



**StorTrends 2400
Hardware Platform
Specific
User's Guide**

MAN-2400-HW
02/26/10

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Revision History

02/26/10 Hardware Only

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The buyer agrees that if this product proves to be defective, American Megatrends is only obligated to repair or replace this product at American Megatrends' discretion according to the terms and conditions of the warranty registration card that accompanies this product. American Megatrends shall not be liable in tort or contract for any loss or damage, direct, incidental or consequential resulting from the use of this product. Please see the *Warranty Registration Card* shipped with this product for full warranty details.

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If...	Then...
You purchased this product from AMI or from a certified AMI reseller,	Call AMI technical support at 770-246-8645. Please be prepared to specify the serial number of the product.
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If the American Megatrends StorTrends® 2400 fails to operate as described or you are in doubt about a configuration option, please call technical support at 770-246-8645.

Web Site

We invite you to access the StorTrends website at:

<http://www.stortrends.com/>

Disclaimer

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Product Compliance Information

The StorTrends 2400 chassis is compliant with the following safety standards/requirements:

Electromagnetic Emissions

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

Electromagnetic

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

EN 60950/IEC 60950-Compliant, UL Listed (USA), CUL Listed (Canada), TUV Certified (Germany), CE Marking (Europe)

Chapter 1 Safety Information

STOP!

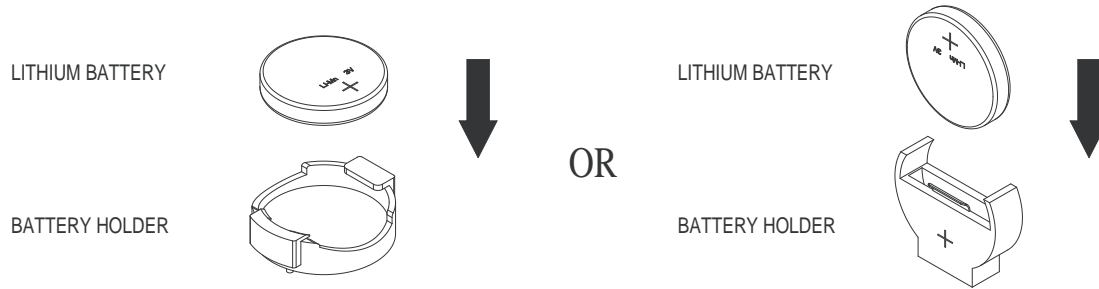
Only remove the Chassis Cover when instructed to do so by an American Megatrends support technician.
Doing so at any other time may VOID your warranty.

WARNING!

BASIC ELECTRICAL SAFETY PRECAUTIONS SHOULD BE FOLLOWED TO PROTECT YOURSELF FROM HARM AND THE STORTRENDS 2400 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 SERVER BOARD AND MEMORY MODULES. 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.**
- **SERVER BOARD BATTERY: CAUTION – THE ONBOARD BATTERY MUST BE INSTALLED BY A TRAINED TECHNICIAN ONLY. THERE IS A DANGER OF EXPLOSION IF THE ONBOARD BATTERY IS INSTALLED UPSIDE DOWN, WHICH WILL REVERSE ITS POLARITIES. THE SAME RISK APPLIES IF THE INCORRECT BATTERY TYPE IS BEING INSTALLED. 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.**

Installing the Onboard Battery



General Safety Guidelines

WARNING!

FOLLOW THESE RULES TO ENSURE GENERAL SAFETY:

- **KEEP THE AREA AROUND THE STORTRENDS 2400 CHASSIS CLEAN AND FREE OF CLUTTER.**
- **THE STORTRENDS 2400 WEIGHS APPROXIMATELY 100 LBS WHEN FULLY LOADED. WHEN LIFTING THE SYSTEM, TWO PEOPLE AT EITHER END SHOULD LIFT SLOWLY WITH THEIR FEET SPREAD OUT TO DISTRIBUTE THE WEIGHT. ALWAYS KEEP YOUR BACK STRAIGHT AND LIFT WITH YOUR LEGS.**
- **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.**

CAUTION!

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:

- *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 Server Board 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 Server Board.*

Operation Safety Guidelines

WARNING!

FOR PROPER COOLING, MAKE SURE TO INSTALL ALL CHASSIS COVERS BEFORE TURNING ON THE SYSTEM. IF THIS RULE IS NOT STRICTLY FOLLOWED, WARRANTY MAY BECOME VOID. DO NOT OPEN THE CASING OF A POWER SUPPLY. POWER SUPPLIES CAN ONLY BE ACCESSED AND SERVICED BY A QUALIFIED TECHNICIAN OF THE MANUFACTURER.

WARNING!

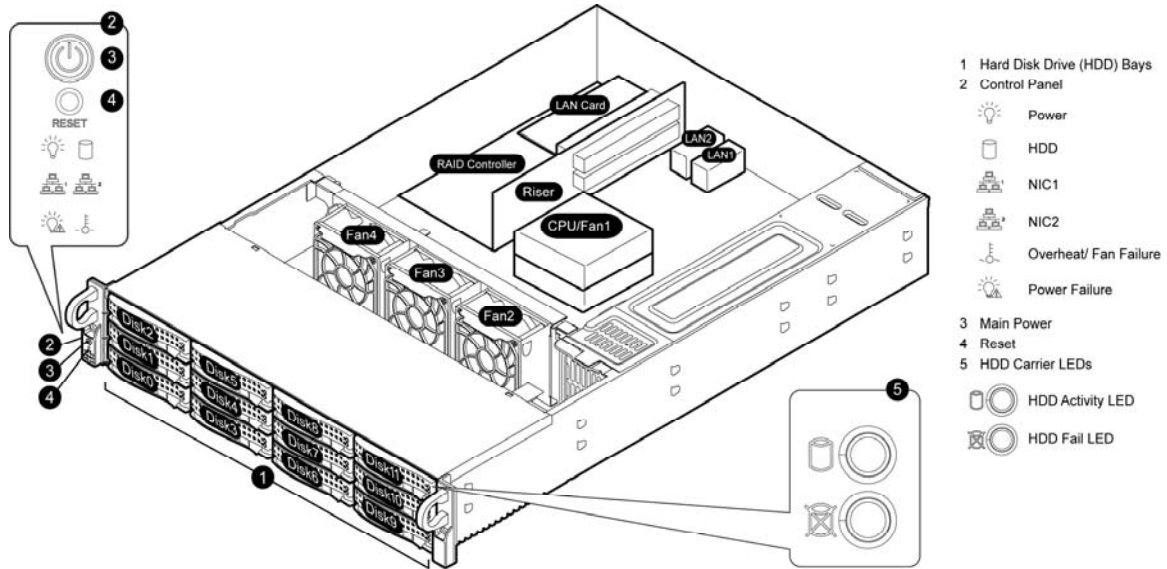
TO AVOID PERSONAL INJURY AND PROPERTY DAMAGE, READ THE FOLLOW SAFETY STEPS LISTED IN THIS SECTION.

Before Installing the Chassis into a Rack

Step	Action
1	Make sure that the rack is securely anchored onto an unmovable surface or structure before installing the chassis into the rack.
2	Unplug the power cord(s) of the rack before installing the chassis into the rack.
3	Make sure that the system is adequately supported. Make sure that all the components are securely fastened to the chassis to prevent components falling off from the chassis.
4	Be sure to install an AC Power Disconnect for the entire rack assembly and this Power Disconnect must be clearly marked.
5	The rack assembly shall be properly grounded to avoid electric shock.
6	The rack assembly must provide sufficient airflow to the chassis for proper cooling.

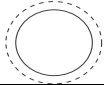

Chapter 2 Chassis Overview

Chassis Layout




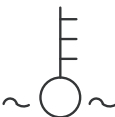
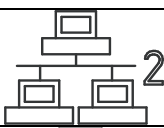
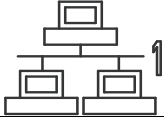
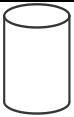

System Interface

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.

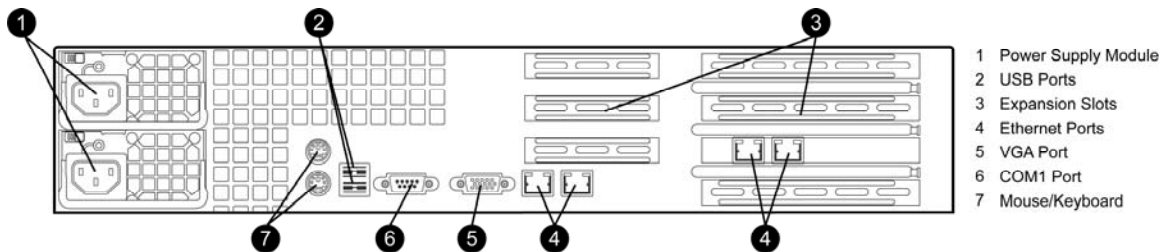
Illustration	Name	Description
	System Reset	Use the reset switch to reboot the system.
	Power Button	The main power switch is used to apply or remove power from the power supply to the server system. Turning off system power with this button removes the main power but keeps standby power supplied to the system. Therefore, you must unplug system before servicing.

Control Panel LEDs

The control panel located on the front of the StorTrends 2400 chassis has six LEDs. These LEDs provide you with critical information related to different parts of the system. This section explains what each LED indicates when illuminated and any corrective action you may need to take.

Illustration	Name	Description
	Power Failure LED	When this LED flashes, it indicates a power failure in the power supply.
	Overheat/Fan Fail LED	When this LED flashes it indicates a fan failure. When on continuously (on and not flashing) it indicates an overheat condition. This 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 LED	Indicates network activity on LAN2 when flashing.
	NIC1 LED	Indicates network activity on LAN1 when flashing.
	HDD LED	Indicates IDE channel activity. On the StorTrends 2400 this light indicates hard disk drive activity when flashing.
	Power LED	Indicates power is being supplied to the system's power supply units. This LED should normally be illuminated when the system is operating.

Chassis Rear Views



Drive Carrier LEDs

Hard Disk Drives

Each hard disk drive carrier has two LEDs:

LED Color	Description
Blue	Each SATA drive carrier has a blue LED. When illuminated, this blue LED (on the front of the hard disk drive carrier) indicates drive activity. A connection to the backplane enables this LED to blink on and off when that particular drive is being accessed.
Red	The red LED to indicate a hard disk drive failure. If one of the hard disk drives fail, you should be notified by your system management software.

Removing the Chassis Cover

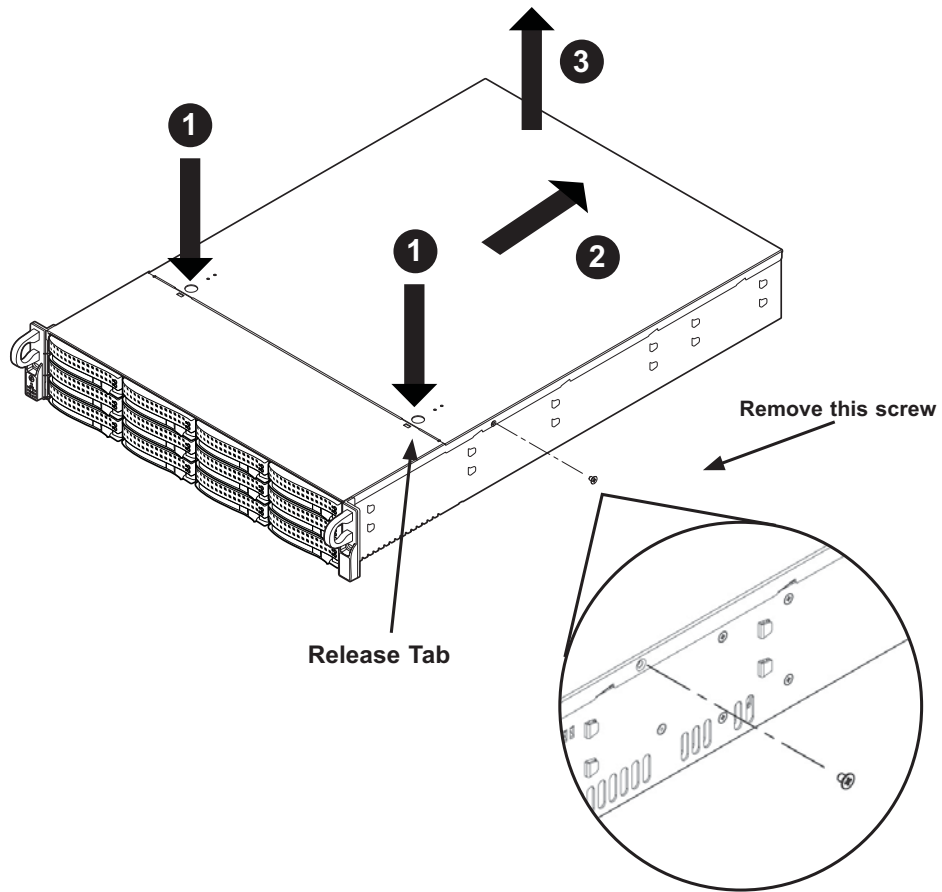
Static-Sensitive Devices

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

Precautions

- *Use a grounded wrist strap designed to prevent static discharge.*
- *Touch a grounded metal object before removing any board from its antistatic bag.*
- *Handle a board by its edges only; do not touch its components, peripheral chips, memory modules or gold contacts.*
- *When handling chips or modules, avoid touching their pins.*
- *Put the Server Board, 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 Server Board.*

Removing Cover



To remove the chassis cover

Step	Action
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.

Hard Disk Drive Overview

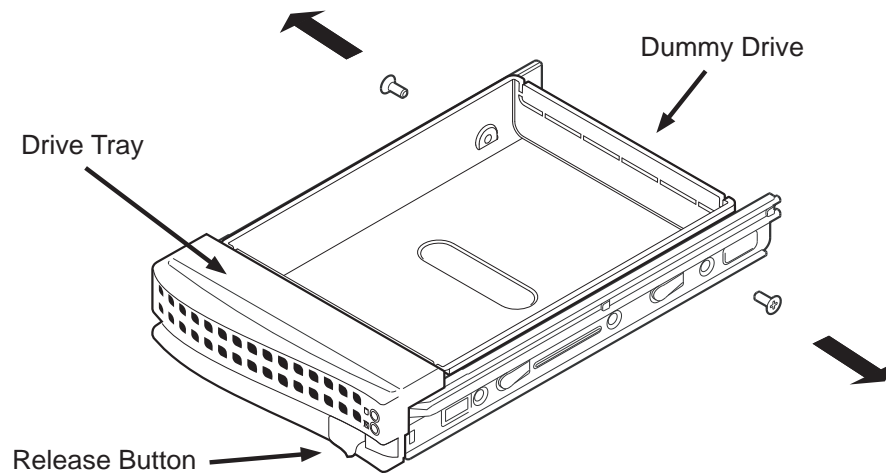
The drives are mounted in drive carriers to simplify their installation and removal from the chassis. These carriers also help promote proper airflow for the drive bays.

To remove hard drive trays from the chassis

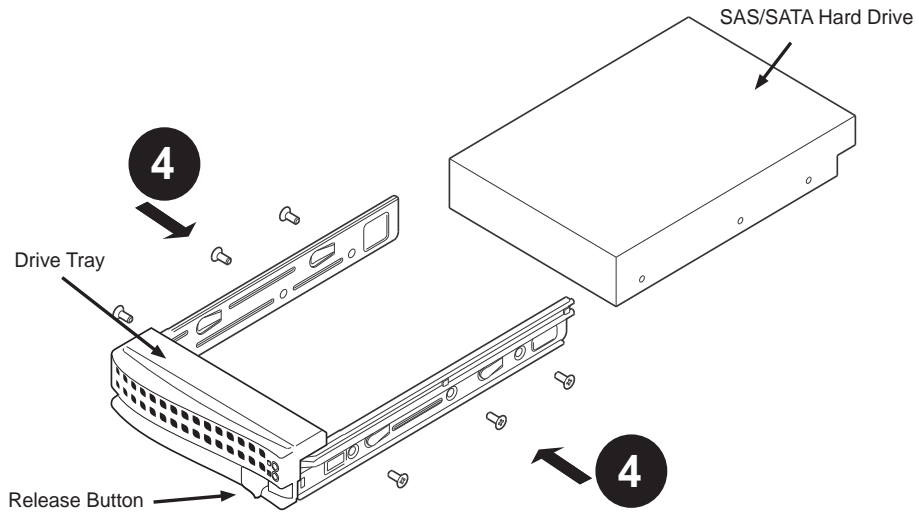
Step	Action
1	Press the release button on the drive tray. This extends the drive bay handle.
2	Use the handle to pull the drive out of the chassis.

To install a hard drive into the tray

Step	Action
1	Remove the screws (2) holding connecting the drive tray the carrier.
2	Remove the tray from the carrier.



Step	Action
3	Install a new drive into the carrier with the printed circuit board side facing down so that the mounting holes align with those in the carrier.
4	Secure the hard drive by tightening all six (6) screws.
5	Replace the drive tray into the chassis. Make sure to close the drive tray using the drive tray handle.

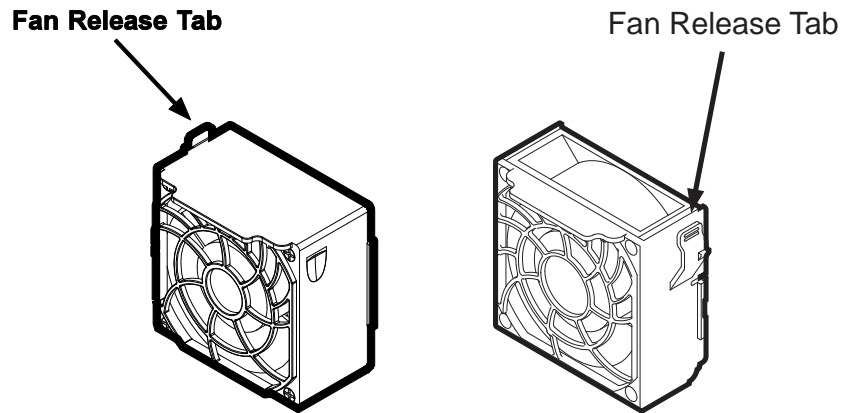


Accessing the Chassis Fans

STOP!

Only remove the Chassis Cover when instructed to do so by an American Megatrends support technician. Doing so at any other time may VOID your warranty.

Before installing the Server Board in the chassis or accessing the Server Board, you will need to remove the rear chassis fans from the chassis.



Procedures

Locate the release tab on the left side of the rear chassis fan (when facing the front side of the back panel). Push the release tab to the right to release the rear chassis fan from its locking position as shown below:

Power Supplies

The power supply for the StorTrends 2400 Chassis is redundant and hot swappable, meaning the power supply can be changed without powering down the system.

Replacing the Power Supply

Step	Action
1	The StorTrends 2400 chassis includes a redundant power supply (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.

WARNING!

DO NOT OPEN THE CASING OF A POWER SUPPLY. POWER SUPPLIES CAN ONLY BE ACCESSED AND SERVICED BY A QUALIFIED TECHNICIAN FROM THE MANUFACTURER.

CAUTION!

Unplug the Power Cord before removing the Power Supply.

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