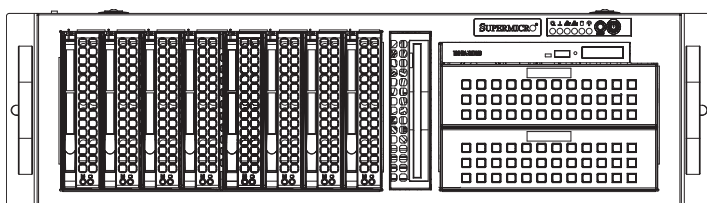


# SUPERO®

## SC835 Chassis Series



SC835TQ - R800B

## USER'S MANUAL

1.0

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## Preface

### About This Manual

This manual is written for professional system integrators and PC technicians. It provides information for the installation and use of the SC835 3U chassis. Installation and maintenance should be performed by experienced technicians only.

Supermicro's SC835 3U chassis features a unique and highly-optimized design for dual-core Xeon platforms. The chassis is equipped with a redundant 800W high efficiency power supply. High performance fans provide ample optimized cooling for FB-DIMM memory modules and 8 hot-swap drive bays offers maximum storage capacity in a 3U form factor.

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

## Manual Organization

### **Chapter 1: Introduction**

The first chapter provides a checklist of the main components included with this chassis and describes the main features of the SC835 chassis. This chapter also includes contact information.

### **Chapter 2: System Safety**

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

### **Chapter 3: Chassis Components**

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

### **Chapter 4: System Interface**

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

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

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

### **Chapter 6: Rack Installation**

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

### **Appendix A: SC835 Chassis Cables**

### **Appendix B: SC835 Power Supply Specifications**

### **Appendix C: SAS 833TQ Series Backplane**

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**Appendix A SC835 Chassis Cables**

**Appendix B SC835 Power Supply Specifications**

**Appendix C SAS-833TQ Backplane Specifications**

# Chapter 1

## Introduction

### 1-1 Overview

Supermicro's SC835 3U chassis features a unique and highly-optimized design. The chassis is equipped with a redundant high efficiency power supply. High performance fans provide ample optimized cooling and 8 hot-swappable drive bays offer maximum storage capacity in a 3U form factor.

### 1-2 Shipping List

#### Part Numbers

Please visit the following link for the latest shipping lists and part numbers for your particular chassis model:

<http://www.supermicro.com/products/chassis/3U/?chs=835>

<b>SC835 Chassis Series</b>				
<b>Model</b>	<b>CPU</b>	<b>HDD</b>	<b>I/O Slots</b>	<b>Power Supply</b>
<b>SC835TQ-R800B</b>	Dual-core Xeon 1066 MHz FSB	8x 3.5" SAS / SATA hot swappable drive trays	7x FF	R800W

## 1-3 Chassis Features

The SC835 high performance chassis includes the following features:

### **CPU Support**

The SC835 Chassis supports Intel and AMD Quad processors. Please refer to the motherboard specifications pages on our Web site for updates on supported processors for this chassis

### **Hard Drives**

The SC835 Chassis features 8 slots for 3.5" SAS/SATA drives. These drives are hot swappable. Once setup correctly, these drives can be removed without powering down the server. In addition, these drives support SES2 (SAS/SATA).

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

Each version of the SC835 Chassis includes 7 full-height, full-length I/O expansion slots.

### **Peripheral Drives**

Each SC835 chassis supports either one slim 8x DVD drive, one 24x CD or one optional floppy drive. These drives allow you to quickly install or save data.

### **Other Features**

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



## 1-4 Contacting SuperMicro

### Headquarters

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

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Fax: +1 (408) 503-8008

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[support@supermicro.com](mailto:support@supermicro.com) (Technical Support)

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

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4F, No. 232-1, Liancheng Rd.  
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Tel: +886-(2) 8226-3990

Fax: +886-(2) 8226-3991

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

Technical Support:

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

Tel: 886-2-8228-1366, ext.132 or 139

**Notes**

## Chapter 2

# System Safety

### 2-1 Overview

This chapter provides a quick setup checklist to get your chassis up and running. Following the steps in order given should enable you to have your chassis setup and operational within a minimal amount of time. These instructions assume that you are an experienced technician, familiar with common concepts and terminology.

### 2-2 Warnings and Precautions

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

Decide on a suitable location for the rack unit that will hold the chassis. It should be situated in a clean, dust-free area that is well ventilated. Avoid areas where heat, electrical noise and electromagnetic fields are generated.

You will also need it placed near at least two grounded power outlets. The SC835 chassis includes two redundant power supplies which require two grounded outlets.

### 2-3 Preparing for Setup

The SC835 chassis includes a set of rail assemblies, including mounting brackets and mounting screws you will need to install the systems into the rack. Please read this manual in its entirety before you begin the installation procedure.

## 2-4 Electrical Safety Precautions

Basic electrical safety precautions should be followed to protect yourself from harm and the SC835 from damage:

- Be aware of the locations of the power on/off switch on the chassis as well as the room's emergency power-off switch, disconnection switch or electrical outlet. If an electrical accident occurs, you can then quickly remove power from the system.
- Do not work alone when working with high voltage components.
- Power should always be disconnected from the system when removing or installing main system components, such as the serverboard, memory modules and the DVD-ROM and floppy drives (not necessary for hot swappable drives). When disconnecting power, you should first power down the system with the operating system and then unplug the power cords from all the power supply modules in the system.
- When working around exposed electrical circuits, another person who is familiar with the power-off controls should be nearby to switch off the power, if necessary.
- Use only one hand when working with powered-on electrical equipment. This is to avoid making a complete circuit, which will cause electrical shock. Use extreme caution when using metal tools, which can easily damage any electrical components or circuit boards they come into contact with.
- Do not use mats designed to decrease electrostatic discharge as protection from electrical shock. Instead, use rubber mats that have been specifically designed as electrical insulators.
- The power supply power cord must include a grounding plug and must be plugged into grounded electrical outlets.
- Serverboard Battery: CAUTION - There is a danger of explosion if the onboard battery is installed upside down, which will reverse its polarities This battery must be replaced only with the same or an equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions.

- DVD-ROM Laser: CAUTION - This server may have come equipped with a DVD-ROM drive. To prevent direct exposure to the laser beam and hazardous radiation exposure, do not open the enclosure or use the unit in any unconventional way.

## 2-5 General Safety Precautions

- Keep the area around the chassis clean and free of clutter.
- Place the chassis top cover and any system components that have been removed away from the system or on a table so that they won't accidentally be stepped on.
- While working on the system, do not wear loose clothing such as neckties and unbuttoned shirt sleeves, which can come into contact with electrical circuits or be pulled into a cooling fan.
- Remove any jewelry or metal objects from your body, which are excellent metal conductors that can create short circuits and harm you if they come into contact with printed circuit boards or areas where power is present.
- After accessing the inside of the system, close the system back up and secure it to the rack unit with the retention screws after ensuring that all connections have been made.

## 2-6 System Safety

Electrostatic discharge (ESD) is generated by two objects with different electrical charges coming into contact with each other. An electrical discharge is created to neutralize this difference, which can damage electronic components and printed circuit boards. The following measures are generally sufficient to neutralize this difference before contact is made to protect your equipment from ESD:

- Do not use mats designed to decrease electrostatic discharge as protection from electrical shock. Instead, use rubber mats that have been specifically designed as electrical insulators.
- Use a grounded wrist strap designed to prevent static discharge.
- Keep all components and printed circuit boards (PCBs) in their antistatic bags until ready for use.

- Touch a grounded metal object before removing any board from its antistatic bag.
- Do not let components or PCBs come into contact with your clothing, which may retain a charge even if you are wearing a wrist strap.
- Handle a board by its edges only; do not touch its components, peripheral chips, memory modules or contacts.
- When handling chips or modules, avoid touching their pins.
- Put the serverboard 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.

## Chapter 3

# Chassis Components

### 3-1 Overview

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

### 3-2 Components

#### Chassis and Chassis Bays

The SC835 chassis supports either one slim 8x DVD, one 24x CD-ROM or one floppy drive. It includes 8 hard drive bays. Most chassis models include a DVD-ROM. Hard drives must be purchased separately. For the latest shipping lists, visit our Web site at: <http://www.supermicro.com>.

#### Backplane

Each SC835 chassis comes with a 3U backplane. Depending on our order, your backplane will accept SAS/SATA drives, SAS only, or SCSI drives. For more information regarding compatible backplanes, view the appendices found at the end of this manual. In addition, visit our Web site for the latest information: <http://www.supermicro.com>.

#### Fans

The SC835 chassis accepts three 8cm hot-swappable fans and two 8cm rear exhaust fans. System fans for SC835 chassis are powered from the serverboard. These fans are 3U compatible and are powered by 3-pin connectors.

## Mounting Rails

The SC835 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.

## Power Supply

Each SC835 chassis model includes two redundant high-efficiency "hot-swappable" power supplies rated at 800 Watts. In the unlikely event of a failure in one of the power supplies, you can remove and replace the faulty power supply without powering down the system.

## Air Shroud

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

### 3-3 Where to get Replacement Components

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



# Chapter 4 System Interface

## 4-1 Overview

There are several LEDs on the control panel as well as others on the drive carriers to keep you constantly informed of the overall status of the system as well as the activity and health of specific components. Most SC835 models have two buttons on the chassis control panel: a reset button and an on/off switch. This chapter explains the meanings of all LED indicators and the appropriate response you may need to take.

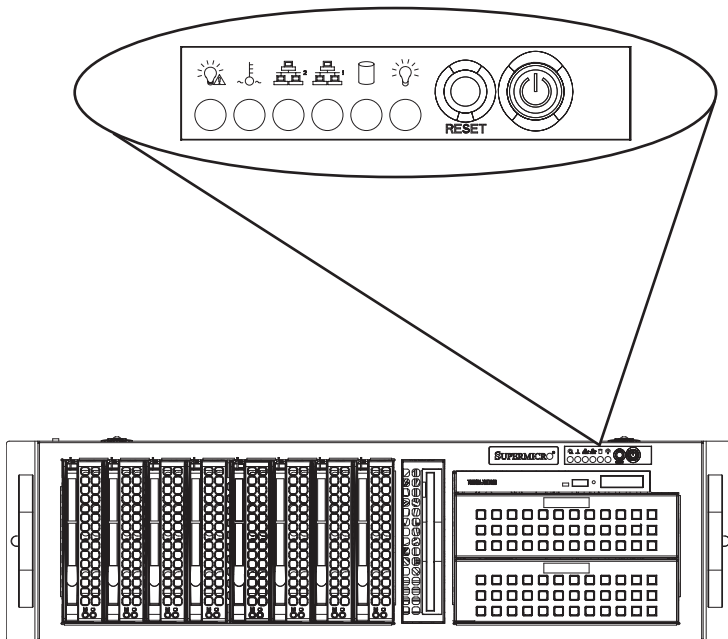
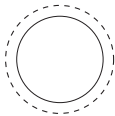


Figure 4-1: SC835 Front Panel

## 4-2 Control Panel Buttons

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



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



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

## 4-3 Control Panel LEDs

The control panel located on the front of the SC835 chassis has 6 LEDs. These LEDs provide you with critical information related to different parts of the system. This section explains what each LED indicates when illuminated and any corrective action you may need to take.



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



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



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



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



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



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

## 4-4 Drive Carrier LEDs

Each SAS drive carrier has two LEDs.

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

## Chapter 5

# Chassis Setup and Maintenance

### 5-1 Overview

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

When coupled with an SC833 series backplane, this chassis is capable of failover, and cascading. Review Appendix C in this manual for setup instructions.



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

## 5-2 Removing the Chassis Cover

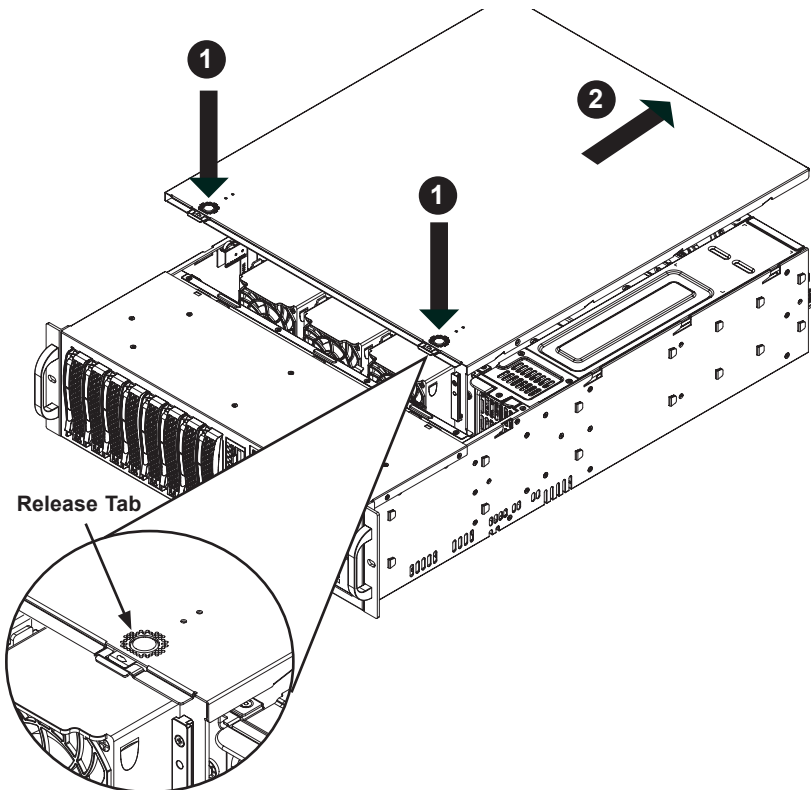


Figure 5-1: Removing the Chassis Cover

### *Removing the Chassis Cover*

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



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

## 5-3 Installing the Hard Drives

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

### Removing Hard Drive Trays From the Chassis

#### *Removing the Hard Drives*

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

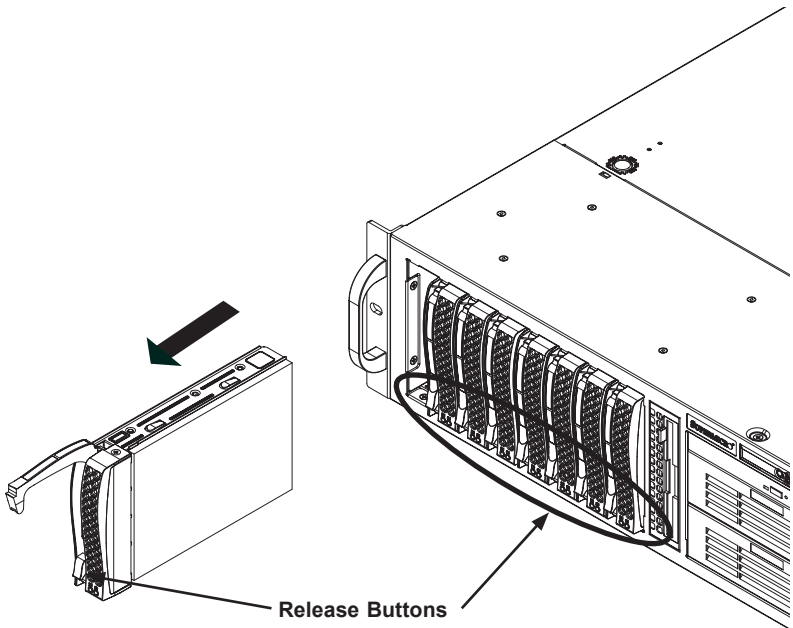


Figure 5-2: Removing the Hard Drive Tray

## Installing a Hard Drive into the Hard Drive Tray

### *Installing a Hard Drive*

1. Remove the two screws securing the dummy drive to the drive tray.
2. Lift the dummy drive out of the drive tray.
3. Place the hard drive tray on a flat, stable surface such as a desk, table, or work bench.
4. Slide the hard drive into the tray with the printed circuit board side facing down.
5. Carefully align the mounting holes in the hard drive and the tray. Make sure the bottom of the hard drive and bottom of the hard drive tray are flush.
6. Secure the hard drive using all six screws.
7. Replace the drive tray into the chassis. Make sure to close the drive tray using the drive tray handle.

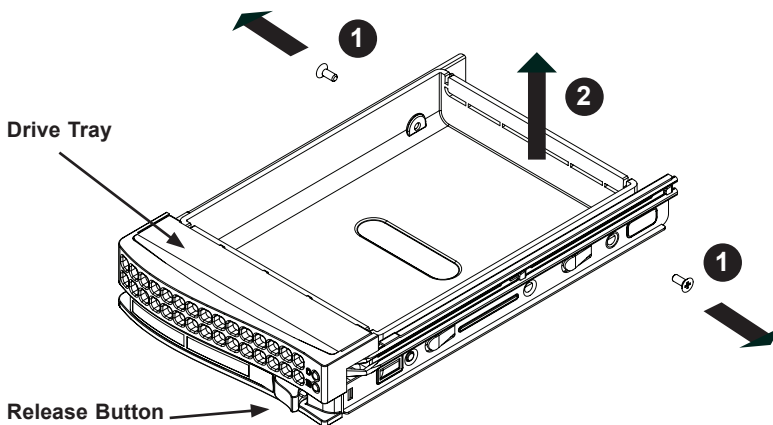


Figure 5-2: Removing the Dummy Drive from Tray



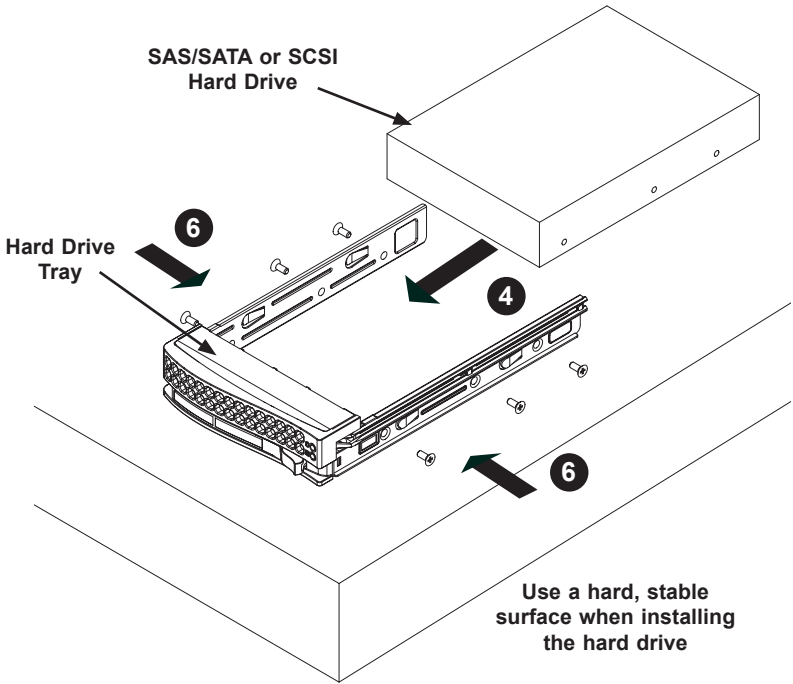


Figure 5-3: Installing an SAS or SATA Drive to Hard Drive Tray

## 5-4 Installing the Motherboard

### Permanent and Optional Standoffs

Standoffs prevent short circuits by securing space between the motherboard and the chassis surface. The SC835 chassis includes permanent standoffs in locations used by most motherboards. These standoffs accept the rounded Phillips head screws included in the SC835 accessories packaging.

Some motherboard require additional screws for heatsinks, general components and/or non-standard security. Optional standoffs are included to these motherboards. To use an optional standoff, you must secure a hexagonal post by screwing it into the necessary spot.

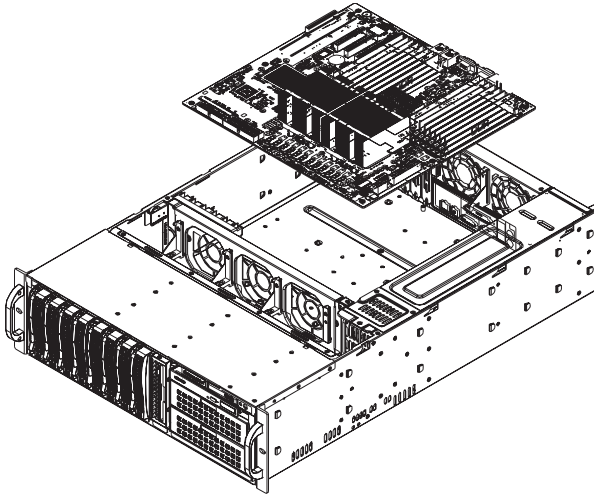
### Standoff Labeling

Standoff locations are labeled on the bottom of the SC835 chassis with the letters: P, D, and A.

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

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

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



**Figure 5-4: Installing the Motherboard**

## **Motherboard Installation**

### ***Installing the Motherboard***

1. Review the documentation that came with your motherboard. Become familiar with component placement, requirements, and precautions.
2. Confirm that the power supply is disconnected and lay the chassis on a flat surface.
3. Open the chassis cover.
4. Remove any packaging from the chassis. If the rear fans (set of two fans nearest the I/O slots) or the air shroud is in place, remove them.
5. If required by your motherboard, install standoffs in any areas that do not have a permanent standoff. To do this, tighten a hexagonal optional standoff into the chassis.
6. Lay the motherboard on the chassis aligning the permanent and optional standoffs.
7. Secure the motherboard to the chassis using the rounded, Phillips head screws.
8. Secure the CPU(s) and heatsinks to the motherboard

## I/O Shield and Add On Card Setup

The SC835 chassis includes space for an I/O shield and up to seven Add-on/expansion cards.

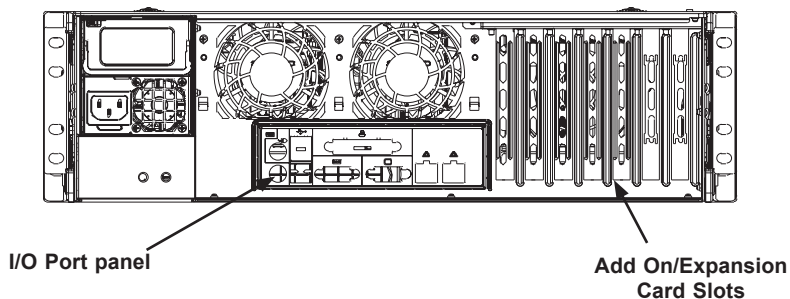


Figure 5-4: SC835 Chassis Add On Card Slots and I/O Ports

## Installing an Add-On or Expansion Card

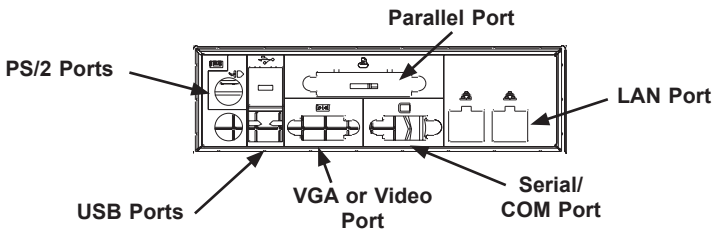
### *Installing Add-on or Expansion Cards*

1. Remove the chassis cover.
2. Locate the motherboard port aligned with the card slot you want to install.
3. Each slot is secured by one screw located on the top (inside) the chassis. Remove this screw.
4. Gently slide the expansion/add-on card into the correct motherboard slot. If the Add On card requires a riser card, install it at this time. If necessary, slide the card into the PCI card guide and lock. Never force a component into a motherboard or the chassis.
5. Secure the expansion/add-on card with the screw from the I/O panel.

## Installing an I/O Port Panel

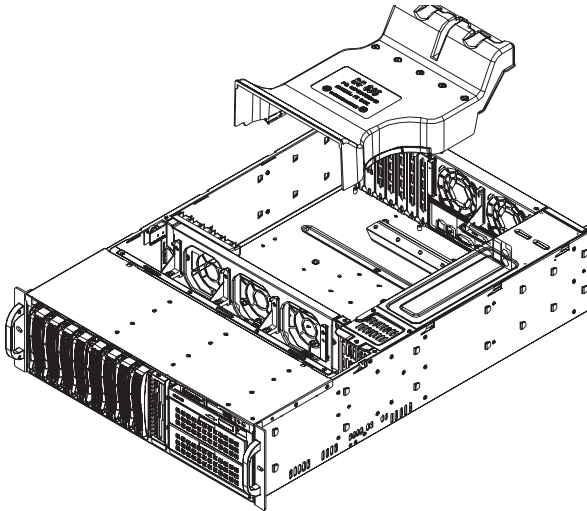
### *Installing an I/O Port Panel*

1. Remove the chassis cover.
2. Locate the I/O port panel.
3. Depending on your motherboard, you must remove the existing port shield and replace with the new one or use the existing the shield to slide the ports through.
4. Connect the port panel to the motherboard following the motherboard documentation.



**Figure 5-5: SC835 Chassis Port Panel**

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



**Figure 5-6: Installing the Air Shroud**

Air shrouds concentrate airflow to maximize fan efficiency. The SC835 chassis air shroud does not require screws to set it up.

### ***Installing the Air Shroud***

1. Remove the chassis cover. If necessary, remove the rear fans.
2. Place the air shroud in the chassis, as illustrated. The shroud aligns with the fan holders and covers two of the front fans with two of the rear fans. Make sure the air shroud aligns completely with the chassis

## 5-6 Chassis Maintenance

### System Fans

Five heavy duty fans provide cooling for the chassis. These fans circulate air through the chassis as a means of lowering the chassis' internal temperature. The SC835 Chassis includes three front fans and two rear fans.

SC835 chassis fans are fully hot swappable. In other words, fans may be removed and replaced without having to power down the server.

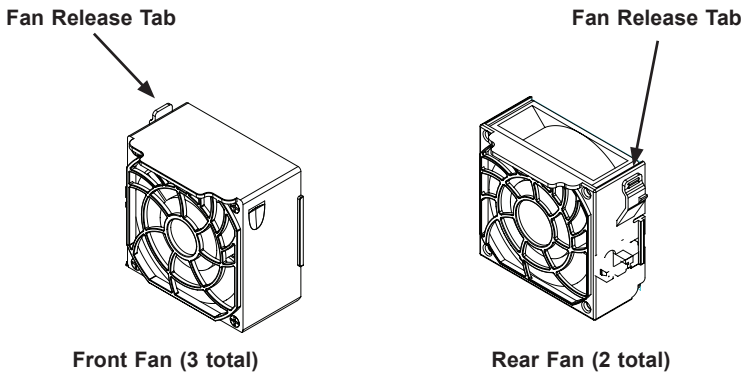


Figure 5-7: Chassis Fans

### Replacing a System Fan

#### *Installing a System Fan*

1. Open the chassis and locate the faulty fan. Never run the server for an extended period of time with the chassis open.
2. Press the release tab on the fan and pull the fan upward.
3. Slide the new fan into the fan housing. Make sure the power connectors are correctly aligned. The new fan will be immediately active.

## Rear System Fans

The SC835 chassis includes three front fans and two rear fans. The front fans are pre-installed. The rear fans must be installed after motherboard and air shroud setup.

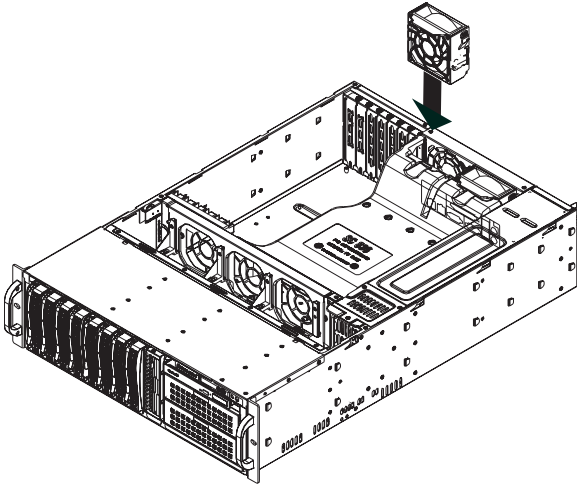


Figure 5-8: Install the Rear Fan

## Installing the Rear System Fans

### *Installing a the Rear System Fans*

1. Confirm that the air shroud is correctly placed.
2. Slide the rear fan into the slot as illustrated. The fan release tab should be on the side closest to the power supply.
3. Make sure that the fan is secure in the fan housing and the housing is correctly connected to the power supply.



## Checking the Server's Air Flow

### *Checking the Air Flow*

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

## 5-7 Power Supply

The power supply for the SC835 Chassis is redundant and hot swappable, meaning the power supply can be changed without powering down the system.

### Replacing the Power Supply

#### *Replacing the Power Supply*

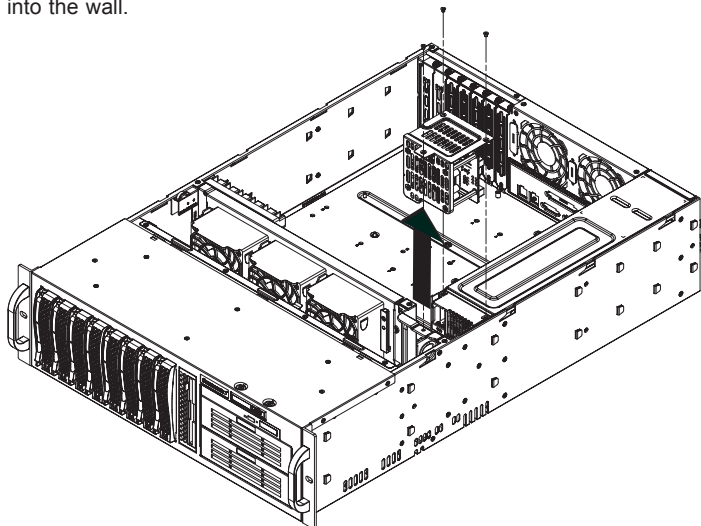
1. The SC835 chassis includes a redundant power supply (at least two power modules), you can leave the server running if you remove only one power supply at a time.
2. Unplug the power supply that you will replace.
3. Push the release tab (on the back of the power supply) as illustrated.
4. Pull the power supply out using the handle provided.
5. Replace the failed power module with the same model.
6. Push the new power supply module into the power bay until you hear a click.
7. Plug the AC power cord back into the module and power up the server.

## Replacing the Power Distributor

Redundant server chassis that are 2U or higher, require a power distributor. The power distributor provides failover and power supply redundancy. In the unlikely event you must replace the power distributor, do following

### *Installing the Power Distributor*

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



**Figure 5-9: Removing the Power Distributor**

## Replacing the DVD or CD-ROM Drive

SC835 chassis models support either a slim 8x DVD-ROM, 24x CD, DVD-ROM, or an optional floppy disk drive. Use these instructions in this section in the unlikely event that you must replace any of these components.

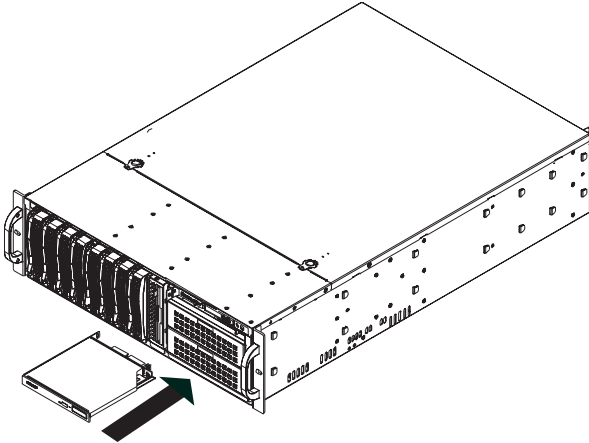


Figure 5-10: Installing the DVD-ROM, Front Panel, or CD-ROM

## Replacing or Installing the DVD Drive

### *Installing a DVD or CD-ROM Drive*

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

For more information, see the manual for your backplane in the appendix.

## Replacing or Installing the Optional Floppy Drive

### *Installing a Floppy Drive*

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

## Chapter 6

# Rack Installation

### 6-1 Overview

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

### 6-2 Unpacking the System

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

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

### 6-3 Preparing for Setup

The box your chassis was shipped in includes one set of rail assemblies (two inner and 2 outer) and the mounting screws you will need to install the system into the rack. Please read this section in its entirety before you begin the installation procedure outlined in the sections that follow.

#### Choosing a Setup Location

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

## Rack Precautions



### Warnings and 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.

### General Server Precautions

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

## **Rack Mounting Considerations**

### **Ambient Operating Temperature**

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

### **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.).



## 6-4 Rack Mounting Instructions

This section provides information on installing the SC835 chassis into a rack unit with the rails provided. There are a variety of rack units on the market, which may mean the assembly procedure will differ slightly. You should also refer to the installation instructions that came with the rack unit you are using.

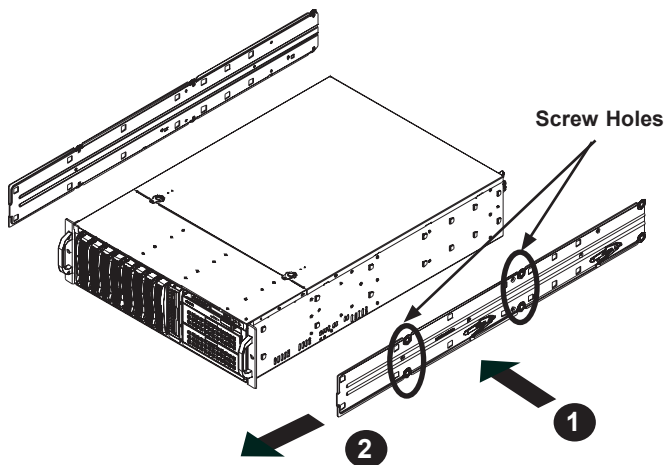
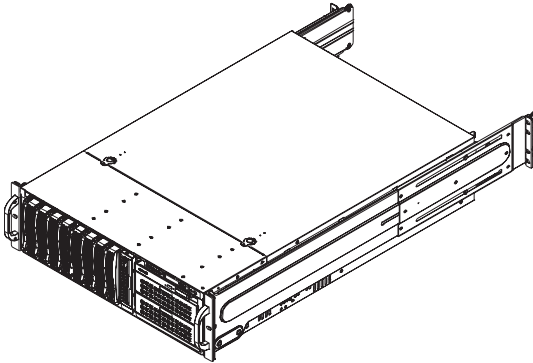


Figure 7-1: Installing the Inner Rack Rails

### Installing the Inner Rack Rails

#### *Installing the Inner Rails*

1. Place the inner rack extensions on the side of the chassis aligning the hooks of the chassis with the rail extension holes.
2. Slide the extension toward the front of the chassis.
3. Secure the chassis with four screws as illustrated.
4. Repeat steps 1-3 for the other inner rail.



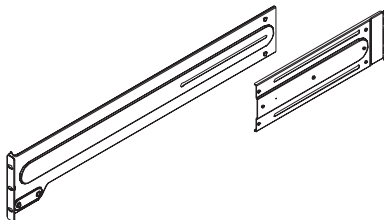
**Figure 7-3: Inner Rack Rails Installed**

## Installing the Outer Rack Rails

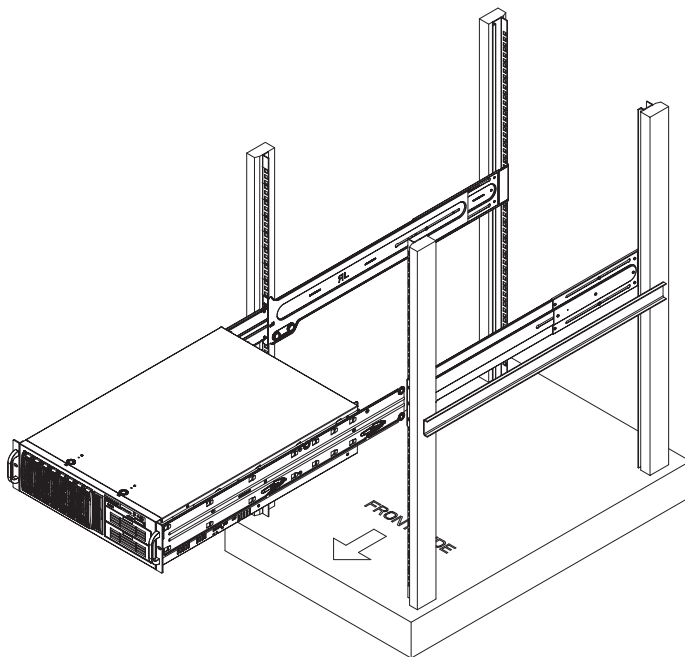
Outer rails attach to the server rack and hold the server in place. The outer rails for the SC835 chassis extend between 30 inches and 33 inches.

### *Installing a the Outer Rails*

1. Begin by measuring the distance from the front rail to the rear rail of the rack
2. Attach a short bracket to the front side of the right outer rail and a long bracket to the rear side of the right outer rail.
3. Adjust both the short and long brackets to the proper distance so that the rail can fit snugly into the rack.
4. Secure the short bracket to the front side of the outer rail with two screws and the long bracket to the rear side of the outer rail with three screws.
5. Repeat these steps for the left outer rail.



**Figure 7-2: Outer Rack Rails**



**Figure 7-4: Installing the Chassis into the Server Rack**

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

### ***Installing into a Rack***

1. Confirm that the inner and outer rails are installed on the rack.
2. Line chassis rails with the front of the rack rails.
3. Slide the chassis rails into the rack rails, keeping the pressure even on both sides (you may have to depress the locking tabs when inserting). When the server has been pushed completely into the rack, you should hear the locking tabs "click" into position.
4. (Optional) Insert and tighten the thumbscrews that hold the front of the server to the rack.

## Appendix A

### SC835 Chassis Cables

#### A-1 Overview

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

#### A-2 Cables Included with SC835TQ Chassis (SAS/SATA)

<b>SC835TQ-R800B</b>			
<b>Part #</b>	<b>Type</b>	<b>Length</b>	<b>Description</b>
CBL-0044L	Cable	2'	SATA Cable
CBL-0087	Ribbon, Round	20"	16 pin to 16 pin ribbon cable for control panel
CBL-0209L	Wire	210mm	4 pin to 3 pin fan power cable
-	Cable	6'	Regional power cord

## A-3 Compatible Cables

This section lists cables included with the SC835 Chassis packages.

### Alternate SAS Cables

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

**Cable Name:** SAS Cable

**Quantity:** 1

**Part #:** CBL-0175L

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

**Description:** This cable has one SFF-8484 (32 pin) connector on one end and 4 SAS connectors (7 pins each) at the other. This cable connects from the Host (motherboard or other controller) to the backplane SAS hard drive port.

**Cable Name:** SAS Cable

**Quantity:** 1

**Part #:** CBL-0116

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

**Description:** This cable has one ipass (SFF-8087/mini-sas) connector (36 pins) at one end and 4 SAS connectors on one end. This cable connects from the Host (motherboard or other controller) to the backplane SAS hard drive port.

---

## Cascading/JBOD SAS Cables

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



**Cable Name:** SAS Cable

**Quantity:** varies by setup

**Part #:** CBL-0167L

**Placement:** Internal cable

**Ports:** Single

**Description:** Internal cable. Connects the backplane to the Host Bus Adapter (HBA) or external port. Used in single port environments.



**Cable Name:** SAS Cable

**Quantity:** varies by setup

**Part #:** CBL-0168L

**Placement:** Internal cable

**Ports:** Dual

**Description:** Internal cascading cable. Connects the backplane to the Host Bus Adapter (HBA) or external port. Used in Dual port environments.



**Cable Name:** SAS Cable

**Quantity:** varies by setup

**Part #:** CBL-0166L

**Placement:** External cable

**Ports:** Single or Dual

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

## Extending Power Cables

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

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

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

## Front Panel to the Motherboard

The SC835 chassis includes a cable to connect the chassis front panel to the motherboard. If your motherboard uses a different connector, use the following list to find a compatible cable.

<b>Front Panel to Motherboard Cable (Ribbon Cable)</b>		
<b>Number of Pins (Front Panel)</b>	<b>Number of Pins (Motherboard)</b>	<b>Cable Part #</b>
<b>16 pin</b>	<b>16 pin</b>	<b>CBL - 0049</b>
<b>16 pin</b>	<b>20 pin</b>	<b>CBL - 0048</b>
<b>20 pin</b>	<b>20 pin</b>	<b>CBL - 0047</b>
<b>16 pin</b>	<b>various*</b>	<b>CBL - 0068</b>
<b>20 pin</b>	<b>various*</b>	<b>CBL - 0067</b>

\* Split Cables: Use these cable if your motherboard requires several different connections from the front panel.



## Notes

## Appendix B

### SC835 Power Supply Specifications

This appendix lists power supply specifications for your chassis system.

<b>SC835TQ-R800B</b>	
	<b>800W (Redundant)</b>
<b>MFR Part #</b>	PWS-801-1R
<b>Rated AC Voltage</b>	100 - 240V 50 - 60Hz 10A - 4 Amp
<b>+5V standby</b>	4 Amp
<b>+12V</b>	66 Amp
<b>+5V</b>	25 Amp
<b>+3.3V</b>	12 Amp
<b>-12V</b>	0.5 Amp

## Power Supply Connections

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

Power Supply Cables			
Name	Number	Connects to:	Description
20-pin or 24-pin power cable	1	motherboard	20-pin or 24-pin power cable provides electricity to the motherboard. Has 20 - 24 yellow, black, gray, red, orange, green and blue wires.
HDD (Hard Drive) power cable	3	backplane	Each cable has 3 connectors (two Hard Drive [HDD] and one Floppy Drive [FDD]). Attach the HDD connectors to the backplane. <b>If you are using a Supermicro backplane, the FDD connector does not need to be attached.</b>
8-pin motherboard cable	1	motherboard	Provides power to the motherboard CPU. This cable has 2 black and 2 yellow wires.
4-pin motherboard cable	1	motherboard	Provides power to PCI expansion card. This cable has 2 black and 2 yellow wires.
5-pin SMBus power cable (small)	1	motherboard	Allows the SM (System Management) bus to monitor power supply
2-pin INT cable	1	motherboard	Intrusion detection cable allows the system to log when the server chassis has been opened.

## Appendix C

# SAS-833TQ Backplane Specifications

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

### C-1 ESD Safety Guidelines

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

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

### C-2 General Safety Guidelines

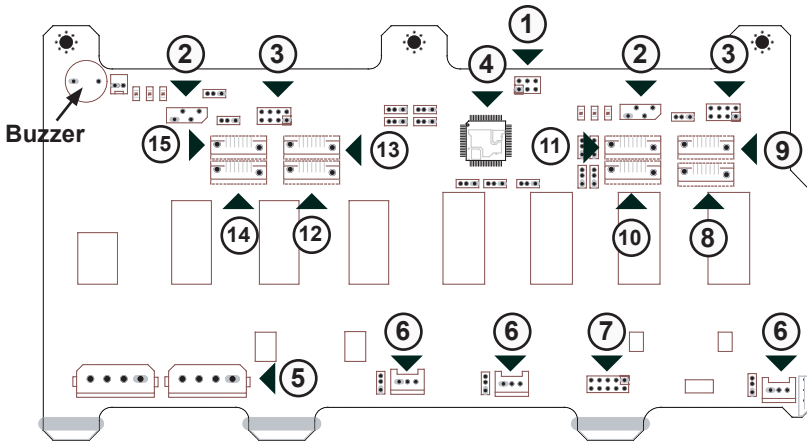
- Always disconnect power cables before installing or removing any components from the computer, including the backplane.
- Disconnect the power cable before installing or removing any cables from the backplane.
- Make sure that the backplane is securely and properly installed on the motherboard to prevent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

## C-3 An Important Note to Users

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

## Jumper Settings and Pin Definitions

### C-4 Front Connectors and Jumpers



#### Front Connectors

- Upgrade Connector JP69
- I<sup>2</sup>C Connector#1 JP37 and I<sup>2</sup>C Connector#2 JP95
- SideBand Connector#1 JP66 and SideBand Connector#2 JP68
- Chip: MG9072
- Power Connectors (4-pin): JP10 and JP13
- Fan Connectors: JP54, JP56 and JP60
- ACT\_IN: JP26
- SAS Port #0 J5
- SAS Port #1 J6
- SAS Port #2 J7
- SAS Port #3 J8
- SAS Port #4 J10
- SAS Port #5 J12
- SAS Port #6 J14
- SAS Port #7 J16

## C-5 Front Connector and Pin Definitions

### 1. Upgrade Connector

The Upgrade connector, designated JP69, is used for manufacturer's diagnostic purposes only.

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

The I<sup>2</sup>C Connectors, designated JP37 and JP95, are used to monitor HDD activity and status. See the table on the right for pin definitions.

I <sup>2</sup> C Connector Pin Definitions (JP37 and JP95)	
Pin#	Definition
1	Data
2	Ground
3	Clock
4	No Connection

### 3. Sideband Headers

The sideband headers are designated JP66, JP68, JP75, JP77, JP112, and JP114. For SES-2 to work properly, you must connect an 8-pin sideband cable. See the table to the right for pin definitions.

NOTE: SGPIO is the default setting for this backplane.

Sideband Headers (JP66, JP68 and JP68)			
Pin #	Definition	Pin #	Definition
2	<b>SGPIO:</b> SDIN  <b>I<sup>2</sup>C:</b> Backplane Addressing (SB5)	1	Controller ID (SB6)
4	<b>SGPIO:</b> SDOUT  <b>I<sup>2</sup>C:</b> Reset (SB4)	3	GND (SB2)
6	GND (SB3)	5	<b>SGPIO:</b> SLOAD  <b>I<sup>2</sup>C:</b> SDA (SB1)
8	Backplane ID (SB7)	7	<b>SGPIO:</b> SCLOCK  <b>I<sup>2</sup>C:</b> SCL (SB0)
10	No Connection	9	No Connection

### 4. MG9072 Chip

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

**5. Backplane Main Power Connectors**

The 4-pin connectors, designated JP10 and JP13 provide power to the backplane. See the table on the right for pin definitions.

Backplane Main Power 4-Pin Connector (JP10 and JP13)	
Pin#	Definition
1	+12V
2 and 3	Ground
4	+5V

**6. Fan Connectors**

The 3-pin connectors, designated JP54, JP56, and JP60, provide power to the fans. See the table on the right for pin definitions.

Fan Connectors (JP54, JP56, and JP60)	
Pin#	Definition
1	Ground
2	+12V
3	Tachometer

**7. Activity LED Header**

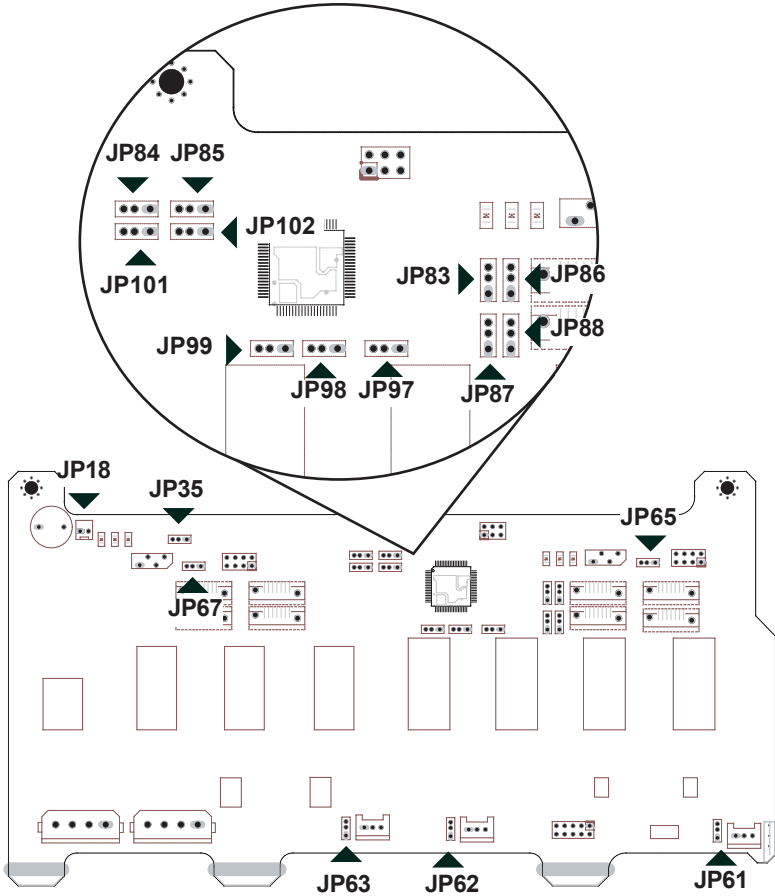
The activity LED header, designated JP26, is used to indicate the activity status of each SAS drive. The Activity LED Header is located on the front panel. For the Activity LED Header to work properly, connect using a 10-pin LED cable.

SAS Activity LED Header Pin Definitions (JP26)			
Pin #	Definition	Pin #	Definition
1	ACT IN#0	6	ACT IN#4
2	ACT IN#1	7	ACT IN#5
3	ACT IN#2	8	ACT IN#6
4	ACT IN#3	9	ACT IN#7
5	Ground	10	Empty

**8-15. SAS Ports**

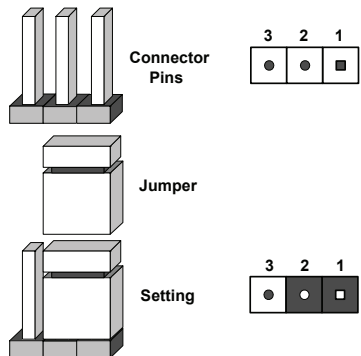
The SAS ports are used to connect the SAS drive cables. The 8 ports are designated #0 - #7. Each port is also compatible with SATA drives.

## C-6 Front Jumper Locations and Pin Definitions



### Explanation of Jumpers

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





<b>Jumper Settings</b>		
<b>Jumper</b>	<b>Jumper Settings</b>	<b>Note</b>
JP35	1-2: Reset 2-3: No Reset	MG 9072 Chip Reset

<b>Socket Settings</b>		
<b>Socket</b>	<b>Socket Setting</b>	<b>Note</b>
JP18	Connected to front panel	Buzzer Reset Press once to disable buzzer; Press twice to enable buzzer

### **Fan Jumper Settings**

This backplane can use up to three fans. To utilize each fan, you must configure **both jumpers** as instructed below.

<b>Fan Jumper Settings</b>		
<b>Jumper</b>	<b>Jumper Settings</b>	<b>Note</b>
JP61	1-2:With Fan 2-3:No Fan	FAN #1 Select
JP97	1-2:With Fan 2-3:No Fan	FAN #1 Select
JP62	1-2:With Fan 2-3:No Fan	FAN #2 Select
JP98	1-2:With Fan 2-3:No Fan	FAN #2 Select
JP63	1-2: With Fan 2-3:No Fan	FAN #3 Select
JP99	1-2: With Fan 2-3:No Fan	FAN #3 Select

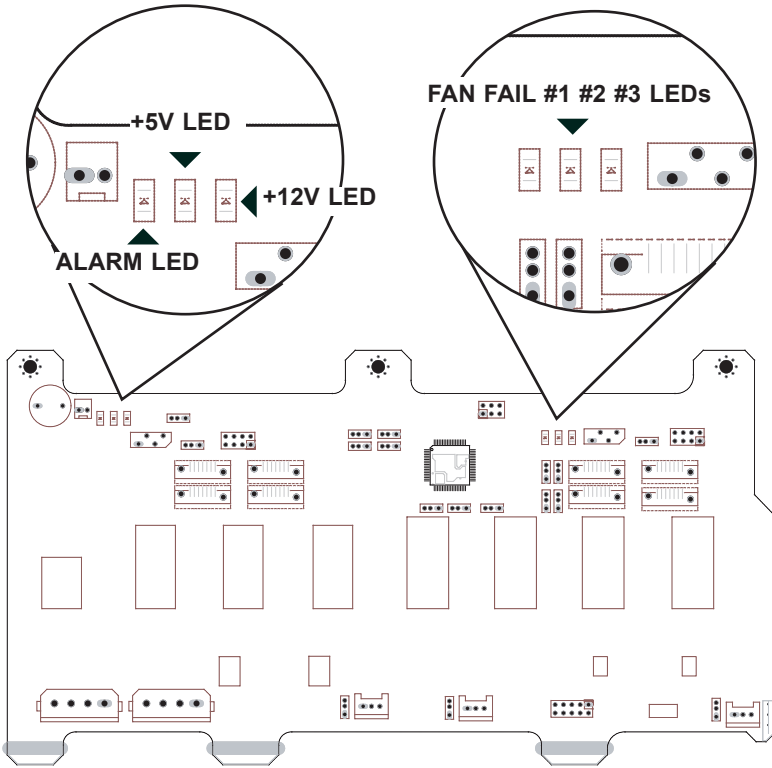
## I<sup>2</sup>C and SGPIO Modes and Jumper Settings

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

SGPIO Setting (Default)		
Jumper	Jumper Setting	Note
JP65	1-2	SDIN #1
JP67	1-2	SDIN #2
JP83	1-2	I <sup>2</sup> C Reset #1
JP84	1-2	Controller ID #1
JP85	1-2	Backplane ID #1 (use ID#0)
JP86	1-2	I <sup>2</sup> C Reset #2
JP87	1-2	SDOUT #1
JP88	1-2	SDOUT #2
JP101	1-2	Controller ID #2
JP102	1-2	Backplane ID #2 (use ID#0)

I <sup>2</sup> C Setting		
Jumper	Jumper Setting	Note
JP65	2-3	Backplane ID #1
JP67	2-3	Backplane ID #2
JP83	2-3	I <sup>2</sup> C Reset #1
JP84	2-3	Controller ID #1
JP85	1-2	Backplane ID #1 (use ID#0)
JP86	2-3	I <sup>2</sup> C Reset #2
JP87	2-3	I <sup>2</sup> C Reset #1
JP88	2-3	I <sup>2</sup> C Reset #2
JP101	2-3	Controller ID #2
JP102	2-3	Backplane ID #2 (use ID#1)

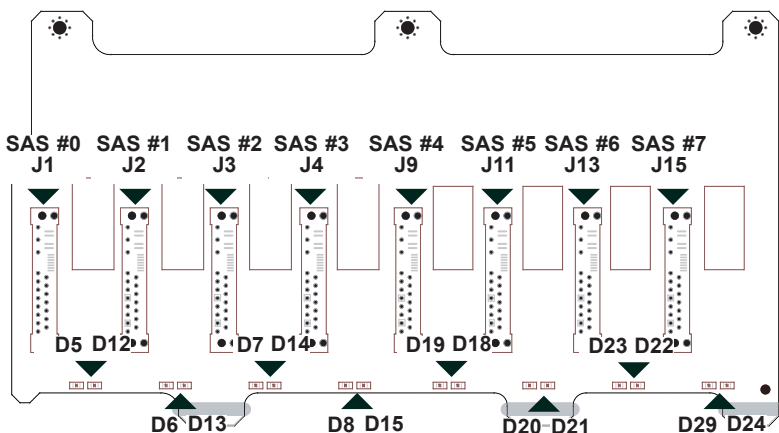
**FRONT LED INDICATORS**



**Front Panel LEDs**

LED	NORMAL STATE	SPECIFICATION
Fan #1 Fail	OFF	Failure in Fan #1
Fan #2 Fail	OFF	Failure in Fan #2
Fan #3 Fail	OFF	Failure in Fan #3
Alarm #1	OFF	Overheat/Drive Failure
+5V	ON	Backplane power failure. Light is on during normal operation.
+12V	ON	Backplane power failure. Light is on during normal operation.

## C-7 Rear Connectors and LED Indicators



**Rear SAS/SATA Connectors**

Rear Connector	SAS Drive Number
SAS #0	SAS/SATA HDD #0
SAS #1	SAS/SATA HDD #1
SAS #2	SAS/SATA HDD #2
SAS #3	SAS/SATA HDD #3
SAS #4	SAS/SATA HDD #4
SAS #5	SAS/SATA HDD #5
SAS #6	SAS/SATA HDD #6
SAS #7	SAS/SATA HDD #7

**Rear LED Indicators**

Rear LED	Hard Drive Activity	Failure LED
SAS #0	D12	D5
SAS #1	D13	D6
SAS #2	D14	D7
SAS #3	D15	D8
SAS #4	D18	D19
SAS #5	D21	D20
SAS #6	D22	D23
SAS #7	D24	D29

**Notes**