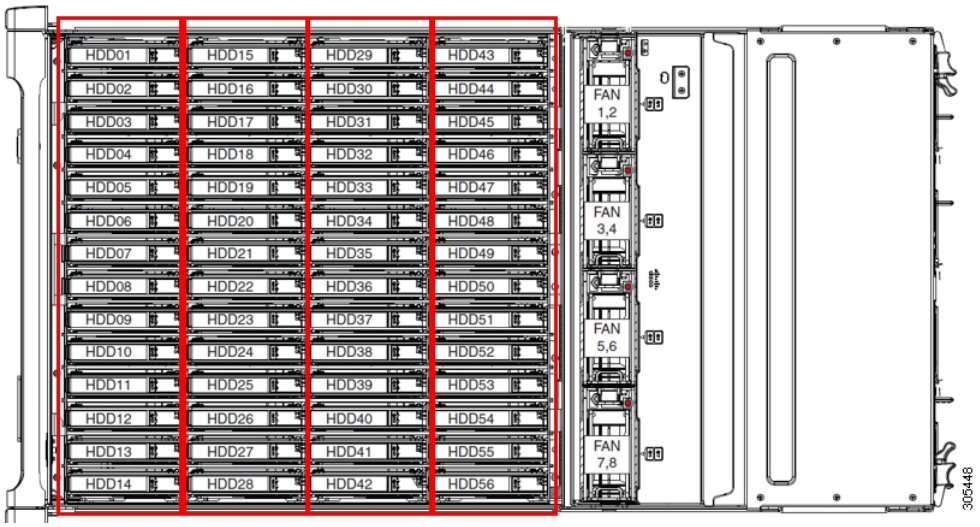
The Cisco UCS S3260 system consists of one or two server nodes, each with two CPUs, DIMM memory of 128, 256, or 512 GB, and a RAID card up to 4 GB cache or a pass-through controller. The server nodes can be one of the following:

- Cisco UCS S3260 M3 Server Node
- Cisco UCS S3260 M4 Server Node—This node might include an optional I/O expander module that attaches to the top of the server node.
- Cisco UCS S3260 M5 Server Node—This node might include an optional I/O expander module that attaches to the top of the server node.

Disk Slots

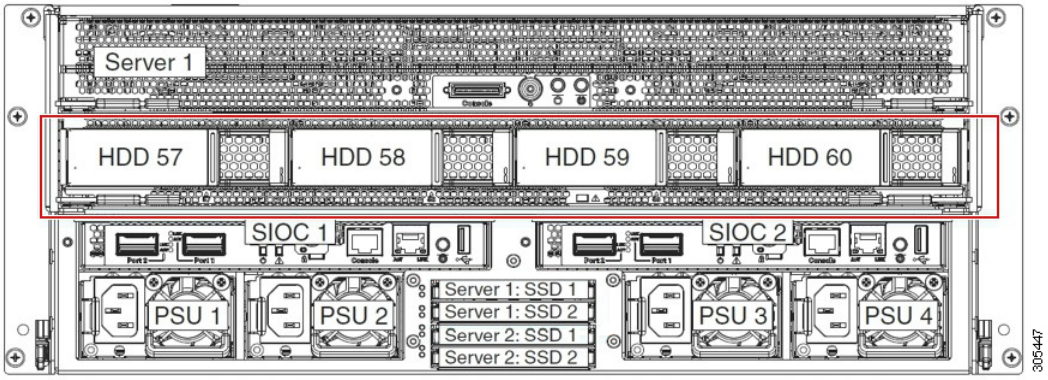
The Cisco UCS S3260 chassis has 4 rows of 14 disk slots on the HDD motherboard and 4 additional disk slots on the HDD expansion tray. The following image shows the disk arrangement for the 56 top-accessible, hot swappable 3.5-inch 6 TB or 4 TB 7200 rpm NL-SAS HDD drives. A disk slot has two SAS ports and each is connected a SAS expander in the chassis.

Figure 11: Cisco UCS S3260 Top View



The following image shows the Cisco UCS S3260 chassis with the 4 additional disk slots on the HDD expansion tray.

Figure 12: Cisco UCS 3260 with the HDD expansion tray (Rear View)



If you have two server nodes with two SIOCs, you will have the following functionality:

1. The top server node works with the left SIOC (Server Slot1 with SIOC1).
2. The bottom server works with the right SIOC (Sever Slot 2 with SIOC2).

If you have one server node with two SIOCs, you can enable Server SIOC Connectivity functionality. Beginning with release 3.1(3), Cisco UCS S3260 system supports Server SIOC Connectivity functionality. Using this functionality, you can configure the data path through both the primary and auxiliary SIOCs when the chassis has single server and dual SIOCs set up.

SAS Expanders

The Cisco UCS S3260 system has two SAS expanders that run in redundant mode and connect the disks at the chassis level to storage controllers on the servers. The SAS expanders provide two paths between a storage controller, and hence enable high availability. They provide the following functionality:

- Manage the pool of hard drives.
- Disk zone configuration of the hard drives to storage controllers on the servers.

Beginning with release 3.2(3a), Cisco UCS Manager can enable single path access to disk by configuring single DiskPort per disk slot. This ensures that the server discovers only a single device and avoid a multi-path configuration.

The following table describes how the ports in each SAS expander are connected to the disks based on the type of deployment.

Port range	Connectivity
1-56	Top accessible disks
57-60	Disks in the HDD expansion tray.

Note The number of SAS uplinks between storage controller and SAS expander can vary based on the type of controller equipped in the server.

Storage Enclosures

A Cisco UCS S3260 system has the following types of storage enclosures:

Chassis Level Storage Enclosures

- **HDD motherboard enclosure**—The 56 dual port disk slots in the chassis comprise the HDD motherboard enclosure.
- **HDD expansion tray**—The 4 additional dual disk slots in the Cisco UCS S3260 system comprise the HDD expansion tray.

Note The HDD expansion tray is a field replaceable unit (FRU). The disks will remain unassigned upon insertion, and can be assigned to storage controllers. For detailed steps on how to perform disk zoning, see Disk Zoning Policies, on page 48

Server level Storage Enclosures

Server level storage enclosures are pre-assigned dedicated enclosures to the server. These can be one of the following:

- **Rear Boot SSD enclosure**—This enclosure contains two 2.5 inch disk slots on the rear panel of the Cisco UCS S3260 system. Each server has two dedicated disk slots. These disk slots support SATA SSDs.
- **Server board NVMe enclosure**—This enclosure contains one PCIe NVMe controller.

Note In the Cisco UCS S3260 system, even though disks can be physically present on the two types of enclosures described above, from the host OS all the disks are viewed as part of one SCSI enclosure. They are connected to SAS expanders that are configured to run as single SES enclosure.

Storage Controllers

Mezzanine Storage Controllers

The following table lists the storage controller type, firmware type, modes, sharing and OOB support for the various storage controllers.

Table 4:

Storage Controller Type	Firmware type	Modes	Sharing	OOB Support
UCSC-S3X60-R1GB	Mega RAID	HW RAID, JBOD	No	Yes
UCS-C3K-M4RAID	Mega RAID	HW RAID, JBOD	No	Yes
UCSC-S3X60-HBA	Initiator Target	Pass through	Yes	Yes
UCS-S3260-DHBA	Initiator Target	Pass through	Yes	Yes
UCS-S3260-DRAID	Mega RAID	HW RAID, JBOD	No	Yes

Other storage controllers

SW RAID Controller—The servers in the Cisco UCS S3260 system support two dedicated internal SSDs embedded into the PCIe riser that is connected to the SW RAID Controller. This controller is supported on the Cisco C3000 M3 servers.

NVMe Controller—This controller is used by servers in the Cisco UCS S3260 system for inventory and firmware updates of NVMe disks.

For more details about the storage controllers supported in the various server nodes, see the related service note:

- Cisco UCS C3X60 M3 Server Node For Cisco UCS S3260 Storage Server Service Note
- Cisco UCS C3X60 M4 Server Node For Cisco UCS S3260 Storage Server Service Note
- Cisco UCS S3260 M5 Server Node For Cisco UCS S3260 Storage Server Service Note

Cisco UCS S3260 Storage Management Operations

The following table summarizes the various storage management operations that you can perform with the Cisco UCS Manager integrated Cisco UCS S3260 system.

Operation	Description	See:
Disk Sharing for High Availability	The SAS expanders in the Cisco UCS S3260 system can manage the pool of drives at the chassis level. To share disks for high availability, perform the following: 1. Creating disk zoning policies. 2. Creating disk slots and assigning ownership. 3. Associating disks to chassis profile.	"Disk Zoning Policies" section in this guide.
Storage Profiles, Disk Groups and Disk Group Configuration Policies	You can utilize Cisco UCS Manager's Storage Profile and Disk Group Policies for defining storage disks, disk allocation and management in the Cisco UCS S3260 system.	"Storage Profiles" section in the *Cisco UCS Manager Storage Management Guide, Release 3.2*.
Storage Enclosure Operations	You can swap the HDD expansion tray with a server, or remove the tray if it was previously inserted.	"Removing Chassis Level Storage Enclosures" section in this guide.

Disk Sharing for High Availability

Disk Zoning Policies

You can assign disk drives to the server nodes using disk zoning. Disk zoning can be performed on the controllers in the same server or on the controllers on different servers. Disk ownership can be one of the following:

Unassigned

Unassigned disks are those not visible to the server nodes.

Dedicated

If this option is selected, you will need to set the values for the **Server**, **Controller**, **Drive Path**, and **Slot Range** for the disk slot.

Note A disk is visible only to the assigned controller.

Beginning with release 3.2(3a), Cisco UCS Manager can enable single path access to disk by configuring single DiskPort per disk slot for Cisco UCS S3260 M5 and higher servers. Setting single path configuration ensures that the server discovers the disk drive only through a single drive path chosen in the configuration. Single path access is supported only for **Cisco UCS S3260 Dual Pass Through Controller** (UCS-S3260-DHBA)

Once single path access is enabled, you cannot downgrade to any release earlier than 3.2(3a). To downgrade, disable this feature and assign all the disk slots to both the disk ports by configuring disk path of the disk slots to **Path Both** in disk zoning policy.

Shared

Shared disks are those assigned to more than one controller. They are specifically used when the servers are running in a cluster configuration, and each server has its storage controllers in HBA mode.

Note Shared mode cannot be used under certain conditions when dual HBA controllers are used.

Chassis Global Hot Spare

If this option is selected, you will need to set the value for the **Slot Range** for the disk.

Important Disk migration and claiming orphan LUNs: To migrate a disk zoned to a server (Server 1) to another server (Server 2), you must mark the virtual drive (LUN) as transport ready or perform a hide virtual drive operation. You can then change the disk zoning policy assigned for that disk. For more information on virtual drive management, see the *Disk Groups and Disk Configuration Policies* section of the Cisco UCS Manager Storage Management Guide.

Creating a Disk Zoning Policy

Procedure

Step 1 In the Navigation pane, click **Chassis**.

Step 2 Expand **Policies** > **root**.

Step 3 Right-click **Disk Zoning Policies** and choose **Create Disk Zoning Policy**.

Step 4 In the **Create Disk Zoning Policy** dialog box, complete the following:

Name	Description
Name field	The name of the policy. This name can be between 1 and 16 alphanumeric characters. You cannot use spaces or any special characters other than - (hyphen), _ (underscore), : (colon), and . (period), and you cannot change this name after the object is saved.
Description field	A description of the policy. Cisco recommends including information about where and when to use the policy. Enter up to 256 characters. You can use any characters or spaces except ` (accent mark), \ (backslash), ^ (carat), " (double quote), = (equal sign), > (greater than), < (less than), or ' (single quote).
Preserve Config check box	If this check box is selected, it preserves all configuration related information for the disks such as slot number, ownership, server assigned, controller assigned, and controller type. **Note** By default the **Preserve Config** check box remains unchecked.

In the **Disk Zoning Information** area, complete the following:

Name	Field
Name column	The name for the disk slot.
Slot Number column	The slot number for the disk.

Name	Field
Ownership column	The slot ownership value. This can be one of the following: • **Unassigned**—This option is selected by default. You can set the slot number in the **Slot Range** field. • **Dedicated**—If this option is selected, you will need to set the values for the **Server**, **Controller**, **Drive Path,** and **Slot Range** for the disk slot. Beginning with release 3.2(3a), Cisco UCS Manager can enable single path access to disk by configuring single DiskPort per disk slot. This ensures that the server discovers only a single device and avoid a multi-path configuration. Drive Path options are: • **Path Both** (Default) - Drive path is zoned to both the SAS expanders. • **Path 0** - Drive path is zoned to SAS expander 1. • **Path 1** - Drive path is zoned to SAS expander 2. • **Shared**—If this option is selected, you will need to set the values for the **Slot Range** and controller information such as server assigned, controller assigned, and controller type for the disk slot. **Note** Shared mode cannot be used under certain conditions when dual HBA controllers are used. To view the conditions for **Shared** mode for Dual HBA controller, see Table 5: Limitations for Shared Mode for Dual HBA Controller, on page 51. • **Chassis Global Hot Spare**—If this option is selected, you will need to set the value for the **Slot Range** for the disk.
Assigned to Server column	The ID of the server that the disk is assigned.

Name	Field
Assigned to Controller column	The ID of the controller that the disk is assigned. **Note** In a Dual RAID setup, to migrate the disk from first controller to second, change the **Assigned to Controller** to the second controller.
Controller Type column	The type for the controller. If the disk is either dedicated or shared, the controller type is always SAS.

Table 5: Limitations for Shared Mode for Dual HBA Controller

Server	HDD Tray	Controller	Shared mode Support
Cisco UCS S3260	No	Dual HBA	Not Supported
Cisco UCS S3260	HDD Tray	Dual HBA	Not Supported
Pre-Provisioned	HDD Tray	Dual HBA	Not Supported

Creating Disk Slots and Assigning Ownership

After you create a disk zoning policy, you must create the disk slots, and assign ownership.

Procedure

Step 1 In the Navigation pane, click **Chassis**.

Step 2 Expand **Policies** > **root** > **Disk Zoning Policies**, and select the disk zoning policy that you want to add disk slots.

Step 3 In the Work pane, under **Actions**, click **Add Slots to Policy**.

Step 4 In the **Add Slots to Policy** dialog box, complete the following:

Name	Description
Ownership check box	The ownership for the disk slot. This can be one of the following: • **Unassigned**—This option is selected by default. You can set the slot number in the **Slot Range** field. • **Dedicated**—If this option is selected, you will need to set the values for the **Server**, **Controller**, and **Slot Range** for the disk slot. • **Shared**—If this option is selected, you will need to set the values for the **Slot Range** and controller information such as server assigned, controller assigned, and controller type for the disk slot. **Note** Shared mode cannot be used under certain conditions when dual HBA controllers are used. To view the conditions for **Shared** mode for Dual HBA controller, see Table 5: Limitations for Shared Mode for Dual HBA Controller, on page 51. • **Chassis Global Hot Spare**—If this option is selected, you will need to set the value for the **Slot Range** for the disk.

Step 5 Click **OK**.

Associating Disk Zoning Policies to Chassis Profile

Procedure

Step 1 In the **Navigation** pane, click **Chassis**.

Step 2 Expand **Chassis** > **Chassis Profiles**.

Step 3 Expand the node for the organization where you want to create the chassis profile.

If the system does not include multitenancy, expand the **root** node.

Step 4 Right-click the organization and select **Create Chassis Profile**.

Step 5 In the **Identify Chassis Profile** page, specify the name for the chassis profile, and click **Next**.

Step 6 (Optional) In the **Maintenance Policy** page, specify the name for the maintenance policy, and click **Next**.

Step 7 In the **Chassis Assignment** page, select **Select existing Chassis** under **Chassis Assignment**, and then select the chassis that you want to associate with this chassis profile. Click **Next**.

Step 8 In the **Disk Zoning** page, specify the disk zoning policy that you want to associate with this chassis profile.

Step 9 Click **Finish**.

Disk Migration

Before you can migrate a disk zoned from one server to another, you must mark the virtual drive(LUN) as transport ready or perform a hide virtual drive operation. This will ensure that all references from the service profile have been removed prior to disk migration. For more information on virtual drives, please refer to the "virtual drives" section in the *Cisco UCS Manager Storage Management Guide, Release 3.2*

Note In a Dual RAID setup, to migrate the disk from first controller to second change the **Assigned to Controller** to the second controller in the disk zoning policy. Refer Creating a Disk Zoning Policy, on page 49.

Procedure

Step 1 In the Navigation pane, click **Equipment** > **Chassis** > **Servers**.

Step 2 Choose the Sever where you want to perform disk migration.

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

Step 4 Click the **Storage** subtab.

Step 5 Click the **LUNs** subtab.

Step 6 Choose the storage controller where you want to prepare the virtual drives fr migration to another server.

Step 7 Choose the disk that you want to migrate.

Step 8 In the **Actions** area, choose one of the following:

Name	Description
Rename	Click on this link to rename your disk.
Delete	Click on this link to delete your disk.
Set Transportation Ready	Click on this link for the safe migration of the virtual drive from one server to another. **Note** All virtual drives on a disk group must be marked as hidden before migrating or unassigning the disks from a server node.
ClearTransportation Ready	Click on this link to set the state of the virtual drive to no longer be transport ready.

Name	Description
Hide Virtual Drive	Click on this option for the safe migration of the virtual drive from one server to another. **Note** All virtual drives on a disk group must be marked as hidden before migrating or unassigning the disks from a server node.
Unhide Virtual Drive	Click on this link to unhide the virtual drive and enable IO operations.

Storage Enclosure Operations

Removing Chassis Level Storage Enclosures

You can remove the storage enclosure corresponding to HDD expansion tray in Cisco UCS Manager after it is physically removed. You cannot remove server level or any other chassis level storage enclosures.

Procedure

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

Step 2 Expand**Chassis** > **Servers** > **Storage Enclosures**.

Step 3 Choose the storage enclosure that you want to remove.

Step 4 In the **Actions** area, click **Remove Enclosure**.

Sas Expander Configuration Policy

Creating Sas Expander Configuration Policy

Procedure

Step 1 In the **Navigation** pane, click **Chassis**.

Step 2 Expand **Chassis** > **Policies**.

Step 3 Expand the node for the organization where you want to create the policy.

If the system does not include multitenancy, expand the **root** node.

Step 4 Right-click **Sas Expander Configuration Policies** and choose **Create Sas Expander Configuration Policy**.

Step 5 In the **Create Sas Expander Configuration Policy** dialog box, complete the following fields:

Name	Description
Name field	The name of the policy. This name can be between 1 and 16 alphanumeric characters. You cannot use spaces or any special characters other than - (hyphen), _ (underscore), : (colon), and . (period), and you cannot change this name after the object is saved.
Description field	A description of the policy. Cisco recommends including information about where and when to use the policy. Enter up to 256 characters. You can use any characters or spaces except ` (accent mark), \ (backslash), ^ (carat), " (double quote), = (equal sign), > (greater than), < (less than), or ' (single quote).
6G-12G Mixed Mode field	This can be one of the following: • **Disabled**—Connection Management is disabled in this policy and the Sas Expander uses only 6G speeds even if 12G is available. • **Enabled**—Connection Management is enabled in this policy and it intelligently shifts between 6G and 12 G speeds based on availability. After **6G-12G Mixed Mode** is enabled, you cannot downgrade to any release earlier than 3.2(3a). To downgrade, disable this mode. • **No Change** (Default) —Pre-existing configuration is retained. **Note** Enabling or disabling **6G-12G Mixed Mode** causes system reboot. **6G-12G Mixed Mode** field is available only for Cisco UCS S3260 M5 and higher servers.

Step 6 Click **OK**.

Deleting a Sas Expander Configuration Policy

Procedure

Step 1 In the **Navigation** pane, click **Chassis**.

Step 2 Expand **Chassis** > **Policies**.

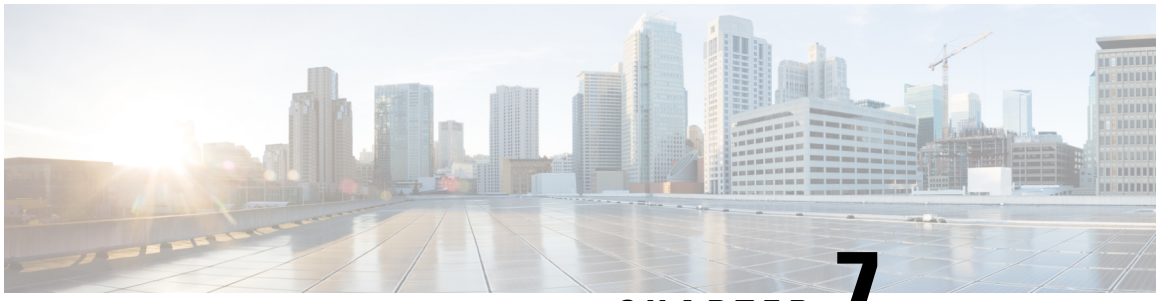
Step 3 Expand the node for the organization containing the pool.

If the system does not include multitenancy, expand the **root** node.

Step 4 Expand **Sas Expander Configuration Policies**.

Step 5 Right-click the Sas Expander Configuration policy you want to delete and choose **Delete**.

Step 6 If a confirmation dialog box displays, click **Yes**.



CHAPTER 7

Firmware Management

Firmware Management for Cisco UCS S3260 Systems

Cisco UCS uses firmware obtained from and certified by Cisco to support the endpoints in a Cisco UCS domain. Each endpoint is a component in the Cisco UCS domain that requires firmware to function.

Cisco UCS Manager Firmware Management Guide, Release 3.2 provides detailed information about the complete firmware management process. Additionally, beginning with Cisco UCS Manager Release 3.1(2), you can upgrade the firmware of Cisco UCS S3260 chassis components by defining a chassis firmware policy and including it in the chassis profile associated with a Cisco UCS S3260 chassis.

You can upgrade a Cisco UCS domain with a S3260 chassis and servers through Cisco UCS Manager in the following ways:

- Upgrade infrastructure components through Auto Install—You can upgrade the infrastructure components, such as the Cisco UCS Manager software and the fabric interconnects, in a single step by using Auto Install. *Cisco UCS Manager Firmware Management Guide, Release 3.2* provides detailed information about the Auto Install process.
- Upgrade chassis through one of the following:
  - Upgrade chassis components through Auto Install—Beginning with Cisco UCS Manager Release 3.2(3), you can upgrade the firmware of Cisco UCS S3260 chassis components in a single step by using Auto Install.
  - Upgrade chassis through chassis firmware packages in chassis profiles—This option enables you to upgrade all chassis endpoints in a single step. The chassis endpoints that you can upgrade through a chassis firmware package are:
    - Chassis Adapter
    - Chassis Management Controller
    - Chassis Board Controller
    - Local Disk

Note You can upgrade local disks in the chassis through a chassis firmware package. Upgrade the local disks in a server through a host firmware package.

- SAS Expander

- Upgrade servers through firmware packages in service profiles—This option enables you to upgrade all server endpoints in a single step, reducing the amount of disruption caused by a server reboot. You can combine this option with the deferred deployment of service profile updates to ensure that server reboots occur during scheduled maintenance windows. The server endpoints that you can upgrade through a host firmware package are:
  - CIMC
  - BIOS
  - Board Controller
  - Storage Controller
  - Local Disk

  Cisco UCS Manager Firmware Management Guide, Release 3.2 provides detailed information about upgrading server endpoints through host firmware packages.

You can also directly upgrade the firmware at each infrastructure, chassis, and server endpoint. This option enables you to upgrade many infrastructure, chassis, and server endpoints directly, including the fabric interconnects, SAS expanders, CMCs, chassis adapters, storage controllers, and board controllers. However, direct upgrade is not available for all endpoints, including the storage controller, HBA firmware, HBA option ROM and local disk.

This chapter explains the following newly introduced firmware management capabilities for the Cisco UCS S3260 system:

- Upgrading firmware through chassis firmware packages in chassis profiles
- Directly upgrading firmware on Cisco UCS S3260 chassis and server endpoints

Chassis Firmware Upgrade through Auto Install

Cisco UCS Manager Release 3.2(3) introduces support for upgrading chassis firmware through Auto Install on Cisco UCS S3260 chassis. This ability enables you to upgrade all chassis components in a Cisco UCS domain through a single chassis firmware package.

Upgrading the Chassis Firmware with Auto Install

You can upgrade chassis firmware by specifying a Chassis Firmware package.

If you staged the chassis firmware through **Prepare for Firmware Install**, and that backup version is the same as the selected chassis firmware version in this procedure, the backup version is set as the startup version.

If you did not set the backup version earlier, the selected firmware version is set as the backup version. This version is then set as the startup version.

Completing this stage will result in a reboot.

Note You cannot use Auto Install to upgrade the chassis in a Cisco UCS domain if Cisco UCS Manager in that domain is at a release prior to Cisco UCS Manager 3.2(3). For more information, see the *Cautions and Guidelines for Upgrading with Auto Install* section in the *Cisco UCS Manager Firmware Management Guide, Release 3.2*.

You cannot cancel a chassis firmware upgrade process after you complete the configuration in the **Install Chassis Firmware** wizard. Cisco UCS Manager applies the changes immediately.

Before you begin

- Complete all prerequisites listed in the *Prerequisites for Upgrading and Downgrading Firmware* section of the *Cisco UCS Manager Firmware Management Guide, Release 3.2*.
- Stage the Chassis firmware if using Cisco UCS Manager Release 3.2(3) or later releases. The *Preparing for Firmware Install* section of the *Cisco UCS Manager Firmware Management Guide, Release 3.2*, provides detailed information about staging the chassis firmware.

Note Although this is optional, it is also recommended.

Procedure

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

Step 2 Click the **Equipment** node.

Step 3 In the **Work** pane, click the **Firmware Management** tab.

Step 4 In the **Work** pane, click the **Firmware Auto Install** tab.

Step 5 In the **Actions** area, click **Install Chassis Firmware**.

Step 6 On the **Prerequisites** page of the **Install Chassis Firmware** wizard, carefully review the prerequisites and guidelines listed on this page and then do one of the following:

- If you have completed all of the prerequisites, click **Next**.
- If you have not completed all of the prerequisites, click **Cancel** and complete the prerequisites before you upgrade the chassis firmware.

Step 7 On the **Select Package Versions** page of the **Install Chassis Firmware** wizard, do the following:

a) Choose the software bundle to which you want to upgrade these chassis from the **New Version** drop-down list in the **Chassis Firmware** area.

b) To upgrade the chassis to a service pack firmware version, choose the service pack to which you want to upgrade these chassis from the **New Version** drop-down list in the **Service-Pack Firmware** area.

c) Click **Next**.

Step 8 On the **Select Firmware Packages** page of the **Install Chassis Firmware** wizard, do the following:

a) Expand the node for each organization that contains a chassis firmware package you want to update with the selected software.

   If the firmware version for a chassis firmware package is staged, it appears as the **Backup Version** along with the name of the chassis firmware package.

b) Check the check box next to the name of each chassis firmware package that you want to update.

   This step updates the selected chassis firmware package with the new version of firmware. You must choose the chassis firmware packages included in the chassis profiles associated with all chassis in the Cisco UCS domain to update all chassis.

c) Click **Next**.

Step 9 On the **Firmware Package Dependencies** page of the **Install Chassis Firmware** wizard, do the following:

a) Expand the node for each chassis firmware package listed in the table.
b) Review the list of chassis profiles that include the chassis firmware package.
c) If desired, click a link in one of the following columns:
   - **Chassis Pack DN** column—Opens the navigator for the chassis firmware package.
   - **Chassis Profile DN** column—Opens the navigator for the chassis profile.
d) Do one of the following:
   - If you want to change one or more of the selected chassis firmware packages, click **Prev**.
   - If you are satisfied that you have selected the appropriate chassis firmware packages and want to review the impact of the chassis firmware upgrade on the endpoints, click **Next**.
   - If you want to start the chassis upgrade immediately, click **Install**.

Step 10 On the **Impacted Endpoints Summary** page of the **Install Chassis Firmware** wizard, do the following:

a) Click the appropriate check boxes to filter the results in the **Impacted Endpoints** table.

   You can filter the results by the type of endpoint and by whether the impact of the upgrade is disruptive or not.

b) Review the list of impacted endpoints.
c) If desired, click the link in the **Maintenance Policy** column to open the navigator for that policy.
d) Do one of the following:
   - If you want to change one or more of the selected chassis firmware packages, click **Prev**.
   - If you are satisfied that you have selected the appropriate chassis firmware packages and want to start the chassis upgrade, click **Install**.

Step 11 (Optional) To check on the progress of the chassis firmware upgrade, check the **FSM** tab for each chassis that you are upgrading.

The **Firmware Installer** field on the **Firmware Auto Install** tab shows only the status of an infrastructure firmware upgrade.

Firmware Upgrades through Chassis Firmware Packages in Chassis Profiles

Cisco UCS Manager Release 3.1(2) introduces support for chassis profiles and chassis firmware packages on Cisco UCS S3260 chassis. You can upgrade the firmware of Cisco UCS S3260 chassis endpoints by defining a chassis firmware package and including it in the chassis profile associated with a chassis. You cannot manually upgrade the firmware of a chassis that is associated with a chassis profile.

Note If any chassis component is in the failed state, chassis profile association fails. Cisco recommends bringing the chassis component back up before continuing with chassis profile association. To continue association without bringing the chassis component back up, exclude the component before association.

You cannot upgrade the firmware on a server through chassis profiles. Upgrade the firmware on servers through service profiles.

Servers in a chassis are automatically powered down before the chassis upgrade process begins.

Chassis Firmware Package

This policy enables you to specify a set of firmware versions that make up the chassis firmware package (also known as the chassis firmware pack). The chassis firmware package includes the following firmware for chassis endpoints:

- **Chassis Adapter**
- **Chassis Management Controller**
- **Chassis Board Controller**
- **Local Disk**

  Note **Local Disk** is excluded by default from the chassis firmware package.

- **SAS Expander**

Tip You can include more than one type of firmware in the same chassis firmware package. For example, a chassis firmware package can include both board controller firmware and chassis adapter firmware for two different models of adapters. However, you can only have one firmware version with the same type, vendor, and model number. The system recognizes which firmware version is required for an endpoint and ignores all other firmware versions.

You can also exclude firmware of specific components from a chassis firmware package either when creating a new chassis firmware package or when modifying an existing chassis firmware package. For example, if

you do not want to upgrade the board controller firmware through the chassis firmware package, you can exclude board controller firmware from the list of firmware package components.

Important Each chassis firmware package is associated with one list of excluded components.

The chassis firmware package is pushed to all chassis associated with chassis profiles that include this policy.

This policy ensures that the chassis firmware is identical on all chassis associated with chassis profiles that use the same policy. Therefore, if you move the chassis profile from one chassis to another, the firmware versions are maintained. Also, if you change the firmware version for an endpoint in the chassis firmware package, new versions are applied to all the affected chassis profiles immediately.

For a chassis firmware package to take effect, include this policy in a chassis profile, and associate that chassis profile with a chassis.

This policy is not dependent upon any other policies. Ensure that the appropriate firmware has been downloaded to the fabric interconnect. If the firmware image is not available when Cisco UCS Manager is associating a chassis with a chassis profile, Cisco UCS Manager ignores the firmware upgrade and completes the association.

Stages of a Firmware Upgrade through Chassis Firmware Packages in Chassis Profiles

You can use the chassis firmware package policies in chassis profiles to upgrade chassis firmware.

Caution If you modify a chassis firmware package by adding an endpoint or changing firmware versions for an existing endpoint, Cisco UCS Manager upgrades the endpoints after you acknowledge the change by clicking **Pending Activities**. This process disrupts data traffic to and from the chassis.

New Chassis Profile

For a new chassis profile, this upgrade takes place over the following stages:

Chassis Firmware Package Policy Creation

During this stage, you create the chassis firmware package.

Chassis Profile Association

During this stage, you include the chassis firmware package in a chassis profile, and then associate the chassis profile with a chassis. The system pushes the selected firmware versions to the endpoints. The chassis must be reacknowledged to ensure that the endpoints are running the versions specified in the firmware package.

Existing Chassis Profile

For chassis profiles that are associated with a chassis, Cisco UCS Manager upgrades the firmware after you acknowledge the change by clicking **Pending Activities**.

Effect of Updates to Firmware Packages in Chassis Profiles

To update firmware through a chassis firmware package in a chassis profile, you need to update the firmware in the package. What happens after you save the changes to a firmware package depends upon how the Cisco UCS domain is configured.

The following table describes the most common option for upgrading chassis with a firmware package in a chassis profile.

Chassis Profile	Maintenance Policy	Upgrade Actions
The chassis firmware package is included in one or more chassis profiles, and each chassis profile is associated with one chassis. OR The chassis firmware package is included in an updating chassis profile template, and the chassis profile created from that template is associated with one chassis.	Configured for user acknowledgment	The following occurs when you update the chassis firmware package: 1. Cisco UCS asks you to confirm your change and advises that a user-acknowledgement of the chassis is required. 2. Click the flashing **Pending Activities** button to select the chassis you want to reacknowledge, and apply the new firmware. 3. Cisco UCS verifies the model numbers and vendor against all chassis associated with chassis profiles that include this policy. If the model numbers and vendor match a firmware version in the policy, Cisco UCS reacknowledges the chassis and updates the firmware. A manual reacknowledgment of the chassis does not cause Cisco UCS to apply the chassis firmware package, nor does it cancel the pending activities. You must acknowledge or cancel the pending activity through the **Pending Activities** button.

Creating a Chassis Firmware Package

Tip You can include more than one type of firmware in the same chassis firmware package. For example, a chassis firmware package can include both board controller firmware and chassis adapter firmware for two different models of adapters. However, you can only have one firmware version with the same type, vendor, and model number. The system recognizes which firmware version is required for an endpoint and ignores all other firmware versions.

You can also exclude firmware of specific components from a chassis firmware package either when creating a new chassis firmware package or when modifying an existing chassis firmware package.

Before you begin

Ensure that the appropriate firmware was downloaded to the fabric interconnect.

Procedure

Step 1 In the **Navigation** pane, click **Chassis**.

Step 2 Expand **Chassis** > **Policies**.

Step 3 Expand the node for the organization where you want to create the policy.

If the system does not include multitenancy, expand the **root** node.

Step 4 Right-click **Chassis Firmware Packages** and choose **Create Chassis Firmware Package**.

Step 5 In the **Create Chassis Firmware Package** dialog box, enter a unique name and description for the package.

This name can be between 1 and 16 alphanumeric characters. You cannot use spaces or any special characters other than - (hyphen), _ (underscore), : (colon), and . (period), and you cannot change this name after the object is saved.

Step 6 From each drop-down list, **Chassis Package**, and **Service Pack**, select the firmware package.

The images from **Service Pack** will take precedence over the images from **Chassis Package**.

Step 7 In the **Excluded Components** area, check the check boxes corresponding to the components that you want to exclude from this chassis firmware package.

If you do not check any component check boxes, all the listed components are included in the chassis firmware package.

Note Local Disk is excluded by default from the chassis firmware pack.

Step 8 Click **OK**.

What to do next

Include the policy in a chassis profile or chassis profile template

Updating a Chassis Firmware Package

You can include more than one type of firmware in the same chassis firmware package. For example, a chassis firmware package can include both board controller firmware and chassis adapter firmware for two different models of adapters. However, you can only have one firmware version with the same type, vendor, and model number. The system recognizes which firmware version is required for an endpoint and ignores all other firmware versions.

You can also exclude firmware of specific components from a chassis firmware package either when creating a new chassis firmware package or when modifying an existing chassis firmware package.

Important Each chassis firmware package is associated with one list of excluded components.

Before you begin

Ensure that the appropriate firmware was downloaded to the fabric interconnect.

Procedure

Step 1 In the **Navigation** pane, click **Chassis**.

Step 2 Expand **Chassis** > **Policies**.

Step 3 Expand the node for the organization that includes the policy you want to update.

If the system does not include multitenancy, expand the **root** node.

Step 4 Expand **Chassis Firmware Packages** and choose the policy you want to update.

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

Step 6 To modify the components in the chassis firmware package, click **Modify Package Versions**.

The **Modify Package Versions** window appears.

Step 7 To modify the chassis package, from the **Chassis Package** drop-down list, select the chassis package version.

Step 8 To modify the service pack, from the **Service Pack** drop-down list, select the service pack version.

To remove the service pack, select **<not set>**.

Step 9 In the **Excluded Components** area, check the check boxes corresponding to the components that you want to exclude from this chassis firmware package.

If you do not check any component check boxes, all the listed components are included in the chassis firmware package.

Note **Local Disk** is excluded by default from the chassis firmware pack.

Step 10 Click **OK**.

Adding Chassis Firmware Packages to an Existing Chassis Profile

If the chassis profile is associated with a chassis, Cisco UCS Manager updates and activates the firmware in the chassis with the new versions after a user acknowledgment.

Procedure

Step 1 In the **Navigation** pane, click **Chassis**.

Step 2 Expand **Chassis** > **Chassis Profiles**.

Step 3 Expand the node for the organization that includes the chassis profile that you want to update.

If the system does not include multitenancy, expand the **root** node.

Step 4 Click the chassis profile to which you want to add the chassis firmware package.

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

Step 6 Click the down arrows to expand the **Chassis Firmware Package** section.

Step 7 To add a chassis firmware package, select the desired policy from the **Chassis Firmware Package** drop-down list.

Step 8 Click **Save Changes**.

Upgrading a UCS Domain with Cisco UCS S3260 Servers

Before you begin

- Ensure that all the servers nodes are shut down.
- Ensure that the UCS domain has an assigned chassis policy that references a chassis firmware package policy and a chassis maintenance policy.

Procedure

Step 1 Upgrade infrastructure firmware through Auto Install. See Upgrading the Infrastructure Firmware with Auto Install.

Step 2 Update the chassis firmware package policy.

- If you are using the default chassis firmware package policy, update the **default** chassis firmware package policy with the new package version. See Updating a Chassis Firmware Package, on page 64.
- You can create a new chassis firmware package policy using the new chassis package version, and configure the existing or assigned chassis profile (accept any UserAck). See Creating a Chassis Firmware Package, on page 63 to create a new chassis firmware package policy.

This process may take 1-2 hours. You can monitor the status in the chassis FSM tab.

Step 3 Update the host firmware. See Upgrading the Server Firmware with Auto Install.

Direct Firmware Upgrade on S3260 Chassis and Server Endpoints

The following sections provide detailed information about upgrading S3260 Chassis and Server endpoints.

S3260 Chassis Endpoints

To trigger firmware upgrade on S3260 Chassis components, use the following order:

1. Update CMC 1 firmware
2. Update CMC 2 firmware
3. Update Chassis Adapter 1 firmware
4. Update Chassis Adapter 2 firmware
5. Update SAS Expander 1 firmware

6. Update SAS Expander 2 firmware
7. Activate SAS Expander 1 firmware
8. Activate SAS Expander 2 firmware
9. Activate CMC 1 firmware
10. Activate CMC 2 firmware
11. Activate Chassis Adapter 1 firmware
12. Activate Chassis Adapter 2 firmware
13. Activate Chassis Board Controller

Note You cannot manually update the firmware for local disk in a chassis. The local disk firmware is updated when you explicitly include it in a chassis firmware package.

Cisco UCS S3260 Server Node Endpoints

To trigger firmware upgrade on server endpoints, use the following order:

1. Update CIMC
2. Activate CIMC
3. Update BIOS
4. Activate BIOS
5. Activate Board Controller
6. Activate Storage Controller

While upgrading firmware, Cisco recommends that you use the following order:

1. Upgrade infrastructure—Cisco UCS Manager software and the fabric interconnects
2. Upgrade chassis and server endpoints

While downgrading firmware, Cisco recommends that you use the following order:

1. Downgrade chassis and server endpoints
2. Downgrade infrastructure—Cisco UCS Manager software and the fabric interconnects

Direct Firmware Upgrade on Chassis Endpoints

Updating the CMC Firmware on a S3260 Chassis

Caution Do not remove the hardware that contains the endpoint or perform any maintenance on it until the update process completes. If the hardware is removed or otherwise unavailable due to maintenance, the firmware update fails. This failure might corrupt the backup partition. You cannot update the firmware on an endpoint with a corrupted backup partition.

Procedure

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

Step 2 Expand **Equipment** > **Chassis** > ***Chassis Number***

Step 3 In the **Work** pane, click the **Installed Firmware** tab, select **Chassis Management Controller**, and then click **Update Firmware**.

Step 4 In the **Update Firmware** dialog box, do the following:

a) From the **Version** drop-down list, select the firmware version to update the endpoint.

b) Click **OK**.

If one or more endpoints cannot be directly updated, Cisco UCS Manager displays a notification message. After you acknowledge the notification message, Cisco UCS Manager updates the firmware for all other endpoints on servers that can be directly updated.

Cisco UCS Manager copies the selected firmware package to the backup memory slot, where it remains until you activate it.

Step 5 (Optional) Monitor the status of the update in the **Update Status** area.

The update process can take several minutes. Do not activate the firmware until the selected firmware package displays in the **Backup Version** field in the **Installed Firmware** tab.

What to do next

Activate the firmware.

Updating the Chassis Adapter Firmware on a S3260 Chassis

If the adapter connectivity to both fabric interconnects is down, upgrade is skipped.

Caution Do not remove the hardware that contains the endpoint or perform any maintenance on it until the update process completes. If the hardware is removed or otherwise unavailable due to maintenance, the firmware update fails. This failure might corrupt the backup partition. You cannot update the firmware on an endpoint with a corrupted backup partition.

Procedure

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

Step 2 Expand **Equipment** > **Chassis** > **Chassis** *Number*

Step 3 In the **Installed Firmware** tab, select **Chassis Adapter** and click **Update Firmware**.

Step 4 In the **Update Firmware** dialog box, do the following:

a) From the **Version** drop-down list, select the firmware version to update the endpoint.

b) Click **OK**.

If one or more endpoints cannot be directly updated, Cisco UCS Manager displays a notification message. After you acknowledge the notification message, Cisco UCS Manager updates the firmware for all other endpoints on servers that can be directly updated.

Cisco UCS Manager copies the selected firmware package to the backup memory slot, where it remains until you activate it.

Step 5 (Optional) Monitor the status of the update in the **Update Status** area.

The update process can take several minutes. Do not activate the firmware until the selected firmware package displays in the **Backup Version** field in the **Installed Firmware** tab.

What to do next

Activate the firmware.

Updating the SAS Expander Firmware on a S3260 Chassis

Caution Do not remove the hardware that contains the endpoint or perform any maintenance on it until the update process completes. If the hardware is removed or otherwise unavailable due to maintenance, the firmware update fails. This failure might corrupt the backup partition. You cannot update the firmware on an endpoint with a corrupted backup partition.

Procedure

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

Step 2 Expand **Equipment** > **Chassis** > **Chassis** *Number*

Step 3 In the **Installed Firmware** tab, select the SAS expander that you want to update and click **Update Firmware**.

Step 4 In the **Update Firmware** dialog box, do the following:

a) From the **Version** drop-down list, select the firmware version to update the endpoint.

b) Click **OK**.

If one or more endpoints cannot be directly updated, Cisco UCS Manager displays a notification message. After you acknowledge the notification message, Cisco UCS Manager updates the firmware for all other endpoints on servers that can be directly updated.

Cisco UCS Manager copies the selected firmware package to the backup memory slot, where it remains until you activate it.

Step 5 (Optional) Monitor the status of the update in the **Update Status** area.

The update process can take several minutes. Do not activate the firmware until the selected firmware package displays in the **Backup Version** field in the **Installed Firmware** tab.

What to do next

Activate the firmware.

Activating the SAS Expander Firmware on a S3260 Chassis

Procedure

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

Step 2 Expand **Equipment** > **Chassis** > **Chassis** *Number*

Step 3 In the **Installed Firmware** tab, select the SAS Expander that you want to update and click **Activate Firmware**.

Step 4 In the **Activate Firmware** dialog box, do the following:

a) Select the appropriate version from the **Set Version** drop-down list.

If one or more of the selected endpoints are not configured with the version that you want as the backup version, the version does not display in the **Set Version** drop-down list. You must select the version from the **Startup Version** column for each individual endpoint.

b) Click **OK**.

Activating the CMC Firmware on a S3260 Chassis

Procedure

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

Step 2 Expand **Equipment** > **Chassis** > **Chassis** *Number*

Step 3 In the **Installed Firmware** tab, select **Chassis Management Controller** and then click **Activate Firmware**.

Step 4 In the **Activate Firmware** dialog box, do the following:

a) Select the appropriate version from the **Set Version** drop-down list.

If one or more of the selected endpoints are not configured with the version that you want as the backup version, the version does not display in the **Set Version** drop-down list. You must select the version from the **Startup Version** column for each individual endpoint.

b) Click **OK**.

Activating the Chassis Adapter Firmware on a S3260 Chassis

Procedure

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

Step 2 Expand **Equipment** > **Chassis** > **Chassis** *Number*

Step 3 In the **Installed Firmware** tab, select **Chassis Adapter** and then click **Activate Firmware**.

Step 4 In the **Activate Firmware** dialog box, do the following:

a) Select the appropriate version from the **Set Version** drop-down list.

If one or more of the selected endpoints are not configured with the version that you want as the backup version, the version does not display in the **Set Version** drop-down list. You must select the version from the **Startup Version** column for each individual endpoint.

b) Click **OK**.

Activating the Chassis Board Controller Firmware on a S3260 Chassis

Note Cisco UCS Manager does not support activation of chassis board controller firmware to earlier versions.

Procedure

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

Step 2 Expand **Equipment** > **Chassis** > **Chassis** *Number*

Step 3 In the **Installed Firmware** tab, select **Board Controller** and then click **Activate Firmware**.

Step 4 In the **Activate Firmware** dialog box, do the following:

a) Select the appropriate version from the **Set Version** drop-down list.

If one or more of the selected endpoints are not configured with the version that you want as the backup version, the version does not display in the **Set Version** drop-down list. You must select the version from the **Startup Version** column for each individual endpoint.

b) Click **OK**.

Direct Firmware Upgrade on Server Endpoints

Updating the CIMC Firmware on a Cisco UCS S3260 Server Node

Caution Do not remove the hardware that contains the endpoint or perform any maintenance on it until the update process completes. If the hardware is removed or otherwise unavailable due to maintenance, the firmware update fails. This failure might corrupt the backup partition. You cannot update the firmware on an endpoint with a corrupted backup partition.

Procedure

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

Step 2 Expand **Equipment** > **Chassis** > *Chassis Number* > **Servers**.

Step 3 Expand the node for the server for which you want to update the CIMC.

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

Step 5 Click the **CIMC** tab.

Step 6 In the **Actions** area, click **Update Firmware**.

Step 7 In the **Update Firmware** dialog box, do the following:

a) From the **Version** drop-down list, select the firmware version to update the endpoint.

b) Click **OK**.

Cisco UCS Manager copies the selected firmware package to the backup memory slot, where it remains until you activate it.

Step 8 (Optional) Monitor the status of the update in the **Update Status** area.

The update process can take several minutes. Do not activate the firmware until the selected firmware package displays in the **Backup Version** field in the **Firmware** area of the **General** tab.

What to do next

Activate the firmware.

Activating the CIMC Firmware on a Cisco UCS S3260 Server Node

The activation of firmware for a CIMC does not disrupt data traffic. However, it will interrupt all KVM sessions and disconnect any vMedia attached to the server.

Caution Do not remove the hardware that contains the endpoint or perform any maintenance on it until the update process completes. If the hardware is removed or otherwise unavailable due to maintenance, the firmware update fails. This failure might corrupt the backup partition. You cannot update the firmware on an endpoint with a corrupted backup partition.

Procedure

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

Step 2 Expand **Equipment** > **Chassis** > *Chassis Number* > **Servers**.

Step 3 Expand the node for the server that includes the CIMC for which you want to activate the updated firmware.

Step 4 On the **Work** pane, click the **Inventory** tab.

Step 5 Click the **CIMC** tab.

Step 6 In the **Actions** area, click **Activate Firmware**.

Step 7 In the **Activate Firmware** dialog box, do the following:

a) Select the appropriate version from the **Version To Be Activated** drop-down list.

If one or more of the selected endpoints are not configured with the required version as the backup version, that version does not display in the **Set Version** drop-down list. You must select the version from the **Startup Version** column for each individual endpoint.

b) If you want to set the startup version and not change the version running on the endpoint, check the **Set Startup Version Only** check box.

If you configure **Set Startup Version Only**, the activated firmware moves to the pending-next-reboot state and the endpoint is not immediately rebooted. The activated firmware does not become the running version of firmware until the endpoint reboots.

c) Click **OK**.

Updating the BIOS Firmware on a Cisco UCS S3260 Server Node

Caution Do not remove the hardware that contains the endpoint or perform any maintenance on it until the update process completes. If the hardware is removed or otherwise unavailable due to maintenance, the firmware update fails. This failure might corrupt the backup partition. You cannot update the firmware on an endpoint with a corrupted backup partition.

Procedure

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

Step 2 Expand **Equipment** > **Chassis** > *Chassis Number* > **Servers**.

Step 3 Expand the node for the server for which you want to update the BIOS firmware.

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

Step 5 Click the **Motherboard** tab.

Step 6 In the **Actions** area, click **Update BIOS Firmware**.

Step 7 In the **Update Firmware** dialog box, do the following:

a) From the **Version** drop-down list, select the firmware version to which you want to update the server BIOS.

b) (Optional) If you want to update the firmware regardless of any possible incompatibilities or currently executing tasks, check the **Force** check box.
c) Click **OK**.

Cisco UCS Manager copies the selected server BIOS firmware package to the backup memory slot, where it remains until you explicitly activate it.

The update is complete when the **BIOS** area of the **Motherboard** tab displays **Ready** in the **Update Status** column for the **Backup Version**.

What to do next

Activate the firmware.

Activating the BIOS Firmware on a Cisco UCS S3260 Server Node

Procedure

Step 1 In the **Navigation** pane, click **Equipment**.
Step 2 Expand **Equipment** > **Chassis** > *Chassis Number* > **Servers**.
Step 3 Expand the node for the server for which you want to activate the updated BIOS firmware.
Step 4 In the **Work** pane, click the **Inventory** tab.
Step 5 Click the **Motherboard** tab.
Step 6 In the **Actions** area, click **Activate BIOS Firmware**.
Step 7 In the **Activate Firmware** dialog box, do the following:
a) Select the appropriate server BIOS version from the **Version To Be Activated** drop-down list.
b) If you want to set the startup version and not change the version running on the server, check the **Set Startup Version Only** check box.

If you configure **Set Startup Version Only**, the activated firmware moves into the pending-next-reboot state and the server is not immediately rebooted. The activated firmware does not become the running version of firmware until the server is rebooted.

c) Click **OK**.

Activating the Board Controller Firmware on a Cisco UCS S3260 Server Node

Note This activation procedure causes the server to reboot. Depending upon whether the service profile associated with the server includes a maintenance policy, the reboot can occur immediately. Cisco recommends that you upgrade the board controller firmware through the host firmware package in the service profile as the last step of upgrading a Cisco UCS domain, along with upgrading the server BIOS. This reduces the number of times a server needs to reboot during the upgrade process.

Procedure

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

Step 2 Click the **Equipment** node.

Step 3 In the **Work** pane, click the **Firmware Management** tab.

Step 4 On the **Installed Firmware** tab, click **Activate Firmware**.

Cisco UCS Manager GUI opens the **Activate Firmware** dialog box and verifies the firmware versions for all endpoints in the Cisco UCS domain. This step might take a few minutes, based on the number of chassis and servers.

Step 5 From the **Filter** drop-down list on the menu bar of the **Activate Firmware** dialog box, select **Board Controller**.

Cisco UCS Manager GUI displays all servers that have board controllers in the **Activate Firmware** dialog box.

Step 6 For the board controller you want to update, select a version from the **Startup Version** drop-down list.

Step 7 Click **OK**.

Step 8 (Optional) You can also use the **Force Board Controller Activation** option to update the firmware version when you upgrade CPUs with different architectures.

Activating the Storage Controller Firmware on a Cisco UCS S3260 Server Node

Procedure

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

Step 2 Expand **Equipment** > **Chassis** > *Chassis Number* > **Servers**.

Step 3 Select the server on which you want to activate the storage controller.

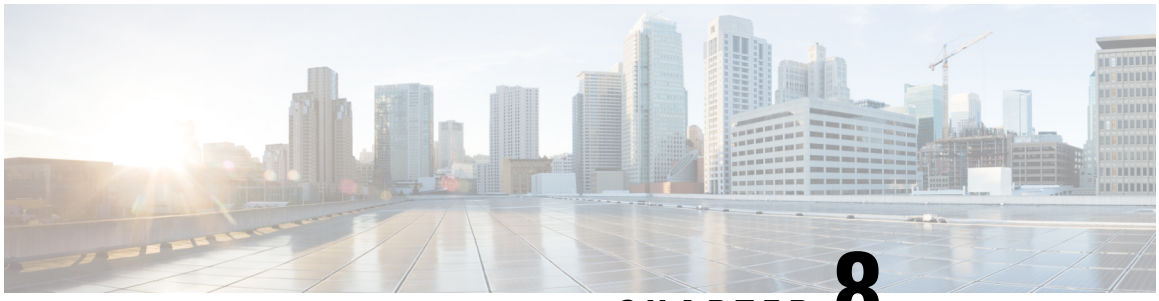
Step 4 In the **Installed Firmware** tab, select **Storage Controller** and then click **Activate Firmware**.

Step 5 In the **Activate Firmware** dialog box, do the following:

a) Select the appropriate version from the **Set Version** drop-down list.

If one or more of the selected endpoints are not configured with the version that you want as the backup version, the version does not display in the **Set Version** drop-down list. You must select the version from the **Startup Version** column for each individual endpoint.

b) Click **OK**.



CHAPTER 8

Chassis Management

The Cisco UCS S3260 Chassis

Cisco UCS Manager Release 3.1(2) introduces support for the Cisco UCS S3260 chassis on Cisco UCS 6300 Series, and 6200 Series fabric interconnect setups.

The Cisco UCS S3260 chassis is a 4U chassis that is designed to operate in a standalone environment and also as part of the Cisco Unified Computing System. It has the following main components:

- Four 1050 Watt AC modular power supplies (2 + 2 shared and redundant mode of operation)
- Two System IO Controller (SIOC) slots
- Two storage server slots out of which one can be used for storage expansion

Note The second server slot in the chassis can be utilized by an HDD expansion tray module for an additional four 3.5” drives.

- 56 3.5” drive bays with an optional 4 x 3.5” HDD expansion tray module instead of the second server
- Up to 360 TB storage capacity by using 6 TB HDDs
- Serial Attached SCSI (SAS) expanders that can be configured to assign the 3.5” drives to individual server modules
- The two servers in the chassis can be replaced by a single, dual-height server with an IO expander

Acknowledging a Chassis

Perform the following procedure if you change the port that connects the chassis to the fabric interconnect. Acknowledging the chassis ensures that Cisco UCS Manager is aware of the change in the port.

After you change the port that connects the chassis to the fabric interconnect, wait for at least 1 minute before you reacknowledge the chassis.

Procedure

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

Step 2 Expand **Equipment** > **Chassis**.

Step 3 Choose the chassis that you want to acknowledge.

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

Step 5 In the **Actions** area, click **Acknowledge Chassis**.

Step 6 If Cisco UCS Manager displays a confirmation dialog box, click **Yes**.

Cisco UCS Manager disconnects the chassis and then rebuilds the connections between the chassis and the fabric interconnect or fabric interconnects in the system.

Decommissioning a Chassis

Procedure

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

Step 2 Expand **Equipment** > **Chassis**.

Step 3 Choose the chassis that you want to decommission.

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

Step 5 In the **Actions** area, click **Decommission Chassis**.

Step 6 If Cisco UCS Manager GUI displays a confirmation dialog box, click **Yes**.

The decommission process may take several minutes to complete.

Removing a Chassis

Before you begin

Physically remove the chassis before performing the following procedure.

Procedure

Step 1 In the **Navigation** pane, click **Equipment**.
Step 2 Expand **Equipment** > **Chassis**.
Step 3 Choose the chassis that you want to remove.
Step 4 In the **Work** pane, click the **General** tab.
Step 5 In the **Actions** area, click **Remove Chassis**.
Step 6 If Cisco UCS Manager displays a confirmation dialog box, click **Yes**.

The removal may take several minutes to complete.

Turning on the Locator LED for a Chassis

Procedure

Step 1 In the **Navigation** pane, click **Equipment**.
Step 2 Expand **Equipment** > **Chassis**.
Step 3 Click the chassis that you need to locate.
Step 4 In the **Work** pane, click the **General** tab.
Step 5 In the **Actions** area, click **Turn on Locator LED**.

This action is not available if the locator LED is already turned on.

The LED on the chassis starts flashing.

Turning off the Locator LED for a Chassis

Procedure

Step 1 In the **Navigation** pane, click **Equipment**.
Step 2 Expand **Equipment** > **Chassis**.
Step 3 Choose the chassis for which you want to turn off the locator LED.
Step 4 In the **Work** pane, click the **General** tab.
Step 5 In the **Actions** area, click **Turn off Locator LED**.

This action is not available if the locator LED is already turned off.

The LED on the chassis stops flashing.

Creating a Zoning Policy from Inventory

You can create a disk zoning policy from the existing inventory and disk ownership.

Note Creating a disk zoning policy from the existing inventory is supported only on Cisco UCS S3260 chassis.

Procedure

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

Step 2 Expand **Equipment** > **Chassis**.

Step 3 Choose the chassis for which you want to create a zoning policy.

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

Step 5 In the **Actions** area, click **Create Zoning Policy from Inventory**.

Step 6 In the **Create Zoning Policy from Inventory** dialog box that appears, do the following:

a) Enter the **Disk Zoning Policy Name**.

b) Select the organization where you want to create the policy.

c) Click **OK**

Step 7 In the confirmation dialog box that appears, click **OK**.

Viewing the POST Results for a Chassis

You can view any errors collected during the Power On Self-Test process for all servers and adapters in a chassis.

Procedure

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

Step 2 Expand **Equipment** > **Chassis**.

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

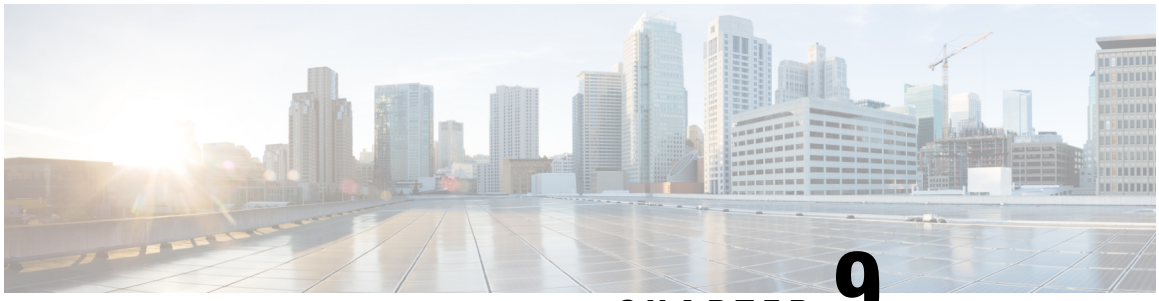
Step 4 In the **Work** pane, click the **General** tab.

Step 5 In the **Actions** area, click **View POST Results**.

The **POST Results** dialog box lists the POST results for each server in the chassis 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.



CHAPTER 9

Server Management

Cisco UCS S3260 Server Node Management

You can manage and monitor all Cisco UCS S3260 server nodes in a Cisco UCS domain through Cisco UCS Manager. You can perform some server management tasks, such as changes to the power state, from the server and service profile.

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

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

Booting a Cisco UCS S3260 Server Node

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 **Equipment**.

Step 2 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 a confirmation dialog box displays, click **Yes**.

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

Booting a Cisco UCS S3260 Server Node from the Service Profile

Procedure

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

Step 2 Expand **Servers** > **Service Profiles**.

Step 3 Expand the node for the organization where you want to create the service profile, or where the appropriate service profile already exists.

If the system does not include multitenancy, expand the **root** node.

Step 4 Choose the service profile that requires the associated server to boot.

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

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

Step 7 If a confirmation dialog box displays, click **Yes**.

Step 8 Click **OK** in the **Boot Server** dialog box.

After the server boots, the **Overall Status** field on the **General** tab displays an ok status or an up status.

Determining the Boot Order of a Cisco UCS S3260 Server Node

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 **Equipment**.
Step 2 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.

Shutting Down a Cisco UCS S3260 Server Node

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 **Equipment**.
Step 2 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 a confirmation dialog box displays, 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 Cisco UCS S3260 Server Node 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 **Servers**.
Step 2 Expand **Servers** > **Service Profiles**.
Step 3 Expand the node for the organization with the associated service profile.
Step 4 Choose the service profile associated with the 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 a confirmation dialog box displays, click **Yes**.

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

Resetting a Cisco UCS S3260 Server Node

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 shutdown, the server is power cycled. The option to have Cisco UCS Manager complete all management operations before it resets the server does not guarantee the completion of these operations 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 become out of sync with the actual power state and the servers might 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 **Equipment**.
Step 2 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.

Resetting a Cisco UCS S3260 Server Node to Factory Default Settings

You can now reset a Cisco UCS S3260 Server Node to its factory settings. By default, the factory reset operation does not affect storage drives. This is to prevent any loss of data. However, you can choose to reset these devices to a known state as well.

The following guidelines apply to Cisco UCS S3260 Server Nodes when using scrub policies:

- For Cisco UCS S3260 Server Nodes, you cannot delete storage by using the scrub policy.
- Cisco UCS S3260 Server Nodes do not support FlexFlash drives.
- For Cisco UCS S3260 Server Nodes, you can only reset the BIOS by using the scrub policy.

Important Resetting storage devices will result in loss of data.

Perform the following procedure to reset the server to factory default settings.

Procedure

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

Step 2 Expand **Equipment** > **Chassis** > *Chassis Number* > **Servers**.

Step 3 Choose the server that you want to reset to its factory default settings.

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 **Reset to Factory Default**.
b) Click **OK**.

Step 7 From the **Maintenance Server** dialog box that appears, select the appropriate options:

- To delete all storage, check the **Scrub Storage** check box.

  Note For Cisco UCS S3260 Server Nodes, you cannot delete storage using the scrub policy.

- To place all disks into their initial state after deleting all storage, check the **Create Initial Volumes** check box.

  You can check this check box only if you check the **Scrub Storage** check box. For servers that support JBOD, the disks will be placed in a JBOD state. For servers that do not support JBOD, each disk will be initialized with a single R0 volume that occupies all the space in the disk.

  Important Do not check the **Create Initial Volumes** box if you want to use storage profiles. Creating initial volumes when you are using storage profiles may result in configuration errors.

Cisco UCS Manager resets the server to its factory default settings.

Reacknowledging a Cisco UCS S3260 Server Node

Perform the following procedure to 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 **Equipment**.

Step 2 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, click **Re-acknowledge**, then 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 Cisco UCS S3260 Server Node from a Chassis

Procedure

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

Step 2 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, click **Decommission**, then 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 reinstall the server, you must re-acknowledge the slot for Cisco UCS Manager to re-discover the server.

Deleting the Inband Configuration from a Cisco UCS S3260 Server Node

This procedure removes the inband management IP address configuration from a blade server. If this action is grayed out, no inband configuration was completed.

Procedure

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

Step 2 Expand **Equipment** > **Chassis** > *Chassis Number* > **Servers** > *Server Name*.

Step 3 In the **Work** area, click the **Inventory** tab.

Step 4 Click the **CIMC** subtab.

Step 5 In the **Actions** area, click **Delete Inband Configuration**.

Step 6 Click **Yes** in the **Delete** confirmation dialog box.

The inband configuration for the server is deleted.

Note If an inband service profile is configured in Cisco UCS Manager with a default VLAN and pool name, the server CIMC will automatically get an inband configuration from the inband profile approximate one minute after deleting the inband configuration here.

Decommissioning a Cisco UCS S3260 Server Node

Procedure

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

Step 2 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 reinstall the server, you must re-acknowledge the slot for Cisco UCS Manager to rediscover the server.

Recommissioning a Cisco UCS S3260 Server Node

Procedure

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

Step 2 Click the **Chassis** node.

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

Step 4 On the row for each server that you want to recommission, check the check box in the **Recommission** column, then click **Save Changes**.

Step 5 If a confirmation dialog box displays, click **Yes**.

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

Reacknowledging a Server Slot in a S3260 Chassis

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

Procedure

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

Step 2 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.

Option	Description
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 Cisco UCS S3260 Server Node 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 Removing a Cisco UCS S3260 Server Node from a Chassis, on page 88.

Procedure

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

Step 2 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, click **Remove**, then 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 Cisco UCS S3260 Server Node On and Off

Procedure

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

Step 2 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**—Turns on the LED for the selected server.
- **Turn off Locator LED**—Turns off the LED for the selected server.

Turning the Local Disk Locator LED on a Cisco UCS S3260 Server Node On and Off

Before you begin

- Ensure that the disk is zoned. Turning the locator LED on and off cannot be done on disks that are not zoned.
- Ensure the server, on which the disk is located, is powered on. If the server is off, you are unable to turn on or off the local disk locator LED.

Procedure

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

Step 2 Expand **Equipment** > **Chassis** > *Chassis Number* > **Servers**.

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

Step 4 In the **Work** pane, click the **Inventory** > **Storage** > **Disks** tabs.

The Storage Controller inventory appears.

Step 5 Click a disk.
The disk details appear.

Step 6 In the **Details** area, click **Toggle Locator LED**.
If the **Locator LED** state is **On**, it will turn **Off**. If the **Locator LED** state is **Off**, it will turn **On**.

Step 7 Click **Save Changes.**

Resetting the CIMC for a Cisco UCS S3260 Server Node

Sometimes, with the firmware, troubleshooting a server might require you to reset the CIMC. Resetting the CIMC is not part of the normal maintenance of a server. After you reset the CIMC, the CIMC reboots 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 until the CIMC reboots. Typically, the reset only takes 20 seconds; however, it is possible that the peak power cap can exceed during that time. To avoid exceeding the configured power cap in a low power-capped environment, consider staggering the rebooting or activation of CIMCs.

Procedure

Step 1 In the **Navigation** pane, click **Equipment**.
Step 2 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, click **Reset CIMC (Server Controller)**, then click **OK**.

Resetting the CMOS for a Cisco UCS S3260 Server Node

Sometimes, troubleshooting a server might require you to reset the CMOS. Resetting the CMOS is not part of the normal maintenance of a server.

Procedure

Step 1 In the **Navigation** pane, click **Equipment**.
Step 2 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, click **Reset CMOS**, then click **OK**.

Issuing an NMI from a Cisco UCS S3260 Server Node

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 **Equipment**.
Step 2 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.

Viewing the POST Results for a Cisco UCS S3260 Server Node

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 **Equipment**.

Step 2 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.

Viewing Health Events for a Cisco UCS S3260 Server Node

Procedure

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

Step 2 Expand **Equipment** > **Chassis** > ***Chassis Number*** > **Servers**.

Step 3 Choose the server for which you want to view health events.

Step 4 In the **Work** pane, click the **Health** tab

The health events triggered for this server appear. The fields in this tab are:

Name	Description
Health Summary area	
Health Qualifier field	Comma-separated names of all the heath events that are triggered for the component.

Name	Description
Health Severity field	Highest severity of all the health events that are triggered for the component. This can be one of the following: • **critical** • **major** • **minor** • **warning** • **info** • **cleared** **Note** The severity levels listed here are from highest to lowest severity.
Health Details area	
Severity column	Severity of the health event. This can be one of the following: • **critical** • **major** • **minor** • **warning** • **info** • **cleared** **Note** The severity levels listed here are from highest to lowest severity.
Name column	Name of the health event.
Description column	Detailed description of the health event.
Value column	Current value of the health event.
Details area	The **Details** area displays the **Name**, **Description**, **Severity**, and **Value** details of any health event that you select in the **Health Details** area.

Health LED Alarms

The server health LED is located on the front of each 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 server health LED blinks amber. This is indicated with a red dot. • Minor - The server 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 that 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 **Equipment**.

Step 2 Expand **Equipment** > **Chassis** > ***Chassis Number*** > **Servers**.

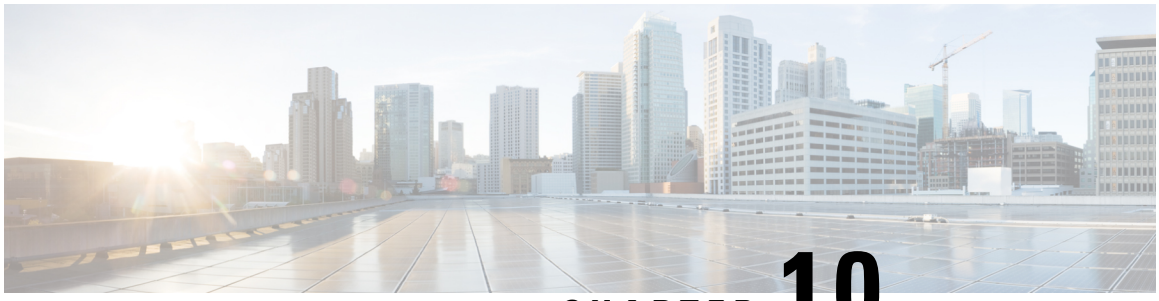
Step 3 Click the server for which you want to view health LED alarms.

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.



CHAPTER 10

SIOC Management

SIOC Management in Cisco UCS Manager

You can manage and monitor all System Input/Output Controllers (SIOC) in a Cisco UCS domain through Cisco UCS Manager.

SIOC Removal or Replacement

You can remove or replace an SIOC from a chassis. Removal or replacement of an SIOC is a service-affecting operation, which requires you to power down the entire chassis.

Guidelines for SIOC Removal

- To remove the active SIOC, or both SIOCs, shut down and remove power from the entire chassis. You must disconnect all power cords to completely remove power.
- Removal of SIOCs from a chassis results in the entire chassis being disconnected from Cisco UCS Manager.

SIOC Removal

Do the following to remove an SIOC from the system:

1. Shut down and remove power from the entire chassis. You must disconnect all power cords to completely remove power.
2. Disconnect the cables connecting the SIOC to the system.
3. Remove the SIOC from the system.

SIOC Replacement

Do the following to remove an SIOC from the system and replace it with another SIOC:

1. Shut down and remove power from the entire chassis. You must disconnect all power cords to completely remove power.
2. Disconnect the cables connecting the SIOC to the system.
3. Remove the SIOC from the system.
4. Connect the new SIOC to the system.
5. Connect the cables to the SIOC.
6. Connect power cords and then power on the system.
7. Acknowledge the new SIOC.

   The server connected to the replaced SIOC is rediscovered.

Note If the firmware of the replaced SIOC is not the same version as the peer SIOC, then it is recommended to update the firmware of the replaced SIOC by re-triggering chassis profile association.

Acknowledging an SIOC

Cisco UCS Manager has the ability to acknowledge a specific SIOC in a chassis. Perform the following procedure when you replace an SIOC in a chassis.

Caution This operation rebuilds the network connectivity between the SIOC and the fabric interconnects to which it is connected. The server corresponding to this SIOC becomes unreachable, and traffic is disrupted.

Procedure

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

Step 2 Expand **Equipment** > **Chassis** > ***Chassis Number*** > **SIOC**

Step 3 Choose the SIOC that you want to acknowledge.

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

Step 5 In the **Actions** area, click **Acknowledge SIOC**.

Step 6 In the **Acknowledge SIOC** confirmation box, click **Yes**.

Resetting the CMC

Procedure

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

Step 2 Expand **Equipment** > **Chassis** > ***Chassis Number*** > **SIOC** > ***SIOC Number***

Step 3 In the **Work** pane, click the **Chassis Management Controller** tab.

Step 4 In the **Actions** area, click **Reset CMC**.

Step 5 In the **Reset CMC** confirmation box, click **Yes**.

CMC Secure Boot

With Chassis Management Controller (CMC) secure boot, only Cisco-signed firmware images can be installed and run on the CMC. When the CMC is updated, the image is certified before the firmware is flashed. If certification fails, the firmware is not flashed. This prevents unauthorized access to the CMC firmware.

Guidelines and Limitations for CMC Secure Boot

- CMC secure boot is supported only on the Cisco UCS S3260 chassis.
- When chassis association is in progress, enabling secure boot on one of the SIOCs will result in a failed operation.
- After CMC secure boot is enabled, it cannot be disabled.
- CMC secure boot is specific to the SIOC on which it is enabled. If you replace the SIOC on which CMC secure boot is enabled, the **Secure boot operational state** field will now display the secure boot status of the new SIOC.
- After CMC secure boot is enabled on a chassis, you cannot move the chassis back to standalone mode and downgrade the firmware to a CMC firmware image earlier than Cisco IMC Release 2.0(13).
- The **Secure boot operational state** field shows the secure boot status. This can be one of the following:
  - **Disabled**—When CMC secure boot is not enabled. This is the default state.
  - **Enabling**—When CMC secure boot is being enabled.
  - **Enabled**—When CMC secure boot is enabled.

Enabling CMC Secure Boot

Procedure

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

Step 2 Expand **Equipment** > **Chassis** > ***Chassis Number*** > **SIOC**

Step 3 Choose the SIOC on which you want to enable CMC secure boot.

Step 4 In the **Work** pane, click the **Chassis Management Controller** tab.

Step 5 In the **Actions** area, click **Enable Secure Boot**.

The **Enable Secure Boot** confirmation box appears with the following warning:

When committed, CMC secure boot and installation will be enabled. This is an irreversible operation. Are you sure you want to enable secure boot.

Step 6 Click **Yes**.