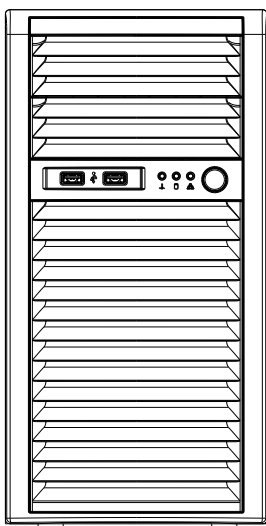


SUPERO®

SC731 CHASSIS SERIES



SC731i-300B

USER'S MANUAL

1.0

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Manual Revision 1.0
Release Date: December 17, 2008

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Preface

About This Manual

This manual is written for professional system integrators and PC technicians. It provides information for the installation and use of the SC731 chassis. Installation and maintenance should be performed by experienced technicians only.

Supermicro's SC731 chassis features a unique and highly optimized design, allowing the user to install components with minimal or no use of screws or tools. The chassis is equipped with a 300 Watt whisper-quiet, high-efficiency power supply for superb power savings.

This manual lists compatible parts available when this document was published. Always refer to the our Web site for updates on supported parts and configurations at www.supermicro.com.

Manual Organization

Chapter 1: Introduction

The first chapter provides a description of the main components included with this chassis and describes the main features of the SC731 chassis. This chapter also includes contact information.

Chapter 2: System Safety

This chapter lists warnings, precautions, and system safety. It is recommended that you thoroughly familiarize yourself with the safety precautions before installing and servicing this chassis.

Chapter 3: System Interface

Refer to this chapter for details on the system interface, which includes the functions and information provided by the control panel on the chassis as well as other LEDs located throughout the system.

Chapter 4: Chassis Setup and Maintenance

Follow the procedures given in this chapter when installing, removing, or reconfiguring your chassis.

Appendix A: Chassis Cables, Screws and other Accessories

Appendix B: Power Supply Specifications

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Appendix A Cables, Screws, and other Accessories

Appendix B SC731 Power Supply Specifications

Notes

Chapter 1

Introduction

1-1 Overview

Supermicro's SC731 chassis features a unique and highly-optimized design, allowing most configuration of the chassis to be accomplished without tools or screws. The chassis is equipped with high-efficiency power supply. High-performance fans provide ample optimized cooling for FB-DIMM memory modules, and four hot-swap drive bays offer maximum storage capacity.

1-2 Where to get Replacement Components

Although not frequently, you may need replacement parts for your system. To ensure the highest level of professional service and technical support, we strongly recommend purchasing exclusively from our Supermicro Authorized Distributors/System Integrators/Resellers. A list of Supermicro Authorized Distributors/System Integrators/Reseller can be found at: <http://www.supermicro.com>. Click the Where to Buy link.

1-3 Contacting Supermicro

Headquarters

Address: Super Micro Computer, Inc.
980 Rock Ave.
San Jose, CA 95131 U.S.A.

Tel: +1 (408) 503-8000

Fax: +1 (408) 503-8008

Email: marketing@supermicro.com (General Information)
support@supermicro.com (Technical Support)

Web Site: www.supermicro.com

Europe

Address: Super Micro Computer B.V.
Het Sterrenbeeld 28, 5215 ML
's-Hertogenbosch, The Netherlands

Tel: +31 (0) 73-6400390

Fax: +31 (0) 73-6416525

Email: sales@supermicro.nl (General Information)
support@supermicro.nl (Technical Support)
rma@supermicro.nl (Customer Support)

Asia-Pacific

Address: Super Micro Computer, Inc.
4F, No. 232-1, Liancheng Rd.
Chung-Ho 235, Taipei County
Taiwan, R.O.C.

Tel: +886-(2) 8226-3990

Fax: +886-(2) 8226-3991

Web Site: www.supermicro.com.tw

Technical Support:

Email: support@supermicro.com.tw

Tel: 886-2-8226-1900

1-4 Returning Merchandise for Service

A receipt or copy of your invoice marked with the date of purchase is required before any warranty service will be rendered. You can obtain service by calling your vendor for a Returned Merchandise Authorization (RMA) number. When returning to the manufacturer, the RMA number should be prominently displayed on the outside of the shipping carton, and mailed prepaid or hand-carried. Shipping and handling charges will be applied for all orders that must be mailed when service is complete.

For faster service, RMA authorizations may be requested online (<http://www.supermicro.com/support/rma/>).

Whenever possible, repack the chassis in the original Supermicro carton, using the original packaging material. If these are no longer available, be sure to pack the chassis securely, using packaging material to surround the chassis so that it does not shift within the carton and become damaged during shipping.

This warranty only covers normal consumer use and does not cover damages incurred in shipping or from failure due to the alteration, misuse, abuse or improper maintenance of products.

During the warranty period, contact your distributor first for any product problems.

Notes

Chapter 2

System Safety

2-1 Overview

This chapter provides a quick setup checklist to get your chassis up and running. Following the steps in the order given should enable you to have your chassis setup and operational within a minimal amount of time. This quick setup assumes that you are an experienced technician, familiar with common concepts and terminology.

2-2 Warnings and Precautions

You should inspect the box the chassis was shipped in and note if it was damaged in any way. If the chassis itself shows damage, file a damage claim with carrier who delivered your system.

Avoid areas where heat, electrical noise and electromagnetic fields are generated. Position the chassis near at least one grounded power outlet.

2-3 Preparing for Setup

The SC731 chassis contains many features that are unique to the SC731 chassis model. Read this manual in its entirety before beginning the installation procedure.

2-4 Electrical Safety Precautions

Basic electrical safety precautions should be followed to protect yourself from harm and the SC731 from damage:

- Be aware of the locations of the power on/off switch on the chassis as well as the room's emergency power-off switch, disconnection switch or electrical outlet. If an electrical accident occurs, you can then quickly remove power from the system.
- Do not work alone when working with high voltage components.
- Power should always be disconnected from the system when removing or installing main system components, such as the serverboard, memory modules

and optical device drives. When disconnecting the power, you should first power down the system with the operating system and then unplug the power cords from all the power supply modules in the system.

- When working around exposed electrical circuits, another person who is familiar with the power-off controls should be nearby to switch off the power, if necessary.
- Use only one hand when working with powered-on electrical equipment. This is to avoid making a complete circuit, which will cause electrical shock. Use extreme caution when using metal tools, which can easily damage any electrical components or circuit boards they come into contact with.
- Do not use mats designed to decrease electrostatic discharge as protection from electrical shock. Instead, use rubber mats that have been specifically designed as electrical insulators.
- The power supply power cord must include a grounding plug and must be plugged into a grounded electrical outlet.
- Serverboard battery: CAUTION - There is a danger of explosion if the onboard battery is installed upside down, which will reverse its polarities This battery must be replaced only with the same or an equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions.
- DVD-ROM laser: CAUTION - This server may have come equipped with a DVD-ROM drive. To prevent direct exposure to the laser beam and hazardous radiation exposure, do not open the enclosure or use the unit in any unconventional way.

2-5 General Safety Precautions

- Keep the area around the chassis clean and free of clutter.
- Place the chassis top cover and any system components that have been removed away from the system or on a table so that they won't accidentally be stepped on.
- While working on the system, do not wear loose clothing such as neckties and unbuttoned shirt sleeves, which can come into contact with electrical circuits or be pulled into a cooling fan.

- Remove any jewelry or metal objects from your body, which are excellent metal conductors that can create short circuits and harm you if they come into contact with printed circuit boards or areas where power is present.
- After accessing the inside of the system, close the system back up and secure it to the rack unit with the retention screws after ensuring that all connections have been made.

2-6 System Safety

Electrostatic discharge (ESD) is generated by two objects with different electrical charges coming into contact with each other. An electrical discharge is created to neutralize this difference, which can damage electronic components and printed circuit boards. The following measures are generally sufficient to neutralize this difference before contact is made to protect your equipment from ESD:

- Do not use mats designed to decrease electrostatic discharge as protection from electrical shock. Instead, use rubber mats that have been specifically designed as electrical insulators.
- Use a grounded wrist strap designed to prevent static discharge.
- Keep all components and printed circuit boards (PCBs) in their antistatic bags until ready for use.
- Touch a grounded metal object before removing any board from its antistatic bag.
- Do not let components or PCBs come into contact with your clothing, which may retain a charge even if you are wearing a wrist strap.
- Handle a board by its edges only; do not touch its components, peripheral chips, memory modules or contacts.
- When handling chips or modules, avoid touching their pins.
- Put the serverboard and peripherals back into their antistatic bags when not in use.
- For grounding purposes, make sure your computer chassis provides excellent conductivity between the power supply, the case, the mounting fasteners and the serverboard.

Notes

Chapter 3

System Interface

3-1 Overview

There are several LEDs on the control panel as well as others on the drive carriers to keep you constantly informed of the overall status of the system as well as the activity and health of specific components. The SC731 has a power on/off switch, located on the control panel. This chapter explains the meanings of all LED indicators and the appropriate responses you may need to take.

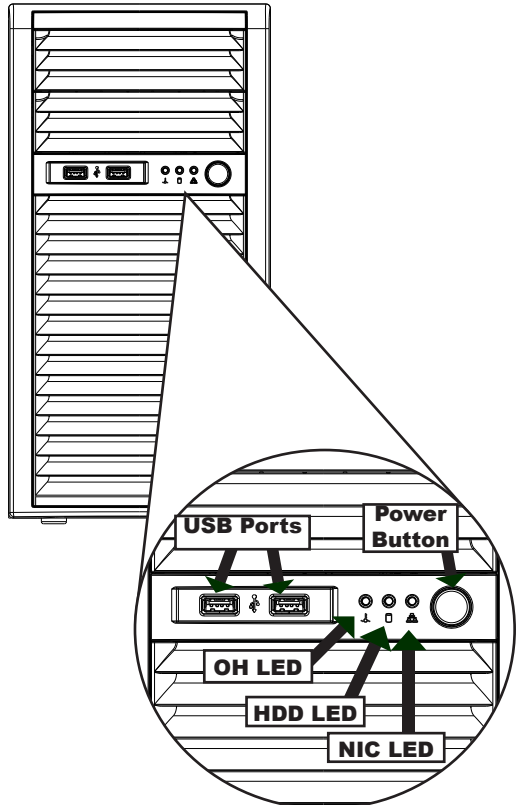


Figure 3-1: Front Chassis Panel

3-2 Control Panel Buttons



Power: The main power switch is used to apply or remove power from the power supply to the server system. Turning off system power with this button removes the main power but keeps standby power supplied to the system. Therefore, you must unplug system before servicing.

3-3 Control Panel LEDs

The control panel located on the front of the SC731 chassis has three LEDs. These LEDs provide you with critical information related to different parts of the system. This section explains what each LED indicates when illuminated and any corrective action you may need to take.



HDD: Indicates IDE channel activity. SAS/SATA drive, SCSI drive, and/or DVD-ROM drive activity when flashing.



NIC1: Indicates network activity on GLAN1 when flashing.

**Overheat/Fan Fail**

When Flashing: This LED indicates a fan failure.

When Continuously On (not flashing): This LED indicates an overheat condition caused by cables obstructing the airflow in the system or the ambient room temperature being too warm.

Correcting an Overheat/Fan Fail Condition

1. Check the routing of the cables and move any cables that restrict airflow.
2. Confirm that all fans are operating normally.
3. Verify that the heatsinks are installed properly.
4. If the chassis cover is not aligned correctly, the airflow may be disrupted. This leads to overheating. Confirm that the chassis cover is placed correctly.
5. This LED will remain active as long as the overheat condition exists.

Notes

Chapter 4

Chassis Setup and Maintenance

4-1 Overview

This chapter covers the steps required to install components and perform maintenance on the chassis. Most components of the SC731 do not require tools or screws to set them up. Those components which must be secured with screws require only a Phillips screwdriver. Print this chapter to use as a reference while setting-up your chassis.



Review the warnings and precautions listed in the manual before setting up or servicing this chassis. These include information in Chapter 2: System Safety and the warning/precautions listed in the setup instructions.

4-2 Removing the Chassis Cover

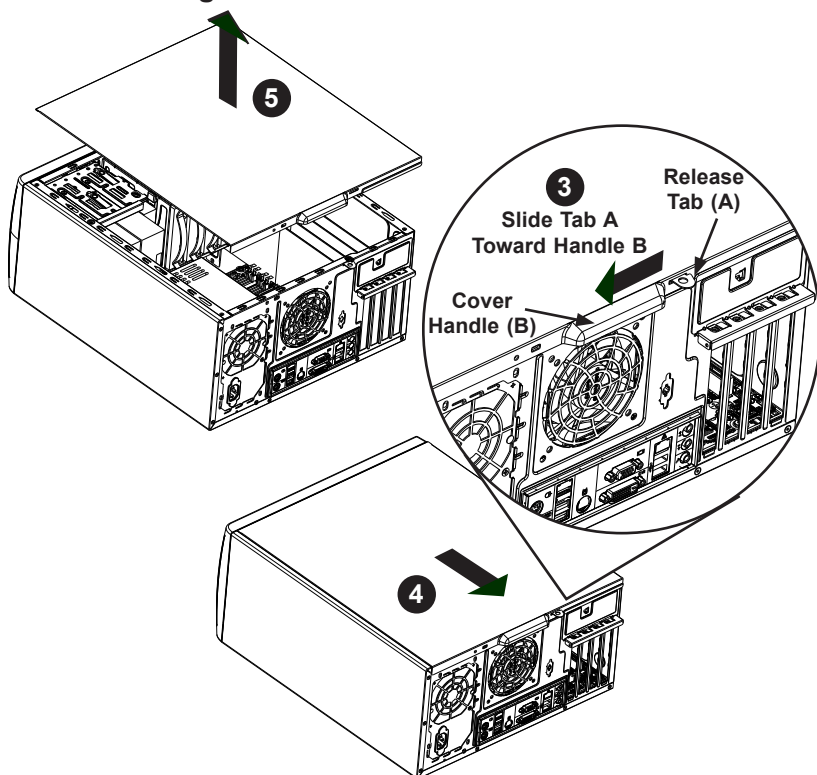


Figure 4-1: Removing the Chassis Cover

Removing the Chassis Cover

1. Push the power button to turn off the power to the system.
2. Disconnect the chassis from any power source.
3. Slide the release tab (A) towards the cover handle (B).
4. Grasp the cover handle with your fingers.
5. Slide the cover toward the rear of the chassis
6. Lift the cover off the chassis.



Warning: Except for short periods of time, do NOT operate the system without the cover in place. The chassis cover must be in place to allow for proper airflow and to prevent overheating.

4-3 Rotating the Hard Drive Cage

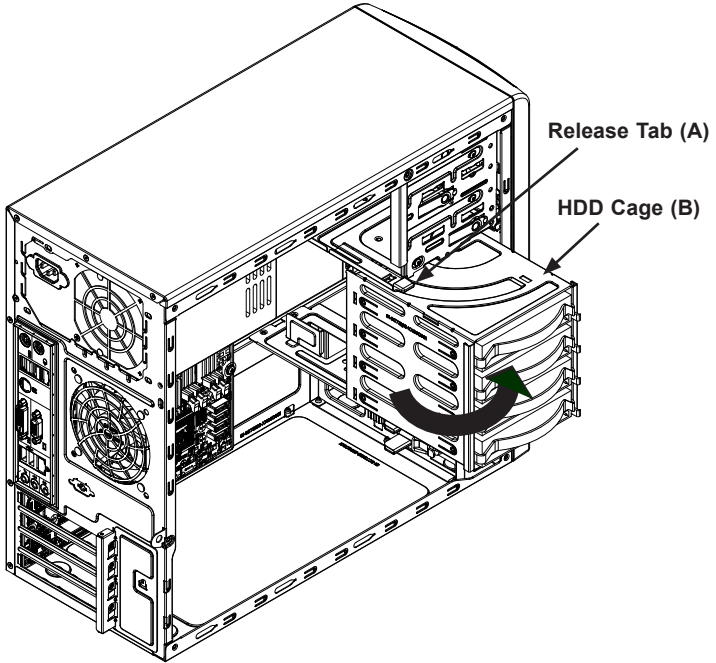


Figure 4-2: Rotating the Hard Drive Cage

In order to access and install components in the chassis interior, it is necessary to rotate the hard drive cage. This will provide sufficient room to install and configure the chassis components.

Rotating the Hard Drive Cage

1. Disconnect the chassis from any power source.
2. Pull the release tab (A).
3. Rotate the hard disk drive cage (B) outward.

4-4 Removing and Installing Hard Drives

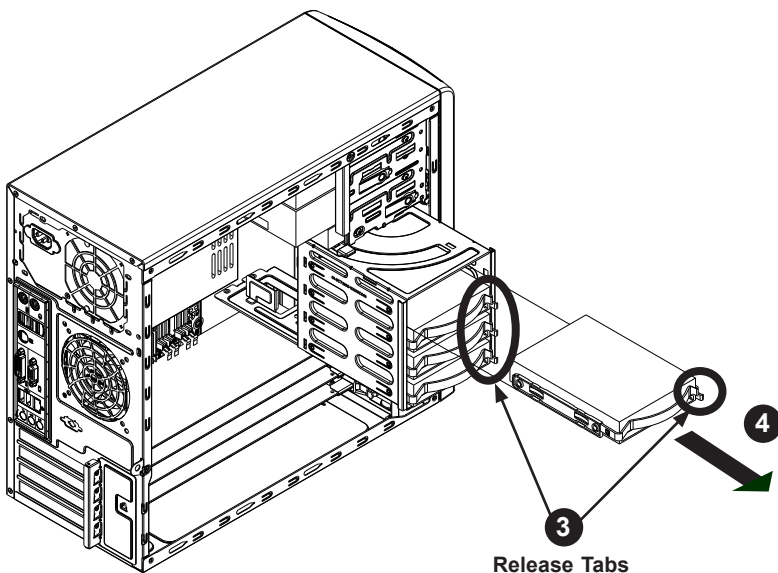


Figure 4-3: Removing the Hard Drive Carrier from the Hard Drive Cage

The SC731 chassis must be powered-down before hard drives can be removed from the hard drive carriers.

Removing and Installing Hard Drives

1. Disconnect the chassis from any power source.
2. Rotate the hard drive cage outward 90 degrees as described in section 4-3 Rotating the Hard Drive Cage.
3. Disconnect all of the cables from the hard drive.
4. Press the release tab on the side of the hard drive carrier that is to be removed from the hard drive cage.
5. Gently slide the hard drive carrier out of the hard drive cage.

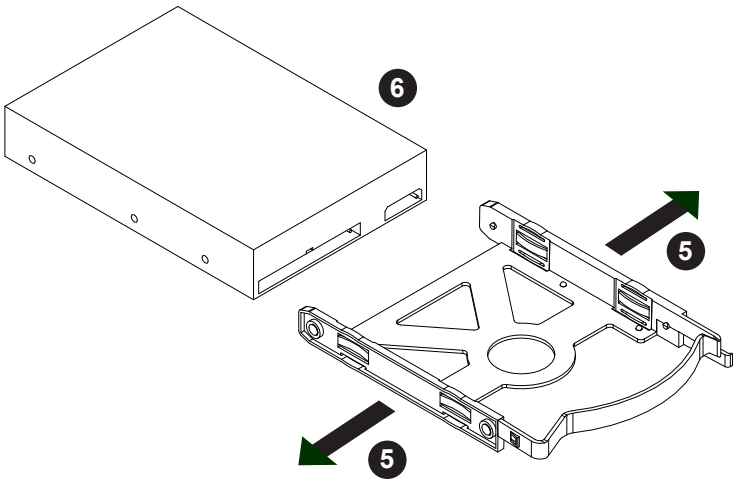


Figure 4-4: Removing the Hard Drive from the Hard Drive Carrier

6. If a hard drive is already present, remove it by carefully pulling the sides of the hard drive carrier outward.
7. Remove the hard drive from the hard drive carrier.

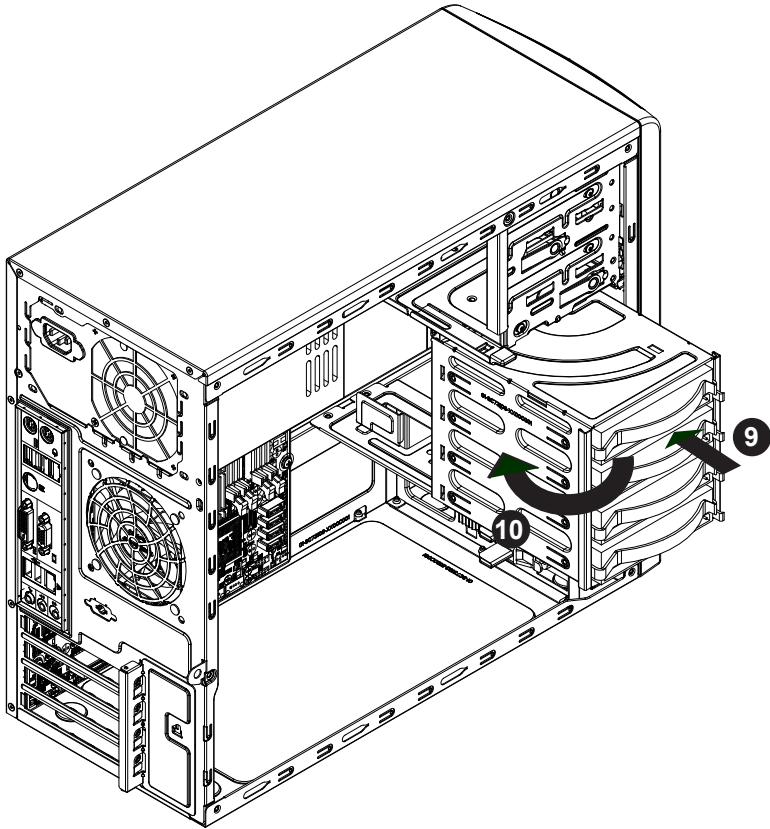


Figure 4-5: Installing the Hard Drive Carrier into the Hard Drive Cage

8. Insert the new hard drive into the hard drive carrier.
9. Insert the hard drive carrier into the hard drive cage, sliding it towards the back of the the hard drive cage until it clicks into a locked position.
10. Rotate the hard drive cage 90 degrees inward, returning it to the closed, operational position in the chassis.
11. Connect the related cables to the hard drives.

4-5 Installing the I/O Shield and Motherboard

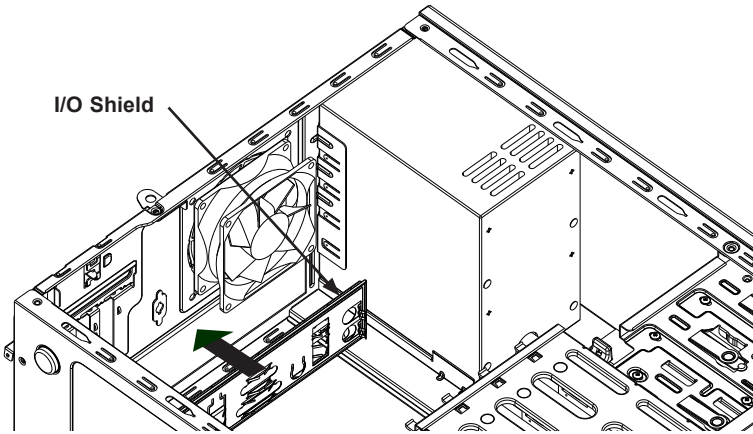


Figure 4-6: I/O Shield Placement

I/O Shield

An I/O shield holds the motherboard ports in place. Install the I/O shield before you install the motherboard. The SC731 supports a Micro ATX motherboard, which is sold separately from the SC731 chassis and comes with an I/O shield specific to the Micro ATX motherboard.

Installing the I/O Shield

1. Review the documentation that came with the Micro ATX motherboard. Become familiar with component placement, requirements, and safety precautions.
2. Disconnect the chassis from any power source
3. With the illustrations facing the outside of the chassis, slide the shield into the space provided.
4. Once installed, the motherboard will hold the I/O shield in place.

Permanent Motherboard Standoffs

The SC731 provides permanent motherboard standoffs molded into the chassis floor. These standoffs prevent short circuits by creating space between the motherboard and the chassis surface. Note that motherboards must be purchased separately from the chassis.

Motherboard Installation

Installing the Motherboard

1. Review the documentation that came with your motherboard. Become familiar with component placement, requirements, precautions, and cable connections.
2. Disconnect the chassis from any power source. Rotate the hard drive cage 90 degrees outward, as described in the previous section, Rotating the Hard Drive Cage.
3. Lay the motherboard in the chassis.
4. Secure the motherboard to the chassis using the rounded, Phillips head screws provided.
5. Secure the CPU(s), heatsinks, and other components to the motherboard as described in the motherboard documentation.
6. Connect the cables between the motherboard and power supply.

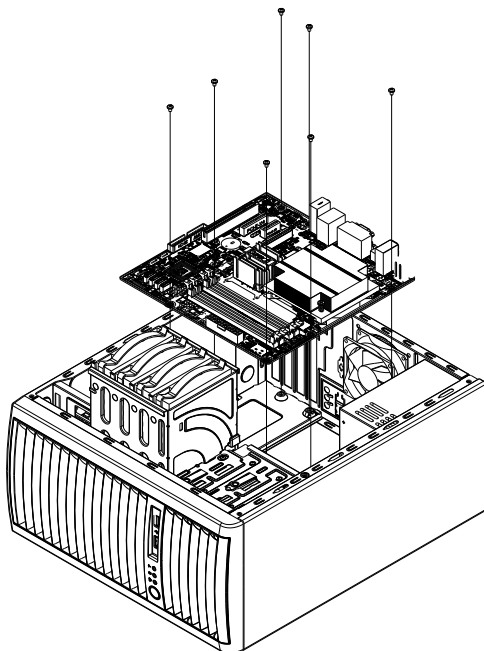


Figure 4-7: Installing the Motherboard

4-6 Installing an Optical Device

The SC731 chassis has two optical device slots, which support up to two optional devices, such as DVD-ROM drives.

Installing an Optical Device

1. Remove the front bezel from the chassis by lifting it upwards from the bottom, and pulling off the front of the chassis.
2. Remove the cover plate from the optical device slot on the front of the chassis.
3. Install the bracket rail (A) onto one side of the optical device, by inserting the pins of the bracket into the mounting holes on the sides of the optical device.
4. Slide the optical device into the chassis.
5. If desired, screws may be used where indicated below (B) to secure the optical device into chassis.

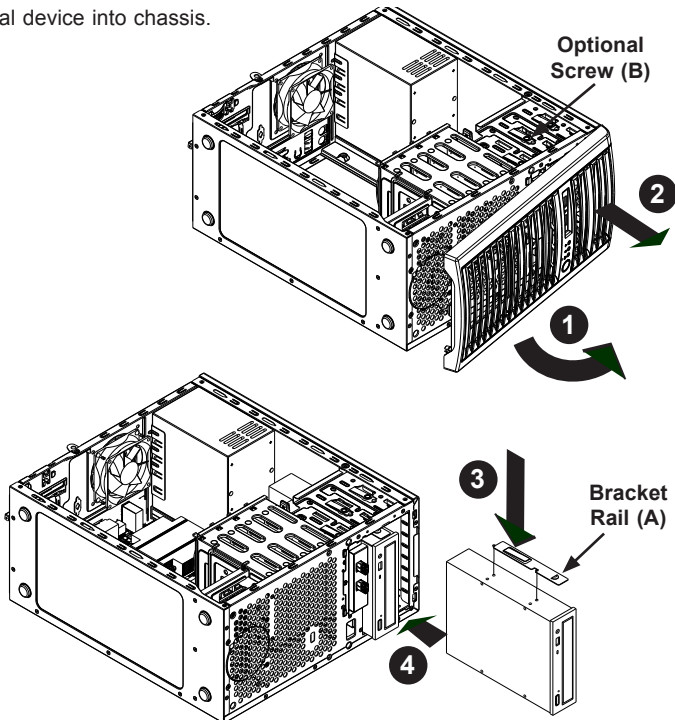


Figure 4-8: Installing the Optical Device

4-7 Installing Add-on and Expansion Cards

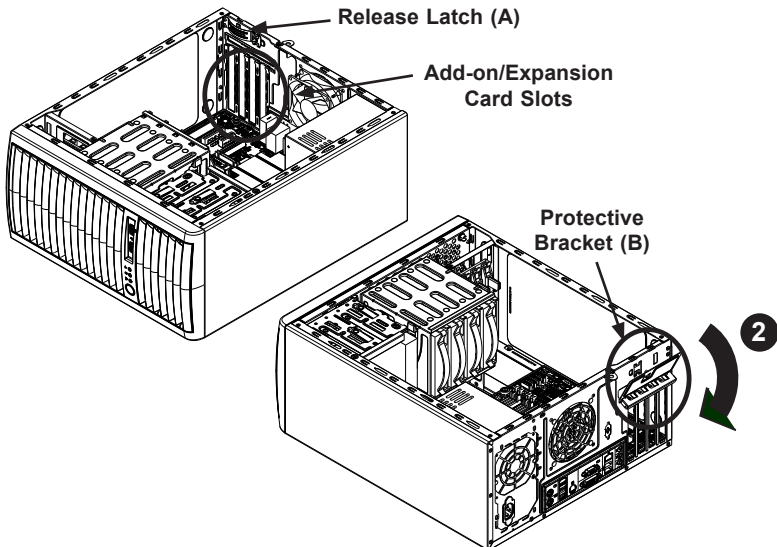


Figure 4-9: Locating the Add-on Card Installation Components

Add-on Card/Expansion Slot Setup

The SC731 chassis includes slots for add-on cards and expansion cards. The number of cards you can use depends on your chassis model and motherboard model.

Installing Add-on and Expansion Cards

1. Depress the release latch (A) which holds the protective bracket (B) which secures the add-on card brackets to the chassis.
2. Lower the protective bracket from over the top of the add-on card dummy brackets as shown in the lower illustration.
3. Remove the add-on card dummy brackets from their slots.
4. Simultaneously, slide the add-on card and its bracket into the slot on the chassis, and insert the add-on card into its slot on the motherboard.
5. If desired, screws can be used to secure the add-on cards into the chassis.
6. Close the protective bracket over the tops of the add-on card brackets.

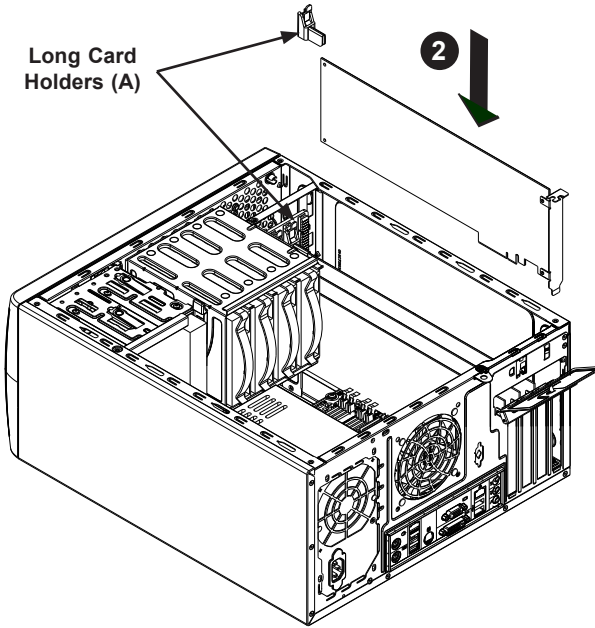


Figure 4-10: Installing a Long Add-on/Expansion Card

Long Add-on/Expansion Card Setup

The SC731 chassis includes clips to accommodate the use of long-length add-on cards. These clips support and stabilize the long cards, preventing them from contacting any undesired surfaces.

Installing Long Add-on/Expansion Cards

1. Locate the long card holders (A), on the opposite side of the chassis from the add-on card brackets.
2. Begin by installing the long card as described in the previous section, Add-on/Expansion Card Slot Setup.
3. Push the long card holder all the way down onto the end of the card to secure it in the chassis.

4-8 Installing the System Fan

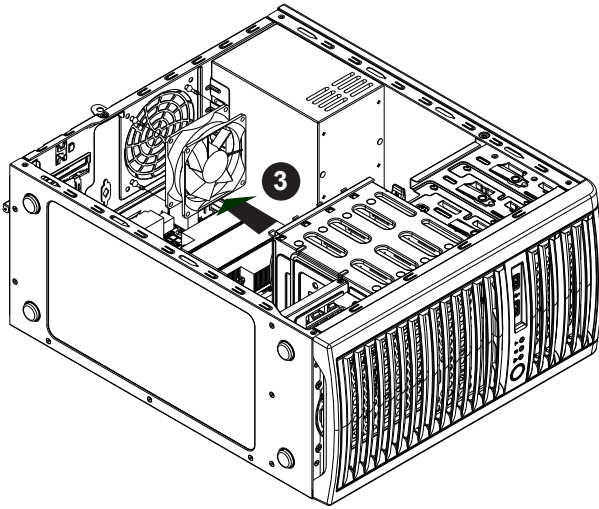


Figure 4-11: Installing the System Fan

The SC731 includes a super quiet system fan that provides cooling for the chassis. No tools or screws are required to install the system fan.

Installing the System Fan

1. Disconnect all power to the chassis.
2. Insert the four rubber pins into the four mounting holes surrounding the fan grill on the rear of the chassis.
3. Place the system fan on top of the fan grill, aligning the mounting holes of the fan grill with the mounting holes of the system fan.
4. Pull the rubber pins through the mounting holes of the system fan to secure the fan to the chassis.
5. Connect the fan cable to the motherboard.

4-9 Installing the Front Bezel

Front Bezel Installation

1. Remove the dummy cover (A) for optical device from the front bezel.
2. Install the front bezel onto the front of the chassis to complete the installation

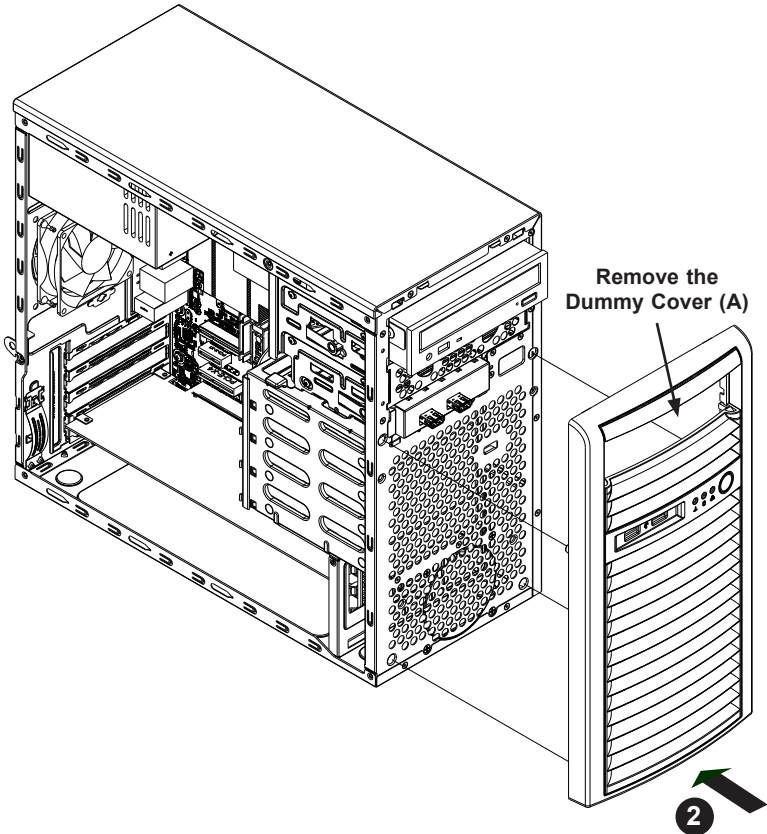


Figure 4-12: Installing the Front Bezel

4-10 Power Supply

The SC731 chassis includes a 300 Watt power supply. In the unlikely event that it becomes necessary to replace the power supply, follow the instructions below.

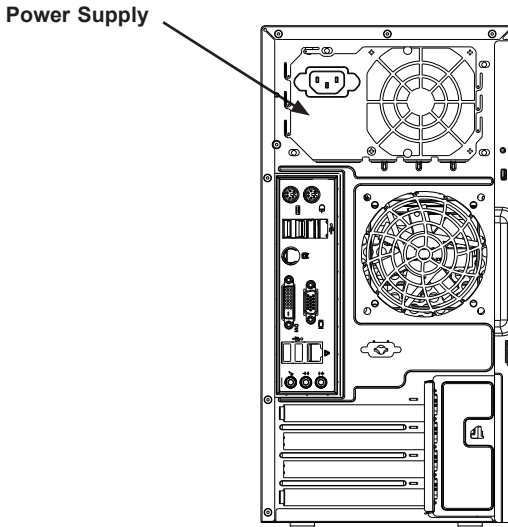


Figure 4-13: Removing the Power Supply

Changing the Power Supply

1. Disconnect the chassis from any power source.
2. Remove the screws securing the power supply to the chassis, which are located on the rear of the chassis. Set these screws aside for later use.
3. Gently lift the power supply out of the chassis.
4. Replace the failed power supply with an identical power supply model.
5. Secure the new power supply using the screws previously set aside.
6. Plug the AC power cord back into the module and power up the server.

Appendix A

Cables, Screws, and other Accessories

A-1 Overview

This appendix lists the supported cables for the SC731 chassis. It only includes the most commonly used components and configurations. For more compatible cables, refer to the manufacturer of the motherboard and our Web site at: www.supermicro.com.

A-2 Cables Included with SC731 Chassis

SC731			
Part #	Type	Quantity	Description
CBL-0087	Cable	1	Front panel cable, 16 pin to 16 pin
CBL-0263L	Cable	1	USB cable
CBL-0084L	Cable	1	Split converter cable

A-3 Chassis Screws

The accessory box includes all the screws needed to set up your chassis. This section lists and describes the most commonly used screws. Your chassis may not require all of the parts listed.

M/B



Pan head
6-32 x 5 mm
[0.197]

HARD DRIVE



Flat head
6-32 x 5 mm
[0.197]

DVD-ROM, CD-ROM, and FLOPPY DRIVE



Pan head
6-32 x 5 mm
[0.197]



Flat head
6-32 x 5 mm
[0.197]



Round head
M3 x 5 mm
[0.197]



Round head
M2.6 x 5 mm
[0.197]

M/B STANDOFFS



M/B standoff
6-32 to 6-32

Appendix B

SC731 Power Supply Specifications

This appendix lists power supply specifications for your chassis system.

The SC731 chassis includes a power supply rated at 80 Plus Bronze Level.



**Bronze Level
80 PLUS® Certified
Power Supplies**

SC731	
	300W
MFR Part #	PWS-303-PQ
Input	100 - 127/200~240Vac A/4A, 50 - 60Hz.
+5.08V	19 Amps
+12V	11 Amps
+12Vcpu	11.5 Amps
+3.3V	16 Amps
-12V	0.15 Amps
+5.08Vaux	2 Amps

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