

Sun Storage J4400 Array Chassis Replacement Guide

Sun Microsystems, Inc.
www.sun.com

Part No. 820-4601-10
April 2008, Revision A

Submit comments about this document at: <http://www.sun.com/hwdocs/feedback>

Copyright 2008 Sun Microsystems, Inc., 4150 Network Circle, Santa Clara, California 95054, U.S.A. All rights reserved.

Sun Microsystems, Inc. has intellectual property rights relating to technology that is described in this document. In particular, and without limitation, these intellectual property rights may include one or more of the U.S. patents listed at <http://www.sun.com/patents> and one or more additional patents or pending patent applications in the U.S. and in other countries.

This document and the product to which it pertains are distributed under licenses restricting their use, copying, distribution, and decompilation. No part of the product or of this document may be reproduced in any form by any means without prior written authorization of Sun and its licensors, if any.

Third-party software, including font technology, is copyrighted and licensed from Sun suppliers.

Parts of the product may be derived from Berkeley BSD systems, licensed from the University of California. UNIX is a registered trademark in the U.S. and in other countries, exclusively licensed through X/Open Company, Ltd.

Sun, Sun Microsystems, the Sun logo, AnswerBook2, docs.sun.com, and Solaris are trademarks or registered trademarks of Sun Microsystems, Inc. in the U.S. and in other countries.

All SPARC trademarks are used under license and are trademarks or registered trademarks of SPARC International, Inc. in the U.S. and in other countries. Products bearing SPARC trademarks are based upon an architecture developed by Sun Microsystems, Inc.

The OPEN LOOK and Sun™ Graphical User Interface was developed by Sun Microsystems, Inc. for its users and licensees. Sun acknowledges the pioneering efforts of Xerox in researching and developing the concept of visual or graphical user interfaces for the computer industry. Sun holds a non-exclusive license from Xerox to the Xerox Graphical User Interface, which license also covers Sun's licensees who implement OPEN LOOK GUIs and otherwise comply with Sun's written license agreements.

U.S. Government Rights—Commercial use. Government users are subject to the Sun Microsystems, Inc. standard license agreement and applicable provisions of the FAR and its supplements.

DOCUMENTATION IS PROVIDED "AS IS" AND ALL EXPRESS OR IMPLIED CONDITIONS, REPRESENTATIONS AND WARRANTIES, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR NON-INFRINGEMENT, ARE DISCLAIMED, EXCEPT TO THE EXTENT THAT SUCH DISCLAIMERS ARE HELD TO BE LEGALLY INVALID.

Copyright 2008 Sun Microsystems, Inc., 4150 Network Circle, Santa Clara, Californie 95054, Etats-Unis. Tous droits réservés.

Sun Microsystems, Inc. a les droits de propriété intellectuelle relatants à la technologie qui est décrit dans ce document. En particulier, et sans la limitation, ces droits de propriété intellectuelle peuvent inclure un ou plus des brevets américains énumérés à <http://www.sun.com/patents> et un ou les brevets plus supplémentaires ou les applications de brevet en attente dans les Etats-Unis et dans les autres pays.

Ce produit ou document est protégé par un copyright et distribué avec des licences qui en restreignent l'utilisation, la copie, la distribution, et la décompilation. Aucune partie de ce produit ou document ne peut être reproduite sous aucune forme, par quelque moyen que ce soit, sans l'autorisation préalable et écrite de Sun et de ses bailleurs de licence, s'il y en a.

Le logiciel détenu par des tiers, et qui comprend la technologie relative aux polices de caractères, est protégé par un copyright et licencié par des fournisseurs de Sun.

Des parties de ce produit pourront être dérivées des systèmes Berkeley BSD licenciés par l'Université de Californie. UNIX est une marque déposée aux Etats-Unis et dans d'autres pays et licenciée exclusivement par X/Open Company, Ltd.

Sun, Sun Microsystems, le logo Sun, AnswerBook2, docs.sun.com, et Solaris sont des marques de fabrique ou des marques déposées de Sun Microsystems, Inc. aux Etats-Unis et dans d'autres pays.

Toutes les marques SPARC sont utilisées sous licence et sont des marques de fabrique ou des marques déposées de SPARC International, Inc. aux Etats-Unis et dans d'autres pays. Les produits portant les marques SPARC sont basés sur une architecture développée par Sun Microsystems, Inc.

L'interface d'utilisation graphique OPEN LOOK et Sun™ a été développée par Sun Microsystems, Inc. pour ses utilisateurs et licenciés. Sun reconnaît les efforts de pionniers de Xerox pour la recherche et le développement du concept des interfaces d'utilisation visuelle ou graphique pour l'industrie de l'informatique. Sun détient une licence non exclusive de Xerox sur l'interface d'utilisation graphique Xerox, cette licence couvrant également les licenciées de Sun qui mettent en place l'interface d'utilisation graphique OPEN LOOK et qui en outre se conforment aux licences écrites de Sun.

LA DOCUMENTATION EST FOURNIE "EN L'ÉTAT" ET TOUTES AUTRES CONDITIONS, DECLARATIONS ET GARANTIES EXPRESSES OU TACITES SONT FORMELLEMENT EXCLUES, DANS LA MESURE AUTORISEE PAR LA LOI APPLICABLE, Y COMPRIS NOTAMMENT TOUTE GARANTIE IMPLICITE RELATIVE A LA QUALITE MARCHANDE, A L'APTITUDE A UNE UTILISATION PARTICULIERE OU A L'ABSENCE DE CONTREFAÇON.



Contents

Replacing a J4400 Array Chassis 1

Prerequisites 1

Verifying a Chassis Failure 1

ESD Precautions 2

Removing a Chassis 2

Installing the New Chassis 9

Installing CRUs Into a New Chassis 11

Completing the Chassis Installation 14

Related Documentation 15

Replacing a J4400 Array Chassis

This document describes replacement procedures for the Sun Storage J4400 Array chassis.



Caution – Only trained service personnel should remove the covers on this equipment.

This product is intended for restricted access whereby access is controlled through the use of a means of security (for example, key, lock, tool, badge access), and personnel authorized for access have been instructed on the reasons for the restrictions and any precautions that need to be taken.

Prerequisites

Before you start to replace a failed chassis, you must:

- Back up all data stored on the array.
- Stop all system I/O to the array.
- Verify that the failed chassis is ready to be removed.
- Prepare the work site and observe all [“ESD Precautions” on page 2](#).
- Remove all power from the chassis and chassis components.

Verifying a Chassis Failure

To determine that a chassis has failed, check the following:

- The array System Power/Status LED (front) is amber.

- The audible alarm is sounding.
- All of the component fault LEDs are green.
 - Disk drive ID/Status LEDs (front) are green
 - SIM Power LED (back) is green
 - Power supply module LEDs (back) are green

Note – A steady amber LED on any component indicates a problem with that component.

ESD Precautions

Observe the following electrostatic discharge (ESD) precautions:

- Remove all plastic, vinyl, and foam material from the work area.
- Wear an antistatic wrist strap at all times when handling any CRU.
- Before handling any CRU, discharge any static electricity by touching a grounded surface.
- After removing a CRU from the cabinet, immediately place it on an antistatic mat.
- Handle any card that is part of a CRU by its edges only and avoid touching the components or circuitry.
- Do not slide a CRU over any surface.
- Limit body movement (which builds up static electricity) during the removal and replacement of a CRU.

Removing a Chassis

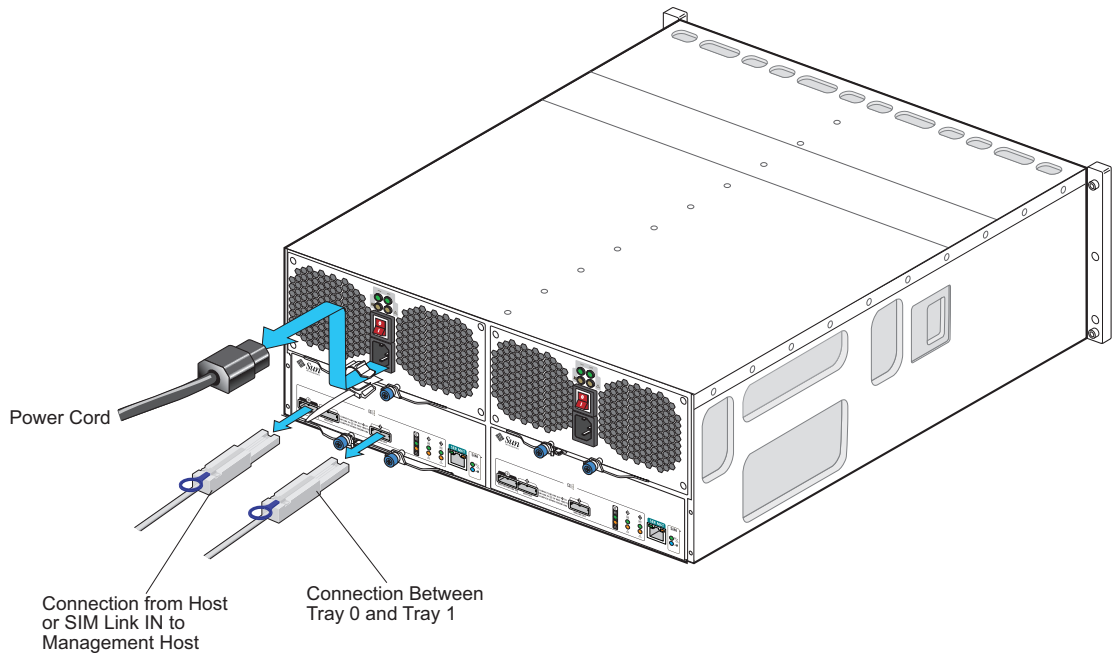


Caution – You must remove power from the chassis that needs to be replaced before starting this procedure. All interconnected trays will be disrupted during this procedure. Powering off one J4400 Array tray causes loss of access to other interconnected trays.

1. From the back of the cabinet, locate the chassis (also referred to as a tray) that is being replaced (see [“Verifying a Chassis Failure”](#) on page 1).
2. Disconnect the power cord from each power supply (see [FIGURE 1](#)):

- a. Remove the power cord tie strap from each power cord.
- b. Disconnect each power cord from its power supply connector (see [FIGURE 1](#)).

FIGURE 1 Removing the Power Cable and Mini-SAS Cables



Caution – For products with multiple power cords, all power cords must be disconnected to completely remove power from the system.

3. Label each mini-SAS cable connection (see [FIGURE 1](#)) for reconnection to the same connectors on the replacement chassis. For example, “Tray 1, SIM Link Out to Tray 0, Host or SIM Link IN.”
4. Disconnect the labeled mini-SAS cables from each SIM board.
 - a. Grasp the metal body of the connector with one hand, and use your other hand to firmly grasp and pull the tab.
 - b. Pull the tab gently toward the connector body, and, then with your other hand, extract the connector from the bulkhead.



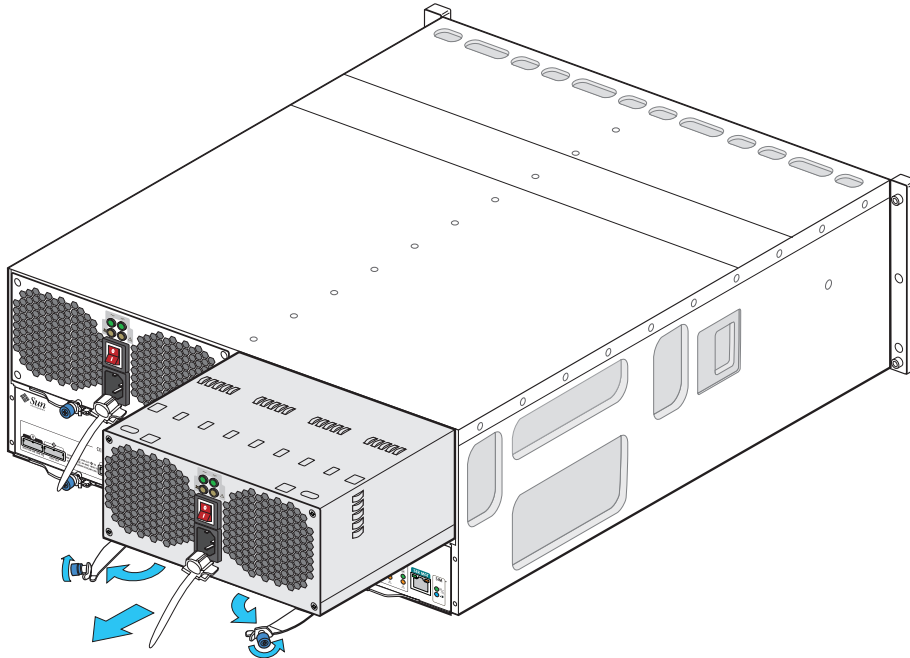
Caution – Do not twist the tab or pull it in any direction other than parallel with the connector body. If the tab breaks, use a small sharp object (such as a fine-tipped screwdriver) to lift the metal spring at the top of the connector shell to unlatch it (see [FIGURE 1](#)).



Caution – Electrical Shock Hazard. The power supplies in this equipment can produce high energy hazards. Only instructed personnel with authorized access to this equipment can remove and replace modules in the system.

- a. Loosen the two captive thumb screws on the power supply ejection levers and swing the ejection levers fully outward to partially eject the power supply from the tray (see [FIGURE 2](#)).
- b. Pull the power supply out of the tray.
- c. Place the power supply aside.

FIGURE 2 Removing a Power Supply



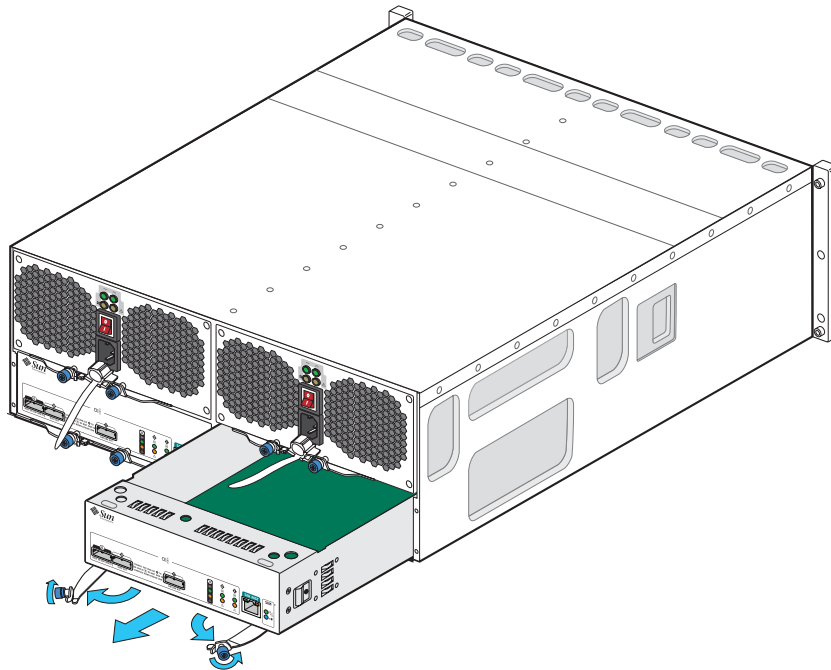
5. Remove each SIM board from the chassis (see [FIGURE 3](#)).



Caution – Possible loss of configuration data. Label the SIM boards (SIM 0 and SIM 1) as you remove them from the faulty chassis, and reinstall them in the new chassis in the same slot order to prevent possible loss of driver configuration data.

- a. Loosen the captive thumb screws on the ejection levers and pull the ejections levers out fully to partially eject the SIM board from the tray.
- b. Pull the SIM board from chassis (see [FIGURE 3](#)).
- c. Place the SIM board aside in a static-free environment.

FIGURE 3 Removing a SIM Board From the Chassis



6. From the front of the cabinet, remove each disk drive and disk filler assembly (see [FIGURE 4](#)).



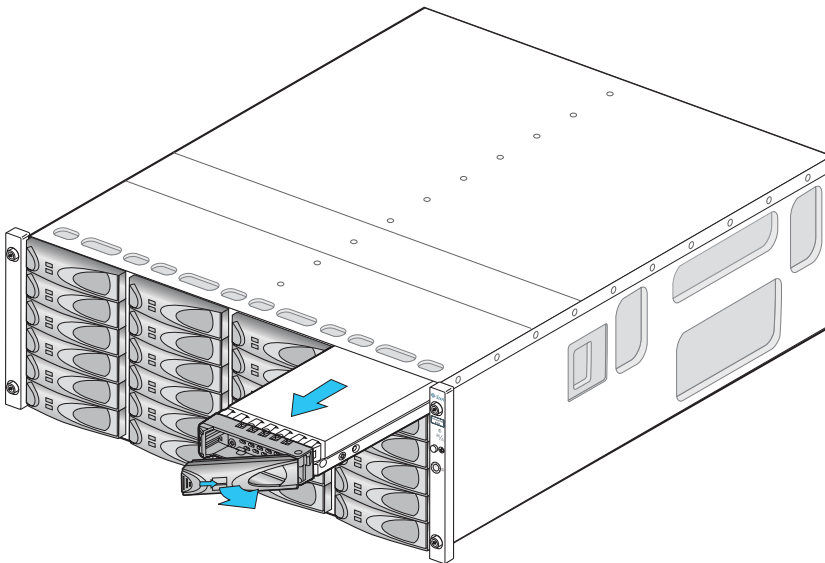
Caution – Potential loss of data access - Data might be lost if an active disk drive is removed. If you remove an active disk drive accidentally, wait at least 30 seconds before reinserting it.



Caution – Potential loss of configuration information or data - Label each disk drive with the slot from which it was removed, and reinstall each drive in the identical slot location in the replacement chassis.

- a. Press the release button in and to the right to release the disk extraction lever.
- b. Swing the extraction lever fully out and to the right to partially extract the disk drive from the tray.
- c. Grasp the middle of the disk drive and pull it toward you to remove it from the tray (see [FIGURE 4](#)).

FIGURE 4 Removing a Disk Drive or Disk Filler Assembly



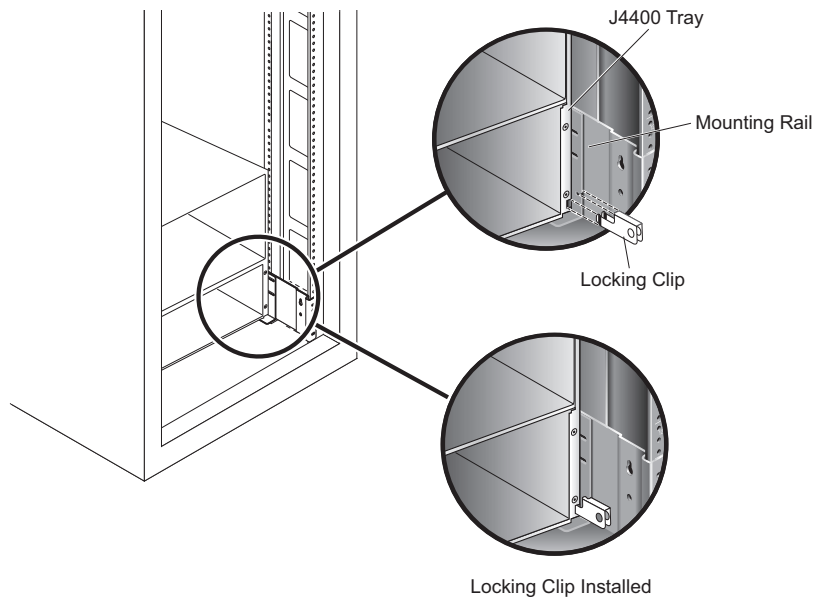
- d. Record the slot location on the outer drive casing. Use the same slot location when installing each disk drive in the new chassis.
 - e. Store each disk drive in a static-free environment.
7. After you have removed all of the components from the chassis, remove the chassis from the cabinet (see [FIGURE 6](#)).



Caution – The empty weight of a chassis is 14 kg (32 lbs). You might need two people to remove the chassis from the cabinet.

- a. Remove the two system locking clips from the lower corners of the rear chassis (see). You can use a Phillips head screwdriver for leverage to help you pull out each clip. Set the clips aside.

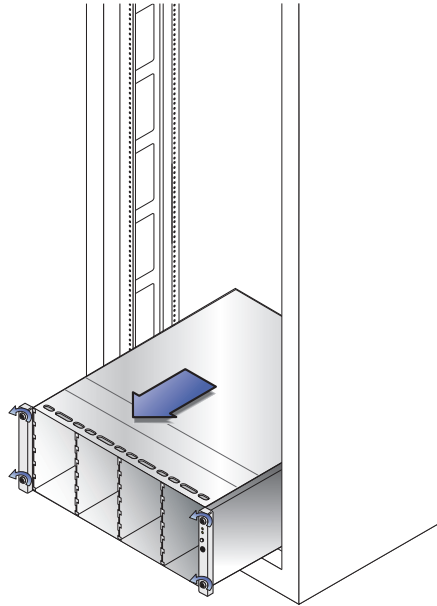
FIGURE 5 Removing the System Locking Clips



- b. From the front of the cabinet, loosen the four captive screws, two on either side of the tray.

- c. Grasp each side of the chassis and pull it toward you, and remove it from the cabinet (see [FIGURE 6](#)).

FIGURE 6 Removing the Failed Chassis From the Cabinet



- d. Package the failed chassis and return it to Sun, if instructed to do so, or properly dispose of it.

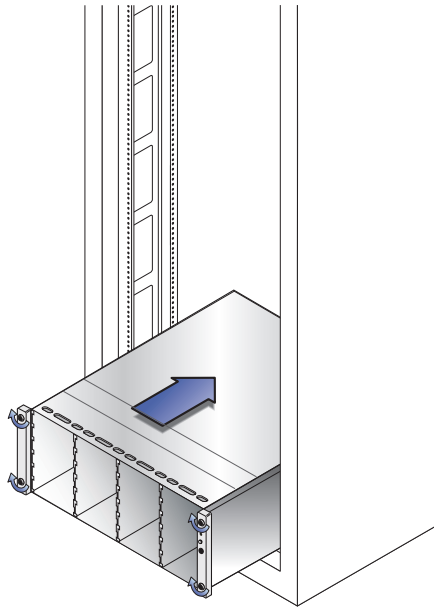
Installing the New Chassis



Caution – Follow all “[ESD Precautions](#)” on [page 2](#) and use care when handling all components.

1. From the front of the cabinet, slide the new chassis into the cabinet until the front flanges of the chassis touch the vertical face of the cabinet (see [FIGURE 7](#)).

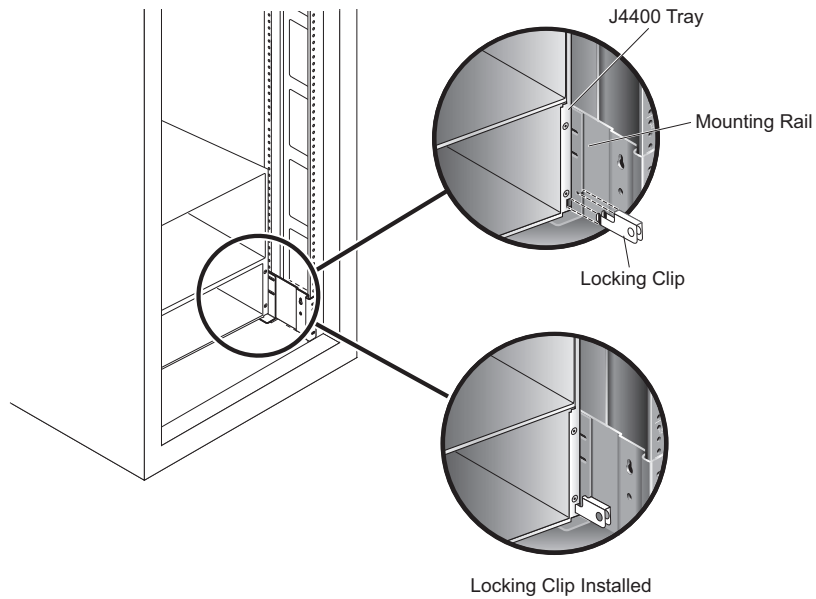
FIGURE 7 Installing the New Chassis in the Cabinet



2. Tighten the captive screws on each side of the tray front to secure the chassis to the cabinet.

3. At the back of the cabinet, slide a system locking clip onto each lower corner of the chassis (see [FIGURE 8](#)). You can use a Phillips head screwdriver for leverage to help you push in the clip.

FIGURE 8 Installing the System Locking Clips



Installing CRUs Into a New Chassis

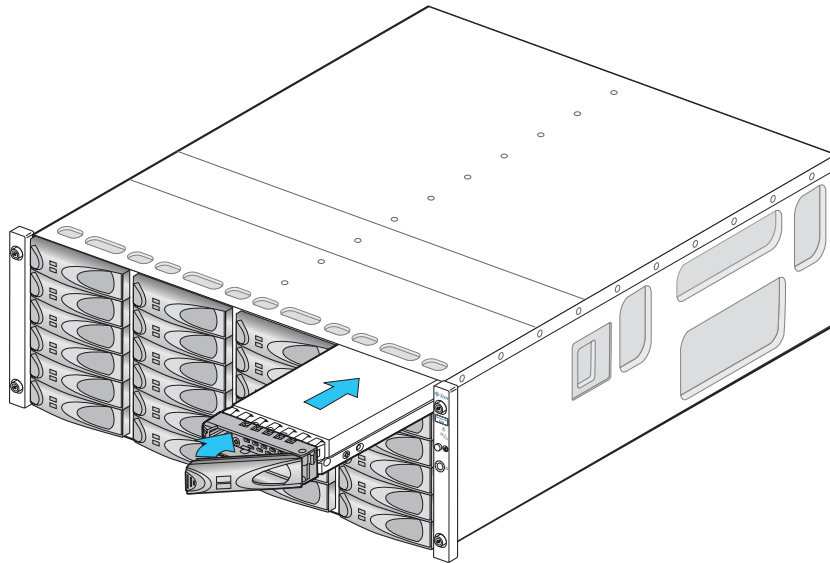
1. From the front of the cabinet, install each disk drive and disk filler assembly into (see [FIGURE 9](#)). For each disk drive and disk filler assembly:



Caution – Possible loss of configuration information or data - Reinstall each drive into the identical slot location from which it was removed in the failed chassis, as defined by the notation written on the drive outer case when each drive was removed.

- a. Unlatch and swing the extraction lever to its fully open position.
- b. Align the disk component with the open slot and slide the drive into the tray until the extraction lever engages with the tray connectors and the lever begins to swing closed.
- c. Press the extraction lever closed until it snaps in place on the disk front panel to seat the drive into the tray.

FIGURE 9 Installing the Disk Drives and Filler Assemblies in New Chassis



2. From the back of the cabinet, install the two SIM boards in the SIM slots (see [FIGURE 10](#)).

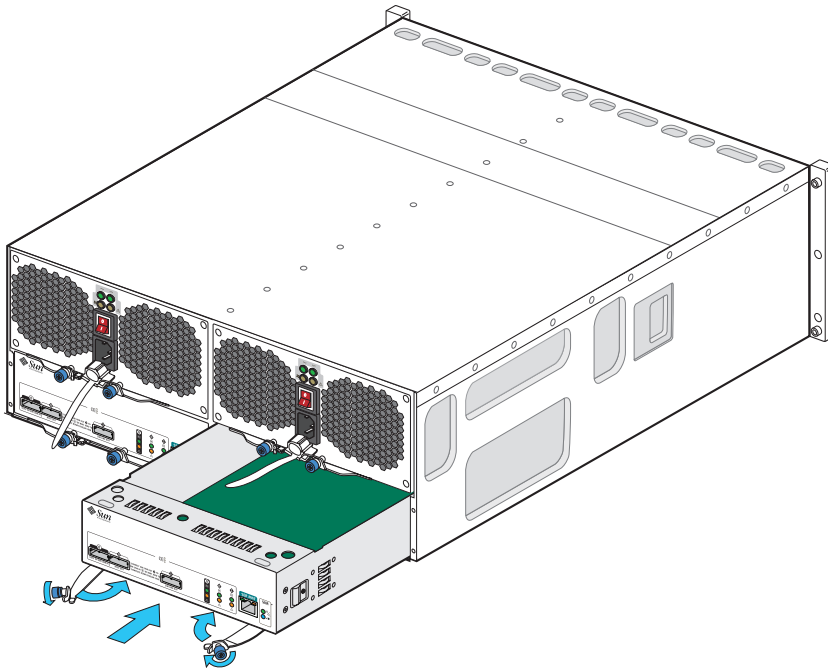


Caution – Possible incorrect configuration or driver information - Reinstall the SIM boards into the identical slot locations from which they were removed in the failed chassis.

For each SIM board:

- a. Swing both extraction levers to the fully open position.
- b. Align the SIM board with the open slot and slide it into the tray until it engages with the tray connectors and the extraction levers begin to swing closed.
- c. Simultaneously push both extraction levers toward the middle of the board to seat it in the tray.
- d. Tighten the extraction lever captive screws to secure the board.

FIGURE 10 Installing a SIM Board

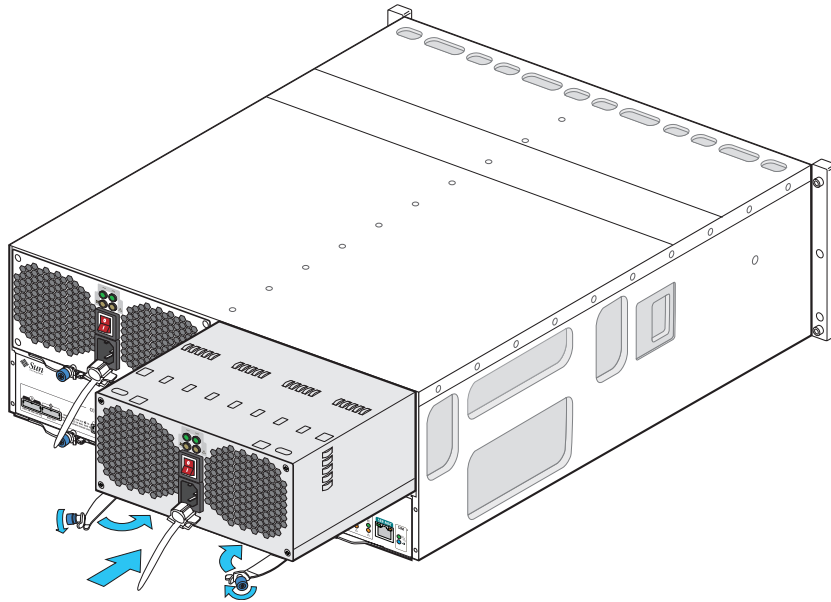


3. Install the two power supplies into the chassis slots (see [FIGURE 11](#)).

For each power supply:

- a. Swing both extraction levers to the fully open position.**
- b. Align the power supply with the open slot and slide it into the tray until it engages with the tray connectors and the extraction levers begin to swing closed.**
- c. Simultaneously push both extraction levers toward the middle of the power supply to seat it in the tray.**
- d. Tighten the extraction lever captive screws to secure the power supplies.**

FIGURE 11 Installing a Power Supply



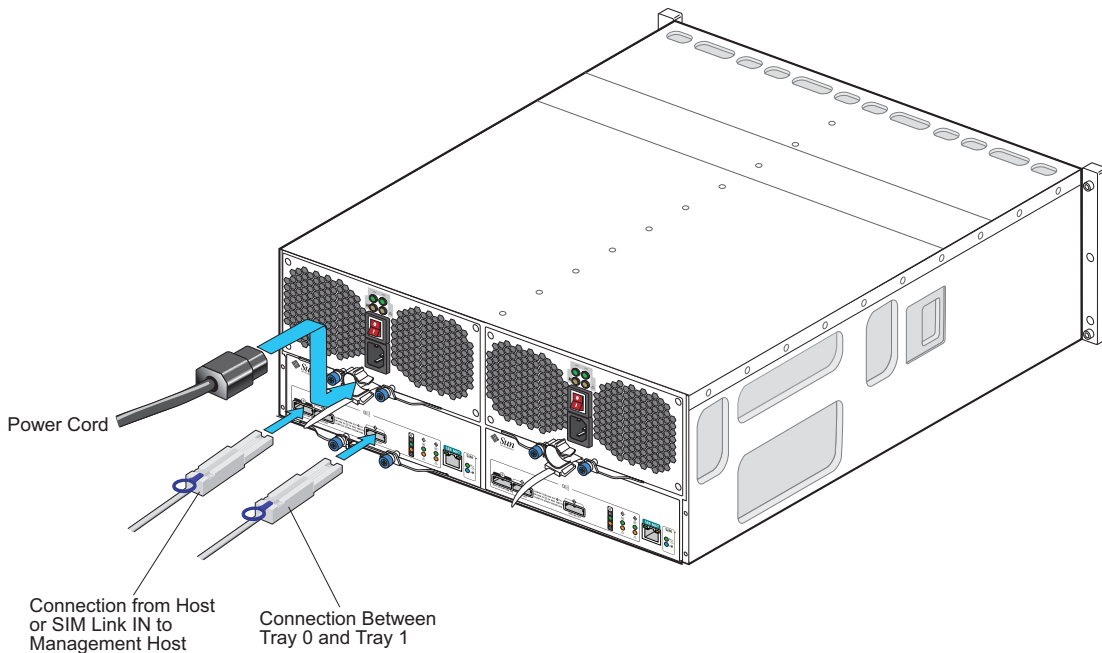
Completing the Chassis Installation



Caution – Possible incorrect configuration or loss of data - Reconnect all mini-SAS cables to their original locations on each SIM board in the new chassis.

1. From the back of the cabinet (see [FIGURE 12](#)), reconnect the country-specific power cables into each of the power supply connectors.
2. Replace the power cord tie strap on each power cord.
3. Turn on power to both power supplies.

FIGURE 12 Reconnecting the Mini-SAS and Power Cables



4. Check the status of the tray.

After the power-on sequence is complete, confirm the following:

- The green OK/Power LEDs on each drive in the tray are steady on.
If all tray and drive OK/Power LEDs are steady green and the amber Service Required LEDs are off, the power-on sequence is complete and no faults have been detected.
- The amber LED is blinking for any module.
Reseat the module to make sure that it is properly installed. If the LED is now green, the module is functioning properly. If the module remains blinking amber, contact Sun Customer Service Personnel.
- The alarm shuts off after connecting the second power cord.
If an alarm sounds after plugging in the first power cord, the alarm will shut off once the second power cord is connected.

Related Documentation

For additional information about the Sun Storage J4400 Array chassis, see the following product documentation:

Application	Title	Part Number
Regulatory and safety information	<i>Sun StorageTek Regulatory and Safety Compliance Manual</i>	96272, Revision A
Multilanguage safety information	<i>Important Safety Information for Sun Hardware Systems</i>	816-7190- <i>nn</i>
Site planning information	<i>Sun Storage J4200/J4400 Array Site Preparation Guide</i>	820-3219- <i>nn</i>
Installation at a glance	<i>Sun Storage J4200 Array Setup Poster</i>	820-3221- <i>nn</i>
Installation at a glance	<i>Sun Storage J4400 Array Setup Poster</i>	820-4691- <i>nn</i>
Complete details of the hardware components, rail and tray installation, and cabling.	<i>Sun Storage J4200/J4400 Array Hardware Installation Guide</i>	820-3218- <i>nn</i>
Late-breaking information not included in the information set	<i>Sun Storage J4200/J4400 Array Release Notes</i>	820-3222- <i>nn</i>

Application	Title	Part Number
Installation and use of the management software using a GUI	<i>Sun StorageTek Common Array Manager User Guide for the J4000 Array Family</i>	820-3765- <i>nn</i>
Installation and use of the management software using a CLI	<i>Sun StorageTek Common Array Manager CLI Guide for the J4000 Array Family</i>	820-4419- <i>nn</i>
General operation and troubleshooting	<i>Sun Storage J4200/J4400 Array Overview</i>	820-3223- <i>nn</i>
Disk drive replacement procedures	<i>Sun Storage J4200/J4400 Array Disk Drive Replacement Guide</i>	820-3225- <i>nn</i>
SIM board replacement procedures	<i>Sun Storage J4200 Array SIM Board Replacement Guide</i>	820-3226- <i>nn</i>
SIM board replacement procedures	<i>Sun Storage J4400 Array SIM Board Replacement Guide</i>	820-4600- <i>nn</i>
Power supply replacement procedures	<i>Sun Storage J4200 Array Power Supply Replacement Guide</i>	820-3227- <i>nn</i>
Fan replacement procedures	<i>Sun Storage J4200 Array Fan Replacement Guide</i>	820-3229- <i>nn</i>
Power supply and fan replacement procedures	<i>Sun Storage J4400 Array Power Supply/Fan Replacement Guide</i>	820-3228- <i>nn</i>
Chassis replacement procedures	<i>Sun Storage J4200 Chassis Replacement Guide</i>	820-4413- <i>nn</i>
Chassis replacement procedures	<i>Sun Storage J4400 Chassis Replacement Guide</i>	820-4601- <i>nn</i>
Rail kit installation procedures	<i>Sun Storage J4200/J4400 Array Rail Kit Installation Guide</i>	820-3764- <i>nn</i>

Service Contact Information

If you need help installing or using this product in the United States, call 1-800-USA-4SUN(872-4786), or go to:

<http://www.sun.com/service/contacting/index.xml>

