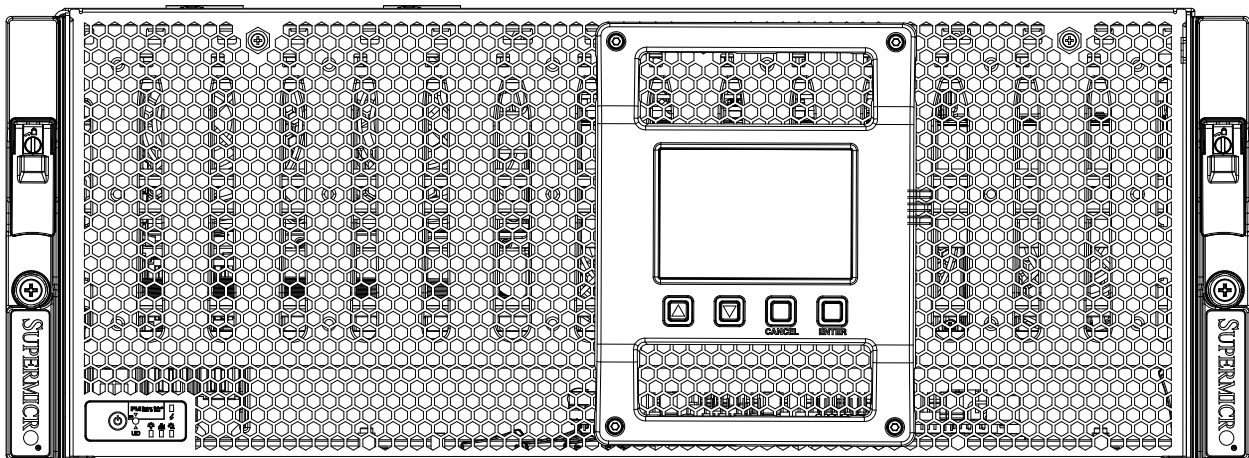




## SC946L JBOD CHASSIS



SC946LE1C-R1K66JBOD

### USER'S MANUAL

Revision 1.0

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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 chassis. Installation and maintenance should be performed by experienced technicians only.

This document lists compatible parts available when this document was published. Refer to the Supermicro web site for updates on supported parts and configurations.

This manual may be periodically updated without notice. Please check the Supermicro Web site for possible updates. (<http://www.supermicro.com>).

## Notes

For your system to work properly, please follow the links below to download all necessary drivers, utilities and the user's manual for your server.

- Supermicro product manuals: <http://www.supermicro.com/support/manuals/>
- Product drivers and utilities: <ftp://ftp.supermicro.com>
- Product safety info: [http://www.supermicro.com/about/policies/safety\\_information.cfm](http://www.supermicro.com/about/policies/safety_information.cfm)

If you have any questions, please contact our support team at: [support@supermicro.com](mailto:support@supermicro.com).

## Warnings

Special attention should be given to the following symbols used in this manual.



**Warning!** Indicates important information given to prevent equipment/property damage or personal injury.



**Warning!** Indicates high voltage may be encountered when performing a procedure.

# Contents

## **Chapter 1 Introduction**

1.1 Models .....	8
1.2 Unpacking the System .....	8
1.3 Chassis Features .....	9
Control Panel .....	9
Chassis Front .....	10
Chassis Rear .....	11
Chassis Top .....	12
1.4 System Status LCD Screen .....	13
Introduction .....	13
Main Screen .....	14
System Status Submenu .....	14
Hard Disk Drive Status .....	15
Power Supply Status .....	15
Cable Connection Status .....	15
Fans Status .....	15
Thermal Monitor .....	15
IPMI Submenu .....	15
System Info .....	16
IPMI Event Log .....	16
Settings Submenu .....	17
Error Message .....	17
UID Message .....	17
1.5 Where to get Replacement Components .....	18
1.6 Returning Merchandise for Service .....	18

## **Chapter 2 Installation in a Rack**

2.1 Preparing for Setup .....	19
Choosing a Setup Location .....	19
Rack Precautions .....	19
Server Precautions .....	20
Rack Mounting Considerations .....	20

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Ambient Operating Temperature.....	20
Airflow .....	20
Mechanical Loading.....	20
Circuit Overloading .....	21
Reliable Ground.....	21
2.2 Installing the Rails.....	22
Identifying the Rails .....	22
Releasing the Inner Rail .....	23
Installing the Inner Rails .....	24
Installing the Outer Rails onto the Rack .....	25
Adapters for Round and Threaded Hole Racks .....	26
2.3 Installing the Chassis into a Rack.....	27
Removing the Chassis from the Rack .....	28
2.4 Optional Quick Installation Method .....	28
2.4 Installing the Cable Management Arm .....	29
<b>Chapter 3 Maintenance and Component Installation</b>	
3.1 Power Up/Power Down Sequences.....	34
Power Up .....	34
First Use or Power Cord Plug-In .....	34
After Normal Shutdown by IPMI or Power Button.....	34
After a Power Loss.....	34
Power Down.....	34
Removing Power from the System .....	35
3.2 Cable Connections .....	35
IPMI .....	35
SAS Cables.....	36
Cascading Storage.....	37
3.3 Accessing the Chassis .....	38
3.4 Chassis Components .....	39
Hard Drives .....	39
Hard Drive Carrier Indicators.....	39
Hard Drive Installation .....	40
System Cooling .....	42

Checking the Server Air Flow .....	44
Overheating .....	44
Power Supply .....	45
Power Supply LEDs.....	45
Removing the JBOD Control Board.....	46
<b><i>Appendix A Power Supply Specifications</i></b>	
<b><i>Appendix B Standardized Warning Statements for AC Systems</i></b>	
<b><i>Appendix C Backplane Specifications</i></b>	
Cascading Configuration, Backplane to Internal HBA Controllers.....	82
Cascading Configuration, Backplane to Internal SAS Controllers.....	83
<b><i>Appendix D CSE-PTJBOD-CB3 Control Board</i></b>	

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# Chapter 1

## Introduction

Optimized for enterprise-level high capacity storage applications, Supermicro's SC946L JBOD chassis features up to 45 hot-swap 3.5" SAS3 hard drives in top-loading drive bays. It is ideal for cloud backup, data replication or high density archive storage applications

This design offers extra high-density of HDDs per space ratio in a 4U form factor. The chassis features high power efficiency, optimized HDD signal trace routing and improved HDD carrier design to dampen HDD vibrations and maximize performance. Equipped with two redundant high-efficiency power supplies and five 80 mm high-speed, low-vibration, hot-swappable cooling fans, the SC946L JBOD is a reliable maintenance storage server.

### 1.1 Models

SC946L JBOD Chassis Models			
Model	Drives	SAS Expanders	Power Supply
SC946LE1C-R1K66JBOD	45 SAS/SATA	1	1000W/1600W redundant (Platinum Level)

### 1.2 Unpacking the System

Inspect the box in which the chassis was shipped. If any equipment appears damaged, file a claim with the carrier who delivered it.



## 1.3 Chassis Features

### Control Panel

Power switches and status LEDs are located on the control panel on the front of the chassis.

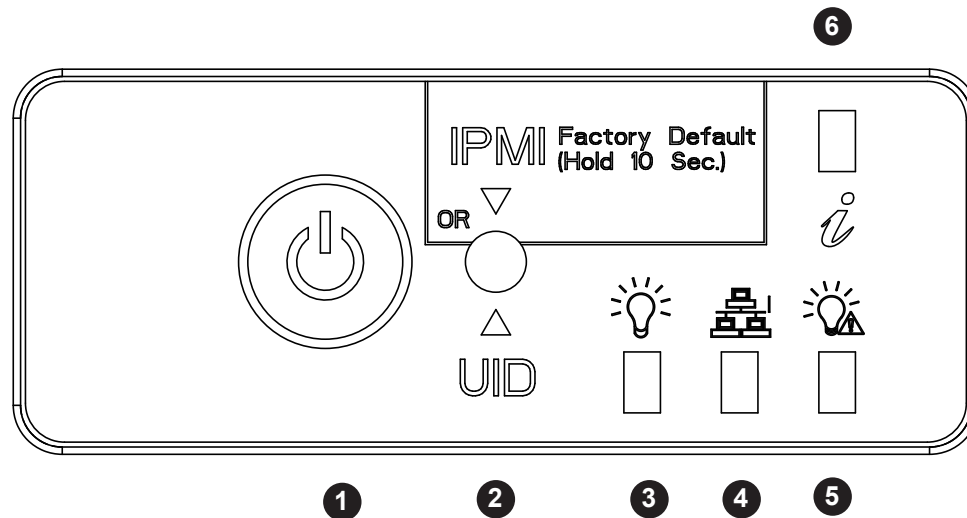


Figure 1-1. Control Panel

Control Panel Features		
Item	Features	Description
1	Power button	The main power switch applies or removes primary power from the power supply to the server but maintains standby power. To perform most maintenance tasks, unplug the system to remove all power.
2	UID/IPMI button	The unit identification (UID) button turns on or off the blue light function of the Information LED and a blue LED on the rear of the chassis. These are used to locate the server in large racks and server banks. The same button functions as an IPMI reset button. Hold the button for ten seconds to reset IPMI to factory defaults.
3	Power LED	Indicates power is being supplied to the system power supply units. This LED is illuminated when the system is operating normally.
4	NIC LED	Indicates network activity on the LAN when flashing.
5	Power Fail LED	Indicates a power supply module has failed.
6	Information LED	Alerts operator to several states, as noted in the following table.

Information LED	
Status	Description
Continuously on and red	An overheat condition has occurred. (This may be caused by cable congestion.)
Blinking red (1Hz)	Fan failure, check for an inoperative fan.
Blinking red (0.25Hz)	Power failure, check for a non-operational power supply.
Solid blue	Local UID has been activated. Use this function to locate the server in a rack mount environment.
Blinking blue	Remote UID is on. Use this function to identify the server from a remote location.

### Chassis Front

The illustration below shows the features included on the front of the chassis.

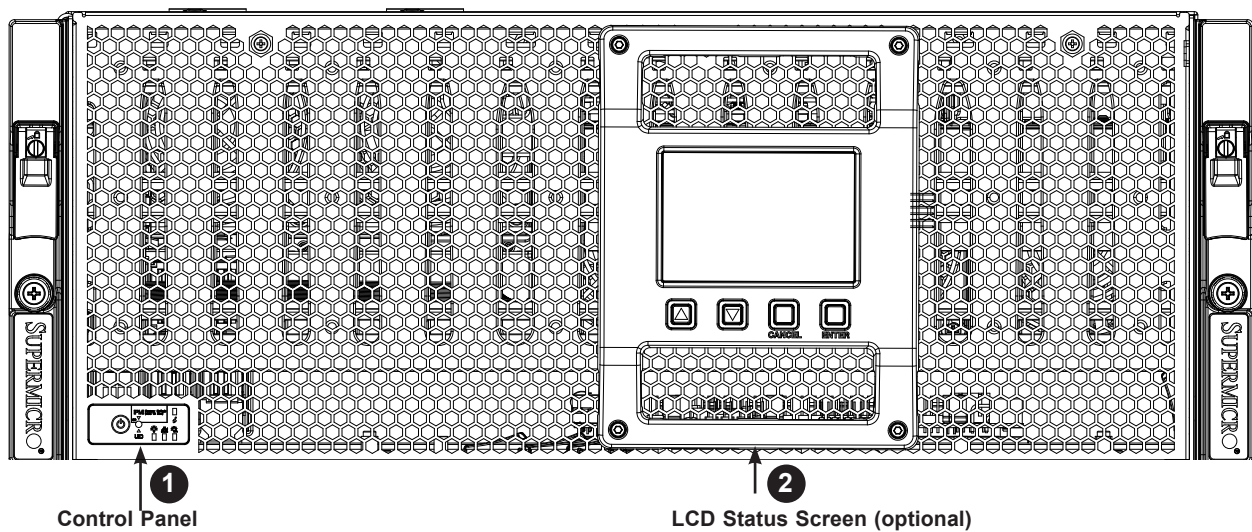


Figure 1-2. Front View (optional LCD Status screen pictured)

Front Chassis Features		
Item	Feature	Description
1	Control Panel	Power, UID, network, overheat
2	LCD Status Screen	(Optional purchase item) LCD panel for system status and error information; see Section 1.4 for details

## Chassis Rear

The illustration below shows the features included on the rear of the chassis. Power supply modules display status lights.

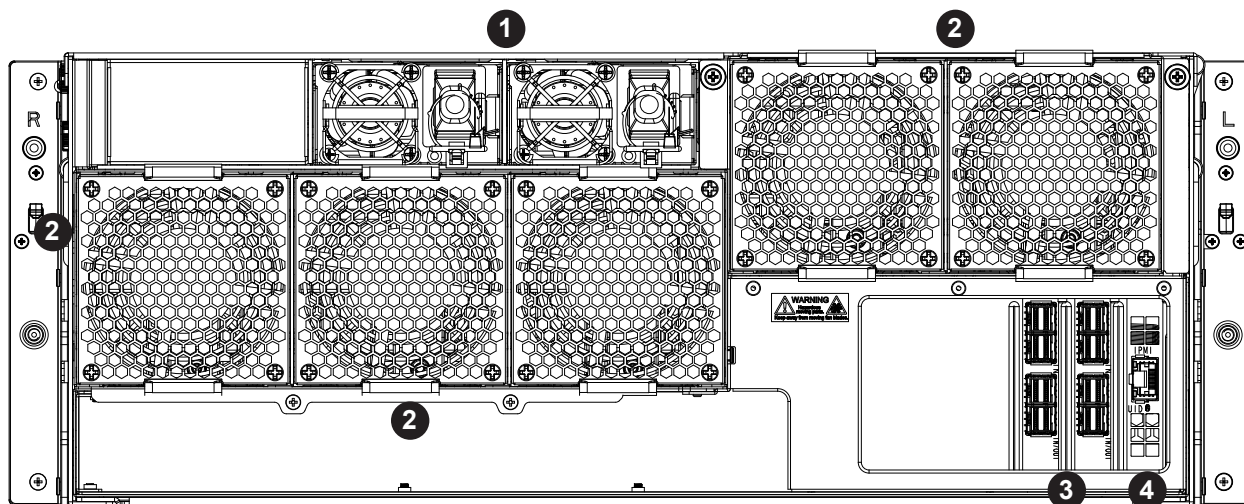
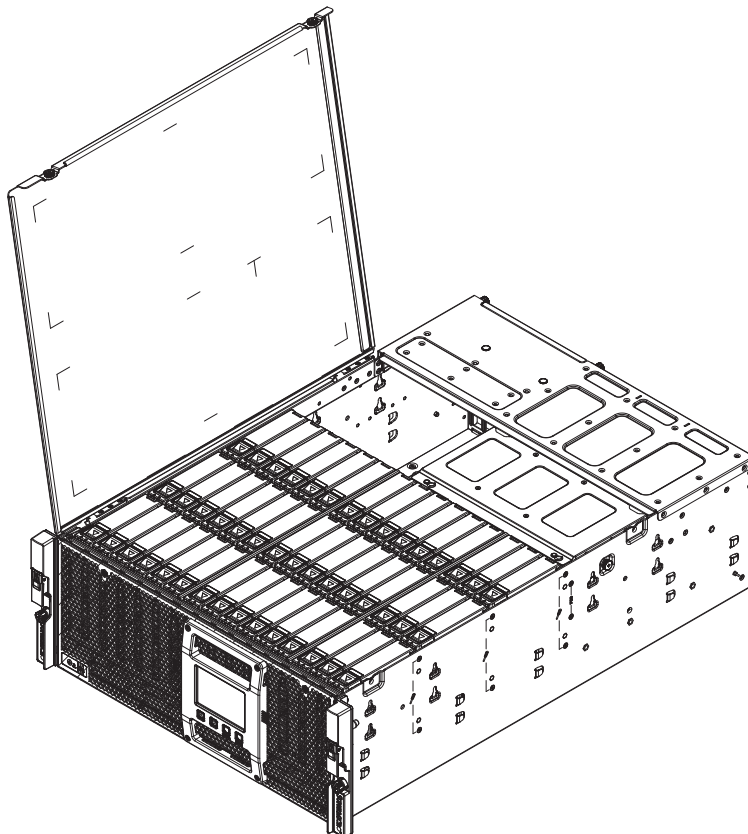


Figure 1-3. Rear View

Rear Chassis Features		
Item	Feature	Description
1	Power Supply modules	Two, redundant hot-swap
2	Fans	Five, hot-swap
3	Mini-SAS Ports	Mini-SAS HD ports for internal or external cascading expander combinations One for SC946LE1C-R1K66JBOD.
4	IPMI Port	Networking port used for remote management

## Chassis Top

A hinged cover on the top of the chassis opens to access the drive bays. Individual hard drive carriers display status lights.



45 Drives Mounted Vertically

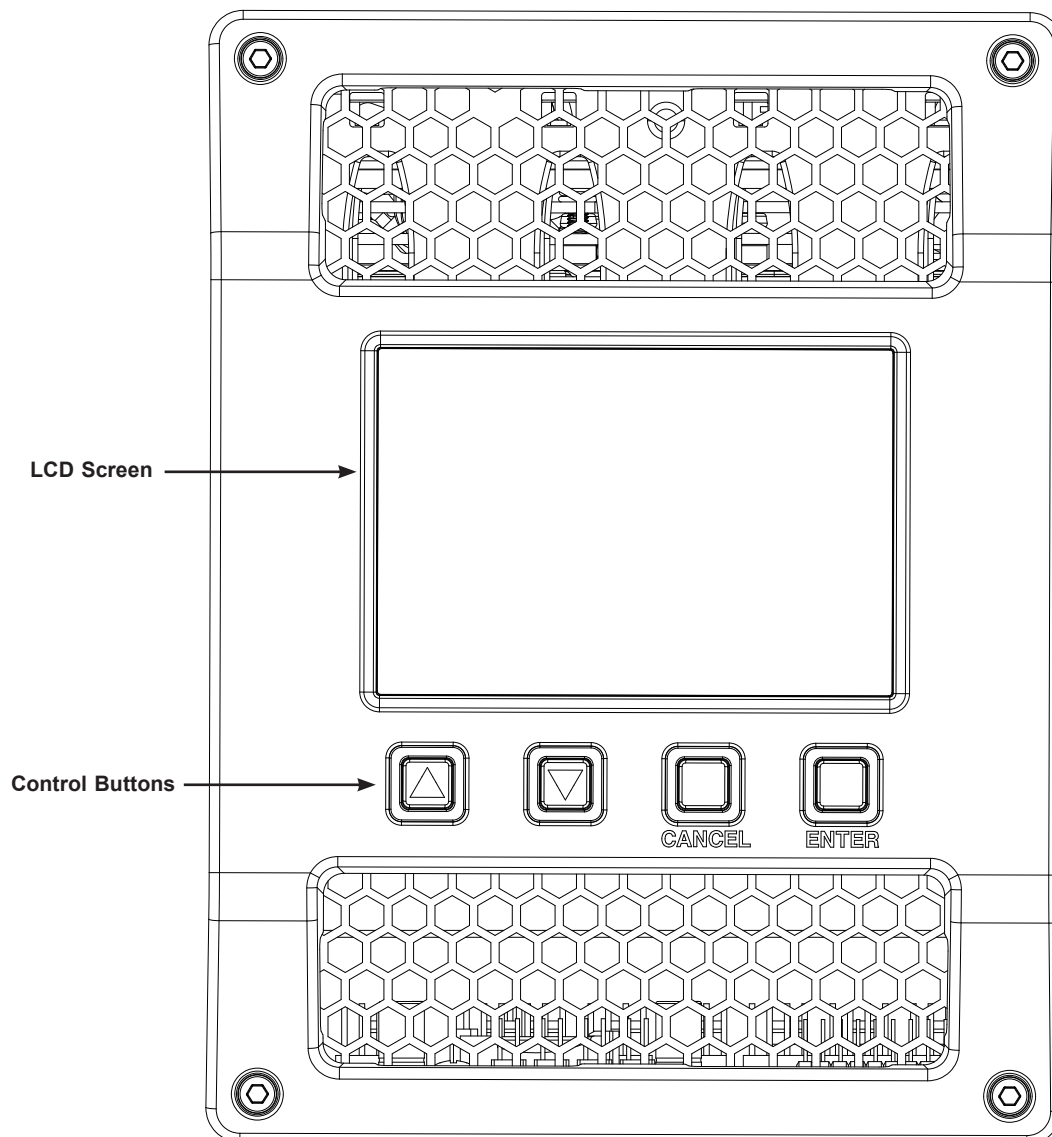
Figure 1-4. Top View

## 1.4 System Status LCD Screen

The SC946L JBOD offers an (optional) LCD display on the front of the chassis that shows the status of many system components. The functions are described in this section.

### Introduction

This feature gives the user the ability to monitor drives, power supplies, fans, and connections. It shows temperature, events, and errors. The LCD display is activated as the system powers on.



**Figure 4-1. LCD Status LCD Screen on the Chassis Front**

The user can navigate the menus using the four control buttons: scroll up, scroll down, Cancel, and Enter. **Note:** The SKU shown in the screen is for reference only and may differ with the SKU user is currently using.

## Main Screen

After a welcome page, the Main screen appears. Note that the screen may reflect a model or part number similar to what you have, but may reflect a slightly different SKU.

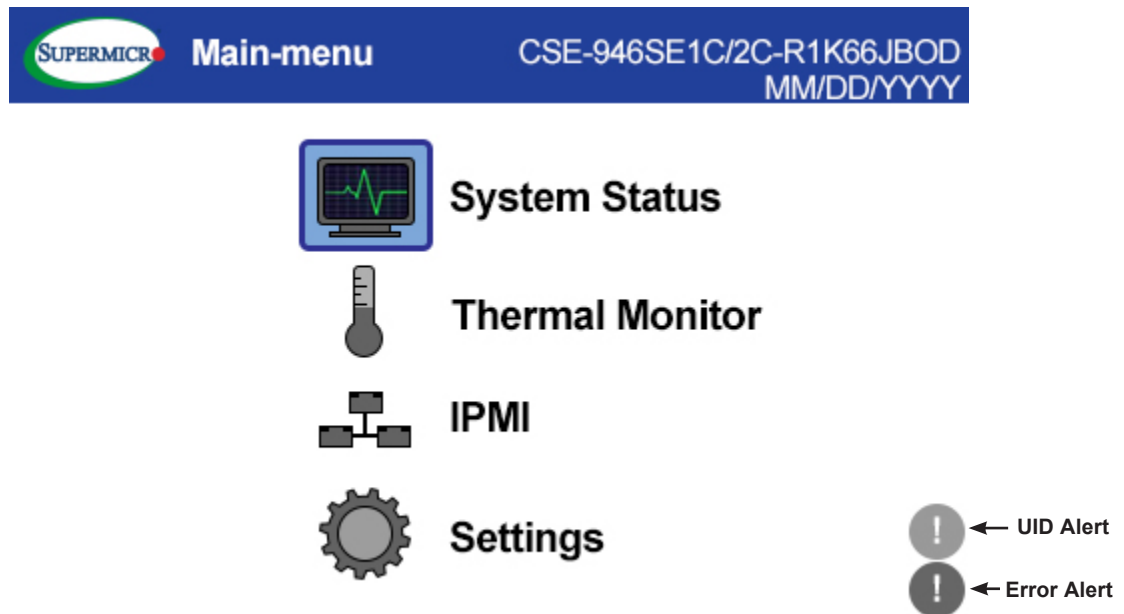


Figure 4-1. System Status Main Page

Throughout the GUI, component status is displayed in color where green indicates normal operation, red indicates a problem, and gray indicates the component is not installed. The UID Alert is blue when active; the Error Alert is red when active.

## System Status Submenu

Main Page > System Status

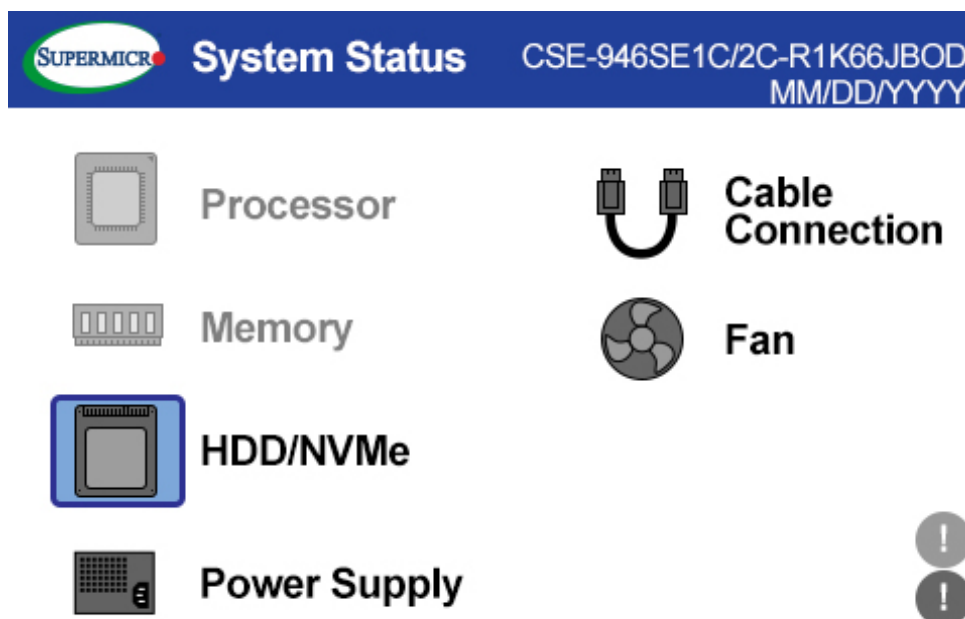


Figure 4-2. System Status Submenu

For JBOD storage enclosures, the Processor and Memory items are not available.

#### ***Hard Disk Drive Status***

*Main Page > System Status > Hard Disk Drive*

This page displays all drive bays. The drive may be operational, failed (if on the server node side a hardware RAID card is installed and connected), or not installed.

#### ***Power Supply Status***

*Main Page > System Status > Power Supply*

This page shows the status and temperature of each power supply unit.

#### ***Cable Connection Status***

*Main Page > System Status > Cable Connection*

The Cable Connection page shows the status of connections to the backplanes.

#### ***Fans Status***

*Main Page > System Status > Fan*

The Fan page shows whether each fan is operational, failed or not installed.

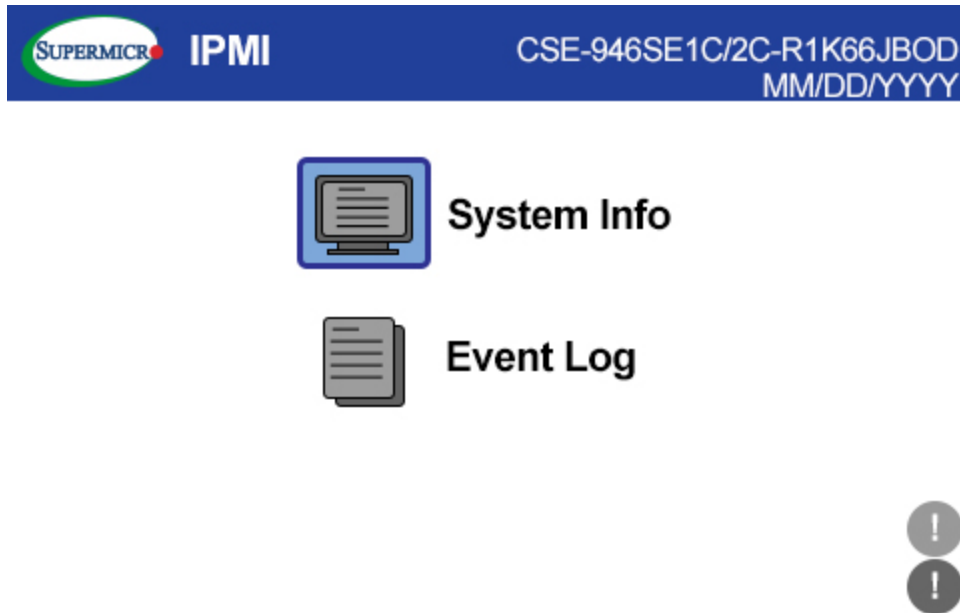
## **Thermal Monitor**

*Main Page > Thermal Monitor*

The Thermal Monitor shows the temperature of the backplane, JBOD control board (CB3), and ambient chassis temperature.

## **IPMI Submenu**

*Main Page > IPMI*



**Figure 4-10. IPMI Submenu**

***System Info***

*Main Page > IPMI > System Info*

The IPMI System Info pages show:

- IPMI firmware version
- BIOS firmware version
- BMC IP Address
- MAC Address
- JBOD Control board serial number
- Product serial number
- Chassis serial number
- Power supplies 1 and 2 serial numbers

***IPMI Event Log***

Event Log page will show the latest 100 critical errors:

- /\*CPU OverHeating\*/
- /\*MEM OverHeating\*/
- /\*PSU FAIL\*/



- /\*MEM ECC Error\*/
- /\*MEM MRC Error\*/
- /\*Fan Error\*/
- HDD activity

## Settings Submenu

*Main Page > Settings > Brightness*

This item allows the user to adjust the LCD brightness.

## Error Message

An error message pops up when a critical error occurs and shows the latest three critical errors. The user can choose to navigate to event log or ignore message.

Also, there will be an error icon on the bottom right of the page to remind user that there are critical errors that require attention.

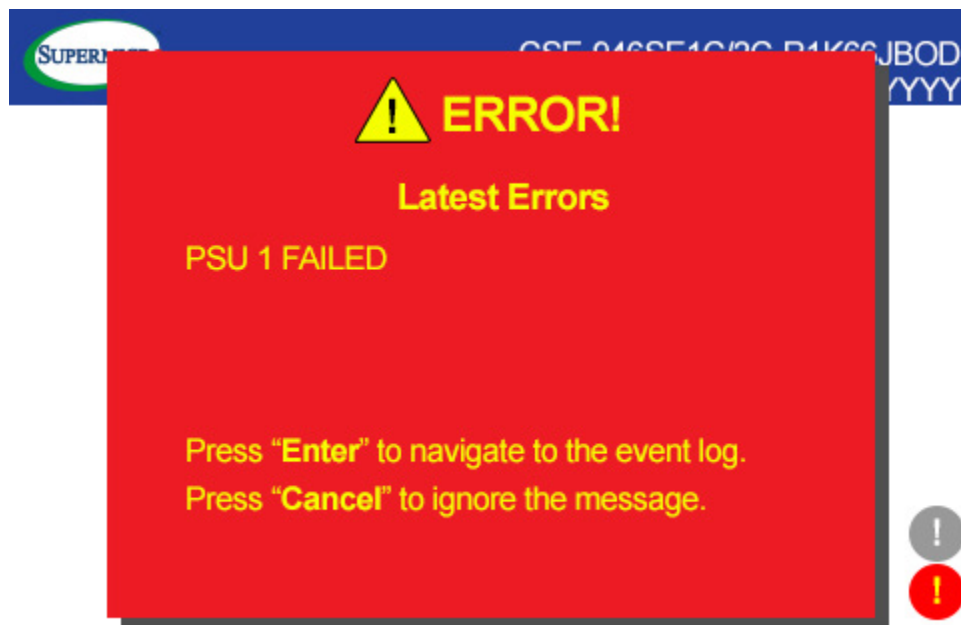


Figure 4-15. Error Message

## UID Message

A message pops up when the user activates UID. The UID icon (blue circle with a white exclamation mark) in the bottom right corner remains active until the user turns off UID.

## 1.5 Where to get Replacement Components

If you need replacement parts for your system, to ensure the highest level of professional service and technical support, purchase exclusively from our Supermicro Authorized Distributors/System Integrators/Resellers. A list can be found at: <http://www.supermicro.com>. Click the "Where to Buy" link.

## 1.6 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.

# Chapter 2

## Installation in a Rack

This chapter provides advice and instructions for mounting your system in a rack.

### 2.1 Preparing for Setup

The box in which the system was shipped should include the hardware needed to install it into the rack. Please read this section in its entirety before you begin the installation.

#### Choosing a Setup Location

- The system should be situated in a clean, dust-free area that is well ventilated. Avoid areas where heat, electrical noise and electromagnetic fields are generated.
- Leave enough clearance in front of the rack so that you can open the front door completely (~25 inches) and approximately 30 inches of clearance in the back of the rack to allow sufficient space for airflow and access when servicing.
- This product should be installed only in a Restricted Access Location (dedicated equipment rooms, service closets, etc.).
- This product is not suitable for use with visual display workplace devices according to §2 of the the German Ordinance for Work with Visual Display Units.

#### Rack Precautions

- Ensure that the leveling jacks on the bottom of the rack are extended to the floor so that the full weight of the rack rests on them.
- In single rack installations, stabilizers should be attached to the rack. In multiple rack installations, the racks should be coupled together.
- Always make sure the rack is stable before extending a server or other component from the rack.
- Extend only one server or component at a time - extending two or more simultaneously may cause the rack to become unstable.

- When initially installing the server to a rack, test that the rail locking tabs engage to prevent the server from being overextended. Have a rack lift in place as a precaution in case the test fails.
- In any instance of pulling the system from the rack, always use a rack lift and follow all associated safety precautions.

## **Server Precautions**

- Review the electrical and general safety precautions in Chapter.
- Determine the placement of each component in the rack *before* you install the rails.
- Install the heaviest server components at the bottom of the rack first and then work your way up.
- Use a regulating uninterruptible power supply (UPS) to protect the server from power surges and voltage spikes and to keep your system operating in case of a power failure.
- Allow any drives and power supply modules to cool before touching them.
- When not servicing, always keep the front door of the rack and all covers/panels on the servers closed to maintain proper cooling.

## **Rack Mounting Considerations**

### ***Ambient Operating Temperature***

If installed in a closed or multi-unit rack assembly, the ambient operating temperature of the rack environment may be greater than the room's ambient temperature. Therefore, consideration should be given to installing the equipment in an environment compatible with the manufacturer's maximum rated ambient temperature ( $T_{mra}$ ).

### ***Airflow***

Equipment should be mounted into a rack so that the amount of airflow required for safe operation is not compromised.

### ***Mechanical Loading***

Equipment should be mounted into a rack so that a hazardous condition does not arise due to uneven mechanical loading.

### ***Circuit Overloading***

Consideration should be given to the connection of the equipment to the power supply circuitry and the effect that any possible overloading of circuits might have on overcurrent protection and power supply wiring. Appropriate consideration of equipment nameplate ratings should be used when addressing this concern.

### ***Reliable Ground***

A reliable ground must be maintained at all times. To ensure this, the rack itself should be grounded. Particular attention should be given to power supply connections other than the direct connections to the branch circuit (i.e. the use of power strips, etc.).



To prevent bodily injury when mounting or servicing this unit in a rack, you must take special precautions to ensure that the system remains stable. The following guidelines are provided to ensure your safety:

- This unit should be mounted at the bottom of the rack if it is the only unit in the rack.
- When mounting this unit in a partially filled rack, load the rack from the bottom to the top with the heaviest component at the bottom of the rack.
- If the rack is provided with stabilizing devices, install the stabilizers before mounting or servicing the unit in the rack.
- Slide rail mounted equipment is not to be used as a shelf or a work space.

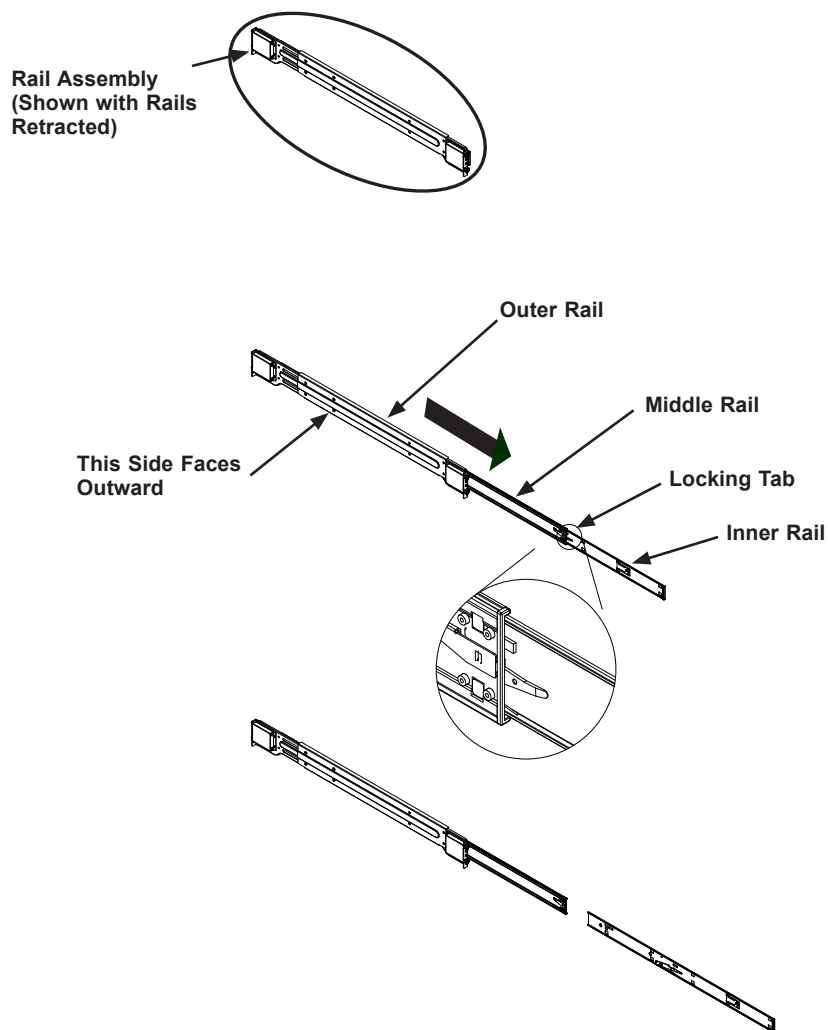
## 2.2 Installing the Rails

There are a variety of rack units on the market, which may require a slightly different assembly procedure. Do not use a two post "telco" type rack. This rail set fits a rack between 26.5" and 36.4" deep.

The following is a basic guideline for installing the system into a rack with the rack mounting hardware provided. You should also refer to the installation instructions that came with the specific rack you are using.

### Identifying the Rails

The chassis package includes two rail assemblies. Each assembly consists of three sections: An inner rail that secures directly to the chassis, an outer rail that secures to the rack, and a middle rail which extends from the outer rail. These assemblies are specifically designed for the left and right side of the chassis and labeled.



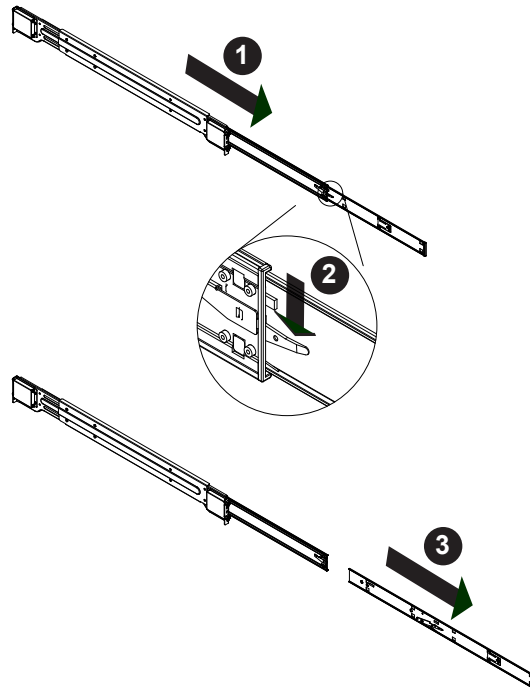
**Figure 2-1. Identifying the Outer Rail, Middle Rail and Inner Rail**  
(Left Rail Assembly Shown)

## Releasing the Inner Rail

Each inner rail has a locking latch. This latch prevents the server from coming completely out of the rack when the chassis is pulled out for servicing.

To mount the rail onto the chassis, first release the inner rail from the outer rails.

1. Pull the inner rail out of the outer rail until it is fully extended as illustrated below.
2. Press the locking tab down to release the inner rail.
3. Pull the inner rail all the way out.



**Figure 2-2. Extending and Releasing the Inner Rail**

## Installing the Inner Rails

Begin the rack mounting procedure by installing the inner rails to the chassis.

1. Identify the left and right inner rails. They are labeled.
2. Place the inner rail firmly against the side of the chassis, aligning the angled posts on the side of the chassis with the holes in the inner rail.
3. Slide the inner rail forward toward the front of the chassis and under the angled posts until the rail lock snaps into place, securing the rail to the chassis.
4. If desired, secure the rail with a locking screw.

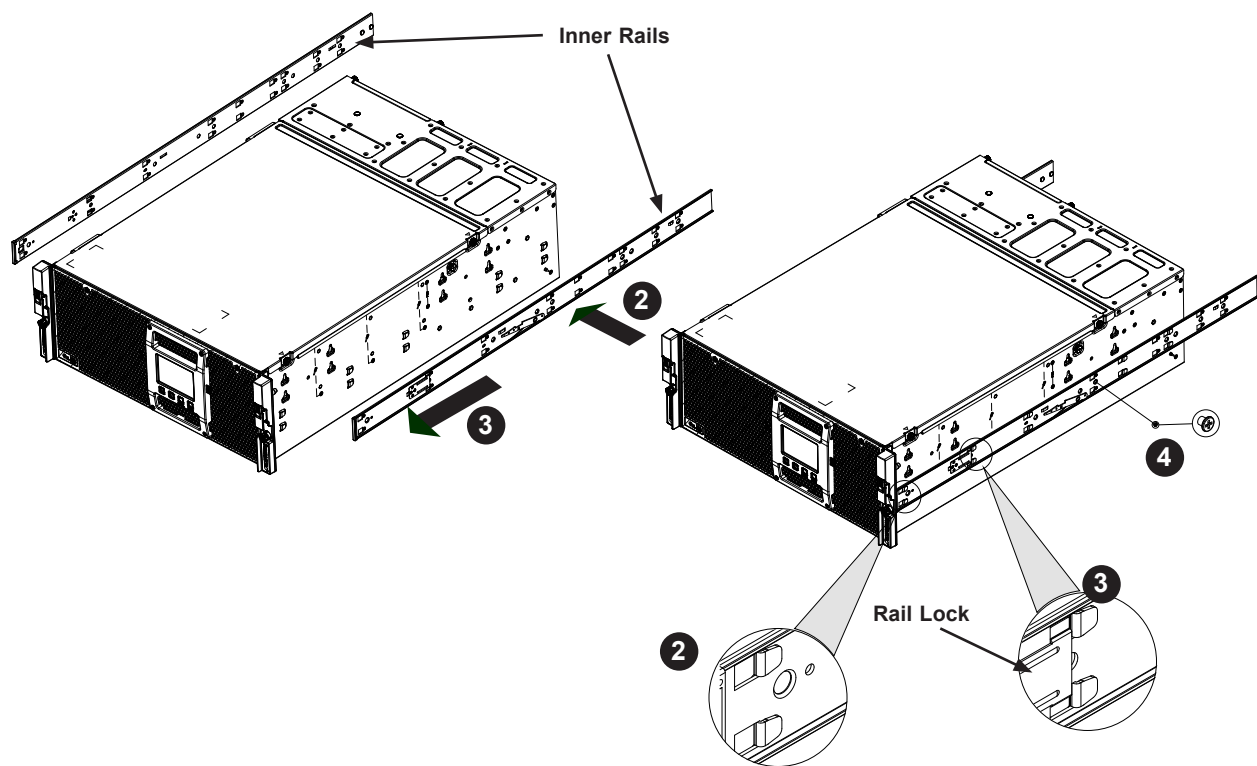


Figure 2-3. Installing the Rails



**Warning:** Do not pick up the server with the front handles. They are designed to pull the system from a rack only.



## Installing the Outer Rails onto the Rack

1. Press upward on the locking tab at the rear end of the middle rail.
2. Push the middle rail back into the outer rail.
3. Hang the hooks on the front of the outer rail onto the square holes on the front of the rack. If desired, use screws to secure the outer rails to the rack.
4. Pull out the rear of the outer rail, adjusting the length until it just fits within the posts of the rack.
5. Hang the hooks of the rear section of the outer rail onto the square holes on the rear of the rack. Take care that the proper holes are used so the rails are level. If desired, use screws to secure the rear of the outer rail to the rear of the rack.
6. Repeat for the other outer rail.

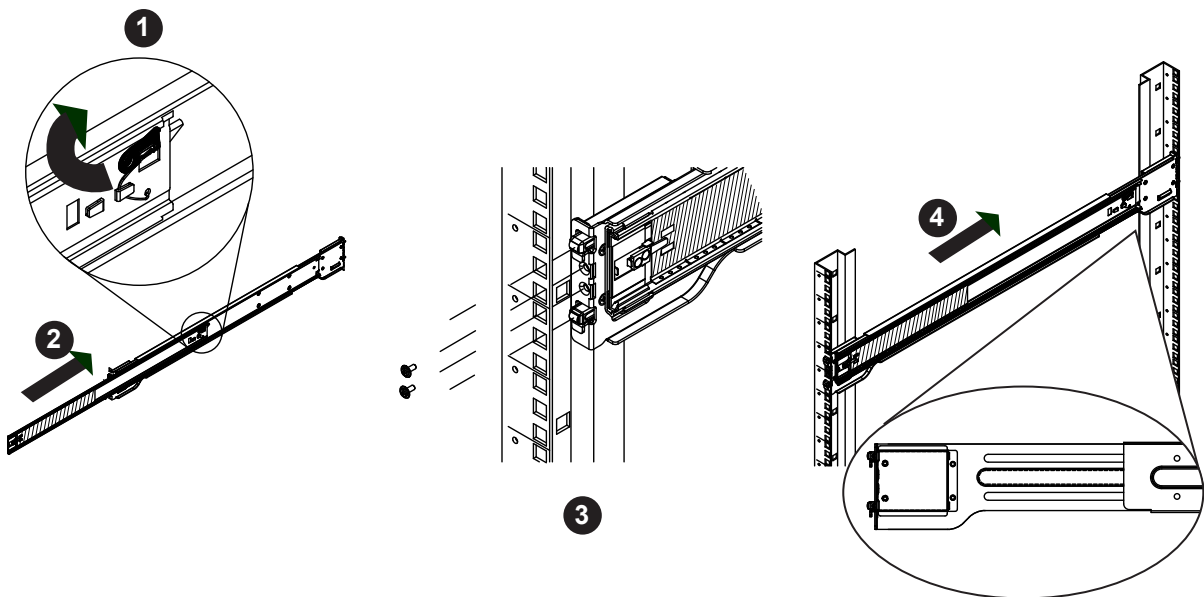


Figure 2-4. Extending and Mounting the Outer Rails

### ***Adapters for Round and Threaded Hole Racks***

The chassis includes adapter brackets for those customers using round hole racks or racks with threaded holes size M5 or larger.

#### ***Installing the Outer Rails with Adapter Brackets***

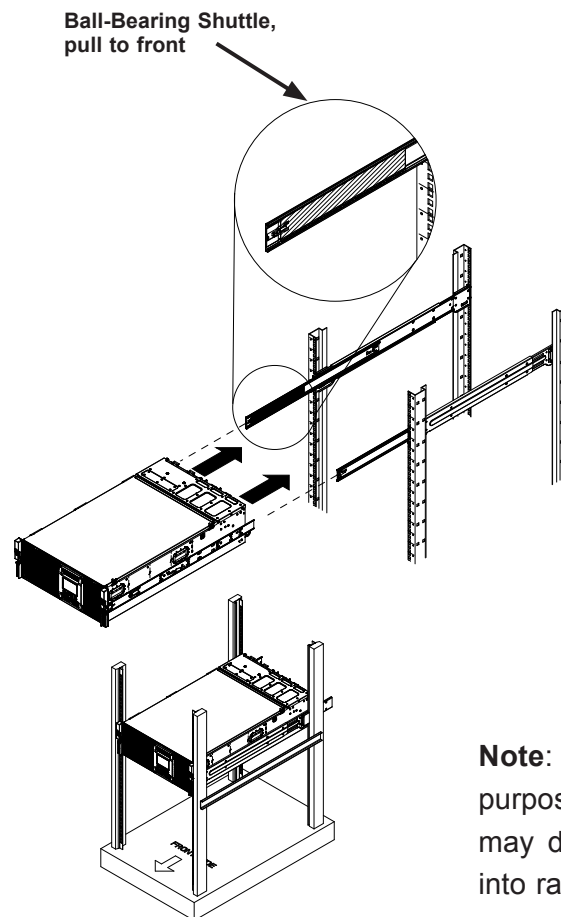
1. Place the hooks of the front of the outer rail into the square holes of one of the adapter brackets.
2. Place the hooks of the rear of the outer rail into the square holes of a second adapter bracket.
3. Adjust the length of the outer rail to fit within the rack uprights.
4. Secure the front adapter bracket to the front of the rack using the screws recommended by the rack manufacturer.
5. Secure the rear adapter bracket to the rear of the rack in the same manner.

## 2.3 Installing the Chassis into a Rack

After the rails are installed on the chassis and on the rack, the server can be installed in the rack. It is heavy and requires two to three people or a lift.

### *Installing the Chassis into a Rack*

1. Pull both middle rails out the front of the outer rail until each clicks to a stop.
2. Align the inner rails on the chassis with the front of the middle rails.
3. Slide the inner rails on the chassis into the middle rails, keeping the pressure even on both sides. When partially in, the locking levers will stop further progress.
4. Press down the locking levers on the inside of the inner rails and push the chassis all the way into the rear of the rack. The front latches will click into place.



**Note:** Figures are for illustrative purposes only. Your actual chassis may differ. Always install servers into racks from the bottom up.

**Figure 2-5. Installing the Chassis into the Rack**



**Warning:** When initially installing the server to a rack, test that the rail locking tabs engage to prevent the server from being overextended. Have a rack lift in place as a precaution in case the test fails.

## Removing the Chassis from the Rack



**Caution!** It is dangerous for a single person to off-load the heavy chassis from the rack without assistance. Be sure to have sufficient assistance supporting the chassis when removing it from the rack. Use a lift.

1. Lift the release levers and pull the chassis out the front of the rack until it stops.
2. Press the release latches on each of the inner rails downward simultaneously and continue to pull the chassis completely out of the rack.

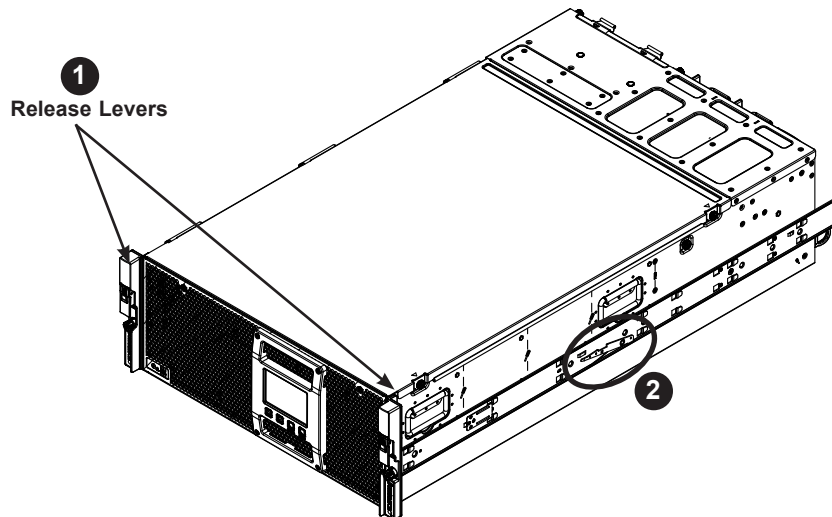


Figure 2-6. Removing the Chassis From the Rack



Stability hazard. The rack stabilizing mechanism must be in place, or the rack must be bolted to the floor before you slide the unit out for servicing. Failure to stabilize the rack can cause the rack to tip over.

Slide rail mounted equipment is not to be used as a shelf or a work space.

## 2.4 Optional Quick Installation Method

The following quick installation method may be used to install the chassis to a rack.

### *Installing the Chassis into a Rack*

1. Install the whole rail assembly into the rack in a manner similar to that described in the previous section, "Installing the Outer Rails onto the Rack."
2. Fully extend the inner rails.
3. Using a lift, carefully align the chassis between the inner rails.
4. Install the inner rails on the chassis in a manner similar to that described in the previous section, "Installing the Inner Rails."

## 2.4 Installing the Cable Management Arm

The SC946L JBOD chassis supports a cable management arm (CMA) that keeps the rear cables organized and clear of the rail mechanisms when the system is extended out the front of the rack for maintenance. The kit includes six fabric Velcro cable ties.

The CMA attaches to the rack mounting rails by means of four connectors. They are labeled on the connectors 1, 2, 3, and 4.

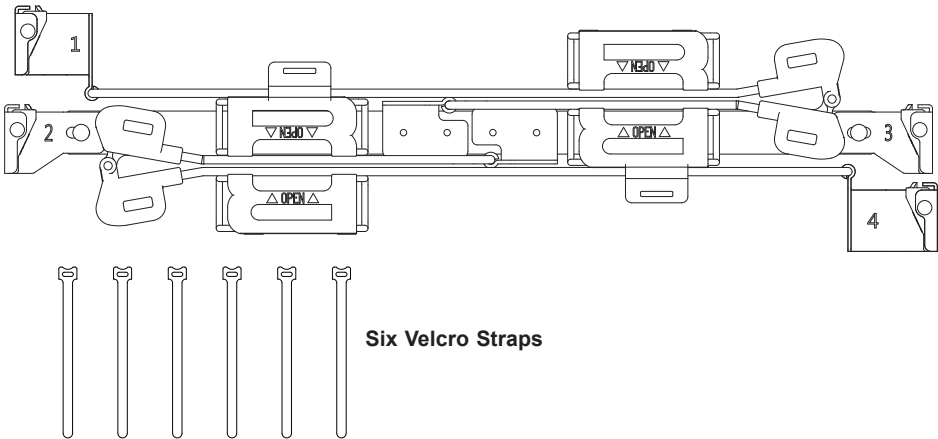
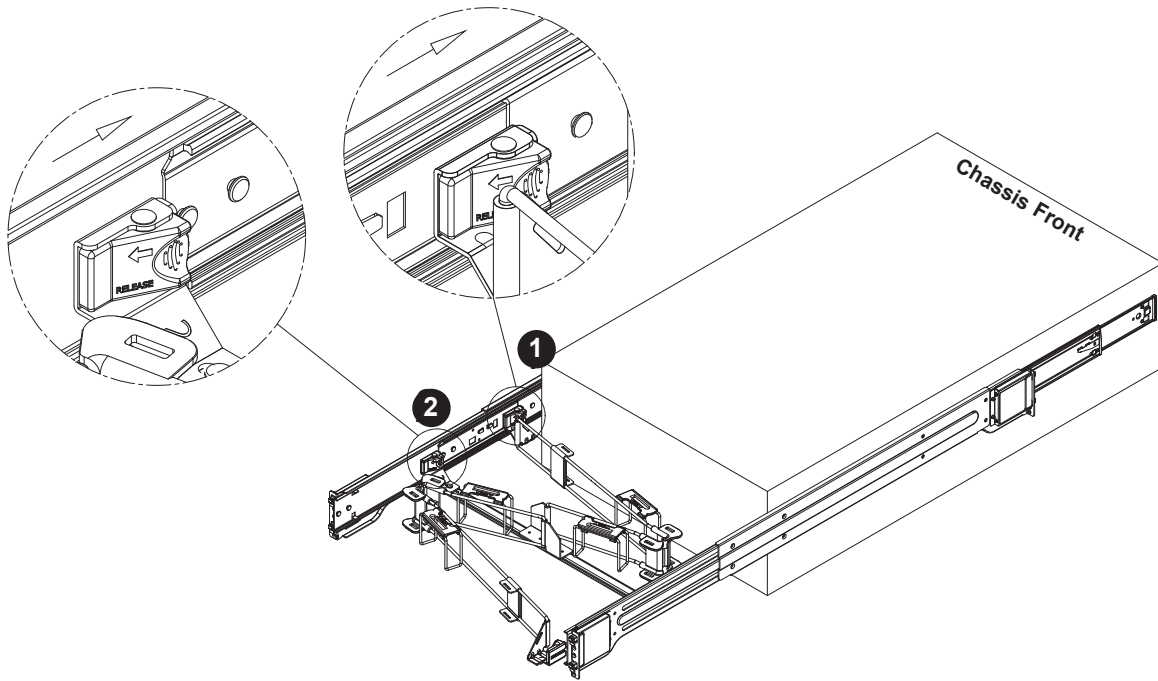


Figure 2-7. Cable Managment Arm and Velcro Straps

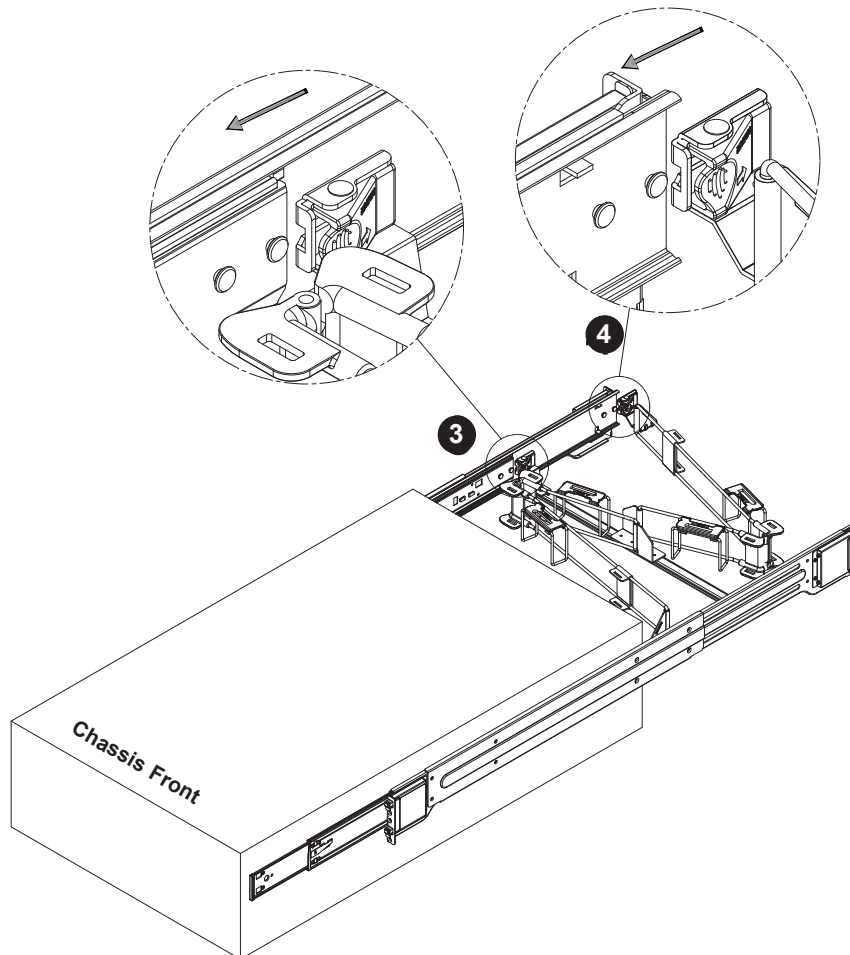
### ***Installing the Cable Management Arm***

1. Slide CMA connector #1 forward onto the two posts on the rear of the right inner rail (right side when viewed from the front). It snaps into place.
2. Slide CMA connector #2 forward onto the two posts on the rear of the right middle rail. It snaps into place.

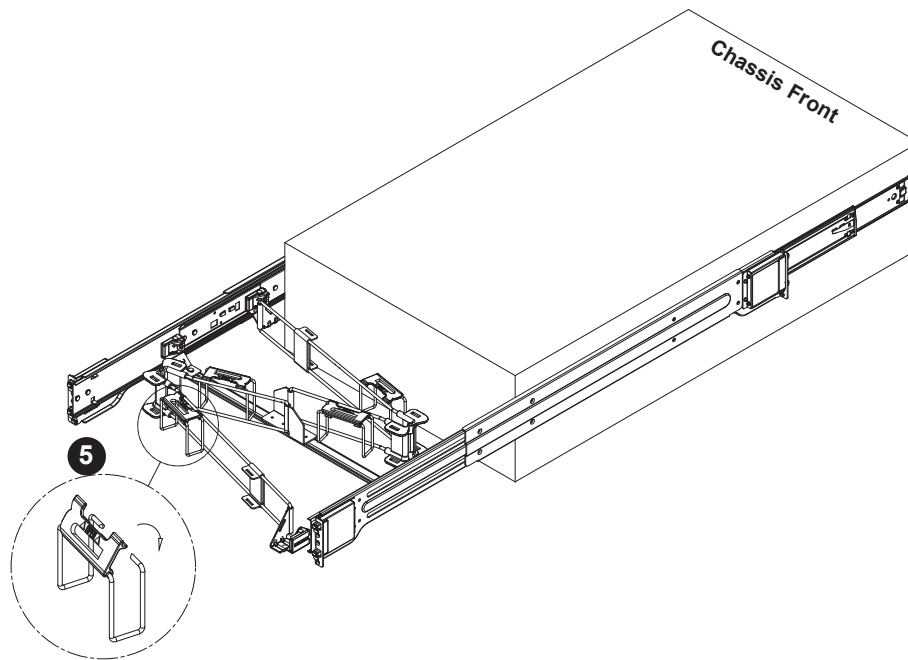


**Figure 2-8. Installing the Connectors 1 and 2**

3. Slide CMA connector #3 forward onto the two posts on the rear of the left middle rail. It snaps into place.
4. For CMA connector #4, align the metal tabs with the slots on the rear of the left outer rail and push it forward. It snaps into place.

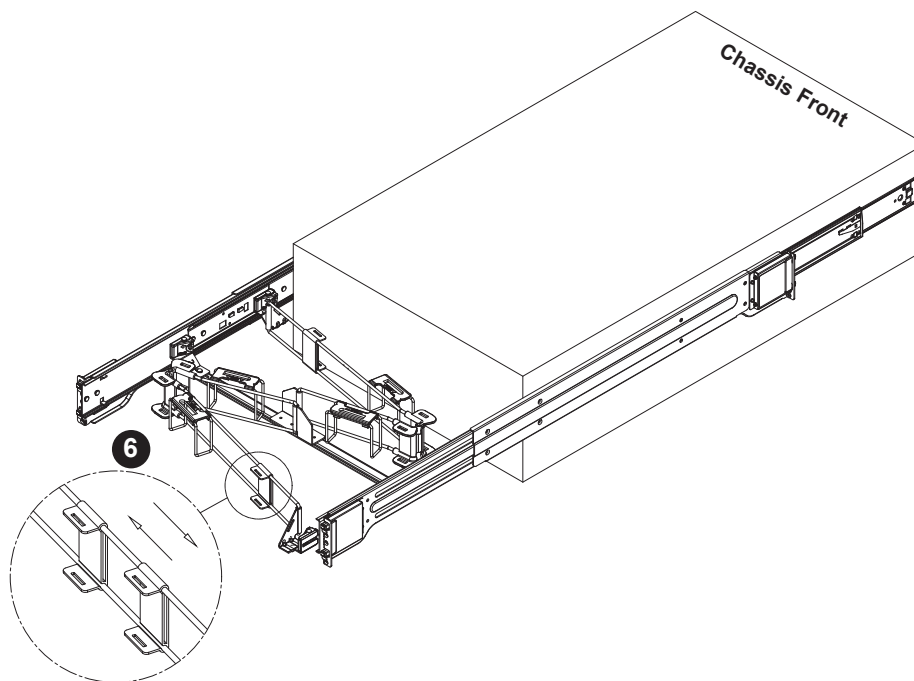


**Figure 2-9. Installing the Connectors 3 and 4**



**Figure 2-10. Routing the Cables**

5. Open the four red plastic caps and route the cables into the wire carrier.
6. If necessary, adjust the U-brackets to clear chassis components.



**Figure 2-11. Adjusting the U-Brackets**



7. Use the six Velcro straps to secure the cables to the CMA. Use a strap on either side of each joint and one on each U-bracket, inserting it through the slot on the bracket.
8. Slide the chassis forward and backward in the rack to confirm that the cable management arm is operating smoothly. If necessary, loosen the straps for smoother movement.

If at some time you must remove the cable management arm, follow this procedure.

***Removing the Cable Management Arm***

1. Remove cables from the CMA, releasing the Velcro straps and the red plastic caps.
2. For CMA connector #4, pull the metal release tab toward the center of the rack and slide the connector toward the rear to release it.
3. For CMA connectors #3, #2, and #1, depress the front edge of the yellow plastic rocker lock, and slide the connector toward the rear to release it.

## Chapter 3

# Maintenance and Component Installation

This chapter provides instructions on installing and replacing main system components. To assure compatibility, only use components that match the specifications or part numbers given. Installation or replacement of most components require that power first be removed from the system.

### 3.1 Power Up/Power Down Sequences

There are several procedures to turn on or off the system with the CB3 JBOD control board.

#### Power Up

##### *First Use or Power Cord Plug-In*

1. Plug the power cords into the rear of the power supplies.
2. Wait until blue Information LED starts to blink.
3. Press the power button once. The JBOD control board initiates the power up sequence in three seconds.

##### *After Normal Shutdown by IPMI or Power Button*

Press the power button once. The JBOD control board will initiate the power up sequence in three seconds.

##### *After a Power Loss*

The system will power up automatically approximately fifteen seconds after the power returns.

#### Power Down

1. Hold down the power button. The blue Information LED will begin blinking. Continue to hold the power button.
2. Release power button after blue LED stops blinking and goes dark.
3. The shutdown sequence will begin and shut down the system within ten seconds

## Removing Power from the System

Before performing most setup or maintenance tasks, use the following procedure to ensure that power has been removed from the system.

1. After the system has completely shut-down, carefully grasp the head of the power cord and gently pull it out of the back of the power supply. If your system has dual power supplies, remove the cords from both power supplies.
2. Disconnect the cord from the power strip or wall outlet.

## 3.2 Cable Connections

### IPMI

The SC946L JBOD chassis offers intelligent management with IPMI to provide hardware health monitoring and remote power control. To enable, connect to the storage enclosure using the dedicated IPMI LAN connector (Figure 1-3).

The default IP address configuration mode is DHCP (Dynamic Host and Configuration Protocol). When connected to the network, you can find the IP address assigned to this system from DHCP server. You can now connect using the User name and Password as shown below.

**Note:** The IP configuration mode can be toggled between DHCP and Static IP. Press and hold the reset button on the front panel for 6-8 seconds to change to static IP mode with the default IP address as shown below. Press and hold the reset button for 10-12 seconds to change the IP configuration mode back to DHCP.

Simple setup configuration:

**IPMI default IP:** 192.168.1.99

**User name:** ADMIN

**Password:** ADMIN

For details on configuring and using IPMI, refer to the Supermicro IPMI manual.

## SAS Cables

This drawing shows connectors for SAS cabling. For primary and secondary, the top two connectors are marked **In**, and the bottom two connectors are marked **In/Out**.

Connect two mini-SAS HD cables (SFF-8644) from the head server node host bus adapter (HBA) card to the top two Primary receptacles marked **In**. If using the E2C model for redundancy, connect two more mini-SAS HD cables to the top two Secondary receptables also marked **In**. Cables are described in Appendix B.

To cascade out, connect cables from the two receptacles marked **In/Out** to the next JBOD storage enclosure. (see Figure 3-2 and 3-3)

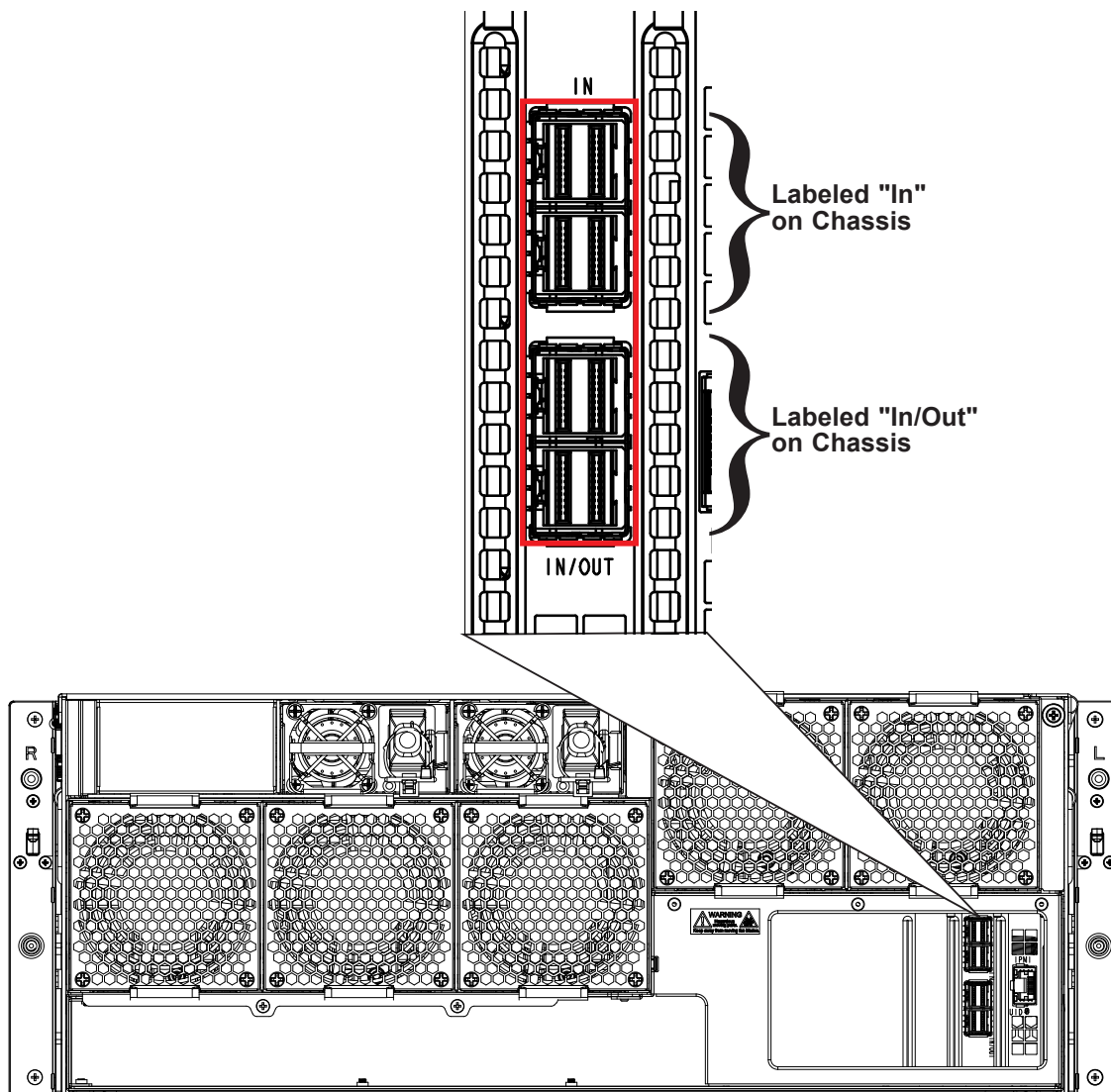


Figure 3-1. SAS and IPMI Cables

## Cascading Storage

The following diagram shows a server with a single host bus adapter (HBA). The SC946L JBOD storage enclosure model E1C can accommodate this configuration.

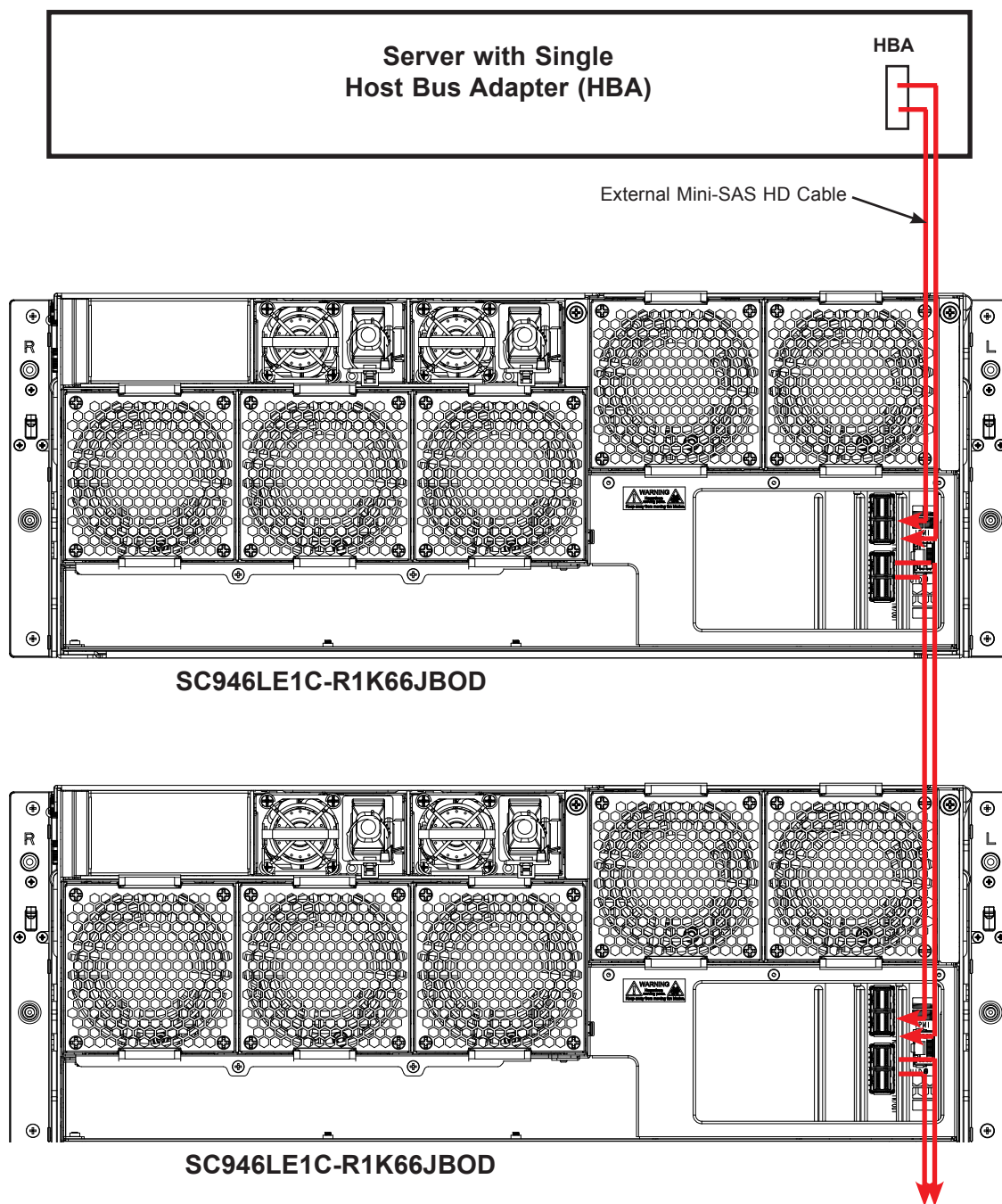


Figure 3-2. Sample Cascading Storage, Single HBA

### 3.3 Accessing the Chassis

Drive bays can be accessed by opening the top cover. Other components can be accessed through the front or rear of the chassis.

**Caution:** Except for short periods of time, do not operate the server without the cover in place. It helps provide proper airflow and prevent overheating.

#### *Opening the Drive Cover*

On the right side of the chassis, release the two thumb screws and lift the cover. The cover holds an open position at 100 degrees without additional support. Do not open farther.

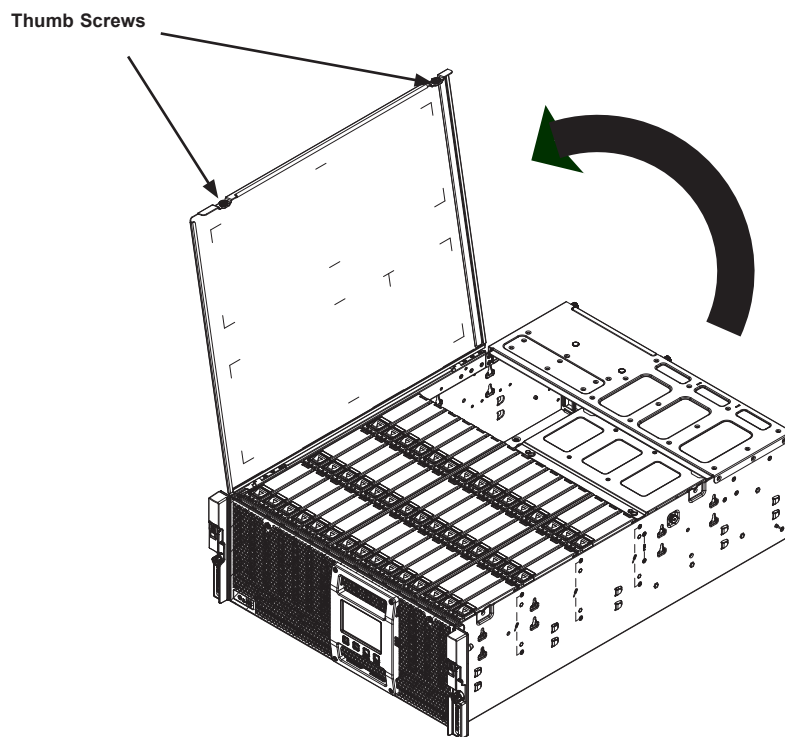


Figure 3-4. Opening the Drive Cover

## 3.4 Chassis Components

### Hard Drives

The SC946L JBOD chassis supports forty five 3.5" hard drives. They can be removed without powering down the system if your operating system supports RAID. In addition, it supports two 2.5" drives accessible at the rear of the chassis.

#### *Hard Drive Carrier Indicators*

Each hard drive carrier has two LED indicators: an activity indicator and a status indicator. The status indicator functions in RAID configurations. For non-RAID configurations, it remains off. See the table below for details.

Hard Drive Carrier LED Indicators			
	Color	Blinking Pattern	Behavior for Device
<b>Activity LED</b>	Blue	Solid On	SAS drive installed
	Blue	Blinking	I/O activity
<b>Status LED</b>	Red	Solid On	Failure of drive with RSTe support
	Red	Blinking at 1 Hz	Rebuild drive with RSTe support
	Red	Blinking with two blinks and one stop at 1 Hz	Hot spare for drive with RSTe support
	Red	On for five seconds, then off	Power on for drive with RSTe support
	Red	Blinking at 4 Hz	Identify drive with RSTe support

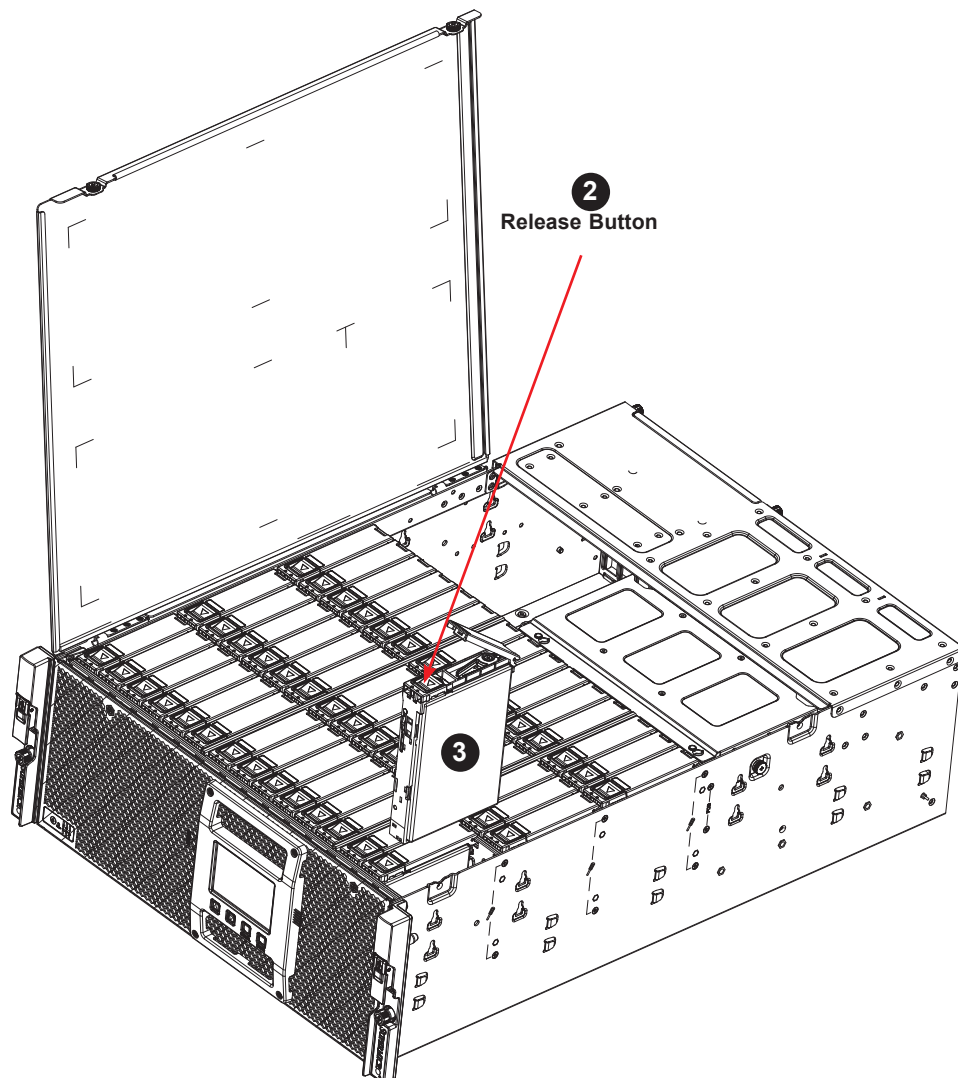
**Note:** Enterprise level hard disk drives are recommended for use in Supermicro chassis and servers. For information on recommended HDDs, visit the Supermicro website and check the "Drive Options" in the product webpage.

### ***Hard Drive Installation***

The drives are mounted in drive carriers to simplify their installation and removal from the chassis. These carriers also help promote proper airflow through the drive bays.

### ***Removing Hard Drive Carriers from the Chassis***

1. Open the top front cover of the chassis.
2. Slide the release button on the drive carrier, which opens the carrier handle.
3. Use the drive carrier handle to pull the drive out of the chassis.



**Figure 3-5. Removing a Hard Drive Carrier**

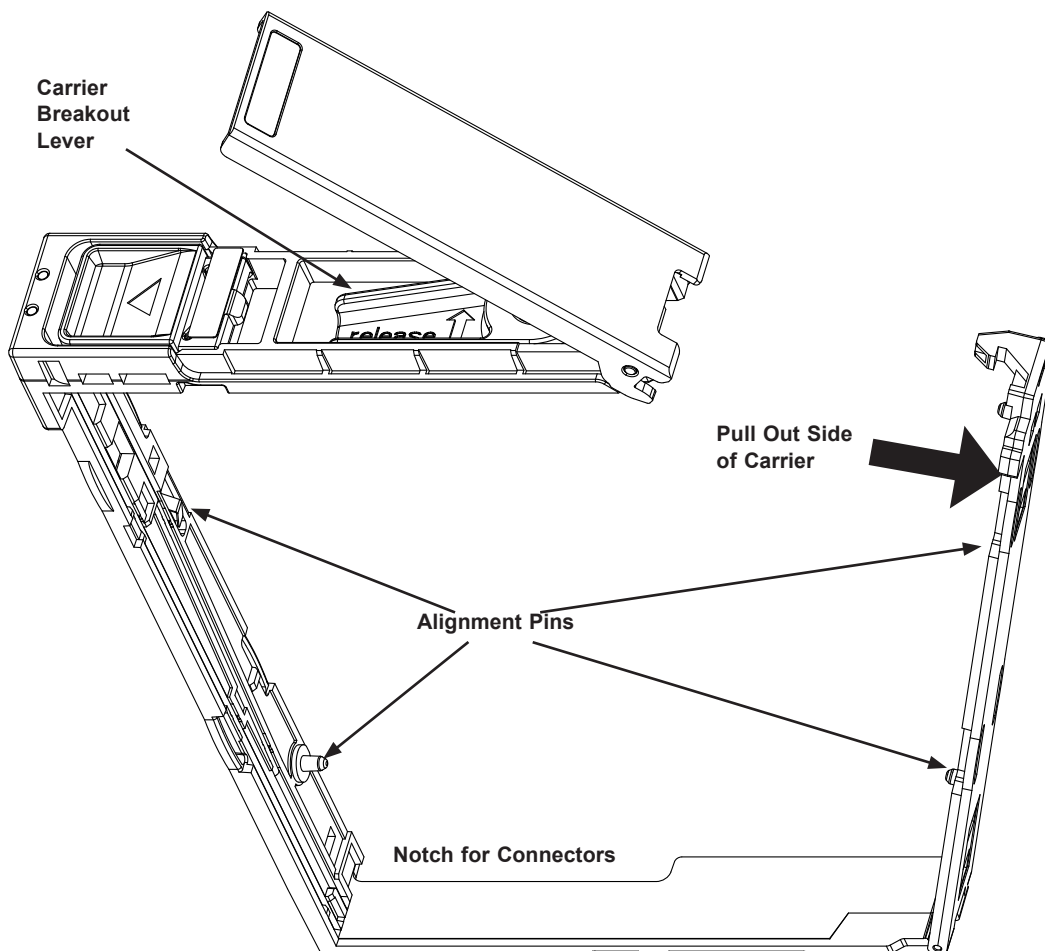
**Caution:** Except for short periods of time, such as swapping hard drives, do not operate the server with the hard drive bays empty.



### Installing a 3.5" Hard Disk Drive

With the drive carrier removed from the storage compartment:

1. Under the main the carrier handle, find and the lift the breakout lever and pull out the side of the carrier.



**Figure 3-6. Opening the Drive Carrier**

2. Remove the dummy drive from the carrier.
3. Insert the hard drive into the drive carrier. Orient the drive by matching the two alignment pins on the side and by noting the notch in the carrier for the HDD connectors. Close the side of the carrier until it snaps in place.
4. Slide the carrier assembly into its spot in the chassis until it clicks into locked position.

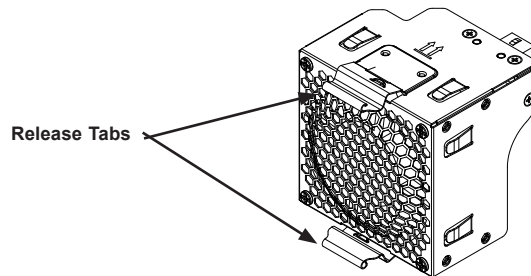
## System Cooling

Five hot-swap, heavy-duty rear mounted fans provide cooling. They can be replaced without powering down the system.

Fan speed is controlled by a system temperature setting in IPMI. If a fan fails, the remaining fans will ramp up to full speed. Replace any failed fan at your earliest convenience with the same type and model. The system can continue to run with a failed fan.

### *Replacing a System Fan*

1. While the power is running, examine the fans to determine which fan has failed.
2. Simultaneously press down on the upper release tab and push up the lower release tab of the failed fan.

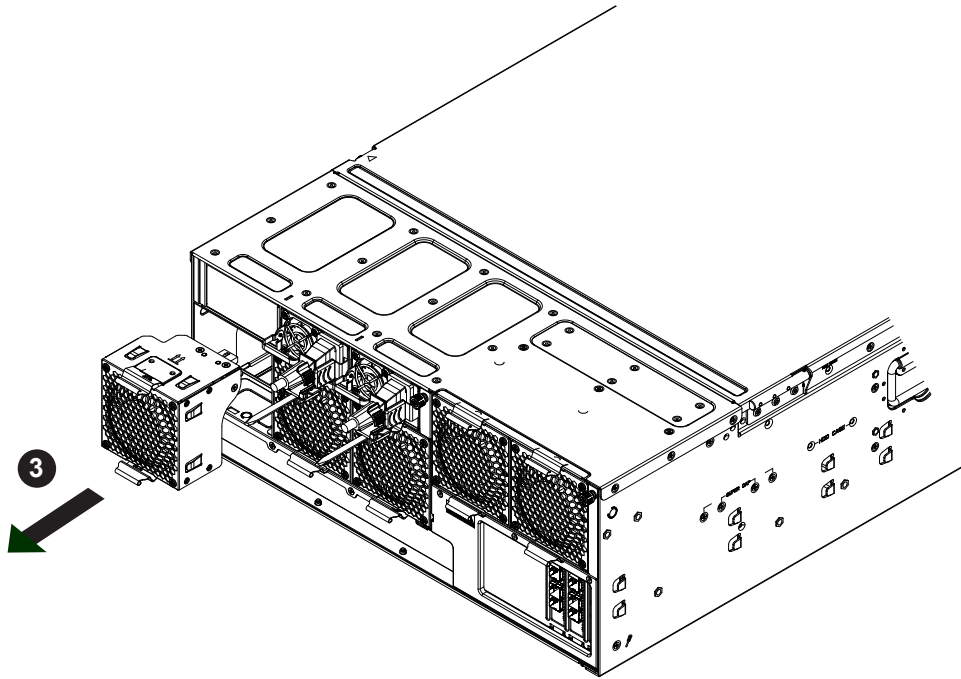


**Figure 3-8. Fan Release Tabs**

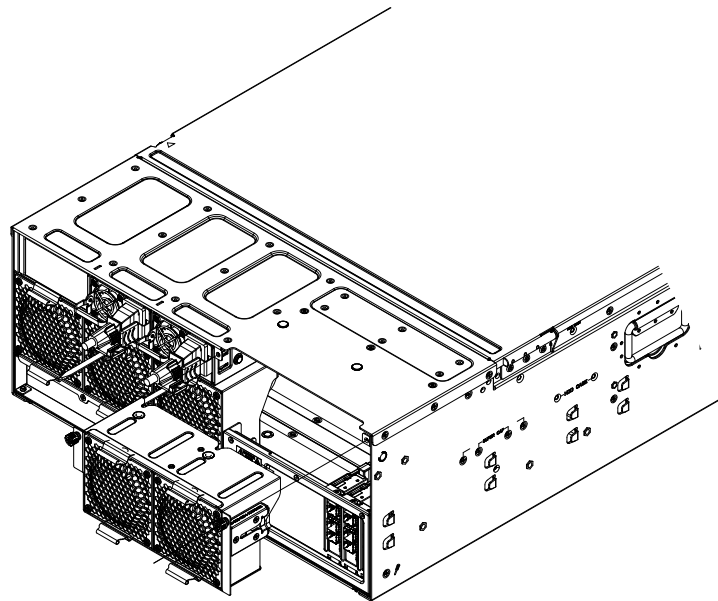
3. Pull the fan out of the bay using the tabs.

**Caution:** Fans will continue to rotate for a brief time after removing them from the chassis. To avoid injury, keep fingers clear of the rotating fan blades.

4. Place the new fan into the vacant fan bay. Confirm that the fan is fully seated in the fan bay and functioning properly.



**Figure 3-9. Removing a Fan From the Housing, Right Side**



**Figure 3-10. Removing the Fan Housing, Left Side**

### ***Checking the Server Air Flow***

- Make sure there are no objects to obstruct airflow in and out of the server.
- If you are using a front bezel, make sure the bezel filter is replaced periodically.
- Do not operate the server without drives or drive trays in the drive bays.
- Use only recommended server parts.
- Make sure no wires or foreign objects obstruct air flow through the chassis. Pull all excess cabling out of the airflow path or use shorter cables.

The control panel LEDs display system heat status. See “Control Panel” in Chapter 1 for details.

### ***Overheating***

There are several possible responses if the system overheats.

#### *Overheat Temperature Setting*

Some backplanes allow the overheat temperature to be set at 45, 50, or 55 by changing a jumper setting. For more information, consult the backplane user manual at [www.supermicro.com](http://www.supermicro.com). (Click Support, then the Manuals link.)

#### *Responses*

##### ***If the enclosure overheats:***

1. Use the LEDs to determine the nature of the overheating condition.
2. Confirm that the chassis covers are installed properly.
3. Make sure all fans are present and operating normally.
4. Check the routing of the cables.

## Power Supply

The chassis features redundant power supplies. The system will continue to operate if one module fails. It should be replaced as soon as convenient. The power supply modules are hot-swappable, meaning they can be changed without powering down the system. New units can be ordered directly from Supermicro or authorized distributors.

These power supplies are auto-switching capable. This feature enables them to automatically sense the input voltage and operate at a 100-120v or 180-240v.

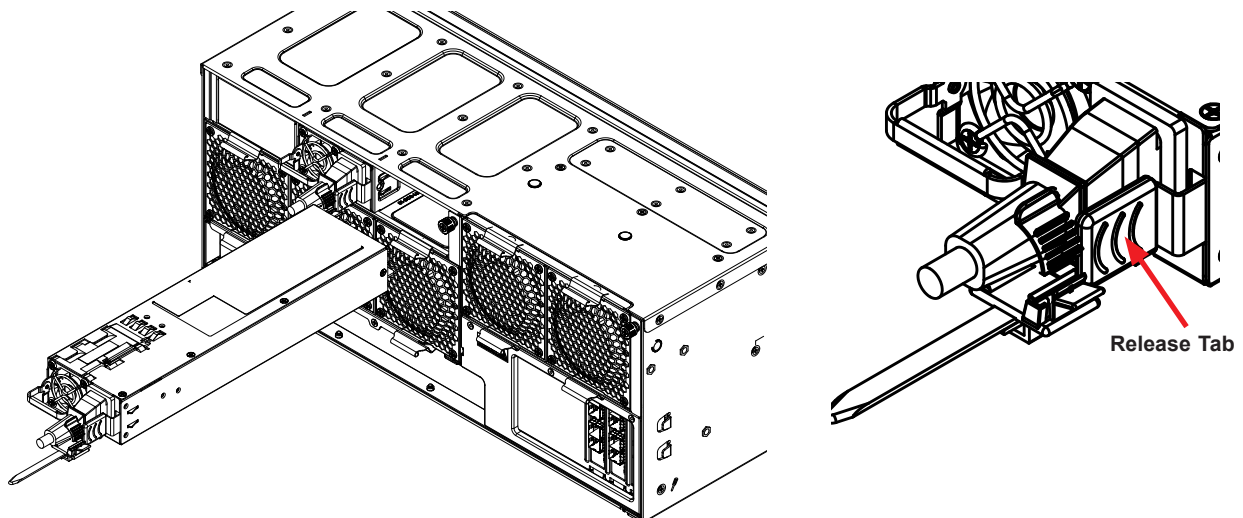
### *Power Supply LEDs*

On the rear of the power supply module, an LED displays the status.

- **Solid Green:** When illuminated, indicates that the power supply is on.
- **Solid Amber:** When illuminated, indicates the power supply is plugged in and turned off, or the system is off but in an abnormal state.
- **Blinking Amber:** When blinking, this system power supply temperature has reached 63C. The system will automatically power-down when the power supply temperature reaches 70C and restart when the power supply temperature goes below 60C.

### *Changing the Power Supply Module:*

1. Unplug the AC cord from the module to be replaced.
2. On the back of the module, push the release tab sideways, as illustrated.
3. Pull the module out using the handle.
4. Push the new power supply module into the power bay until it clicks. Replace with the same model.
5. Plug the AC power cord back into the module.



**Figure 3-11. Removing the Power Supply**

## Removing the JBOD Control Board

The CB3 JBOD Control Board is mounted on a tray near the rear of the chassis. **Note:** This procedure should only be performed by a qualified technician, in consultation with the Supermicro Technical Support team.

1. Power down the system as described in Section 3.1.
2. Remove the power supply modules.
3. Loosen the power supply holding bracket by removing the thumbscrew on the right side of the chassis, near the cover thumbscrew. Slide the bracket toward the left side of the chassis and lift up.

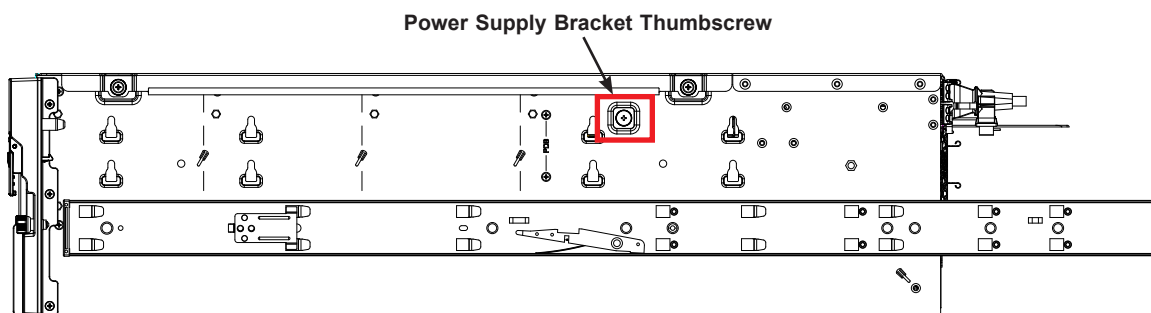


Figure 3-12. Power Supply Bracket Thumbscrew, Chassis Right Side

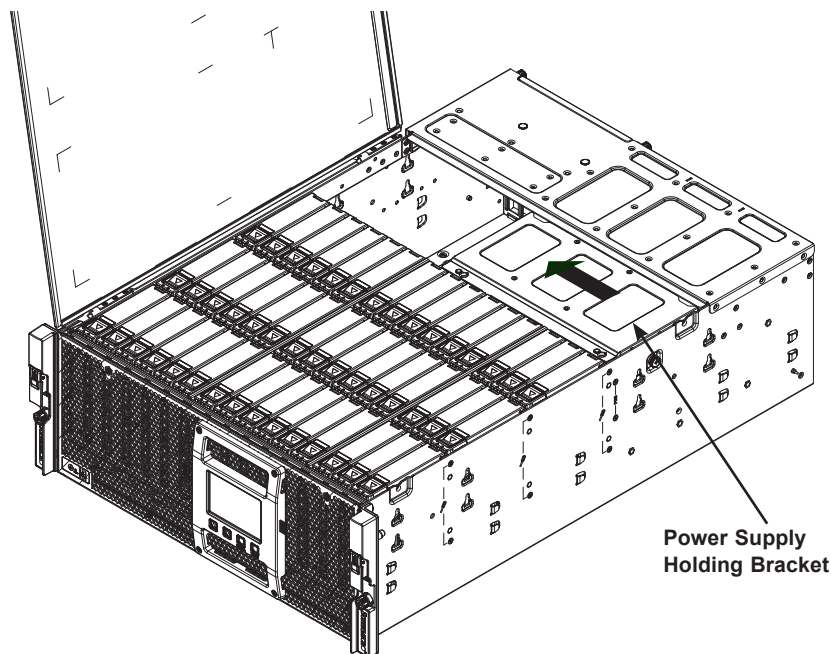
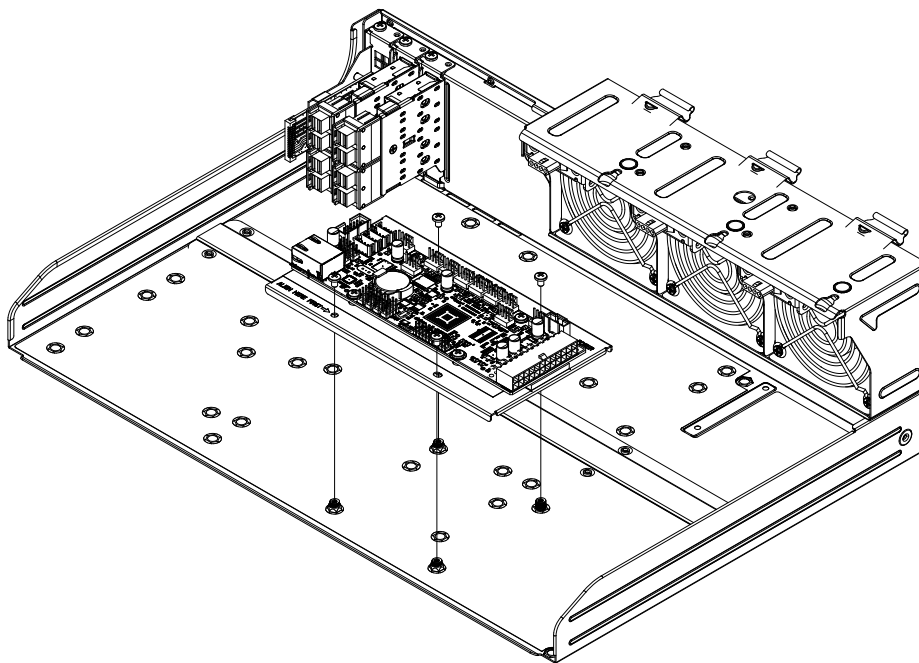


Figure 3-13. Power Supply Holding Bracket

4. Now the JBOD control board is visible. Disconnect all the cables connected on the control board, taking note of the location for each connector, including the ATX power cable, FAN power cable, IPMI cable, I<sup>2</sup>C cable, and control panel cable.
5. Loosen the screws on the control board and lift out the control board



**Figure 3-13. Removing the JBOD Control Board**

## Notes



## Appendix A

### Power Supply Specifications

This appendix lists power supply specifications for your chassis system.

<b>1000/1600W (Redundant)</b>	
<b>MFR Part #</b>	PWS-1K66P-1R
<b>AC Input</b>	1000W Output @ 100-140V, 12-8A, 50-60Hz 1600W Output @ 180-240V, 8-6A, 50-60Hz
<b>DC Output</b>	1000W: +12V/82A 1600W: +12V/132A

## Appendix B

# Standardized Warning Statements for AC Systems

### About Standardized Warning Statements

The following statements are industry standard warnings, provided to warn the user of situations which have the potential for bodily injury. Should you have questions or experience difficulty, contact Supermicro's Technical Support department for assistance. Only certified technicians should attempt to install or configure components.

Read this appendix in its entirety before installing or configuring components in the Supermicro chassis.

These warnings may also be found on our website at [http://www.supermicro.com/about/policies/safety\\_information.cfm](http://www.supermicro.com/about/policies/safety_information.cfm).

### Warning Definition



**Warning!** 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.

#### 警告の定義

この警告サインは危険を意味します。

人身事故につながる可能性がありますので、いずれの機器でも動作させる前に、電気回路に含まれる危険性に注意して、標準的な事故防止策に精通して下さい。

此警告符号代表危險。

您正处于可能受到严重伤害的工作环境中。在您使用设备开始工作之前，必须充分意识到触电的危险，并熟练掌握防止事故发生的标准工作程序。请根据每项警告结尾的声明号码找到此设备的安全性警告说明的翻译文本。

此警告符號代表危險。

您目前所處的工作環境可能讓您受傷。的工作環境中。在您使用任何設備之前，請注意觸電的危險，並且要熟悉預防事故發生的標準工作程序。請依照每一注意事項後的號碼找到相關的翻譯說明內容。

## Warnung

## WICHTIGE SICHERHEITSHINWEISE

Dieses Warnsymbol bedeutet Gefahr. Sie befinden sich in einer Situation, die zu Verletzungen führen kann. Machen Sie sich vor der Arbeit mit Geräten mit den Gefahren elektrischer Schaltungen und den üblichen Verfahren zur Vorbeugung vor Unfällen vertraut. Suchen Sie mit der am Ende jeder Warnung angegebenen Anweisungsnummer nach der jeweiligen Übersetzung in den übersetzten Sicherheitshinweisen, die zusammen mit diesem Gerät ausgeliefert wurden.

BEWAHREN SIE DIESE HINWEISE GUT AUF.

## INSTRUCCIONES IMPORTANTES DE SEGURIDAD

Este símbolo de aviso indica peligro. Existe riesgo para su integridad física. Antes de manipular cualquier equipo, considere los riesgos de la corriente eléctrica y familiarícese con los procedimientos estándar de prevención de accidentes. Al final de cada advertencia encontrará el número que le ayudará a encontrar el texto traducido en el apartado de traducciones que acompaña a este dispositivo.

GUARDE ESTAS INSTRUCCIONES.

## IMPORTANTES INFORMATIONS DE SÉCURITÉ

Ce symbole d'avertissement indique un danger. Vous vous trouvez dans une situation pouvant entraîner des blessures ou des dommages corporels. Avant de travailler sur un équipement, soyez conscient des dangers liés aux circuits électriques et familiarisez-vous avec les procédures couramment utilisées pour éviter les accidents. Pour prendre connaissance des traductions des avertissements figurant dans les consignes de sécurité traduites qui accompagnent cet appareil, référez-vous au numéro de l'instruction situé à la fin de chaque avertissement.

CONSERVEZ CES INFORMATIONS.

**תקנון הצהרות אזהרה**

הצהרות הבאות הן אזהרות על פי תקני התעשייה, על מנת להזהיר את המשתמש מפני חבלה פיזית אפשרית. במידה ויש שאלות או היתקלות בבעיה כלשהי, יש ליצור קשר עם מחלקת תמיכה טכנית של סופרמיקרו. טכנאים מוסמכים בלבד רשאים להתקין או להגדיר את הרכיבים.

יש לקרוא את הנספח במלואו לפני התקנת או הגדרת הרכיבים במארזי סופרמיקרו.

تحذير! هذا الرمز يعني خطر انك في حالة يمكن أن تتسبب في اصابة جسدية .  
 قبل أن تعمل على أي معدات، كن على علم بالمخاطر الناجمة عن الدوائر  
 الكهربائية  
 وكن على دراية بالممارسات الوقائية لمنع وقوع أي حوادث  
 استخدم رقم البيان المنصوص في نهاية كل تحذير للعثور لترجمتها

안전을 위한 주의사항

경고!

이 경고 기호는 위험이 있음을 알려 줍니다. 작업자의 신체에 부상을 야기 할 수 있는  
 상태에 있게 됩니다. 모든 장비에 대한 작업을 수행하기 전에 전기회로와 관련된  
 위험요소들을 확인하시고 사전에 사고를 방지할 수 있도록 표준 작업절차를 준수해 주시기  
 바랍니다.

해당 번역문을 찾기 위해 각 경고의 마지막 부분에 제공된 경고문 번호를 참조하십시오

## BELANGRIJKE VEILIGHEIDSINSTRUCTIES

Dit waarschuwings symbool betekent gevaar. U verkeert in een situatie die lichamelijk letsel kan veroorzaken. Voordat u aan enige apparatuur gaat werken, dient u zich bewust te zijn van de bij een elektrische installatie betrokken risico's en dient u op de hoogte te zijn van de standaard procedures om ongelukken te voorkomen. Gebruik de nummers aan het eind van elke waarschuwing om deze te herleiden naar de desbetreffende locatie.

BEWAAR DEZE INSTRUCTIES

## Installation Instructions



**Warning!** Read the installation instructions before connecting the system to the power source.

### 設置手順書

システムを電源に接続する前に、設置手順書をお読み下さい。

### 警告

将此系统连接电源前, 请先阅读安装说明。

### 警告

將系統與電源連接前，請先閱讀安裝說明。

**Warnung**

Vor dem Anschließen des Systems an die Stromquelle die Installationsanweisungen lesen.

**¡Advertencia!**

Lea las instrucciones de instalación antes de conectar el sistema a la red de alimentación.

**Attention**

Avant de brancher le système sur la source d'alimentation, consulter les directives d'installation.

יש לקרוא את הוראות התקנה לפני חיבור המערכת למקור מתח.

اقر إرشادات التركيب قبل توصيل النظام إلى مصدر للطاقة

시스템을 전원에 연결하기 전에 설치 안내를 읽어주십시오.

**Waarschuwing**

Raadpleeg de installatie-instructies voordat u het systeem op de voedingsbron aansluit.

**Circuit Breaker**

**Warning!** This product relies on the building's installation for short-circuit (overcurrent) protection. Ensure that the protective device is rated not greater than: 250 V, 20 A.

**サーキット・ブレーカー**

この製品は、短絡(過電流)保護装置がある建物での設置を前提としています。

保護装置の定格が250 V、20 Aを超えないことを確認下さい。

**警告**

此产品的短路(过载电流)保护由建筑物的供电系统提供,确保短路保护设备的额定电流不大于250V,20A。

**警告**

此产品的短路(过载电流)保护由建筑物的供电系统提供,确保短路保护设备的额定电流不大于250V,20A。

### Warnung

Dieses Produkt ist darauf angewiesen, dass im Gebäude ein Kurzschluss- bzw. Überstromschutz installiert ist. Stellen Sie sicher, dass der Nennwert der Schutzvorrichtung nicht mehr als: 250 V, 20 A beträgt.

### ¡Advertencia!

Este equipo utiliza el sistema de protección contra cortocircuitos (o sobrecorrientes) del edificio. Asegúrese de que el dispositivo de protección no sea superior a: 250 V, 20 A.

### Attention

Pour ce qui est de la protection contre les courts-circuits (surtension), ce produit dépend de l'installation électrique du local. Vérifiez que le courant nominal du dispositif de protection n'est pas supérieur à :250 V, 20 A.

מוצר זה מסתמך על הגנה המותקנת במבנים למניעת קצר חשמלי. יש לוודא כי המכשיר המגן מפני הקצר החשמלי הוא לא יותר מ-250 V, 20 A

المنتج يعتمد على معدات الحماية من الدوائر القصيرة التي تم تثبيتها في  
بني  
أكبر من أن تقبل الحماية المقالة. ليس أكثر من 250V 20A

### 경고!

이 제품은 전원의 단락(과전류)방지에 대해서 전적으로 건물의 관련 설비에 의존합니다. 보호장치의 정격이 반드시 250V(볼트), 20A(암페어)를 초과하지 않도록 해야 합니다.

### Waarschuwing

Dit product is afhankelijk van de kortsluitbeveiliging (overspanning) van uw elektrische installatie. Controleer of het beveiligde apparaat niet groter gedimensioneerd is dan 250V, 20A.

## Power Disconnection Warning



**Warning!** The system must be disconnected from all sources of power and the power cord removed from the power supply module(s) before accessing the chassis interior to install or remove system components.

### 電源切斷の警告

システムコンポーネントの取り付けまたは取り外しのために、シャーシ内部にアクセスするには、システムの電源はすべてのソースから切斷され、電源コードは電源モジュールから取り外す必要があります。

### 警告

在你打开机箱并安装或移除内部器件前，必须将系统完全断电，并移除电源线。

### 警告

在您打開機殼安裝或移除內部元件前，必須將系統完全斷電，並移除電源線。

### Warnung

Das System muss von allen Quellen der Energie und vom Netzanschlusskabel getrennt sein, das von den Spg.Versorgungsteilmodulen entfernt wird, bevor es auf den Chassisinnenraum zurückgreift, um Systemsbestandteile anzubringen oder zu entfernen.

### ¡Advertencia!

El sistema debe ser disconnected de todas las fuentes de energía y del cable eléctrico quitado de los módulos de fuente de alimentación antes de tener acceso el interior del chasis para instalar o para quitar componentes de sistema.

### Attention

Le système doit être débranché de toutes les sources de puissance ainsi que de son cordon d'alimentation secteur avant d'accéder à l'intérieur du chassis pour installer ou enlever des composants de système.

## אזהרה מפני ניתוק חשמלי

### אזהרה!

יש לנתק את המערכת מכל מקורות החשמל ויש להסיר את כבל החשמלי מהספק לפני גישה לחלק הפנימי של המארז לצורך התקנת או הסרת רכיבים.

يجب فصل النظام من جميع مصادر الطاقة وإزالة سلك الكهرباء من وحدة امداد  
الطاقة قبل  
الوصول إلى المناطق الداخلية للهيكل لتثبيت أو إزالة مكونات الجهاز

경고!

시스템에 부품들을 장착하거나 제거하기 위해서는 새시 내부에 접근하기 전에 반드시 전원 공급장치로부터 연결되어있는 모든 전원과 전기코드를 분리해주어야 합니다.

Waarschuwing

Voordat u toegang neemt tot het binnenwerk van de behuizing voor het installeren of verwijderen van systeem onderdelen, dient u alle spanningsbronnen en alle stroomkabels aangesloten op de voeding(en) van de behuizing te verwijderen

## Equipment Installation



**Warning!** Only trained and qualified personnel should be allowed to install, replace, or service this equipment.

機器の設置

トレーニングを受け認定された人だけがこの装置の設置、交換、またはサービスを許可されてい  
ます。

警告

只有经过培训且具有资格的人员才能进行此设备的安装、更换和维修。

警告

只有經過受訓且具資格人員才可安裝、更換與維修此設備。

Warnung

Das Installieren, Ersetzen oder Bedienen dieser Ausrüstung sollte nur geschultem, qualifiziertem Personal gestattet werden.

¡Advertencia!

Solamente el personal calificado debe instalar, reemplazar o utilizar este equipo.



## Attention

Il est vivement recommandé de confier l'installation, le remplacement et la maintenance de ces équipements à des personnels qualifiés et expérimentés.

**אזהרה!**  
צוות מוסמך בלבד רשאי להתקין, להחליף את הציוד או לתת שירות עבור הציוד.

يجب أن يسمح فقط للموظفين المؤهلين والمدربين لتركيب واستبدال أو خدمة هذا الجهاز

## 경고!

훈련을 받고 공인된 기술자만이 이 장비의 설치, 교체 또는 서비스를 수행할 수 있습니다.

## Waarschuwing

Deze apparatuur mag alleen worden geïnstalleerd, vervangen of hersteld door geschoold en gekwalificeerd personeel.

**Restricted Area**

**Warning!** This unit is intended for installation in restricted access areas. A restricted access area can be accessed only through the use of a special tool, lock and key, or other means of security. (This warning does not apply to workstations).

## アクセス制限区域

このユニットは、アクセス制限区域に設置されることを想定しています。

アクセス制限区域は、特別なツール、鍵と錠前、その他のセキュリティの手段を用いてのみ出入りが可能です。

## 警告

此部件应安装在限制进出的场所，限制进出的场所指只能通过使用特殊工具、锁和钥匙或其它安全手段进出的场所。

## 警告

此裝置僅限安裝於進出管制區域，進出管制區域係指僅能以特殊工具、鎖頭及鑰匙或其他安全方式才能進入的區域。

**Warnung**

Diese Einheit ist zur Installation in Bereichen mit beschränktem Zutritt vorgesehen. Der Zutritt zu derartigen Bereichen ist nur mit einem Spezialwerkzeug, Schloss und Schlüssel oder einer sonstigen Sicherheitsvorkehrung möglich.

**¡Advertencia!**

Esta unidad ha sido diseñada para instalación en áreas de acceso restringido. Sólo puede obtenerse acceso a una de estas áreas mediante la utilización de una herramienta especial, cerradura con llave u otro medio de seguridad.

**Attention**

Cet appareil doit être installée dans des zones d'accès réservés. L'accès à une zone d'accès réservé n'est possible qu'en utilisant un outil spécial, un mécanisme de verrouillage et une clé, ou tout autre moyen de sécurité.

**אזור עם גישה מוגבלת****אזהרה!**

יש להתקין את היחידה באזורים שיש בהם הגבלת גישה. הגישה ניתנת בעזרת כלי אבטחה בלבד (מפתח, מנעול וכד').

تم تخصيص هذه الوحدة لت تركيبها في مناطق محظورة .  
يمكن الوصول إلى منطقة محظورة فقط من خلال استخدام أداة خاصة،  
قفل ومفتاح أو أي وسيلة أخرى للأمان

**경고!**

이 장치는 접근이 제한된 구역에 설치하도록 되어 있습니다. 특수도구, 잠금 장치 및 키, 또는 기타 보안 수단을 통해서만 접근 제한 구역에 들어갈 수 있습니다.

**Waarschuwing**

Dit apparaat is bedoeld voor installatie in gebieden met een beperkte toegang. Toegang tot dergelijke gebieden kunnen alleen verkregen worden door gebruik te maken van speciaal gereedschap, slot en sleutel of andere veiligheidsmaatregelen.

## Battery Handling



**Warning!** There is the danger of explosion if the battery is replaced incorrectly. Replace the battery only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions

### 電池の取り扱い

電池交換が正しく行われなかった場合、破裂の危険性があります。交換する電池はメーカーが推奨する型、または同等のものを使用下さい。使用済電池は製造元の指示に従って処分して下さい。

### 警告

電池更換不當會有爆炸危險。請只使用同類電池或制造商推薦的功能相當的電池更換原有電池。請按製造商的說明處理廢舊電池。

### 警告

電池更換不當會有爆炸危險。請使用製造商建議之相同或功能相當的電池更換原有電池。請按照製造商的說明指示處理廢棄舊電池。

### Warnung

Bei Einsetzen einer falschen Batterie besteht Explosionsgefahr. Ersetzen Sie die Batterie nur durch den gleichen oder vom Hersteller empfohlenen Batterietyp. Entsorgen Sie die benutzten Batterien nach den Anweisungen des Herstellers.

### Attention

Danger d'explosion si la pile n'est pas remplacée correctement. Ne la remplacer que par une pile de type semblable ou équivalent, recommandée par le fabricant. Jeter les piles usagées conformément aux instructions du fabricant.

### ¡Advertencia!

Existe peligro de explosión si la batería se reemplaza de manera incorrecta. Reemplazar la batería exclusivamente con el mismo tipo o el equivalente recomendado por el fabricante. Desechar las baterías gastadas según las instrucciones del fabricante.

### אזהרה!

קיימת סכנת פיצוץ של הסוללה במידה והוחלפה בדרך לא תקינה. יש להחליף את הסוללה בסוג התואם מחברת יצרן מומלצת.

סילוק הסוללות המשומשות יש לבצע לפי הוראות היצרן.

هناك خطر من انفجار في حالة استبدال البطارية بطريقة غير صحيحة فعليك  
استبدال البطارية  
فقط بنفس النوع أو ما يعادلها كما أوصت به الشركة المصنعة  
تخلص من البطاريات المستعملة وفقا لتعليمات الشركة الصانعة

경고!

배터리가 올바르게 교체되지 않으면 폭발의 위험이 있습니다. 기존 배터리와 동일하거나 제조사에서 권장하는 동등한 종류의 배터리로만 교체해야 합니다. 제조사의 안내에 따라 사용된 배터리를 처리하여 주십시오.

Waarschuwing

Er is ontploffingsgevaar indien de batterij verkeerd vervangen wordt. Vervang de batterij slechts met hetzelfde of een equivalent type die door de fabrikant aanbevolen wordt. Gebruikte batterijen dienen overeenkomstig fabrieksvoorschriften afgevoerd te worden.

## Redundant Power Supplies



**Warning!** This unit might have more than one power supply connection. All connections must be removed to de-energize the unit.

冗長電源装置

このユニットは複数の電源装置が接続されている場合があります。

ユニットの電源を切るためには、すべての接続を取り外さなければなりません。

警告

此部件连接的电源可能不止一个，必须将所有电源断开才能停止给该部件供电。

警告

此裝置連接的電源可能不只一個，必須切斷所有電源才能停止對該裝置的供電。

Warnung

Dieses Gerät kann mehr als eine Stromzufuhr haben. Um sicherzustellen, dass der Einheit kein Strom zugeführt wird, müssen alle Verbindungen entfernt werden.

¡Advertencia!

Puede que esta unidad tenga más de una conexión para fuentes de alimentación. Para cortar por completo el suministro de energía, deben desconectarse todas las conexiones.

Attention

Cette unité peut avoir plus d'une connexion d'alimentation. Pour supprimer toute tension et tout courant électrique de l'unité, toutes les connexions d'alimentation doivent être débranchées.

**אם קיים יותר מספק אחד**

**אזהרה!**

ליחידה יש יותר מחיבור אחד של ספק. יש להסיר את כל החיבורים על מנת לרוקן את היחידה.

قد يكون لهذا الجهاز عدة اتصالات بوحدات امداد الطاقة.  
يجب إزالة كافة الاتصالات لعزل الوحدة عن الكهرباء.

경고!

이 장치에는 한 개 이상의 전원 공급 단자가 연결되어 있을 수 있습니다. 이 장치에 전원을 차단하기 위해서는 모든 연결 단자를 제거해야만 합니다.

Waarschuwing

Deze eenheid kan meer dan één stroomtoevoeraansluiting bevatten. Alle aansluitingen dienen verwijderd te worden om het apparaat stroomloos te maken.

## Backplane Voltage



**Warning!** Hazardous voltage or energy is present on the backplane when the system is operating. Use caution when servicing.

### バックプレーンの電圧

システムの稼働中は危険な電圧または電力が、バックプレーン上にかかっています。

修理する際には注意ください。

### 警告

当システム正在进行时，背板上有很危险的电压或能量，进行维修时务必小心。

### 警告

當系統正在進行時，背板上危險的電壓或能量，進行維修時務必小心。

### Warnung

Wenn das System in Betrieb ist, treten auf der Rückwandplatine gefährliche Spannungen oder Energien auf. Vorsicht bei der Wartung.

### ¡Advertencia!

Cuando el sistema está en funcionamiento, el voltaje del plano trasero es peligroso. Tenga cuidado cuando lo revise.

### Attention

Lorsque le système est en fonctionnement, des tensions électriques circulent sur le fond de panier. Prendre des précautions lors de la maintenance.

## מתח בפנל האחורי

אזהרה!  
קיימת סכנת מתח בפנל האחורי בזמן תפעול המערכת. יש להיזהר במהלך העבודה.

هناك خطر من التيار الكهربائي أو الطاقة الموجودة على اللوحة  
عندما يكون النظام يعمل كن حذرا عند خدمة هذا الجهاز

경고!

시스템이 동작 중일 때 후면판 (Backplane)에는 위험한 전압이나 에너지가 발생 합니다.  
서비스 작업 시 주의하십시오.

Waarschuwing

Een gevaarlijke spanning of energie is aanwezig op de backplane wanneer het systeem in gebruik is. Voorzichtigheid is geboden tijdens het onderhoud.

## Comply with Local and National Electrical Codes



**Warning!** Installation of the equipment must comply with local and national electrical codes.

地方および国の電気規格に準拠

機器の取り付けはその地方および国の電気規格に準拠する必要があります。

警告

设备安装必须符合本地与本国电气法规。

警告

設備安裝必須符合本地與本國電氣法規。

Warnung

Die Installation der Geräte muss den Sicherheitsstandards entsprechen.

¡Advertencia!

La instalación del equipo debe cumplir con las normas de electricidad locales y nacionales.

Attention

L'équipement doit être installé conformément aux normes électriques nationales et locales.

## תיאום חוקי החשמל הארצי

אזהרה!

התקנת הציוד חייבת להיות תואמת לחוקי החשמל המקומיים והארציים.

تركيب المعدات الكهربائية يجب أن يمتثل للقوانين المحلية والوطنية المتعلقة  
بالكهرباء

경고!

현 지역 및 국가의 전기 규정에 따라 장비를 설치해야 합니다.

Waarschuwing

Bij installatie van de apparatuur moet worden voldaan aan de lokale en nationale elektriciteitsvoorschriften.

## Product Disposal



**Warning!** Ultimate disposal of this product should be handled according to all national laws and regulations.

### 製品の廃棄

この製品を廃棄処分する場合、国の関係する全ての法律・条例に従い処理する必要があります。

警告

本产品的废弃处理应根据所有国家的法律和规章进行。

警告

本產品的廢棄處理應根據所有國家的法律和規章進行。

Warnung

Die Entsorgung dieses Produkts sollte gemäß allen Bestimmungen und Gesetzen des Landes erfolgen.

¡Advertencia!

Al deshacerse por completo de este producto debe seguir todas las leyes y reglamentos nacionales.



## Attention

La mise au rebut ou le recyclage de ce produit sont généralement soumis à des lois et/ou directives de respect de l'environnement. Renseignez-vous auprès de l'organisme compétent.

## סילוק המוצר

אזהרה!

סילוק סופי של מוצר זה חייב להיות בהתאם להנחיות וחוקי המדינה.

عند التخلص النهائي من هذا المنتج ينبغي التعامل معه وفقا لجميع القوانين واللوائح الوطنية

## 경고!

이 제품은 해당 국가의 관련 법규 및 규정에 따라 폐기되어야 합니다.

## Waarschuwing

De uiteindelijke verwijdering van dit product dient te geschieden in overeenstemming met alle nationale wetten en reglementen.

## Hot Swap Fan Warning



**Warning!** Hazardous moving parts. Keep away from moving fan blades. The fans might still be turning when you remove the fan assembly from the chassis. Keep fingers, screwdrivers, and other objects away from the openings in the fan assembly's housing.

## ファン・ホットスワップの警告

警告!回転部品に注意。運転中は回転部(羽根)に触れないでください。シャーシから冷却ファン装置を取り外した際、ファンがまだ回転している可能性があります。ファンの開口部に、指、ドライバー、およびその他のものを近づけないで下さい。

## 警告!

警告! 危险的可移动性零件。请务必与转动的风扇叶片保持距离。当您从机架移除风扇装置, 风扇可能仍在转动。小心不要将手指、螺丝起子和其他物品太靠近风扇

## 警告

危險的可移動性零件。請務必與轉動的風扇葉片保持距離。當您從機架移除風扇裝置, 風扇可能仍在轉動。小心不要將手指、螺絲起子和其他物品太靠近風扇。

**Warnung**

Gefährlich Bewegende Teile. Von den bewegenden Lüfterblätter fern halten. Die Lüfter drehen sich u. U. noch, wenn die Lüfterbaugruppe aus dem Chassis genommen wird. Halten Sie Finger, Schraubendreher und andere Gegenstände von den Öffnungen des Lüftergehäuses entfernt.

**¡Advertencia!**

Riesgo de piezas móviles. Mantener alejado de las aspas del ventilador. Los ventiladores podran dar vuelta cuando usted quite el montaje del ventilador del chasis. Mantenga los dedos, los destornilladores y todos los objetos lejos de las aberturas del ventilador

**Attention**

Pieces mobiles dangereuses. Se tenir a l'écart des lames du ventilateur Il est possible que les ventilateurs soient toujours en rotation lorsque vous retirerez le bloc ventilateur du châssis. Prenez garde à ce que doigts, tournevis et autres objets soient éloignés du logement du bloc ventilateur.

**אזהרה !**

חלקים נעים מסוכנים. התרחק מלהבי המאוורר בפעולהכאשר מסירים את חלקי המאוורר מהמארז, יתכן והמאווררים עדיין עובדים. יש להרחיק למרחק בטוח את האצבעות וכלי עבודה שונים מהפתחים בתוך המאוורר

تحذير! أجزاء متحركة خطيرة. ابتعد عن شفرات المروحة المتحركة من الممكن أن المراوح لا تزال تدور عند إزالة كتلة المروحة من الهيكل يجب إبقاء الأصابع ومفكات البراغي وغيرها من الأشياء بعيدا عن الفتحات في كتلة المروحة.

**경고!**

움직이는 위험한 부품. 회전하는 송풍 날개에 접근하지 마세요. 새시로부터 팬 조립품을 제거할 때 팬은 여전히 회전하고 있을 수 있습니다. 팬 조립품 외관의 열려있는 부분들로부터 손가락 및 스크류드라이버, 다른 물체들이 가까이 하지 않도록 배치해 주십시오.

**Waarschuwing**

Gevaarlijk bewegende onderdelen. Houd voldoende afstand tot de bewegende ventilatorbladen. Het is mogelijk dat de ventilator nog draait tijdens het verwijderen van het ventilatorsamenstel uit het chassis. Houd uw vingers, schroevendraaiers en eventuele andere voorwerpen uit de buurt van de openingen in de ventilatorbehuizing.

## Power Cable and AC Adapter



**Warning!** When installing the product, use the provided or designated connection or procure cables, power cables and AC adaptors complying with local codes and safety requirements including proper cord size and plug. Using any other cables and adaptors could cause a malfunction or a fire. Electrical Appliance and Material Safety Law prohibits the use of UL or CSA -certified cables (that have UL/CSA shown on the code) for any other electrical devices than products designated by Supermicro only.

### 電源コードとACアダプター

製品を設置する場合、提供または指定および購入された接続ケーブル、電源コードとACアダプターを該当する地域の条例や安全基準に適合するコードサイズやプラグと共に使用下さい。他のケーブルやアダプタを使用すると故障や火災の原因になることがあります。

電気用品安全法は、ULまたはCSA認定のケーブル(UL/CSEマークがコードに表記)を Supermicro が指定する製品以外に使用することを禁止しています。

### 警告

安装此产品时,请使用本身提供的或指定的或采购的连接线,电源线和电源适配器,包含遵照当地法规和安全要求的合规的电源线尺寸和插头.使用其它线材或适配器可能会引起故障或火灾.除了Supermicro所指定的产品,电气用品和材料安全法律规定禁止使用未经UL或CSA认证的线材。(线材上会显示UL/CSA符号)。

### 警告

安裝此產品時,請使用本身提供的或指定的或採購的連接線,電源線和電源適配器,包含遵照當地法規和安全要求的合規的電源線尺寸和插頭.使用其它線材或適配器可能會引起故障或火災.除了Supermicro所指定的產品,電氣用品和材料安全法律規定禁止使用未經UL或CSA認證的線材。(線材上會顯示UL/CSA符號)。

### Warnung

Nutzen Sie beim Installieren des Produkts ausschließlich die von uns zur Verfügung gestellten Verbindungskabeln, Stromkabeln und/oder Adapter, die Ihre örtlichen Sicherheitsstandards einhalten. Der Gebrauch von anderen Kabeln und Adapter können Fehlfunktionen oder Feuer verursachen. Die Richtlinien untersagen das Nutzen von UL oder CAS zertifizierten Kabeln (mit UL/CSA gekennzeichnet), an Geräten oder Produkten die nicht mit Supermicro gekennzeichnet sind.

### ¡Advertencia!

Cuando instale el producto, utilice la conexión provista o designada o procure cables, Cables de alimentación y adaptadores de CA que cumplan con los códigos locales y los requisitos de seguridad, incluyendo el tamaño adecuado del cable y el enchufe. El uso de otros cables y adaptadores podría causar un mal funcionamiento o un incendio. La Ley de Seguridad de Aparatos Eléctricos y de Materiales prohíbe El uso de cables certificados por UL o CSA (que tienen el certificado UL / CSA en el código) para cualquier otros dispositivos eléctricos que los productos designados únicamente por Supermicro.

### Attention

Lors de l'installation du produit, utilisez les cables de connection fournis ou désigné ou achetez des cables, cables de puissance et adaptateurs respectant les normes locales et les conditions de securite y compris les tailles de cables et les prises electriques appropries. L'utilisation d'autres cables et adaptateurs peut provoquer un dysfonctionnement ou un incendie. Appareils électroménagers et la Loi sur la Sécurité Matériel interdit l'utilisation de câbles certifiés- UL ou CSA (qui ont UL ou CSA indiqué sur le code) pour tous les autres appareils électriques sauf les produits désignés par Supermicro seulement.

AC ימאתמו מיי למשח מילבכ

!הרהזא

ךרוצל ומאתוה וא ושכרנ רשא AC מימאתמו מיקפס, מילבכב שמתשהל שי, רצומה תא מיניקתמ רשאכ לכב שומיש . עקתהו לבכה לש הנוכח הדימ ללוכ, תוימוקמה תוחיטבה תושירדל ומאתוה רשאו, הנקתהה למשחה ירישכמב שומישה יקוחל מאתהב. ילמשח רצק וא הלקתל מורגל לולע, רחא גוסמ מאתמ וא לבכ לש דוק מהילע עיפומ רשאכ) UL-ב או CSA-ב-ב מיכמוסומה מילבכב שמתשהל רוסיא מייק, תוחיטבה יקוחו דבלב Supermicro י"ע מאתוה רשא רצומב קר אלא, רחא ילמשח רצומ לכ רובע (UL/CSA)

תאלבאלא אארשב מץ וא אדדחמלא וא ארפוטמלא תאליטוטלא מאדחטסאב מץ, אגתנמלא בייקרת דנע לכלז יפ אמב אילחמלא אלאסלא תאבלטתמו נינאווקב מאזתלאלא אמ דדרתמלא ראיטלא תאלוחמו אילברמלא קיירח וא לטע יפ בבסטטי דץ ירשא תאלוחמו תאלבאלא יא מאדחטסא. מילסלא סבאלאו לטומוא מץ ח CSA וא UL לביק נמ אדמתמלא תאלבאלא מאדחטסא תאדעמלא אילברמלא אזהאלל אלאסלא נונאק רזחי Supermicro לביק נמ אדדחמלא אילברמלא תאגתנמלא ריג ירשא תאדעמ יא אמ (UL/CSA) אלאע למחתיטלאו

### 전원 케이블 및 AC 어댑터

경고! 제품을 설치할 때 현지 코드 및 적절한 굵기의 코드와 플러그를 포함한 안전 요구 사항을 준수하여 제공되거나 지정된 연결 혹은 구매 케이블, 전원 케이블 및 AC 어댑터를 사용하십시오.

다른 케이블이나 어댑터를 사용하면 오작동이나 화재가 발생할 수 있습니다. 전기 용품 안전법은 UL 또는 CSA 인증 케이블 (코드에 UL / CSA가 표시된 케이블)을 Supermicro가 지정한 제품 이외의 전기 장치에 사용하는 것을 금지합니다.

### Stroomkabel en AC-Adapter

Waarschuwing! Bij het aansluiten van het Product uitsluitend gebruik maken van de geleverde Kabels of een andere geschikte aan te schaffen Aansluitmethode, deze moet altijd voldoen aan de lokale voorschriften en veiligheidsnormen, inclusief de juiste kabeldikte en stekker. Het gebruik van niet geschikte Kabels en/of Adapters kan een storing of brand veroorzaken. Wetgeving voor Elektrische apparatuur en Materiaalveiligheid verbied het gebruik van UL of CSA -gecertificeerde Kabels (met UL/CSA in de code) voor elke andere toepassing dan de door Supermicro hiervoor beoogde Producten.

## Appendix C

### Backplane Specifications

This appendix provides details about the BPN-SAS3-946LEL1 backplane.

#### C.1 Safety Guidelines

##### ESD Safety Guidelines

Electrostatic Discharge (ESD) can damage electronic components. To prevent damage to your system, it is important to handle it very carefully. The following measures are generally sufficient to protect your equipment from ESD.

- Use a grounded wrist strap designed to prevent static discharge.
- Touch a grounded metal object before removing a component from the antistatic bag.
- Handle the backplane by its edges only; do not touch its components, peripheral chips, memory modules or gold contacts.
- When handling chips or modules, avoid touching their pins.
- Put the backplane and peripherals back into their antistatic bags when not in use.

##### General Safety Guidelines

- Always disconnect power cables before installing or removing any components from the computer, including the backplane.
- Disconnect the power cable before installing or removing any cables from the backplane.
- Make sure that the backplane is securely and properly installed on the motherboard to prevent damage to the system due to power shortage.

#### C.2 Version Information

The BPN-SAS3-946LEL1 backplane has been designed to utilize the most up-to-date technology available, providing your system with reliable, high-quality performance.

Always refer to the Supermicro website at [www.supermicro.com](http://www.supermicro.com) for the latest updates, compatible parts and supported configurations.

## C.3 Components and LEDs

### Component Side Connectors

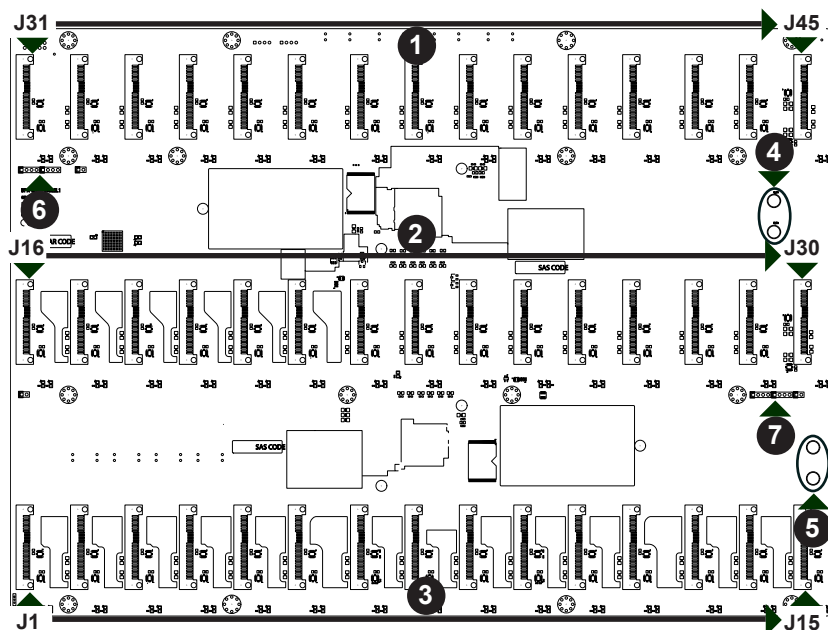


Figure C-1. BPN-SAS3-946LEL1 Connector Side Components

1. HDD Connectors: J31 - J45.
2. HDD Connectors: J16 - J30.
3. HDD Connectors: J1 - J15.
4. 12V Power Cable Input: NI\_TP1 and NI\_TP2.
5. Ground Cable Input: NI\_TP3 and NI\_TP4.
6. SDB and UART Connector for the Secondary Expander: J53 and J54.
7. SDB and UART Connector for the Primary Expander: J50 and J51.

## Connector Side Component Definitions

### 1. - 3. HDD Connectors

The HDD connectors are designated J1 through J45. These are for SAS3, SATA3, and SAS2 drives.

### 4. 12V Power Connector

The power connectors, designated NI\_TP1 and NI\_TP2, provide power to the backplane.

### 5. Ground Cable Input Connector

The ground cable input connectors are designated NI\_TP3 and NI\_TP4.

### 6. - 7. SDB and UART Connectors

The Serial Debug (SDB) and UART connectors for the primary and secondary expanders are designated J50, J51, J53, and J54. The debug connectors are for the manufacturer's diagnostic purposes only.

## Connector Side LED Indicators and SAS Connectors

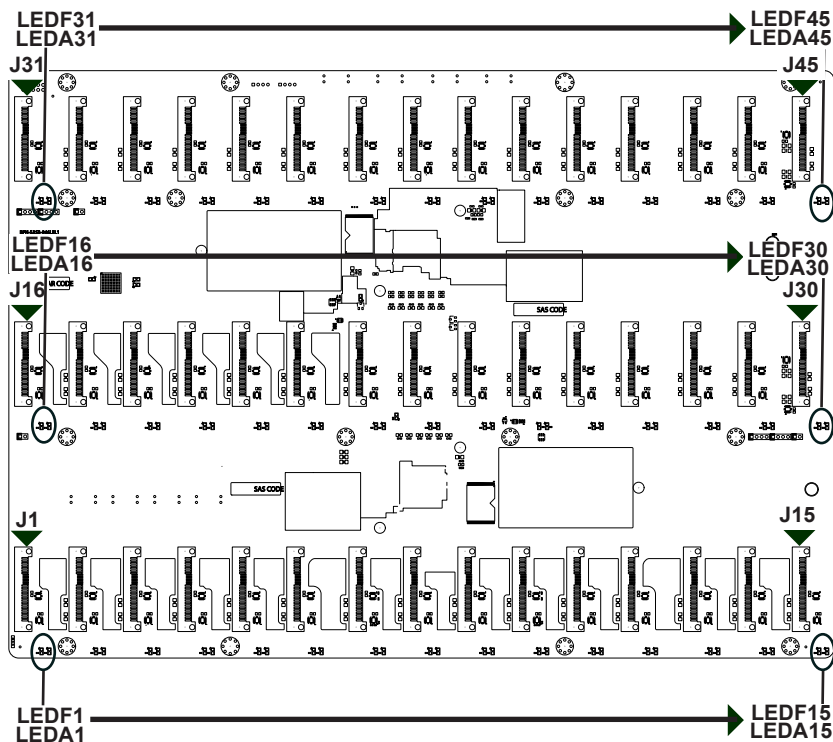


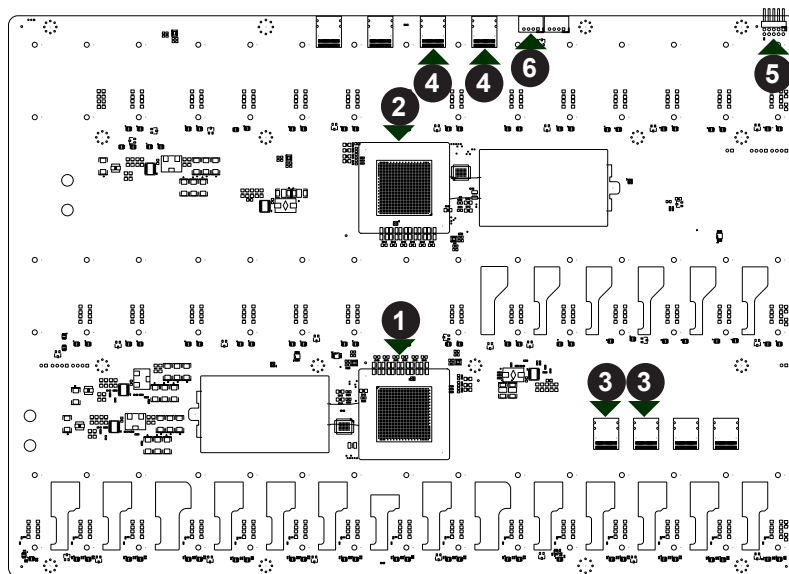
Figure C-2. BPN-SAS3-946LEL1 Connector Side LEDs



Connector Side SAS Connectors					
SAS Connector	SAS Drive Number	SAS Connector	SAS Drive Number	SAS Connector	SAS Drive Number
J1	SAS HDD #0	J16	SAS HDD #15	J31	SAS HDD #30
J2	SAS HDD #1	J17	SAS HDD #16	J32	SAS HDD #31
J3	SAS HDD #2	J18	SAS HDD #17	J33	SAS HDD #32
J4	SAS HDD #3	J19	SAS HDD #18	J34	SAS HDD #33
J5	SAS HDD #4	J20	SAS HDD #19	J35	SAS HDD #34
J6	SAS HDD #5	J21	SAS HDD #20	J36	SAS HDD #35
J7	SAS HDD #6	J22	SAS HDD #21	J37	SAS HDD #36
J8	SAS HDD #7	J23	SAS HDD #22	J38	SAS HDD #37
J9	SAS HDD #8	J24	SAS HDD #23	J39	SAS HDD #38
J10	SAS HDD #9	J25	SAS HDD #24	J40	SAS HDD #39
J11	SAS HDD #10	J26	SAS HDD #25	J41	SAS HDD #40
J12	SAS HDD #11	J27	SAS HDD #26	J42	SAS HDD #41
J13	SAS HDD #12	J28	SAS HDD #27	J43	SAS HDD #42
J14	SAS HDD #13	J29	SAS HDD #28	J44	SAS HDD #43
J15	SAS HDD #14	J30	SAS HDD #29	J45	SAS HDD #44

Connector Side LED Indicators					
SAS Connector	Hard Drive Activity LED	Failure LED	SAS Connector	Hard Drive Activity LED	Failure LED
J1	LEDA1	LEDF1	J24	LEDA24	LEDF24
J2	LEDA2	LEDF2	J25	LEDA25	LEDF25
J3	LEDA3	LEDF3	J26	LEDA26	LEDF26
J4	LEDA4	LEDF4	J27	LEDA27	LEDF27
J5	LEDA5	LEDF5	J28	LEDA28	LEDF28
J6	LEDA6	LEDF6	J29	LEDA29	LEDF29
J7	LEDA7	LEDF7	J30	LEDA30	LEDF30
J8	LEDA8	LEDF8	J31	LEDA31	LEDF31
J9	LEDA9	LEDF9	J32	LEDA32	LEDF32
J10	LEDA10	LEDF10	J33	LEDA33	LEDF33
J11	LEDA11	LEDF11	J34	LEDA34	LEDF34
J12	LEDA12	LEDF12	J35	LEDA35	LEDF35
J13	LEDA13	LEDF13	J36	LEDA36	LEDF36
J14	LEDA14	LEDF14	J37	LEDA37	LEDF37
J15	LEDA15	LEDF15	J38	LEDA38	LEDF38
J16	LEDA16	LEDF16	J39	LEDA39	LEDF39
J17	LEDA17	LEDF17	J40	LEDA40	LEDF40
J18	LEDA18	LEDF18	J41	LEDA41	LEDF41
J19	LEDA19	LEDF19	J42	LEDA42	LEDF42
J20	LEDA20	LEDF20	J43	LEDA43	LEDF43
J21	LEDA21	LEDF21	J44	LEDA44	LEDF44
J22	LEDA22	LEDF22	J45	LEDA45	LEDF45
J23	LEDA23	LEDF23			

## Expander Chip Side Components



**Figure C-3. BPN-SAS3-946LEL1 Expander Chip Side Components**

- |   |   |
|---|---|
| 1. Primary Expander Chip.                         | 4. Secondary SAS Slim Line Connectors: CN3 and CN4. |
| 2. Secondary Expander Chip.                       | 5. Primary UART Connector: J52.                     |
| 3. Primary SAS Slim Line Connectors: CN1 and CN2. | 6. I <sup>2</sup> C Connector: J48.                 |

## Expander Chip Side Component Definitions

### 1. - 2. Primary and Secondary Expander Chips

These chips allow connectivity to the primary and secondary components on the backplane.

### 3. Primary SAS Slim Line Connectors

These primary SAS slim line connectors are designated CN1 and CN2.

### 4. Secondary SAS Slim Line Connectors

These secondary SAS slim line connectors are designated CN3 and CN4.

### 5. Primary UART Connector

The primary UART connector is designated J52 and is used for the manufacturer's diagnostic purposes only.

### 6. I<sup>2</sup>C Connector

The I<sup>2</sup>C connector is designated J48. This connector is used to monitor hard drive activity and status through LEDs. See the table on the right for pin definitions. J48 is for the manufacturer's use only.

I <sup>2</sup> C Connector Pin Definitions	
Pin#	Definition
1	Data
2	Ground
3	Clock
4	No Connection

## C.4 Cascading Configurations

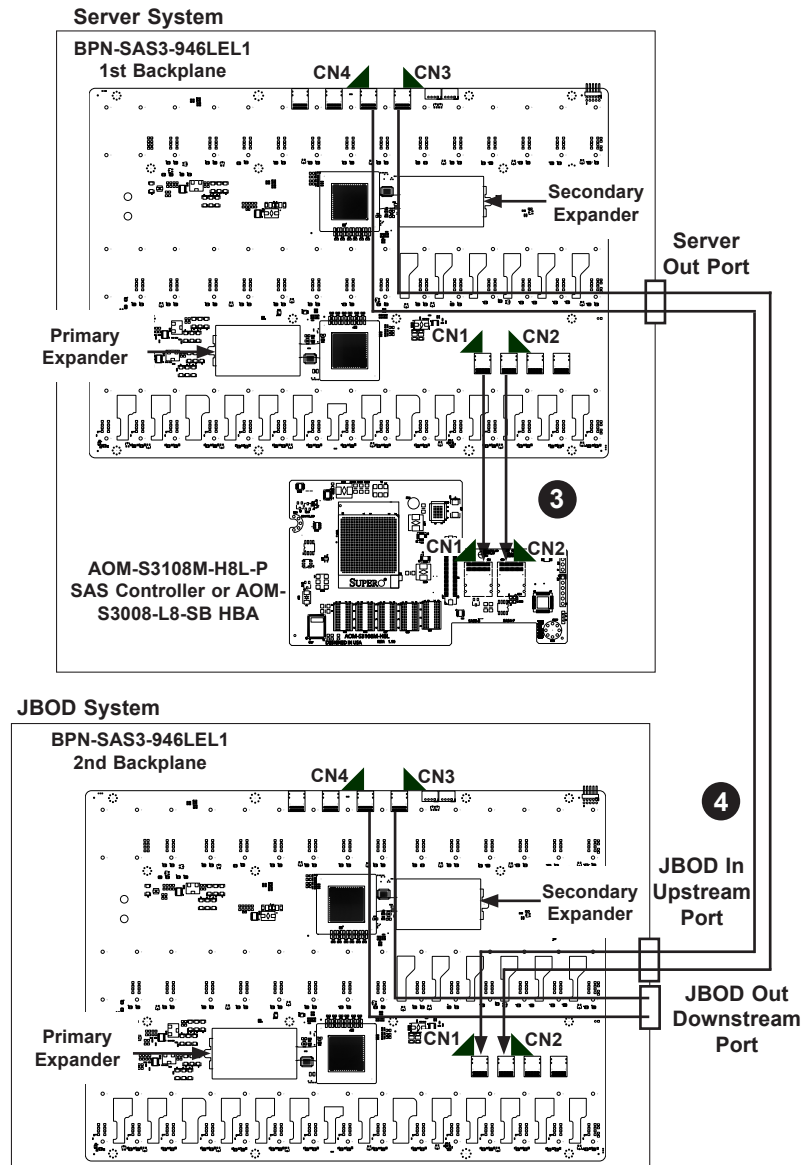
### **Cascading Backplanes with SAS RAID and HBA Controllers**

The BPN-SAS3-946LEL1 can be cascaded to a second BPN-SAS3-946LEL1 backplane and an AOM-S3108M-H8L-P SAS RAID, AOC-S3108L-H8IR SAS RAID, AOC-S3008L-L8E HBA, or AOM-S3008-L8-SB HBA controller using the primary and secondary expander components of the backplane. Note that the connectors are located on the undersides of the boards in the following illustrations.

## Cascading Configuration, Backplanes to Internal Controller

### Connecting Backplane in a Server to Internal Controller and to Backplane in a JBOD

1. Power down the system and remove the power cords from the rear of the power supplies. Open the chassis cover and access the backplanes as described in your system manual.



**Figure C-4. Backplane Cascading Configuration**

2. Locate connectors CN1 and CN2 on the underside of the 1st backplane.
3. Plug the cables into the 1st backplane connectors CN1 and CN2, then route them to connectors CN1 and CN2 on the underside of the AOM-S3108M-H8L-P SAS controller or AOM-S3008-L8-SB HBA in the same server as the 1st backplane, as illustrated in Figure C-4.

4. To connect the 1st backplane connectors CN3 and CN4 to the 2nd backplane connectors CN1 and CN2, plug the External MiniSAS HD to External MiniSAS HD 1m cables (CBL-SAST-0573) into the server out port and into the JBOD in upstream port of the JBOD where the 2nd backplane is located, as illustrated in Figure C-4.
5. A 3rd backplane can be added using a connection from CN3 and CN4 of the 2nd backplane through its JBOD out downstream port.
6. Close the chassis cover, plug the power cords into the rear of the power supplies, and power up the system.

## Cascading Configuration, Backplanes to External Controller

### Connecting Backplanes in JBODs to External Controller

1. Power down the system and remove the power cords from the rear of the power supplies. Open the chassis cover and access the backplanes as described in your system manual.

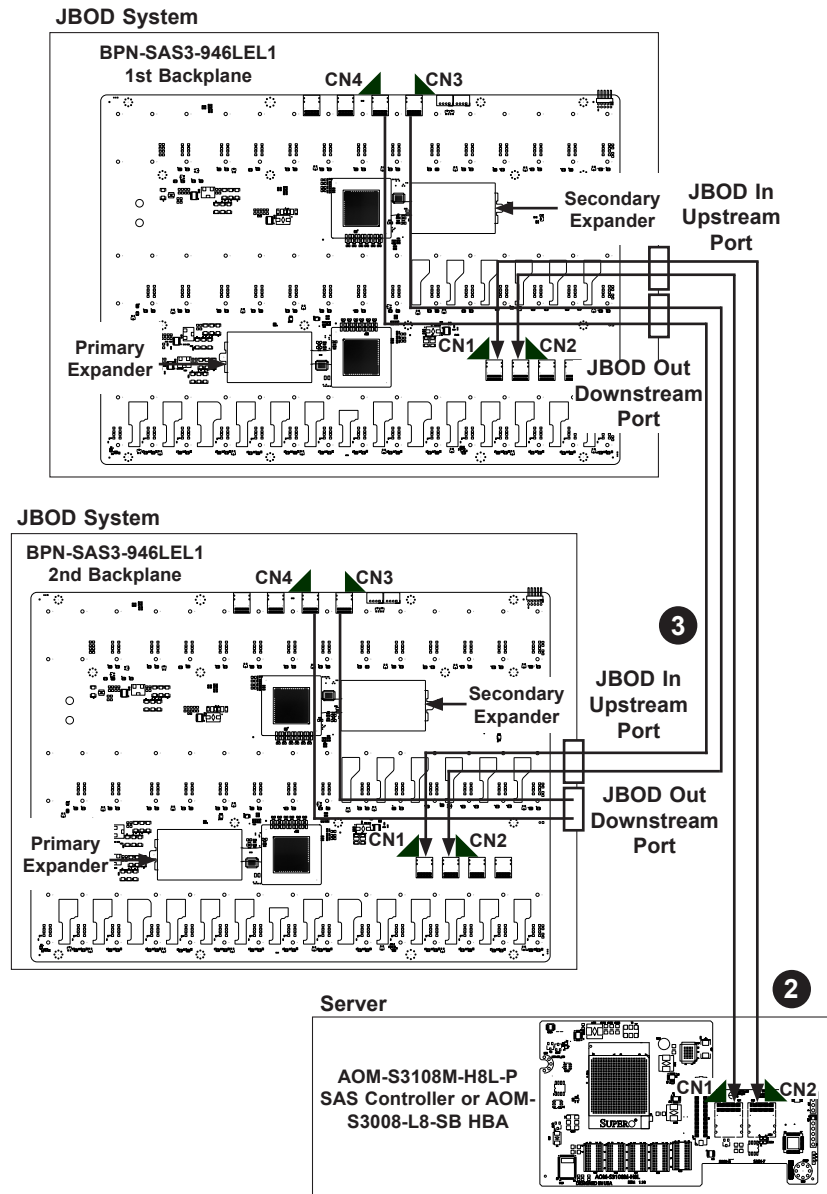


Figure C-5. Backplane Cascading Configuration

2. To connect the 1st backplane connectors CN1 and CN2 to the controller located in a server, plug the External MiniSAS HD to External MiniSAS HD 1m cables (CBL-SAST-0573) into the JBOD in upstream port of the JBOD where the 1st backplane is located and into connectors CN1 and CN2 on the underside of the AOM-S3108M-H8L-P SAS controller or AOM-S3008-L8-SB HBA, as illustrated in Figure C-5.



3. To connect 1st backplane connectors CN3 and CN4 to 2nd backplane connectors CN1 and CN2, plug the External MiniSAS HD to External MiniSAS HD cables (CBL-SAST-0573) into the JBOD out downstream port of the JBOD where the 1st backplane is located and into the JBOD in upstream port of the JBOD where the 2nd backplane is located, as illustrated in Figure C-5.
4. A 3rd backplane can be added using a connection from CN3 and CN4 of the 2nd backplane through its JBOD out downstream port.
5. Close the chassis cover, plug the power cords into the rear of the power supplies, and power up the system.

## Cascading Configuration, Backplane to Internal HBA Controllers

A server configures two internal HBA cards for MPIO maximum performance.

### **Connecting Backplane in a Server to Internal HBAs**

1. Power down the system and remove the power cords from the rear of the power supplies. Open the chassis cover and access the backplane as described in your system manual.
2. Locate connectors CN1 and CN2 on the underside of the backplane in a server.
3. Plug the cables into connectors CN1 and CN2, then route them to connectors CN1 and CN2 on the underside of the AOM-S3008-L8-SB HBA located within the same server as the backplane, as illustrated in Figure C-6.
4. Locate connectors CN3 and CN4 on the underside of the backplane.
5. Connect the cables to CN3 and CN4, then route them to CN1 and CN2 on the underside of the AOC-S3008L-L8E HBA in the same server, as illustrated in Figure C-6.
6. Close the chassis cover, plug the power cords into the rear of the power supplies, and power up the system.

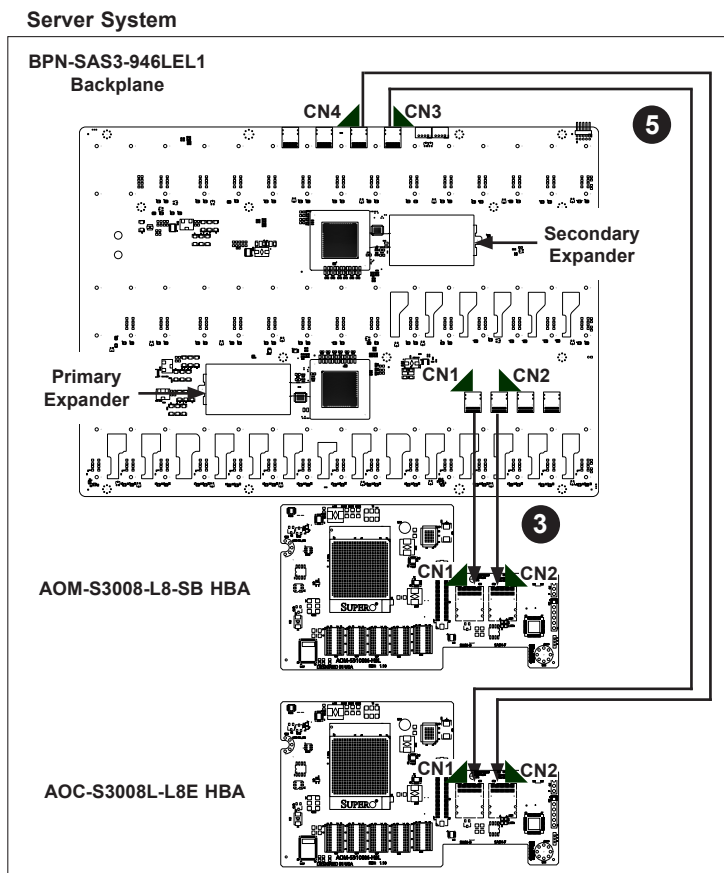


Figure C-6. Backplane Cascading Configuration

## Cascading Configuration, Backplane to Internal SAS Controllers

A server configures two internal RAID controller cards with zoning utility enabled (Flexible Zoning). The 1st RAID controller card can be assigned to the first X number of drives. The 2nd RAID controller card can be assigned to the rest of the drives (45 - X).

### Connecting Backplane in a Server to Internal RAID Controller Cards

1. Power down the system and remove the power cords from the rear of the power supplies. Open the chassis cover and access the backplane as described in your system manual.
2. Locate connectors CN1 and CN2 on the underside of the backplane in a server.
3. Plug the cables into connectors CN1 and CN2, then route them to connectors CN1 and CN2 on the underside of the AOM-S3108M-H8L-P RAID controller card located within the same server as the backplane, as illustrated in Figure C-7.

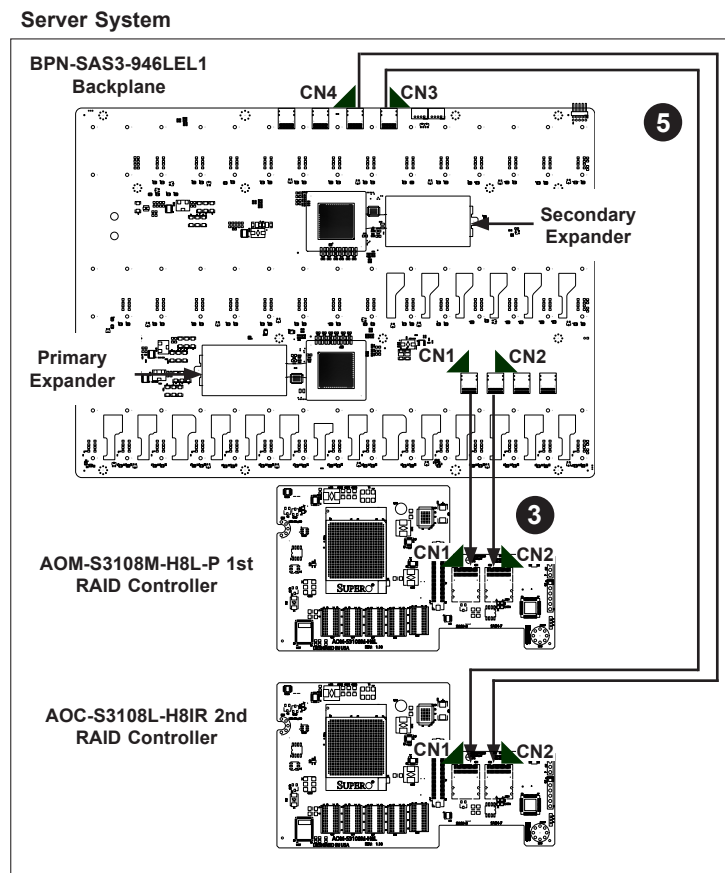


Figure C-7. Backplane Cascading Configuration

4. Locate connectors CN3 and CN4 on the underside of the backplane.
5. Connect the cables to CN3 and CN4, then route them to CN1 and CN2 on the underside of the AOC-S3108L-H8IR RAID controller card in the same server, as illustrated in Figure C-7.
6. Close the chassis cover, plug the power cords into the rear of the power supplies, and power up the system.

## Appendix D

# CSE-PTJBOD-CB3 Control Board

### D.1 Overview

The CSE-PTJBOD-CB3 model JBOD control board allows the user to remotely control and monitor the chassis resources using IPMI, such as powering on or off, controlling fan speeds and reading temperature data from the backplane. It has been designed to utilize the most up-to-date technology available, providing your system with reliable, high-quality performance.

This manual reflects the revision 1.02 JBOD control board, the most current release available at the time of publication. Refer to the Supermicro web site at [www.supermicro.com](http://www.supermicro.com) for the latest updates, compatible parts and supported configurations.

### D.2 Safety Guidelines

#### ESD Safety Guidelines

Electrostatic Discharge (ESD) can damage electronic components. To prevent damage to your system, it is important to handle it very carefully. The following measures are generally sufficient to protect your equipment from ESD.

- Use a grounded wrist strap designed to prevent static discharge.
- Touch a grounded metal object before removing a component from the antistatic bag.
- Handle the control board by its edges only; do not touch its components, peripheral chips, memory modules or gold contacts.
- When handling chips or modules, avoid touching their pins.
- Put the control board and peripherals back into their antistatic bags when not in use.

## General Safety Guidelines

- Always disconnect power cables before installing or removing any components from the computer, including the control board.
- Disconnect the power cable before installing or removing any cables from the control board.
- Make sure that the control board is securely and properly installed in the chassis to prevent damage to the system due to power shortage.

## D.3 Components, Connectors, Jumpers and LEDs

### Component and Connector Locations

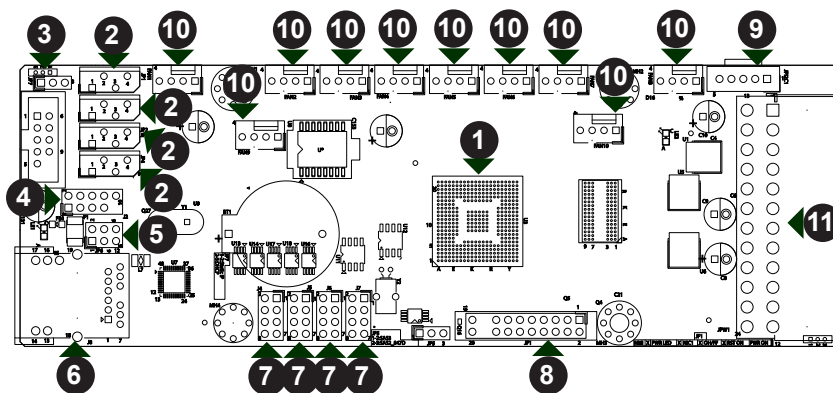


Figure CB3-1. Components and Connectors on the CSE-PTJBOD-CB3

#### Components and Connectors

- |  |   |
|--|---|
| 1. BMC Chip                                      | 7. (SC847D only) SAS2<br>I <sup>2</sup> C Connectors: J4 - J7 |
| 2. SAS2/SAS3 I <sup>2</sup> C Connectors JP1-JP4 |   |
| 3. Manufacturing Test Connector: J3              | 8. Control Panel Connector: JF1                               |
| 4. Manufacturer's USB Test Connector:<br>FB1     | 9. PMBus Connector: JPI <sup>2</sup> C1                       |
| 5. IPMI LAN LED Header: JP6                      | 10. Fan Connectors: FAN1 - FAN10                              |
| 6. IPMI LAN Connector: J8                        | 11. ATX Power Connector: JPW1                                 |

## Component and Connector Definitions

### 1. BMC Chip

The Baseboard Management Controller (BMC) chip monitors the physical state of a system and provides communication with the system administrator through an independent connection.

### 2. I<sup>2</sup>C Connectors

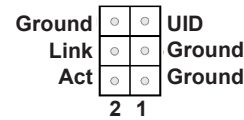
These connectors (JP1-JP4) accept cables for up to four SAS2/SAS3 backplanes that carry management data between the the backplane and the control board.

### 3 and 4. Manufacturing Test Connectors

Connectors J3 and FB1 are for Supermicro manufacturing use only.

### 5. IPMI LAN LED Header

This connector is designated JP6 and is used to connect to the LED indicators on the chassis using cable CBL-NTWK-0584 or CBL-NTWK-0587.



### 6. IPMI LAN Connector

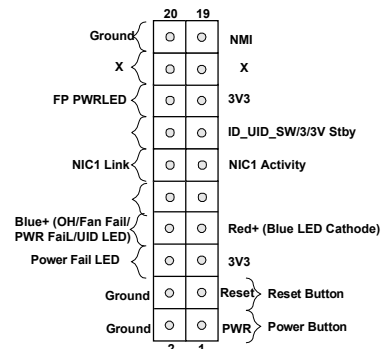
The Intelligent Platform Management Interface (IPMI) LAN connector is designated J8 and supports connectivity with a local network using cable CBL-NTWK-0584 or CBL-NTWK-0587.

### 7. SC847D SAS2 I<sup>2</sup>C Connectors

(Used for SC847D only) The backplane connectors, designated J4-J7, accept internal cables to connect to up to four SC847D expanders.

### 8. Control Panel Connector

This connector is designated JF1 and connects to the control panel on the chassis. See Chapter 3 for additional control panel information.



### 9. PMBus Connector

This connector is designated JPI2C1 and connects the power distributor to the Power Management Bus (PMBus).

### 10. Fan Connectors

The fan connectors supply power to the fans and are designated FAN1-FAN10.

### 11. ATX Power Connector

The ATX power connector is designated JPW1.

## Jumpers and LED Indicators

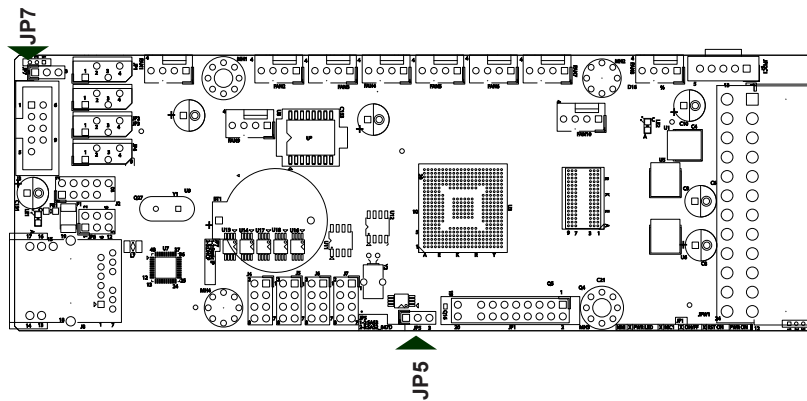
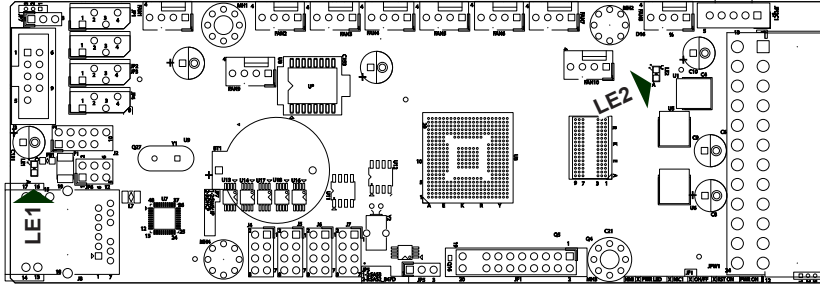


Figure CB3-2. Jumpers

SAS2/SAS3 Jumpers	
Jumper	Description
JP7	Pins 1-2: IPMI factory mode, IP 192.168.1.99 Pins 2-3: User mode (static/DHCP)
JP5	Pins 1-2: SAS3 enabled Pins 2-3: SAS2 enabled and SC847D

To enable SAS2 or SAS3 functionality on the I<sup>2</sup>C connectors, set the JP5 jumper as noted.





**Figure CB3-3. LED Indicators**

LED Indicators	
LED	Description
LE1	Heartbeat LED: A blinking LED indicates BMC activity
LE2	Power LED: DC power indicator

## D.4 I<sup>2</sup>C Cabling to the Backplane

This JBOD storage enclosure is preconfigured with the internal cables connected. Use this section for reference if a cable becomes disconnected during maintenance. Ensure that the JP5 jumper on the JBOD control board is set according to the table in the section, *Jumpers and LED Indicators*.

When enabling SAS2/SAS3 functionality, connect the I<sup>2</sup>C connectors on the JBOD control board (Figure CB3-1) to the proper connector on the backplane. Refer to the table below and the backplane documentation to determine the correct connector.

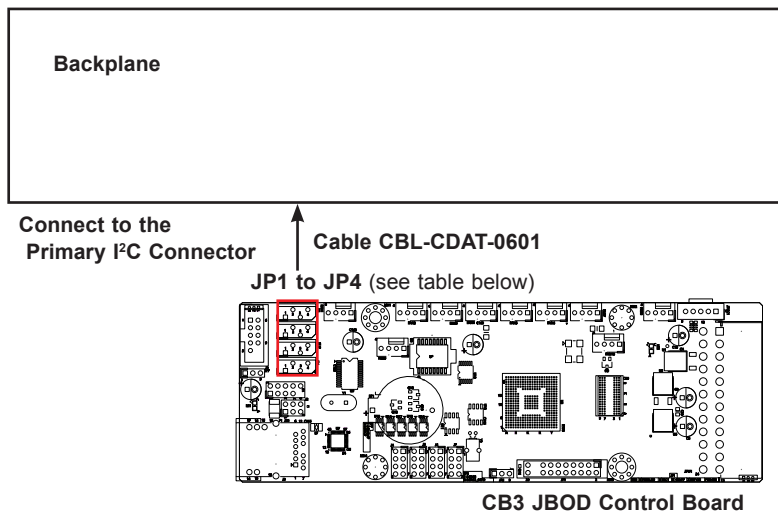
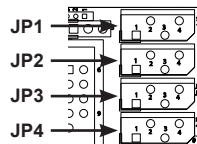


Figure CB3-4. SAS I<sup>2</sup>C Cabling (except SC847D)

### Connections for SC946L JBOD Chassis

Specific I<sup>2</sup>C connectors (JP1-JP4) on the JBOD control board are connected to the backplane.

I <sup>2</sup> C Cable Connections for SC946L JBOD	
Control Board	BPN-SAS3-216EL Backplane
JP1	SMB connector
JP2	na
JP3	na
JP4	Optional for front LCD panel



## D.5 JBOD Power Up/Power Down Sequences

There are several procedures to turn on or off the system with the CB3 JBOD control board.

### Power Up

#### *First Use or Power Cord Plug-In*

1. Plug the power cords into the rear of the power supplies.
2. Wait until blue Information LED starts to blink.
3. Press the power button once. The JBOD control board initiates the power up sequence in three seconds.

#### *After Normal Shutdown by IPMI or Power Button*

Press the power button once. The JBOD control board will initiate the power up sequence in three seconds.

#### *After a Power Loss*

The system will power up automatically approximately fifteen seconds after the power returns.

### Power Down

1. Hold down the power button. The blue Information LED will begin blinking. Continue to hold the power button.
2. Release power button after blue LED stops blinking and goes dark.
3. The shutdown sequence will begin and shut down the system within ten seconds

## D.6 IPMI Static IP to DHCP Setting

### *IP Address to DHCP Setting*

1. Download the utility from the Supermicro website or technical support.
2. Extract the file to a known folder.
3. By default, the JBOD control board will be configured in static IP 192.168.1.99.
4. Change the host to static IP as 192.168.1.10.
5. Go to the IPMI website and select the *Configuration* tab and then select the *Network* page.
6. Change the setting from *Static* to *DHCP* mode

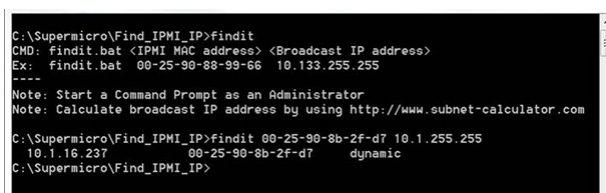
If default website is not responding, press the reset button for more than ten seconds to reset to default. You will observe that the fan speed will slow and then return to normal. Continue to change to DHCP mode when the fan reaches normal speed.

7. Save the new setting.
8. Change the host IP back to DHCP mode.
9. Determine the DHCP IP address of the host, for example 10.1.1.50.
10. Run the command prompt with administrative privileges.
11. Go to the utility folder and type:

```
findit 00-25-90-xx-xx-xx yy.zz.255.255
```

Where: xx-xx-xx is, enter the JBOD control board MAC ID. yy.zz represents the first two octets of your host IP. Example: findit 00-25-90-xx-xx-xx 10.1.255.255

12. The utility will return the IP address of the JBOD control board. Enter the IP in browser and access the IPMI web GUI.



```
C:\Supermicro\Find_IPMI_IP>findit
CMD: findit.bat <IPMI MAC address> <Broadcast IP address>
Ex: findit.bat 00-25-90-88-99-66 10.133.255.255
----
Note: Start a Command Prompt as an Administrator
Note: Calculate broadcast IP address by using http://www.subnet-calculator.com

C:\Supermicro\Find_IPMI_IP>findit 00-25-90-8b-2f-d7 10.1.255.255
10.1.16.237 00-25-90-8b-2f-d7 dynamic
C:\Supermicro\Find_IPMI_IP>
```