



Preface vii

Audience vii

Conventions vii

Related Documentation xiv

Documentation Feedback xiv

Obtaining Documentation and Submitting a Service Request xiv

CHAPTER 1

Overview 1-1

Front Panel Features 1-1

Rear Panel Features 1-2

Replaceable Component Locations 1-3

Server Features Overview 1-4

CHAPTER 2

Installing the Server 2-1

Unpacking and Inspecting the Server 2-2

Preparing for Server Installation 2-3

 Installation Guidelines 2-3

 Rack Requirements 2-4

 Equipment Requirements 2-4

 Slide Rail Adjustment Range 2-4

Installing the Server in a Rack 2-5

 Installing the Slide Rails 2-5

 Installing the Cable Management Arm (Optional) 2-9

 Reversing the Cable Management Arm (Optional) 2-10

Initial Server Setup 2-11

 Connecting and Powering on the Server (Standalone Mode) 2-11

NIC Modes and NIC Redundancy Settings 2-14

 NIC Modes 2-14

 NIC Redundancy 2-14

System BIOS and Cisco IMC Firmware 2-15

 Updating the BIOS and Cisco IMC Firmware 2-15

 Accessing the System BIOS 2-16

CHAPTER 3

Maintaining the Server 3-1

- Standalone Server Monitoring and Management Tools **3-1**
 - Cisco Integrated Management Interface **3-1**
 - Server Configuration Utility **3-1**
- Status LEDs and Buttons **3-2**
 - Front-Panel LEDs **3-2**
 - Rear-Panel LEDs and Buttons **3-5**
 - Internal Diagnostic LEDs **3-7**
- Preparing for Server Component Installation **3-8**
 - Required Equipment **3-8**
 - Shutting Down and Powering Off the Server **3-8**
 - Removing or Replacing the Front Bezel (Optional) **3-9**
 - Removing or Replacing the Server Top Cover **3-10**
- Replaceable Component Locations **3-11**
- Hot-Swap or Hot-Plug Replacement **3-12**
- Replacing Server Components **3-13**
 - Replacing Hard Drives or Solid State Drives **3-14**
 - Drive Population Guidelines **3-14**
 - Replacing a SAS or SATA Drive **3-15**
 - Replacing Fan Modules **3-16**
 - Replacing Memory Risers **3-17**
 - Memory Riser Population Guidelines **3-17**
 - Identifying a Faulty Memory Riser or DIMM **3-18**
 - Replacing a Memory Riser **3-18**
 - Replacing DIMMs **3-20**
 - DIMM Performance Guidelines and Population Rules **3-20**
 - Replacing a DIMM **3-25**
 - Replacing CPUs and Heat Sinks **3-26**
 - Special Information For Upgrades to Intel Xeon v3 Series CPUs **3-26**
 - CPU Configuration Rules **3-27**
 - Replacing a CPU and Heat Sink **3-27**
 - Additional CPU-Related Parts to Order with RMA Replacement Motherboards **3-32**
 - Replacing a RAID Controller Card **3-33**
 - Replacing a Modular RAID Controller Transportable Memory Module (TMM) **3-34**
 - Replacing the Supercap Power Module (RAID Backup Unit) **3-37**
 - Replacing a PCIe Riser **3-39**
 - Replacing a PCIe Card **3-41**
 - PCIe Slots **3-41**
 - PCIe Configuration Guide For Optimum Performance **3-42**

Special Considerations for Cisco UCS Virtual Interface Cards	3-43
Special Considerations for Cisco UCS Fusion ioDrive2 Storage Accelerator Cards	3-44
Replacing a PCIe Card	3-45
Installing Multiple PCIe Cards and Resolving Limited Resources	3-47
Replacing an NVIDIA GPU Card	3-50
Overview of GPU Card Software Requirements	3-50
NVIDIA GPU Slot Population Rules	3-50
Replacing a GPU Card	3-51
Replacing the Motherboard RTC Battery	3-53
Replacing a Media Riser Card	3-55
Replacing a Cisco Flexible Flash Drive	3-57
Monitoring and Managing a Cisco Flexible Flash Drive	3-57
Synchronizing RAID After Installing a Second Cisco Flexible Flash Drive	3-57
Replacing a Cisco Flexible Flash Drive	3-57
Replacing an Internal USB Drive	3-59
Internal USB Drive Replacement Procedure	3-59
Enabling or Disabling the Internal USB Port	3-59
Installing and Enabling a Trusted Platform Module	3-60
Installing the TPM Hardware	3-60
Enabling TPM Support in the BIOS	3-61
Enabling the Intel TXT Feature in the BIOS	3-62
Replacing Power Supplies	3-63
Service DIP Switches	3-64
DIP Switch Location on the Media Riser Card	3-64
Using the Clear Password DIP Switch	3-65
Using the BIOS Recovery DIP Switch	3-66
Using the Clear CMOS DIP Switch	3-67

APPENDIX A**Server Specifications A-1**

Physical Specifications	A-1
Environmental Specifications	A-2
Power Specifications	A-2

APPENDIX B**Power Cord Specifications B-1**

Supported Power Cords and Plugs	B-1
AC Power Cord Illustrations	B-3

APPENDIX C**RAID Controller Considerations C-1**

Supported RAID Controllers and Required Cables	C-1
--	-----

- Supercap Power Module (RAID Backup Unit) **C-2**
- RAID Controller Cabling **C-3**
 - SAS Cable-to-Drive Bay Mapping **C-3**
 - Cabling an 8-Port RAID Controller **C-3**
 - Cabling a 12-Port RAID Controller **C-3**
- Restoring RAID Configuration After Replacing a RAID Controller **C-4**
- For More Information **C-4**

APPENDIX D **Installation for Cisco UCS Integration** **D-1**