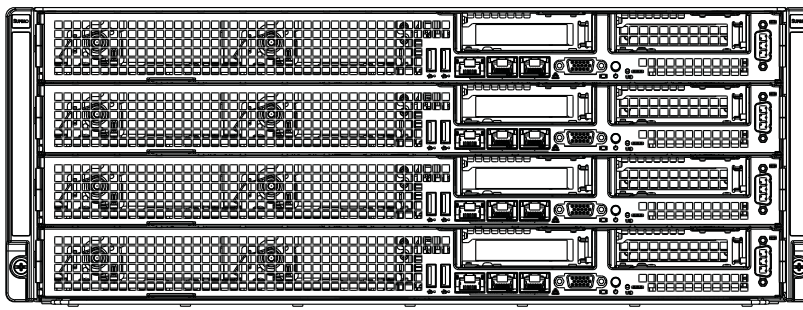
SUPERMICRO®

FatTwin
F517H6-FT



USER'S MANUAL

Revision 1.0b

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

Revision 1.0b
Release Date: January 16, 2014

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 FatTwin™ F517H6-FT. Installation and maintainance should be performed by experienced technicians only.

The FatTwin F517H6-FT is a high-end server based on the F414IS-R1K62B 4U rackmount chassis and a single processor X9SCFF-F serverboard. It has four serverboard nodes each with an IPMI LAN port and twelve (12) 3.5" fixed drives and two (2) 2.5" fixed drives each per node.

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 X9SCFF-F serverboards and the F414IS-R1K62B chassis.

Chapter 2: Server Installation

This chapter describes the steps necessary to install the FatTwin F517H6-FT into a rack and check out the server configuration prior to powering up the system. If your server was ordered without processor and memory components, this chapter will refer you to the appropriate sections of the manual for their installation.

Chapter 3: System Interface

Refer here 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 Warning Statements for AC Systems

You should thoroughly familiarize yourself with this chapter for a general overview of safety precautions that should be followed when installing and servicing the FatTwin F517H6-FT.

Chapter 5: Advanced Serverboard Setup

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

Chapter 6: Advanced Chassis Setup

Refer to Chapter 6 for detailed information on the F414IS-R1K62B server chassis. You should follow the procedures given in this chapter when installing, removing or reconfiguring SATA 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: BIOS Error Beep Codes

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Chapter 1

Introduction

1-1 Overview

The FatTwin F517H6-FT is a high-end server comprised of two main subsystems: the F414IS-R1K62B 4U server chassis and the X9SCFF-F single processor serverboard in four hot-swap nodes. Please refer to our web site for information on operating systems that have been certified for use with the system (www.supermicro.com).

In addition to the serverboard and chassis, various hardware components have been included with the FatTwin F517H6-FT server, as listed below:

- Four (4) 1U passive CPU heat sinks for MB w/ narrow ILM (SNK-P0047PS)
- Four (4) power adapter boards (BPN-ADP-F418L-O-P)
- Power Cables:
  Four (4) 8pin to 2x2pin (50cm) and 2 SATA power connectors (46cm) and (16cm) 18AWG power cables (CBL-PWEX-0511-01)
  Four (4) 8 pin to 2 2x2(50/60-cm) and 2 SATA (26+16-cm) 18AWG power cables (CPL-PWEX-0485-01)
- SAS/SATA Backplane and accessories:
  Four (4) backplanes for fourteen (14) 3.5" HDD (BPN-SAS-816T-A3-O-P)
  Eight (8) 1U Hadroop backplanes for thirty-two (32) 3.5" HDD (BPN-SAS-816T-A4-O-P)
  Four (4) IPASS to 4 SATA 70-cm 30AWG cables (CBL-0237L-01)
  Four (4) IPASS to 4 SATA, 55, 45, 35, 30-cm 30AWG cables (CBL-0476L)
  Twenty (20) 55-cm 30AWG SATA cables
- Eight (8) PCI-E x8 riser cards (RSC-R1UFF-E8R-O-P)
- Four (4) STD Gen-3 PCI-e @ 8Gb/s, 6Gb/s SAS, 8 internal ports, low profile, RAID 0,1 and 10 add-on cards (AOC-S2308L-L8I)
- One (1) F418/F424 rail set (MCP-290-41803-0N)
- Optional Power Supply: PWS-2K02P-1R

Note: If you are using the optional PWS-2K02P-1R power supply you will need to use the C13 to C14 size 14AWG wire power cord set (14AWG/250V/15A, 3FT) for the rack. See Section 6-13 for further details.

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

- Supermicro product manuals: http://www.supermicro.com/support/manuals/
- Product drivers and utilities: ftp://ftp.supermicro.com
- Product safety information: http://super-dev/about/policies/safety_information.cfm
- If you have any questions, please contact our support team at: **support@supermicor.com**

1-2 Serverboard Features

At the heart of the FatTwin F517H6-FT lies the X9SCFF-F, a single processor serverboard based on the Intel® C204 chipset and designed to provide maximum performance. One of these serverboards is mounted in each node of the F414IS-R1K62B chassis.

The sections below cover the main features of the X9SCFF-F serverboard (see Figure 1-1 for a block diagram of the chipset).

Processors

The X9SCFF-F supports a single Intel® Xeon® E3-1200 processor (Socket H2 (LGA 1155)). The processor supports four full-width Intel QuickPath Interconnect (QPI) links, with support of up to 25.6 GT/s per QPI link and with Data Transfer Rate of up to 8.0 GT/s per direction. Please refer to the serverboard description pages on our web site for a complete listing of supported processors (www.supermicro.com).

Memory

Each X9SCFF-F serverboard node has four (4) DIMM slots supporting up to 32 GB of DDR3-1600/1333 MHz speed UDIMM in up to 1 GB, 2 GB, 4 GB or 8 GB size at 1.5V voltages. See Chapter 5 for details.

Note: For the latest CPU/memory updates, please refer to our website at http://www.supermicro.com/products/motherboard.

Serial ATA

A Serial ATA controller is integrated into the C204 to provide up to a six-port SATA subsystem, (two SATA 3 (6 Gb/s) and four SATA 2 (3 Gb/s). RAID 0 and 1 (AHCI SATA3) and RAID 0, 1, 5 and 10 (AHCI SATA2) are supported. The SATA drives are internal fixed units.

SAS

Each of the FatTwin nodes contains an add-on card with LSI® LSI 2308 SAS2 controllers that provides up to two eight port 6 Gb/s SAS2 (Serial Attached SCSI) subsystems, which are RAID 0, 1, and 10 supported. The SAS drives are internal fixed units.

PCI Expansion Slots

Each node in the the FatTwin F517H6-FT has 1x PCI-E 3.0 x8 low-profile expansion slot.

Onboard Controllers/Ports

One Fast UART 16550 serial port, two USB headers and one Type-A USB port is located on the serverboard. The color-coded external I/O ports include one VGA (monitor) port, two USB 2.0 ports, an IPMI dedicated LAN port and two Gigabit Ethernet ports.

Note: For IPMI Configuration Instructions, please refer to the Embedded IPMI Configuration User's Guide available @ http://www.supermicro.com/support/manuals/.

Graphics Controller

The X9SCFF-F features an integrated Matrox G200eW Video Controller.

Nuvoton WPCM450 Controller

Note: The term "IPMI controller" and the term "BMC controller" can be used interchangeably in this section.

The Nuvoton WPCM450R Controller, a Baseboard Management Controller (BMC), supports 2D/VGA-compatible Graphic Cores with PCI interface, creating multi-media virtualization via Keyboard/Video/Mouse Redirection (KVMR). The WPCM450R Controller is ideal for remote system management.

The WPCM450R Controller interfaces with the host system via PCI connections to communicate with the graphics cores. It supports USB 2.0 and 1.1 for remote keyboard/mouse/virtual media emulation. It also provides LPC interface support to control Super IO functions. The WPCM450R Controller is connected to the network via an external Ethernet PHY module or shared NCSI connections.

The WPCM450R communicates with onboard components via six SMBus interfaces, PECI (Platform Environment Control Interface) buses, and General Purpose I/O ports.

WPCM450R DDR2 Memory Interface

The WPCM450R supports a 16-bit DDR2 memory module with a speed of up to 220 MHz. For best signal integrity, the WPCM450R provides point-to-point connection.

WPCM450R PCI System Interface

The WPCM450R provides 32-bit, 33 MHz 3.3V PCI interface, which is compliant with the PCI Local Bus Specification Rev. 2.3. The PCI system interface connects to the onboard PCI Bridge used by the graphics controller.

Other Features Supported by the WPCM BMC Controller

The WPCM450R supports the following features:

- IPMI 2.0
- Serial over LAN
- KVM over LAN
- LAN Alerting-SNMP Trap
- Event Log
- X-Bus parallel interface for I/O expansion
- Multiple ADC inputs, Analog and Digital Video outputs
- SPI Flash Host BIOS and firmware bootstrap program supported
- Reduced Media Independent Interface (RMII)
- OS (Operating System) Independency
- Provides remote Hardware Health Monitoring via IPMI. Key features
- Provides Network Management Security via remote access/console redirection.
- Supports the following Management tools: IPMIView, CLI (Command Line Interface)
- RMCP+ protocol supported

Note: For more information on IPMI configuration, please refer to the IPMI User's Guide posted on our website at http://www.supermicro.com/support/manuals/.

Hard Drive Power

Please connect the onboard power cables (four each CBL-0511L and CBL-0485L) from each node's serverboard to the SATA backplane board in the node tray in order to provide power to the drives.

Super I/O

The Super I/O provides functions that comply with ACPI (Advanced Configuration and Power Interface), which includes support of legacy and ACPI power management through an SMI or SCI function pin. It also features auto power management to reduce power consumption.

1-3 Server Chassis Features

The following is a general outline of the main features of the F414IS server chassis.

System Power

The F414IS chassis model includes two high-efficiency 94%+ Platinum certified redundant 1620 Watt power supplies. In the unlikely event your power supply fails, replacement is simple and can be accomplished without tools.

SAS/SATA Subsystem

The F414IS supports up to fourteen (14) fixed SAS/SATA drives for each node (two (2) 2.5" SATA, four (4) 3.5" SATA and eight (8) 3.5" SAS/SATA hard drives) for a total of up to fifty-six (56) drives. These drives are fixed units and are connected to three backplanes per node (that provides power and control).

Note: For more information, visit our Web site at: http://www.supermicro.com.

I/O Ports

The F414IS is an proprietary form factor chassis designed to be used in a 4U rackmount configuration. The F414IS chassis provides one single low-profile add-on card slot, a VGA port, two USB 2.0 ports, one IPMI Ethernet port and two gigabit Ethernet ports per node.

Cooling System

The F414IS chassis supports external exhaust fans. which provide cooling for the system. The F517H6-FT server uses eight (8) 8-cm external system fans powered from the backpane. When one of the motherboard nodes is removed, another motherboard will continue to operate the fans.

Air Shrouds

The F414IS chassis requires mylar air shrouds for each node to direct the airflow where cooling is needed. The air shroud will differ for different motherboards. If using a motherboard which is not the default in the chassis, refer to the optional parts in the Appendix of this manual, or the Supermicro Web site at www.supermicro.com to puchase the proper air shroud.

Mounting Rails

The F414IS includes a set of rails, and can be placed in a rack for secure storage and use. To setup your rack, follow the step-by-step instructions included in this manual.

1-4 Advanced Power Management

Intel® Intelligent Power Node Manager (NM)

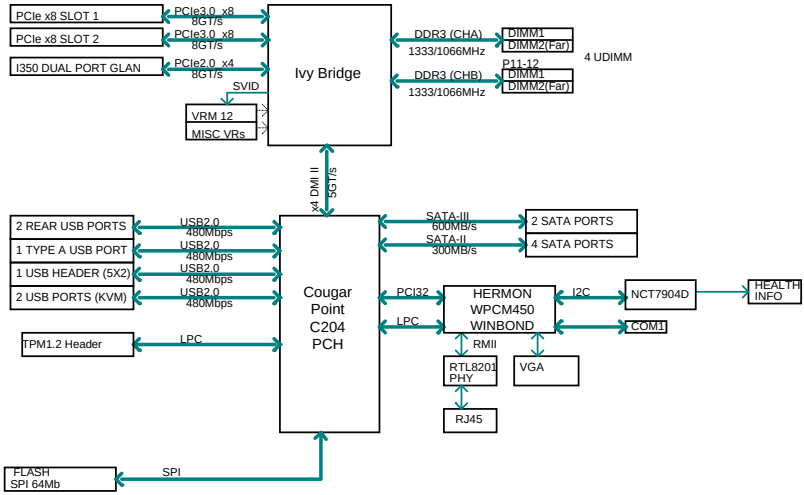
The Intel® Intelligent Power Node Manager (IPNM) provides your system with real-time thermal control and power management for maximum energy efficiency. Although IPNM Specification Version 1.5 is supported by the BMC (Baseboard Management Controller), your system must also have IPNM-compatible Manageability Engine (ME) firmware installed to use this feature.

Manageability Engine (ME)

The Manageability Engine, which is an ARC controller embedded in the IOH (I/O Hub), provides Server Platform Services (SPS) to your system. The services provided by SPS are different from those proveded by the ME on client platforms.

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

Note: This is a general block diagram and may not exactly represent the features on your motherboard. See the previous pages for the actual specifications of your motherboard. This block diagram is intended for your reference only.



1-5 Contacting Supermicro

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1-6 Fat Twin: System Notes

As a FatTwin configuration, the FatTwin F517H6-FT is a unique server system. With four system boards incorporated into a single chassis acting as four separate nodes, there are several points you should keep in mind.

Nodes

Each of the four serverboards act as a separate node in the system. As independant nodes, each may be powered off and on without affecting the others. In addition, each node is a hot-swappable unit that may be removed from the rear of the chassis. The nodes are connected to the server backplane by means of an adapter card.

Note: A guide pin is located between the upper and lower nodes on the inner chassis wall. This guide pin also acts as a “stop” when a node is fully installed. If too much force is used when inserting a node this pin may break off. Take care to slowly slide a node in until you hear the “click” of the locking tab seating itself.

System Power

Two high-efficiency 94%+ Plus Platinum Level 1620 Watt power supplies are used to provide the power for all serverboards. Each serverboard however, can be shut down independently of the other with the power button on its own control panel.

SAS/SATA Backplane/Drives

As a system, the FatTwin F517H6-FT supports the use of fifty-six (56) SAS/SATA drives. Each of the backplanes in the system logically connects the internal fixed SAS/SATA drives to each node's backplane/serverboard. See Chapter 6 for the logical hard drive and node configuration.

Notes

Chapter 2

Server Installation

2-1 Overview

This chapter provides a quick setup checklist to get your FatTwin F517H6-FT up and running. Following these steps in the order given should enable you to have the system operational within a minimum amount of time. This quick setup assumes that your system has come to you with the processors and memory preinstalled. If your system is not already fully integrated with a serverboard, processors, 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 FatTwin F517H6-FT 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 FatTwin F517H6-FT. 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 your chassis was shipped in should include two sets of rail assemblies and the mounting screws needed for installing the system into the rack. *Please read this section in its entirety before you begin the installation procedure outlined in the sections that follow*.

2-4 Warnings and Precautions

Choosing a Setup Location

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

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 any hot plug 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

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.

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.).

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. The SCF418 is not designed for installation into a Telco post-style rack unit.

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

 **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.

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

Warning: In any instance of pulling the system from the rack, always use a rack lift and follow all associated safety precautions.

Identifying the Sections of the Rack Rails

The chassis package includes two rail assemblies in the rack mounting kit. Each assembly consists of two sections: A front section which secures to the front post of the rack and a rear section which adjusts in length and secures to the rear post of the rack. These assemblies are specifically designed for the left and right side of the chassis (see Figure 2-1).

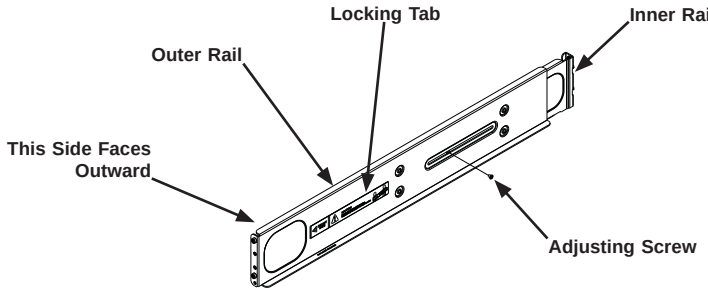
Adjusting the Rails

Each rail assembly has an adjusting screw. loosening this screw allows you to adjust the length of the rail to fit a variety of rack sizes.

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 Outer Rail and Inner Rails (Left Rail Assembly Shown)

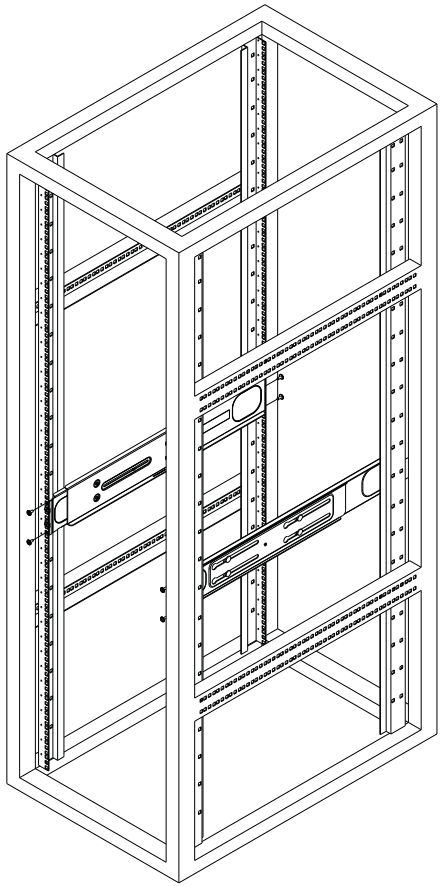


Installing the Rails on a Rack

Installing the Rails

1. Adjust the length of both rails as described on the previous page.
2. Align the front section of the outer rail with the slots on the front post of the rack. Secure the front of the outer rail to the rack with two screws.
3. Pull out the rear section of the outer rail, adjusting the length until it fits within the posts of the rack.
4. Align the rear section of the rail with the slots on the rear post of the rack. Secure the rear of the outer rail to the rear of the rack with two screws.
5. Repeat steps 1-4 for the remaining rail.

Figure 2-2: Attaching the Rails to a Rack

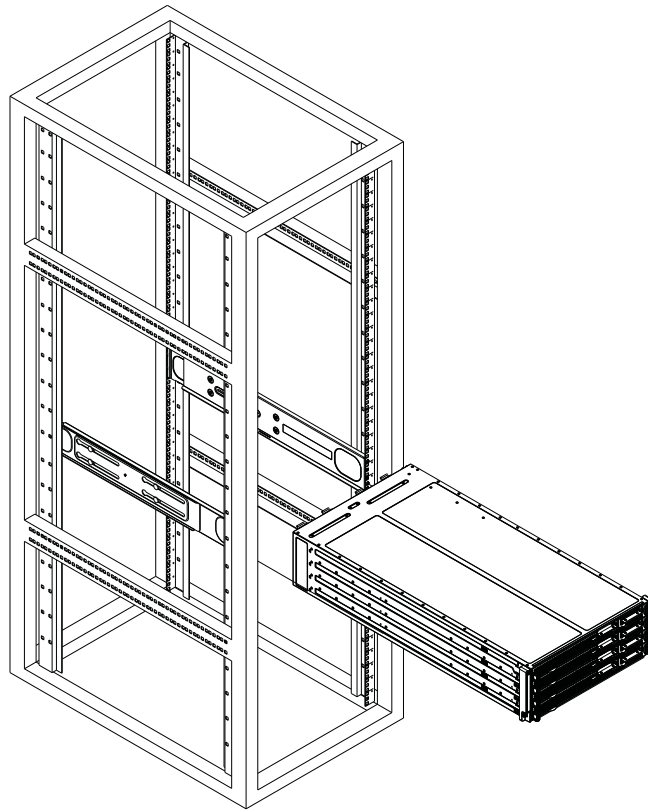


Chassis Installation

Installing the Chassis into a Rack

1. Confirm that the rails are correctly installed on the rack.
2. Align the bottom of the chassis with the bottom of the rails.
3. Insert the chassis into the rails, keeping the pressure even on both sides, pushing the chassis into the rack until it clicks into the locked position.
4. Secure the chassis handles to the front of the rack.

Figure 2-3: Installing into a Rack



Note: The figure above is for illustration purposes only. Always install servers to the bottom of the rack first.

2-6 Checking the Serverboard Setup

After you install the SuperServer F517H6-FT in the rack, you will need to open the unit to make sure the serverboard is properly installed and all the connections have been made.

Accessing the inside of the System

Before operating the server for the first time, it is important to remove the protective film covering the top of the chassis, in order to allow for proper ventilation and cooling.

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

Checking the Components and Setup

1. You may have one or two processors already installed into the serverboard. Each processor needs its own heat sink. See Chapter 5 for instructions on processor and heat sink installation.
2. Your SuperServer F517H6-FT server system may have come with system memory already installed. Make sure all DIMMs are fully seated in their slots. For details on adding system memory, refer to Chapter 5.
3. If desired, you can install add-on cards to the system. See Chapter 5 for details on installing PCI add-on cards.
4. Make sure all power and data cables are properly connected and not blocking the chassis airflow. Also make sure that no cables are positioned in front of the fans. See Chapter 5 for details on cable connections.

2-7 Checking the Drive Bay Setup

Next, you should check to make sure the peripheral drives and the SATA drives have been properly installed and all connections have been made.

Checking the Drives

1. For the F517H6-FT server, all hard drives are fixed on the motherboard tray and can only be retrieved by removing the top cover.
2. Depending upon your system's configuration, your system may have one or more drives already installed. If you need to install hard drives, please refer to Chapter 6.

Checking the Airflow

1. Make sure there are no objects to obstruct airflow in and out of the server. In addition, if you are using a front bezel, make sure the bezel's filter is replaced periodically.
2. Do not operate the server without drives or drive trays in the drive bays. Use only recommended server parts.
3. Make sure that no wires or foreign objects obstruct air flow through the chassis. Pull all excess cabling out of the airflow path or use shorter cables. The control panel LEDs inform you of the system status. See “Chapter 3 System Interface” for details on the LEDs and the control panel buttons.

Providing Power

1. Plug the power cord(s) from the power supply unit(s) into a high-quality power strip that offers protection from electrical noise and power surges. It is recommended that you use an uninterruptible power supply (UPS).
2. Depress the power on button on the front of the chassis.

Notes

Chapter 3

System Interface

3-1 Overview

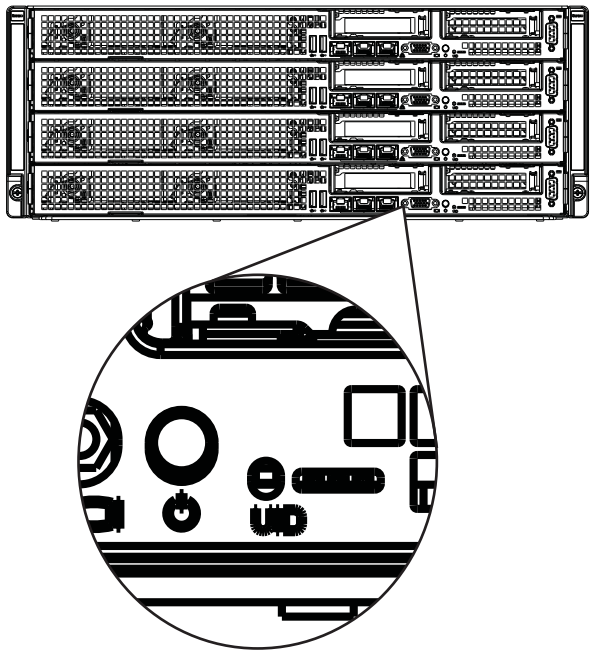
There are several LEDs on the control panel to keep you constantly informed of the overall status of the system. F414IS models include four control panels on the handles of the chassis which control each of the systems.

This chapter explains the meanings of all LED indicators and the appropriate response you may need to take.

3-2 F414IS Front I/O Control Panel

The F414IS chassis include a power button with a built-in LED and features both a LAN LED and a UID LED on each node's front control panel.

Figure 3-2: F414IS Node Control Panel



- Power: The main power button on each of the four control panels is used to apply or remove power from the power supply to each of the four systems in the chassis. Turning off system power with this button removes the main power, but keeps standby power supplied to the system. Therefore, you must unplug system before servicing. The poer button has a built-in LED which will turn green when the power is on.

- UID: When used with a UID compatible motherboard, the UID button is used to turn on or off the blue light function of the LED. This is built into the front side of the UID button and at the rear end of each motherboard node, for those motherboards which support it. Once the blue light is activated, the unit can be easily located in very large racks and server banks.

3-3 Control Panel LEDs

The four control panels are located on the front handle of the F414IS chassis. Each control panel has two additional LEDs. These LEDs provide you with critical information related to different parts of the system. This section explains what each LED indicates when illuminated and any corrective action you may need to take.

- **Information LED:** See the following table for the status shown by this LED.

Information LED	
Status	**Description**
Continously on and red	An overheat ocondition has occured. (This may be caused by cable congestion.)
Blinking red (1 Hz)	Fan failure: check for an inoperative fan.
Blinking red (0.25 Hz)	Power failure: check for an inoperative power supply.
Solid blue	Local UID has been activated. Use this function to locate the server in a rack environment.
Blinking blue (300 msec)	Remote UID has been activated. Use this function to locate the server from a remote location.

- NIC: Indicates network activity on either LAN1 or LAN2 when flashing

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 בבעיה כלשהי, יש ליצור קשר עם מחלקת תמיכה טכנית של סופרמיקרו. טכנאים מוסמכים בלבד רשאים להתקין או להגדיר את הרכיבים.

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

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

안전을 위한 주의사항

경고!

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

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

BELANGRIJKE VEILIGHEIDSINSTRUCTIES

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

BEWAAR DEZE INSTRUCTIES

Installation Instructions

Warning!

Read the installation instructions before connecting the system to the power source.

設置手順書

システムを電源に接続する前に、設置手順書をお読み下さい。

警告

将此系统连接电源前,请先阅读安装说明。

警告

將系統與電源連接前，請先閱讀安裝說明。

Warnung

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

¡Advertencia!

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

Attention

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

יש לקרוא את הוראות התקנה לפני חיבור המערכת למקור מתח.

اقر إرشادات التركيب قبل توصيل النظام إلى مصدر للطاقة

시스템을 전원에 연결하기 전에 설치 안내를 읽어주십시오.

Waarschuwing

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

Circuit Breaker

Warning!

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

サーキット・ブレーカー

この製品は、短絡（過電流）保護装置がある建物での設置を前提としています。

保護装置の定格が250 V、20 Aを超えないことを確認下さい。

警告

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

警告

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

Warnung

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

¡Advertencia!

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

Attention

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

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

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 מפני ניתוק חשמלי

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

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

경고!

시스템에 부품들을 장착하거나 제거하기 위해서는 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 للأمان

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 발생합니다. 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 تدورعند إزالة كتلة المروحة من الهيكل يجب إبقاء الأصابع ومفكات البراغي
وغيرها من الأشياء بعيدا عن الفتحات في كتلة المروحة.

경고!

새시로부터 팬 조립품을 제거할 때 팬은 여전히 회전하고 있을 수 있습니다. 팬 조림품 외관의 열려있는 부분들로부터 손가락 및 스크류드라이버, 다른 물체들이 가까이 하지 않도록 배치해 주십시오.

Waarschuwing

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

Power Cable and AC Adapter

Warning!

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

電源コードとACアダプター

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

警告

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

警告

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

Warnung

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

¡Advertencia!

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

Attention

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

חשמליים ומתאמי AC

אזהרה !

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

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

경고!

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

Waarschuwing

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

Chapter 5

Advanced Motherboard Setup

This chapter covers the steps required to install the X9SCFF-F motherboard into the 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 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 Connecting Cables

The FatTwin F517H6-FT server needs to have both power and data cables connected to the X9SCFF-F serverboard.

Connecting SATA Power Cables

Various cables used to power each node's SATA drives are connected between the serverboard and the drive's backplane board installed in the chassis. The following cables are used for this connection:

- Four (4) 8pin to 2x2pin (50cm) and 2 SATA power connectors (46cm) and (16cm) 18AWG power cables (CBL-0511L)
- Four (4) 8 pin to 2 2x2(50/60-cm) and 2 SATA (26+16-cm) 18AWG power cables (CBL-0485L)

Connecting Data Cables

The cables used to transfer data from the peripheral devices have been carefully routed in preconfigured systems 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 reroute them as they were originally after reconnecting them (make sure the red wires connect to the pin 1 locations). If you are configuring the system, keep the airflow in mind when routing the cables.

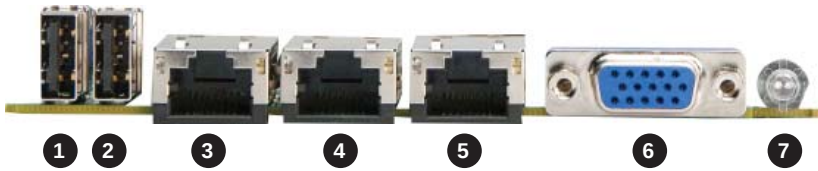
The FatTwin F517H6-FT system uses the following data cables:

- Four (4) IPASS to 4 SATA 70-cm 30AWG cables (CBL-0237L-01)
- Four (4) IPASS to 4 SATA, 55, 45, 35, 30-cm 30AWG cables (CBL-0476L)
- Twenty (20) 55-cm 30AWG SATA cables

5-3 Control Panel Connectors and I/O Ports

The front I/O ports are color coded in conformance with the PC 99 specification. See Figure 5-1 below for the colors and locations of the various I/O ports.

Figure 5-1. Front I/O Ports



Back Panel I/O Port Locations and Definitions	
1.	Front Panel USB Port 1
2.	Front Panel USB Port 2
3.	Gigabit LAN 1
4.	Gigabit LAN 2
5.	IPMI LAN
6.	VGA Port
7	Power Switch/LED Indicator

5-4 Processor and Heatsink Installation

Warning! When handling the processor package, avoid placing direct pressure on the label area.

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

Note: Always connect the power cord last, and always remove it before adding, removing or changing any hardware components. Make sure that you install the processor into the CPU socket before you install the CPU heatsink.

Note: Make sure to install the system board into the chassis before you install the CPU heatsink.

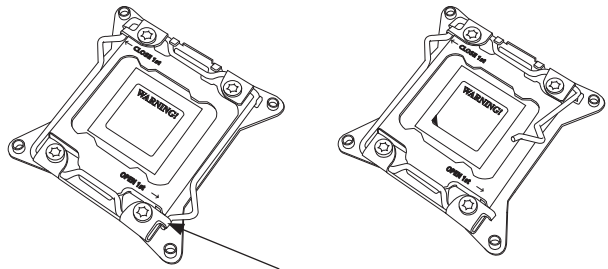
Note: When receiving a server board without a processor pre-installed, make sure that the plastic CPU socket cap is in place and none of the socket pins are bent; otherwise, contact your retailer immediately.

Note: Refer to the Supermicro website for updates on CPU support.

Note: When one CPU is installed, be sure to installed on CPU Socket 1 first.

Installing the LGA2011 Processor

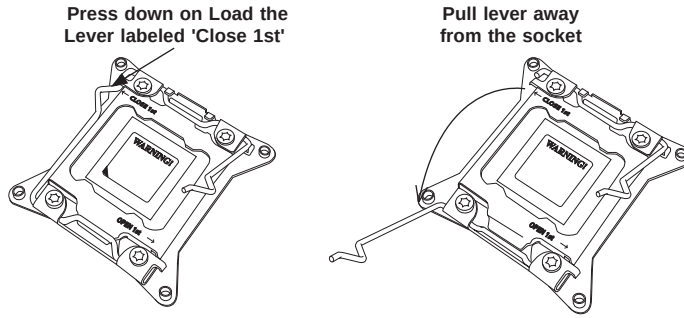
1. There are two load levers on the LGA2011 socket. To open the socket cover, first press and release the load lever labeled 'Open 1st'.



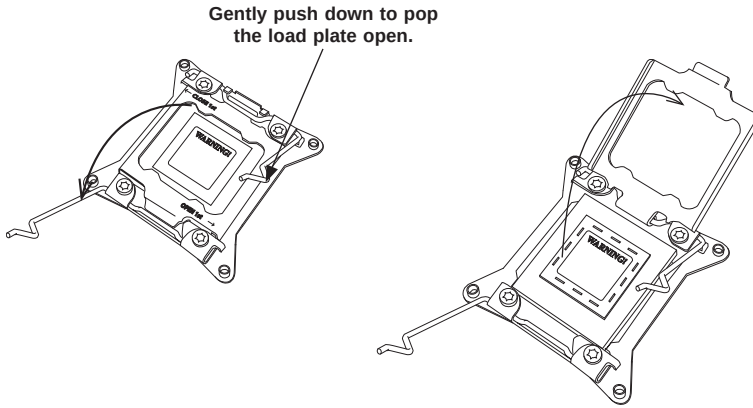
Press down on Load Lever labeled 'Open 1st'.

Note: Graphics and drawings shown in this manual are for illustration only. Your components may or may not look the same as the graphics shown in the manual.

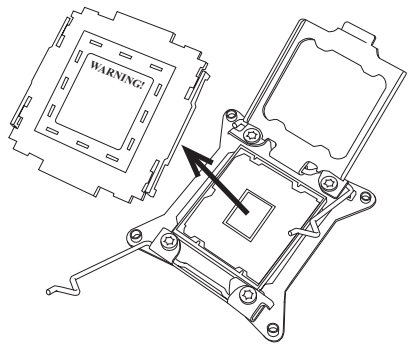
2. Press the second load lever labeled 'Close 1st' to release the load plate that covers the CPU socket from its locking position.



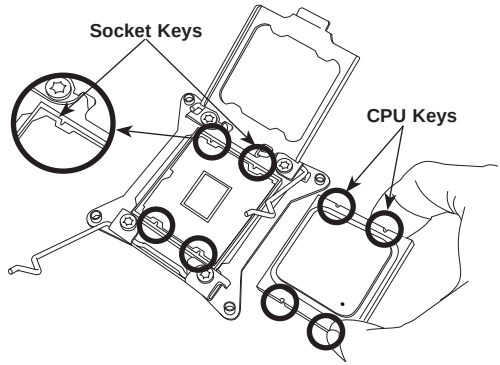
3. With the lever labeled 'Close 1st' fully retracted, gently push down on the 'Open 1st' lever to open the load plate. Lift the load plate to open it completely.



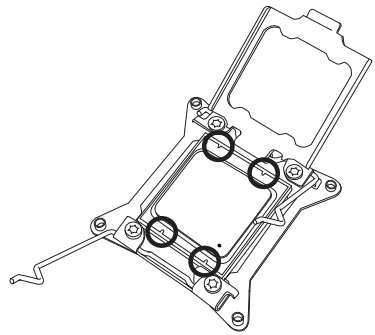
4. Using your thumb and the index finger, remove the 'WARNING' plastic cap from the socket.



5. Use your thumb and index finger to hold the CPU on its edges. Align the CPU keys, which are semi-circle cutouts, against the socket keys.

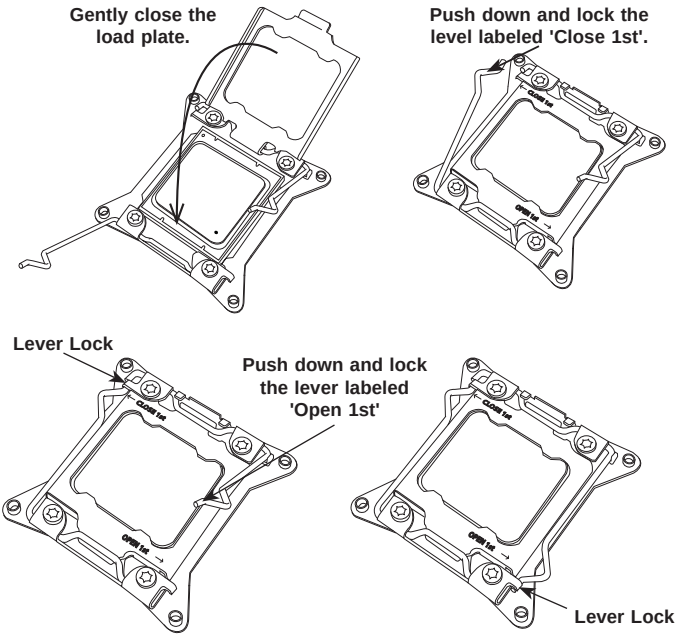


6. Once they are aligned, carefully lower the CPU straight down into the socket. (Do not drop the CPU on the socket. Do not move the CPU horizontally or vertically. Do not rub the CPU against the surface or against any pins of the socket to avoid damaging the CPU or the socket.)



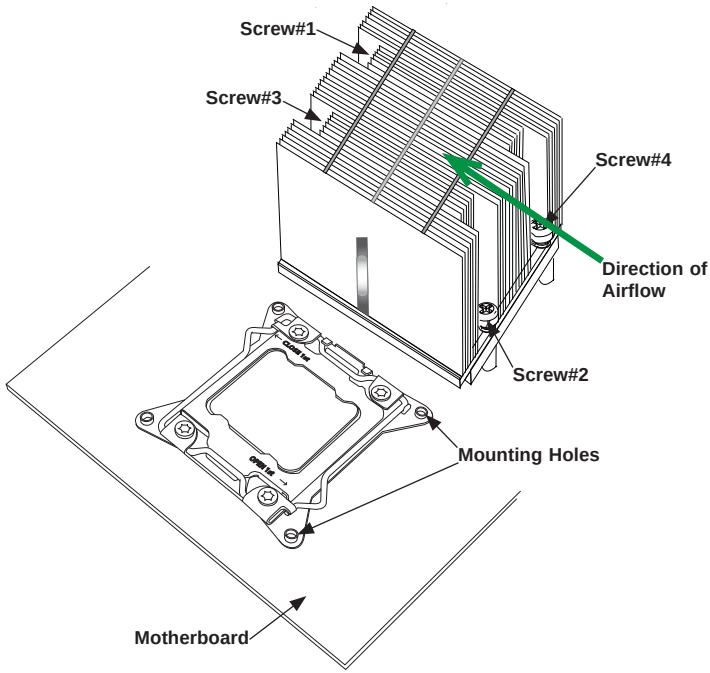
Caution: You can only install the CPU inside the socket in one direction. Make sure that it is properly inserted into the CPU socket before closing the load plate. If it doesn't close properly, do not force it as it may damage your CPU. Instead, open the load plate again and double-check that the CPU is aligned properly.

7. With the CPU inside the socket, inspect the four corners of the CPU to make sure that the CPU is properly installed.
8. Close the load plate with the CPU inside the socket. Lock the lever labeled 'Close 1st' first, then lock the lever labeled 'Open 1st' second. Use your thumb to gently push the load levers down to the lever locks.



Installing a Passive CPU Heatsink

1. Do not apply any thermal grease to the heatsink or the CPU die -- the required amount has already been applied.
2. Place the heatsink on top of the CPU so that the four mounting holes are aligned with those on the Motherboard's and the Heatsink Bracket underneath.
3. Screw in two diagonal screws (i.e., the #1 and the #2 screws) until just snug (-do not over-tighten the screws to avoid possible damage to the CPU.)
4. Finish the installation by fully tightening all four screws.



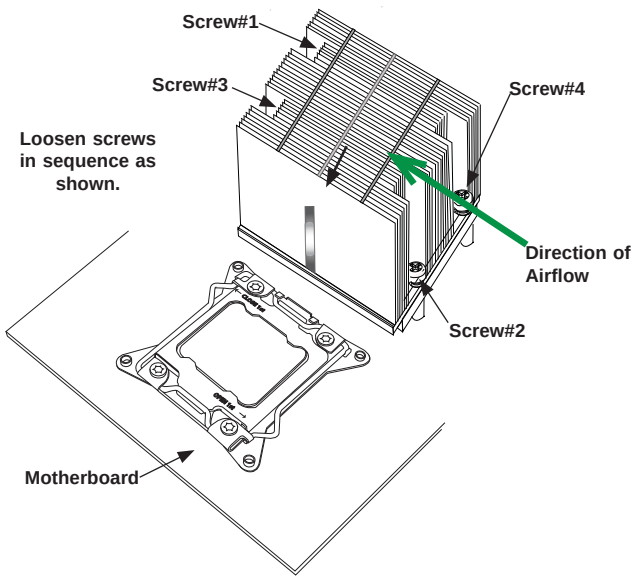
Note: Make sure the heatsink is placed so that the fins of the heatsink are in the direction of the airflow in your system.

Removing the Heatsink

Caution: We do not recommend that the CPU or the heatsink be removed. However, if you do need to uninstall the heatsink, please follow the instructions below to avoid damaging the CPU or the CPU socket.

1. Unscrew the heatsink screws from the motherboard in the sequence as shown in the illustration below.
2. Gently wriggle the heatsink to loosen it from the CPU. (Do not use excessive force when wriggling the heatsink!)
3. Once the CPU is loosened from the heatsink, remove the CPU from the CPU socket.
4. Remove the used thermal grease and clean the surface of the CPU and the heatsink, Reapply the proper amount of thermal grease on the surface before reinstalling the CPU and the heatsink.

Caution: Do not reuse thermal grease!



5-5 Installing Memory

Caution: exercise extreme care when installing or removing DIMM modules to prevent any possible damage.

Installing Memory

1. Insert the desired number of DIMMs into the memory slots, in the following order: DIMMB1 (blue slot), DIMMB2 (blue slot), DIMMA1 and DIMMA2. (For best performance, please use the memory modules of the same type and speed in the same bank.)
2. Push the release tabs outwards on both ends of the DIMM slot to unlock it.
3. Align the key of the DIMM module with the receptive point on the memory slot.
4. Align the notches on both ends of the module against the receptive points on the ends of the slot.
5. Use two thumbs together to press the notches on both ends of the module straight down into the slot until the module snaps into place.
6. Press the release tabs to the locking positions to secure the DIMM module into the slot.

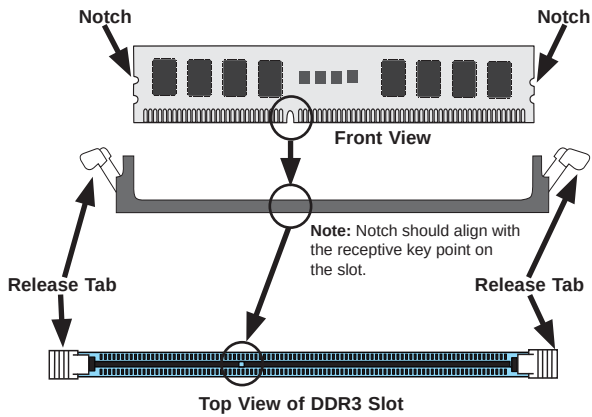
Reverse the steps above to remove the DIMM modules from the motherboard.

Note: 1 GB, 2 GB, 4 GB or 8 GB size memory modules are supported. It is highly recommended that you remove the power cord from the system before installing or changing memory modules. Please refer to our web site for memory that has been tested on the X9SCFF-F serverboard.

Figure 5-2. Installing DIMM into Slot

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.



Removing Memory Modules

Press both notches on the ends of the DIMM module to unlock it. Once the DIMM module is loosened, remove it from the memory slot.

Memory Support

The X9SCFF-F motherboard supports up to 32 GB of 240-pin Unbuffered (UDIMM) ECC/Non-ECC DDR3-1600/1333 MHz speed 4-channel memory in four (4) DIMM slots.

Note: For the latest CPU/memory updates, please refer to our website at http://www.supermicro.com/products/motherboard.

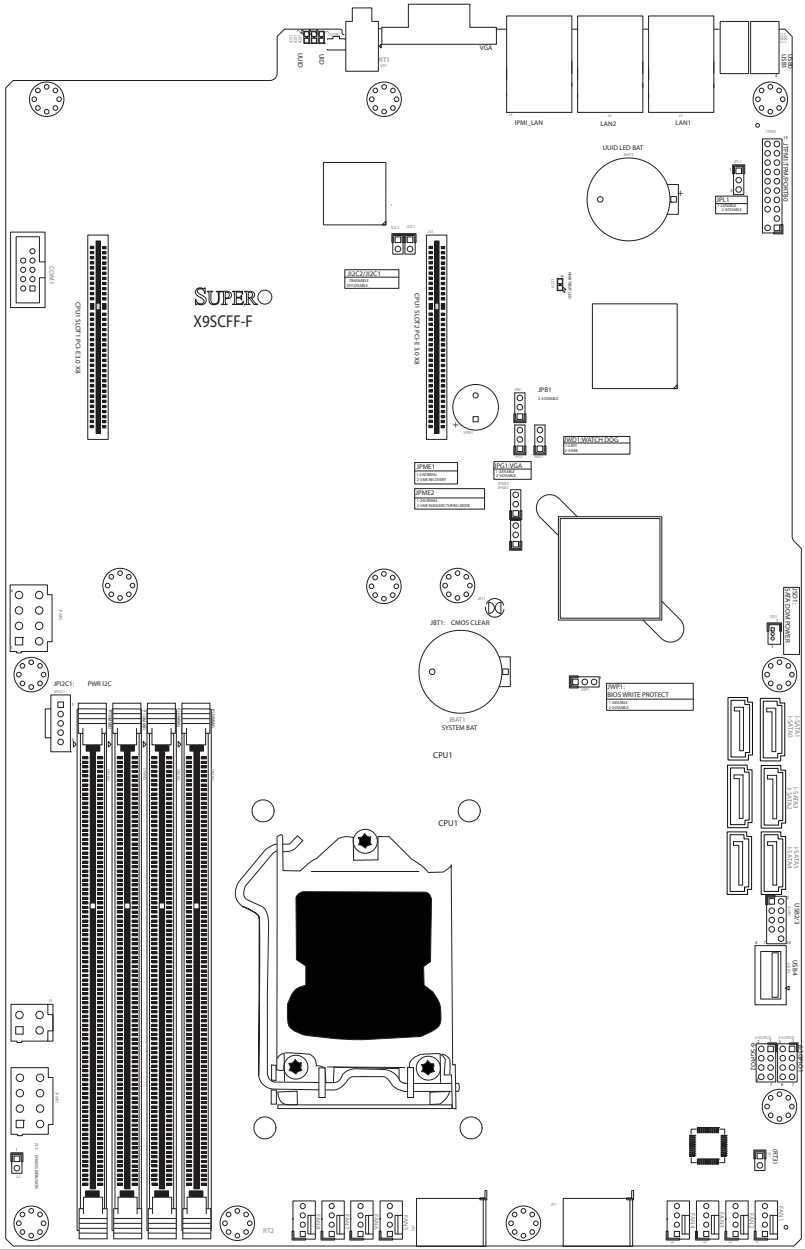
Recommended Population (Balanced)				
DIMMB1 Slot	**DIMMB2 Slot**	**DIMMA1 Slot**	**DIMMA2 Slot**	**Total System Memory**
2GB DIMM	2GB DIMM			4GB
2GB DIMM	2GB DIMM	2GB DIMM	2GB DIMM	8GB
4GB DIMM	4GB DIMM			8GB
4GB DIMM	4GB DIMM	4GB DIMM	4GB DIMM	16GB
8GB DIMM	8GB DIMM			16GB
8GB DIMM	8GB DIMM	8GB DIMM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

Memory Population Guidelines

- 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.

5-6 Motherboard Details

Figure 5-3. X9SCFF-F Motherboard Layout
(not drawn to scale)



Notes:

1. For the latest CPU/Memory updates, please refer to our website at http://www.supermicro.com/products/motherboard/ for details.
2. Use only the correct type of onboard CMOS battery as specified by the manufacturer. Do not install the onboard battery upside down to avoid possible explosion.
3. Jumpers not indicated are for test purposes only.
4. All graphics shown in this manual were based upon the latest PCB Revision available at the time of publishing of the manual. The motherboard you've received may or may not look exactly the same as the graphics shown in this manual.

X9SCFF-F Jumpers		
Jumper	**Description**	**Default Setting**
JBT1	Clear CMOS	Short contact pads to clear CMOS
JI2C1,JI2C2	PCI Slot SMB Enable	Short (Enabled), Open (Disabled)
JPB1	BMC Enable/Disable	Pins 1-2 (Enabled), 2-3 (Disabled)
JPG1	VGA Enable/Disable	Pins 1-2 (Enabled), 2-3 (Disabled)
JPME2	ME Manufacturing Mode	Pins 1-2 (Normal), 2-3 (Manuf. Mode)
JPME1	ME Recovery	Pins 1-2 (Normal), 2-3 (Recovery Mode)
JPL1	LAN1 Enable/Disable	Pins 1-2 (Enabled), 2-3 (Disabled)
JWD1	Watch Dog Timer Reset/NMI	Pins 1-2 (Reset), 2-3 (NMI)

X9SCFF-F LED Indicators			
LED	**Description**	**State**	**Status**
LED4	IPMI Heartbeat	Green: Blinking	IPMI is running (Normal)
LED5	Overheat/Fan Fail/Power Fail Warning	Red: On, Steady Red: On, Blinking	System Overheat Fan Fail/Power Fail
LED6	Front Panel UID	Blue: On, Steady	Unit ID switch is on

X9SCFF-F Connectors	
Connectors	**Description**
6-SGIOP1,6-SGPIO2	Serial Link Gen. Purpose I/O Headers for AOC (SAS/SATA)
COM1	Serverboard Internal COM Port
Fans 1~4,5~8	System Fan Headers
(IPMI) LAN	IPMI LAN
J3	4-Pin Power Connector
J31 (RT3)	Hard Disk Drive Temperature Header
JBAT1	Onboard CMOS Battery (See Chpt. 3 for Battery Disposal)
JL1	Chassis Intrusion Header
JP2,JP1	Hard Disk Drive Power Connectors
JPI2C1	PWR supply (I2C) System Management Bus
JPWR2,JPWR1	8-Pin Power Connector
JSD1	Disk-On-Module (DOM) Power Connector
JTPM1	Trusted Platform Module (TPM) Header
JUSB1 (USB4)	Type "A" Internal USB Connector for USB4
JUSB2 (USB2/3)	Internal USB Header for USB 2/3
LAN1/2	G-bit Ethernet LAN Ports 1/2
PCI-E Slot1	PCI-Exp. 3.0 x8 Slot
PCI-E Slot2	PCI-Exp. 3.0 x8 Slot
SATA 0,1,2,3,4,5	Internal SATA Ports
SPKR1	Internal Speaker/Buzzer
USB0/USB1	Front Control Panel USB 0/USB1 I/O Ports
USB2/USB3	Serverboard USB Header Ports
USB4	Serverboard USB Type-A Port
UID_SWI	UID (Unit Identifer) Switch (SW1)
VGA	Front Control Panel VGA Port

5-7 Connector Definitions

Power Headers (JPWR1,JPWR2,J3)

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

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

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

Power Header (JPWR1, JPWR2) Pin Definitions

Pin#	Definition	Pin#	Definition
1	GND	5	+12V
2	GND	6	+12V
3	GND	7	+12V
4	GND	8	+12V

Power Header (J3) Pin Definitions

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

HDD Power (JP1,JP2)

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

HDD Power (JP1,JP2) 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

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. Refer to the board layout below for the locations of the headers.

S-SGPIO 1/2 Pin Definitions

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

Note: NC indicates no connection.

Universal Serial Bus (USB)

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

Universal Serial Bus Headers Pin Definitions (USB2/3, USB4/5)

USB2, USB3			
Pin #	Definition	Pin #	Definition
1	+5V	2	+5V
3	USB_N1	4	USB_N2
5	USB_P1	6	USB_P2
7	Ground	8	Ground
9	Key	10	OC#

Note: NC indicates no connection.

Type A USB (USB4) Pin Definition

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

Fan Headers (FAN)

The X9SCFF-F has eight (8) fan headers on board. 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

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 Pin Definitions (COM1)

Pin #	Definition	Pin #	Definition
1	DCD	6	DSR
2	RXD	7	RTS
3	TXD	8	CTS
4	DTR	9	RI
5	Ground	10	NC

NC indicates no connection.

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 (JTPM1) 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

Power Supply I2C (JPI2C1)

The Power Supply I2C Connector, located at JPI2C, monitors the status of the power supply, fan and system temperature. See the table on the right for pin definitions.

PWR SMB (JPI²C1) Pin Definitions

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

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 (Jl1) Pin Definitions

Pin#	Definition
1	Intrusion Input
2	Ground

SATA DOM Power Connector

The SATA DOM Power on JSD1 is used to supply power to SATA Disk-on-Module (DOM) solid-state storage devices. Connect an appropriate cable here to provide power support for your SATA DOM devices.

DOM PWR (JSD1) Pin Definitions

Pin#	Definition
1	+5V
2	Ground
3	Ground

RT3 (J31)

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

RT3 (J31) Pin Definitions

Pin#	Definition
1	TP
2	TN

Unit Identifier Switch

A Unit Identifier switch (SW1) and a UID LED Indicator are located on the motherboard. The UID switch is located next to the power switch on the backplane. The UID LED (UID_LED1) is located next to the UID switch. When you press the UID switch, the UID LED Indicator will be turned on. Press the UID switch again to turn off the UID LED. The UID Indicator provides easy identification of a system unit that may be in need of service.

Note: UID can also be triggered via IPMI on the motherboard. For more information on IPMI, please refer to the IPMI User's Guide posted on our Website @ http://www.supermicro.com.

UID Switch (SW1) Pin Definitions

Pin#	Definition
1	Ground
2	Ground
3	Button In
4	Ground

UID LED (UID_LED1) Status

Color/State	OS	Status
Blue: On	Windows OS	Unit Identified
Blue: Blinking	Linux OS	Unit Identified

Video Connection

A Video (VGA) port is located next to the LAN Port 2 on the I/O backplane. Refer to the layout below for the location.

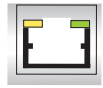
Power Switch

A power switch (PWR_SW1) is located next to the VGA port on the motherboard. Refer to the layout below for the location.

Ethernet Ports

Two Ethernet ports (LAN1, LAN2) are located on the I/O backplane. These Ethernet ports support 10G LAN connections on the serverboard, and 1G LAN connections on the serverboard.

In addition, an IPMI LAN port is also located on the backplane. All these ports accept RJ45 cables. Please refer to the LED Indicator Section for LAN LED information.

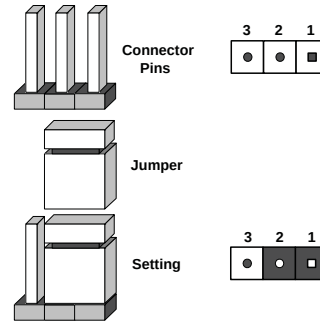


LAN Ports (LAN1/2) Pin Definition

Pin#	Definition	Pin#	Definition
1	P2V5SB	10	SGND
2	TD0+	11	Act LED
3	TD0-	12	P3V3SB
4	TD1+	13	Link 100 LED (Yellow, +3V3SB)
5	TD1-	14	Link 1000 LED (Yellow, +3V3SB)
6	TD2+	15	Ground
7	TD2-	16	Ground
8	TD3+	17	Ground
9	TD3-	18	Ground

NC indicates no connection.

5-8 Jumper Settings



Explanation of Jumpers

To modify the operation of the motherboard, 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 diagram at right for an example of jumping pins 1 and 2. Refer to the motherboard layout page for jumper locations.

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


JBT1 contact pads

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). It is also recommended that you remove the onboard battery from the serverboard.
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 1. For an ATX power supply, you must completely shut down the system, remove the AC power cord, and then short JBT1 to clear CMOS.

Note 2. Be sure to remove the onboard CMOS Battery before you short JBT1 to clear CMOS.

Note 3. Clearing CMOS will also clear all passwords.

Note 4: *Do not use the PW_ON connector to clear CMOS*.

BMC Enable

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

BMC Enable (JPB1) Jumper Settings

Jumper Setting	Definition
Pins 1-2	BMC Enable (Default)
Pins 2-3	Normal

VGA Enable

Jumper JPG1 allows the user to enable onboard VGA support. The default setting is on Pins 1-2 to enable VGA support. See the table on the right for jumper settings.

VGA Enable (JPG1) Jumper Settings

Jumper Setting	Definition
Pins 1-2	Enabled (Default)
Pins 2-3	Disabled

Watch Dog Reset/NMI (JWD1)

Watch Dog (JWD1) is a system monitor that can reboot the system when a software application hangs. Close pins 1~2 to reset the system if an application hangs. Close pins 2~3 to generate a non-maskable interrupt signal for the application that hangs. See the table on the right for jumper settings. Watch Dog must also be enabled in the BIOS.

Watch Dog (JWD1) Jumper Settings

Jumper Setting	Definition
Pins 1-2	Reset (default)
Pins 2-3	NMI
Open	Disabled

SMB Bus to PCI Slots (JI2C1/JI2C2)

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-Exp (JI2C1/JI2C2) Jumper Settings

Jumper Setting	Definition
Pins 1-2	Enabled
Pins 2-3	Disabled (Default)

GLAN Enable/Disable

JPL1 enables or disables LAN Port1/ LAN Port2 on the motherboard. See the table on the right for jumper settings. The default setting is Enabled.

GLAN Enable (JPL1) Jumper Settings

Jumper Setting	Definition
Pins 1-2	Enabled (default)
Pins 2-3	Disabled

ME Recovery (JPME1)

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

ME Recovery (JPME1) Jumper Settings

Jumper Setting	Definition
Pins 1-2	Normal (Default)
Pins 2-3	ME Recovery

ME Manufacturing Mode (JPME2)

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

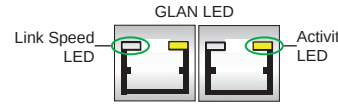
ME Manufacturing Mode (JPME2) Jumper Settings

Jumper Setting	Definition
Pins 1-2	Normal (Default)
Pins 2-3	ME Manufacturing Mode

5-9 Onboard Indicators

GLAN LEDs

There are two LAN ports (LAN1/2) on the motherboard. Each Ethernet LAN port has two LEDs. The Yellow LED on the right indicates connection and activity. The Link LED on the left side may be green, amber or off to indicate the speed of the connection. See the tables at right for more information.

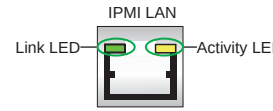


GLAN Activity Indicator (Right) LED Settings		
Color	Status	Definition
Off	No Connections	
Yellow	Flashing	Active

LAN Connection Speed Indicator (Left) LED Settings	
LED Color	Definition
Off	10 MHz
Green	100 MHz
Amber	1 GHz

IPMI Dedicated LAN LEDs

In addition to LAN Ports 1/2, an IPMI Dedicated LAN is also located on the I/O Backplane. The amber LED on the right indicates connection and activity; while the green LED on the left indicates the speed of the connection. See the tables at right for more information.



IPMI LAN Link/Speed LED (Left) & Activity LED (Right)		
Color	Status	Definition
Off	Off	No Connection
Green: Solid	Link/ Speed (Left)	100 Mb/s
Amber Blinking	Activity (Right)	Active

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. Also see the layout below for the LED location.

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 Indicator (LED5) 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 Indicator (LED6) LED Settings	
On (Steady)	Unit ID switch is on
Off	Unit ID switch is off

5-10 Serial ATA Connections

SATA Ports

A total of six (6) Serial ATA (SATA) connectors are located on the motherboard. Of these, two ports support SATA 3.0 (I-SATA 0/1), while the remaining four are SATA 2.0. These Serial Link connections provide faster data transmission than legacy Parallel ATA. See the table below for pin definitions.

Note: For more information on SATA HostRAID configuration, please refer to the Intel SATA and LSI SAS HostRAID User's Guides posted on our Website @ http://www.supermicro.com..

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

SATA 2.0/3.0 Connectors Pin Definitions	
Pin#	Definition
1	Ground
2	SATA_TXP
3	SATA_TXN
4	Ground
5	SATA_RXN
6	SATA_RXP
7	Ground

5-11 Installing Drivers

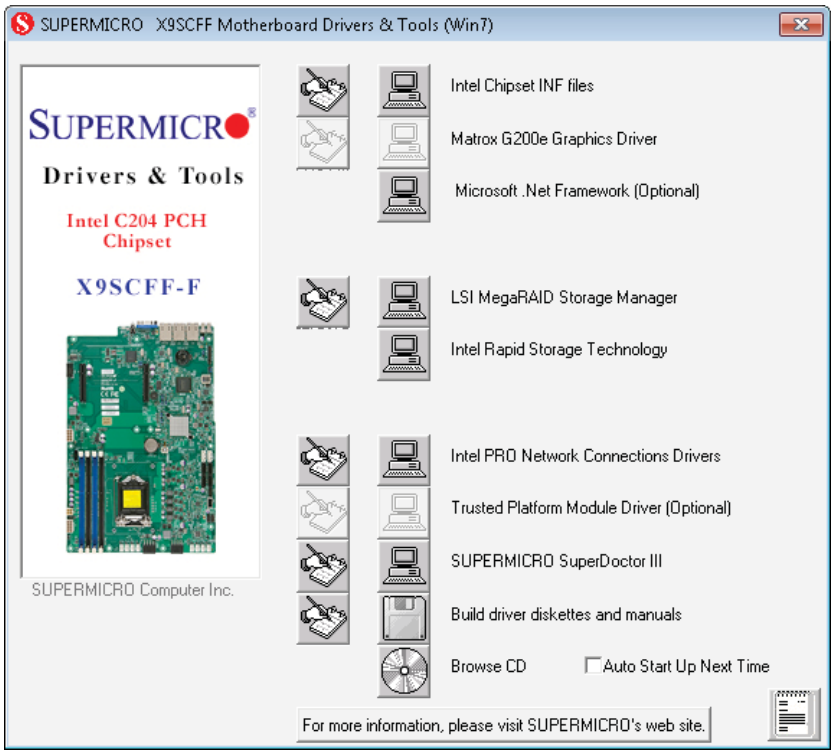
The Supermicro ftp site contains drivers and utilities for your system at ftp://ftp.supermicro.com. Some of these must be installed, such as the chipset driver.

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 5-4 should appear.

Figure 5-4. 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

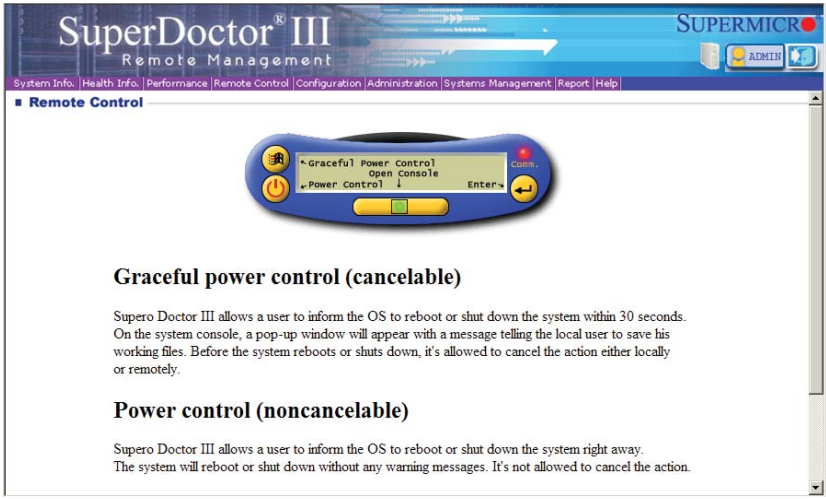
The SuperDoctor® III program is a web-based management tool that supports remote management capability. It includes Remote and Local Management tools. The local management is called SD III Client. The SuperDoctor III program allows you to monitor the environment and operations of your system. SuperDoctor 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 5-5. Supero Doctor III Interface Display Screen (Health Information)

Figure 5-6. Supero Doctor III Interface Display Screen (Remote Control)

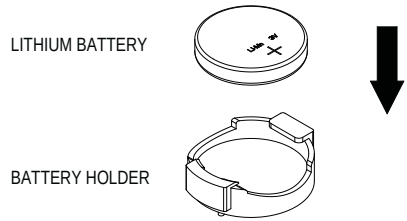


Note: The SuperDoctor III program and User's Manual can be downloaded from the Supermicro web site at http://www.supermicro.com/products/accessories/software/SuperDoctorIII.cfm.For Linux, we recommend that you use the SuperoDoctor II application instead.

5-12 Serverboard Battery

Caution: There is a danger of explosion if the onboard battery is installed upside down, which will reverse its polarites (see Figure 5-7). This battery must be replaced only with the same or an equivalent type recommended by the manufacturer (CR2032). Dispose of used batteries according to the manufacturer's instructions.

Figure 5-7. Installing the 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.

Notes

Chapter 6

Advanced Chassis Setup

This chapter covers the steps required to install components and perform maintenance on the F414IS-R1K62B 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 maintenance 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 damage.

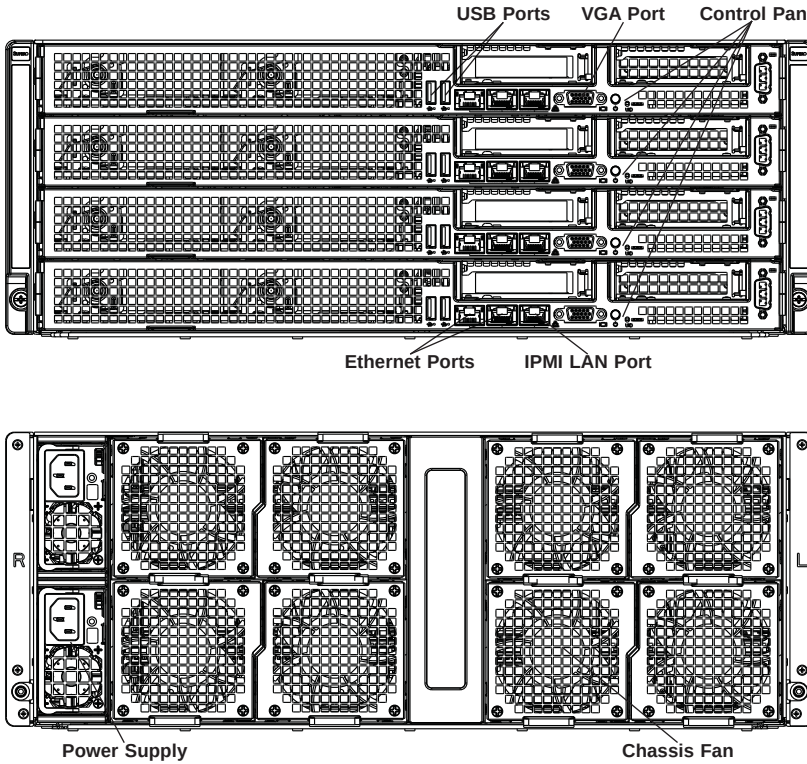
Precautions

- 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 serverboard, 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 serverboard.

Unpacking

The serverboard 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. Front and Rear Chassis Views



6-2 Control Panel

The control panel for each node is located on the front of the chassis. The LEDs inform you of system status.

See Chapter 3 for details on the LEDs and the control panel buttons.

6-3 Removing the Power Cord

Before performing any setup or maintenance on the chassis, use the following procedure to ensure that power has been removed disconnected from the system.

Removing the Power Cord

1. Use the operating system to power down the system, following the on-screen prompts.
2. After the system has completely shut-down, carefully grasp the head of the power cord and gently pull it out of the back of the power supply.
3. If your system has dual redundant power supplies, remove the cords from both power supplies.
4. Disconnect the cord from the power strip or wall outlet.

6-4 Removing Nodes from the Chassis

Each of the four individual motherboard nodes may be removed from the chassis. Note that any time a node is removed from the chassis, the hard drives located in the node twill shut-down.

Removing a Motherboard Node

1. Power down the system and remove the power cords from the rear of the node as described on the previous page.
2. Grasp the node by the handles on either side of the front of the node.
3. Carefully pull the node forward and out of the chassis.

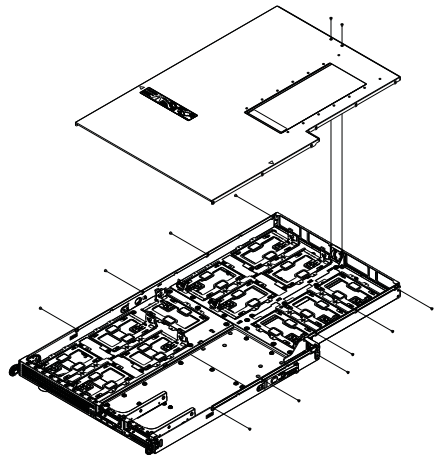
6-5 Removing the Node Cover

Each node has a removable cover which will permit access to the nodes components.

Removing the Node Cover

1. Remove the power cord from the rear of the node as described in Section 6-3 and remove the node from the chassis as described in Section 6-4. Place the node on a flat, stable surface.
2. Remove the six screws securing the cover to the node, as illustrated above.
3. Lift the cover up and off the node.

Figure 6-2: Removing the Node Cover

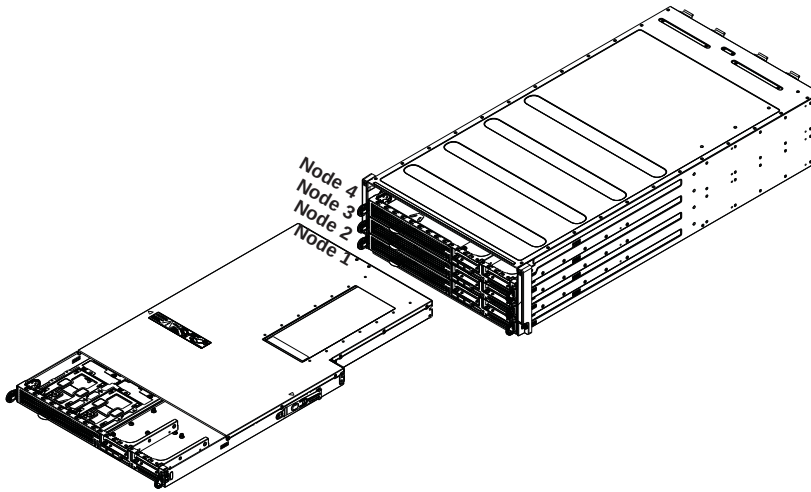


6-6 Installing and Removing Hard Drives

The F414IS chassis contains individual motherboards in separate 1U nodes. Each motherboard node controls the hard drives contained within that node. Note that if a node is pulled out of the chassis, the hard drives associated with that node will power down as well. Refer to the charts below and on the following pages for your specific chassis configuration. These instructions apply to fixed 3.5" hard drives.

Only enterprise level hard drives are recommended for use in Supermicro chassis.

Figure 6-3: Chassis Nodes and their Corresponding Motherboards (Your chassis and drives may differ from those shown in this illustration)



F414IS-R1K62B Chassis Nodes and Their Hard Drives
Node 4 Controls twelve (12) 3.5" HDDs, and two (2) 2.5" HDDs, D1-D15
Node 3 Controls twelve (12) 3.5" HDDs, and two (2) 2.5" HDDs, C1-C15
Node 2 Controls twelve (12) 3.5" HDDs, and two (2) 2.5" HDDs, B1-B15
Node 1 Controls twelve (12) 3.5" HDDs, and two (2) 2.5" HDDs, A1-A15

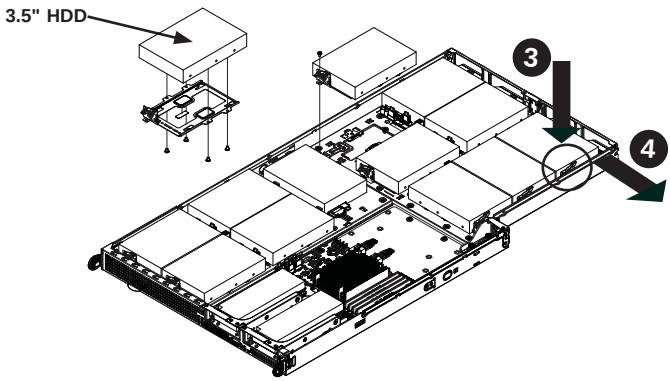
Replacing Fixed 3.5" Hard Drives

Replacing a Fixed 3.5" Hard Drive

1. Power down the node with the operating system and remove the cord from the rear of the power supply as described in Section 6-3. Remove the node from the chassis as described in Section 6-4. Remove the node cover as described in Section 6-5.
2. Remove the screw securing the hard drive tray to the floor of the node and set it aside for later use.
3. Press the latch on the HDD tray.
4. Shift the tray toward the dirction of the latch.
5. Lift the hard drive up and out of the node.
6. Remove the four screws securing the hard drive to the hard drive tray and set them aside for later use.
7. Remove the hard drive from the tray and replace it with a new hard drive.
8. Align the mounting holes in the hard drive with those in the the hard drive tray and secure the hard drive using the screws previously set aside.
9. Place the hard drive and tray in the node and secure the tray to the floor of the node with the mounting screw previously set aside.

Caution: 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-CompList.pdf

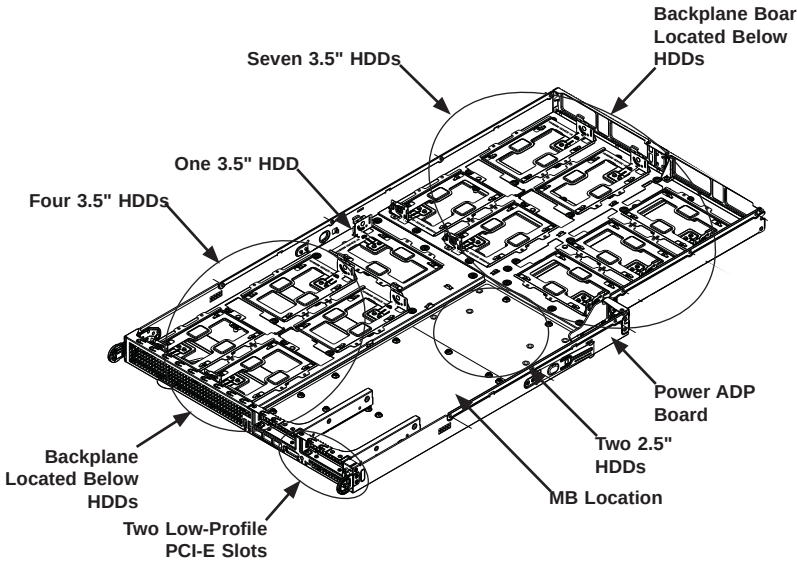
Figure 6-4: Installing 3.5" Hard Drives in the Node



6-7 Node Configuration

The four F414IS chassis nodes are configured as illustrated above. In addition to the node components shown, there are eight exhaust fans and two power supplies located in the rear of the chassis body.

Figure 6-5: Configuration of the Node



6-8 Removing and Installing the Backplane

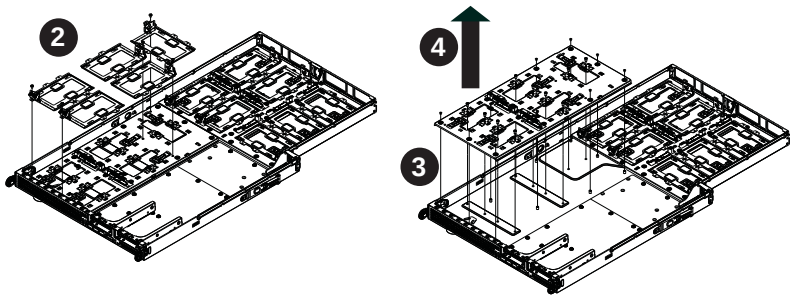
The F414IS backplane is located under the hard drives on the front left side of each node as shown in Figure 6-5. Although backplane failure rarely occurs, in the event of a backplane failure, follow the instructions below.

Removing the Backplane

Removing the Backplane from the Node

1. Power down the node with the operating system and remove the cord from the rear of the power supply as described in Section 6-3. Remove the node from the chassis as described in Section 6-4. Remove the node cover as described in Section 6-5.
2. Remove the screws securing the 3.5" hard drive trays and release the trays as described on page 6-6.
3. Remove the screws securing the protection cover and set them aside for later use.
4. Lift the protection cover with the attached backplane, up and out of the node.

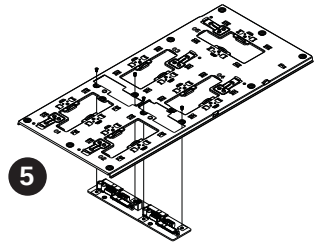
Figure 6-6: Removing the Backplane



Note: HDD trays shown empty for clarity, most will have HDDs installed.

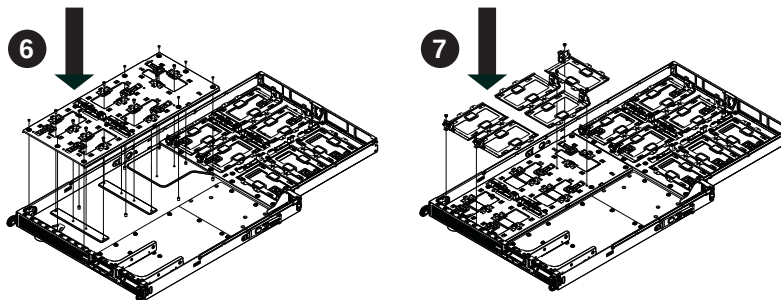
5. Remove the three screws securing the backplane to the protection cover.

Figure 6-7: Removing the Backplane from the Protection Cover



6. Install a replacement backplane onto the protection cover and secure with the screws previously set aside.
7. Place the protection cover in the node and secure it to the floor of the node with the screws previously set aside.
8. Secure the fixed 3.5" hard drives and their trays over the protection cover as described on page 5-5.
9. Replace the node cover, return the node to its bay in the chassis, plug the power cord into the rear of the power supply and power up the node.

Figure 6-8: Installing the Backplane



Note: HDD trays shown empty for clarity, most will have HDDs installed.

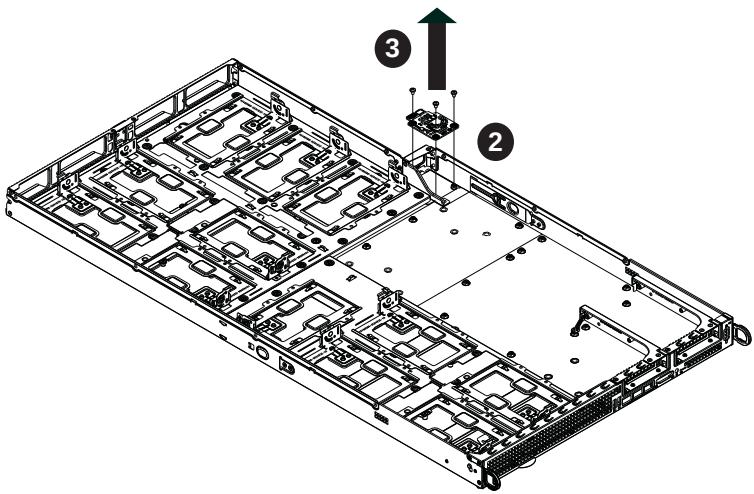
6-9 Power Adapter Board Replacement

Each of the nodes includes a power adapter board, which connects it to the chassis. In the unlikely event of a failure of the power adapter board, replacement is simple and requires only a Phillips head screwdriver.

Changing the Power Adapter Board

1. Power down the node with the operating system and remove the cord from the rear of the power supply as described in Section 6-3. Remove the node from the chassis as described in Section 6-4. Remove the node cover as described in Section 6-5.
2. Remove the screws securing the power adapter board to the floor of the node and set them aside for later use.
3. Lift the power adapter board up and out of the node.
4. Place the power adapter board into the same position on the floor of the node, aligning the mounting holes of the board with those in the node. Secure the board with the screws previously set aside. Do not exceed eight pound of torque when tightening the power distributor board.
5. Place the cover back on the node, return the node to the chassis, plug the power cord into the rear of the power supply and power up the node.

Figure 6-9: Removing the Power Adapter Board



6-10 Installing the Motherboard

Compatible Motherboards

For the most up-to-date information on compatible motherboards and other parts, visit the Supermicro Web site at www.supermicro.com.

Permanent and Optional Standoffs

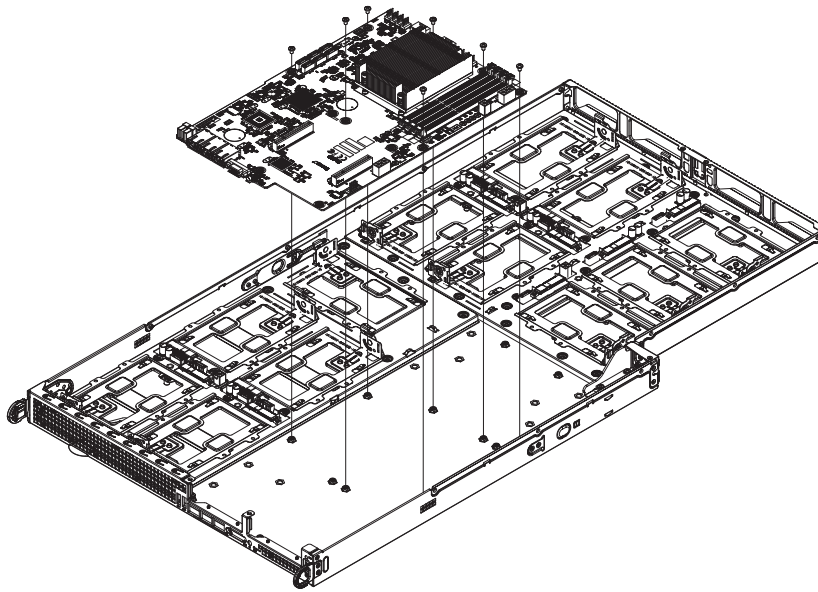
Standoffs prevent short circuits by creating space between the motherboard and the floor of the node. The F414IS chassis includes permanent standoffs in locations used by most motherboards. These standoffs use the rounded Phillips head screws included in the F414IS accessories packaging.

Some motherboards require additional screws for heatsinks, general components and/or non-standard security. Optional standoffs are used for these motherboards.

To use an optional standoff, compare the mounting holes in the motherboard with those in the floor of the motherboard node. Then place a screw through the bottom the node and secure the screw with a hexagonal nut (rounded side up).

Depending upon the configuration of the motherboard being used, it is also possible that some of the optional standoffs which are pre-installed in the chassis, may need to be removed. Add or remove standoffs as needed.

Figure 6-10: Installing the Motherboard in the Node



Installing the Motherboard

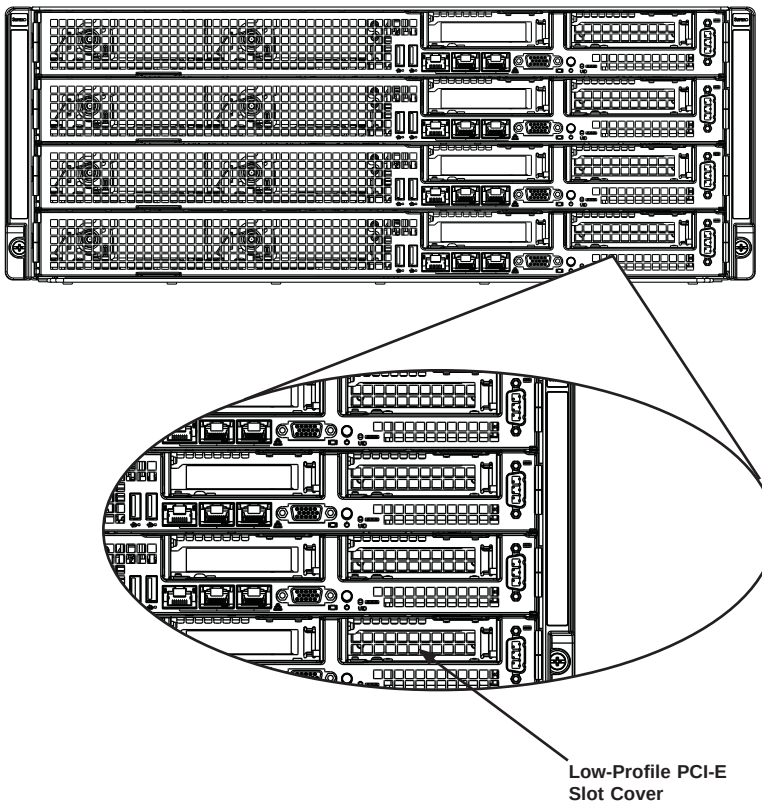
1. Review the documentation that came with your motherboard. Become familiar with component placement, requirements, cautions, and cable connections.
1. Power down the node with the operating system and remove the cord from the rear of the power supply as described in Section 6-3. Remove the node from the chassis as described in Section 6-4. Remove the node cover as described in Section 6-5.
2. Compare the mounting holes in the node with those in the motherboard. Add or remove standoffs as needed.
3. Secure the motherboard to the floor of the node tray using the rounded, Phillips head screws included for this purpose. Do not exceed eight pounds of torque when tightening down the motherboard.
4. Refer to the next section of this for instructions on installing the expansion card
5. After installing the expansion card, ecure the CPU(s), heatsinks, and other components to the motherboard as described in the motherboard documentation.
6. Connect the cables between the motherboard, backplane, front panel, and power supply, as needed.
7. Return the node ot the chassis and power up the node.

6-11 Installing Expansion Cards

PCI-E Slot Setup

The nodes of some F414IS chassis models support one low-profile expansion cards. To install a low-profile expansion cards follow the instructions on the following pages.

Figure 6-11: PCI-E Slot Shield Configuration



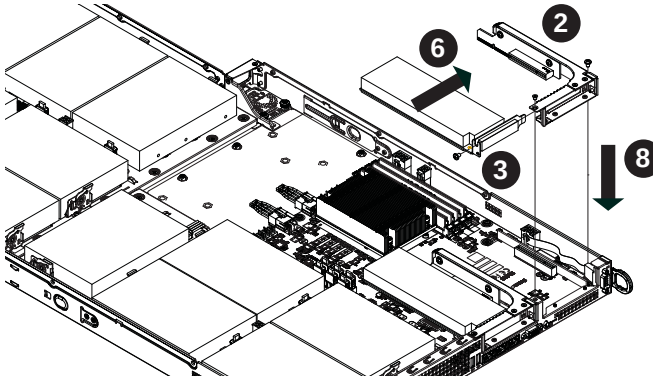
Installing a Low-Profile Expansion Card

The F414IS chassis supports two low-profile expansion cards in each of the four nodes for a total of eight expansion cards in the chassis, Each expansion card connects to the motherboard with a riser card.

Installing a Low-Profile Expansion Card into a Node

1. Power down the node with the operating system and remove the cord from the rear of the power supply as described in Section 6-3. Remove the node from the chassis as described in Section 6-4. Remove the node cover as described in Section 6-5.
2. Remove the three screws securing the riser card bracket to the node and set them aside for later use.
3. Remove the mounting screw which secures the PCI-E slot cover in the riser card bracket and set this aside for later use.
4. Remove the PCI-E slot cover by sliding it sideways and out of the PCI-E slot and set this screw aside for later use.
5. Lift the riser card bracket up and out of the chassis.
6. Assemble the riser card as illustrated below, by simultaneously connecting the expansion card to the riser card, while sliding the PCI-E slot cover into the PCI-E slot.
7. Secure the PCI-E slot cover into the PCI-E slot with the screw previously set aside.
8. Insert the riser card into the motherboard and secure the riser card bracket to the node with the screws previously set aside.
9. Place the node cover on top of the node and secure it with the eight screws previously used for this purpose.
10. Return the node to the chassis, plug the power cord into the rear of the power supply and power up the node.

Figure 6-12: Removing the Riser Card Bracket from the Node



Installation Complete

In most cases, the node power supplies and fans are pre-installed. If you need to install fans or power supplies, continue to the Systems Fan and Power Supply sections of this chapter. If the chassis will be installed into a rack, continue to the next chapter for rack installation instructions.

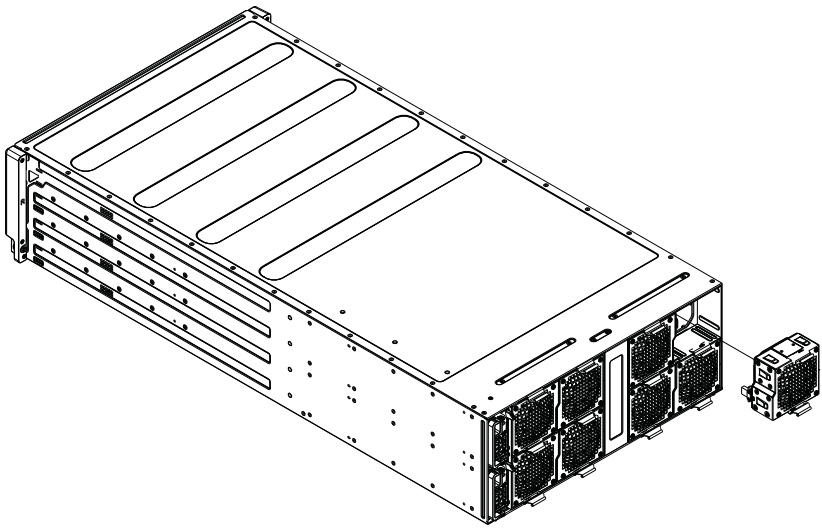
6-12 Replacing Exhaust Fans

Eight rear exhaust fans provide cooling for the nodes in the F414IS chassis. These fans circulate air through the nodes as a means of lowering the internal temperature. The F414IS exhaust fans are easily removed from the chassis withouthat tools. There is no need to uninstall any other parts when replacing fans

Replacing an Exhaust Fan

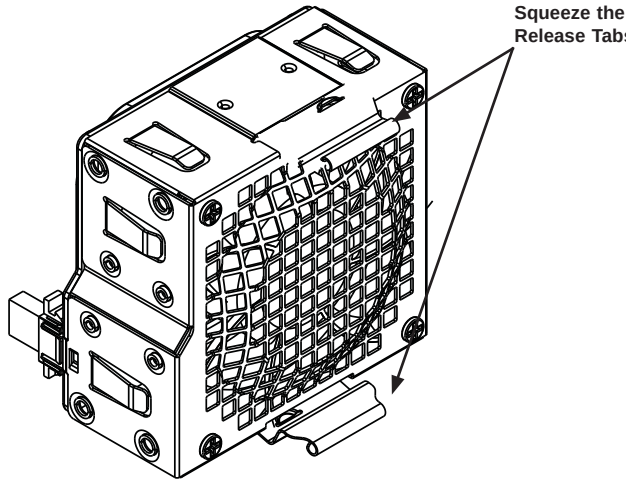
1. Determine the location of the failed fan.
2. Power down the node with the operating system.
3. Remove the power cord from the rear of the node with the failed fan.
4. Simultaneously squeeze both sets of release tabs on the top and bottom of the fan to release it from the rear of the chassis.
5. Pull the failed fan from the rear of the chassis.
6. Insert a replacement fan into the fan bay in the rear of the chassis.
7. Push the fan into the bay until it clicks into the locked position.

Figure 6-13: Replacing an Exhaust Fan



Warning! The exhaust fan should be replaced immediately after removal to avoid unintentional contact with the exposed connector pins.

Figure 6-14: Removing the System Fans from the Fan Housing



6-13 Replacing the Power Supply

The F414IS chassis includes two 1620 Watt power supplies that are auto-switching capable. This enables it to automatically sense and operate at a 100Vac to 240Vac 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.

The system with the **PWS-2K02P-1R** power supply is designed to have a multiple maximum output power base, on different input ratings. The power ratings available are shown in the table below, please make sure your system's total power budget is within the maximum output power:

PWS-2K02P-1R Power Ratings			
Region	**Input Power Source**	**Current Rating**	**Maximum Output Power**
North America	100-120V, 50-60Hz	12.0-10.5A	1100W
	200-240V, 50-60Hz	11.0-9.8A	2000W
International	100-120V, 50-60Hz	12.0-10.5A	1100W
	200-240V, 50-60Hz	10.0-8.3A	1995W

A default interconnected power cord comes with the system and uses a 250VAC, C13 to C14 connectors with a 14AWG wire and can be used for power strips or racks/PDU with a 200V- 240VAC rating only.

When required, the alternative power cord should be purchased separately.

For North American use, a wall-plug 250 VAC, NEMA 6-15P or 6-20P, wire size 14-16AWG power cord should be used.

Warning! Only the approved power cords or default power cords provided with the server are supported. Other alternative power cords must be certified and suitably rated for the use.

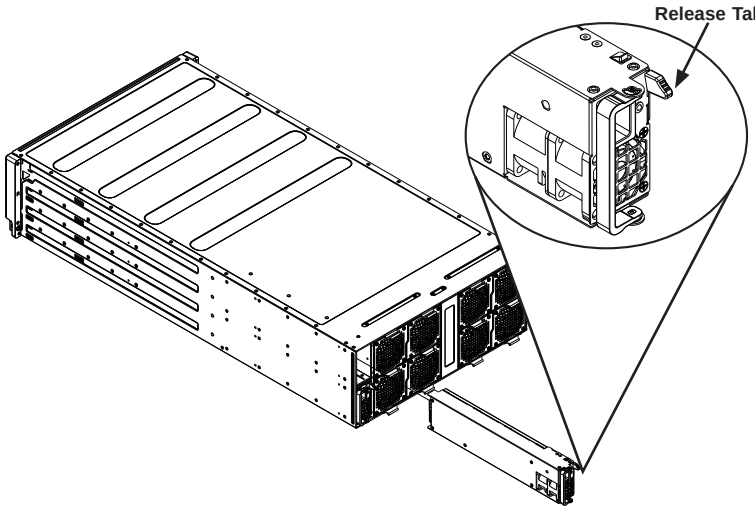
Power Supply Replacement

The F414IS chassis utilizes two redundant power supplies. In the unlikely event that the power supply unit needs to be replaced, one power supply can be removed, without powering down the system. Replacement units can be ordered directly from Supermicro (See the contact information in the Preface of this manual).

Changing the Power Supply

1. Power down the system and disconnect the AC power cord on the back of the failed power supply.
2. Press the release tab on the back of the power supply and pull the power supply out using the handle provided.
3. Push the replacement power supply module into the power bay until it clicks into the locked position.
4. Plug the AC power cord back into the module and return the node to its bay in the chassis..

Figure 6-15: Changing the Power Supply



Notes

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.

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

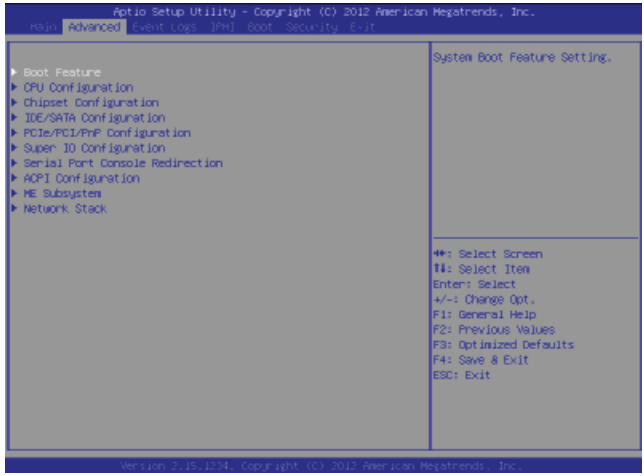
System Memory

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:



▶ 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 performance. The options are **Enabled** and Disabled.

▶ Turbo Boost Technology

This menu is only 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**.

PCI-E Maximum Read Request

This feature selects the setting for the PCI-E 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.

▶ PCI-E/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

This option is available if your 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 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,** 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 dependency on other timestamp calculation devices, such as an x86 RDTSC Instruction 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.

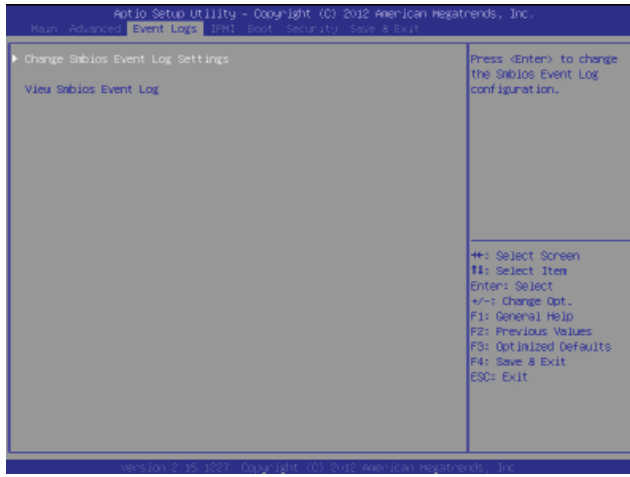
▶ ME Subsystem

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



▶ 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.

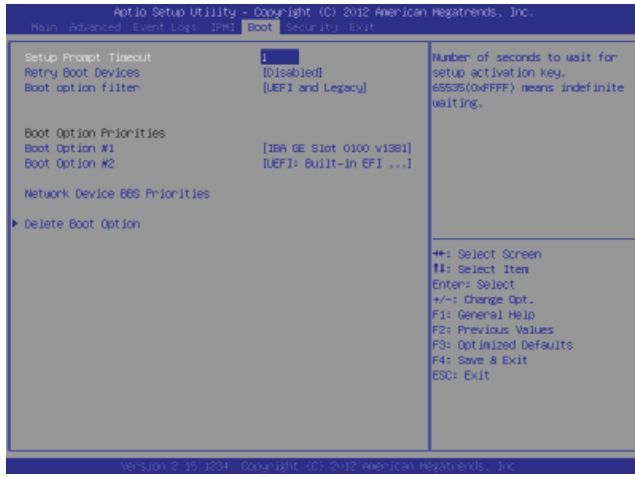
Current Subnet Mask - Subnet masks tell the network which subnet this machine belongs to. The value of each three-digit number separated by dots should not exceed 255.

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:



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.

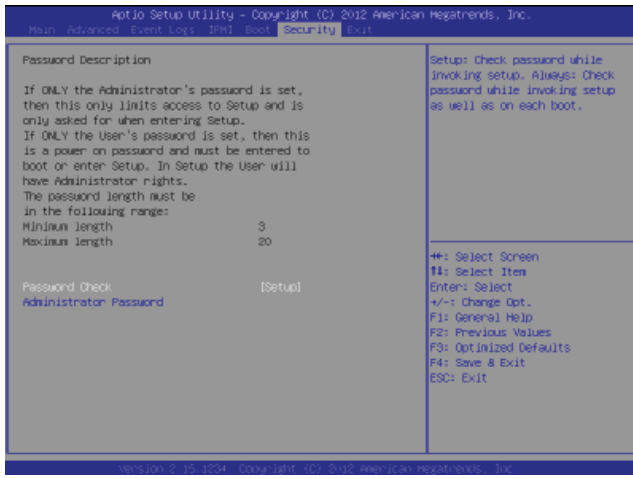
Network Device BBS Priorities

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

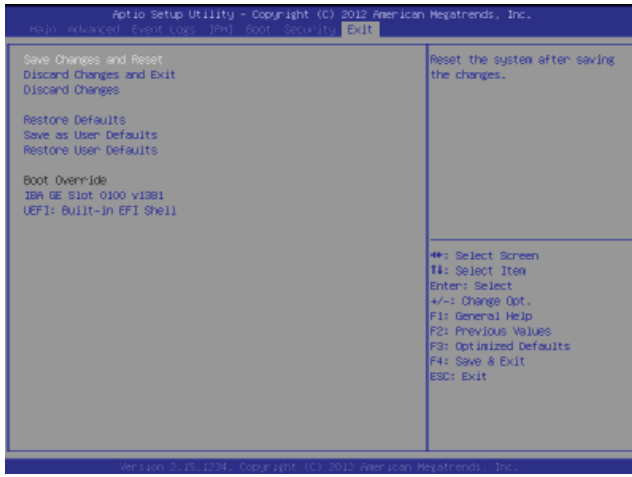
Use this feature to determine when a password entry is required. Select Setup to require the password only when entering setup. Select Always to require the password when entering setup and on each boot. The options are **Setup** and Always.

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.



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.

Notes

Appendix A

BIOS Error Beep Codes

During the POST (Power-On Self-Test) routines, which are performed each time the system is powered on, errors may occur.

Non-fatal errors are those which, in most cases, allow the system to continue the boot-up process. The error messages normally appear on the screen.

Fatal errors are those which will not allow the system to continue the boot-up procedure. If a fatal error occurs, you should consult with your system manufacturer for possible repairs.

These fatal errors are usually communicated through a series of audible beeps. The numbers on the fatal error list (on the following page) correspond to the number of beeps for the corresponding error. All errors listed, with the exception of Beep Code 8, are fatal errors.

A-1 AMIBIOS Error Beep Codes

Beep Code	Error Message	Description
1 beep	Refresh	Circuits have been reset (Ready to power up)
5 short beeps and 1 long beep	Memory error	No memory detected in the system
5 beeps	No Con-In or No Con-Out devices	Con-In: USB or PS/2 keyboard, PCI or Serial Console Redirection, IPMI KVM or SOL Con-Out: Video Controller, PCI or Serial Console Redirection, IPMI SOL
1 beep per device	Refresh	1 beep for each USB device
X9 IPMI Error Codes		
1 continuous beep	System overheat	System overheat

Notes

Appendix B

System Specifications

Note: Unless noted specifications apply to a complete system (all serverboards). There are four motherboard drawer nodes per system.

Processors

One E3-1200 series processor per node in a Socket H2 (LGA 1155) type socket

Note: please refer to our website for details on supported processors.

Chipset

One C204 chipset per node

BIOS

64 Mb AMI BIOS® Flash EEPROM per node

Memory Capacity

The X9SCFF-F serverboard has four (4) DIMM slots supporting up to 32 GB of UDIMM DDR3-1600/1333 MHz speed SDRAM in up to 1 GB, 2 GB, 4 GB or 8 GB sizes at 1.5V voltage per node.

Note: refer to Section 5-5 for details on installation.

Note: Check the Supermicro website (www.supermicro.com) for the latest memory support information.

SAS/SATA Drive Bays

Each of the FatTwin F517H6-FT nodes contains twelve (12) fixed internal drive trays to house twelve standard 3.5" SATA drives with two (2) fixed 2.5" internal drive trays available for 2.5" SATA drives.

PCI Expansion

The FatTwin F517H6-FT has 1x PCI-E 3.0 x8 low-profile slot available per node.

Serverboard

FatTwin X9SCFF-F serverboard (proprietary form factor)

Dimensions: (LxW) 18.72" x 8.54" (475.49 mm x 216.92 mm)

Chassis

F414IS-R1K62B (4U rackmount)

Dimensions: (WxHxD) 17.63 x 6.96 x 35 in. (448 x 177 x 889 mm)

Weight

Gross (Bare Bone): 240 lbs (108.86 kg)

System Cooling

The system has eight (8) 8-cm PWM system cooling fans in the rear of the chassis.

System Input Requirements

AC Input: 1000W Output @ 100-120V, 12-10A, 50-60Hz
1200W Output @ 120-140V, 12-10A, 50-60Hz
1620W Output @ 180-240V, 10.5-8A, 50-60Hz

Efficiency: 94%+ (Platinum Level)

Power Supply

Rated Output Power: 1620 Watt (Part# PWS-1K62P-1R)
Rated Output Voltages: 1000W: +12V/84A; +5Vsb/4A
1200W: +12V/100A; +5Vsb/4A
1620W: +12V/150A; +5Vsb/4A

Operating Environment

Operating Temperature: 10°C to 35°C (50°F to 95°F)
Non-operating Temperature: -40°C to 70°C (-40°F to 158°F)
Operating Relative Humidity: 8% to 90% (non-condensing)
Non-operating Relative Humidity: 5% to 95% (non-condensing)

The table below specifies the preferred ambient temperature versus processor support for the FatTwin F517H6-FT system.

Ambient Temperature versus Porcessor Support			
	35°C	**30°C**	**25°C**
E3-1270v2 (69W)	X[1]	X	X

Notes:

1. Can NOT support PCI-E add-on-card.

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" for further details.

(continued from front)

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