



American  
Megatrends

# StorTrends® 3400 Hardware Guide for Onsite Support

MAN-3400-SS  
11/21/2012

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## **Revision History**

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11/21/2012      Initial release

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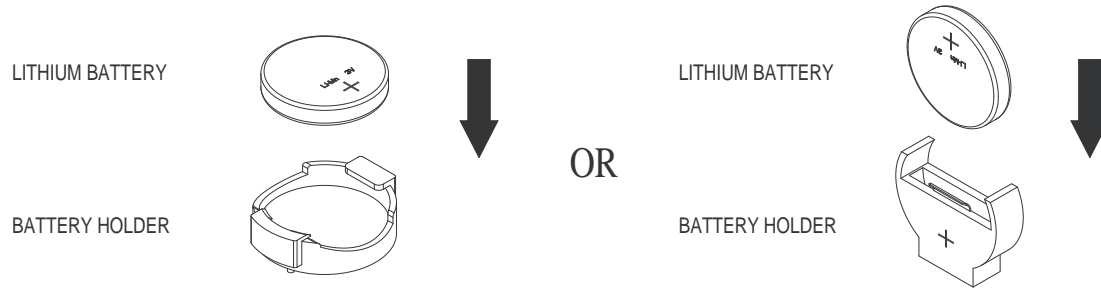
# WARNING!

**BASIC ELECTRICAL SAFETY PRECAUTIONS SHOULD BE FOLLOWED TO PROTECT YOURSELF FROM HARM AND THE STORTRENDS 3400 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, MEMORY MODULES AND THE DVD-ROM (NOT NECESSARY FOR SAS 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.**
- **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.**
- **DVD-ROM LASER: CAUTION - THIS SERVER HAS 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.**

## Installing the Onboard Battery

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## General Safety Guidelines

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### **WARNING!**

#### **FOLLOW THESE RULES TO ENSURE GENERAL SAFETY:**

- **KEEP THE AREA AROUND THE STORTRENDS 3400 CHASSIS CLEAN AND FREE OF CLUTTER.**
- **THE STORTRENDS 3400 WEIGHS IN EXCESS OF 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.**

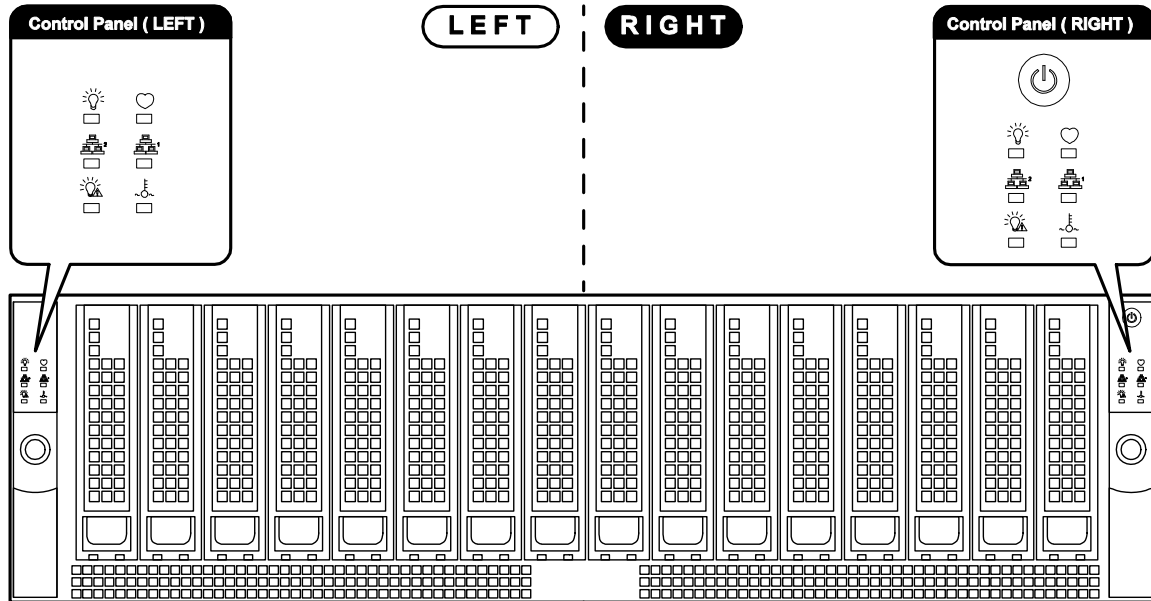
### CAUTION!

*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:*

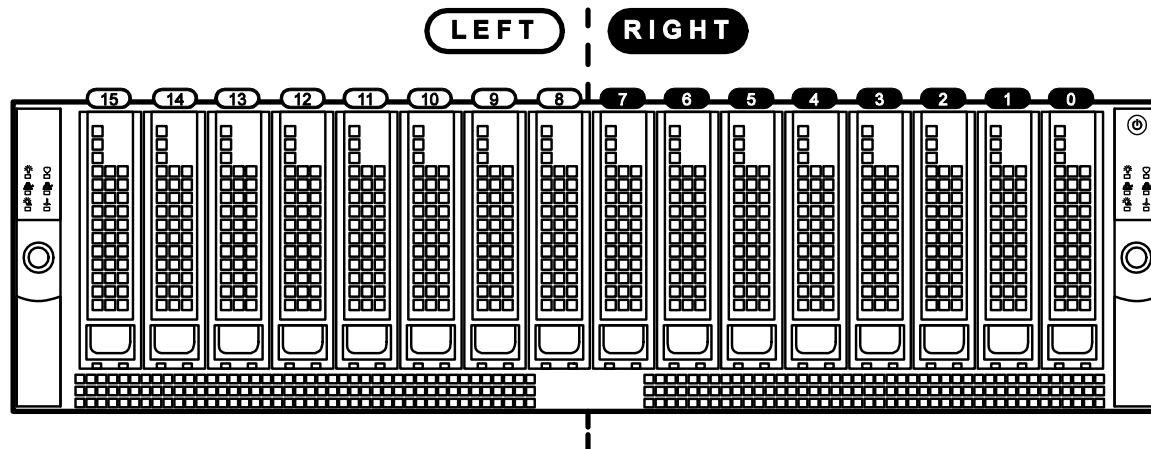
- *Use a grounded wrist strap designed to prevent static discharge.*
- *Keep all components and printed circuit boards (PCBs) in their antistatic bags until ready for use.*
- *Touch a grounded metal object before removing any board from its antistatic bag.*
- *Do not let components or PCBs come into 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.*

# Chapter 1 Chassis Overview

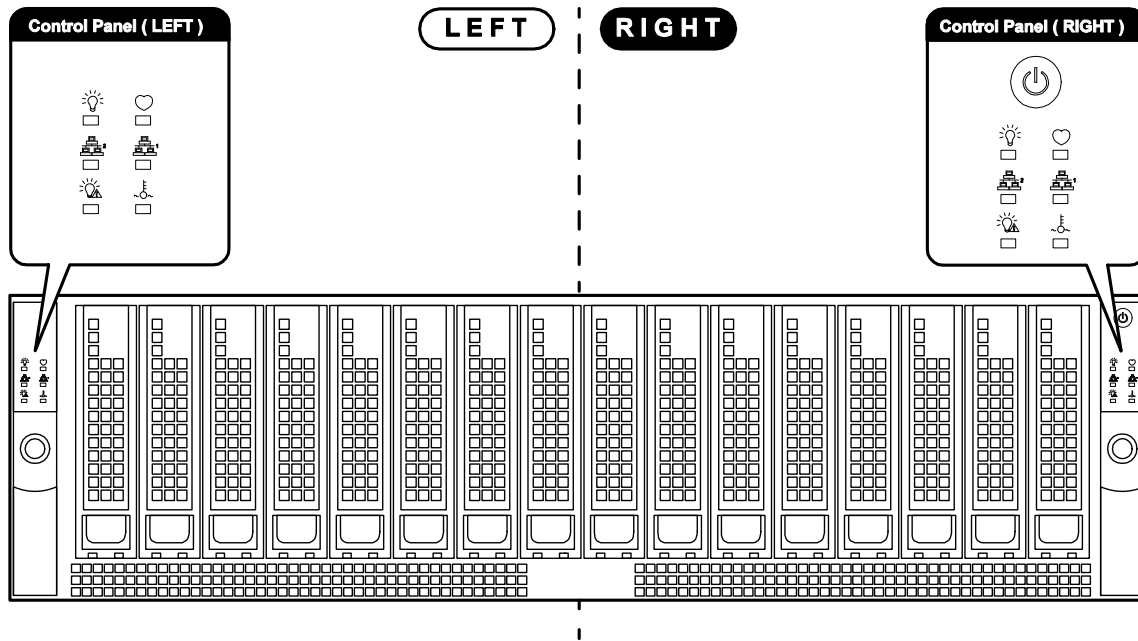
## Chassis Front




## Drive Bay Numbering Scheme



## System Interface









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

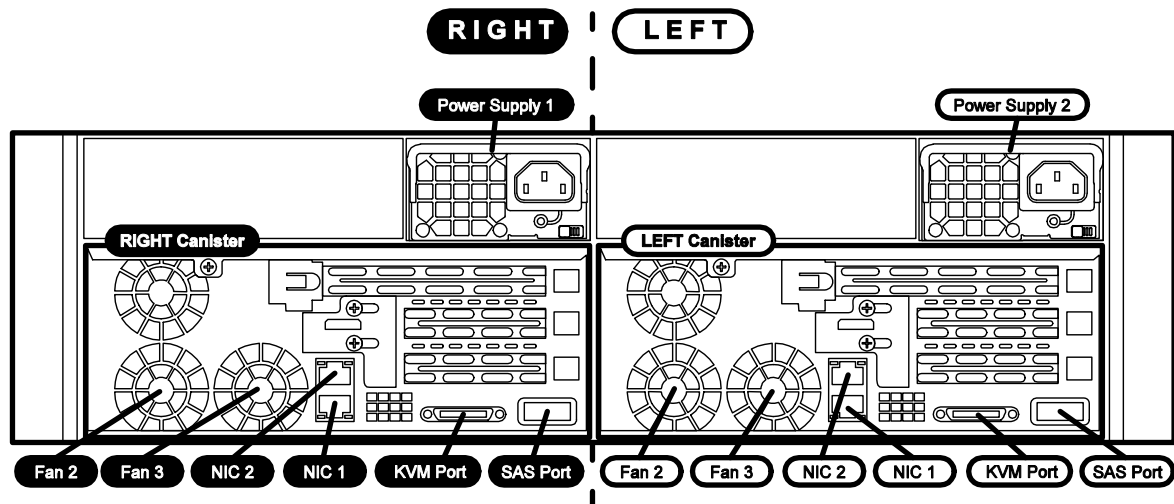
Illustration	Name	Description
	Power Button	The main power switch is used to apply or remove power from the power supply to the server system. Turning off system power with this button removes the main power but keeps standby power supplied to the system. Therefore, you must unplug system before servicing.

## Control Panel LEDs

The control panel located on the front of the StorTrends 3400 chassis has six LEDs per canister. 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.

Icon	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 heat sinks 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.
	Heartbeat LED	Flashing LED means that the system is running normally.
	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





## Drive Carrier LEDs


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### Hard Disk Drives

## NOTE:

If you have configured a spare drive:  
From looking at the front of the chassis, there is no way for you to tell which drive is configured as a spare. However, if you log into ManageTrends, you can view the location of the spare(s) from the *Hardware Health* page. Any drives that are designated as spare drives will have a flashing yellow icon over it.

### StorTrends 3400 Head: RAID Status

LED Color	Description	Picture
Green	Indicates both activities when blinking and spare when solid.	
Solid Red w/Green	Indicates a failed drive.	
Blinking Red and Green	Indicates the drive is rebuilding.	

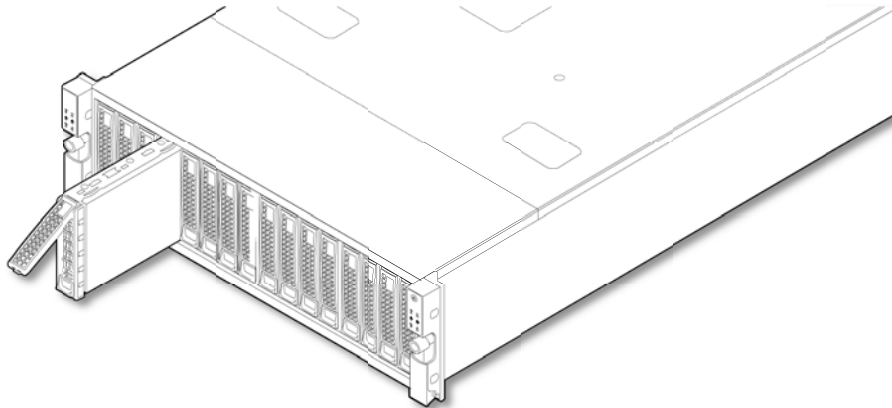
## Install Hard Drives

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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.

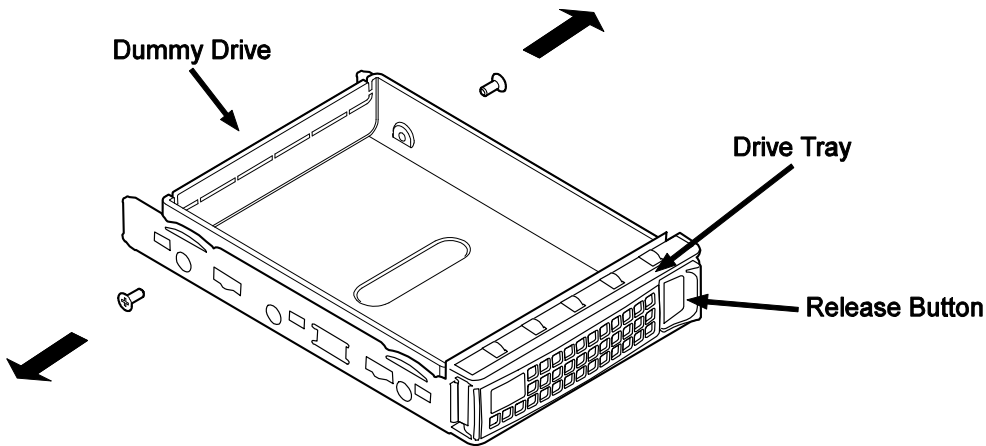
### To remove hard drive trays from the chassis

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.

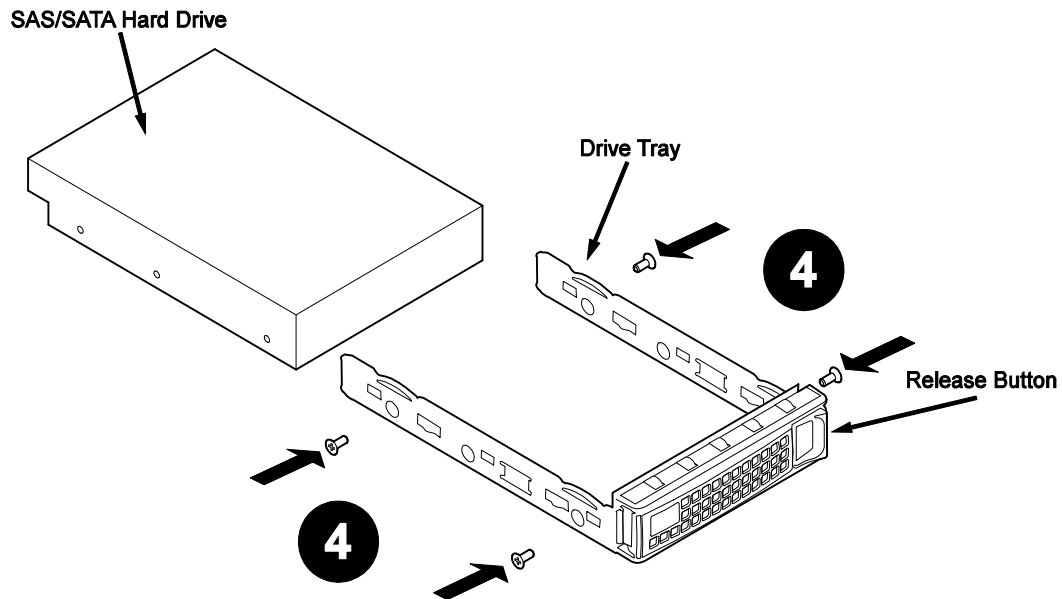


**To install a hard drive into the tray**

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.



## Power Supplies

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The two power supplies in the StorTrends 3400 Chassis are 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 3400 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).
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.

## Removing the Canister

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**STOP!**

Only remove the Canister when instructed to do so by an American Megatrends support technician.

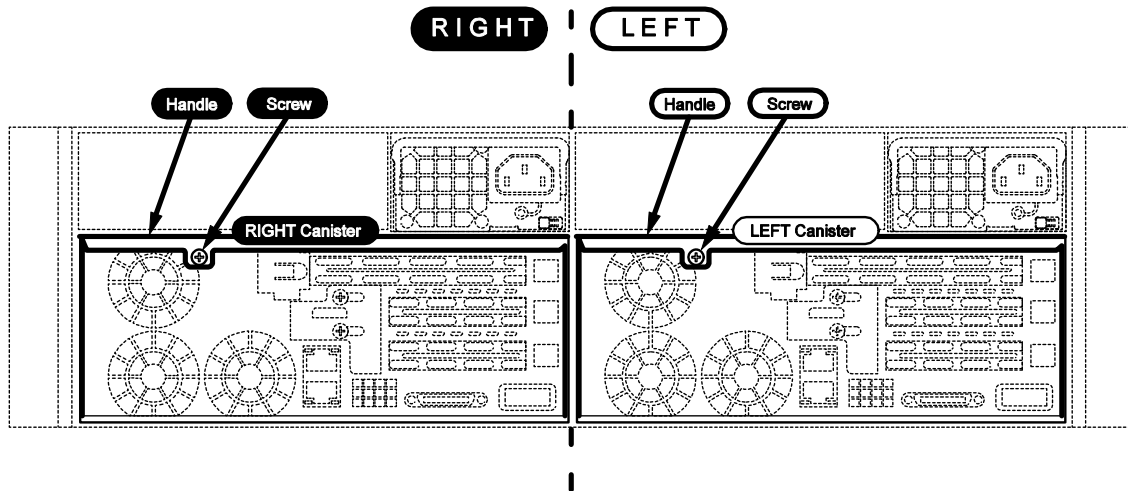
### Static-Sensitive Devices

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 Canister



## To remove the Canister

Before removing the *Canister*, make sure to unplug the network cable(s). Do not unplug the power supplies.

Step	Action
1	Locate the <i>Canister</i> that you want to remove.
2	Unscrew the retention hand screw.
3	Pull the lever down.
4	Pull the <i>Canister</i> out.

## Reinstalling the Canister

To re-insert a *Canister*, perform the above steps in the reverse order. Make sure that the fans on the *Canister* are seated all the way down while inserting.

**WARNING!**  
**Do not press the power button to turn the newly inserted canister on. It will automatically start.**

**EXCEPT FOR SHORT PERIODS OF TIME, DO NOT OPERATE THE SERVER WITHOUT THE COVER AND BOTH CANISTERS IN PLACE. THE CHASSIS COVER AND CANISTERS MUST BE IN PLACE TO ALLOW PROPER AIRFLOW AND PREVENT OVERHEATING.**