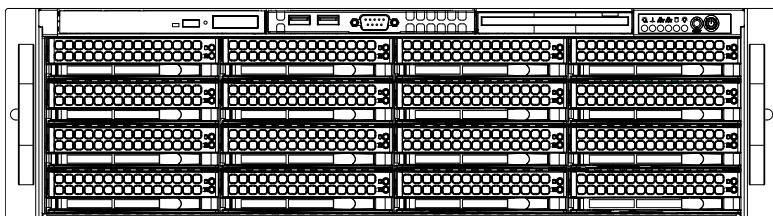


# SUPERO®

## SC836 Chassis Series



SC836A-R1200B	SC836BA-R920B
SC836BA-R1K28B	SC836TQ-R500B
SC836TQ-R800V/B	SC836TQ-R710B
SC836E16-R500B	SC836E16/E26-R1200B
SC836BE16/E26-R920B	SC836BE16/E26-R1K28B
SC836BHA-R1K28B	SC836BHE16/E26-R1K28B

## User's Manual

The information in this User's Manual has been carefully reviewed and is believed to be accurate. The vendor assumes no responsibility for any inaccuracies that may be contained in this document, makes no commitment to update or to keep current the information in this manual, or to notify any person or organization of the updates. **Please Note: For the most up-to-date version of this manual, please see our web site at [www.supermicro.com](http://www.supermicro.com).**

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**WARNING: Handling of lead solder materials used in this product may expose you to lead, a chemical known to the State of California to cause birth defects and other reproductive harm.**

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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 SC836 3U chassis. Installation and maintenance should be performed by experienced technicians only.

Supermicro's SC836 3U chassis features a unique and highly-optimized design. The chassis is equipped with a redundant 500W, 710W (DC), 800W, 920W, 1200W or 1280W high-efficiency power supply. High-performance fans provide ample optimized cooling for the chassis and sixteen hot-swappable drives offer maximum storage capacity in a 3U form factor.

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

## Manual Organization

### **Chapter 1 Introduction**

The first chapter provides a list of the main components included with the SC836 chassis and describes the main features of the chassis. This chapter also includes contact information.

### **Chapter 2 Standardized Warning Statements for AC/DC Systems**

This chapter lists warnings, precautions, and system safety. You should thoroughly familiarize yourself with this chapter for a general overview of safety precautions that should be followed before installing and servicing this chassis.

### **Chapter 3 Chassis Components**

Refer here for details on this chassis model including the fans, bays, airflow shields, and other components.

### **Chapter 4 System Interface**

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

### **Chapter 5 Chassis Setup and Maintenance**

Refer to this chapter for detailed information on this chassis. You should follow the procedures given in this chapter when installing, removing, or reconfiguring your chassis.

### **Chapter 6 Advanced Setup**

This chapter includes detailed instructions for advanced setup configurations including multiple chassis connections.

### **Chapter 7 Rack Installation**

Refer to this chapter for detailed information on chassis rack installation. You should follow the procedures given in this chapter when installing, removing or reconfiguring your chassis into a rack environment.



**Compatible Backplanes**

This section lists compatible cables, power supply specifications, and compatible backplanes. Not all compatible backplanes are listed. Refer to our web site for the latest compatible backplane information.

**Appendix A SC836 Chassis Cables****Appendix B SC836 Power Supply Specifications****Appendix C BPN-SAS2-836EL Series Backplane Specifications****Appendix D BPN-SAS-836TQ Backplane Specifications****Appendix E BPN-SAS-836A Backplane Specifications****Appendix F PCC-JBWR2 and CSE-PTJBOD-CB2 Power Control Card Specifications****Appendix G SC836B Chassis Specifications**

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***Appendix A SC836 Chassis Cables***

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***Appendix F PCC-JBPWR2 and CSE-PTJBOD-CB1***

***Appendix G SC836B Chassis Specifications***

## Notes

# Chapter 1

## Introduction

### 1-1 Overview

Supermicro's SC836 storage chassis supports up to sixteen hot-swappable 3.5" SAS/SATA hard drive bays, the industry's highest storage density for a 3U system. The SC836 include 100% cooling redundancy and high efficiency (1+1) redundant 710W, 800W, or 1200W (93%) Gold Level power supplies with PM BUS functionality for enhanced power management. The SC836 is optimized for the next-generation dual-processor Intel® Xeon® (5500 series) and AMD Opteron™ platforms. Direct attached HDD backplane (TQ version), multilane backplane (A version) and expanders' backplane (E1, E2 versions) are available for application specific solution optimization. Heavy duty palletized packaging is available to ensure secure system reliability during shipping and tool-less, roller rail designs for easy installation and maintenance are standard with each system.

SC836 Chassis Series			
Model	HDD	I/O Slots	Power Supply
SC836BHA-R1K28B	16x SAS	7x FF	1280W (Redundant, Platinum)
SC836BHE16-R1K28B SC836BHE26-R1K28B	16x SAS	7x FF	1280W (Redundant, Platinum)
SC836BE16-R1K28B SC836BE26-R1K28B	16x SAS	7x FF	1280W (Redundant, Platinum)
SC836BA-R1K28B	16x SAS	7x FF	1280W (Redundant, Platinum)
SC836E16-R1200B SC836E26-R1200B	16x SAS/SATA	7x FF	1280W (Redundant, Platinum)
SC836A-R1200B	16x SAS/SATA	7x FF	1280W (Redundant, Platinum)

<b>SC836 Chassis Series</b>			
<b>SC836BE16-R920B</b> <b>SC836BE26-R920B</b>	16x SAS	7x FF	920W (Redundant, Platinum)
<b>SC836BA-R920B</b>	16x SAS	7x FF	920W (Redundant, Platinum)
<b>SC836TQ-R800V</b> <b>SC836TQ-R800B</b>	16x SAS/SATA	7x FF	800W (Redundant)
<b>SC836TQ-R710B</b>	16x SAS/SATA	7x FF	710W DC (Redundant)
<b>SC836TQ-R500B</b>	16x SAS/SATA	7x FF	500W (Redundant, Platinum)
<b>SC836E16-R500B</b>	16x SAS/SATA	7x FF	500W (Redundant, Platinum)

## 1-2 Shipping List

### Part Numbers

Please visit the Supermicro web site for the latest shipping lists and part numbers for your particular chassis model at [www.supermicro.com](http://www.supermicro.com).



## 1-3 Chassis Features

The SC836 3U high-performance chassis includes the following features:

### **CPU Support**

The SC836 chassis supports a DP Dual-core Xeon processor. Please refer to the motherboard specifications pages on our web site for updates on supported processors for this chassis

### **Hard Drives**

The SC836 chassis features sixteen slots for SAS or SAS/SATA drives. These drives are hot-swappable, meaning that once set up correctly these drives may be removed without powering down the server. In addition, these drives support SES2.

### **I/O Expansion slots**

Each version of the SC836 chassis includes seven full I/O expansion slots.

### **Peripheral Drives**

Each SC836 chassis supports one slim DVD-ROM drive (optional) These drives allow you to quickly install software or save data.

### **Other Features**

Other onboard features are included to promote system health. These include various five cooling fans, a convenient power switch, reset button, and LED indicators

### **SCSI Drives**

For information on SCSI drives contact the Supermicro Technical Support Department at [www.supermicro.com](http://www.supermicro.com)

## 1-4 Contacting Supermicro

### Headquarters

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

Tel: +1 (408) 503-8000

Fax: +1 (408) 503-8008

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

Web Site: [www.supermicro.com](http://www.supermicro.com)

### Europe

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

Tel: +31 (0) 73-6400390

Fax: +31 (0) 73-6416525

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

Web Site: [www.supermicro.nl](http://www.supermicro.nl)

### Asia-Pacific

Address: Super Micro Computer, Inc.  
3F, No. 150, Jian 1st Rd.  
Zhonghe Dist., New Taipei City 235  
Taiwan (R.O.C)

Tel: +886-(2) 8226-3990

Fax: +886-(2) 8226-3992

Email: [support@supermicro.com.tw](mailto:support@supermicro.com.tw)

Web Site: [www.supermicro.com.tw](http://www.supermicro.com.tw)

## 1-5 Returning Merchandise for Service

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

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

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

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

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

# Notes

## Chapter 2

# Standardized Warning Statements for AC/DC Systems

### 2-1 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 web site 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。

您正處於可能身體可能會受損傷的工作環境中。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.

## **תקנת 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 במלוואו לפני התקנת או הגדרת הרכיבים במארוזי 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 ترجمتها

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.

اقرأ إرشادات التركيب قبل توصيل النظام إلى مصدر للطاقة

주의!

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60V、20A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600V,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60V,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: 60V, 20A 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: 60V, 20A.

### 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 :60V, 20A.

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

هذا المنتج يعتمد على معدات الحماية من الدوائر القصيرة التي تم تثبيتها في المبنى

경고!

이 제품은 전원의 단락(과전류)방지에 대해서 전적으로 건물의 관련 설비에 의존합니다. 보호장치의 정격이 반드시 60V(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 60V, 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 châssis pour installer ou enlever des composants de système.

**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 للهيكल 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 لتثبيت 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 للالأمان

경고!

이 장치는 접근이 제한된 구역에 설치하도록 되어있습니다. 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製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

此装置连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。

修理する際にはご注意ください。

警告

当系统正在进行时，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，背板上有危險的電壓或能量，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 يمثل 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!

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

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

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**

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**

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!**

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**

Il est possible que les ventilateurs soient toujours en rotation lorsque vous retirez le bloc ventilateur du châssis. Prenez garde à ce que doigts, tournevis et autres objets soient éloignés du logement du bloc ventilateur.

**אזהרה!**

כאשר מסירים את חלקי המאוורר מהמארז, יתכן והמאווררים עדיין עובדים. יש להרחיק למרחק בטוח את האצבעות וכלי עבודה שונים מהפתחים בתוך המאוורר

من الممكن أن تترال المراوح لا تدور عند إزالة كتلة المروحة من الهيكل يجب إبقاء الأصابع ومفكات البراغي وغيرها من الأشياء بعيدا عن الفتحات في كتلة المروحة.

**경고!**

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**

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.

## DC Power Supply



### Warning!

When stranded wiring is required, use approved wiring terminations, such as closedloop or spade-type with upturned lugs. These terminations should be the appropriate size for the wires and should clamp both the insulation and conductor.

### 警告

より線が必要な場合、承認済みのケーブル終端(上向きの端子を備えたクローズループ型またはU字型の終端など)を使用してください。使用するワイヤーに適したサイズで、絶縁体および導体が両方ともクランプされている終端でなければなりません。

### 警告

需要多股佈線時、請使用經核准的佈線終端，例如閉環或鏟型接線片。這些終端的大小應適合線路，並且可以同時夾住絕緣體和導體。

### 警告

需要使用绞线连接时，请使用经认可的连接端子，如闭环端子或具有接线柱的铲形端子。这些端子的大小应与线缆相吻合，并且可以将绝缘部分和导体夹紧固定。

### Warnung

Wenn Litzenverdrahtung erforderlich ist, sind zugelassene Verdrahtungsabschlüsse, z.B. für einen geschlossenen Regelkreis oder gabelförmig, mit nach oben gerichteten Kabelschuhen zu verwenden. Diese Abschlüsse sollten die angemessene Größe für die Drähte haben und sowohl die Isolierung als auch den Leiter festklemmen.

### ¡Advertencia!

Quando se necesite hilo trenzado, utilizar terminales para cables homologados, tales como las de tipo "bucle cerrado" o "espada", con las lengüetas de conexión vueltas hacia arriba. Estos terminales deberán ser del tamaño apropiado para los cables que se utilicen, y tendrán que sujetar tanto el aislante como el conductor.

### Attention

Quand des fils torsadés sont nécessaires, utiliser des douilles terminales homologuées telles que celles à circuit fermé ou du type à plage ouverte avec cosses rebroussées. Ces douilles terminales doivent être de la taille qui convient aux fils et doivent être refermées sur la gaine isolante et sur le conducteur.

### 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

كإل سأل امدختس او، لبس ل مهب تعطقت ني ذلأ كالس ألأ ابولطم نو كي امدنح عونلأ ةيقي قح ل اء اء اس أب اء اء ش ألأ وأ ةقل لغم ةقل ح لشم، اء اء ل ع ةقق فاوملأ اء اء ن! كالس ألل بس ان ملأ مء ح لأ نو كي تاء اء ن إلأ هذهل يغب ن ي و. ةبولقم تاور علأ عم ل ص وم و لز علأ نم لك حبك بء ج ي و.

### 주의!

꼬인 배선이 요구 될 때에는 폐회로나 돌출부가 위로 튀어 나온 Spade 형태의 승인된 배선 터미네이션들을 사용하세요.

이 터미네이션들은 배선들을 위해 적절한 크기여야 하고, 절연체와 도체 모두를 고정시킬 수 있어야 합니다.

### Waarschuwing

Wanneer geslagen bedrading vereist is, dient u bedrading te gebruiken die voorzien is van goedgekeurde aansluitingspunten, zoals het gesloten-lus type of het grijperschop type waarbij de aansluitpunten omhoog wijzen. Deze aansluitpunten dienen de juiste maat voor de draden te hebben en dienen zowel de isolatie als de geleider vast te klemmen.





주의!

다음 절차를 수행하기 전에, 전원이 DC 회로로부터 제거되었는지를 확인해 주십시오.

Waarschuwing

Wanneer geslagen bedrading vereist is, dient u bedrading te gebruiken die voorzien is van goedgekeurde aansluitingspunten, zoals het gesloten-lus type of het grijperschop type waarbij de aansluitpunten omhoog wijzen. Deze aansluitpunten dienen de juiste maat voor de draden te hebben en dienen zowel de isolatie als de geleider vast te klemmen.

### Hazardous Voltage or Energy Present on DC Power Terminals



**Warning!**

Hazardous voltage or energy may be present on DC power terminals. Always replace cover when terminals are not in service. Be sure uninsulated conductors are not accessible when cover is in place.

警告

直接電力端子に危険な電圧やエネルギーが発生している可能性があります。使用していない端子には常にカバーをつけてください。カバーがついているときは非絶縁形コンダクターに接触していないことを確認してください。

警告

直流電源終端可能產生危險的電壓或能量。終端不使用時，請務必蓋上機蓋。當蓋上機蓋，確認不絕緣導體無法使用。

警告

直流电源终端可能会产生危险的电压或能量。终端不使用时，请务必盖上机盖。机盖盖上后，请确保导体未绝缘部分无法使用。

Warnung

In mit Gleichstrom betriebenen Terminals kann es zu gefährlicher Spannung kommen. Die Terminals müssen abgedeckt werden, wenn sie nicht in Betrieb sind. Stellen Sie bei Benutzung der Abdeckung sicher, dass alle nicht isolierten, stromführenden Kabel abgedeckt sind.

¡Advertencia!

Puede haber energía o voltaje peligrosos en los terminales eléctricos de CC. Reemplace siempre la cubierta cuando no estén utilizándose los terminales. Asegúrese de que no haya acceso a conductores descubiertos cuando la cubierta esté colocada.

Attention

Le voltage ou l'énergie électrique des terminaux à courant continu peuvent être dangereux. Veuillez à toujours replacer le couvercle lors les terminaux ne sont pas en service. Assurez-vous que les conducteurs non isolés ne sont pas accessibles lorsque le couvercle est en place.

**אזהרה!**

מקור מתח מסוכן עלול להיות נוכח על הקטבים של זרם ה-DC. החלף תמיד את המכסה כאשר הקטבים לא בשימוש. ודא כי המוליכים הלא מבודדים אינם נגישים כאשר המכסה נמצא במקומו.

**تحذير**

لادبتسا ؤمصاعلا ؤق اظلا تااطحم ىل ع ؤدوجوم نوكت ؤق اظلا و ا ؤرطخل ا دهجل ا دق ريغ تالصولا هيف لكش ال امم ؤمدخل ا يف تسيل تااطحملا امدن ع امئاد اعاطغ هنالكم يف اعاطغلا امدن ع اهيل لوصولا نلكمي ال لوزعم

주의!

DC전원 단자들에 위험한 전압이나 에너지가 발생할 수 있습니다.

단말기들을 운영하지 않을 때에는 덮개로 다시 덮어 놓아 주십시오. 덮개가 제자리에 있어야만 절연되지 않은 도체들의 접근을 막을 수 있습니다.

Waarschuwing

Op DC-aansluitingspunten kunnen zich gevaarlijke voltages of energieën voordoen. Plaats altijd de afsluiting wanneer de aansluitingspunten niet worden gebruikt. Zorg ervoor dat blootliggende contactpunten niet toegankelijk zijn wanneer de afsluiting is geplaatst.

## Chapter 3

# Chassis Components

### 3-1 Overview

This chapter describes the most common components included with your chassis. Some components listed may not be included or compatible with your particular chassis model. For more information, see the installation instructions detailed later in this manual.

### 3-2 Components

#### Chassis and Chassis Bays

The SC836 chassis may include one optional slim CD-ROM or DVD-ROM, one front port panel, and either sixteen or eighteen hard drive bays. Hard drives must be purchased separately. For the latest shipping lists, visit our web site at [www.supermicro.com](http://www.supermicro.com).

#### Backplane

Each SC836 chassis comes with a 3U backplane. Depending upon your order, your backplane will accept SAS/SATA drives or SAS only drives. For more information regarding compatible backplanes, view the appendices found at the end of this manual. In addition, visit our web site for the latest information at [www.supermicro.com](http://www.supermicro.com).

#### Fans

The SC836 chassis accepts five system fans. System fans for SC836 chassis are powered from the serverboard. These fans are 3U compatible and connect to 4-pin connectors.

## Mounting Rails

The SC836 can be placed in a rack for secure storage and use. To set up your rack, follow the step-by-step instructions included in this manual.

## Power Supply

Each SC836 chassis model includes redundant high-efficiency hot-swappable power supply rated at 500, 710, 800, 920, 1200 or 1280 Watts. In the unlikely event of a power supply failure, you can remove and replace the failed power supply without powering down the system.

## Air Shroud

Air shrouds are shields, usually plastic, that funnel air directly to where it is needed. **Always use the air shroud included with your chassis.**

### 3-3 Where to get Replacement Components

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

# Chapter 4

## System Interface

### 4-1 Overview

There are LEDs on the control panel and on the drive carriers to keep you constantly informed of the overall status of the system, as well as the activity and health of specific components. Most SC836 models have two buttons on the chassis control panel- a reset button and an on/off switch. This chapter explains the meanings of all LED indicators and the appropriate responses you may need to take.

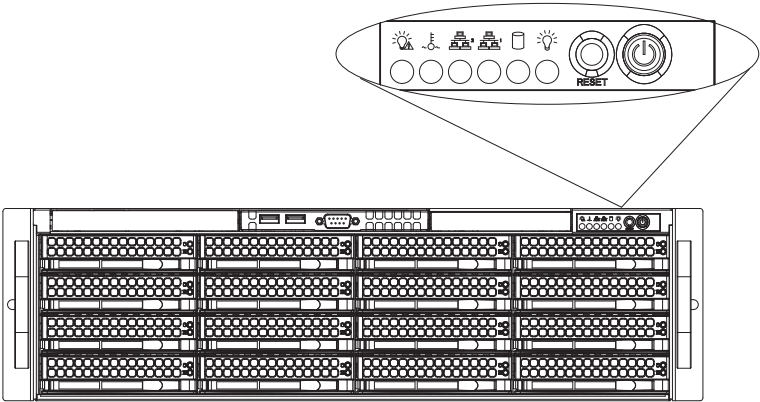


Figure 4-1. SC836 Front Panel

## 4-2 Control Panel Buttons

There are two push-buttons located on the front of the chassis, a reset button and a power on/off button.



**Reset:** The reset button is used to reboot the system.



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

## 4-3 Control Panel LEDs

The control panel is located on the front of the SC836 chassis and has six LEDs. These LEDs provide you with critical information related to different parts of the system. This section explains what each LED indicates when illuminated and any corrective actions you may need to take.



**Power Failure:** When this LED flashes, it indicates a power failure in the power supply.



**Overheat/Fan Fail:** When this LED flashes it indicates a fan failure. When continuously on (not flashing) it indicates an overheat condition, which may be caused by cables obstructing the airflow in the system or the ambient room temperature being too warm. Check the routing of the cables and make sure all fans are present and operating normally. You should also check to make sure that the chassis covers are installed. Finally, verify that the heatsinks are installed properly. This LED will remain flashing or on as long as the overheat condition exists.



**NIC2:** Indicates network activity on LAN2 when flashing.



**NIC1:** Indicates network activity on LAN1 when flashing.



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



**Power:** Indicates power is being supplied to the system's power supply units. This LED should normally be illuminated when the system is operating.

## 4-4 Drive Carrier LEDs

Each drive carrier has two LEDs.

- **Blue:** When illuminated, this blue LED (on the front of the drive carrier) indicates drive activity. A connection to the backplane enables this LED to blink on and off when that particular drive is being accessed.
- **Red:** The red LED to indicate a drive failure. If one of the drives fail, you should be refer to your system management software.



## Chapter 5

# Basic Chassis Setup and Maintenance

### 5-1 Overview

This chapter details the basic steps required to install components to the chassis. The only tool you will need is a Phillips screwdriver. Print this page to use as a reference while setting up your chassis.

When coupled with an 836EL series backplane, this chassis is capable of failover, and cascading. Review Chapter 6 and the BPN-SAS-836EL appendix in this manual for setup instructions.

**Review the warnings and precautions listed in the manual before setting up or servicing this chassis. These include information in Chapter 2: Standardized Warning Statements for AC/DC Systems and the warning/precautions listed in the setup instructions.**

## 5-3 Removing the Chassis Cover

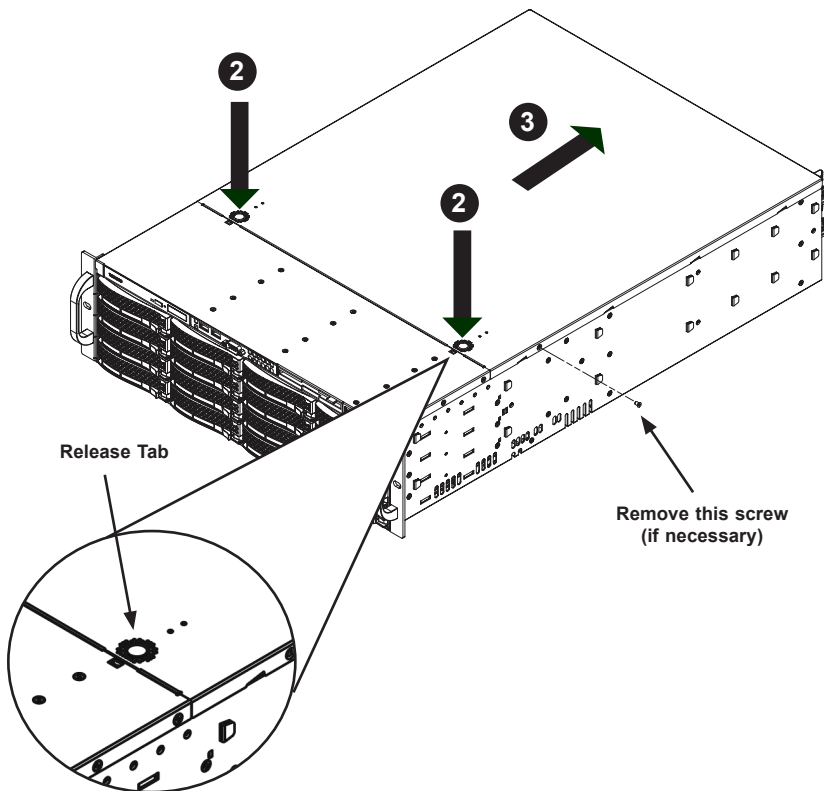


Figure 5-1. Removing the Chassis Cover

### *Removing the Cover*

1. Remove the power cord from the rear of the power supply.
2. Press the release tabs to remove the cover from the locked position. Press both tabs at the same time. If necessary, you may need to remove the chassis cover screw.
3. Once the top cover is released from the locked position, slide the cover toward the rear of the chassis and lift the cover off the unit.

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

## 5-4 Installing the Hard Drives

The drives are mounted in drive trays to simplify their installation and removal from the chassis.

### Removing Hard Drive Carriers from the Chassis

#### *Removing Hard Drive Carriers*

1. Press the release button on the drive carrier. This extends the drive carrier handle.
2. Use the handle to pull the drive out of the chassis.

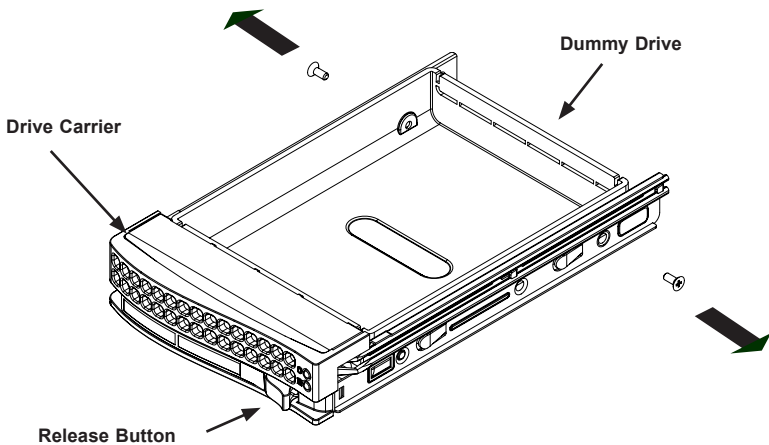
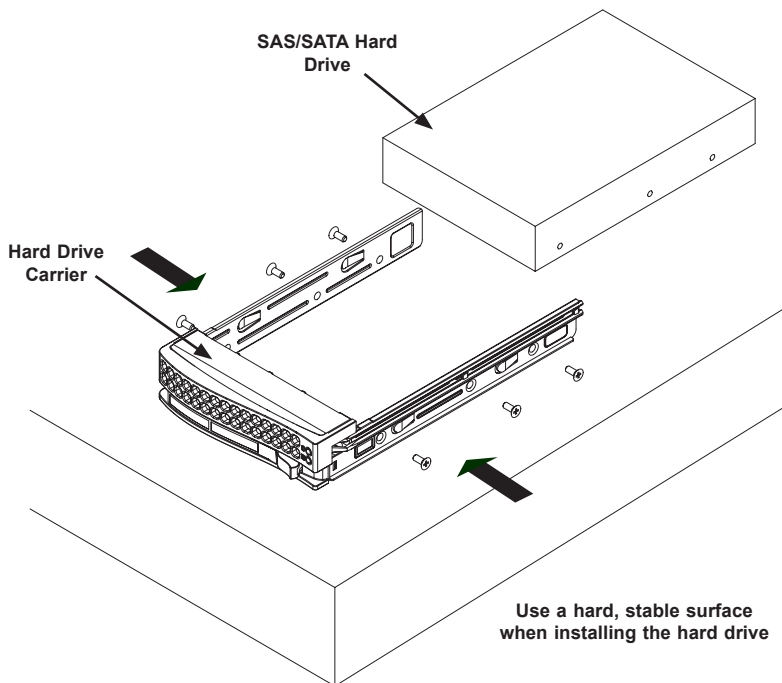


Figure 5-2. Removing Dummy Drive from Carrier

### Installing a Hard Drive to the Hard Drive Carrier

#### *Installing an Hard Drive*

1. Remove the two screws securing the dummy drive to the drive carrier.



**Figure 5-3. Installing a Hard Drive into a Hard Drive Carrier**

2. Place the hard drive carrier on a flat, stable surface such as a desk, table, or work bench.
3. Slide the hard drive into the carrier with the printed circuit board side facing down.
4. Carefully align the mounting holes in the hard drive and the carrier. Make sure the bottom of the hard drive and bottom of the hard drive carrier are flush.
5. Secure the hard drive using all six screws.
6. Return the hard drive carrier into the chassis. Lock the hard drive carrier into the drive bay by closing the drive carrier handle until it clicks into the locked position.

**Warning!** Enterprise level hard disk drives are recommended for use in Supermicro chassis and servers. For information on recommended HDDs, visit the Supermicro web site at <http://www.supermicro.com>

## 5-5 Installing the Motherboard

### Permanent and Optional Standoffs

Standoffs prevent short circuits by creating space between the motherboard and the chassis surface. The SC836 chassis includes permanent standoffs in locations used by most motherboards. These standoffs accept the rounded Phillips head screws included in the SC836 accessories packaging.

Some motherboard require additional screws for heatsinks, general components and/or non-standard securing within the chassis. Optional standoffs are included to these motherboards. To use an optional standoff, you must place it into the desired position in the chassis and secure it with a screw.

### Standoffs Labeling

Standoff locations are labeled on the bottom of the SC836 chassis with the letters: P, D, and A.

P = Most compatible motherboards have a processor or CPU located here. If necessary, place standoffs here for the CPU's heatsink.

D = Place optional standoffs here if your motherboard requires additional posts to hold the unit in place.

A = A number of older motherboards have processors or CPUs located in areas designated "A". Place standoffs here for the CPU's heatsink.

### Motherboard Installation

#### *Installing the Motherboard*

1. Review the documentation that came with your motherboard. Become familiar with component placement, requirements, and precautions.
2. Power down the system, remove the power cord from the rear of the power supply. Remove the chassis cover as described in Section 5-3 and lay the chassis on a flat, stable surface.

3. Remove any packaging from the chassis. If the rear fans (set of two fans nearest the I/O slots) or the air shroud are in place, remove them.
4. If required by your motherboard, install standoffs in any areas that do not have a permanent standoff. To do this, place an optional hexagonal standoff into the chassis and secure it with a screw. Compare the holes in the motherboard to those in the chassis and add or remove standoffs as needed.
5. Lay the motherboard in the chassis, aligning the permanent and optional standoffs.
6. Secure the motherboard to the chassis using the rounded, Phillips head screws. Do not exceed eight pounds of torque when tightening down the motherboard.
7. Secure the CPU(s) and heatsinks to the motherboard.

## Power Supply Connections

Connect each of the following cables, as required, by your motherboard manufacturer. In some instances, some cables may not need to be connected.

Power Supply Cables			
Name	Number	Connects to:	Description
20-pin or 24-pin power cable	1	Motherboard	20-pin or 24-pin power cable provides electricity to the motherboard. Has twenty to twenty-four yellow, black, gray, red, orange, green and blue wires.
HDD (Hard Drive) power cable	3	Backplane	Each cable has three connectors (two Hard Drive [HDD] Attach the HDD connectors to the backplane.
8-pin motherboard cable	1	Motherboard	Provides power to the motherboard CPU. This cable has two black and two yellow wires.
4-pin motherboard cable	1	Motherboard	Provides power to PCI expansion card. This cable has two black and two yellow wires.
5-pin SMBus power cable (small)	1	Motherboard	Allows the SM (System Management) bus to monitor the power supply.
2-pin INT cable	1	Motherboard	The intrusion detection cable allows the system to log when the server chassis has been opened.

## I/O Shield and Expansion Card Setup

The SC836 chassis includes space for an I/O shield and up to seven expansion cards can be installed in the PCI card slots.

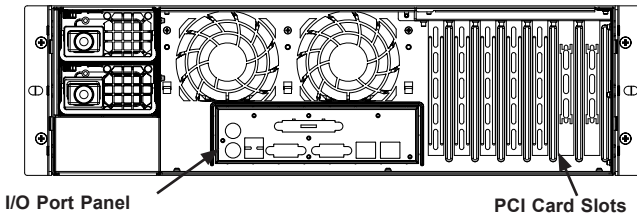


Figure 5-4. SC836 Chassis Rear PCI Card Slots and I/O Ports

## Installing an I/O Panel

### *Installing the I/O Panel*

1. Power down the system, remove the power cord from the rear of the power supply and remove the chassis cover as described in Section 5-3.
2. Locate the I/O port panel.
3. Depending on your motherboard, you must remove the existing port shield and replace with the new one or use the existing shield to slide the ports through.
4. Connect the port panel to the motherboard following the motherboard documentation.

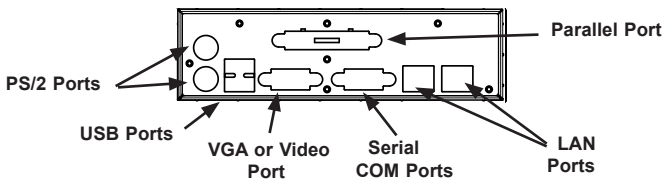


Figure 5-5. SC836 Chassis Port Panel

## Installing an Expansion Card

### *Installing Expansion Cards*

1. Remove the chassis cover.
2. Locate the motherboard port aligned with the PCI card slot where the expansion card will be installed.
3. Each PCI slot cover is secured by one screw located on the top (inside) the chassis. Remove this screw.
4. Remove the PCI slot cover by sliding it upward.
5. Gently slide the expansion card into the correct motherboard slot. If the expansion card requires a riser card, install it at this time. Slide the card into the PCI slot and close the latch. Never force a component into a motherboard or the chassis.
6. Secure the expansion card with the screw from the I/O panel.



## 5-6 Installing the Air Shroud, Rear Fan, and Checking Airflow

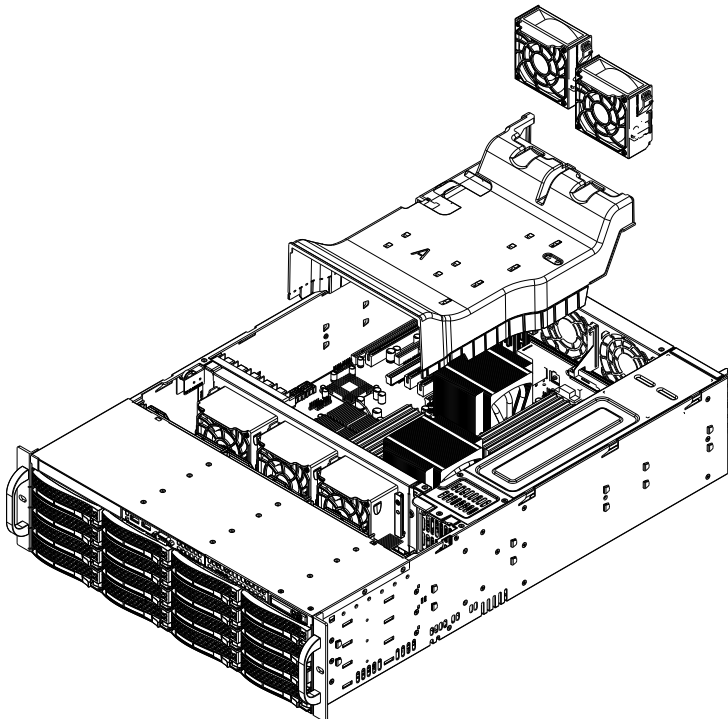


Figure 5-6. Place the Air Shroud

Air shrouds concentrate airflow to maximize fan efficiency. The SC836 chassis air shroud does not require screws to set it up.

### Installing the Air Shroud

#### *Air Shroud Installation*

1. Power down the system, remove the power cord from the rear of the power supply and remove the chassis cover as described in Section 5-3. If necessary, remove the rear fans.
2. Place the air shroud in the chassis, as illustrated. The shroud aligns with the fan holders and sits behind two of the front fans covers two of the rear fans. Make sure the air shroud is properly aligned inside the chassis.

## Installing Rear System Fans

The SC836 chassis includes three front fans and two rear fans. The front fans are pre-installed. The rear fans must be installed after motherboard and air shroud are installed.

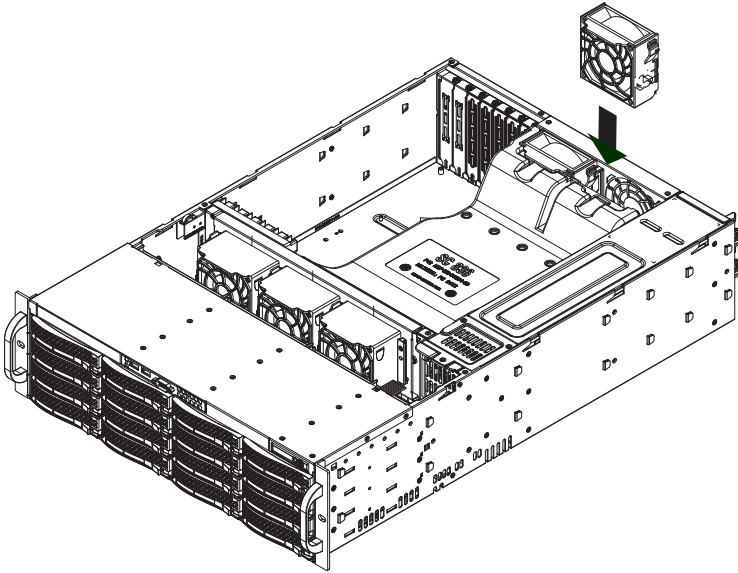


Figure 5-7. Install the Rear Fan

### *Installing Rear Fans*

1. Power down the system, remove the power cord from the rear of the power supply and remove the chassis cover as described in Section 5-3.
2. Confirm that the air shroud is correctly placed.
3. Slide the rear fan into the slot as illustrated. The fan release tab should be on the side closest to the power supply.
4. Make sure that the fan is secured in the fan housing and the housing is correctly connected to the power supply.

## Checking the Server's Airflow

### *Checking the Airflow*

1. Make sure there are no objects to obstruct airflow in and out of the server. If necessary, route the cables through the cable rack.
2. Do not operate the server without drives or drive trays in the drive bays.
3. Use only recommended server parts.
4. Make sure no wires or foreign objects obstruct airflow through the chassis. Pull all excess cabling out of the airflow path or use shorter cables.
5. Do not operate the server for extended periods of time without the air shroud in the proper place.

## 5-7 Chassis Maintenance

### Replacing System Fans

Five heavy-duty fans provide cooling for the chassis. These fans circulate air through the chassis as a means of lowering the chassis' internal temperature. The SC836 chassis includes three front fans and two rear fans.

SC836 chassis fans are fully hot-swappable. In other words, fans may be removed and replaced without having to power down the server.

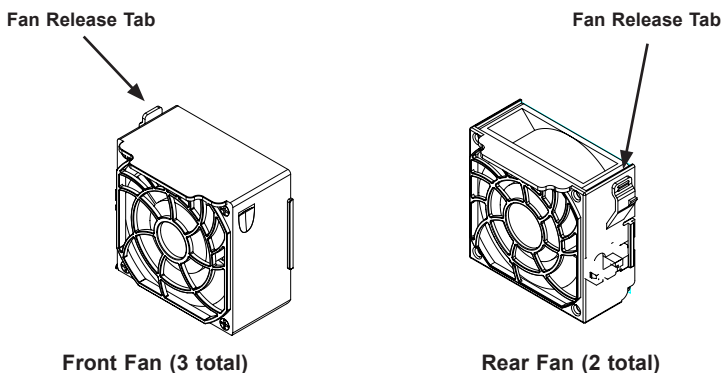


Figure 5-8. Chassis Fans

#### ***Replacing Fans***

1. Open the chassis cover while it is running and locate the faulty fan. Never run the server for an extended period of time with the chassis open.
1. Power down the system, remove the power cord from the rear of the power supply and remove the chassis cover as described in Section 5-3.
2. Press the release tab on the fan and pull the fan upward.
3. Slide the new fan into the fan housing. Make sure the power connectors are correctly aligned. The new fan will activate immediately.

## Replacing the Power Supply

The power supply for the SC836 chassis is redundant and hot-swappable, meaning the power supply can be changed without powering down the system.

### *Replacing a Power Supply Module*

1. The SC836 chassis includes a redundant power supply (at least two power modules), you can leave the server running if you remove only one power supply at a time.
2. Unplug the power cord of the power supply that you will replace.
3. Push the release tab on the back of the power supply.
4. Pull the power supply out using the handle provided.
5. Replace the failed power module with the same model.
6. Push the new power supply module into the power bay until you hear it click into the locked position.
7. Plug the power cord into the new power module and power up the server.

## Replacing the Power Distributor

Redundant server chassis that are 2U or more in height require a power distributor. The power distributor provides failover and power supply redundancy. In the unlikely event that the power distributor requires replacement, do following:

### *Power Distributor Replacement*

1. Power down the server and remove the cord from the wall socket or power strip.
2. Remove all cable connections from the power supply to the motherboard, backplane, and other components. Also, remove both power supplies from the chassis.
3. Locate the power distributor between the power supply and the fan row.
4. Remove the three screws securing the power supply.
5. Gently pull the power distributor from the chassis. Make sure to guide all the cables through the power distributor housing.
6. Slide the new power distributor module into the power distributor housing. Make that you slide the cables through the bottom of the housing.
7. Reconnect all the power cables, replace the power supply, and plug the power supply cord into the wall.

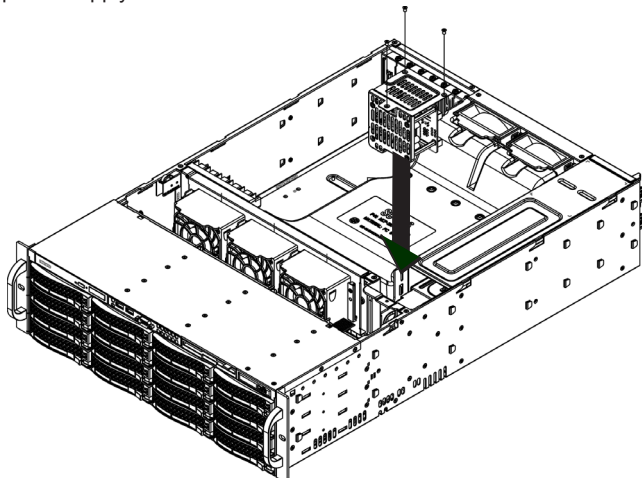


Figure 5-9. Replacing the Power Distributor

## Replacing the Front Panel

SC836 chassis models include a slim DVD-ROM, a drive bay for an optional peripheral drive and front port panel. Use the instructions in this section in the unlikely event that you must replace any of these components.

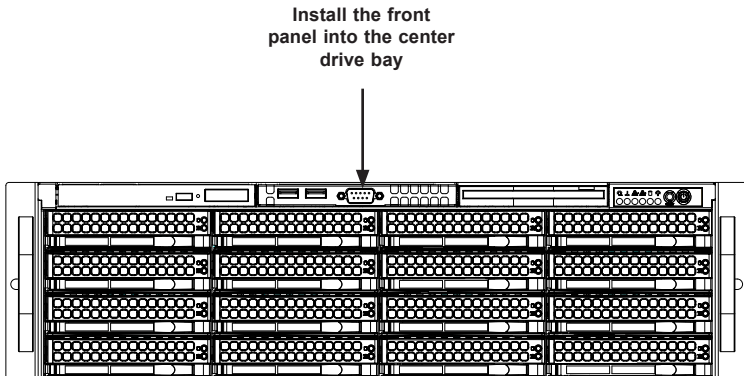


Figure 5-10. Installing the DVD-ROM, Optional Peripheral Drive and Front Panel

## Replacing or Installing the Front Port Panel

### *Installing the Front Panel*

1. Power down the system and unplug the power cord.
2. Remove the chassis cover.
3. **If you are not installing a new front port panel:**  
Remove the mini-bezel (grate) from the center drive bay. The mini-bezel is the small grating that covers the drive bay. Remove this by simply pulling it out of the bay.  
**If you are installing a new front port panel:**  
Remove the old front port panel by depressing the release tab, then pulling the front port panel out of the chassis.
4. Insert the new unit in the slot until the tab locks into place.
5. Connect the data and power cables to the backplane and, if necessary, motherboard.
6. For more information, see the manual for your backplane in the appendix.

# Notes



## Chapter 6

# Advanced Setup

### 6-1 Overview

This chapter covers the steps required to take advantage of the dual port, failover, and cascading features available with the BPN-SAS2-836EL series backplanes.

**Review the warnings and precautions listed in the manual before setting up or servicing this chassis. These include information in Chapter 2: Standardized Warning Statements for AC/DC Systems, and the warning/precautions listed in the setup instructions.**

## 6-2 Dual Ports and Expanders

### Single Ports

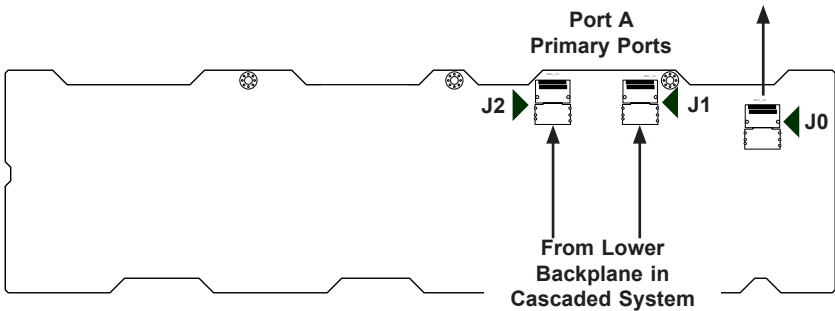
BPN-SAS2-836EL1 backplanes have a single-port expander that accesses all sixteen drives and supports cascading.

### Dual Ports

BPN-SAS2-836EL2 backplanes have dual-port expanders that access all sixteen drives. These dual-port expanders support cascading, failover and recovery.

**Note:** Both BPN-SAS2-836EL series backplanes support SAS drives only.

**BPN-SAS2-836EL1 Single-Port Backplane** To HBA or Higher Backplane



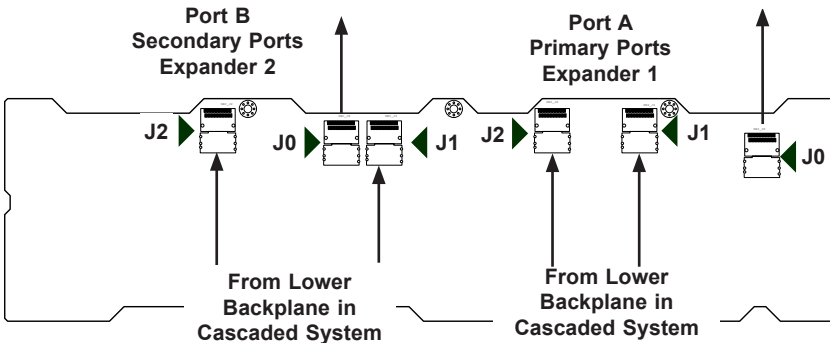
**BPN-SAS2-836EL2 Dual-Port Backplane**

To HBA or Higher Backplane

To HBA or Higher Backplane

Port B Secondary Ports Expander 2

Port A Primary Ports Expander 1



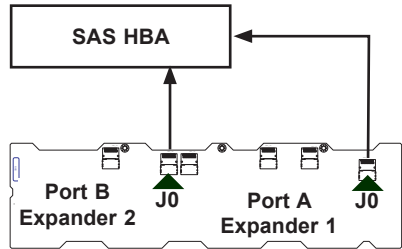
## 6-3 Failover

Failover is the ability to automatically switch to a redundant path when a primary path fails or becomes unavailable. Failover is automatic and requires no action on the part of the administrator.

The BPN-SAS2-836EL2 backplane has two expanders which allow effective failover and recovery. This feature is not supported by the BPN-SAS2-836EL1 backplane.

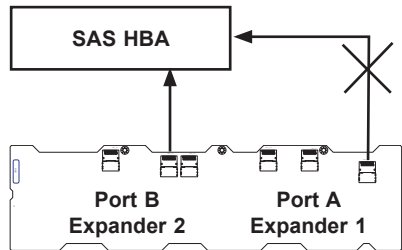
### Single Host Bus Adapter

In a single host bus configuration, the backplane connects to one host bus adapter.



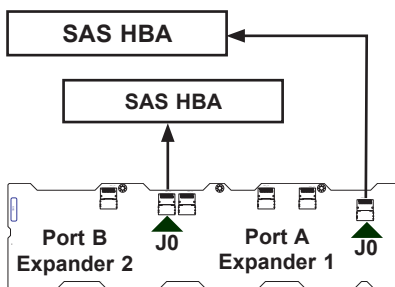
### Single Host Bus Adapter Failover

If the expander or data path in Port A fails, the system will automatically fail over to Port B.



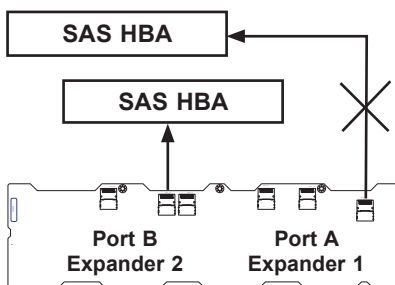
### Dual Host Bus Adapter

In a dual host bus configuration, the backplane connects to two HBAs.



### Dual Host Bus Adapter Failover

If the expander or data path in Port A fails, the system will automatically fail over to Port B. This maintains a full connection to all drives.



## 6-4 Cascading Backplanes

The SC836 chassis supports cascading when coupled with a BPN-SAS2-836EL series backplane or other Supermicro backplane with expander capabilities.

### Power Control Card

In a cascaded configuration, backplanes can be linked to create "Just a Bunch of Drives" or JBOD. The primary server requires a host bus adapter or motherboard. The other servers require a control card or power card.

## Chapter 7

# Rack Installation

### 7-1 Overview

This chapter provides a quick setup checklist to get your chassis up and running. Following these steps in the order given should enable you to have the system operational within a minimal amount of time.

### 7-2 Unpacking the System

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

Decide on a suitable location for the rack unit that will hold your chassis. It should be situated in a clean, dust-free area that is well ventilated. Avoid areas where heat, electrical noise and electromagnetic fields are generated. The system needs to be placed near a grounded power outlet. Be sure to read the Rack and Server Precautions in the next section.

### 7-3 Preparing for Setup

The box your chassis was shipped in should include two sets of rail assemblies and the mounting screws needed for installing the system into the rack. Also included is an optional square hole to round hole converter bracket, for use in racks with round mounting holes. *Please read this section in its entirety before you begin the installation procedure outlined in the sections that follow.*

#### Choosing a Setup Location

- Leave enough clearance in front of the rack to enable you to open the front door completely (~25 inches).
- Leave approximately 30 inches of clearance in the back of the rack to allow for sufficient airflow and ease in servicing.
- This product is for installation only in a Restricted Access Location (dedicated equipment rooms, service closets and the like).

## 7-4 Warnings and Precautions

### Rack Precautions

- Ensure that the leveling jacks on the bottom of the rack are fully extended to the floor with the full weight of the rack resting 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 that the rack is stable before extending a component from the rack.
- You should extend only one component at a time - extending two or more simultaneously may cause the rack to become unstable.

### General Server Precautions

- Review the electrical and general safety precautions that came with the components you are adding to your chassis.
- Determine the placement of each component in the rack *before* you install the rails.
- Install the heaviest server components on the bottom of the rack first, and then work upwards.
- Use a regulating uninterruptible power supply (UPS) to protect the server from power surges, voltage spikes and to keep your system operating in case of a power failure.
- Allow the hot plug hard drives and power supply modules to cool before touching them.
- Always keep the rack's front door and all panels and components on the servers closed when not servicing to maintain proper cooling.

---

## 7-5 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 ambient temperature of the room. Therefore, consideration should be given to installing the equipment in an environment compatible with the manufacturer's maximum rated ambient temperature (TMRA).

### Reduced 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:

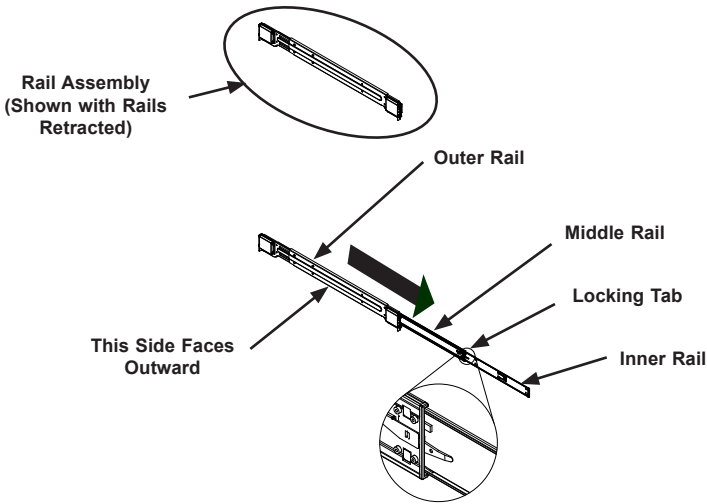
- This unit should be mounted at the bottom of the rack if it is the only unit in the rack.
- When mounting this unit in a partially filled rack, load the rack from the bottom to the top with the heaviest component at the bottom of the rack.
- If the rack is provided with stabilizing devices, install the stabilizers before mounting or servicing the unit in the rack.

## 7-6 Rack Mounting Instructions

This section provides information on installing the chassis into a rack unit with the rails provided. There are a variety of rack units on the market, which may mean that the assembly procedure will differ slightly from the instructions provided. You should also refer to the installation instructions that came with the rack unit you are using. **NOTE:** This rail will fit a rack between 26.5" and 36.4" deep.

### Identifying the Sections of the Rack Rails

The chassis package includes two rail assemblies in the rack mounting kit. Each assembly consists of three sections: An inner chassis rail which 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.



**Figure 7-1. Identifying the Outer, Middle, and Inner Rails (Left Rail Assembly Shown)**



## Locking Tabs

Each inner rail has a locking tab. This tab locks the chassis into place when installed and pushed fully into the rack. These tabs also lock the chassis in place when fully extended from the rack. This prevents the server from coming completely out of the rack when the chassis is pulled out for servicing.

## Releasing the Inner Rail

### *Releasing Inner Rail from the Outer Rails*

1. Identify the left and right outer rail assemblies as described on page 7-4.
2. Pull the inner rail out of the outer rail until it is fully extended as illustrated below.
3. Press the locking tab down to release the inner rail.
4. Repeat steps 1-3 for the second outer rail.

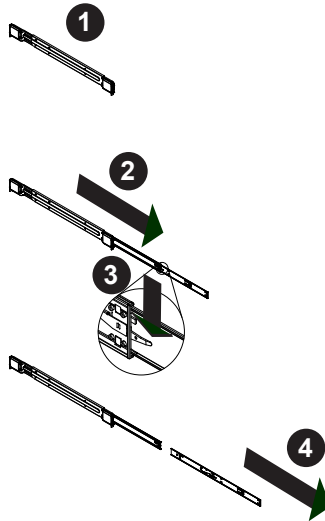


Figure 7-2. Extending and Releasing the Inner Rail

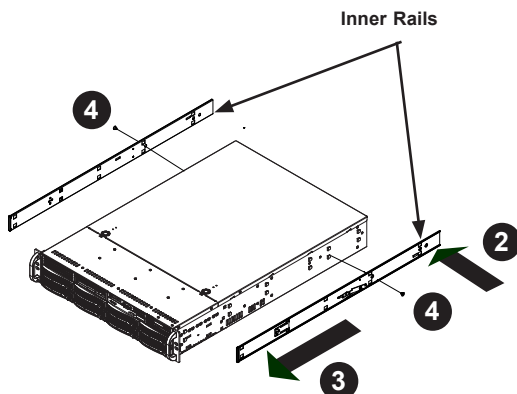


Figure 7-3. Installing the Inner Rails

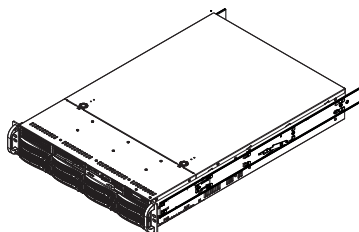


Figure 7-4. Inner Rails Installed on the Chassis  
(The chassis above are an example only. Actual chassis may differ slightly)

## Installing The Inner Rails on the Chassis

### *Installing the Inner Rails*

1. Confirm that the left and right inner rails have been correctly identified.
2. Place the inner rail firmly against the side of the chassis, aligning the hooks 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 until the rail clicks into the locked position, which secures the inner rail to the chassis.
4. Secure the inner rail to the chassis with the screws provided.
5. Repeat steps 1 through 4 above for the other inner rail.



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

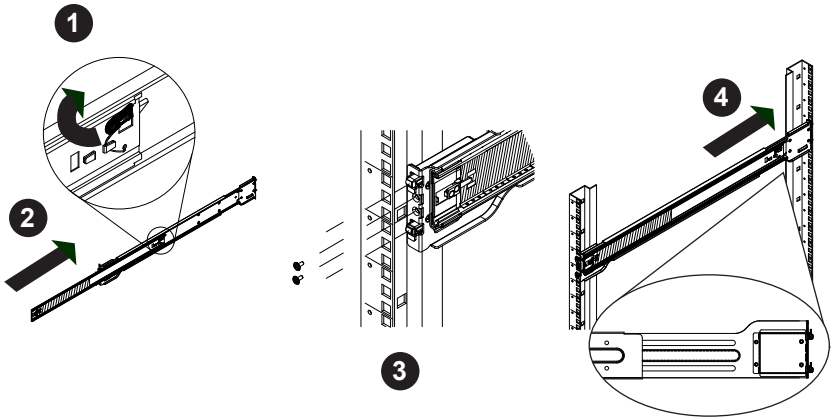
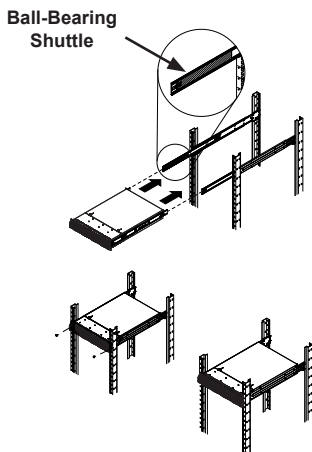


Figure 7-5. Extending and Releasing the Outer Rails

## Installing the Outer Rails on the Rack

### *Installing the Outer Rails*

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 of the front of the outer rail onto the slots on the front of the rack. If necessary, use screws to secure the outer rails to the rack, as illustrated above.
4. Pull out the rear of the outer rail, adjusting the length until it fits within the posts of the rack.
5. Hang the hooks of the rear portion of the outer rail onto the slots on the rear of the rack. If necessary, use screws to secure the rear of the outer rail to the rear of the rack.
6. Repeat steps 1-5 for the remaining outer rail.



**Figure 7-6. Installing into a Rack**

Note: figures are for illustrative purposes only. Always install servers into racks from the bottom up.

## Standard Chassis Installation

### *Installing the Chassis into a Rack*

1. Confirm that the inner rails are properly installed on the chassis.
2. Confirm that the outer rails are correctly installed on the rack.
3. Pull the middle rail out from the front of the outer rail and make sure that the ball-bearing shuttle is at the front locking position of the middle rail.
4. Align the chassis inner rails with the front of the middle rails.
5. Slide the inner rails on the chassis into the middle rails, keeping the pressure even on both sides, until the locking tab of the inner rail clicks into the front of the middle rail, locking the chassis into the fully extended position.
6. Depress the locking tabs of both sides at the same time and push the chassis all the way into the rear of the rack.
7. If necessary for security purposes, use screws to secure the chassis handles to the front of 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.

## **Optional Quick Installation Method**

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

### ***Installing the Chassis into a Rack***

1. Install the whole rail assembly onto the rack as described on page 7-7.
2. Release the inner rail without retracting the middle rail.
3. Install the inner rails on the chassis as previously described on page 7-6.
4. Install the chassis onto the middle rail as described in the previous section.

## Notes

## Appendix A

### SC836 Chassis Cables

#### A-1 Overview

This appendix lists supported cables for your chassis system. It only includes the most commonly used components and configurations. For more compatible cables, refer to the manufacturer of the motherboard you are using and our web site at: [www.supermicro.com](http://www.supermicro.com).

#### A-2 Cables Included with SC836 Chassis (SAS/SATA)

SC836TQ-800			
Part #	Type	Length	Description
CBL-0087	Ribbon, Round	20"	16-pin to 16-pin ribbon cable for control panel
CBL-0179L	Cable	70 mm	SATA cable
-	Cable	6'	Regional power cord
CBL-0180L-01	SATA	Various	Set of four SATA cables, lengths vary to minimize airflow interference.
CBL-0139L	Wire	45 cm	IDE 80-wire cable for DVD-ROM

SC836E-800			
Part #	Type	Length	Description
CBL-0087	Ribbon, Round	20"	16-pin to 16 pin ribbon cable for control panel
CBL-0179L	Cable	70 mm	SATA cable
-	Cable	6'	Regional power cord
CBL-0139L	Wire	45 cm	IDE 80-wire cable for DVD-ROM

<b>SC836A-1200</b>			
<b>Part #</b>	<b>Type</b>	<b>Length</b>	<b>Description</b>
CBL-0087	Ribbon, Round	20"	16-pin to 16-pin ribbon cable for control panel



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## A-4 Compatible Cables

This section lists cables included with the SC836 chassis packages.

### Alternate SAS Cables

Some compatible motherboards have different connectors. If your motherboard has only one SAS connector that the SAS cables must share, use one of the following cables. These cables must be purchased separately.

**Cable Name:** SAS Cable **Quantity:** 1

**Part #:** CBL-0175L

**Alt. Name:** "Big Four"

**Description:** This cable has one SFF-8484 (32-pin) connector on one end and four SAS connectors (7 pins each) at the other. This cable connects from the host (motherboard or other controller) to the backplane SAS hard drive port.

**Cable Name:** SAS Cable **Quantity:** 1

**Part #:** CBL-0116

**Alt. Name:** iPass or "Small Four"

**Description:** This cable has one iPass (SFF-8087/Mini-SAS) connector (36-pin) at one end and four SAS connectors on the opposite end. This cable connects from the host (motherboard or other controller) to the backplane SAS hard drive port.

### Cascading/JBOD SAS Cables

Use the following cables when setting up a cascading or JBOD system.



**Cable Name:** SAS Cable **Quantity:** varies by setup

**Part #:** CBL-0167L

**Ports:** Single

**Placement:** Internal cable

**Description:** Internal cable. Connects the backplane to the host bus adapter or external port. Used in single port environments.



**Cable Name:** SAS Cable

**Quantity:** varies by setup

**Part #:** CBL-0168L

**Placement:** Internal cable

**Ports:** Dual

**Description:** Internal cascading cable. Connects the backplane to the host bus adapter or external port. Used in dual port environments.



**Cable Name:** SAS Cable

**Quantity:** varies by setup

**Part #:** CBL-0166L

**Placement:** External cable

**Ports:** Single or Dual

**Description:** External cascading cable. Connects ports between servers. With most connectors, use one cable for single port connections and two cables for dual port connections.

## Extending Power Cables

Although Supermicro chassis are designed with to be efficient and cost-effective, some compatible motherboards have power connectors located in different areas.

To use these motherboards you may have to extend the power cables to the motherboards. To do this, use the following chart as a guide.

<b>Power Cable Extenders</b>		
<b>Number of Pins</b>	<b>Cable Part #</b>	<b>Length</b>
24-pin	CBL-0042	7.9" (20 cm)
20-pin	CBL-0059	7.9" (20 cm)
8-pin	CBL-0062	7.9" (20 cm)
4-pin	CBL-0060	7.9" (20 cm)

## Front Panel to the Motherboard

The SC836 chassis includes a cable to connect the chassis front panel to the motherboard. If your motherboard uses a different connector, use the following list to find a compatible cable.

<b>Front Panel to Motherboard Cable (Ribbon Cable)</b>		
<b>Number of Pins (Front Panel)</b>	<b>Number of Pins (Motherboard)</b>	<b>Cable Part #</b>
16-pin	16-pin	CBL- 049
16-pin	20-pin	CBL-0048
20-pin	20-pin	CBL-0047
16-pin	varies	CBL-0068

## Notes

## Appendix B

### SC836 Power Supply Specifications

This appendix lists power supply specifications for your chassis system.

<b>1280W (Redundant)</b>	
<b>MFR Part #</b>	PWS-1K28P-SQ
<b>AC Input</b>	1000W Output @ 100-140V, 12-8A, 50-60Hz 1280W Output @ 180-240V, 8-6A, 50-60Hz
<b>DC Output</b>	1000W: +12V/83A; +5Vsb/4A 1280W: +12V/106.7A, +5Vsb/4A

<b>1200W (Redundant)</b>	
<b>MFR Part #</b>	
<b>AC Input</b>	100 - 140V, 50 - 60Hz, 8 - 11.5 Amp 180 - 240V, 50 - 60Hz, 5.5 - 8 Amp
<b>DC Output +12V</b>	1000W, 83 Amp @ 100-140V 1200W, 100 Amp @ 180-240V 5Vsb: 4A
<b>DC Output with PDB</b>	+5V: 50 Amp +3.3V: 30 Amp -12V: 0.6 Amp

<b>800W (Redundant)</b>	
<b>MFR Part #</b>	PWS-801-1R
<b>Rated AC Voltage</b>	100 - 240V 50 - 60Hz 10A - 4 Amp
<b>+5V standby</b>	4 Amp
<b>+12V</b>	66 Amp
<b>+5V</b>	25 Amp
<b>+3.3V</b>	12 Amp
<b>-12V</b>	0.5 Amp

<b>710W (Redundant)</b>	
<b>MFR Part #</b>	PWS-711-1R
<b>Rated DC Input Voltage</b>	Voltage Range: -36 to -75V (24A-11A) Nominal Voltage: -48V
<b>+5V standby</b>	4 Amp
<b>+12V</b>	58 Amp
<b>+5V</b>	24 Amp
<b>+3.3V</b>	21 Amp
<b>-12V</b>	0.6 Amp

<b>500W (Redundant)</b>	
<b>MFR Part #</b>	PWS-501P-1R
<b>AC Input</b>	100-240 V, 50-60 Hz, 6.1-2.6 Amp
<b>DC Output</b>	4 Amp @ +5V standby 41.7 Amp @ +12V
<b>+5V</b>	30 Amp
<b>+3.3V</b>	24 Amp
<b>-12V</b>	0.6 Amp

## Appendix C

### BPN-SAS2-836EL Backplane Specifications

To avoid personal injury and property damage, carefully follow all the safety steps listed below when accessing your system or handling the components.

#### C-1 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.

#### C-2 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-3 An Important Note to Users**

All images and layouts shown in this user's guide are based upon the latest PCB revision available at the time of publishing. The card you have received may or may not look exactly the same as the graphics shown in this manual.

### **C-4 Introduction to the BPN-SAS2-836EL Backplane**

The BPN-SAS2-836EL backplane has been designed to utilize the most up-to-date technology available, providing your system with reliable, high-quality performance.

This manual reflects BPN-SAS2-836EL1 and BPN-SAS2-836EL2 Revision 1.03, the most current release available at the time of publication. Always refer to the Supermicro web site at [www.supermicro.com](http://www.supermicro.com) for the latest updates, compatible parts and supported configurations.



## C-5 Front Connectors

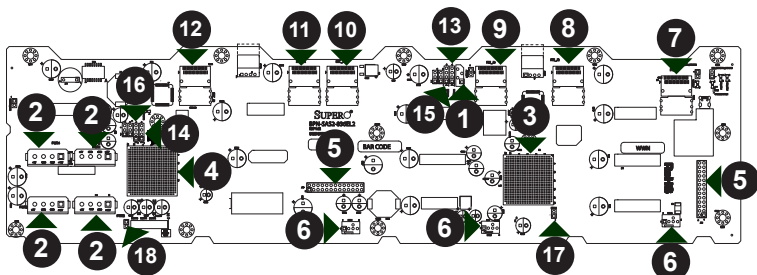


Figure C-1. Front Connectors

### Front Connectors

- |  |  |
|--|--|
| <p>1. Primary I<sup>2</sup>C connector: PRI_I2C1</p> <p>2. Power connectors: PWR1, PWR2, PWR3 and PWR4</p> <p>3. Primary expander chip</p> <p>4. Secondary expander chip (Not available on BPN-SAS2-836EL1 backplane)</p> <p>5. EPP connectors: J16 and J19</p> <p>6. Fan connectors: FAN1, FAN2 and FAN3</p> <p>7. Primary SAS connector: PRI_J1</p> <p>8. Primary SAS connector: PRI_J2</p> <p>9. Primary SAS connector: PRI_J3</p> <p>10. Secondary SAS connector: SEC_J1 (Not available on BPN-SAS2-836EL1 backplane)</p> <p>11. Secondary SAS connector SEC_J2 (Not available on BPN-SAS2-836EL1 backplane)</p> | <p>12. Secondary SAS connector SEC_J3 (Not available on BPN-SAS2-836EL1 backplane)</p> <p>13. Primary UART connector: UART_P1 (Manufacturer's use only)</p> <p>14. Secondary UART connector: UART_S1 (Manufacturer's use only, not present on BPN-SAS2-836EL1 backplane)</p> <p>15. Primary debug connector: EXPDBG1 (Manufacturer's use only)</p> <p>16. Secondary debug connector: EXPDBG2 (Manufacturer's use only, not present on BPN-SAS2-836EL1 backplane)</p> <p>17. Primary MDIO connector: MDIO1 (Manufacturer's use only)</p> <p>18. Secondary MDIO connector: MDIO2 (Manufacturer's use only, not present on BPN-SAS2-836EL1 backplane)</p> |
|--|--|

## C-6 Front Connector and Pin Definitions

### 1. Primary I<sup>2</sup>C Connector

The I<sup>2</sup>C connector is used to monitor the power supply status and to control the fans. See the table on the right for pin definitions.

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

### 2. Backplane Main Power Connectors

The 4-pin connectors, designated PWR1, PWR2, PWR3 and PWR4, provide power to the backplane. See the table on the right for pin definitions.

Backplane Main Power 4-Pin Connector	
Pin#	Definition
1	+12V
2 and 3	Ground
4	+5V

### 3. and 4. Primary and Secondary Expander Chips

These primary and secondary expander chips allow the backplane to support dual ports, cascading, and failover.

### 5. EPP Ports

The EPP ports are used for manufacturer diagnostic purposes only.

**6. Fan Connectors**

The 4-pin connectors, designated FAN1 through FAN3, provide power to the fans. See the table on the right for pin definitions.

Fan Connectors	
Pin#	Definition
1	Ground
2	+12V
3	Tachometer
4	NC

**7. - 12. SAS Connectors**

The primary and secondary sets of SAS connectors provide expander features including cascading and failover. From right to left the ports are Primary 1, Primary 2, Primary 3 and Secondary 1, Secondary 2 and Secondary 3. Note that secondary SAS ports are not present on the BPN-SAS2-836EL1 backplane.

**13. - 14. UART Connectors**

The primary and secondary UART connectors are for manufacturer's diagnostic purposes only. (The secondary UART connector is not present on the SAS2-836EL1 model backplane)

**15. - 16. Debug Connectors**

The primary and secondary EXPDBG1 and EXPDBG2 connectors are for manufacturer's diagnostic purposes only. (The secondary EXPDBG2 connector is not present on the BPN-SAS2-836EL1 model backplane)

**17. - 18. MDIO Connectors**

The primary and secondary MDIO1 and MDIO2 connectors are for Supermicro's internal use only. (The secondary MDIO2 connector is not present on the BPN-SAS2-836EL1 model backplane)

## C-7 Front Jumper Locations and Settings

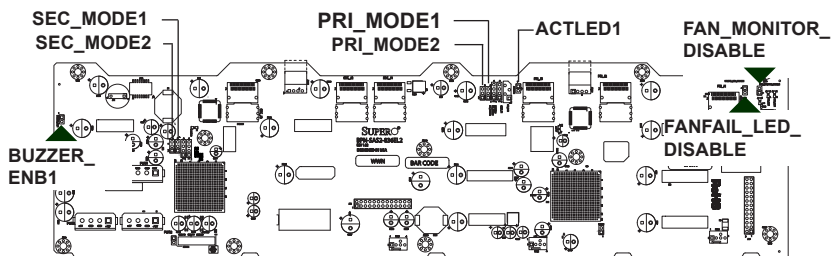


Figure C-2. Front Jumper Locations and Settings

General Jumper Settings		
Jumper	Jumper Settings	Note
PRI_MODE1 and 2	Pin 2-3	Factory setting Do not change
SEC_MODE1 and 2	Pin 2-3	Factory setting Do not change
BUZZER_ENB1	Open: Disabled (Default) Closed: Enabled	Buzzer settings*
ACTLED1	Open: Disabled (Default) Closed: Enabled	Activity LED testing (Supermicro internal use only)
FAN_LED_DISABLE	Open: Enabled Closed: Disabled (Default)	Turns off the FANFAIL1 LED
FAN_MONITOR_DISABLE	Open: Enabled (Default) Closed: Disabled	Turns off fan speed reporting

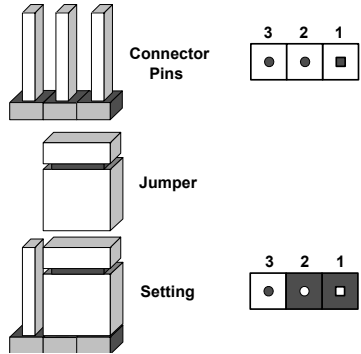
\*The buzzer sound indicates that a condition requiring immediate attention has occurred.

**The buzzer alarm is triggered by one of the following conditions:**

1. Hard drive failure.
2. Fan failure.
3. System temperature over 45° Celsius.

## Explanation of Jumpers

To modify the operation of the backplane, jumpers can be used to choose between optional settings. Jumpers create shorts between two pins to change the function of the connector. Pin 1 is identified with a square solder pad on the printed circuit board. Note: On two pin jumpers, "Closed" means the jumper is on and "Open" means the jumper is off the pins.



## C-8 Front LEDs

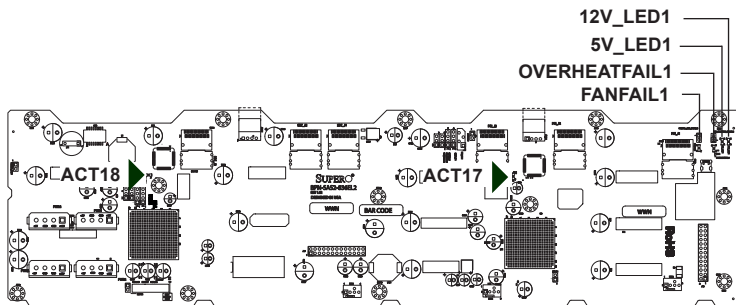


Figure C-3. Front LEDs

Front LEDs		
LED	Active State	Specification
FANFAIL1	On	Fan failure
5V_LED1	On	5V power on LED
12v_LED1	On	12V power on LED
ACT17	On	Primary Ethernet Tx activity LED
ACT18	On	Secondary Ethernet Tx activity LED
OVERHEATFAIL1	On	Overheat/Drive Failure LED Indicator (Red light: flashing, buzzer: on)

## C-9 Rear Connectors and LED Indicators

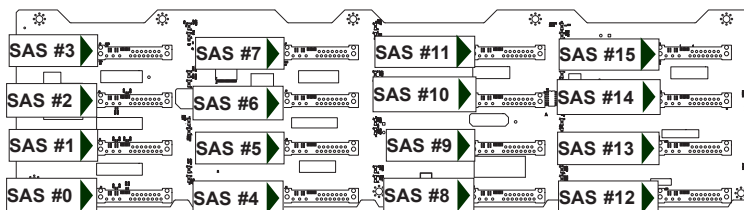


Figure C-4. Rear Connectors

Rear SAS/SATA Connectors	
Rear Connector	SAS/SATA Drive Number
SAS #0	SAS/SATA HDD #0
SAS #1	SAS/SATA HDD #1
SAS #2	SAS/SATA HDD #2
SAS #3	SAS/SATA HDD #3
SAS #4	SAS/SATA HDD #4
SAS #5	SAS/SATA HDD #5
SAS #6	SAS/SATA HDD #6
SAS #7	SAS/SATA HDD #7
SAS #8	SAS/SATA HDD #8
SAS #9	SAS/SATA HDD #9
SAS #10	SAS/SATA HDD #10
SAS #11	SAS/SATA HDD #11
SAS #12	SAS/SATA HDD #12
SAS #13	SAS/SATA HDD #13
SAS #14	SAS/SATA HDD #14
SAS #15	SAS/SATA HDD #15

<b>Rear LED Indicators</b>		
<b>Rear Connector</b>	<b>Hard Drive Activity LED</b>	<b>Failure LED</b>
SAS #0	ACT #0	FAIL #0
SAS #1	ACT #1	FAIL #1
SAS #2	ACT #2	FAIL #2
SAS #3	ACT #3	FAIL #3
SAS #4	ACT #4	FAIL #4
SAS #5	ACT #5	FAIL #5
SAS #6	ACT #6	FAIL #6
SAS #7	ACT #7	FAIL #7
SAS #8	ACT #8	FAIL #8
SAS #9	ACT #9	FAIL #9
SAS #10	ACT #10	FAIL #10
SAS #11	ACT #11	FAIL #11
SAS #12	ACT #12	FAIL #12
SAS #13	ACT #13	FAIL #13
SAS #14	ACT #14	FAIL #14
SAS #15	ACT #15	FAIL #15



## C-10 Single and Dual Port Expanders

### Single Ports

BPN-SAS2-836EL1 backplanes have a single-port expander that accesses all hard drives and supports cascading.

### Dual Ports

BPN-SAS2-836EL2 backplanes have dual-port expanders that access all the hard drives. These dual-port expanders support cascading, failover, and multipath functionality.

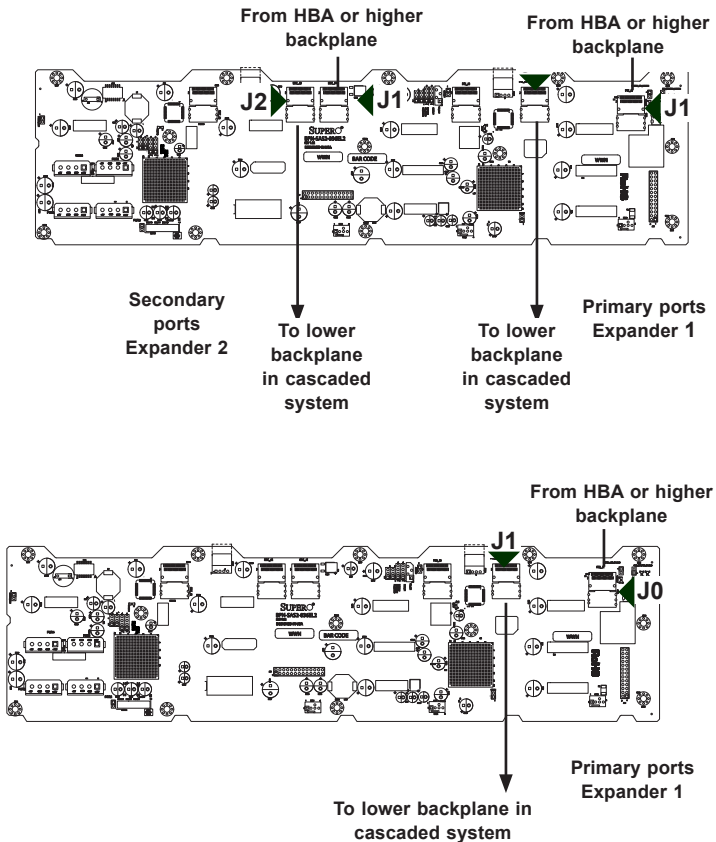


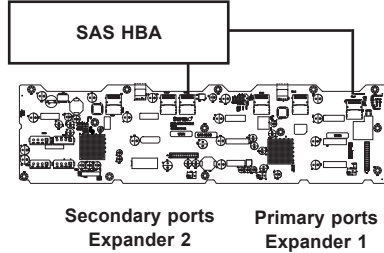
Figure C-5. Dual Port Cascading Configurations

## C-11 Failover

The BPN-SAS2-836EL2 backplane has two expanders which allow effective failover.

### Single Host Bus Adapter

In a single host bus configuration, the backplane connects to one Host Bus Adapter (HBA).



### Single Host Bus Adapter Failover

If the expander or data path in Port A fails, the system automatically switches to Port B.

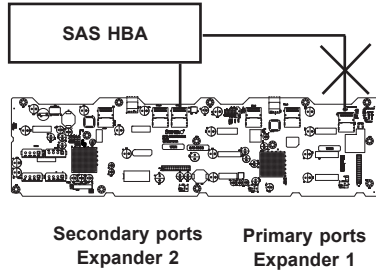


Figure C-6. Single and Dual HBAs

## C-12 Failover with RAID Cards and Multiple HBAs

The BPN-SAS2-836EL backplane may be configured for failover with multiple HBAs using either RAID controllers or HBAs to achieve failover protection.

**RAID Controllers:** If RAID controllers are used, the failover is accomplished through port failover on the same RAID card.

**HBAs:** If multiple HBAs are used to achieve failover protection and load balancing, **Linux MPIO software must be installed and correctly configured to perform the load balancing and failover tasks.**

### Dual Host Bus Adapter

In a dual host bus configuration, the backplane connects to two HBAs.

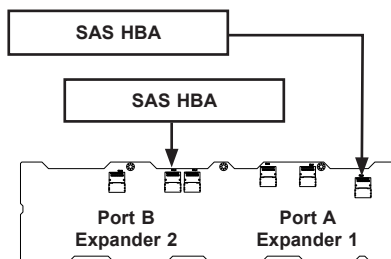


Figure C-7. Dual HBA

### Dual Host Bus Adapter Failover

If the expander or data path in Port A fails, the system automatically switches to Port B. This maintains a full connection to all drives.

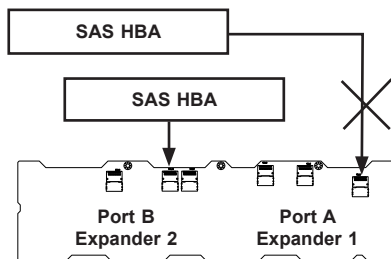


Figure C-7. Dual HBA Failover

**IMPORTANT:** For RAID controllers, redundancy is achieved through port failover. For multiple HBAs MPIO software is required to achieve failover protection.

## C-13 Chassis Power Card and Support Cables

### Chassis Power Card

In a cascaded configuration, the first chassis includes a motherboard and at least one host bus adapter. Other servers in this enclosed system must have a power card. This section describes the supported power card for the BPN-SAS2-836EL series backplanes.

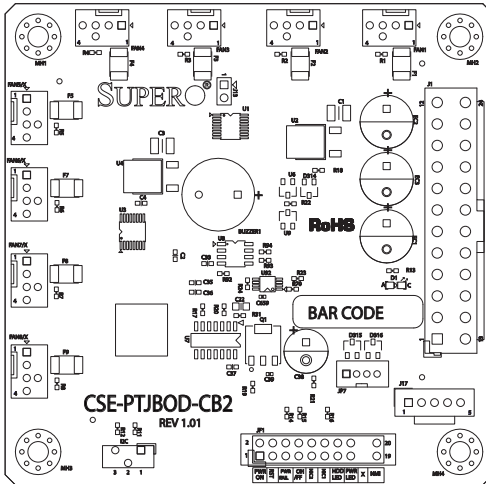


Figure C-8. Chassis Power Card (Sold Separately)

Power Card		
Part Number	Part Type	Where Used
CSE-PTJBOD-CB2	Power card	Allows the chassis to be used as a JBOD (Just a Bunch of Drives) system.

## Connecting an Internal Host Bus Adapter to the Backplane

The following section lists the most common cables used to connect the host bus adapter to the backplane.

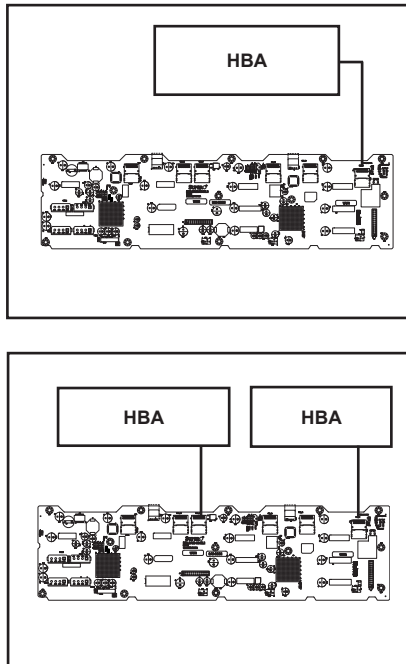


Figure C-9. Connecting an Internal HBA to the Backplane

**IMPORTANT:** See Section 3-3 of this manual, *Failover with RAID Cards and Multiple HBAs* for important information on supported configurations.

### Supported Internal HBA Cables

Use the following cables to create connections between the internal HBA and SAS2-836EL backplane. The cables required depend upon the HBA connector.

**Cable Name:** iPass to 4-lane

**Part #:** CBL-0117L

**Length:** 46 cm (18 inches)

**Description:** This cable has one SFF-8484 (32-pin) connector on one end and one iPass (SFF-8087/Mini-SAS) connector (36-pin) at the other. This cable connects from the HBA to the BPN-SAS2-836EL backplane.

**Cable Name:** iPass (Mini-SAS) to iPass (Mini-SAS)

**Part #:** CBL-0108L-02    **Length:** 39 cm (15 inches)

**Part #:** CBL-0109L-02    **Length:** 22 cm (9 inches)

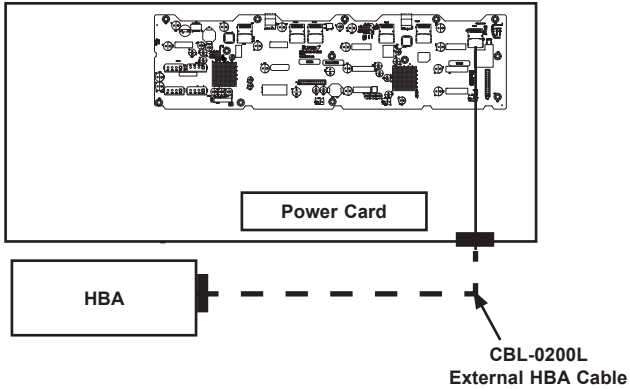
**Part #:** CBL-0110L-02    **Length:** 18 cm (7 inches)

**Description:** This cable has an iPass (SFF-8087/Mini-SAS) connector (36-pin) at each end. It connects from the HBA to the SAS2-836EL backplane.

## Connecting an External Host Bus Adapter to the Backplane

This backplane supports external host bus adapters. In this configuration, the HBA and the backplane are in different physical chassis. This allows a JBOD configuration system to connect to another system that has an HBA.

### Single External Host Bus Adapter



### Dual External Host Bus Adapter

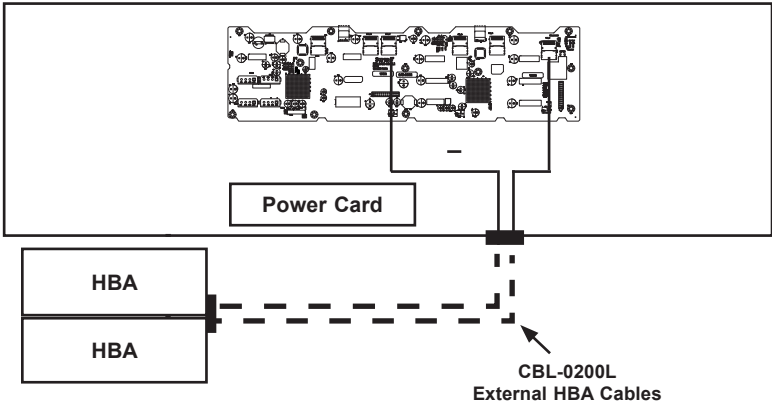


Figure C-10. Connecting Single and Dual HBAs to the Backplane

**IMPORTANT:** See Section C-12 of this manual, *Failover with RAID Cards and Multiple HBAs* for important information on supported configurations.

## Supported External HBA to Backplane Cable

Use the following cable if your external HBA has an InfiniBand connector.



**Figure C-11. External Cable (CBL-0166L)**

**Cable Name:** SAS EL2/EL1 Cascading Cable (External), 68 cm

**Part #:** CBL-0166L (SFF-8088 1x to SFF-8088 x1)

**Ports:** Single or Dual

**Placement:** External cable

**Description:** External cascading cable. Connects ports between servers. With most connectors, use one cable for single port connections and two cables for dual port connections.



## Connecting Multiple Backplanes in a Single Channel Environment

This section describes the cables used when cascading from a single HBA. These connections use CBL-0167L internal cables and CBL-0166L external cables.

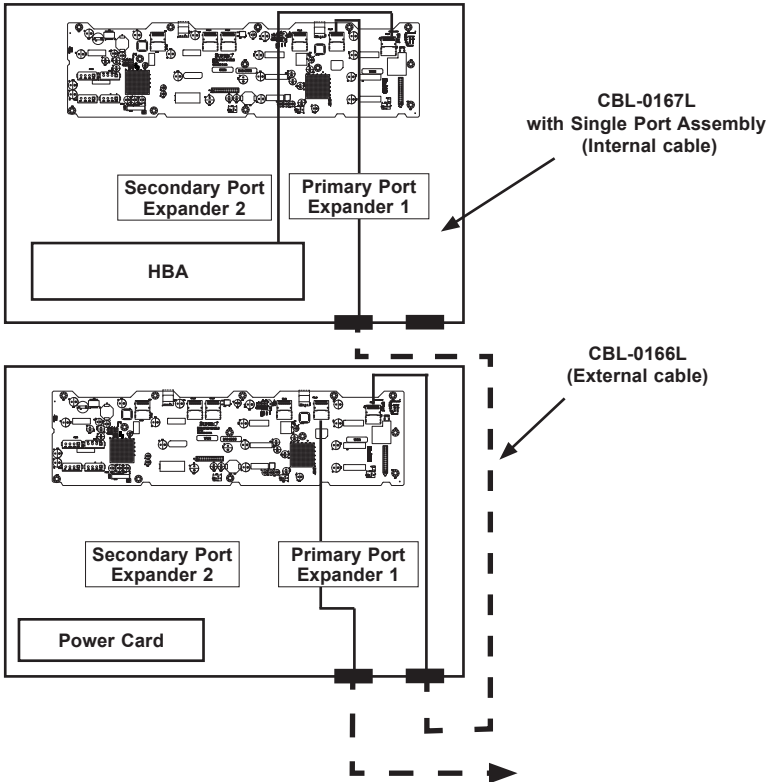


Figure C-12. Single HBA Configuration

## Single HBA Configuration Cables

Single Port Cable  
Assembly

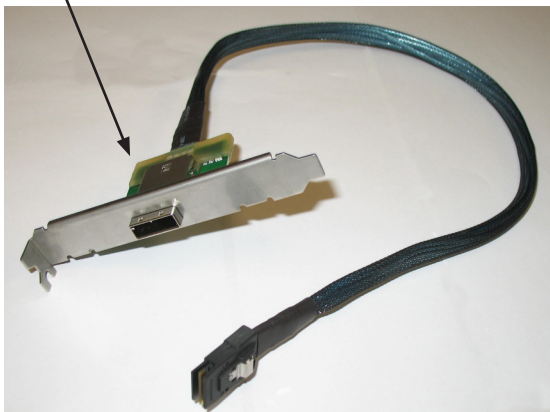


Figure C-13. Single Port Internal Cable (CBL-0167L)

**Cable Name:** SAS EL2/EL1 Backplane Cable (Internal) with 2-port Cascading Cable, 68 cm

**Part #:** CBL-0167L (SFF-8087 to SFF-8088 x1)

**Ports:** Single

**Placement:** Internal cable

**Description:** Internal cable. Connects the backplane to the HBA or external port. Used in single port environments.



Figure C-14. External Cable (CBL-0166L)

**Cable Name:** SAS EL2/EL1 Cascading Cable (External), 68 cm

**Part #:** CBL-0166L (SFF-8088 1x to SFF-8088 x1)

**Ports:** Single or Dual

**Placement:** External cable

**Description:** External cascading cable. Connects ports between servers. With most connectors, use one cable for single port connections and two cables for dual port connections.

## Connecting Multiple Backplanes in a Dual Channel Environment

This section describes the cables used when cascading from dual HBAs. These connections use CBL-0168L internal cables and CBL-0166L external cables.

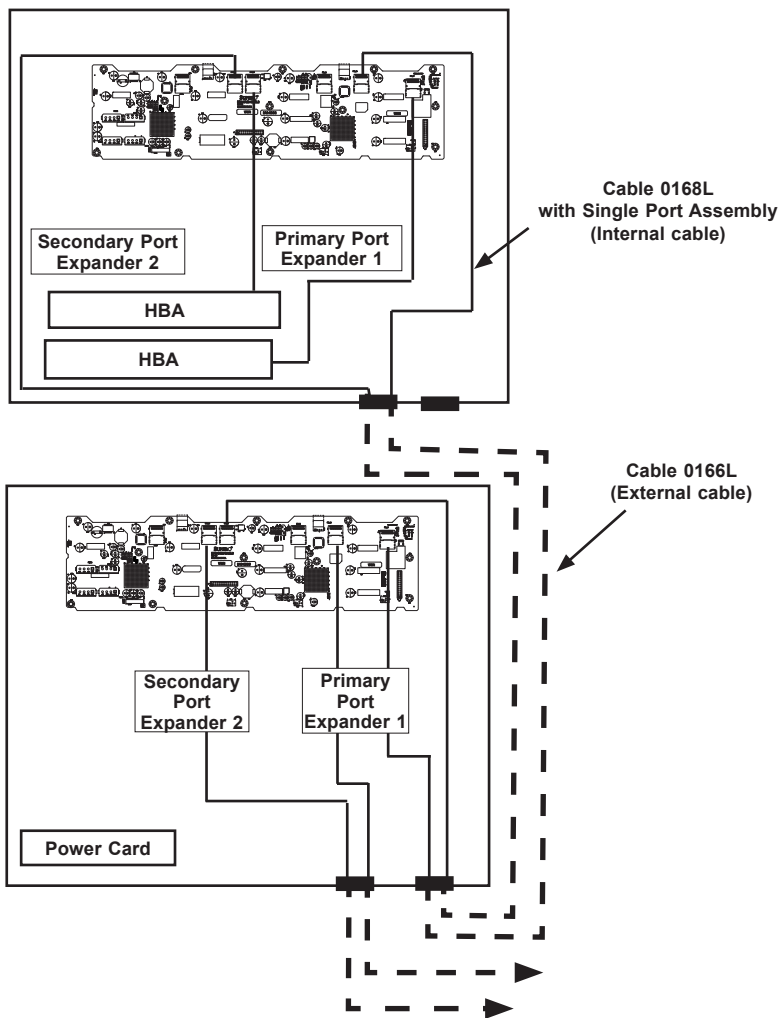


Figure C-15. Multiple Backplanes in a Dual Channel Environment

**IMPORTANT:** See Section C-12 of this manual, *Failover with RAID Cards and Multiple HBAs* for important information on supported configurations.

## Dual HBA Configuration Cables

Dual Port Cable  
Assembly



**Figure C-16. Dual Port Internal Cable (CBL-0168L)**

**Cable Name:** SAS Dual-port Cable Assembly, 68/76 cm

**Part #:** CBL-0168L

**Placement:** Internal cable

**Ports:** Dual

**Description:** Internal cascading cable. Connects the backplane to the HBA or external port. Used in dual port environments.



**Figure C-17. External Cable (CBL-0166L)**

**Cable Name:** SAS EL2/EL1 Cascading Cable (External), 68 cm

**Part #:** CBL-0166L

**Placement:** External cable

**Ports:** Single or Dual

**Description:** External cascading cable. Connects ports between servers. Use one cable for single port connections and two cables for dual port connections.

## C-14 Supported Cascading Configurations

Cascading allows the system to access data at a faster rate by allowing several backplanes to share resources to reduce latency time.

The first backplane in a cascaded system requires a motherboard and an HBA. Other servers require a power control card but with no motherboard and no HBA.

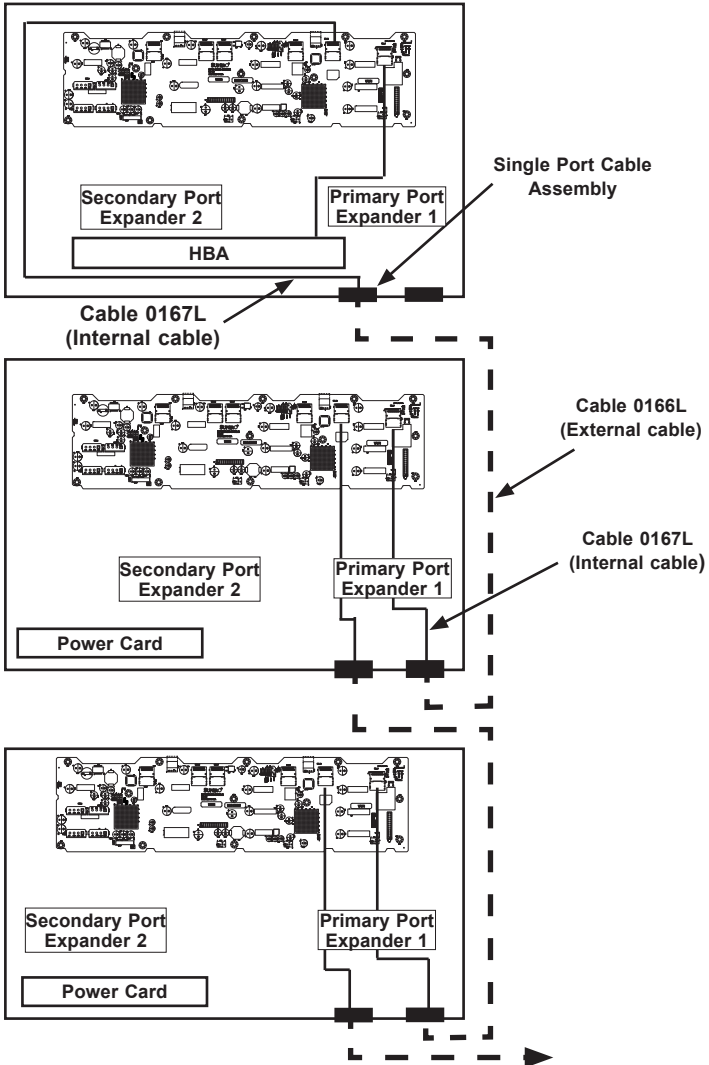


Figure C-18. Simple Cascaded Configurations

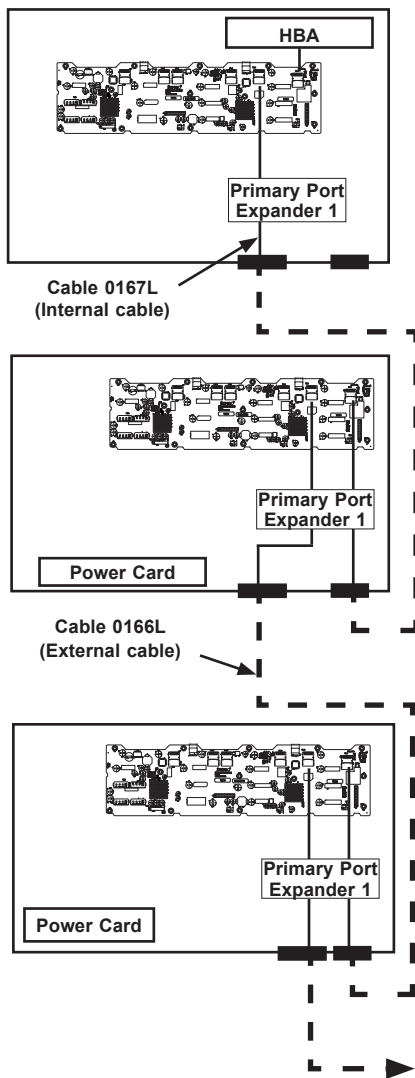


Figure C-19. Cascaded Configuration with Horizontal Branching

## Dual SAS HBA and Cascaded Configuration

**IMPORTANT:** See Section 3-3 of this manual, *Failover with RAID Cards and Multiple HBAs* for important information on supported configurations.

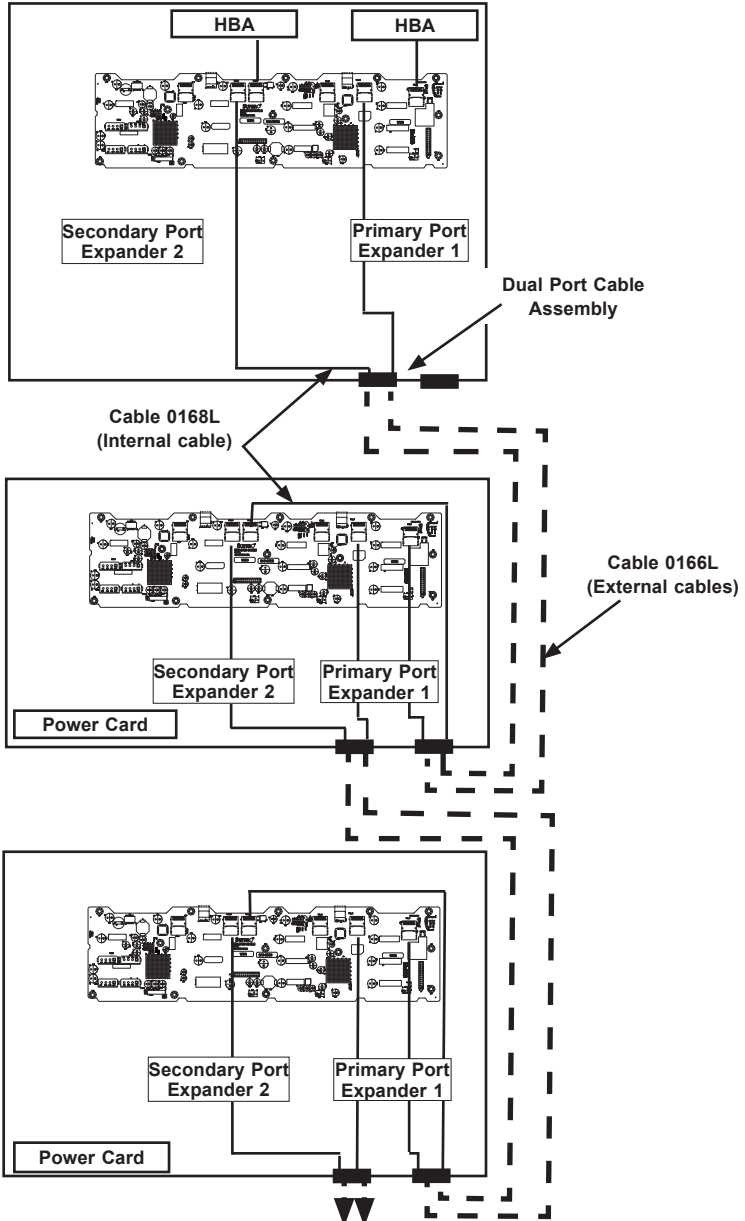


Figure C-20. Dual SAS HBA with Cascaded Configuration

## Dual SAS HBA Cascaded Configuration with Branching

**IMPORTANT:** See Section 3-3 of this manual, *Failover with RAID Cards and Multiple HBAs* for important information on supported configurations.

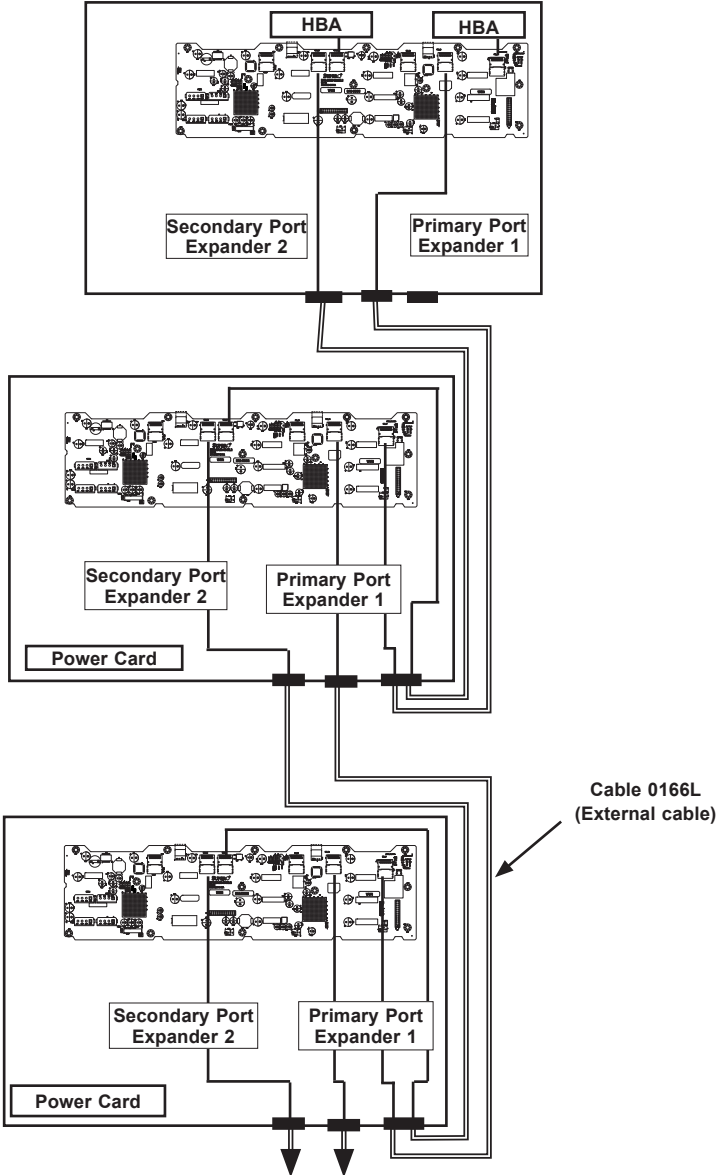


Figure C-21. Dual SAS HBA with Cascaded Configuration and Branching



## Appendix D

### BPN-SAS-836TQ Backplane Specifications

To avoid personal injury and property damage, carefully follow all the safety steps listed below when accessing your system or handling the components.

#### D-1 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 card and peripherals back into their antistatic bags when not in use.

#### D-2 General Safety Guidelines

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

## **D-3 An Important Note to Users**

All images and layouts shown in this user's guide are based upon the latest PCB Revision available at the time of publishing. The card you have received may or may not look exactly the same as the graphics shown in this manual.

## **D-4 Introduction to the BPN-SAS-836TQ Backplane**

- The BPN-SAS-836TQ backplane has been designed to utilize the most up-to-date technology available, providing your system with reliable, high-quality performance.
- This manual reflects BPN-SAS-836TQ Revision 3.2, the most current release available at the time of publication. Always refer to the Supermicro web site at [www.supermicro.com](http://www.supermicro.com) for the latest updates, compatible parts and supported configurations.

## D-5 Front Connectors

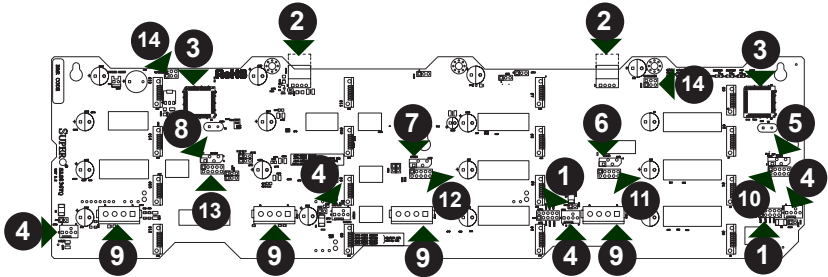


Figure D-1. Front Components

### Front Connectors

- |  |                       |
|--|-----------------------|
| #1. ACT_IN#0-15: JP26 and JP47                           | #15. SAS Port #0 J5   |
| #2. DVD-ROM Drive Power: JP105 and JP106                 | #16. SAS Port #1 J6   |
| #3. Chip: MG9072   | #17. SAS Port #2 J7   |
| #4. Fan Connectors: JP54, JP56, JP58 and JP60            | #18. SAS Port #3 J8   |
| #5. I <sup>2</sup> C Connector#1 JP37                    | #19. SAS Port #4 J10  |
| #6. I <sup>2</sup> C Connector#2 JP95                    | #20. SAS Port #5 J12  |
| #7. I <sup>2</sup> C Connector#3 JP52                    | #21. SAS Port #6 J14  |
| #8. I <sup>2</sup> C Connector#4 JP96                    | #22. SAS Port #7 J16  |
| #9. Power Connectors (4-pin): JP10, JP13, JP46, and JP48 | #23. SAS Port #8 J22  |
| #10. SideBand Connector#1 JP66                           | #24. SAS Port #9 J23  |
| #11. SideBand Connector#2 JP68                           | #25. SAS Port #10 J24 |
| #12. SideBand Connector#3 JP75                           | #26. SAS Port #11 J25 |
| #13. SideBand Connector#4 JP77                           | #27. SAS Port #12 J26 |
| #14. Upgrade Connectors: JP69 and JP78                   | #28. SAS Port #13 J29 |
|  | #29. SAS Port #14 J30 |
|  | #30. SAS Port #15 J32 |

### SAS Ports

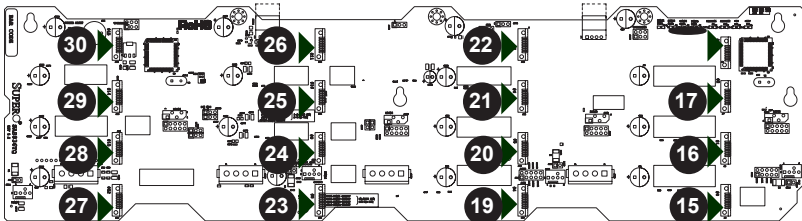


Figure D-2. SAS Ports

## D-6 Front Connector and Pin Definitions

### #1. Activity LED Header

The activity LED headers, designated JP26 and JP47, are used to indicate the activity status of each SAS drive. These activity LED headers are used by the host controller for the SATA drives that previously had no activity status output. If using a SAS drive, and for most SATA drives, these activity headers are not required. The Activity LED Header is located on the front panel. For the Activity LED Header to work properly, connect using a 10-pin LED cable.

SAS Activity LED Header Pin Definitions			
Pin #	Definition	Pin #	Definition
1	ACT IN#0	6	ACT IN#4
2	ACT IN#1	7	ACT IN#5
3	ACT IN#2	8	ACT IN#6
4	ACT IN#3	9	ACT IN#7
5	Ground	10	Empty

SAS Activity LED Header Pin Definitions			
Pin #	Definition	Pin #	Definition
1	ACT IN#8	6	ACT IN#12
2	ACT IN#9	7	ACT IN#13
3	ACT IN#10	8	ACT IN#14
4	ACT IN#11	9	ACT IN#15
5	Ground	10	Empty

### #2. CD-ROM 4-Pin Connectors

The 4-pin connectors, designated JP105 and JP106, provide power to the CD-ROM drives. See the table on the right for pin definitions.

CD-ROM/ FDD Power 4-Pin Connector	
Pin#	Definition
1	+5V
2 and 3	Ground
4	+12V

### #3. MG9072 Chip

The MG9072 is an enclosure management chip that supports the SES-2 controller and SES-2 protocols.

#### #4. Fan Connectors

The 4-pin connectors, designated JP54, JP56, JP58 and JP60, provide power to the fans. See the table on the right for pin definitions. These 4-pin connectors are compatible with 3-pin and 4-pin fans.

Fan Connectors	
Pin#	Definition
1	Ground
2	+12V
3	Tachometer
4	No connection

#### #5., #6., #7., #8. I<sup>2</sup>C Y-Cable Connectors

The I<sup>2</sup>C Y-cable connectors, designated JP37, JP52, JP95, and JP96, are for enclosure management of the I<sup>2</sup>C mode connection. These connectors are used only if the I<sup>2</sup>C is not embedded into the sideband connectors. See the table on the right for pin definitions.

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

#### #9. Backplane Main Power Connectors

The 4-pin connectors, designated JP10, JP13, JP46, and JP48, provide power to the backplane. See the table on the right for pin definitions. All four of these connectors must be used at the same time.

Backplane Main Power 4-Pin Connector	
Pin#	Definition
1	+12V
2 and 3	Ground
4	+5V

#### #10., #11., #12., #13. Sideband Headers

The sideband headers are designated JP66, JP68, JP75 and JP77. are for enclosure management of the SGPIO mode connection. See the table to the right for pin definitions.

Sideband Headers			
Pin #	Definition	Pin #	Definition
2	<b>SGPIO:</b> SDIN <b>I<sup>2</sup>C:</b> Backplane Addressing (SB5)	1	Controller ID (SB6)
4	<b>SGPIO:</b> SDOUT <b>I<sup>2</sup>C:</b> Reset (SB4)	3	GND (SB2)
6	GND (SB3)	5	<b>SGPIO:</b> SLOAD <b>I<sup>2</sup>C:</b> SDA (SB1)
8	Backplane ID (SB7)	7	<b>SGPIO:</b> SCLOCK <b>I<sup>2</sup>C:</b> SCL (SB0)
10	No Connection	9	No Connection

#### **#14. Upgrade Connectors**

The upgrade connectors are designated JP69 (for U19) and JP78 (for U40). Upgrade connectors are for manufacturing use only.

#### **#15-#30. SAS Ports**

The SAS ports are used to connect the SAS drive cables. The 16 ports are designated #0 - #15. Each port is also compatible with SATA drives.

## D-7 Front Jumper Locations and Pin Definitions

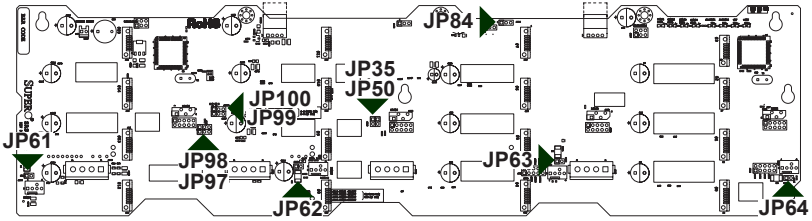
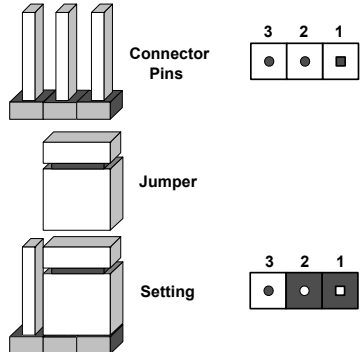


Figure D-2. Jumpers

### Explanation of Jumpers

To modify the operation of the backplane, jumpers can be used to choose between optional settings. Jumpers create shorts between two pins to change the function of the connector. Pin 1 is identified with a square solder pad on the printed circuit board.

**Note:** On two pin jumpers, "Closed" means the jumper is on and "Open" means the jumper is off the pins.



General Jumper Settings		
Jumper	Jumper Settings	Note
JP35	Open: Default Closed: Reset	9072 Chip Reset #1
JP50	Open: Default Closed: Reset	9072 Chip Reset #2

## Fan Jumper Settings

The BPN-SAS-836TQ backplane can use up to four fans. To utilize each fan, you must configure both jumpers as instructed below.

Fan Jumper Settings		
Jumper	Jumper Settings	Note
JP61	Closed: With fan (default) Open: No fan	Fan#1 enable/disable
JP54		Fan#1 connector
JP62	Closed: With fan (default) Open: No fan	Fan#2 enable/disable
JP56		Fan#2 connector
JP63	Closed: With fan (default) Open: No fan	Fan#3 enable/disable
JP58		Fan#3 connector
JP64	Closed: With fan (default) Open: No fan	Fan#4 enable/disable
JP60		Fan#4 onnector
JP97	1-2 With fan (default) 2-3 No fan	Fan #1 selection for MG907X Monitor
JP98	1-2 With fan (default) 2-3 No fan	Fan #2 selection for MG907X Monitor
JP99	1-2 With fan (default) 2-3 No fan	Fan #3 selection for MG907X Monitor
JP100	1-2 With fan (default) 2-3 No fan	Fan #4 Sselection for MG907X Monitor

## I<sup>2</sup>C and SGPIO Modes and Jumper Settings

This backplane can utilize I<sup>2</sup>C or SGPIO. SGPIO is the default mode and can be used without making changes to your jumpers. The following information details which jumpers must be configured to use SGPIO mode or restore your backplane to I<sup>2</sup>C mode.

SGPIO/I <sup>2</sup> C Settings		
Jumper	SGPIO Setting	I <sup>2</sup> C Setting
JP84	1-2 (default)	2-3



## SAS Port Connections in I<sup>2</sup>C and SGPIO Settings

Use the following chart when connecting this backplane. If you connect the SAS ports out of order, you will not be able to easily identify drives using the LED function.

SAS Port Connections in I <sup>2</sup> C and SGPIO Settings		
Port #	I <sup>2</sup> C	SGPIO
# 0 - 3	I <sup>2</sup> C #1	Sideband #1
# 4 - 7	I <sup>2</sup> C #2	Sideband #2
# 8 - 11	I <sup>2</sup> C #3	Sideband #3
# 12 - 15	I <sup>2</sup> C #4	Sideband #4

### Front LED Indicators

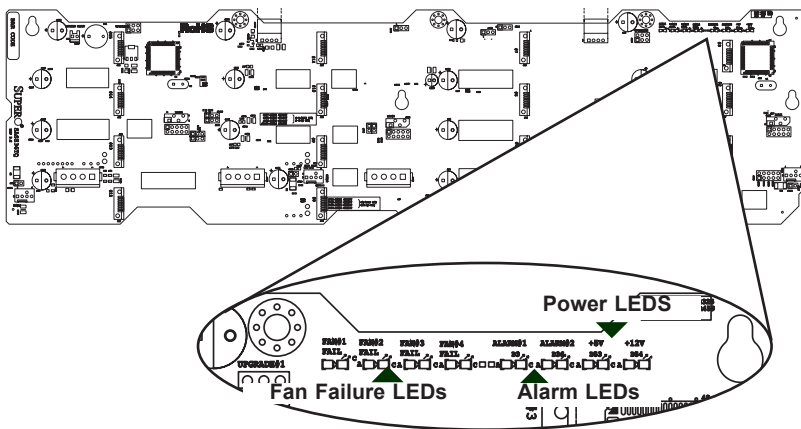
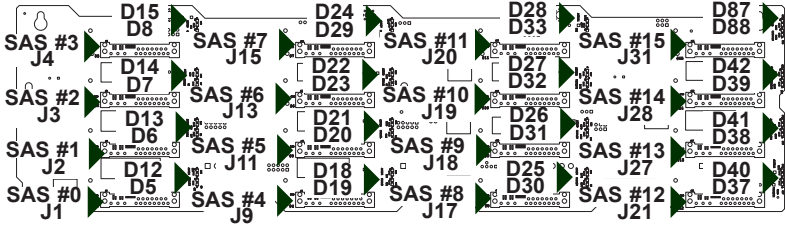


Figure D-3. Front LEDs

Front Pane LEDs		
LED	State	Specification
Fan #1 Fail	On	Failure in Fan #1
Fan #2 Fail	On	Failure in Fan #2
Fan #3 Fail	On	Failure in Fan #3
Fan #4 Fail	On	Failure in Fan #4
Alarm #1	On	Overheat/fan failure/drive failure in Channel 1
Alarm #2	On	Overheat/fan failure/drive failure in Channel 2
+5V	Off	Backplane power failure. Light is on during normal operation.
+12V	Off	Backplane power failure. Light is on during normal operation.

## D-8 Rear Connectors and LED Indicators



**Rear SAS/SATA Connectors**

Rear Connector	SAS Drive Number	Rear Connector	SAS Drive Number
SAS #0	SAS/SATA HDD #0	SAS #8	SAS/SATA HDD #8
SAS #1	SAS/SATA HDD #1	SAS #9	SAS/SATA HDD #9
SAS #2	SAS/SATA HDD #2	SAS #10	SAS/SATA HDD #10
SAS #3	SAS/SATA HDD #3	SAS #11	SAS/SATA HDD #11
SAS #4	SAS/SATA HDD #4	SAS #12	SAS/SATA HDD #12
SAS #5	SAS/SATA HDD #5	SAS #13	SAS/SATA HDD #13
SAS #6	SAS/SATA HDD #6	SAS #14	SAS/SATA HDD #14
SAS #7	SAS/SATA HDD #7	SAS #15	SAS/SATA HDD #15

**Rear LED Indicators**

Rear LED	Hard Drive Activity	Failure LED
SAS #0	D12	D5
SAS #1	D13	D6
SAS #2	D14	D7
SAS #3	D15	D8
SAS #4	D18	D19
SAS #5	D21	D20
SAS #6	D22	D23
SAS #7	D24	D29
SAS #8	D25	D30
SAS #9	D26	D31
SAS #10	D27	D32
SAS #11	D28	D33
SAS #12	D40	D37
SAS #13	D41	D38
SAS #14	D42	D39
SAS #15	D87	D88

## Notes

## Appendix E

### SAS-836A Backplane Specifications

To avoid personal injury and property damage, carefully follow all the safety steps listed below when accessing your system or handling the components.

#### E-1 ESD Safety Guidelines

*Electrostatic Discharge (ESD) can damage electronic components. To prevent damage to your system, it is important to handle the backplane 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 card and peripherals back into their antistatic bags when not in use.

#### E-2 General Safety Guidelines

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

## **E-3 An Important Note to Users**

All images and layouts shown in this user's guide are based upon the latest PCB revision available at the time of publishing. The card you have received may or may not look exactly the same as the graphics shown in this manual.

## **E-4 Introduction to the SAS-836A Backplane**

The BPN-SAS-836A backplane has been designed to utilize the most up-to-date technology available, providing your system with reliable, high-quality performance.

This manual reflects BPN-SAS-836A Revision 1.00, the most current release available at the time of publication. Always refer to the Supermicro web site at [www.supermicro.com](http://www.supermicro.com) for the latest updates, compatible parts and supported configurations.

## E-5 Front Connectors

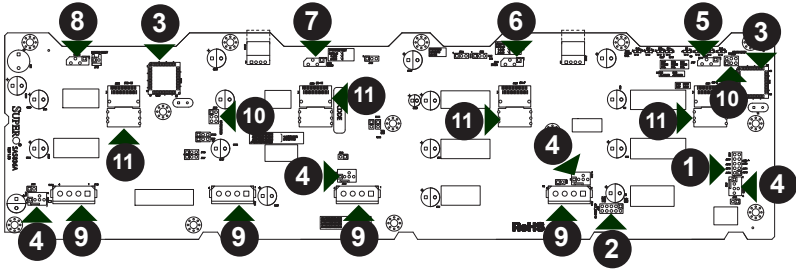


Figure E-1. Front Connectors

### Front Connectors

- |  |   |
|--|---|
| #1. Activity LED Header<br>ACT_IN#0-7: JP26      | #7. I <sup>2</sup> C Connector#3 JP52                       |
| #2. Activity LED Header<br>ACT_IN#8-15: JP47     | #8. I <sup>2</sup> C Connector#4 JP96                       |
| #3. Chip: MG9072                                 | #9. Power Connectors (4-pin): JP10,<br>JP13, JP46, and JP48 |
| #4. Fan Connectors: JP54, JP56,<br>JP58 and JP60 | #10. Upgrade Connectors: JP69 and<br>JP78                   |
| #5. I <sup>2</sup> C Connector#1 JP37            | #11. IPASS Connectors JSM1, JSM2,<br>JSM3 and JSM4          |
| #6. I <sup>2</sup> C Connector#2 JP95            |   |

## E-6 Front Connector and Pin Definitions

### #1 - #2. Activity LED Header

The activity LED headers, designated JP26 and JP47, are used to indicate the activity status of each SAS drive. These activity LED headers are used by the host controller for the SATA drives that previously had no activity status output. If using a SAS drive, and for most SATA drives, these activity headers are not required. The Activity LED Header is located on the front panel. For the Activity LED Header to work properly, connect using a 10-pin LED cable.

SAS Activity LED Header Pin Definitions			
Pin #	Definition	Pin #	Definition
1	ACT IN#0	6	ACT IN#4
2	ACT IN#1	7	ACT IN#5
3	ACT IN#2	8	ACT IN#6
4	ACT IN#3	9	ACT IN#7
5	Ground	10	Empty

SAS Activity LED Header Pin Definitions			
Pin #	Definition	Pin #	Definition
1	ACT IN#8	6	ACT IN#12
2	ACT IN#9	7	ACT IN#13
3	ACT IN#10	8	ACT IN#14
4	ACT IN#11	9	ACT IN#15
5	Ground	10	Empty

### #3. MG9072 Chips

The MG9072 chips are enclosure management chips that support the SES-2 controller and SES-2 protocols.

### #4. Fan Connectors

The 4-pin connectors, designated JP54, JP56, JP58 and JP60, provide power to the fans. See the table on the right for pin definitions. These 4-pin connectors are compatible with 3-pin and 4-pin fans.

Fan Connectors	
Pin#	Definition
1	Ground
2	+12V
3	Tachometer
4	No connection



**#5., #6., #7., #8. I<sup>2</sup>C Connectors**

The I<sup>2</sup>C connectors, designated JP37, JP52, JP95, and JP96, are for enclosure management of the I<sup>2</sup>C mode connection. See the table on the right for pin definitions.

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

**#9. Backplane Main Power Connectors**

The 4-pin connectors, designated JP10, JP13, JP46, and JP48, provide power to the backplane. See the table on the right for pin definitions. All four of these connectors must be used at the same time.

Backplane Main Power 4-Pin Connector	
Pin#	Definition
1	+12V
2 and 3	Ground
4	+5V

**#10. Upgrade Connectors**

The upgrade connectors are designated JP69 (for U19) and JP78 (for U40). Upgrade connectors are for manufacturing use only.

## E-7 Front Jumper Locations and Pin Definitions

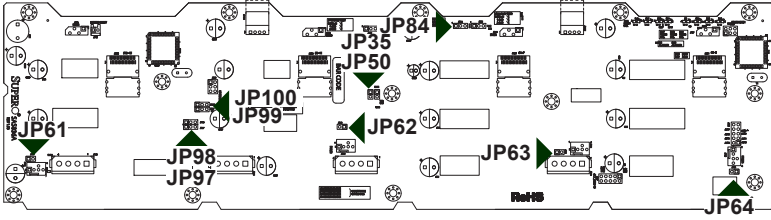
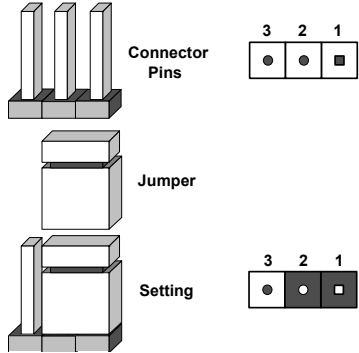


Figure E-2. Front Jumpers

### Explanation of Jumpers

To modify the operation of the backplane, jumpers can be used to choose between optional settings. Jumpers create shorts between two pins to change the function of the connector. Pin 1 is identified with a square solder pad on the printed circuit board.



Note: On two pin jumpers, "Closed" means the jumper is on and "Open" means the jumper is off the pins.

General Jumper Settings		
Jumper	Jumper Settings	Note
JP35	Open: Default Closed: Reset	MG9072 chip reset #1
JP50	Open: Default Closed: Reset	MG9072 chip reset #2

## Fan Jumper Settings

The BPN-SAS-836A backplane can use up to four fans. To utilize each fan, both jumpers must be configured as instructed below.

Fan Jumper Settings		
Jumper	Jumper Settings	Note
JP61	Closed: With fan (default) Open: No fan	Fan#1 enable/disable
JP54		Fan#1 connector
JP62	Closed: With fan (default) Open: No fan	Fan#2 enable/disable
JP56		Fan#2 connector
JP63	Closed: With fan (default) Open: No fan	Fan#3 enable/disable
JP58		Fan#3 connector
JP64	Closed: With fan (default) Open: No fan	Fan#4 enable/disable
JP60		Fan#4 connector
JP97	1-2 With fan (default) 2-3 No fan	Fan #1 selection for MG907X Monitor
JP99	1-2 With fan (default) 2-3 No fan	Fan #2 selection for MG907X Monitor
JP100	1-2 With fan (default) 2-3 No fan	Fan #3 selection for MG907X Monitor
JP100	1-2 With fan (default) 2-3 No fan	Fan #4 selection for MG907X Monitor

## I<sup>2</sup>C and SGPIO Modes and Jumper Settings

This backplane can utilize I<sup>2</sup>C or SGPIO. SGPIO is the default mode and can be used without making changes to your jumpers. The following information details which jumpers must be configured to use SGPIO mode or restore your backplane to I<sup>2</sup>C mode.

SGPIO/I <sup>2</sup> C Setting		
Jumper	SGPIO Jumper Setting	I <sup>2</sup> C Jumper Setting
JP84	1-2 (default)	2-3

### Front LED Indicators

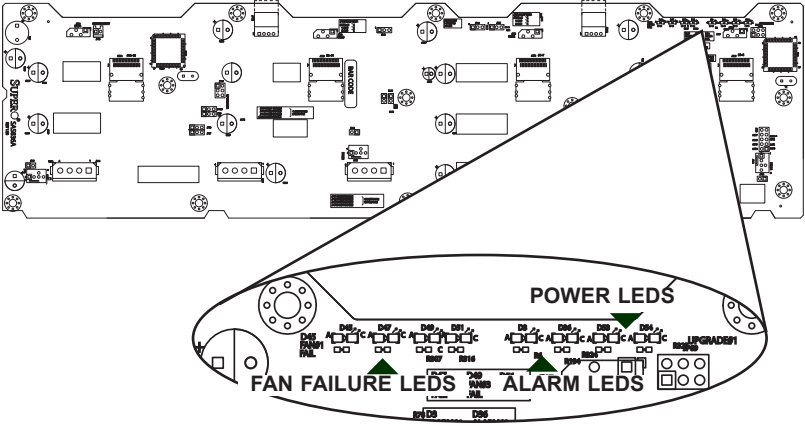


Figure E-3. Front LEDs

Front LEDs		
LED	State	Specification
Fan #1 Fail	On	Fan #1 failure
Fan #2 Fail	On	Fan #2 failure
Fan #3 Fail	On	Fan #3 failure
Fan #4 Fail	On	Fan #4 failure
Alarm #1	On	Overheat/fan failure/drive failure in Channel 1
Alarm #2	On	Overheat/fan failure/drive failure in Channel 2
+5V	Off	Backplane power failure. Light is on during normal operation.
+12V	Off	Backplane power failure. Light is on during normal operation.

## E-8 Rear Connectors and LED Indicators

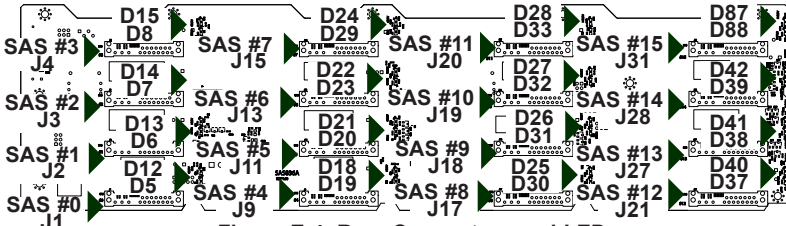


Figure E-4. Rear Connectors and LEDs

Rear SAS/SATA Connectors			
Rear Connector	SAS Drive Number	Rear Connector	SAS Drive Number
SAS #0	SAS/SATA HDD #0	SAS #8	SAS/SATA HDD #8
SAS #1	SAS/SATA HDD #1	SAS #9	SAS/SATA HDD #9
SAS #2	SAS/SATA HDD #2	SAS #10	SAS/SATA HDD #10
SAS #3	SAS/SATA HDD #3	SAS #11	SAS/SATA HDD #11
SAS #4	SAS/SATA HDD #4	SAS #12	SAS/SATA HDD #12
SAS #5	SAS/SATA HDD #5	SAS #13	SAS/SATA HDD #13
SAS #6	SAS/SATA HDD #6	SAS #14	SAS/SATA HDD #14
SAS #7	SAS/SATA HDD #7	SAS #15	SAS/SATA HDD #15
Rear LED Indicators			
Rear LED	Hard Drive Activity	Failure LED	
SAS #0	D12	D5	
SAS #1	D13	D6	
SAS #2	D14	D7	
SAS #3	D15	D8	
SAS #4	D18	D19	
SAS #5	D21	D20	
SAS #6	D22	D23	
SAS #7	D24	D29	
SAS #8	D25	D30	
SAS #9	D26	D31	
SAS #10	D27	D32	
SAS #11	D28	D33	
SAS #12	D40	D37	
SAS #13	D41	D38	
SAS #14	D42	D39	
SAS #15	D87	D88	

## Notes

## Appendix F

### PCC-JBPWR2 and CSE-PTJBOD-CB2

#### Power Control Card Specifications

To avoid personal injury and property damage, carefully follow all the safety steps listed below when accessing your system or handling the components.

#### F-1 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 card 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 card and peripherals back into their antistatic bags when not in use.

## **F-2 General Safety Guidelines**

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

## **F-3 An Important Note to Users**

- All images and layouts shown in this user's guide are based upon the latest PCB Revision available at the time of publishing. The card you have received may or may not look exactly the same as the graphics shown in this manual.



## F-4 Front Connectors

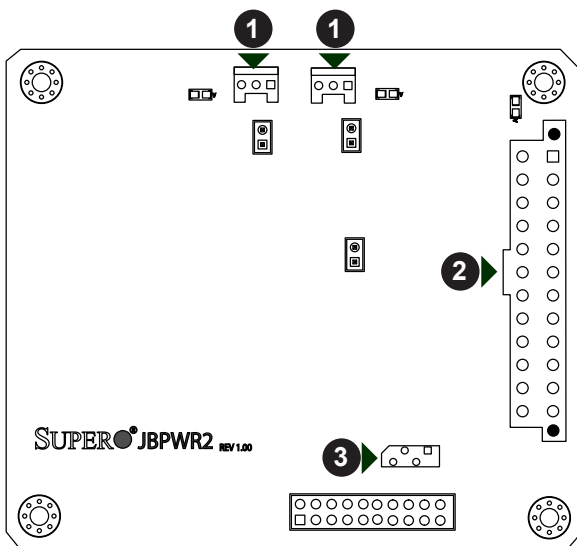


Figure F-1. Front Connectors

### Front Connectors

- #1. Fan1 and Fan2 connectors
- #2. Power connector
- #3. Power fault connector (MCU power on switch)

## F-5 Front Connector and Pin Definitions

### #1. Fan Connectors

The 3-pin connectors, designated Fan1 and Fan2, provide power to the fans.

Since the system will use the power card instead of a motherboard, two fans provide sufficient cooling for the server.

### #2. Main Power Connector

The 12-pin connector provides power to the card to be distributed to the chassis components.

### #3. Power Fault Connector (MCU Power On Switch)

In normal operating mode, power is governed by the MCU (Micro Controller Unit). As a security measure, the switch must be depressed for at least four seconds to power down the system.

In the case of an unexpected loss of power, the MCU will return the system to the power state it was in at the time when power was lost.

### #4. LED and Switch Connector

The LED Header and Switch Connector, designated JF1, is cabled directly to the front panel. This allows the front panel to display system status.

Fan Connectors	
Pin# Definition	
1	Ground
2	+12V
3	Tachometer

Power Fault Connector (MCU Power On Switch)	
Pin# Definition	
1	Power Fault #1
2	Power Fault #2
3	Power Fault #3
4	Reserved

LED and Switch Connector			
Pin # Definition		Pin # Definition	
1	Power	2	Ground
3	Reset	4	Ground
5	Vcc	6	Power Fail LED
7	Vcc	8	OH/Fan Fail LED
9	Vcc	10	NIC2
11	Vcc	12	NIC1
13	Vcc	14	HDD LED
15	Vcc	16	Power LED
17	x (Key)	18	x (Key)
19	NMI	20	Ground

## F-6 Front Jumper Locations and Pin Definitions

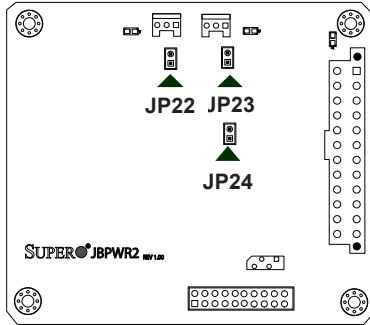
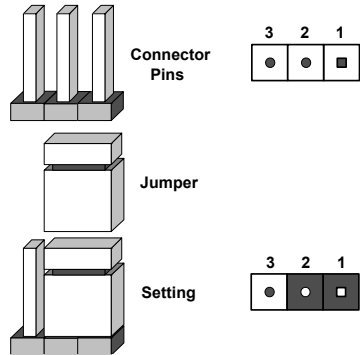


Figure F-2. Front Jumpers

### Explanation of Jumpers

To modify the operation of the backplane, jumpers can be used to choose between optional settings. Jumpers create shorts between two pins to change the function of the connector. Pin 1 is identified with a square solder pad on the printed circuit board. Note: On two pin jumpers, "Closed" means the jumper is on and "Open" means the jumper is off the pins.



Jumper Settings		
Jumper	Jumper Settings	Note
JP22	Closed: Enabled Open: Disabled	Fan1
JP23	Closed: Enabled Open: Disabled	Fan2
JP24	Closed: Enabled Open: Disabled	Buzzer*

\*The buzzer sound indicates that a condition requiring immediate attention has occurred.

**The buzzer alarm is triggered by the following conditions:**

1. Hard drive failure
2. Fan failure
3. System temperature over 45° Celsius.

## F-7 LED Indicators

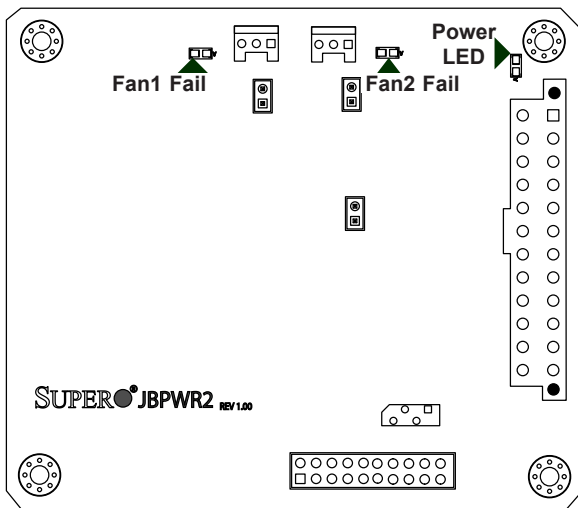


Figure F-3. LEDs

Front LEDs		
LED	State	Specification
Power LED	On	Activity in Power Control Board
Fan1 Fail	On	Failure in Fan 1
Fan2 Fail	On	Failure in Fan 2

## F-8 Power Card Placement

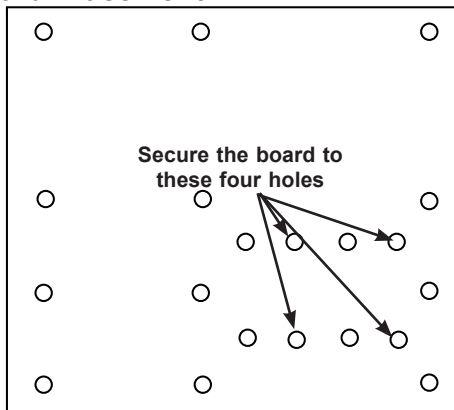


Figure F-4. Fastening the Power Card

## Appendix G

### SC836B Chassis Specifications

#### G-1 Overview

This appendix provides assembly instructions specific to SC836B model chassis only.

#### G-2 Revisions to the Data in this Appendix

Content Revision History		
Date	Revision	Changes
12/29/11	1.0	Initial revision

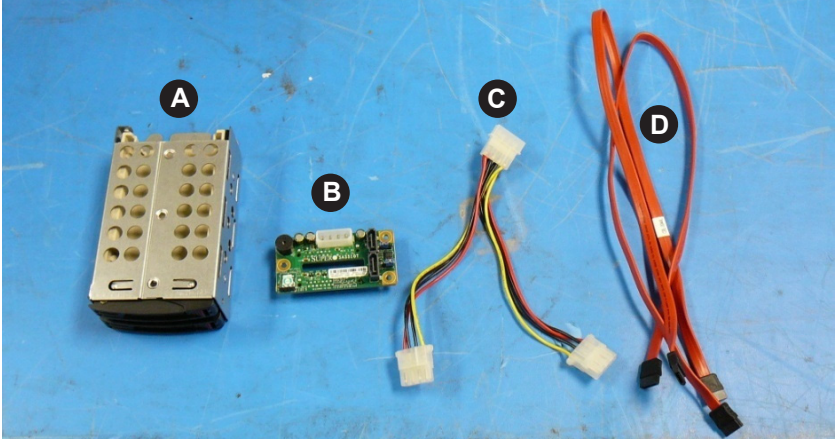
#### G-3 Installation Instructions for SC836B Models

The SC836B model chassis is specially designed with two peripheral drive bays located in the rear of the chassis. For information on which drives are compatible with the SC836B contact Supermicro's Technical Support department at [www.supermicro.com](http://www.supermicro.com).

## G-4 Installing a 2.5" Rear Hard Drives

### Identifying the Hard Drive Components

Use the photograph below to identify the components which are required to install hard drives into the rear peripheral bay of the SC836B chassis:



**Figure G-1. SC836B DVD-ROM Components**

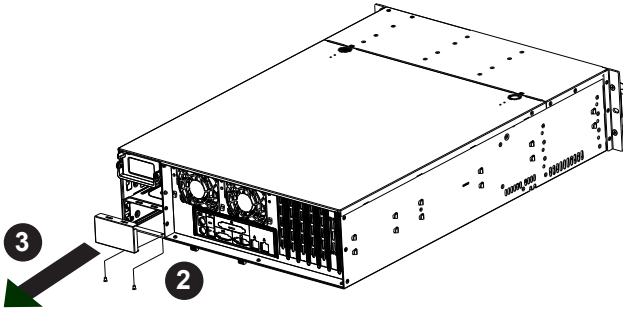
#### ***Rear Hard Drive Components***

- A. Hard drive cage
- B. Hard drive cage backplane
- C. Y-cable for a 4-pin hard drive (CBL-0234L)
- D. Two SATA cables (CBL-0179L)

## Installing Hard Drives into the Rear Hard Drive Carrier

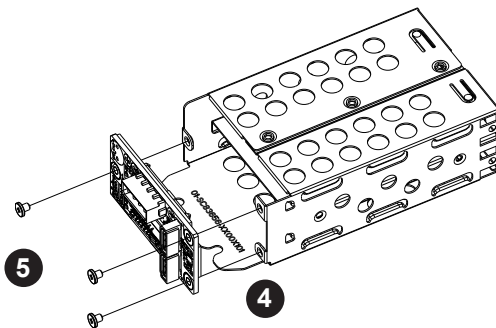
### *Installing the Rear Hard Drive Cage*

1. Disconnect the power from the chassis by unplugging the power cord.



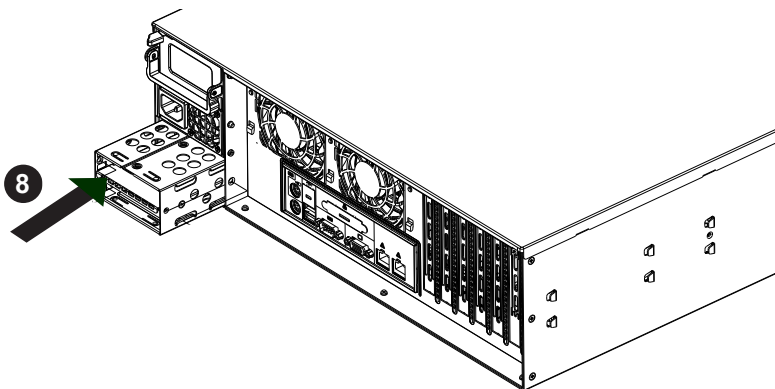
**Figure G-2. Removing the Dummy Drive from the Hard Drive Bay**

2. Remove the screws securing the dummy cover into the rear peripheral drive bay. These screws are located on the underside of the chassis on the left-hand side.
3. Pull the dummy drive out of the hard drive bay.



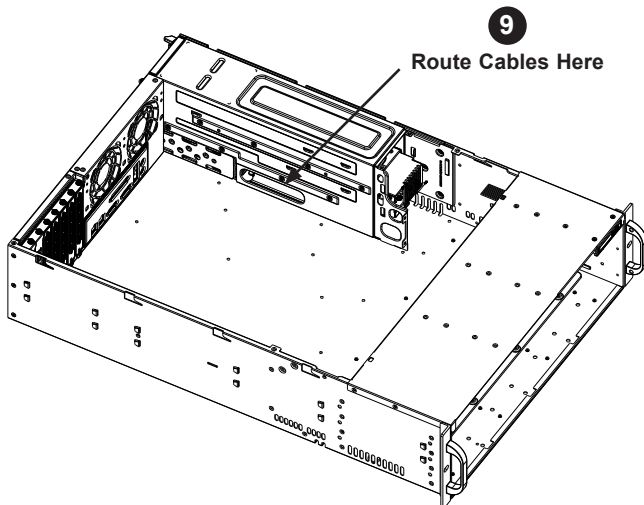
**Figure G-3. Securing the Backplane to the hard drive cage**

4. Align the mounting holes in the hard drive cage backplane with those in the rear of the hard drive cage.
5. Secure the backplane to the rear of the hard drive cage using three screws.
6. Connect the Y-cable to the two ports on the righthand side of the backplane.
7. Connect the SATA cable to the SATA port on the top of the backplane.



**Figure G-4. Installing the Hard Drive Cage into the Rear Hard Drive Bay**

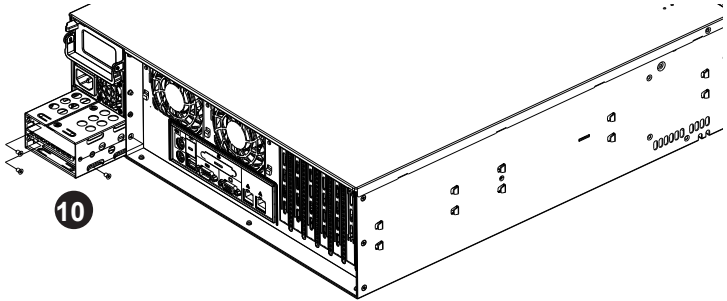
8. Insert the hard drive cage into the rear hard drive bay of the chassis and slide it all the way back, aligning the grooves in the bottom plate of the hard drive



**Figure G-5. Routing the Cables**

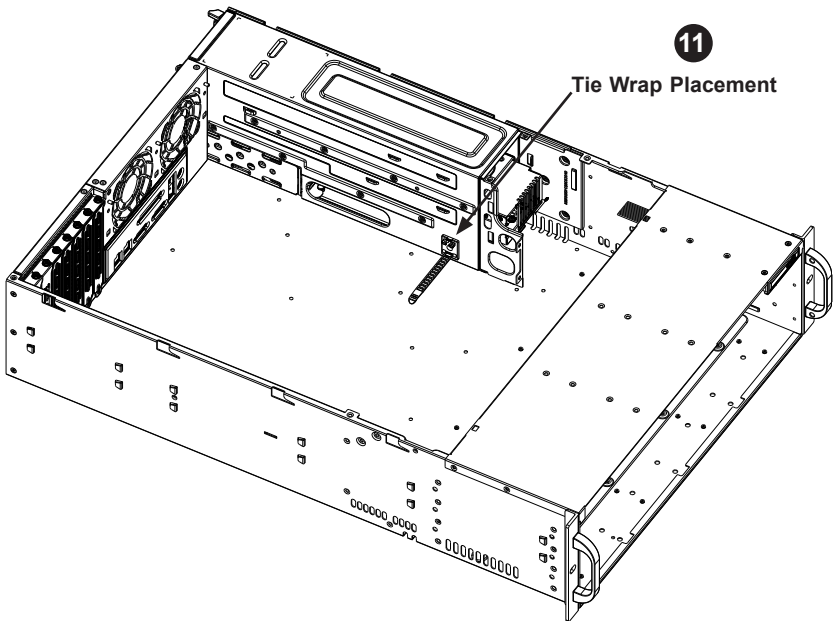


cage with the upright posts inside the hard drive bay.



**Figure G-6. SC836B Hard Drive Assembly Components**

9. Route the cables out through the rounded opening in the side of the hard drive bay on the inside of the chassis.



**Figure G-7. Securing the Tie Wrap to the Hard Drive Bay**

## Installing Hard Drives in the Rear Hard Drive Carriers

The 2.5" hard drives to be installed in the rear of the SC836B are hot-swappable and may be installed without powering down the server.

Note that only enterprise level hard drives are recommended for use in Supermicro chassis.

### *Installing the Hard Drives in the Carrier*

1. Remove the screws securing the dummy drive to the hard drive carrier and remove the dummy drive from the carrier.
2. Insert a hard drive into the carrier with the PCB side facing down and the connector end toward the rear of the carrier.
3. Align the mounting holes in the drive with those in the carrier. Note that there are holes in the carrier marked "SAS" or "SATA" to aid in correct installation.
4. Secure the drive to the carrier with four screws. Use the four M3 flat-head screws included in the HDD bag of your accessory box. Note that the screws used to secure the dummy drive to the tray cannot be reused to secure the hard drive.

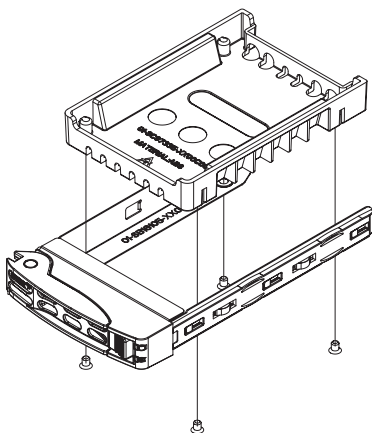


Figure G-8. Removing the Dummy Drive from the Hard Drive Carrier

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## Installing Hard Drives into the Rear Hard Drive Bays

### *Installing Rear Hard Drives*

1. Using the thumb, push against the upper part of the hard drive handle. Push the hard drive into the hard drive bay horizontally as illustrated below, orienting the drive so that the release button is on the right.
2. Push the carrier into the bay until the handle retracts and the hard drive clicks into the locked position.

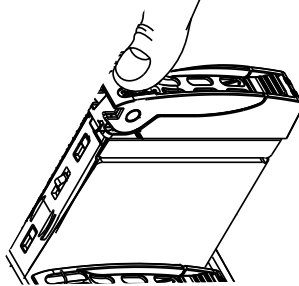


Figure G-9. Using the Thumb to Install the Hard Drive and Carrier

## Removing Hard Drives From the Rear Hard Drive Bays

### *Installing Rear Hard Drives*

1. Press the release button on the right-hand side of the hard drive. This will extend the hard drive carrier handle.
2. Use the hard drive carrier handle to pull the hard drive carrier out of the chassis.

Disclaimer (cont.)

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