SUPER○®

SUPERSERVER

5017R-iHDP

Revision 1.0

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Preface

About This Manual

This manual is written for professional system integrators and PC technicians. It provides information for the installation and use of the SuperServer 5017R-iHDP. Installation and maintenance should be performed by experienced technicians only.

The SuperServer 5017R-iHDP is a 1U rackmount server based on the SC816LTS-655BP server chassis and the Super X9SCFF-F motherboard. Please refer to our web site for updates on supported processors.

Manual Organization

Chapter 1: Introduction

The first chapter provides a checklist of the main components included with the server system and describes the main features of the Super X9SCFF-F motherboard and the SC816LTS-655BP chassis.

Chapter 2: Server Installation

This chapter describes the steps necessary to install the SuperServer 5017R-iHDP into a rack and check out the server configuration prior to powering up the system. If your server was ordered without the processor and memory components, this chapter will refer you to the appropriate sections of the manual for their installation.

Chapter 3: System Interface

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

Chapter 4: Standardized Safety Warnings

You should thoroughly familiarize yourself with this chapter for a general overview of safety precautions that should be followed when installing and servicing the SuperServer 5017R-iHDP.

Chapter 5: Advanced Motherboard Setup

Chapter 5 provides detailed information on the X9SCFF-F motherboard, including the locations and functions of connectors, headers and jumpers. Refer to this chapter when adding or removing processors or main memory and when reconfiguring the motherboard.

Chapter 6: Advanced Chassis Setup

Refer to Chapter 6 for detailed information on the SC816LTS-655BP chassis. You should follow the procedures given in this chapter when installing, removing or reconfiguring Serial ATA or peripheral drives and when replacing system power supply units and cooling fans.

Chapter 7: BIOS

The BIOS chapter includes an introduction to BIOS and provides detailed information on running the CMOS Setup Utility.

Appendix A: POST Error Beep Codes

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Chapter 1

Introduction

1-1   Overview

The SuperServer 5017R-iHDP is comprised of two main subsystems: the SC816LTS-655BP 1U chassis and the X9SCFF-F motherboard. Please refer to our web site for information on operating systems that have been certified for use with the SuperServer 5017R-iHDP (www.supermicro.com).

In addition to the motherboard and chassis, various hardware components have been included with the system, as listed below:

- Eight 4-cm high-performance fans (FAN-0065L4)

- One passive heat sink (SNK-P0047PD)

- Two PCI-Express 3.0 x8 riser cards (RSC-RR1UFF-E8R), one used for LSI add-on card, the other available for additional add-on card use

- SATA Accessories
  Three SAS/SATA backplanes (BPN-SAS-815TQ)

- One SuperServer 5017R-iHDP Quick Reference Guide

- One rackmount rail kit (CSE-PT52L)

Note: a complete list of safety warnings is provided on the Supermicro web site at http://www.supermicro.com/about/policies/safety_information.cfm

1-2   Motherboard Features

At the heart of the SuperServer 5017R-iHDP lies the X9SCFF-F, a single processor motherboard based on the Intel® PCH C204 chipset. Below are the main features of the X9SCFF-F. See Figure 1-1 for a block diagram of the chipset.

Processors

The X9SCFF-F supports one Intel® Xeon E3-1200 V2 series (Socket H2) processor. Please refer to the motherboard description pages on our web site for a complete listing of supported processors (www.supermicro.com).

Memory

The X9SCFF-F has four DIMM slots that can support up to 32GB of DDR3-1600/1333/1066 ECC DIMM modules. Memory modules of the same size and speed should be used. See Chapter 5 for details.

SATA

A SATA controller is integrated into the chipset to provide a six-port Serial ATA subsystem 4x SATA 2.0 and 2x SATA 3.0 ports).

PCI Expansion Slots

The system supports one low-profile PCI-Express 3.0 x8 card with the use of an installed riser card. Another installed riser card is used for a pre-installed LSI add-on card.

I/O Ports

The I/O ports include a VGA port, two USB 2.0 ports, two Gb LAN (NIC) ports and a dedicated IPMI LAN port.

1-3   Server Chassis Features

The following is a general outline of the main features of the SC816LTS-655BP chassis.

System Power

When configured as a SuperServer 5017R-iHDP, the SC816LTS-655BP chassis includes a single 650W power supply.

SATA Subsystem

The SC816LTS-655BP chassis was designed to support 12 internal 3.5" fixed and two internal 2.5" SATA hard drives. These drives are not hot-swappable.

Control Panel

The SC816LTS-655BP's control panel includes a main power button and a UID indicator (LED).

Cooling System

The SC816LTS-655BP chassis has an innovative cooling design that features eight 4-cm high-performance system cooling fans in two separate housings and locations. Each fan plugs into a chassis fan header on the motherboard. Fan speed is controlled by IPMI.

**Figure 1-1. Intel C204 Chipset:
System Block Diagram**

Note: This is a general block diagram. Please see Chapter 5 for details.
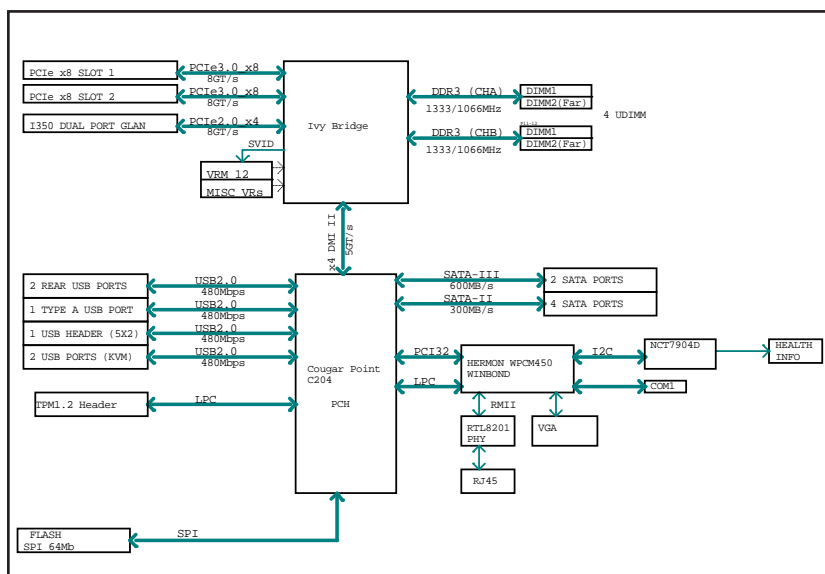
1-4   Contacting Supermicro

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Notes

Chapter 2

Server Installation

2-1   Overview

This chapter provides a quick setup checklist to get your SuperServer 5017R-iHDP up and running. Following the steps in the order given should enable you to have the system operational within a minimal amount of time. This quick setup assumes that your system has come to you with the processor and memory preinstalled. If your system is not already fully integrated with a motherboard, processor, system memory etc., please turn to the chapter or section noted in each step for details on installing specific components.

2-2   Unpacking the System

You should inspect the box the server was shipped in and note if it was damaged in any way. If the server 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 the server. 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. You will also need it placed near a grounded power outlet. Read the Rack and Server Precautions in the next section.

2-3   Preparing for Setup

The box the SuperServer 5017R-iHDP was shipped in should include two sets of rail assemblies, six rail mounting brackets and the mounting screws you will need to install the system into the rack. Follow the steps in the order given to complete the installation process in a minimal amount of time. 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) and 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).

- This product is not suitable for use with visual display work place devices acccording to §2 of the the German Ordinance for Work with Visual Display Units.

2-4 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 installation, stabilizers should be attached to the rack. In multiple rack installations, the racks should be coupled together.

- Always make sure the rack is stable before extending a 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.

Server Precautions

- Review the electrical and general safety precautions in Chapter 4.

- 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 up.

- 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 SATA 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.

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.).

Warning! 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.

2-5   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 Inner Rail and Inner Rail Extension

The SC816LT chassis includes mounting rails for installing the system into a rack. Each assembly consists of two sections: An inner rail which is pre-installed on the chassis, an inner rail extension, and an outer rail that secures to the rack. These assemblies are specifically designed for the left and right side of the chassis

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.
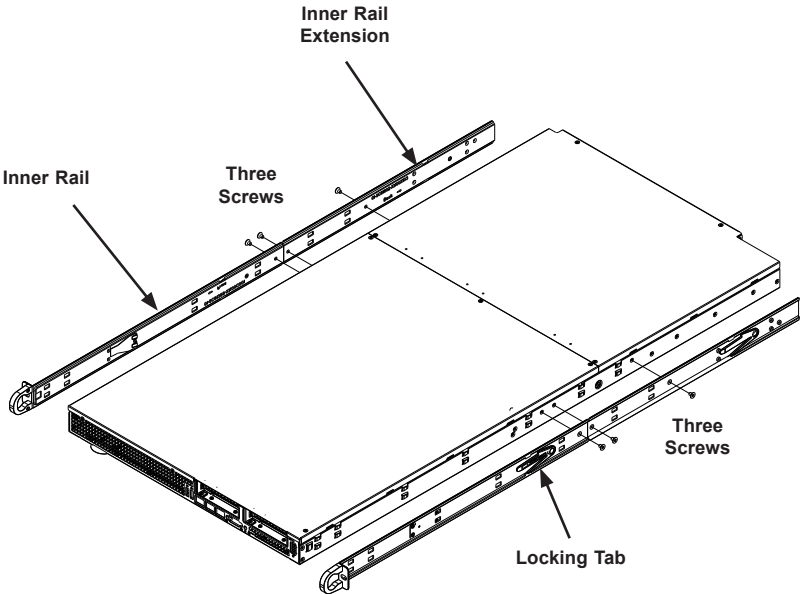
Figure 2-1. Identifying the Inner Rails and Inner Rail Extensions

Attaching the Inner Rail

The SC816LT chassis ships with the inner rails already installed. In most cases it is only necessary to install the inner rail extention.

Releasing Inner Rail from the Outer Rails

1. Identify the left and right inner rails and inner rail extensions as illustrated in Figure 6-1.

2. Place the inner rail and inner rail extension against the side of the chassis.

3. Slide the inner rail and inner rail extension forward toward the front of the chassis

4. Secure the inner rail and inner rail extension with three screws.

5. Repeat steps 1-4 with the remaining inner rail.
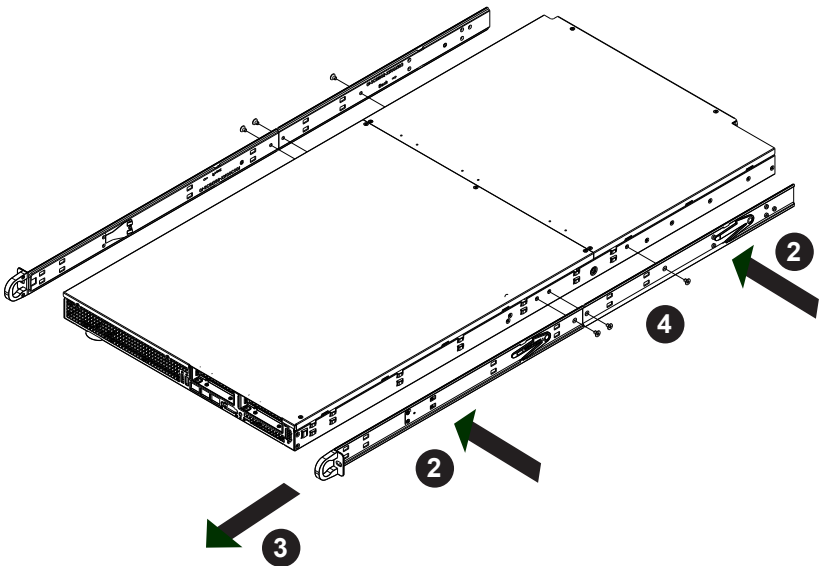
Figure 2-2. Attaching the Inner Rail and Inner Rail Extension

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

Flat head
M5 x 12 mm [0.472]

Washer for M5

Secure to the
Rear of the Rack

Attach Outer Rack Rails
Together

Secure to the
Front of the Rack
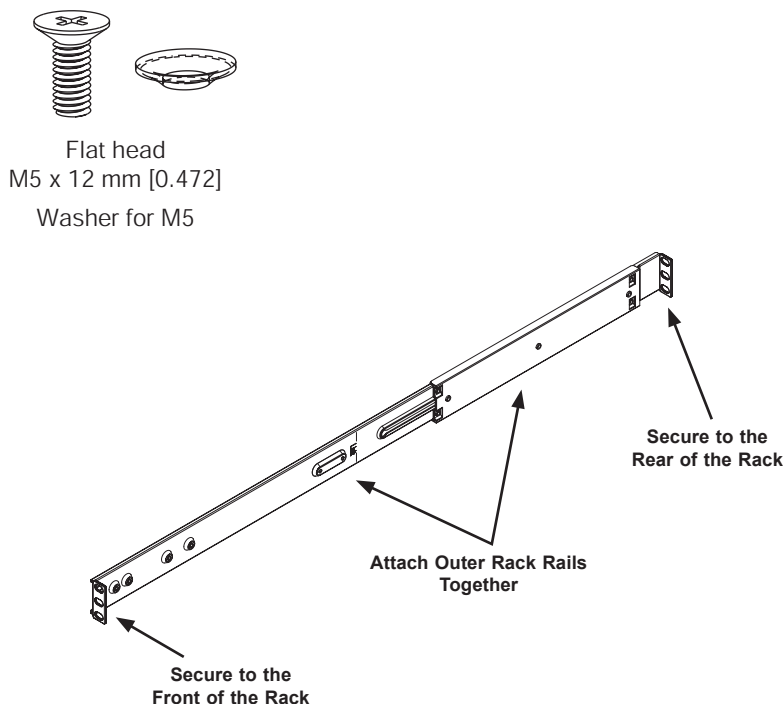
Figure 2-3. Assembling the Outer Rails

Installing the Outer Rails to the Rack

Installing the Outer Rails

1. Attach the short bracket to the outside of the long bracket. You must align the pins with the slides. Also, both bracket ends must face the same direction.
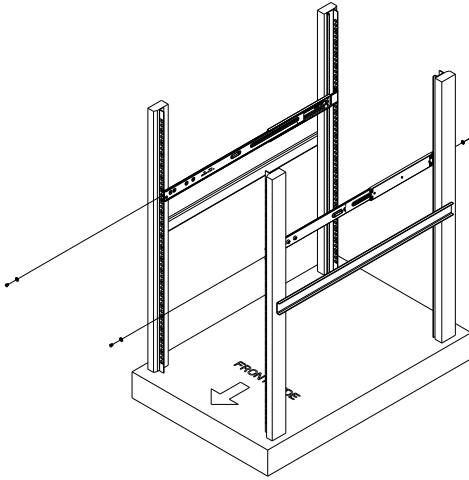
Figure 2-4. Attaching the Outer Rails to a Rack

2. Adjust both the short and long brackets to the proper distance so that the rail fits snugly into the rack.

3. Secure the long bracket to the front side of the outer rail with two M5 screws and the short bracket to the rear side of the outer rail with three M5 screws. Use a washer with each screw.

4. Repeat steps 1-4 for the remaining outer rail.

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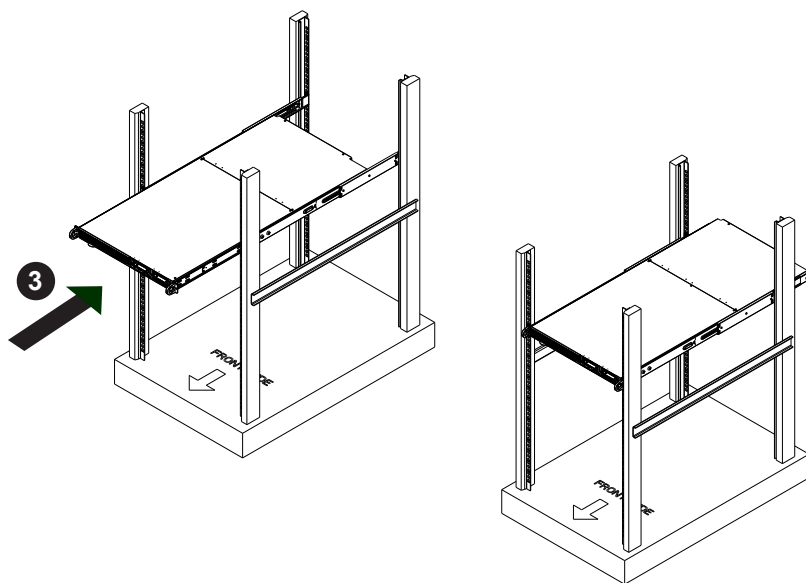
Figure 2-5. Installing the Chassis into a Rack

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

Chassis Installation

Installing the Chassis into a Rack

1. Confirm that the rails are correctly installed on the rack.

2. Align the guides on the chassis with the front of the rails.

3. Slide the guides of the chassis into the rails, keeping the pressure even on both sides, until the locking tabs click into place, securing chassis in a fully extended position.

4. Simultaneously depress the locking tabs of both rails at the same time and push the chassis all the way into the rack.

5. If necessary, use screws to secure the chassis handles to the front of the rack.

Chapter 3

System Interface

3-1   Overview

The server chassis has a single power on/off button. No other buttons or indicators are needed on the Hadoop server.

3-2   Control Panel Button

The power on/off button is located just to the right of the COM port on the front of the chassis.

POWER

Power

The main power button is used to apply or remove power from the power supply to the system. Turning off system power with this button removes the main power, but keeps standby power supplied to the system. For this reason, you should unplug the system before servicing. The power button has a built-in LED that will turn green when the power is on.

Notes

Chapter 4

Standardized Warning Statements for AC Systems

4-1   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 בבעייה 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 على 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 الدوائر القصيرة 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

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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.

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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 5

Advanced Motherboard Setup

This chapter covers the steps required to install the X9SCFF-F motherboard into the SC816LT-655BP chassis, connect the data and power cables and install add-on cards. All motherboard jumpers and connections are also described. A layout and quick reference chart are included in this chapter for your reference. Remember to completely close the chassis when you have finished working with the motherboard to better cool and protect the system.

5-1   Handling the Motherboard

Electrostatic Discharge (ESD) can damage electronic components. To prevent damage to any printed circuit boards (PCBs), it is important to handle them very carefully (see previous chapter). To prevent the X9SCFF-F motherboard from bending, keep one hand under the center of the board to support it when handling. The following measures are generally sufficient to protect your equipment from electric static discharge.

Precautions

- Use a grounded wrist strap designed to prevent Electrostatic Discharge (ESD).

- Touch a grounded metal object before removing any board from its antistatic bag.

- Handle a board by its edges only; do not touch its components, peripheral chips, memory modules or gold contacts.

- When handling chips or modules, avoid touching their pins.

- Put the motherboard, add-on cards and peripherals back into their antistatic bags when not in use.

- For grounding purposes, make sure your computer chassis provides excellent conductivity between the power supply, the case, the mounting fasteners and the motherboard.

Unpacking

The motherboard is shipped in antistatic packaging to avoid electrical static discharge. When unpacking the board, make sure the person handling it is static protected.

5-2   Motherboard Installation

This section explains the first step of physically mounting the X9SCFF-F into the SC816LT-655BP chassis. Following the steps in the order given will eliminate the most common problems encountered in such an installation. To remove the motherboard, follow the procedure in reverse order.

Installing to the Chassis

1. Remove the screws from the rear lip of the chassis cover (see Figure 2-5).

2. Release the top cover by pushing it away from you until it stops. You can then lift the top cover from the chassis to gain full access to the inside of the server

3. Make sure that the I/O ports on the motherboard align properly with their respective holes in the I/O shield at the back of the chassis.

4. Carefully mount the motherboard to the motherboard tray by aligning the board holes with the raised metal standoffs that are visible in the chassis.

5. Insert screws into all the mounting holes on your motherboard that line up with the standoffs and tighten until snug (if you screw them in too tight, you might strip the threads).

Note: Metal screws provide an electrical contact to the motherboard ground to provide a continuous ground for the system.

Warning: To avoid damaging the motherboard and its components, do not apply any force greater than 8 lbs. per square inch when installing a screw into a mounting hole.

5-3   Connecting Cables

Now that the motherboard is installed, the next step is to connect the cables to the board. These include the data cables for the peripherals and control panel and the power cables.

Connecting Data Cables

The cables used to transfer data from the peripheral devices have been carefully routed to prevent them from blocking the flow of cooling air that moves through the system from front to back. If you need to disconnect any of these cables, you should take care to keep them routed as they were originally after reconnecting them.

The following data cables (with their locations noted) must remian connected. (See the layout on page 5-12 for connector locations.)

- SATA drive cables (connect to SATA add-on cards included in system)

- SGPIO cable (T-SGPIO 0)

Connecting Power Cables

The X9SCFF-F has a two 8-pin primary power supply connectors (JPWR1, JPWR2) for connection to the ATX power supply. In addition, there is one 4-pin processor power connector (J3) that also must be connected to your power supply. See Section 5-9 for power connector pin definitions.

Figure 5-1. Control Panel Header Pins

```
                        20   19
        Ground   [ o    o ]  NMI
        x (Key)  [ o    o ]  x (Key)
   Power On LED  [ o    o ]  Vcc
        HDD LED  [ o    o ]  Vcc
       NIC1 LED  [ o    o ]  Vcc
       NIC2 LED  [ o    o ]  Vcc
  OH/Fan Fail LED [ o   o ]  Vcc/Front UID LED
   Power Fail LED [ o   o ]  Vcc
        Ground   [ o    o ]  Reset (Button)
        Ground   [ o    o ]  Power (Button)
                        2    1
```
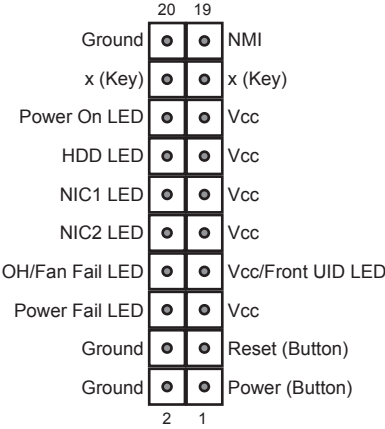
5-4   I/O Ports

The I/O ports are color coded in conformance with the PC 99 specification. See Figure 5-2 below for the locations of the various I/O ports.

Figure 5-2. I/O Ports
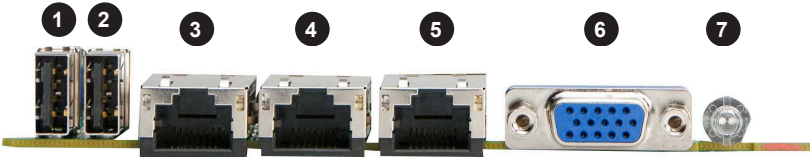
I/O Ports	
1. USB0	5. IPMI LAN
2. USB1	6. VGA Port
3. LAN1	7. Power Switch/LED
4. LAN2	

5-5   Processor and Heatsink Installation

Notes:

- When changing the CPU, always power down the system first. Make sure that you install the CPU into its socket before you install the CPU heatsink.

- If you buy a CPU separately, make sure that you use an Intel-certified multi-directional heatsink only.

- When receiving a motherboard without a processor pre-installed, make sure that the plastic CPU socket cap is in place and none of the socket pins are bent; otherwise, contact your retailer immediately.

- Refer to the Supermicro web site for updates on CPU support.

Installing an LGA1155 Processor

1. Press the load lever to release the load plate, which covers the CPU socket, from its locked position.

2. Gently lift the load lever to open the load plate. Remove the plate cap.

3. Use your thumb and your index finger to hold the CPU at the top center edge and the bottom center edge of the CPU.
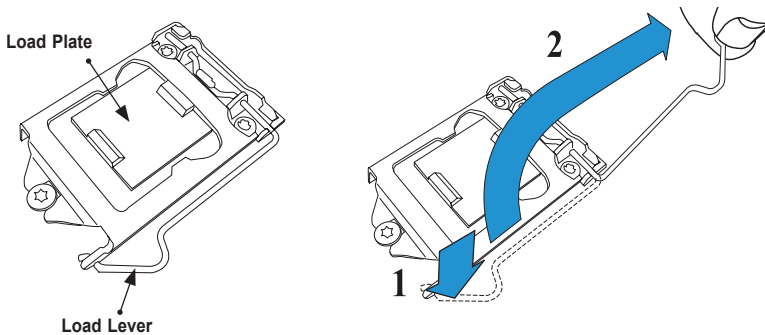
4. Align the CPU key (the semi-circle cutouts) against the socket keys. Once aligned, carefully lower the CPU straight down to the socket. (Do not drop the
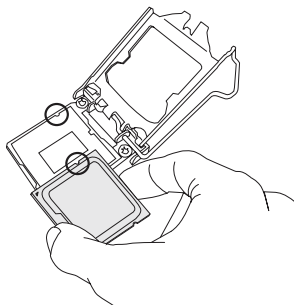
CPU on the socket. Do not move the CPU horizontally or vertically.

Do not rub the CPU against the surface or against any pins of the socket to avoid damage to the CPU or the socket.)

With the CPU inside the socket, inspect the four corners of the CPU to make sure that the CPU is properly installed.

5. Use your thumb to gently push the load lever down to the lever lock.

Save the plastic PnP cap. The motherboard must be shipped with the PnP cap properly installed to protect the CPU socket pins. Shipment without the PnP cap properly installed will cause damage to the socket pins.

Pin 1
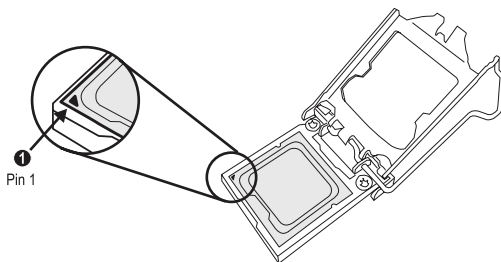
Warning: The CPU will only seat inside the socket in one direction. Make sure it is properly inserted before closing the load plate. If it doesn't close properly, do not force it as it may damage your CPU. Instead, open the load plate again and double-check that the CPU is aligned properly.

CPU properly installed

Load lever locked into place.

A **B**

Make sure "A" points are under B
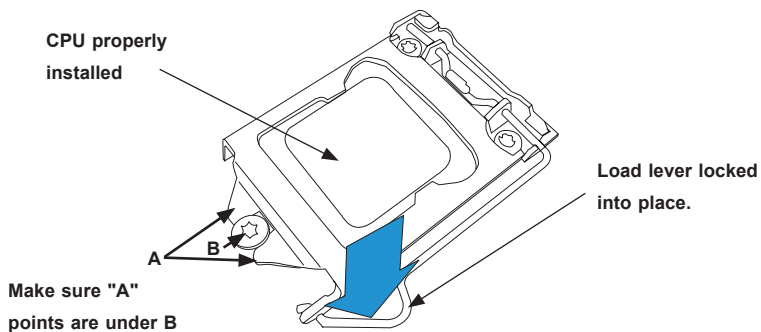
Installing a Heatsink

1. Remove the chassis cover.

2. Do not apply any thermal grease to the heatsink or the CPU die; the required amount has already been applied.

3. Place the heatsink on top of the CPU so that the four mounting holes are aligned with those on the motherboard and the heatsink bracket underneath.

4. Screw in two diagonal facing screws until just snug. (To avoid possible damage to the CPU and heatsink, do not over-tighten the screws.)

5. Finish the installation by fully tightening all four screws.

6. Reverse the order of this procedure to remove a heatsink.

Figure 5-3. Installing a Heatsink
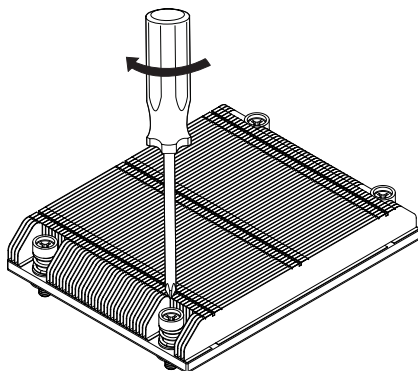
5-6   Installing Memory

Note: Check the Supermicro web site for recommended memory modules.

CAUTION
Exercise extreme care when installing or removing DIMMs to prevent any possible damage.

Installing & Removing DIMMs

1. Insert the desired number of DIMMs into the memory slots, starting with DIMMB1 (blue slot), then DIMMB2, DIMMA1, DIMMA2. Pay attention to the notch along the bottom of the module to prevent incorrect installation.

2. Insert each DIMM module vertically and snap it into place. Repeat step 1 to install more memory, if needed. See instructions on the next page.

Figure 5-34 DIMM Installation

To Install: Insert module vertically and press down until it snaps into place. Pay attention to the alignment notch at the bottom.

To Remove: Use your thumbs to gently push the release tabs near both ends of the module. This should release it from the slot.

Notch

Notch

Front View

Release Tab

Release Tab

Note: Notch should align with the receptive key point on the slot.

Top View of DDR3 Slot

Memory Support

The X9SCFF-F motherboard supports up to 32GB of DDR3-1600/1333/1066 ECC DIMMs. For the latest memory updates, please refer to our website at http://www.supermicro.com/products/motherboard.

Populating Memory Slots

When installing memory modules, the DIMM slots should be populated in the following order: DIMMB1 (blue slot), DIMMB2 (blue slot), DIMMA1 and DIMMA2.

● Always use DDR3 DIMM modules of the same size, type and speed.

● Mixed DIMM speeds can be installed. However, all DIMMs will run at the speed of the slowest DIMM.

● The motherboard will support one DIMM module or three DIMM modules installed. For best memory performance, install DIMM modules in pairs.

Recommended Population (Balanced)				
DIMMB1 Slot	DIMMB2 Slot	DIMMA1 Slot	DIMMA2 Slot	Total System Memory
2GB DIMM	2GB DIMM			4GB
2GB DIMM	2GB DIMM	2GB DIMM	2GB DIMM	8GB
4GB DIMM	4GB DIMM			8GB
4GB DIMM	4GB DIMM	4GB DIMM	4GB DIMM	16GB
8GB DIMM	8GB DIMM			16GB
8GB DIMM	8GB DIMM	8GB DIMM	8GB DIMM	32GB
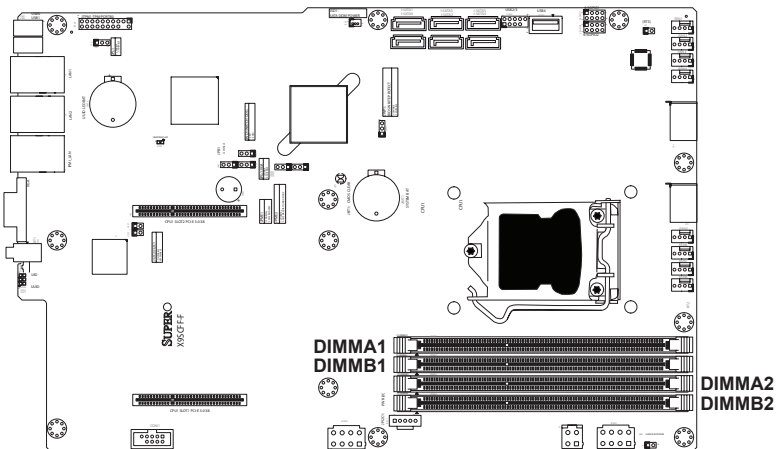
5-8   Motherboard Details

Figure 5-5. X9SCFF-F Layout
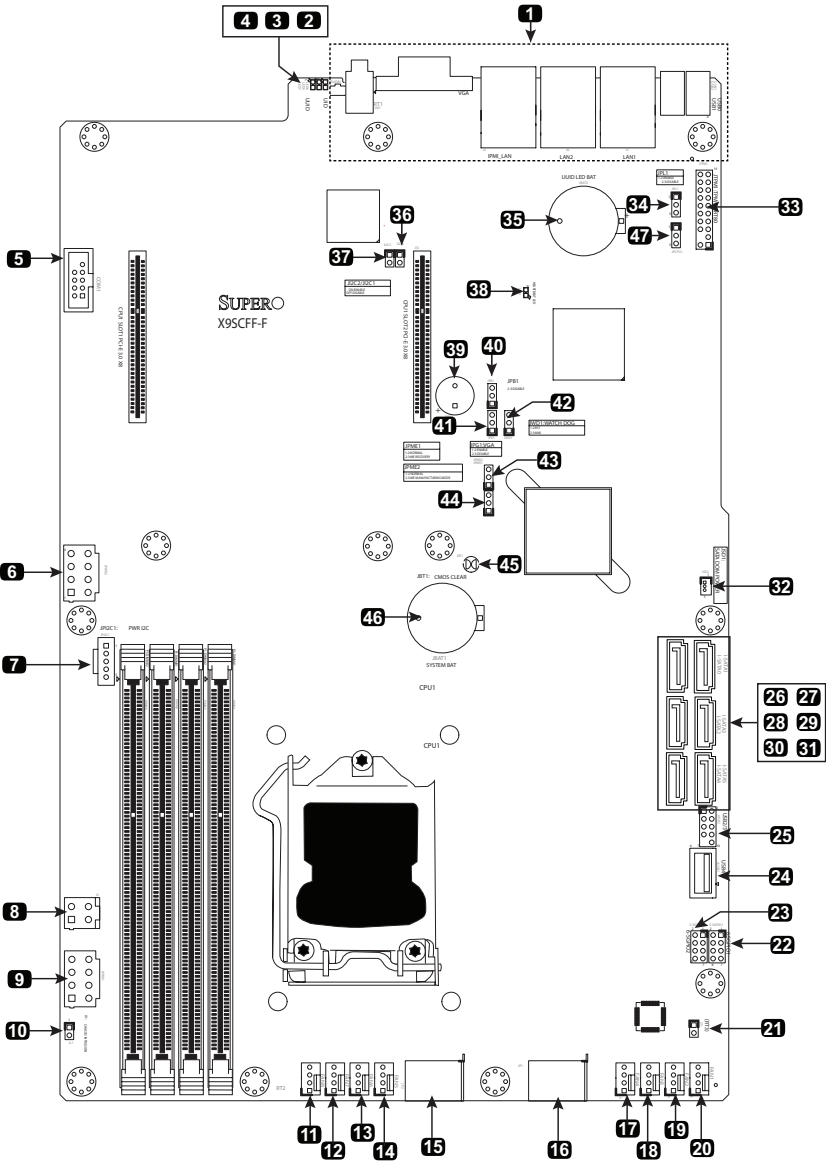
X9SCFF-F Quick Reference Table

#	Connector	Description
1	Front Panel I/O	Refer to the "Front Panel I/O Connectors" Section
5	COM1	Internal COM Ports
6,9	JPWR2,JPWR1	8-Pin Power Connector
7	JPI2C1	PWR supply (I2C) System Management Bus
8	J3	4-Pin Power Connector
10	JL1	Chassis Intrusion Header
11~14,17~20	Fans 1~4,5~8	System Fan Headers
15,16	JP2,JP1	Hard Disk Drive Power Connectors
21	J31 (RT3)	Hard Disk Drive Temperature Header
22,23	6-SGIOP1/2	Serial Link Gen. Purpose I/O Headers for AOC
24	JUSB1 (USB4)	Type "A" Internal USB Connector for USB4
25	JUSB2 (USB2/3)	Internal USB Header for USB 2/3
26~31	SATA 0,1,2,3,4,5	Internal SATA Ports
32	JSD1	Disk-On-Module (DOM) Power Connector
33	JTPM1	Trusted Platform Module (TPM) Header
35	OEM Reserved	Reserved OEM Feature
39	SPKR1	Internal Speaker/Buzzer
46	JBAT1	System Battery

#	Jumper	Description	Default Setting
34	JPL1	LAN1 Enable/Disable	Pins 1-2 (Enabled)
36,37	JI2C1,JI2C2	PCI Slot SMB Enable	Open (Disabled)
40	JPB1	BMC Enable/Disable	Pins 1-2 (Enabled)
41	JPG1	VGA Enable/Disable	Pins 1-2 (Enabled)
42	JWD1	Watch Dog Timer Reset/NMI	Pins 1-2 (Reset)
43	JPME2	ME Manufacturing Mode	Pins 1-2 (Normal)
44	JPME1	ME Recovery	Pins 1-2 (Normal)
45	JBT1	Clear CMOS	Short to clear CMOS
47	JPCFG1	System Type (for Web GUI)	Pins 2-3 (Hadoop)

#	LED	Description	State/Status
2	LED5	Overheat/Fan Fail/Power Fail Warning	Red: On, Steady: System Overheat Red: On, Blinking: Fan Fail/Power Fail
3	LED6	Front Panel UID	Blue: On, Steady: Unit ID switch is on
4	LED7	OEM Reserved	Reserved OEM Feature
38	LED4	IPMI Heartbeat	Green: Blinking: IPMI is running (Normal)

5-9   Connector Definitions

Power Headers (JPWR1,JPWR2,J3)

These headers are used to connect the motherboard to the power supply and are proprietary to the 1U chassis. Please see the tables on the right for pin definitions.

JPWR1 and JPWR2 must be attached to the power supply at same time along with J3.

The four pin power header at J3 provides auxilliary power (PS_ON#) for the system.

JPWR1, JPWR2 Pin Definitions			
Pin #	Definition	Pin #	Definition
1	GND	5	+12V
2	GND	6	+12V
3	GND	7	+12V
4	GND	8	+12V

J3 Pin Definitions			
Pin #	Definition	Pin #	Definition
1	GND	3	P5V_STBY
2	GND	4	PS_ON#

Serial Link Headers (6-SGPIO)

The 6-SGPIO1 and 6-SGPIO2 (Serial-Link General Purpose Input/Output) are located near the USB4 port on the motherboard. These headers are connected to the AOC SAS/SATA and are used to communicate with the enclosure management chip in the system. See the table on the right for pin definitions.

Serial_Link-SGPIO Pin Definitions			
Pin#	Definition	Pin	Definition
1	NC	2	DATA In
3	Ground	4	DATA Out
5	Load	6	Ground
7	Clock	8	NC

SATA DOM Power (JSD1)

The SATA DOM Power on JSD1 is used to supply power to SATA Disk-on-Module (DOM) solid-state storage devices.

Chassis Intrusion (JL1)

A Chassis Intrusion header is located at JL1 on the motherboard. Attach the appropriate cable from the chassis to inform you of a chassis intrusion when the chassis is opened.

Chassis Intrusion Pin Definitions (JL1)	
Pin#	Definition
1	Intrusion Input
2	Ground

Type A USB Pin Definition	
Pin#	Definition
1	+5V
2	USB_PN
3	USB_PP
4	Ground

Universal Serial Bus (USB)

Five Universal Serial Bus ports are pro-vided on the on the motherboard. Two of these are on a header (USB 2/3), and one on a Type A connector (USB 4). There are also two ports (USB 0/1) avail-able on the front panel. See the tables on the right for pin definitions.

USB Header Pin Definitions			
Pin #	Definition	Pin #	Definition
1	5V	2	5V
3	USB_N1	4	USB_N2
5	USB_P1	6	USB_P2
7	Ground	8	GND
9	Key	10	OC#

Fan Headers (FAN)

The X9SCFF-F has eight (8) fan headers onboard. These are 4-pin headers and are controlled by IPMI. Refer to the table on the right for pin definitions.

Fan Header Pin Definitions	
Pin#	Definition
1	Ground
2	+12V
3	Tachometer
4	PWM_Control

Serial Port (COM1)

There is one COM header (COM1) on the motherboard. COM1 is located next to Slot1. See the table on the right for pin definitions.

Serial Port-COM1 Pin Definitions			
Pin #	Definition	Pin #	Definition
1	DCD	6	DSR
2	RXD	7	RTS
3	TXD	8	CTS
4	DTR	9	RI
5	Ground	10	N/A

Power Supply I2C (JPI2C1)

The Power Supply I2C connector, lo-cated at JPI2C, monitors the status of the power supply, fan and system tem-perature. See the table on the right for pin definitions.

PWR Supply I2C Pin Definitions	
Pin#	Definition
1	Clock
2	Data
3	PWR Fail
4	Ground
5	NC

TPM Header (JTPM1)

This header is used to connect a Trusted Platform Module (TPM), that is available from a third-party vendor. A TPM is a security device that allows encryption and authentication of hard drives. It enables the motherboard to deny access if the TPM associated with the hard drive is not installed in the system. See the table on the right for pin definitions.

Trusted Platform Module Header Pin Definitions			
Pin #	Definition	Pin #	Definition
1	LCLK	2	GND
3	LFRAME	4	No Pin
5	LRESET	6	VCC5
7	LAD3	8	LAD2
9	VCC3	10	LAD1
11	LAD0	12	GND
13	RSV0	14	RSV1
15	SB3V	16	SERIRQ
17	GND	18	CLKRUN
19	LPCPD	20	RSV2

HDD Power (JP1,JP2)

These power headers provide 12V power to standard internal drives with Molex 4-pin power connectors. See pin definitions on the right.

HDD Power (JP1,JP2) I Pin Definitions			
Pin#	Definition	Pin#	Definition
1	Ground	5	Vcc 12
2	Ground	6	Vcc 12
3	Ground	7	Vcc 5
4	Ground	8	Vcc 5

RT3 (J31)

RT3 on location J31 is used to monitor the hard disk drive temperature. Attach the appropriate monitoring cable to this header.

RT3 Pin Definitions (J31)	
Pin#	Definition
1	TP
2	TN

5-10 Jumper Settings

Explanation of Jumpers

To modify the operation of the mother-board, 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. See the motherboard layout pages for jumper locations.

Note: On a two-pin jumper, "Closed" means the jumper is on both pins and "Open" means the jumper is either on only one pin or completely removed.
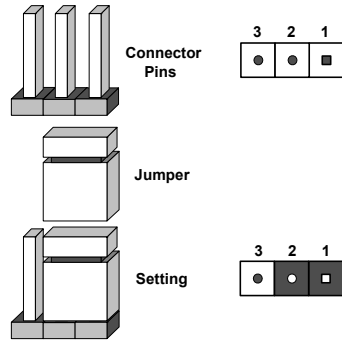
CMOS Clear

JBT1 is used to clear CMOS (which will also clear any passwords). Instead of pins, this jumper consists of contact pads to prevent accidentally clearing the contents of CMOS. To clear CMOS,

1. First power down the system and unplug the power cord(s).

2. With the power disconnected, short the CMOS pads with a metal object such as a small screwdriver.

3. Remove the screwdriver (or shorting device).

4. Reconnect the power cord(s) and power on the system

Note: *Do not use the PW_ON connector to clear CMOS*.

BMC Enable/Disable (JPB1)

Jumper JPB1 allows you to enable the embedded BMC (Baseboard Manage-ment Controller) to provide IPMI 2.0 support on the motherboard. See the table on the right for jumper settings.

BMC Enable Jumper Settings	
Pin#	Definition
1-2	Enabled (Default)
2-3	Disabled

VGA Enable/Disable

JPG1 allows you to enable or disable the VGA port. The default position is enables. See the table on the right for jumper settings.

VGA Enable/Disable Jumper Settings	
Jumper Setting	Definition
Pins 1-2	Enabled
Pins 2-3	Disabled

Watch Dog

JWD1 enables the Watch Dog function, a system monitor that takes action when a software application freezes the system. Jumping pins 1-2 will have WD reboot the system if a program freezes. Jumping pins 2-3 will generate a non-maskable interrupt for the program that has frozen. See the table on the right for jumper settings. Watch Dog must also be enabled in BIOS.

Watch Dog Jumper Settings	
Jumper Setting	Definition
Pins 1-2	Reset
Pins 2-3	NMI
Open	Disabled

Note: when Watch Dog is enabled, the user must write their own application software to disable the Watch Dog Timer.

SMB Bus to PCI Slots

Jumpers JI2C1 and JI2C2 allow you to connect the System Management Bus (SMB) to PCI-E and PCI slots. The default setting is set to **Disabled**. See the table on the right for jumper settings.

I2C to PCI-Slots (JI2C) Jumper Settings	
Jumper	Definition
On	Enabled
Off	Disabled (Default)

ME Recovery

When enabled, Intel ME Recovery (JPME1) is used to update the ME (Management Engine) firmware. When disabled, the firmware is protected.

ME Recovery (JPME1)	
Pin#	Definition
1-2	Normal (Default)
2-3	ME Recovery

ME Manufacturing Mode

Set the jumper to ME Manufacturing Mode (Maintenance Mode) to enable this feature.

ME Manufacturing Mode (JPME2)	
Pin#	Definition
1-2	Normal (Default)
2-3	ME Manufacturing Mode

LAN1/LAN2 Enable/Disable

Change the setting of jumper JPL1/ JPL2 to enable or disable the LAN1 / LAN2 ports, respectively. The default setting is enabled.

LAN1/2 Enable/Disable Jumper Settings	
Jumper Setting	Definition
Pins 1-2	Enabled
Pins 2-3	Disabled

System Type

Change the setting of jumper JPCFG1 to specify the type of system the motherboard is being used in (Hadoop or FatTwin). This is used to display the correct GUI on the web. For the 5017R-iHDP, the default setting is pins 2-3.

System Type Jumper Settings	
Jumper Setting	Definition
Pins 1-2	FatTwin
Pins 2-3	Hadoop

5-11 Onboard Indicators

IPMI Dedicated LAN Port

An IPMI Dedicated LAN port is included on the I/O backpanel. The yellow LED on the right indicates activity, while the green LED on the left indicates the speed of the connection. See the table at right for more information.

GLAN Link Indicator	
LED Color	Definition
Off	No Connection or 10 Mbps
Green	100 Mbps
Amber	1 Gbps

LAN LEDs

There are two Gigabit-LAN ports, each with two LEDs. The yellow LED indicates activity, while the Link/Speed LED may be green, amber or off to indicate the speed of the connection. See the table at right for more information.

LAN Activity Indicator LED Settings		
Color	Status	Definition
Yellow	Flashing	Active

GLAN Link Indicator	
LED Color	Definition
Off	No Connection or 10 Mbps
Green	100 Mbps
Amber	1 Gbps

IPMI Heartbeat

An IPMI Heartbeat LED is located at LED4. When LED4 blinks, the IPMI functions properly. Refer to the table on the right for details.

IPMI Heartbeat LED Indicator (LED4) LED Settings	
Blinking	IPMI is ready for use
Off	IPMI is disabled

Overheat/Fan Fail/PWR Fail LED

The Overheat Warning LED (LED5) indicates a system overheat is being detected. Please see the table on the right for message descriptions.

OH/Fan Fail/PWR Fail Warning LED LED Settings	
On (Steady)	System Overheat
Blinking	Fan Fail/Power Fail

Unit ID LED

The Unit LED is controlled by the Unit ID Button. It enables the user to pinpoint this particular motherboard that may be in need of service. Turn on the UID button in the front of the chassis or on the motherboard's I/O panel to identify the unit in need of servicing.

Unit ID LED LED Settings	
On (Steady)	Unit ID switch is on
Off	Unit ID switch is off

5-12 SATA Ports

I-SATA Ports

A total of six Serial ATA (SATA) ports are provided on the motherboard. Of these, two ports support SATA 3.0 (I-SATA 0/1), while the remaining four are SATA 2.0. See the table on the right for pin definitions.

SATA Port Pin Definitions	
Pin #	Definition
1	Ground
2	TXP
3	TXN
4	Ground
5	RXN
6	RXP
7	Ground

SATA Types	
Port#	Connection Type
I-SATA 2~5,	SATA 2.0 (3 Gb/s)
I-SATA 0/1	SATA 3.0 (6 Gb/s)

5-13 Installing Software

The Supermicro ftp site contains drivers and utilities for your system at ftp://ftp.supermicro.com. Some of these must be installed, such as the chipset driver.

After accessing the ftp site, go into the CDR_Images directory and locate the ISO file for your motherboard. Download this file to create a CD/DVD of the drivers and utilities it contains. (You may also use a utility to extract the ISO file if preferred.)

Another option is to go to the Supermicro Website at http://www.supermicro.com/products/. Find the product page for your motherboard here, where you may download individual drivers and utilities.

After creating a CD/DVD with the ISO files, insert the disk into the CD/DVD drive on your system and the display shown in Figure 5-6 should appear.
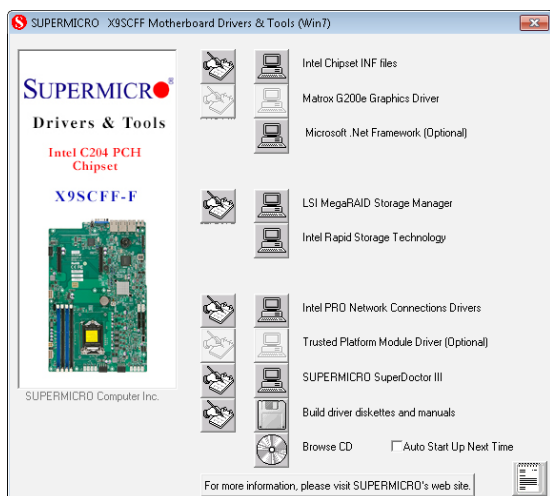
Figure 5-6. Driver/Tool Installation Display Screen

Note: Click the icons showing a hand writing on paper to view the readme files for each item. Click the computer icons to the right of these items to install each item (from top to the bottom) one at a time. **After installing each item, you must re-boot the system before moving on to the next item on the list.** The bottom icon with a CD on it allows you to view the entire contents.

SuperDoctor III

The SuperDoctor® III program is a web-based management tool that supports remote management capability. It includes Remote and Local Management tools. The local management is called SD III Client. The SuperDoctor III program allows you to monitor the environment and operations of your system. SuperDoctor III displays crucial system information such as CPU temperature, system voltages and fan status. See the figures below for examples of the SuperDoctor III interface.

Note: The default User Name and Password for SuperDoctor III is ADMIN / ADMIN.

Note: When SuperDoctor III is first installed, it adopts the temperature threshold settings that have been set in BIOS. Any subsequent changes to these thresholds must be made within SuperDoctor III, as the SuperDoctor III settings override the BIOS settings. To set the BIOS temperature threshold settings again, you would first need to uninstall SuperDoctor III.

Figure 5-7. SuperDoctor III Interface Display Screen (Health Information)
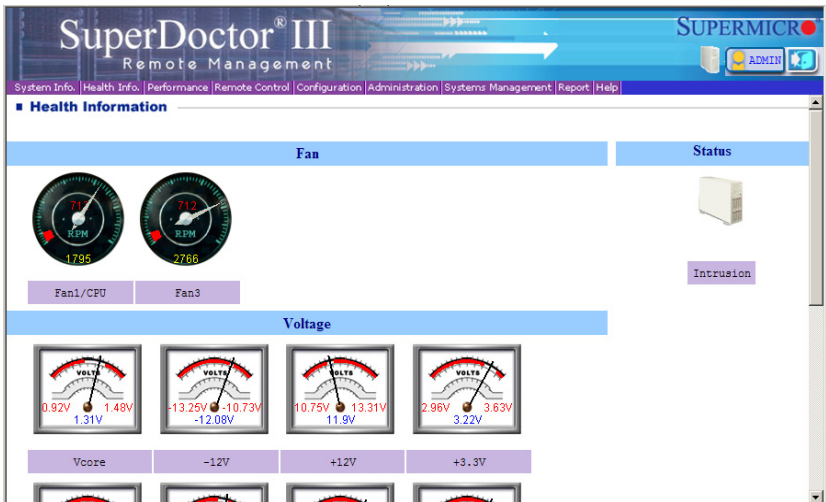
Figure 5-8. SuperDoctor III Interface Display Screen (Remote Control)
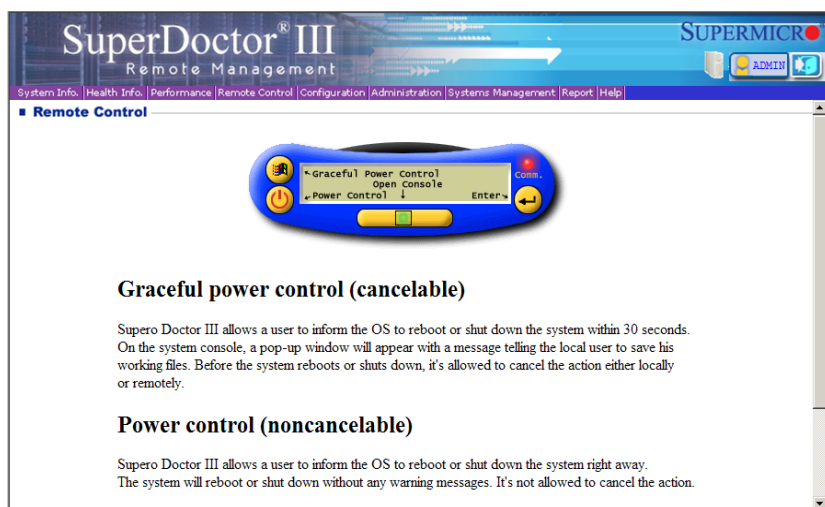
Note: The SuperDoctor III program and User's Manual can be downloaded from the Supermicro web site at http://www.supermicro.com/products/accessories/software/SuperDoctorIII.cfm. For Linux, we recommend that you use the SuperDoctor II application instead.

5-14 Onboard Battery

Please handle used batteries carefully. Do not damage the battery in any way; a damaged battery may release hazardous materials into the environment. Do not discard a used battery in the garbage or a public landfill. Please comply with the regulations set up by your local hazardous waste management agency to dispose of your used battery properly.

Figure 5-9. Installing the Onboard Battery

LITHIUM BATTERY

BATTERY HOLDER
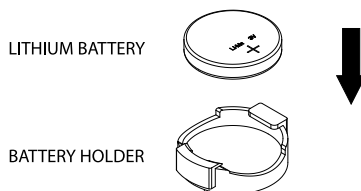
Chapter 6

Advanced Chassis Setup

This chapter covers the steps required to install components and perform maintenance on the SC816LTS-655B chassis. For component installation, follow the steps in the order given to eliminate the most common problems encountered. If some steps are unnecessary, skip ahead to the step that follows.

Tools Required: The only tool you will need to install components and perform maintainance is a Philips screwdriver.

6-1   Static-Sensitive Devices

Electrostatic Discharge (ESD) can damage electronic components. To prevent damage to any printed circuit boards (PCBs), it is important to handle them very carefully. The following measures are generally sufficient to protect your equipment from ESD discharge.

Precautions

- Use a grounded wrist strap designed to prevent static discharge.

- Touch a grounded metal object before removing any board from its antistatic bag.

- Handle a board by its edges only; do not touch its components, peripheral chips, memory modules or gold contacts.

- When handling chips or modules, avoid touching their pins.

- Put the motherboard, add-on cards and peripherals back into their antistatic bags when not in use.

- For grounding purposes, make sure your computer chassis provides excellent conductivity between the power supply, the case, the mounting fasteners and the motherboard.

Unpacking

The motherboard is shipped in antistatic packaging to avoid static damage. When unpacking the board, make sure the person handling it is static protected.

Figure 6-1. Chassis Front View

LAN Ports   Low-Profile PCI-E Slot Covers

COM Port   Power Button   UID Button
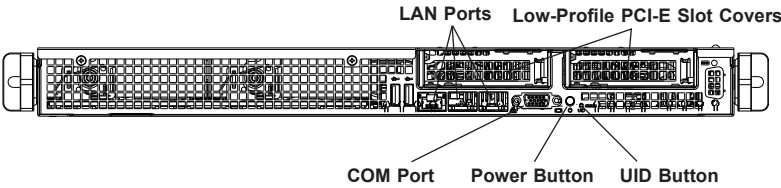
6-2   Removing the Covers

The SC816LT chassis features both a front and a rear cover, which allow access to the interior of the chassis.

Removing the Chassis Covers

1. Remove the power cord from the rear of the chassis.

2. Remove the two screws securing the front cover to the front of the chassis.

3. Remove the four screws on the side and back edges of the front cover.

4. Lift the front cover up and off the chassis.

5. Remove the four screws on the front and back edges of the rear cover.

6. Lift the rear cover up and off the chassis.

Figure 6-2. Removing the Chassis Covers
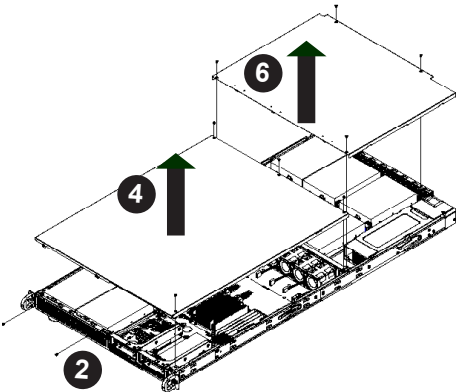
6-3   System Fans

Eight internal system fans in two separate fan housings provide cooling for the system. The system fans are easily removed from the chassis with a screwdriver.

Replacing a System Fan

1. Determine the location of the failed fan. If necessary, briefly remove the chassis cover while the system is running in order to locate the failed fan.

2. Power down the chassis with the operating system, remove the power cord from the rear of the power supply and remove the cover as described previously.

3. Disconnect the fan wiring.

4. Remove the two screws securing the fan housing to the floor of the chassis.

5. Lift the fan housing up and out of the chassis.

6. **To remove the fans in the left system fan housing:**
    Grasp the top of the failed fan. Lift it up and out of the housing.

    To remove the fans in the right system fan housing:
    Remove the four rubber plugs securing the fan into the housing.
    Push upward on the underside of the failed fan, pushing it up and out of the housing.

7. Insert a replacement fan into the fan housing. Confirm that the replacement fan is aligned in the same direction as the fan it replaces. If this is a right side system fan, replace the four rubber plugs.

8. Replace the chassis cover, plug the power cord into the rear of the power supply and power up the system.

Left Side Fan Housing   Right Side Fan Housing
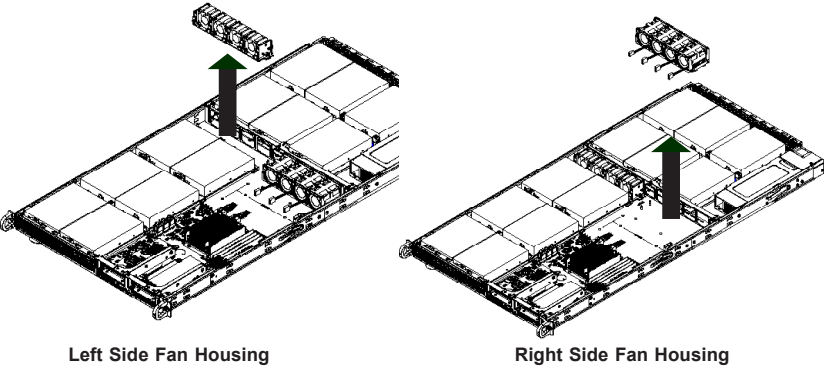
Figure 6-3. Replacing the Left and Right Fan Housings

Left Side Fan Housing   Right Side Fan Housing
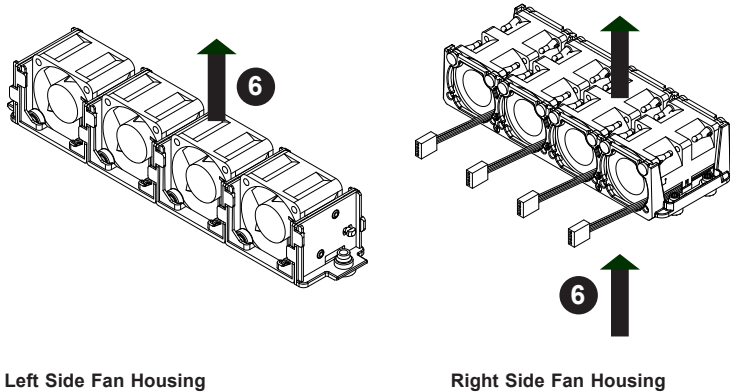
Figure 6-4. Left and Right Fan Housings

6-4   Drive Bay Installation/Removal

The SC816LT chassis contains twelve 3.5" and two 2.5" internal fixed hard drives. Each hard drive and its position in the chassis are labeled with a number that corresponds to the SATA port on the motherboard.
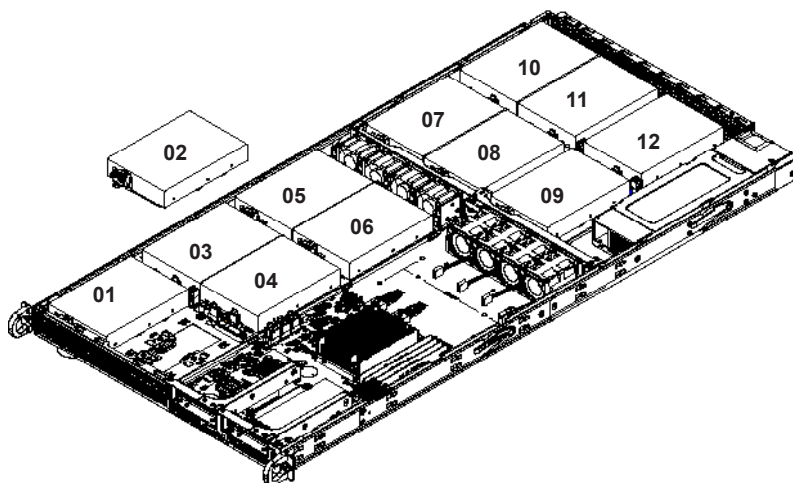
Figure 6-5. Hard Drive Positions and their Corresponding SATA Ports

Replacing Hard Drives

Replacing a 3.5" Hard Drive

1. Power down the chassis with the operating system, remove the cord from the rear of the power supply as described in Section 5-3 and remove the front and rear covers as described in Section 5-4.

2. Locate the latch on the HDD you wish to remove from the chassis.

3. Press down on the latch to release the HDD from the floor of the chassis.

4. Slide the HDD forward to release it from the mounting bracket that secures it to the floor of 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 Web site at http://www.supermicro.com/products/nfo/files/storage/SAS-1-CompList-110909.pdf

5. Lift the HDD up and out of the chassis, noting that the number on the floor of the chassis and the corresponding number on the hard drive.

6. Transfer the number on the failed hard drive to the replacement hard drive.

7. Align the bracket on the underside of the replacement hard drive with the mounting bracket on the floor of the chassis.

8. Slide the hard drive into the mounting bracket until it clicks in the locked position on the chassis floor.

3.5" HDD

HDD Latch
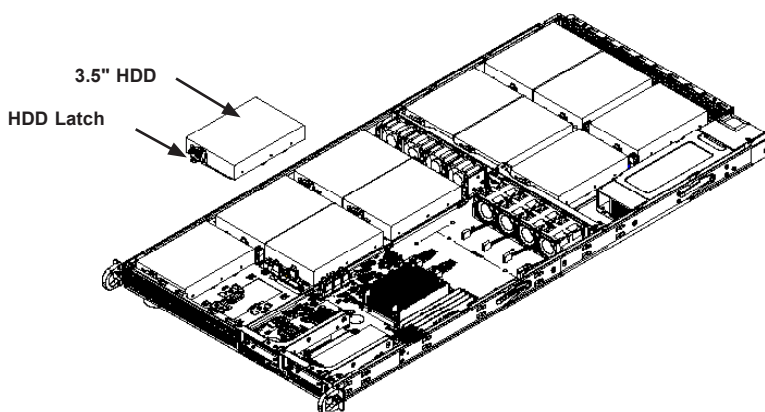
Figure 6-6. Installing 3.5" Hard Drives

6-5   Installing Expansion Cards

The SC816LT chassis supports two low-profile expansion cards, one of which has a pre-installed LSI add-on card. Each expansion card connects to the motherboard with a riser card. To install expansion cards, follow the instructions below.

Installing a Low-Profile Expansion Card

1. Power down the system, remove the cord from the rear of the power supply and remove the chassis covers as described previously.

2. Remove the six screws securing the riser card bracket to the chassis and set them aside for later use.

3. Lift the riser card bracket up and out of the chassis.

4. Open the latch which secures the PCI-E slot cover to the riser card bracket.

5. Remove the PCI-E slot cover by sliding it sideways out of the PCIE slot.

6. Insert the expansion card into the riser card, simultaneously sliding the PCI-E slot cover of the expansion card nto the PCI-E slot.

7. Insert the riser card into the motherboard and secure the riser card bracket to the chassis with the screws previously set aside.

8. Place the chassis covers on top of the chassis and secure them with the screws previously used for this purpose.

9. Plug the power cord into the rear of the power supply and power up the system.
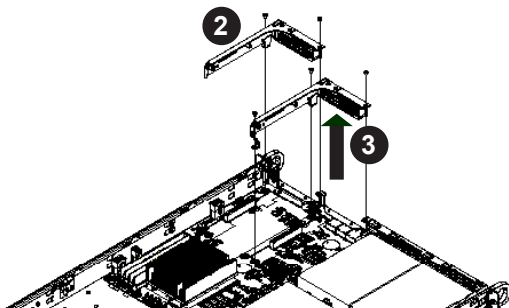
Figure 6-7. Removing the Riser Card Bracket from the Chassis

6-6   Replacing the Power Supply

The 5017R-iHDP includes a single 655W power supply. This power supply is auto-switching capable, which enables it to automatically sense and operate at a 100 to 240 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.

Power Supply Replacement

The system must be powered down to replace the power supply. Replacement units can be ordered directly from Supermicro.

Changing the Power Supply

1. Power down the system and disconnect the AC power cord from the power supply. Remove the chassis cover.

2. Remove the two screws that secure the power supply to the chassis, as illustrated below.

3. Press the release tab on the back of the power supply and pull the power supply out using the handle provided.

4. Push the replacement power supply module into the power bay until it clicks into the locked position. Secure with the screws previosuly removed.

5. Replace the chassis cover, then plug the AC power cord back into the power supply and restore power to the system.
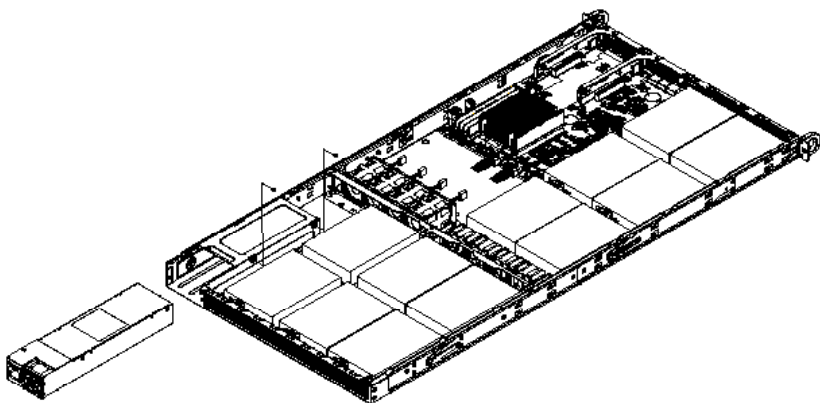
Figure 6-8. Replacing the Power Supply

Chapter 7

BIOS

7-1 Introduction

This chapter describes the AMI BIOS Setup Utility for the X9SCFF-F motherboard. The AMI ROM BIOS is stored in a Flash EEPROM and can be easily updated. This chapter describes the basic navigation of the AMI BIOS Setup Utility setup screens.

> **Note:** For instructions on BIOS recovery, please refer to the instruction guide posted at http://www.supermicro.com/support/manuals/.

Starting BIOS Setup Utility

To enter the AMI BIOS Setup Utility screens, press the <Delete> key while the system is booting up.

> **Note**: In most cases, the <Delete> key is used to invoke the AMI BIOS setup screen. There are a few cases when other keys are used, such as <F1>, <F2>, etc.

Each main BIOS menu option is described in this manual. The Main BIOS setup menu screen has two main frames. The left frame displays all the options that can be configured. Grayed-out options cannot be configured. Options in blue can be configured by the user. The right frame displays the key legend. Above the key legend is an area reserved for a text message. When an option is selected in the left frame, it is highlighted in white. Often a text message will accompany it. (**Note**: the AMI BIOS has default text messages built in. Supermicro retains the option to include, omit, or change any of these text messages.)

The AMI BIOS Setup Utility uses a key-based navigation system called "hot keys". Most of the AMI BIOS setup utility "hot keys" can be used at any time during the setup navigation process. These keys include <F1>, <F10>, <Enter>, <ESC>, arrow keys, etc.

> **Note**: Options printed in **Bold** are default settings.

How To Change the Configuration Data

The configuration data that determines the system parameters may be changed by entering the AMI BIOS Setup utility. This Setup utility can be accessed by pressing <Del> at the appropriate time during system boot.

How to Start the Setup Utility

Normally, the only visible Power-On Self-Test (POST) routine is the memory test. As the memory is being tested, press the <Delete> key to enter the main menu of the AMI BIOS Setup Utility. From the main menu, you can access the other setup screens. An AMI BIOS identification string is displayed at the left bottom corner of the screen, below the copyright message.

Warning! Do not upgrade the BIOS unless your system has a BIOS-related issue. Flashing the wrong BIOS can cause irreparable damage to the system. In no event shall Supermicro be liable for direct, indirect, special, incidental, or consequential damages arising from a BIOS update. If you have to update the BIOS, do not shut down or reset the system while the BIOS is updating. This is to avoid possible boot failure.

7-2   Main Setup

When you first enter the AMI BIOS Setup Utility, you will enter the Main setup screen. You can always return to the Main setup screen by selecting the Main tab on the top of the screen. The Main BIOS Setup screen is shown below.

```
         Aptio Setup Utility - Copyright (C) 2012 American Megatrends, Inc.
   Main  Advanced  Event Logs  IPMI  Boot  Security  Exit

                                                        Set the Date. Use Tab to
                                                        switch between Date elements.
   System Date                    [Tue 12/25/2012]
   System Time                    [19:51:23]

   Supermicro X9SCFF-F
   Version                        2.00
   Build Date                     12/31/2012


   Processor
       Intel(R) Xeon(R) CPU E3-1220L V2 @ 2.30GHz
   Speed                          2300 MHz
   Physical Count                 1               →←: Select Screen
   Logical Count                  4               ↑↓: Select Item
                                                  Enter: Select
   System Memory                                  +/-: Change Opt.
   Size                           8192 MB         F1: General Help
                                                  F2: Previous Values
                                                  F3: Optimized Defaults
                                                  F4: Save & Exit
                                                  ESC: Exit




         Version 2.15.1234. Copyright (C) 2012 American Megatrends, Inc.
```

System Overview: The following BIOS information will be displayed:

System Time/System Date

Use this option to change the system time and date. Highlight *System Time* or *System Date* using the arrow keys. Enter new values through the keyboard. Press the <Tab> key or the arrow keys to move between fields. The date must be entered in Day MM/DD/YY format. The time is entered in HH:MM:SS format. (**Note:** The time is in the 24-hour format. For example, 5:30 P.M. appears as 17:30:00.)

Supermicro X9SCFF-F

Version: This item displays the version of the BIOS used in the system.

Build Date: This item displays the day this version of BIOS was built.

Processor

The AMI BIOS will automatically display the status of processor as shown below:

Processor

Speed

Physical Count

Logical Count

System Memory

This displays the size of memory available in the system:

Size

7-3   Advanced Setup Configurations

Use the arrow keys to select Boot Setup and hit <Enter> to access the submenu items:

```
              Aptio Setup Utility - Copyright (C) 2012 American Megatrends, Inc.
       Main  Advanced  Event Logs  IPMI  Boot  Security  Exit

                                                    System Boot Feature Setting.
   ▶ Boot Feature
   ▶ CPU Configuration
   ▶ Chipset Configuration
   ▶ IDE/SATA Configuration
   ▶ PCIe/PCI/PnP Configuration
   ▶ Super IO Configuration
   ▶ Serial Port Console Redirection
   ▶ ACPI Configuration
   ▶ ME Subsystem
   ▶ Network Stack

                                                    →←: Select Screen
                                                    ↑↓: Select Item
                                                    Enter: Select
                                                    +/−: Change Opt.
                                                    F1: General Help
                                                    F2: Previous Values
                                                    F3: Optimized Defaults
                                                    F4: Save & Exit
                                                    ESC: Exit


              Version 2.15.1234. Copyright (C) 2012 American Megatrends, Inc.
```

▶BOOT Feature

Quiet Boot

This feature allows the user to select the bootup screen display between POST messages and the OEM logo. Select Disabled to display the POST messages. Select Enabled to display the OEM logo instead of the normal POST messages. The options are **Enabled** and Disabled.

AddOn ROM Display Mode

This feature sets the display mode for Option ROM. The options are **Force BIOS** and Keep Current.

Bootup Num-Lock

This feature selects the Power-on state for Numlock key. The options are Off and **On**.

Wait For 'F1' If Error

Select Enabled to force the system to wait until the 'F1' key is pressed if an error occurs. The options are Disabled and **Enabled**.

Interrupt 19 Trap Response

Interrupt 19 is the software interrupt that handles the boot disk function. When this item is set to Immediate, the ROM BIOS of the host adaptors will "trap" Interrupt 19 immediately and allow the drives that are attached to these host adaptors to function as bootable disks. If this item is set to Postponed, the ROM BIOS of the host adaptors will execute the trap during legacy boot only. The options are **Immediate** and Postponed.

Watch Dog Function

If enabled, the Watch Dog timer will allow the system to automatically reboot when a non-recoverable error occurs that lasts for more than five minutes. The options are Enabled and **Disabled.**

Power Button Function

This feature controls how the system shuts down when the power button is pressed. Select 4-Seconds Override to force the user to press and hold the Power Button for 4 seconds before the system turns off. Select Instant Off if you want the system to instantly power off when the Power Button is pressed. The options are 4 Seconds Override and **Instant Off.**

Restore on AC Power Loss

Use this feature to set the power state after a power outage. Select Power-Off for the system power to remain off after a power loss. Select Power-On for the system power to be turned on after a power loss. Select Last State to allow the system to resume its last state before a power loss. The options are Power-On, Power-Off and **Last State**.

▶CPU Configuration

> **Note**: Take Caution when changing the Advanced settings. An incorrect value may cause system to become unstable. When this occurs, revert to the default setting.

Clock Spread Spectrum

Select Enabled to allow BIOS to monitor and attempt to reduce the level of Electromagnetic Interference caused by the components whenever needed. Select Disabled to enhance system stability. The options are **Disabled** and Enabled.

Intel® Hyper Threading Technology

Set to Enabled to use the processor's Hyper Threading Technology feature. The options are **Enabled** and Disabled.

Active Processor Cores

Set to Enabled to use a processor's Second Core and beyond. (Please refer to Intel's web site for more information.) The options are **All** and 1.

Execute-Disable Bit Capability (Available when supported by the OS and the CPU)

Set to Enabled to enable the Execute Disable Bit which will allow the processor to designate areas in the system memory where an application code can execute and where it cannot, thus preventing a worm or a virus from flooding illegal codes to overwhelm the processor or damage the system during an attack. The default is **Enabled**. (Refer to Intel and Microsoft Web Sites for more information.)

Intel® Virtualization Technology (Available when supported by the CPU)

Select Enabled to use the feature of Virtualization Technology to allow one platform to run multiple operating systems and applications in independent partitions, creating multiple "virtual" systems in one physical computer. The options are **Enabled** and Disabled. **Note**: If there is any change to this setting, you will need to power off and restart the system for the change to take effect. Please refer to Intel's web site for detailed information.

Hardware Prefetcher (Available when supported by the CPU)

If set to Enabled, the hardware prefetcher will prefetch streams of data and instructions from the main memory to the L2 cache in the forward or backward manner to improve CPU performance. The options are Disabled and **Enabled**.

Adjacent Cache Line Prefetch (Available when supported by the CPU)

The CPU fetches the cache line for 64 bytes if this option is set to Disabled. The CPU fetches both cache lines for 128 bytes as comprised if **Enabled**.

Power Technology

This feature determines what power-saving scheme the motherboard uses. The options are Disabled, **Energy Efficient** and Custom. If Custom is selected, the following options become available:

EIST (Available when Power Technology is set to Custom)

EIST (Enhanced Intel SpeedStep Technology) allows the system to automatically adjust processor voltage and core frequency in an effort to reduce power consumption and heat dissipation. **Please refer to Intel's web site for detailed information.** The options are Disabled and **Enabled**.

CPU C3 Report (Available when Power Technology is set to Custom)

Select Enabled to allow the BIOS to report the CPU C3 State (ACPI C2) to the operating system. During the CPU C3 State, the CPU clock generator is turned off. The options are Enabled and **Disabled.**

CPU C6 Report (Available when Power Technology is set to Custom)

Select Enabled to allow the BIOS to report the CPU C6 State (ACPI C3) to the operating system. During the CPU C6 State, the power to all cache is turned off. The options are **Enabled** and Disabled.

CPU C7 Report (Available when Power Technology is set to Custom)

Select Enabled to allow the BIOS to report the CPU C7 State (ACPI C3) to the operating system. CPU C7 State is a processor-specific low C-State. The options are **Enabled** and Disabled.

C1E Support (Available when Power Technology is set to Custom)

Select Enabled to enable Enhanced C1 Power State to boost system per-formance. The options are **Enabled** and Disabled.

▶Turbo Boost Technology (Available if Intel® EIST technology is Enabled)

Turbo Mode

This feature allows processor cores to run faster than marked frequency in specific conditions. The options are Disabled and **Enabled.**

Long duration power limit - this is the processor power consumption limit (in Watts) during a long duration time window.

Long duration maintained - this is the time in milliseconds where the Long Duration Power Limit is maintained.

Short duration power limit - During Turbo Mode, the system may exceed the processor's default power setting and exceed the Short Duration Power limit. By increasing this value, the processor can provide better performance for a short duration.

▶**Chipset Configuration**

WARNING: Setting the wrong values in the following sections may cause the system to malfunction.

▶**CPU Bridge Configuration**

This item displays the current CPU Revision, Current CPU1 Memory Frequency, Memory Type and Memory Reference Code Revision.

Memory Frequency

This feature allows the user to select the memory speed. Under normal conditions, please set this to Auto. The options are Auto, Force DDR-1066, Force DDR-1333, and Force DDR-1600.

▶**Integrated I/O Configuration**

This item displays the current North Bridge Revision.

Intel VT-d

Select Enabled to enable Intel's Virtualization Technology support for Direct I/O VT-d by reporting the I/O device assignments to VMM through the DMAR ACPI Tables. This feature offers fully-protected I/O resource-sharing across the Intel platforms, providing the user with greater reliability, security and availability in networking and data-sharing. The settings are Enabled and **Disabled**.

Active State Power Management

Select Enabled to start Active-State Power Management for signal transactions between L0 and L1 Links on the PCI Express Bus. This maximizes power-saving and transaction speed. The options are Enabled and **Disabled**.

PCIE Maximum Read Request

This feature selects the setting for the PCIE maximum payload size. The options are **Auto,** 128 Bytes**,** 256 Bytes, 512 Bytes, 1024 Bytes, 2048 Bytes, and 4096 Bytes**.**

PCI Express Port

This feature enables or disables the PCI Express port. The options are Disabled, Enabled and **Auto.**

PCI Express Port - Gen X

Use this feature to select the speed of PEG. The options are **Auto**, Gen1, Gen2, and Gen3.

De-emphasis Control

Use this feature to configure the de-emphasis control on PEG. The options are **-6 dB** and -3.5 dB.

Detect Non-Compliance Device

This feature enables or disables the detection of a non-compliant device that is attached to the PCI Express Graphics (PEG) port. The options are **Disabled**, and Enabled**.**

▶South Bridge Configuration

This item displays the current South Bridge Revision.

USB Functions

This feature allows the user to decide the number of onboard USB ports to be enabled. The Options are Disabled and **Enabled**.

Legacy USB Support (available if USB Functions above is Enabled)

Select Enabled to use Legacy USB devices. If this item is set to Auto, Legacy USB support will be automatically enabled if a legacy USB device is installed on the motherboard, and vise versa. The settings are Disabled, **Enabled** and Auto.

BIOS EHCI Hand-Off (available if USB Functions above is Enabled)

This item is for Operating Systems that does not support Enhanced Host Controller Interface (EHCI) hand-off. When enabled, EHCI ownership change will be claimed by the EHCI driver. The settings are **Enabled** and Disabled.

Port 60/64 Emulation (available if USB Functions above is Enabled)

Select Enabled to activate I/O port 60h/64h emulation support. This must be enabled for complete USB keyboard legacy support for Operating Systems that are not compatible with USB devices. The settings are **Enabled** and Disabled.

▶IDE/SATA Configuration

When this submenu is selected, the AMI BIOS automatically detects the presence of the IDE devices and displays the following items:

SATA Mode Selection

Use this item to determine how the SATA controller(s) operate. The options are IDE Mode, **AHCI Mode** and RAID Mode.

IDE Mode

The following items are displayed when IDE Mode is selected:

IDE Legacy / Native Mode Selection

Use this feature to specify the operating mode of the integrated SATA controllers. The options are **Native** and Legacy.

SATA Port0~Port5

This item displays the information detected on the installed SATA drives on the particular SATA port.

AHCI Mode

The following items are displayed when AHCI Mode is selected:

Aggressive Link Power Management

When Enabled, the SATA AHCI controller manages the power usage of the SATA link. The controller will put the link in a low power mode during extended periods of I/O inactivity, and will return the link to an active state when I/O activity resumes. The options are **Enabled** and Disabled.

Serial ATA Port0~Port5

This item displays the information detected on the installed SATA drives on the particular SATA port.

Hot Plug

Set this item to Enabled for hot-plugging support. The options are **Enabled** and Disabled.

Staggered Spin Up

Set this item to Enabled for Staggered Spin-up support. The options are Enabled and **Disabled**.

RAID Mode

The following items are displayed when RAID Mode is selected:

PCH RAID CodeBase

Select Intel to enable the Intel SATA Host RAID Utility. Select LSI to use the LSI Host RAID Utility. The options are **Intel** and LSI.

Serial ATA Port0~Port5

This item displays the information detected on the installed SATA drives on the particular SATA port.

Hot Plug

Set this item to Enabled to enable hot-plugging. The options are **Enabled** and Disabled.

▶PCIe/PCI/PnP Configuration

This feature allows the user to set the PCI/PnP configurations for the following items:

PCI Latency Timer

This feature sets the latency Timer of each PCI device installed on a PCI bus. Select 64 to set the PCI latency to 64 PCI clock cycles. The options are 32, **64**, 96, 128, 160, 192, 224 and 248.

Above 4G Decoding (Available if the system supports 64-bit PCI decoding)

Select Enabled to decode a PCI device that supports 64-bit in the space above 4G Address. The options are Enabled and **Disabled**.

PERR# Generation

Select Enabled to allow a PCI device to generate a PERR number for a PCI Bus Signal Error Event. The options are Enabled and **Disabled**.

SERR# Generation

Select Enabled to allow a PCI device to generate an SERR number for a PCI Bus Signal Error Event. The options are Enabled and **Disabled**.

Launch Storage OpROM Priority

Use this feature to select the Option ROM to boot the system when there are multiple UEFI and Legacy storage Option ROMs available in the system. The options are Do not launch, UEFI only, Legacy only, **Legacy first**, and UEFI first.

Onboard LAN Option ROM Select

This feature selects whether to load the iSCSI or PXE onboard LAN option ROM. The options are iSCSI and **PXE**.

Load Onboard LAN1 Option ROM/Load Onboard LAN2 Option ROM

This feature is to enable or disable the onboard option ROMs. The default for LAN1 is **Enabled**. The default for LAN2 is **Disabled**.

Boots Graphics Adapter Priority

Use the feature to select the graphics controller to be used as the primary boot device. The options are **Offboard** and Onboard.

▶**Super IO Configuration**

Serial Port 1

Select Enabled to enable the onboard serial port. The options are **Enabled** and Disabled.

Serial Port 1 Settings

This option specifies the base I/O port address and the Interrupt Request address of Serial Port 1. Select Auto to allow the serial port to automatically assign system resources. The options for Serial Port 1 are **Auto**, (IO=3F8h; IRQ=4), (IO=3F8h; IRQ=3, (IO=2F8h; IRQ=3), (IO=3E8h; IRQ=5), (IO=2E8h; IRQ=7), (IO=3F8h; IRQ=3, 4, 5, 6, 7, 10, 11, 12;), (IO=2F8h; IRQ=3, 4, 5, 6, 7, 10, 11, 12;), (IO=3E8h; IRQ=3, 4, 5, 6, 7, 10, 11, 12;), and (IO=2E8h; IRQ=3, 4, 5, 6, 7, 10, 11, 12;)

▶**Serial Port Console Redirection**

COM 1, SOL

These two submenus allow the user to configure the following Console Redirection settings for a COM Port specified by the user.

COM1, SOL Console Redirection

Select Enabled to use a COM Port selected by the user for Console Redirection. The options are Enabled and Disabled. The default setting for COM1 is **Disabled**, and for SOL is **Enabled**.

▶**Console Redirection Settings**

Terminal Type

This feature allows the user to select the target terminal emulation type for Console Redirection. Select VT100 to use the ASCII Character set. Select VT100+ to add color and function key support. Select ANSI to use the Extended ASCII Character Set. Select VT-UTF8 to use UTF8 encoding to map Unicode characters into one or more bytes. The options are ANSI, VT100, **VT100+**, and VT-UTF8.

Bits Per second

Use this feature to set the transmission speed for a serial port used in Console Redirection. Make sure that the same speed is used in the host computer and the client computer. A lower transmission speed may be required for long and busy lines. The options are 9600, 19200, 38400, 57600 and **115200** (bits per second).

Data Bits

Use this feature to set the data transmission size for Console Redirection. The options are 7 Bits and **8 Bits**.

Parity

A parity bit can be sent along with regular data bits to detect data transmission errors. Select Even if the parity bit is set to 0, and the number of 1's in data bits is even. Select Odd if the parity bit is set to 0, and the number of 1's in data bits is odd. Select None if you do not want to send a parity bit with your data bits in transmission. Select Mark to add a mark as a parity bit to be sent along with the data bits. Select Space to add a Space as a parity bit to be sent with your data bits. The options are **None**, Even, Odd, Mark and Space.

Stop Bits

A stop bit indicates the end of a serial data packet. Select 1 Stop Bit for standard serial data communication. Select 2 Stop Bits if slower devices are used. The options are **1** and 2.

Flow Control

This feature allows the user to set the flow control for Console Redirection to prevent data loss caused by buffer overflow. Send a "Stop" signal to stop sending data when the receiving buffer is full. Send a "Start" signal to start sending data when the receiving buffer is empty. The options are **None** and Hardware RTS/CTS.

VT-UTF8 Combo Key Support

Select Enabled to enable VT-UTF8 Combination Key support for ANSI/VT100 terminals. The options are **Enabled** and Disabled**.**

Recorder Mode

Select Enabled to capture the data displayed on a terminal and send it as text messages to a remote server. The options are **Disabled** and Enabled.

Resolution 100x31

Select Enabled for extended-terminal resolution support. The options are Disabled and **Enabled**.

Legacy OS Redirection Resolution

Use this feature to select the number of rows and columns used in Console Redirection for legacy OS support. The options are **80x24** and 80x25.

Putty KeyPad

This feature selects Function Keys and KeyPad settings for Putty, which is a terminal emulator designed for the Windows OS. The options are **VT100**, LINUX, XTERMR6, SCO, ESCN, and VT400.

Redirection After BIOS Post

Use this feature to enable or disable legacy console redirection after BIOS POST. When set to Bootloader, legacy console redirection is disabled before booting the OS. When set to Always Enable, legacy console redirection remains enabled when booting the OS. The options are **Always Enable** and Bootloader.

Serial Port for Out-of-Band Management/Windows Emergency Management Services (EMS)

The submenu allows the user to configure Console Redirection settings to support Out-of-Band Serial Port management.

Console Redirection (for EMS)

Select Enabled to use a COM Port selected by the user for Console Redirection. The options are Enabled and **Disabled**.

▶Console Redirection Settings (for EMS)

This feature allows the user to specify how the host computer will exchange data with the client computer, which is the remote computer used by the user.

Out-of-Band Management Port

The feature selects a serial port used by the Microsoft Windows Emergency Management Services (EMS) to communicate with a remote server. The options are **COM1** and SOL.

Terminal Type

This feature allows the user to select the target terminal emulation type for Console Redirection. Select VT100 to use the ASCII character set. Select VT100+ to add color and function key support. Select ANSI to use the extended ASCII character set. Select VT-UTF8 to use UTF8 encoding to map Unicode characters into one or more bytes. The options are ANSI, VT100, VT100+, and **VT-UTF8**.

Bits Per Second

This item sets the transmission speed for a serial port used in Console Redirection. Make sure that the same speed is used in the host computer and the client computer. A lower transmission speed may be required for long and busy lines. The options are 9600, 19200, 57600, and **115200** (bits per second).

Flow Control

This feature allows the user to set the flow control for Console Redirection to prevent data loss caused by buffer overflow. Send a "Stop" signal to stop send-ing data when the receiving buffer is full. Send a "Start" signal to start sending data when the receiving buffer is empty. The options are **None,** Hardware RTS/CTS, and Software Xon/Xoff.

Data Bits, Parity, Stop Bits

The setting for each of these items is displayed.

▶ACPI Configuration

Use this feature to configure Advanced Configuration and Power Interface (ACPI) power management settings for your system.

High Precision Event Timers

Select Enabled to activate the High Performance Event Timer (HPET) that produces periodic interrupts at a much higher frequency than a Real-time Clock (RTC) does in synchronizing multimedia streams, providing smooth playback and reducing the de-pendency on other timestamp calculation devices, such as an x86 RDTSC Instruc-tion embedded in the CPU. The High Performance Event Timer is used to replace the 8254 Programmable Interval Timer. The options are **Enabled** and Disabled.

Suspend Mode

This setting allows you to configure the ACPI (Advanced Configuration and Power Interface) sleep state for your system when it is in the Suspend mode. The options are Suspend Disabled and **S1 (POS)**.

WHEA Support

This feature Enables the Windows Hardware Error Architecture (WHEA) support for the Windows 2008 operating system (and later versions). The options are **Enabled** and Disabled.
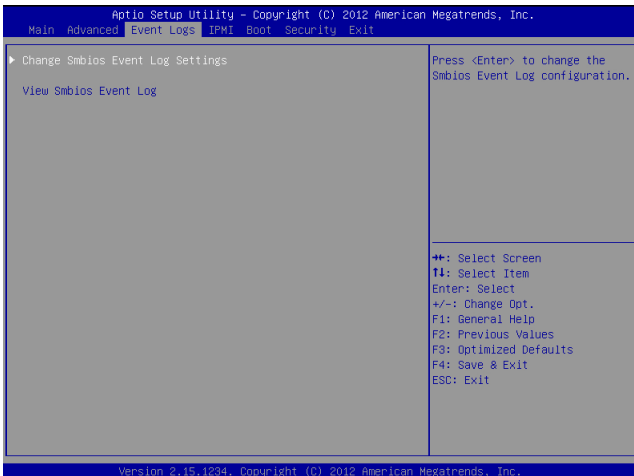
▶ME Subsystem

This feature displays the version number for the ME and the ME BIOS Interface.

▶Network Stack

Select Enabled to enable PXE (Preboot Execution Environment) or UEFI (Unified Extensible Firmware Interface) for network stack support. The options are Enabled and **Disabled**.

7-4   Event Logs

```
        Aptio Setup Utility - Copyright (C) 2012 American Megatrends, Inc.
    Main  Advanced  Event Logs  IPMI  Boot  Security  Exit

 ▶ Change Smbios Event Log Settings                      Press <Enter> to change the
                                                         Smbios Event Log configuration.
   View Smbios Event Log




                                                         ↔: Select Screen
                                                         ↑↓: Select Item
                                                         Enter: Select
                                                         +/-: Change Opt.
                                                         F1: General Help
                                                         F2: Previous Values
                                                         F3: Optimized Defaults
                                                         F4: Save & Exit
                                                         ESC: Exit


        Version 2.15.1234. Copyright (C) 2012 American Megatrends, Inc.
```

▶Change Smbios Event Log Settings

The following options are available:

Smbios Event Log

Change this item to enable or disable all features of the Smbios Event Logging during boot. The options are **Enabled** and Disabled.

Erase Event Log

This option erases all logged events. The options are **No**, Yes, Next reset and Yes, Every reset.

When Log is Full

This option automatically clears the Event Log memory of all messages when it is full. The options are **Do Nothing** and Erase Immediately.

MECI

The Multiple Event Count Increment (MECI) counter counts the number of occurrences a duplicate event must happen before the MECI counter is incremented. This is a numeric value. The default setting is **1**.

METW

The Multiple Event Time Window (METW) defines number of minutes must pass between duplicate log events before MECI is incremented. This is in minutes, from 0 to 99. The default setting is **60**.

View Smbios Event Log

Displays the Smbios Event Log stored in memory.

7-5   IPMI Configuration

Intelligent Platform Management Interface (IPMI) is a set of common interfaces that IT administrators can use to monitor system health and to manage the system as a whole. For more information on the IPMI specifications, please visit Intel's website at www.intel.com.
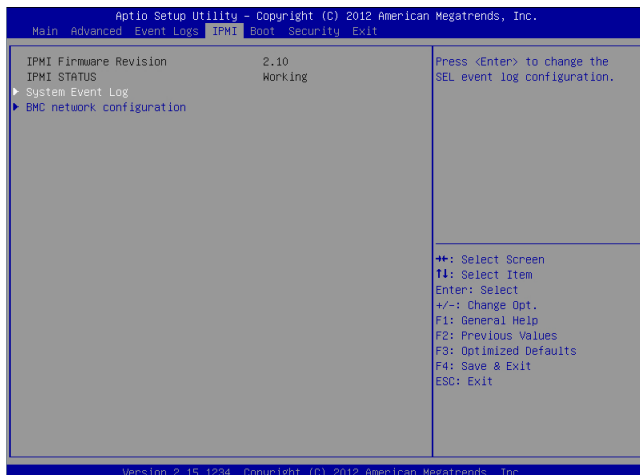
▶System Event Log

This feature is used to change the System Event Log (SEL) configuration.

SEL Components - Change this item to enable or disable all features of System Event Logging. The options are Enabled and **Disabled**. When Enabled, the following can be configured:

Erase SEL - This option erases all logged SEL events. The options are **No**, Yes, On Next reset and Yes, On Every reset.

When SEL Full

This option automatically clears the System Event Log memory of all messages when it is full. The options are **Do Nothing** and Erase Immediately.

▶BMC Network Configuration

Set this feature to configure the IPMI LAN adapter with a network address.

Update IPMI LAN Configuration

Select Yes to update the IPMI LAN configuration. The options are Yes and **No**.

Configuration Source

This feature selects whether the IP address, Subnet Mask and Gateway Address are automatically assigned by the network's DHCP server (Dynamic Host and Configuration Protocol) "Dynamic" or manually entered by the user "Static". If Static is selected, the IP Address, Subnet Mask and Gateway Address must be manually entered below. The options are Static, Dynamic and **Do Nothing**. The following items are displayed when Static is selected:

Current IP Address - Enter the IP address for this machine. This should be in decimal and in dotted quad form (i.e., 192.168.10.253). The value of each three-digit number separated by dots should not exceed 255.

Current Subnet Mask - Subnet masks tell the network which subnet this machine belongs to. The value of each three-digit number separated by dots should not exceed 255.

Current Station MAC Address - MAC addresses are 6 two-digit hexadecimal numbers (Base 16, 0 ~ 9, A, B, C, D, E, F) separated by dots (i.e., 00.30.48.D0.D4.60).

Current Gateway IP Address - Enter the Gateway or Router address this machine will use (i.e., 192.168.10.1).

7-6   Boot Settings

Use this feature to configure Boot Settings:

```
                 Aptio Setup Utility – Copyright (C) 2012 American Megatrends, Inc.
          Main  Advanced  Event Logs  IPMI  Boot  Security  Exit

          Setup Prompt Timeout            1                    Number of seconds to wait for
          Retry Boot Devices             [Disabled]            setup activation key.
          Boot option filter             [UEFI and Legacy]     65535(0xFFFF) means indefinite
                                                               waiting.

          Boot Option Priorities
          Boot Option #1                 [IBA GE Slot 0100 v1381]
          Boot Option #2                 [UEFI: Built-in EFI ...]

          Network Device BBS Priorities

        ▶ Delete Boot Option

                                                               ↔: Select Screen
                                                               ↑↓: Select Item
                                                               Enter: Select
                                                               +/-: Change Opt.
                                                               F1: General Help
                                                               F2: Previous Values
                                                               F3: Optimized Defaults
                                                               F4: Save & Exit
                                                               ESC: Exit


                  Version 2.15.1234. Copyright (C) 2012 American Megatrends, Inc.
```

Setup Prompt Timeout

Number of seconds to wait for setup activation key. Enter 65535 (0xFFFF) to wait indefinitely. The default setting is **1**.

Retry Boot Devices

Select this option to retry booting from the configured boot devices if the systems fail to boot initially. The options are **Disabled** and Enabled.

Boot Option Filter

Use this feature to control what devices the system can boot from. The options are **UEFI and Legacy**, Legacy only, and UEFI only.

Boot Option #1, Boot option #2, Boot Option #3, etc

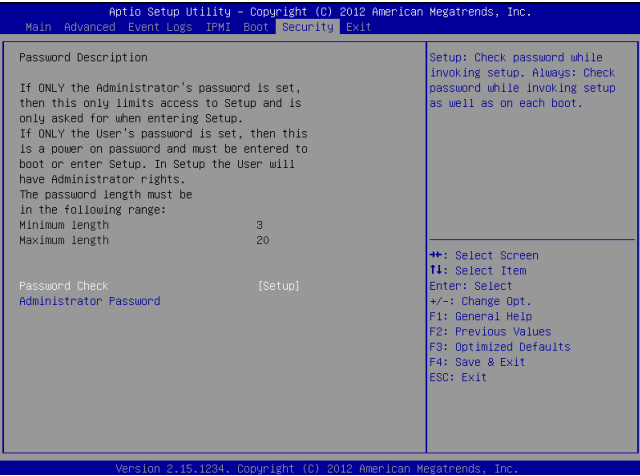The settings are **Built-in EFI Shell**, [any detected boot device] and Disabled.

Network Device BBS Priorities

Use this feature to set the order of the legacy network devices detected by the motherboard.

▶Delete Boot Option

This feature allows the user to delete any previously-defined boot device from the Boot Options Priority.
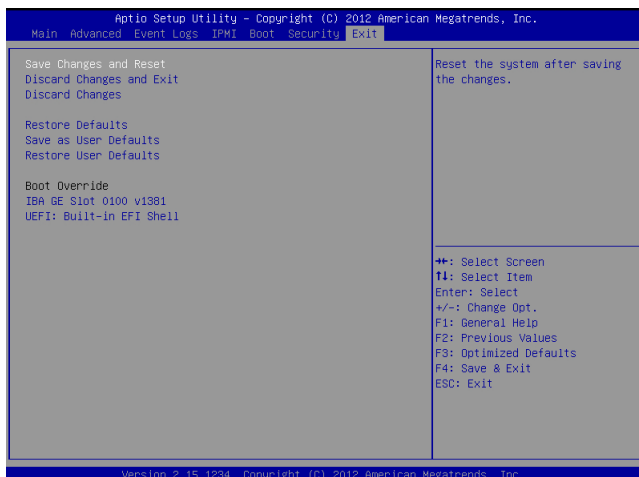
7-7   Security Settings

Password Check

Use this feature to determine when a password entry is required. Select Setup to require the password only when entering setup. Select Always to require the password when entering setup and on each boot. The options are **Setup** and Always.

Administrator Password

Use this feature to set the Administrator Password which is required to enter the BIOS setup utility. The length of the password should be from 3 characters to 20 characters long.

7-8   Exit Options

Select the Exit tab from the BIOS Setup Utility screen to enter the Exit BIOS Setup screen.

```
         Aptio Setup Utility – Copyright (C) 2012 American Megatrends, Inc.
    Main  Advanced  Event Logs  IPMI  Boot  Security  Exit

    Save Changes and Reset                         Reset the system after saving
    Discard Changes and Exit                       the changes.
    Discard Changes

    Restore Defaults
    Save as User Defaults
    Restore User Defaults

    Boot Override
    IBA GE Slot 0100 v1381
    UEFI: Built-in EFI Shell

                                                   →←: Select Screen
                                                   ↑↓: Select Item
                                                   Enter: Select
                                                   +/-: Change Opt.
                                                   F1: General Help
                                                   F2: Previous Values
                                                   F3: Optimized Defaults
                                                   F4: Save & Exit
                                                   ESC: Exit

            Version 2.15.1234. Copyright (C) 2012 American Megatrends, Inc.
```

Save Changes and Reset

When you have completed the system configuration changes, select this option to leave the BIOS Setup Utility and reboot the computer, so that the new system configuration parameters can take effect. Select Save Changes and Reset from the Exit menu and press <Enter>.

Discard Changes and Exit

Select this option to quit the BIOS Setup without making any permanent changes to the system configuration, and reboot the computer. Select Discard Changes and Exit from the Exit menu and press <Enter>.

Discard Changes

Select this option and press <Enter> to discard all the changes and return to the AMI BIOS Utility Program.

Restore Defaults

To set this feature, select Restore Defaults from the Exit menu and press <Enter>. These are factory settings designed for maximum system stability, but not for maximum performance.

Save As User Defaults

To set this feature, select Save as User Defaults from the Exit menu and press <Enter>. This enables the user to save any changes to the BIOS setup for future use

Restore User Defaults

To set this feature, select Restore User Defaults from the Exit menu and press <Enter>. Use this feature to retrieve user-defined settings that were saved previously.

Boot Override

This feature allows the user to override the Boot Option Priorities setting in the Boot menu, and instead immediately boot the system with one of the listed devices. This is a one-time override.

Appendix A

POST Error Beep Codes

This section lists POST (Power On Self Test) error beep codes for the AMI BIOS. POST error beep codes are divided into two categories: recoverable and terminal. This section lists Beep Codes for recoverable POST errors.

Recoverable POST Error Beep Codes

When a recoverable type of error occurs during POST, BIOS will display a POST code that describes the problem. BIOS may also issue one of the following beep codes:

1 long and two short beeps - video configuration error

1 repetitive long beep - no memory detected

1 continuous beep with the front panel Overheat LED on - system overheat

8 short beeps - display memory read/write error

Notes

Appendix B

System Specifications

Processors

One Intel® Xeon E3-1200 V2 series (Socket H2) processor

Note: refer to our web site for details on supported processors and operating systems.

Chipset

Intel PCH C204

BIOS

64Mb SPI AMI BIOS® SM Flash BIOS

Memory Capacity

Four memory slots that support up to 32GB of DDR3-1600/1333/1066 ECC DIMM modules

Note: refer to Chapter 5 for details and to our web site for updates to supported memroy.

Hard Drives

Twelve fixed 3.5" and two fixed 2.5" hard drives housed within the chassis

PCI Expansion

One low-profile PCI-Express 3.0 x8 card in a riser card

Note: refer to Chapter 6 for details.

Motherboard

X9SCFF-F

Dimensions: 8.5 x 13 in (216 x 330 mm)

Chassis

SC816LTS-655BP (1U Rackmount)

Dimensions: (WxHxD) 17.2 x 1.7 x 36 in. (437 x 43 x 914 mm)

Weight

Gross Weight: 38 lbs. (17.3 kg.)

System Cooling

Eight 4-cm high performance fans

System Input Requirements

AC Input Voltage: 100-240VAC auto-range

Rated Input Current: 8.5A max.

Rated Input Frequency: 50 to 60 Hz

Power Supply

Rated Output Power: 650W (Part# PWS-655P-1HS)

Rated Output Voltages: +12V (54.1A), +5Vsb (3A)

Operating Environment

Operating Temperature: 10º to 35º C (50º to 95º F)

Non-operating Temperature: -40º to 70º C (-40º to 158º F)

Operating Relative Humidity: 8% to 90% (non-condensing)

Non-operating Relative Humidity: 5 to 95% (non-condensing)

Regulatory Compliance

Electromagnetic Emissions: FCC Class A, EN 55022 Class A, EN 61000-3-2/-3-3, CISPR 22 Class A

Electromagnetic Immunity: EN 55024/CISPR 24, (EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6, EN 61000-4-8, EN 61000-4-11)

Safety: CSA/EN/IEC/UL 60950-1 Compliant, UL or CSA Listed (USA and Canada), CE Marking (Europe)

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"

Notes