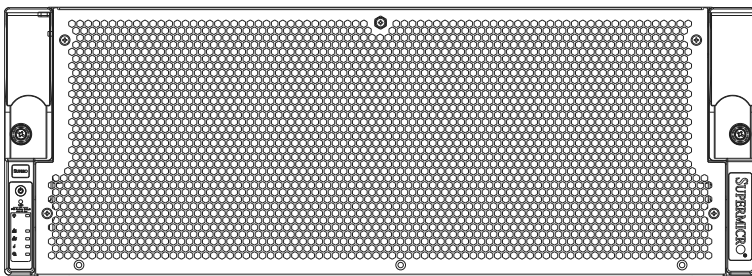# SC946ED
4U 90 BAY HYPER SCALE
STORAGE ENCLOSURE

SC946ED-R2KJBOD

USER'S MANUAL

1.0

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.**

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California Best Management Practices Regulations for Perchlorate Materials: This Perchlorate warning applies only to products containing CR (Manganese Dioxide) Lithium coin cells. "Perchlorate Material-special handling may apply. See www.dtsc.ca.gov/hazardouswaste/perchlorate"

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.

Manual Revision 1.0
Release Date: August 18, 2015

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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 SC946ED storage enclosure. Installation and maintenance should be performed by experienced technicians only.

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

Manual Organization

Chapter 1 Introduction

The first chapter provides a checklist of the main components included with this chassis and describes the main features of the SC946ED storage enclosure. This chapter also includes contact information.

Chapter 2 Standardized Warning Statements for AC/DC Systems

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

Chapter 3 System Interface

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

Chapter 4 Chassis Setup and Maintenance

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

Chapter 5 Cascading Configurations

Refer to this chapter for detailed information on cascading backplane configurations.

The appendices of this manual list compatible cables, power supply specifications, and compatible backplanes. Not all compatible backplanes are listed. Refer to our website for the latest compatible backplane information.

Appendix A Power Supply Specifications

This chapter lists the specifications of the power supply provided with your chassis. For additional information, refer to the Supermicro website at www.supermicro.com.

Appendix B Backplane System Configuration

This appendix provides details on the backplanes, midplane, power distributor board and expander boards included with the SC946ED chassis.

Appendix C Cascading Configurations

See this appendix for information on cascading the backplane system.

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Notes

Chapter 1

Introduction

1-1   Overview

Optimized for enterprise-level high-capacity storage applications, Supermicro's SC946ED storage enclosure supports 90x 3.5" SAS3 12Gb/s hard drives in hot-swappable top-loading HDD drive bays. The SC946ED top-loading design offers extra high-density of HDD per space ratio in a 4U form factor, high power efficiency, optimized HDD signal trace routing and improved HDD carrier design to dampen HDD vibrations and maximize performance. The SC946ED storage enclosure features dual hot-swappable expander modules with four mini SAS HD ports per module. Equipped with 4x 1000W (N+1) redundant high-efficiency power supplies and five 80 mm high-speed, low-vibration, hot-swappable cooling fans, the SC946ED is a reliable and hassle-free maintenance storage system.

1-2   Shipping List

Please visit the Supermicro website for the latest shiping lists and part numbers for your particular chassis model at www.supermicro.com.

SC946ED Chassis		
Model	**HDD**	**Power Supply**
SC946ED-R2KJBOD	90x SAS3/SATA3 3.5" HDDs	4x 1000W

1-3   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. Click the Where to Buy link.

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 (General Information)
	support@supermicro.com (Technical Support)
Website:	www.supermicro.com

Europe

Address:	Super Micro Computer B.V.
	Het Sterrenbeeld 28, 5215 ML
	's-Hertogenbosch, The Netherlands
Tel:	+31 (0) 73-6400390
Fax:	+31 (0) 73-6416525
Email:	sales@supermicro.nl (General Information)
	support@supermicro.nl (Technical Support)
	rma@supermicro.nl (Customer Support)
Website:	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
Website:	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.

Chapter 2

Standardized Warning Statements for AC 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.

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。

此警告符号代表危险。

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.

תקנון הצהרות אזהרה

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

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

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

اقر إرشادات التركيب قبل توصيل النظام إلى مصدر للطاقة

시스템을 전원에 연결하기 전에 설치 안내를 읽어주십시오.

Waarschuwing

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

Circuit Breaker

⚠️ **Warning!**

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

サーキット・ブレーカー

この製品は、短絡（過電流）保護装置がある建物での設置を前提としています。

保護装置の定格が250 V、20 Aを超えないことを確認下さい。

警告

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

警告

此產品的短路(過載電流)保護由建築物的供電系統提供，確保短路保護設備的額定電流不大於250V，20A。

Warnung

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

¡Advertencia!

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

Attention

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

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

هذا المنتج يعتمد على معدات الحماية من الدوائرالقصيرة التي تم تثبيتها في المبنى
تأكد من أن تقييم الجهاز الوقائي ليس أكثر من: 20A, 250V

경고!

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

Waarschuwing

Dit product is afhankelijk van de kortsluitbeveiliging (overspanning) van uw electrische installatie. Controleer of het beveiligde aparaat niet groter gedimensioneerd is dan 220V, 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.

電源切断の警告

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、シャーシー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断され、電源コードは電源モジュールから取り外す必要があります。

警告

在你打开机箱并安装或移除内部器件前,必须将系统完全断电,并移除电源线。

警告

在您打開機殼安裝或移除內部元件前,必須將系統完全斷電,並移除電源線。

Warnung

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

¡Advertencia!

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

Attention

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

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

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

경고!

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

Waarschuwing

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

Equipment Installation

 Warning!

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

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

警告
只有经过培训且具有资格的人员才能进行此设备的安装、更换和维修。

警告
只有經過受訓且具資格人員才可安裝、更換與維修此設備。

Warnung

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

¡Advertencia!

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

Attention

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

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

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

경고!

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

Waarschuwing

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

Restricted Area

 Warning!

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

アクセス制限区域

このユニットは、アクセス制限区域に設置されることを想定しています。

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

警告

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

警告

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

Warnung

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

¡Advertencia!

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

Attention

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

אזור עם גישה מוגבלת

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

تم تخصيص هذه الوحدة لتركيبها 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
电池更换不当会有爆炸危险。请只使用同类电池或制造商推荐的功能相当的电池更
换原有电池。请按制造商的说明处理废旧电池。

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

Warnung

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

Attention

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

¡Advertencia!

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

אזהרה !

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

סילוק הסוללות המשומשות יש לבצע לפי הוראות היצרן.

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

경고!

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

Waarschuwing

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

Redundant Power Supplies

⚡ **Warning!**

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

冗長電源装置

このユニットは複数の電源装置が接続されている場合があります。

ユニットの電源を切るためには、すべての接続を取り外さなければなりません。

警告

此部件连接的电源可能不止一个，必须将所有电源断开才能停止给该部件供电。

警告

此裝置連接的電源可能不只一個，必須切斷所有電源才能停止對該裝置的供電。

Warnung

Dieses Gerät kann mehr als eine Stromzufuhr haben. Um sicherzustellen, dass der Einheit kein trom 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 !

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

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

경고!

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

Waarschuwing

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

Backplane Voltage

⚠️ **Warning!**

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

バックプレーンの電圧
システムの稼働中は危険な電圧または電力が、バックプレーン上にかかっています。
修理する際には注意ください。

警告
当系统正在进行时，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 أوالطاقة 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 instalacion del equipo debe cumplir con las normas de electricidad locales y
nacionales.

Attention

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

תיאום חוקי החשמל הארצי

אזהרה !
התקנת הציוד חייבת להיות תואמת לחוקי החשמל המקומיים והארציים.

تركيب المعدات الكهربائية يجب أن يمتثل للقوانين المحلية والوطنية المتعلقة بالكهرباء

경고!

현 지역 및 국가의 전기 규정에 따라 장비를 설치해야 합니다.

Waarschuwing

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

Product Disposal

 Warning!

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

製品の廃棄

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

警告
本产品的废弃处理应根据所有国家的法律和规章进行。

警告
本產品的廢棄處理應根據所有國家的法律和規章進行。

Warnung

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

¡Advertencia!

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

Attention

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

סילוק המוצר

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

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

경고!

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

Waarschuwing

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

Hot Swap Fan Warning

Warning!

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 ell montaje del ventilador
del chasis. Mandtenga 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 retirerez
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 المراوح لا تزال تدور عند إزالة كتلة المروحة من الهيكل يجب إبقاء
الأصابع ومفكات البراغي
وغيرها من الأشياء بعيدا عن الفتحات في كتلة المروحة.

경고!

섀시로부터 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.

Power Cable and AC Adapter

Warning!

When installing the product, use the provided or designated connection cables, power cables and AC adaptors. Using any other cables and adaptors could cause a malfunction or a fire. Electrical Appliance and Material Safety Law prohibits the use of UL or CSA -certified cables (that have UL/CSA shown on the code) for any other electrical devices than products designated by Supermicro only.

電源コードとACアダプター

製品を設置する場合、提供または指定された接続ケーブル、電源コードとACアダプターを使用下さい。他のケーブルやアダプタを使用すると故障や火災の原因になることがあります。電気用品安全法は、ULまたはCSA認定のケーブル(UL/CSEマークがコードに表記)を Supermicroが指定する製品以外に使用することを禁止しています。

警告

安装此产品时，请使用本身提供的或指定的连接线，电源线和电源适配器．使用其它线材或适配器可能会引起故障或火灾。除了Supermicro所指定的产品，电气用品和材料安全法律规定禁止使用未经UL或CSA认证的线材。(线材上会显示UL/CSA符号)。

警告

安裝此產品時，請使用本身提供的或指定的連接線，電源線和電源適配器．使用其它線材或適配器可能會引起故障或火災。除了Supermicro所指定的產品，電氣用品和材料安全法律規定禁止使用未經UL或CSA認證的線材。(線材上會顯示UL/CSA符號)。

Warnung

Bei der Installation des Produkts, die zur Verfügung gestellten oder benannt Anschlusskabel, Stromkabel und Netzteile. Verwendung anderer Kabel und Adapter kann zu einer Fehlfunktion oder ein Brand entstehen. Elektrische Geräte und Material Safety Law verbietet die Verwendung von UL-oder CSA-zertifizierte Kabel, UL oder CSA auf der Code für alle anderen elektrischen Geräte als Produkte von Supermicro nur bezeichnet gezeigt haben.

¡Advertencia!

Al instalar el producto, utilice los cables de conexión previstos o designados, los cables y adaptadores de CA. La utilización de otros cables y adaptadores podría ocasionar un mal funcionamiento o un incendio. Aparatos Eléctricos y la Ley de Seguridad del Material prohíbe el uso de UL o CSA cables certificados que tienen UL o CSA se muestra en el código de otros dispositivos eléctricos que los productos designados por Supermicro solamente.

Attention

Lors de l'installation du produit, utilisez les bables de connection fournis ou désigné. L'utilisation d'autres cables et adaptateurs peut provoquer un dysfonctionnement ou un incendie. Appareils électroménagers et de loi sur la sécurité Matériel interdit l'utilisation de UL ou CSA câbles certifiés qui ont UL ou CSA indiqué sur le code pour tous les autres appareils électriques que les produits désignés par Supermicro seulement.

חשמליים ומתאמי AC

אזהרה !
כאשר מתקינים את המוצר, יש להשתמש בכבלים, ספקים ומתאמים AC אשר
נועדו וסופקו לשם כך. שימוש בכל כבל או מתאם אחר יכול לגרום לתקלה או
קצר חשמלי. על פי חוקי שימוש במכשירי חשמל וחוקי בטיחות, קיים איסור
להשתמש בכבלים המוסמכים ב- UL או ב- CSA (כשאר מופיע עליהם קוד של
UL/CSA) עבור כל מוצר חשמלי אחר שלא צוין על ידי סופרקמיקרו בלבד.

عند تركيب الجهاز يجب استخدام كابلات التوصيل،والكابلات الكهربائية
ومحولات التيار المتردد
التي . أن استخدام أي كابلات ومحولات أخرى يتسبب في حدوث عطل أو حريق.
تم توفيرها لك مع المنتج
الأجهزة الكهربائية ومواد قانون السلامة يحظر استخدام الكابلات CSA أو UL
معتمدة من قبل
لأي أجهزة كهربائية أخرى غير المنتجات المعينة من قبل Supermicro
(التي تحمل علامة UL/CSA)

경고!

제품을 설치할 때에는 제공되거나 지정된 연결케이블과 전원케이블, AC어댑터를
사용해야 합니다. 그 밖의 다른 케이블들이나 어댑터들은 고장 또는 화재의 원인이
될 수 있습니다. 전기용품안전법 (Electrical Appliance and Material Safety
Law)은 슈퍼마이크로에서 지정한 제품들 외에는 그 밖의 다른 전기 장치들을
위한 UL또는 CSA에서 인증한 케이블(전선 위에 UL/CSA가 표시)들의 사용을
금지합니다.

Waarschuwing

Bij het installeren van het product, gebruik de meegeleverde of aangewezen kabels, stroomkabels en adapters. Het gebruik van andere kabels en adapters kan leiden tot een storing of een brand. Elektrisch apparaat en veiligheidsinformatiebladen wet verbiedt het gebruik van UL of CSA gecertificeerde kabels die UL of CSA die op de code voor andere elektrische apparaten dan de producten die door Supermicro alleen.

Notes

Chapter 3

System Interface

3-1   Overview

There are several LEDs on the control panel as well as others on the drive carriers to keep you constantly informed of the overall status of the system as well as the activity and health of specific components. The SC946ED storage enclosure has two buttons on the chassis control panel: A UID on/off or IPMI factory default reset button and a power on/off button. This chapter explains the meanings of all LED indicators and the appropriate responses you may need to take.
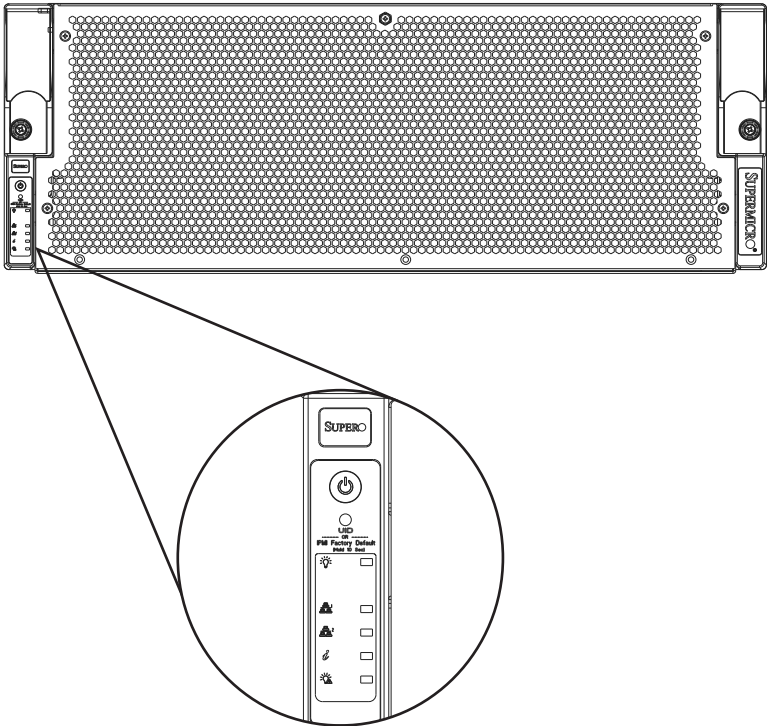
Figure 3-1. Control Panel

3-2   Control Panel Buttons

There are two push-buttons located on the left handle of the chassis. These are (in order from top to bottom) a power on/off button and a reset button.

Power: The main power button 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.

UID: Press this button to toggle the UID function on and off. To activate the IPMI factory default, press and hold this button for ten seconds.

3-3   Control Panel LEDs

The control panel located on the left handle of the SC946EDJ chassis has five LEDs. These LEDs provide you with critical information related to different parts of the system. This section explains what each LED indicates when illuminated and any corrective action you may need to take.

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

NIC1: Indicates network activity on the primary expander when flashing.

NIC2: Indicates network activity on the secondary expander when flashing.

Information LED:

Informational LED	
Status	**Description**
Solid red	An overheat condition has occured. (This may be caused by cable congestion).
Blinking red (1Hz)	Fan failure, check for an inoperative fan.
Blinking red (0.25Hz)	Power failure, check for a non-operational power supply.
Solid blue	Local UID has been activated. Use this function to locate the server in a rack mount environment.
Blinking blue (300 msec)	Remote UID is on. Use this function to identify the server from a remote location.
Blinking blue (500 msec)	IPMI feature is ready.

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

3-4   Drive Carrier LEDs

The SC946EDJ chassis uses SAS or SATA drives.

SAS3 Drives

Each SAS3 drive carrier has two sets of LEDs, one set of blue and red LED indica-
tors for each drive. The LEDs function as follows:

Blue Drive Carrier LED Indicator		
Color	Status	Description
Blue	Solid on	Indicates a SAS drive
Blue	Off	Indicates a SATA drive
Blue	Blinking	Drive is actively being accessed

Each drive carrier has a blue LED. When illuminated in a solid on state, this blue
LED (on the front of the SAS/SATA drive carrier) indicates a SAS drive. A connec-
tion to the SAS/SATA backplane enables this LED to blink on and off when that
particular drive is being accessed.

Red Drive Carrier LED Indicator		
Color	Status	Description
Red	Solid on	Drive failure
Red	Blinking	RAID activity

When the red LED is blinking, it indicates that the system is either building, initial-
izing or rebuilding RAID.

SCSI Drives

This chassis does not support SCSI drives at this time.

3-5   Rear Chassis LEDs, Connectors and Components

The SC946ED features LEDs, connectors and other components on the rear of the chassis. These enabling you to interface with the system. See the illustration below for LED, connector and component identification. See the table below for descriptions of the module status indicator LEDs
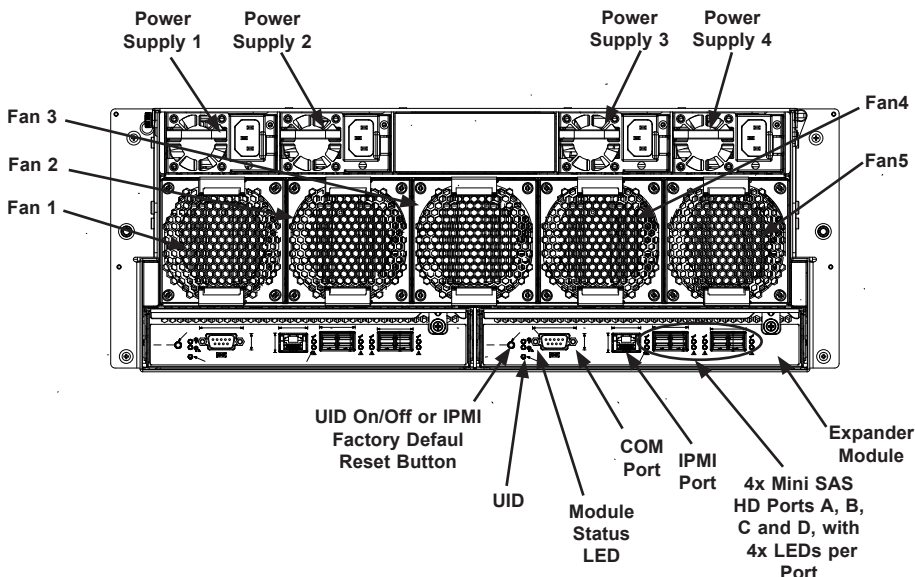
Figure 3-2. Rear Components of the SC946ED Chassis

Module Status LED	
Color	**Description**
Green	The module is working properly.
Red	Failure occured on this module.

Mini SAS HD Ports LED	
Color	**Description**
Green	A proper link is established on the corresponding port.
Amber	A Faulty link is established on the corresponding port.

Notes

Chapter 4

Chassis Setup and Maintenance

4-1   Overview

This chapter covers the steps required to install components and perform mainte-
nance on the chassis. The only tool you will need to install components and perform
maintenance is a Phillips screwdriver. Print this chapter to use as a reference while
setting up your chassis.

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

Safety Warning: Before performing any chassis setup or maintenance, it is recom-
mended that the chassis be removed from the rack and placed on a stable bench
or table. For instructions on how to uninstall the chassis from the rack, refer to
Chapter 5 Rack Installation in this manual.

4-2 Powering Up and Shutting Down the System

The procedures for powering up and shutting down the SC946ED differ slightly from typical systems. It is important to become familiar with the procedure and to follow it each time that the system is powered up or shut down.

Powering Up the System

First Time or Power Loss Power Up Procedure

If powering up your system for the first time or after a loss of power, wait until the blue light begins flashing, then press the power button to power up the system.

Typical Power Up Procedure

If the system was powered down correctly the last time it was shut down, simply press the power button to power up the system.

Powering Down the System

Power Down Procedure

1. Press the power button and hold it down.

2. Wait until the power LED stops flashing.

3. Release the power button.

Optional IPMI Power Up/Down

At any time you may choose to power up or down the server using the IPMI and following the on screen prompts.

4-3 Opening and Closing the Chassis Cover
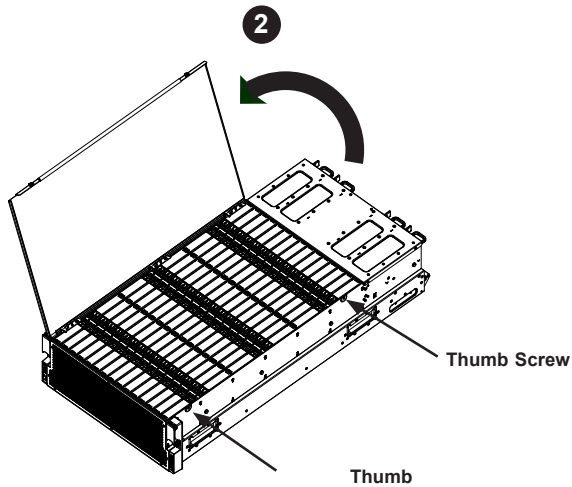
Figure 4-1. Opening the Chassis   Cover

Chassis Cover

Opening the Chassis Cover

1. Release the two thumb screws on the right side of the chassis.

2. Lift the cover up as illustrated above.

3. The cover is deisgned to hold itself in an open position without additional sup-
    port. Note that the cover is designed to swing open to a maximum angle of
    100 degrees and is not designed to open farther.

Closing the Chassis Cover

4. Gently push downward on the cover, easing it into the closed position.

5. Secure the cover with the thumb screws on the right side of the chassis.

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.

4-4 Front Panel Removal and Installation

Remove Three
Lower Front
Screws

Remove Four
Front Screws
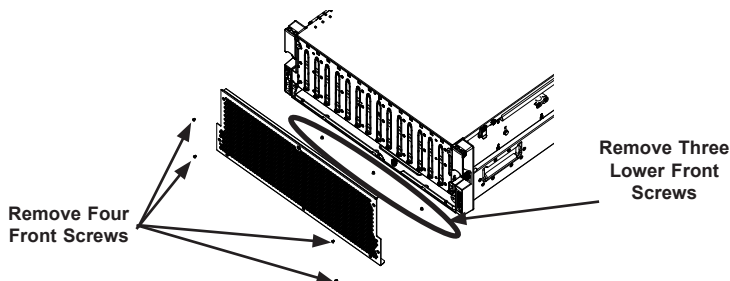
Figure 4-2. Removing the Front Panel

The SC946ED features a front panel which must be removed before pulling out the backplane tray.

Front Panel Removal and Installation

Removing the Front Panel

1. Power down the system as described in Section 4-2. Unplug the power cords from the rear of the power supplies.

2. Remove the seven screws securing the face of the front panel and set them aside for later use.

3. Remove the three screws securing the underside of the front panel and set them aside for later use.

Grasp the front panel and carefully pull it off the front of the chassis.

Installing the Front Panel

1. Place the front panel on the front of the chassis.

2. Align the mounting holes in the front panel with those of the chassis.

3. Install the seven front screws that were previously set aside.

4. Install the three underside screws that were previously set aside.

5. Plug the power cords into the rear of the power supplies and power up the system.

4-5   Installing Hot-Swappable 3.5" Hard Drives
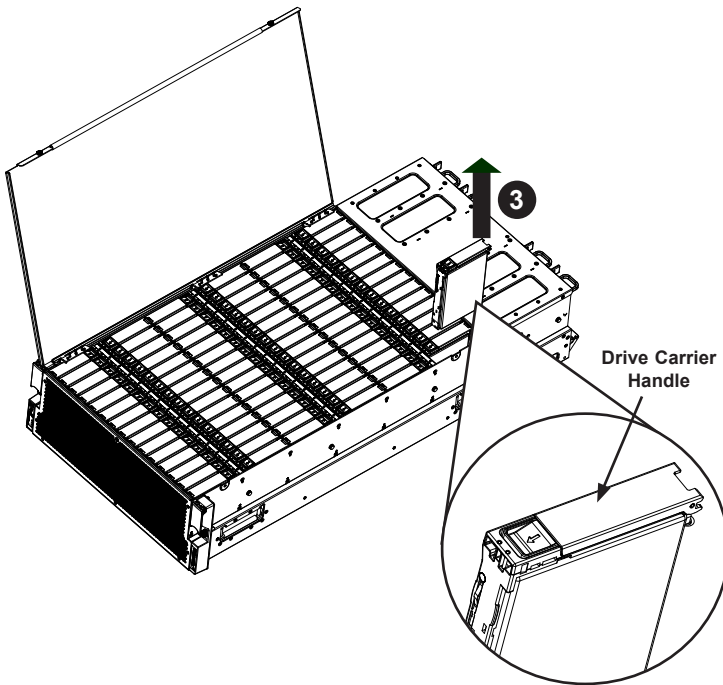
Figure 4-3. Removing a 3.5" Hard Drive Carrier

The SC946ED chassis supports ninety 3.5" hard drives in tooless hard drive carriers to simplify their removal from the chassis. These carriers also help promote proper airflow through the chassis.

Removing Hard Drive Carriers from the Chassis

1. Open the chassis cover as described in Section 4-3

2. Push the release button on the drive carrier.

3. Use the handle to pull the drive carrier up and out of the chassis.

Warning: Except for short periods of time (while swapping hard drives), do not operate the server with the drives removed from the chassis drive bays.

Installing 3.5" Hard Drives into the Hard Drive Carrier

1. Press the release button to open the drive carrier handle.

2. Pull upward on the drive carrier handle.

3. Insert the 3.5" hard drive into the hard drive carrier, taking note of which direction the printed circuit board side of the hard drive is facing. To reduce vibration, alternate the direction hard drive faces in each carrier in the chassis.
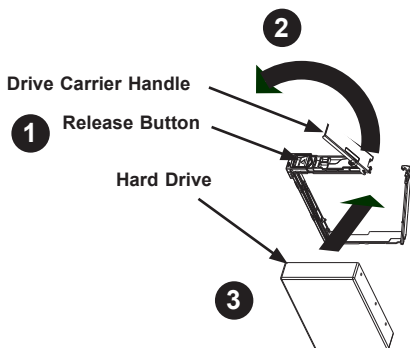
Figure 4-4. Installing a 3.5" Hard Drive into the Hard Drive Carrier

4. Secure the hard drive into the carrier by closing the carrier handle.

5. Using the hard drive carrier handle, push the hard drive carrier into the hard drive bay until it clicks into the locked position.
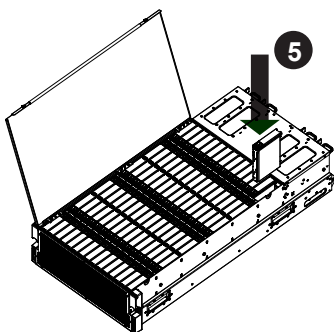
Figure 4-5. Installing the Hard Drives and Carrier into the Chassis

Warning! Enterprise level hard disk drives are recommended for use in Supermicro chassis and servers. For information on recommended HDDs, visit the Supermicro website at www.supermicro.com.

4-6 Accessing the Backplane Tray

The SC946ED includes three primary backplanes and a mid-plane which are contained in a tray that is accessed from the front of the chassis. It is highly unlikely that it will become necessary to access the backplane tray. In the unlikely event that the Supermictro Technical Support Team directs you to check the connections to the backplanes and midplane or to install a new backplane tray, this section covers instructions for opening the backplane tray. Replacement backplane trays are availble from Supermicro. For additional information, see Appendices B and C of this manual.+

Opening the Backplane Tray

1. Unplug the power cords from the rear of the power supplies and remove the power supplies as directed in Section 4-9.

2. Remove the power supply cage by removing the screws securing it to the chassis.

3. Remove the power distributor board as described on page 4-10.

4. Disconnect the front panel cable connector.

5. Disconnect the 8-pin power connector from the front panel of the chassis,

6. Remove the front panel as described in Section 4-4 and remove the thumb screw from the mid-plane of the chassis.
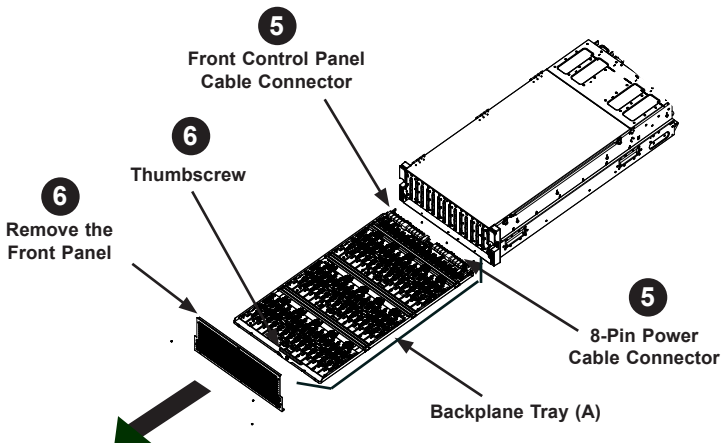
Figure 4-5. Removing the Backplane Tray Assembly

7. Disconnect the 20-pinPDB control cable from the mid-plane.

8. Grasp the front edge of the backplane tray and pull it forward, but not all the way out of the chassis if you are checking cable connections. Pull the backplane tray all the way out if you are removing and replacing the backplane tray.

9. Check the cabling as directed by Supermicro Technical Support or return the entire backplane tray to Supermicro.

Closing the Backplane Tray

1. Reconnect the front control cable, PDB control cable and 8-pin power connector at the back of the backplane tray. and slide the backplane tray fully into the chassis.

2. Tighten the thumbscriew at the front of the backplane tray

3. Secure the front panel with the screws previously set aside.

4. Install the PDB back into the chassis and reconnect all of the cables.

5. Return the power cage to the chassis and secure it with the screws previously set aside, then push the power supplies into the power bays until they click into the locked position.

6. Plug the power cords into the rear of the power supplies, close and latch the chassis cover and then power up the system.
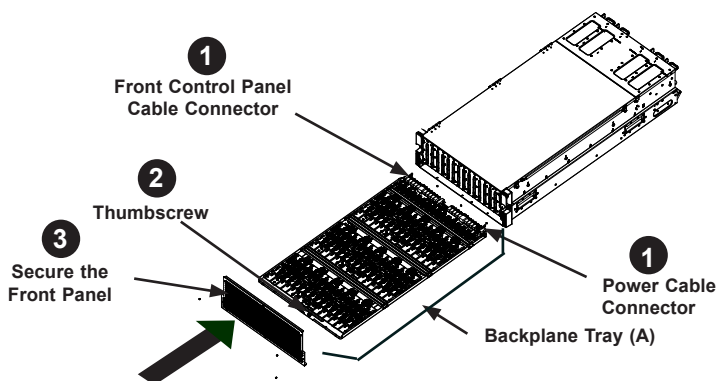
Figure 4-8. Closing the Backplane Tray

4-7   Expander Module Removal and Installation

The SC946ED includes expanders which are contained in dual SAS3 modules at the rear of the chassis. The modules are hot-swappable and can be removed from the chassis without powering down the system. Each of these modules features four Mini SAS HD ports. This section covers removal and installation instructions for the expander modules.
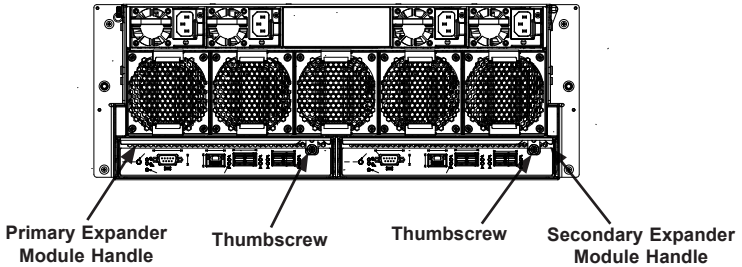
Figure 4-10. Chassis Rear View

Expander Module Removal

Removing the Expander Modules

1. Loosen the thumbscrew on the rear of the expander module you wish to remove from the chassis.

2. Lower the expander module handle.

3. Use the handle to pull the expander module out of the chassis.
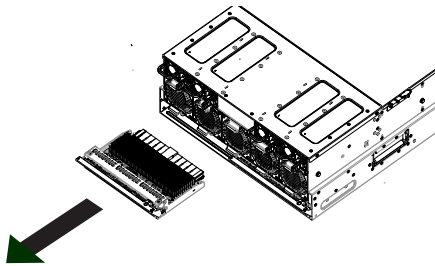
Figure 4-11. Removing the Expander Module from the Chassis
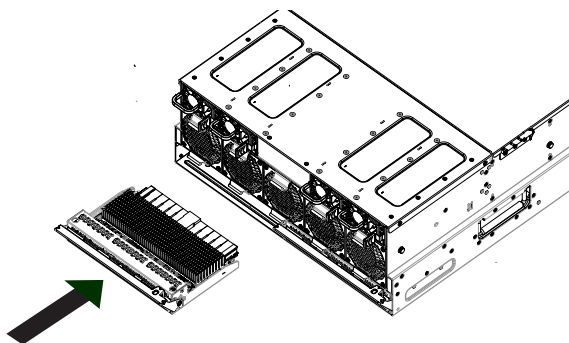
Figure 4-11. Installing the Expander Module into the Chassis

Expander Module Installation

Installing the Expander Module

1. Align the expander module with the empty expander module bay.

2. Using the expander module handle, insert the expander module to the expander module bay that it was removed from.

3. Push the module into the chassis, then lift the expander module handle upward to lock the module into its bay in the chassis.

4. Secure the thumbscrew securing the expander module into its bay in the chassis.

4-8   System Fans

Five hot-swappable, heavy-duty rear mounted fans provide cooling for the chassis. These fans circulate air through the chassis thereby lowering the chassis internal temperature. The SC946ED system fans are hot-swappable and can be removed without powering down the system.
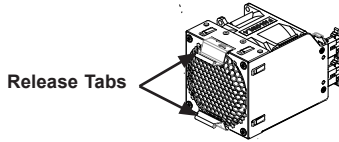
Release Tabs

Figure 4-12. System Fan

Replacing a System Fan

1. While the power is running, examine the fans to determine which fan has failed.

2. Simultaneously press down on the upper release tab and push up the lower release tab of the failed fan.

3. Pull the fan out of the rear of the chassis using the handle provided.

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

5. Place the new fan into the vacant fan bay.

6. Confirm that the fan is fully seated in the fan bay and functioning properly.
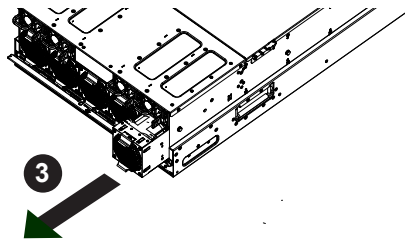
Figure 4-13. Removing an Individual Fan From the Housing (Standard Method)

4-9   Power Supply

The SC946ED chassis features redundant 1000W (N+1) 96% efficient Digital Tita-nium Level power supplies. These power supplies are auto-switching capable. This enables them to automatically sense and operate at a 100v to 240v input voltage. An amber light will be illuminated on the power supply when the power is off. An illuminated green light indicates that the power supply is operating.

Redundant power supplies are hot-swappable, and can be changed without pow-ering down the system. New units can be ordered directly from Supermicro (see contact information in the Preface).
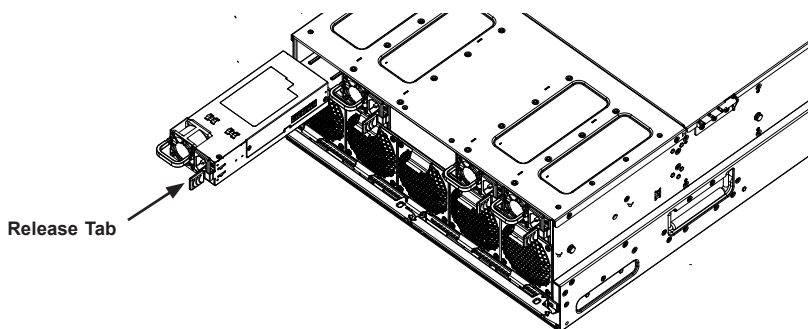
Release Tab

Figure 4-14. Installing the Power Supply

Changing the Power Supply

1. Remove the power cord from the rear of the power supply that you wish to remove from the chassis.

2. Press the release tab and pull the power supply out of the chassis using the handle provided.

3. Replace the failed power module with another of the same model.

4. Push the new power supply module into the power bay until it clicks into the locked position.

5. Plug the AC power cord into the rear of the module.

4-10 Replacing the Power Distributor Board

The SC946ED chassis comes equipped with a PDB-PT946-S616 power distribu-
tor. In the unlikely event that you need to replace the power distributor, use the
following instructions.

Changing the Power Distributor

1. Power down the chassis as described on page 4-2, uplug the power cords
   from the rear of the power supplies.

2. Remove all four power supplies from the power bays of the power module by
   grasping the handle on the rear of the power supplies and pulling them out
   the rear of the chassis.

3. Remove the four side screws as illustrated below and set them aside for later
   use.

4. Pull the power cage out of the back of the chassis.

5. Remove the four side screws securing the power distributor assembly to the
   chassis and set them aside for later use.

6. Unplug the power distributor assembly from the chassis.

7. Lift the power distributor assembly up and out of the chassis.
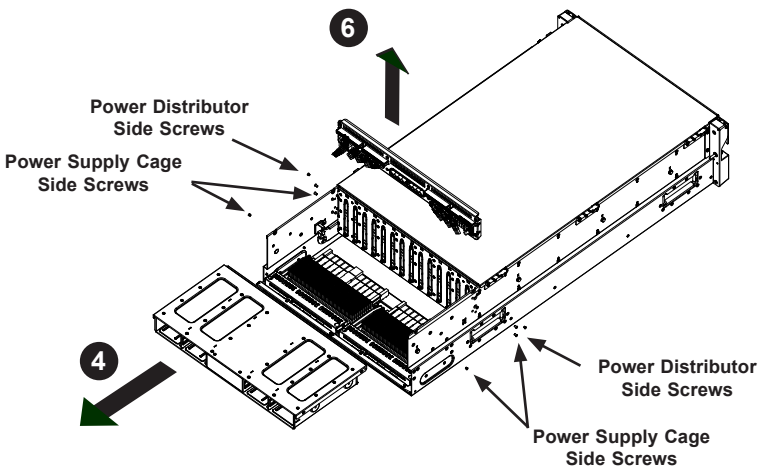
Figure 4-15. Removing the Power Distributor
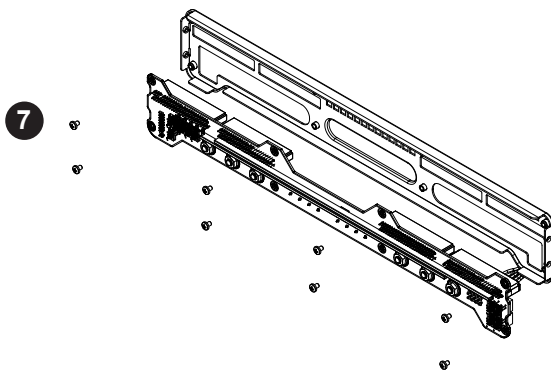
Figure 4-15. Removing the Power Distributor Board

8. Remove the eight screws securing the power distributor board to the power distributor bracket and set them aside for later use.

9. Pull the power distributor board off the bracket.

10. Align the mounting holes in the replacement power distributor board with those in the power distributor bracket.

11. Secure the power distributor board to the bracket using the eight screws previously set aside.

12. Place the power distributor assembly in the chassis and align the mounting holes in the power distributor bracket with those in the chassis. Secure the power assembly to the chassis with the six screws previously set aside.

13. Return the power cage to the chassis and secure it to the chassis with the two screws previously set aside.

14. Push the power supplies into the power bays of the power module until they click into the locked position.

15. Plug the power cords into the rear of the power supplies and power up the system.

4-11   Assembling the Cable Management Arm

The SC946ED chassis supports a cable management arm (CMA) which helps to keep the chassis cables organized and clear of the rach and rail mechanisms. The swing arm functionality of the cable management arm keeps the cables clear while maintenance is being performed on the system.

Preparing to Assemble the Cable Management Arm

Identify the components of the cable management arm as shown below:
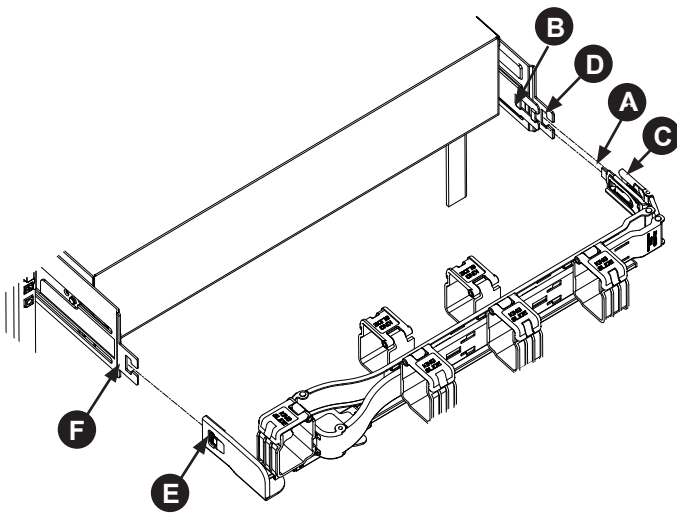
Figure 4-16. Identifying the Cable Managment Arm Components

Cable Arm Managment Components	
A	CMA connector #1
B	CMA connector #1 base on the inner member
C	CMA connector #2
D	CMA connector #2 base on the outer member
E	Center CMA body
F	Outer member CMA connector base

Remove the loop
strap from the cable
arm prior to use
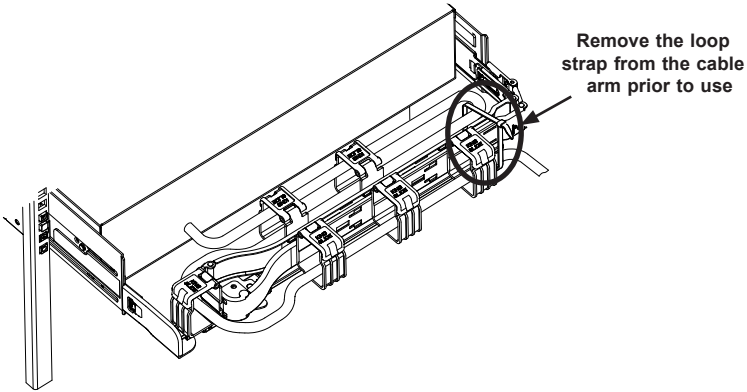
Figure 4-16. Removing the Loop Strap

Prior to using the cable managment arm for the first time, remove the loop strap which secures the cable arm during transport. The loop strap is made of thin plastic which is easily removed with common household scissors. Cable Management Arm Assembly

Assembling the Cable Managment Arm

1. Install CMA connector #1 (A) onto CMA connector #1 base on the inner member (B).
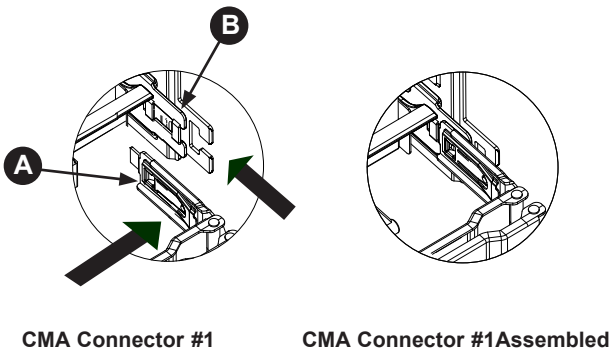
CMA Connector #1   CMA Connector #1Assembled

Figure 4-17. Installing the CMA Connector #1 onto the Inner Member

CMA Connector #2 Apart   **CMA Connector #2 Assembled**
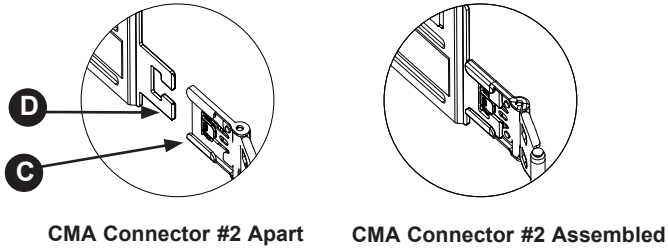
Figure 4-17. Installing the CMA Connector #1 onto the Inner Member

2. Install CMA connector #2 (C) onto CMA connector #2 base (D) on the inner member.

CMA Connector Apart   **CMA Connector Assembled**
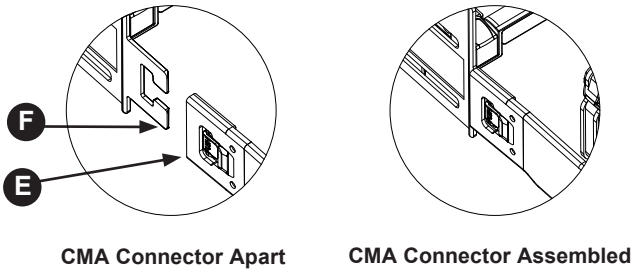
Figure 4-18. Installing the CMA #2 Connector onto the Inner Member

3. Install the CMA connector beside the center CMA body (E) onto the outer member CMA connector base (F).

Swing Arm Functionality of the Cable Arm

Swing Arm Function (Swings Right)

1. Press the button on CMA connector #1 (A).

2. Pull back on CMA connector #1 to release it from the base.
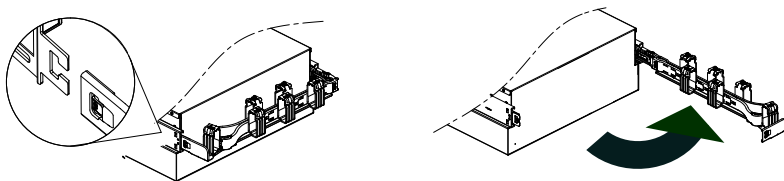
Figure 4-19. Swinging open the Cable Management Arm

Swing Arm Function (Swings Left)

1. Press the release button on the CMA right inner arm (A) and separate the inner arm from its connector.

1. Press the release button on the CMA right outer arm (B) and separate the outer arm from its connector.

2. Swing the arm ninety degrees to the left.
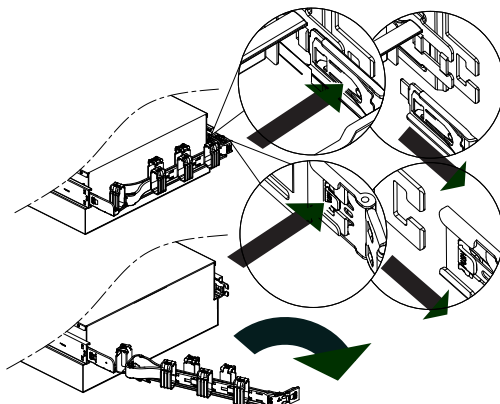
Figure 4-20. Swinging open the Cable Management Arm

Chapter 5

Rack Installation

5-1   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.

5-2   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.

5-3   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 similar environments).

5-4   Warnings and Cautions

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.

5-5   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.

5-6 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.
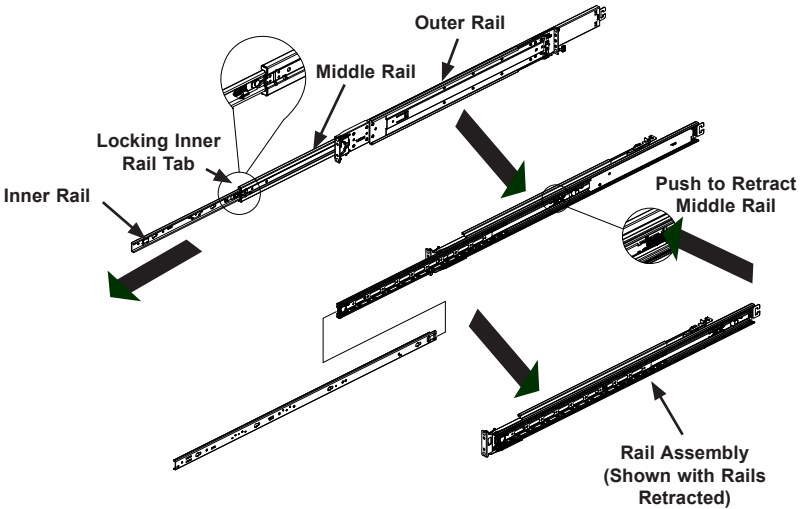
**Figure 5-1. Identifying the Outer Rail, Middle Rail and Inner Rails
(Left Rail Assembly Shown)**

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 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 5-4.

2. Pull the inner rail out of the outer rail until it is fully extended as illustrated below.

3. Press the inner release tab to release the inner rail.

4. Pull the inner rail all the way out.

5. Repeat steps 1-3 for the second outer rail.
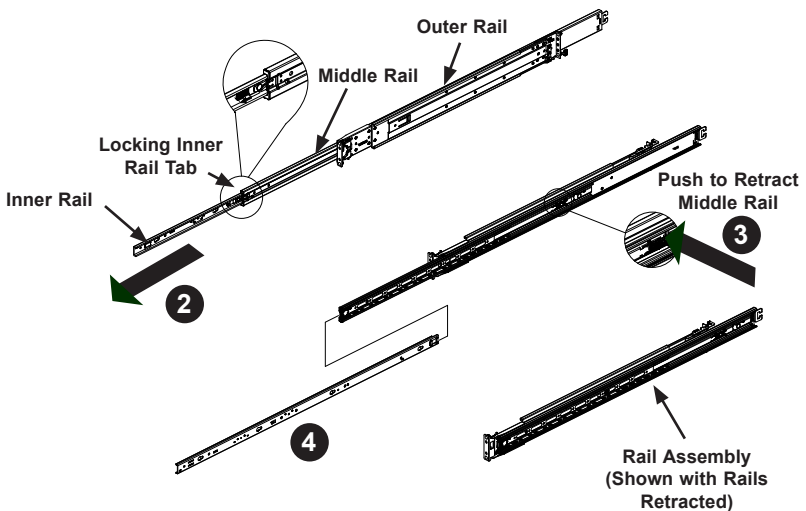
Figure 5-2. Extending and Releasing the Inner Rail
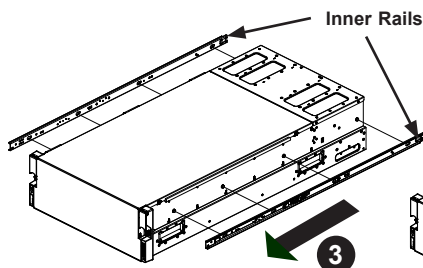
Inner Rails

Figure 5-3. Installing the Inner Rails
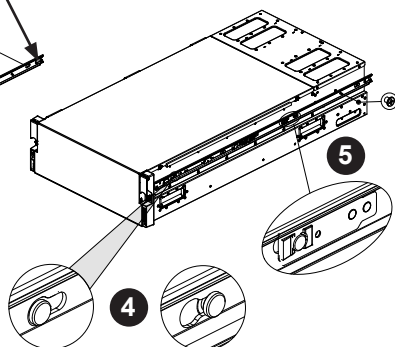
Figure 5-4. Inner Rails Installed on the Chassis

Installing The Inner Rails on the Chassis

Installing the Inner Rails

1. Remove the inner rail from the chassis accessory kit.

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 lock button clicks into the locked position.

4. Press the locking tab to secure the rail into the locked position.

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.
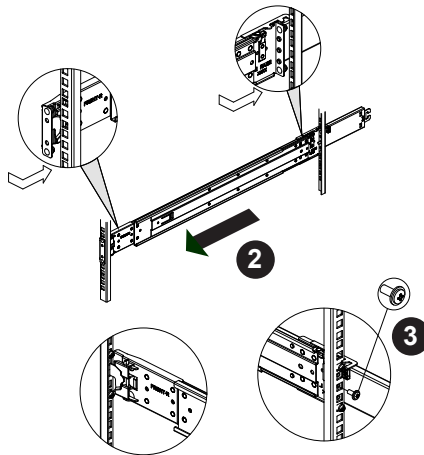
Figure 5-5. Extending and Releasing the Outer Rails

Installing the Outer Rails on the Rack

Installing the Outer Rails

1. 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.

2. Pull out the rear of the outer rail, adjusting the length until it fits within the posts of the rack.

3. 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.

4. Repeat steps 1-5 for the remaining outer rail.
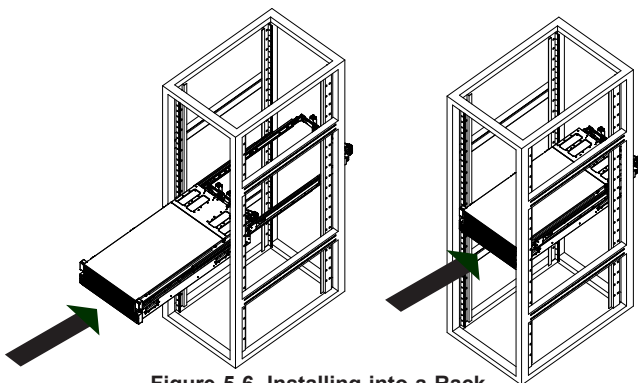
Figure 5-6. Installing into a Rack

Note: Figures are for illustrative purposes. Always install servers 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. Remove all hard drives and power supplies as directed in the previous sections.

4. 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.

5. Align the chassis inner rails with the front of the middle rails.

6. Slide the inner rails of 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.

7. Load the HDDs and their carriers into the HDD bays in the top of the chassis.

8. Depress the chassis locking tabs (blue color) on both sides at the same time, push the chassis all the way into the rear of the rack and secure the chassis into the rack using the thumbscrews on the front handles.

9. Return the power supplies to the chassis, plug the power cords into the rear of the power supplies and power up the system.

⚠️ 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.

Appendix A

SC946ED Power Supply Specifications

This appendix lists power supply specifications for your chassis system.

SC946ED	
	1000W
MFR Part #	PWS-1K04A-1R
AC Input	100-127 V, 50-60 Hz 200-240 V, 50-60 Hz
+12V	Max: 66.7A (100Vac-127Vac) Max: 83A (200Vac-240Vac)
12V SB	Max: 2.1A

Notes

Appendix B

Backplane System Configuration

B-1 Chassis Configuration

The SC946ED chassis backplane system configuration consists of the following components:

- Three backplanes, BPN-SAS3-946BA.

- One midplane, BPN-SAS3-946MP.

- One expander board, BPN-SAS3-946E90.

- Two power distributor boards, PDB-PT946-616.

BPN-SAS3-946E90 Expander Board
(Contained in Removable Expander Board Modules)

PDB-PT946-616 Power Distributor Board
(Behind Removable Power Supply Modules)

SC946ED
Chassis

BPN-SAS3-946MP Midplane
(Located at the back of the
Backplane Tray)

BPN-SAS3-946BA
Backplanes (3)

Removable
Front Panel
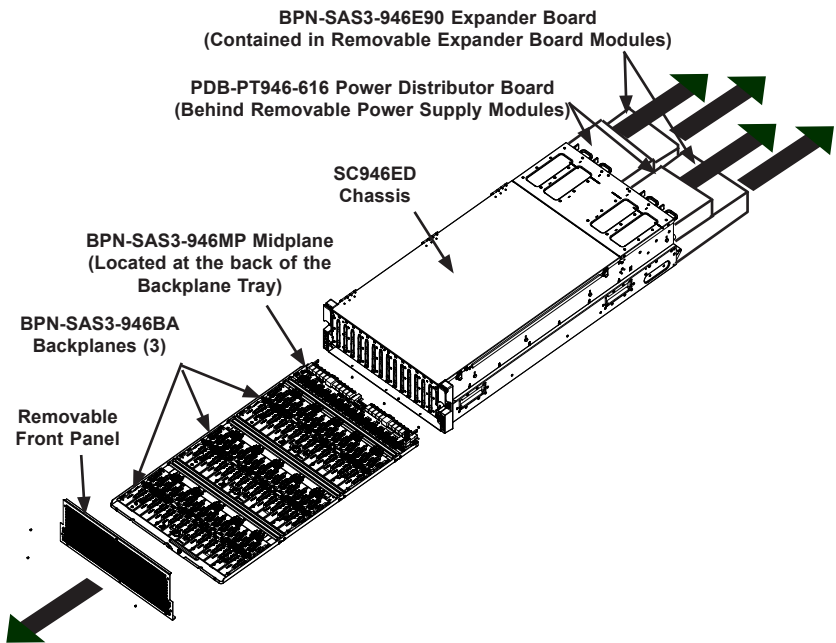
Figure B-1. SC946ED Backplane System Configuration
(This drawing is for illustrative purposes only. Your actual chassis may differ)

B-2   Version at Time of Publication

The backplanes have been designed to utilize the most up-to-date technology available, providing your system with reliable, high-quality performance.

This manual reflects backplane BPN-SAS3-946BA Revision 1.0, midplane BPN-SAS3-946MP Revision 1.0, expander board BPN-SAS3-946E90 Revision 1.0 and power distributor board PDB-PT946-616 Revision 1.0, the most current releases available at the time of publication. Always refer to the Supermicro web site at www.supermicro.com for the latest updates, compatible parts and supported configurations.

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

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

B-3   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.

B-4   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 a power shortage.

Notes

Appendix C

Cascading Configurations

5-1   Cascading Configuration Overview

The SC946EDJ chassis backplanes can be configured in a variety of combinations for different applications. The following sections will provide cascading configuration options specific to your system.

5-2   Cascading Configuration Options

Single Host (LSI 9300-8E) with One JBOD
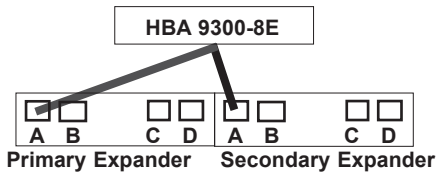
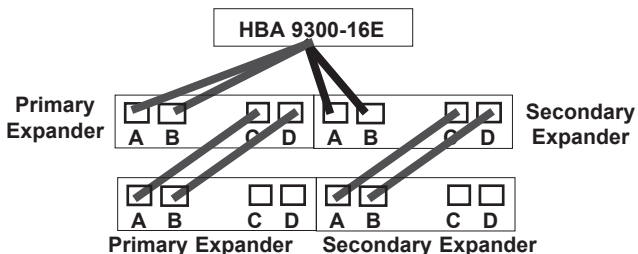**Figure 5-1. Single Host Cascading with One JBOD**

Single Host (LSI 9300-8E) with Two JBODs
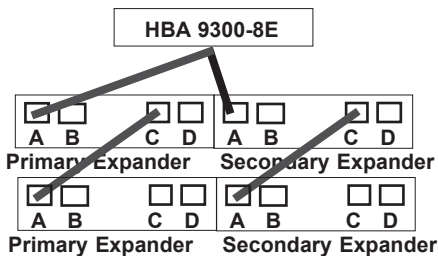
Figure 5-2. Single Host Cascading with Two JBODs

Single Host (LSI 9300-8E) with Three JBODs
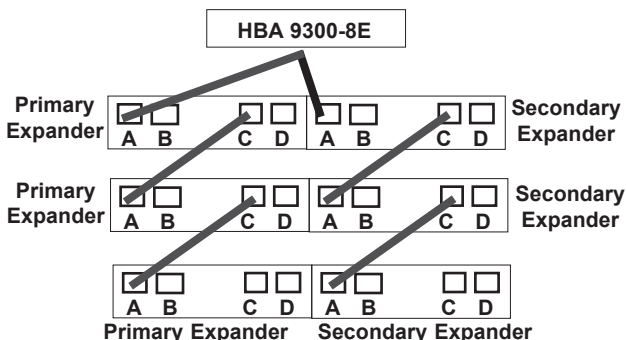
Figure 5-3. Single Host (LSI 9300-8E) with Three JBODs

Single Host (LSI 9300-16E) with One JBOD
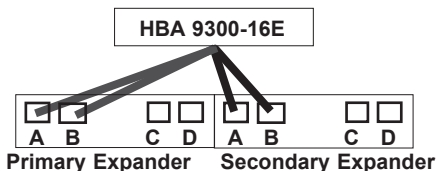
Figure 5-4. Single Host Cascading with One JBOD

Single Host (LSI 9300-16E) with Two JBODs

Figure 5-5. Single Host Cascading with Two JBODs

Single Host (LSI 9300-16E) with Three JBODs
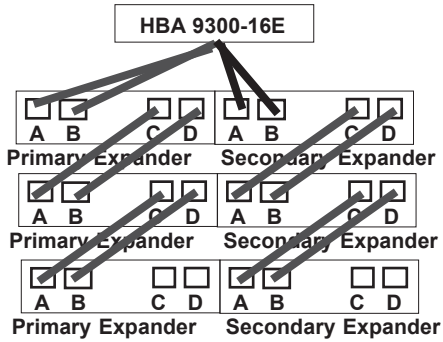
Figure 5-6. Single Host (LSI 9300-8E) with Three JBODs

Single Host (LSI 9300-16E) with One JBOD
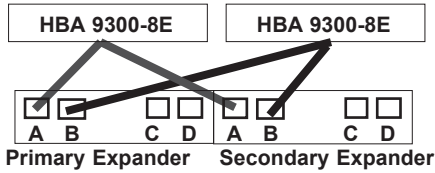
Figure 5-7. Single Host Cascading with One JBOD

Single Host (LSI 9300-16E) with One JBOD
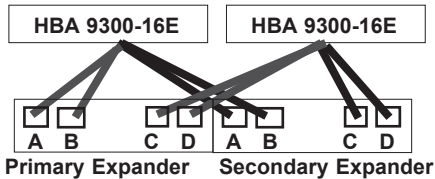
Figure 5-8. Single Host Cascading with Two JBODs

Dual Host (LSI 9300-8E) with Two JBODs
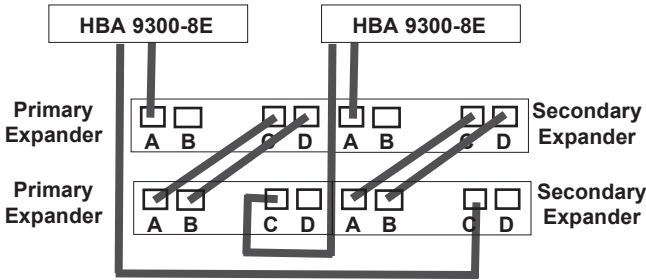
Figure 5-9. Dual Host Cascading with Two JBODs

Dual Host (LSI 9300-16E) with Two JBODs
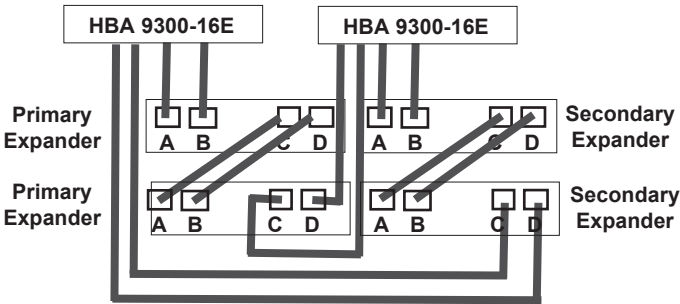
Figure 5-10. Dual Host Cascading with Two JBODs

Four Hosts (LSI 9300-8E) with One JBOD
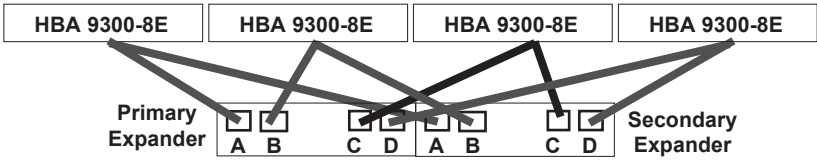
Figure 5-10. Four Host Cascading with One JBOD

Four Hosts (LSI 9300-8E) with One JBOD and Zoning

Figure 5-10. Four Host Cascading with One JBOD