Sun Disk Shelf-24x3.5” SAS-2

Chassis Replacement Guide

Part No. 820-7246-11
April 2010, Revision A

Contents

Replacing the Chassis

This document describes how to replace the chassis for the Sun Disk Shelf-24x3.5″ SAS-2.

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.

ESD Precautions

When completing the procedures in this guide, 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 disk shelf component.
- Before handling any component, discharge any static electricity by touching a grounded surface.
- After removing a component from the disk shelf, immediately place it on an antistatic surface or in antistatic packaging.
- Handle any card that is part of a component by its edges only and avoid touching the components or circuitry.
- Do not slide a component over any surface.

- Limit body movement (which builds up static electricity) during the removal and replacement of a component.

Verifying a Chassis Failure

To verify that the chassis has failed, check the following:

- The system fault LED (front) is amber.
- The component fault LEDs are off:
  - Disk fault LEDs (front) are off.
  - SIM board fault LED (front) is off.
  - Power supply fault LEDs (back) are off.
  - Fan fault LEDs (back) are off.

Note – A lit amber fault LED on a component indicates a problem with that component, but not necessarily a chassis failure.

Before You Begin

Before you start to replace the failed chassis, complete these tasks:

- Back up all data stored on the disk shelf.
- Stop all system input/output (I/O) to the disk shelf.
- Remove all power from the chassis and chassis components.

Procedure

To replace a failed chassis, you must complete the following steps, which are explained in detail in the remainder of this guide:

1. Remove the failed chassis. See "To Remove the Failed Chassis" on page 3.
2. Install the new chassis. See "To Install the New Chassis" on page 11.
3. Install components into the new chassis. See "To Install Components Into the New Chassis" on page 13.
4. Power on the new chassis. See "To Reconnect Power and Cables" on page 16.

▼ To Remove the Failed Chassis

Caution – You must remove power from the chassis you are replacing before you start this procedure. All interconnected disk shelves will be disrupted during this procedure. Powering off one disk shelf causes loss of access to other interconnected disk shelves.

1. **From the back of the cabinet, locate the chassis that you are replacing.**
2. **Remove the power cord tie strap from each power cord.**
3. **Ensure that the power supply on/of switch is in the "O" (off) position.**
4. **Unplug each power cord from its power supply connector (**FIGURE 1**).**

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

5. **Label each mini-SAS cable connection for reconnection to the same connectors on the replacement chassis.**

   For example, *Disk Shelf 1, SIM Link Out to Disk Shelf 0, Host or SIM Link IN*.

6. **Disconnect the labeled mini-SAS cables from each SIM board (**FIGURE 1**):**

   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 chassis.

Caution – Do not twist or pull the tab in any direction other than parallel with the connector body or you might break the tab. 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.

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

FIGURE 1 Removing Power Cables and Mini-SAS Cables

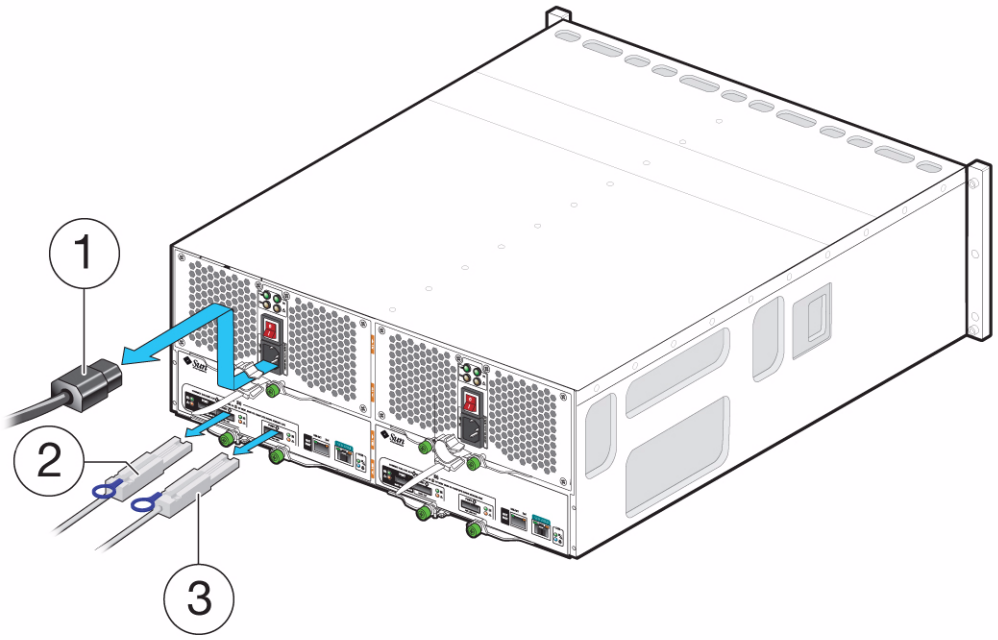


Figure Legend

1	Power cord
2	Mini-SAS cable connection
3	Mini-SAS cable connection

7. **From the back of the cabinet, remove each power supply from the chassis (FIGURE 2):**

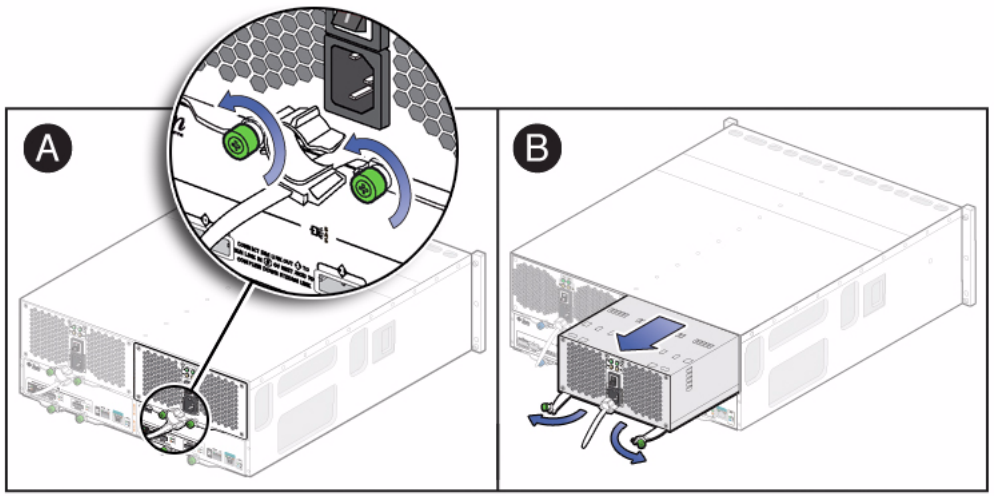
   a. Loosen the two captive screws on the power supply ejection levers.

Note – You might need a Phillips No. 2 screwdriver to loosen the screws.

   b. Swing the ejection levers fully outward to eject the power supply.

Caution – Be careful to not damage the circuit board connector extending from the back of the power supply.

FIGURE 2 Removing a Power Supply



8. **From the back of the cabinet, remove each SIM board from the chassis (**FIGURE 3**):**

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

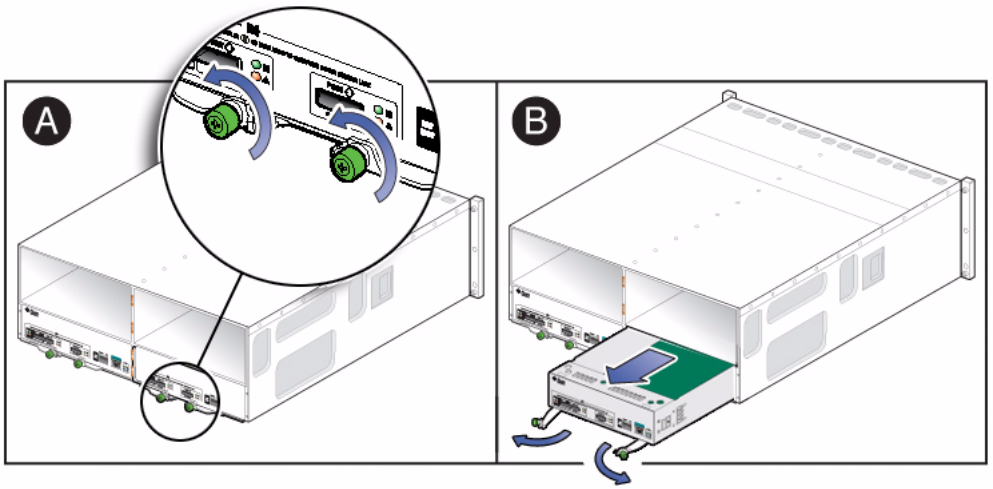
   a. **Loosen the two captive screws on the SIM board ejection levers.**

   b. **Pull the ejection levers fully outward to partially eject the SIM board from the chassis.**

   c. **Pull the SIM board from chassis.**

   d. **Place the SIM board on a static-free surface or in static-free packaging.**

FIGURE 3 Removing a SIM Board



9. **From the front of the cabinet, remove each disk drive and disk filler assembly (**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 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 to prevent possible loss of disk drive configuration data.

a. **Press the disk drive release button, allowing the disk ejection lever to move to the right.**

b. **Swing the ejection lever fully out and to the right to partially extract the disk drive from the chassis.**

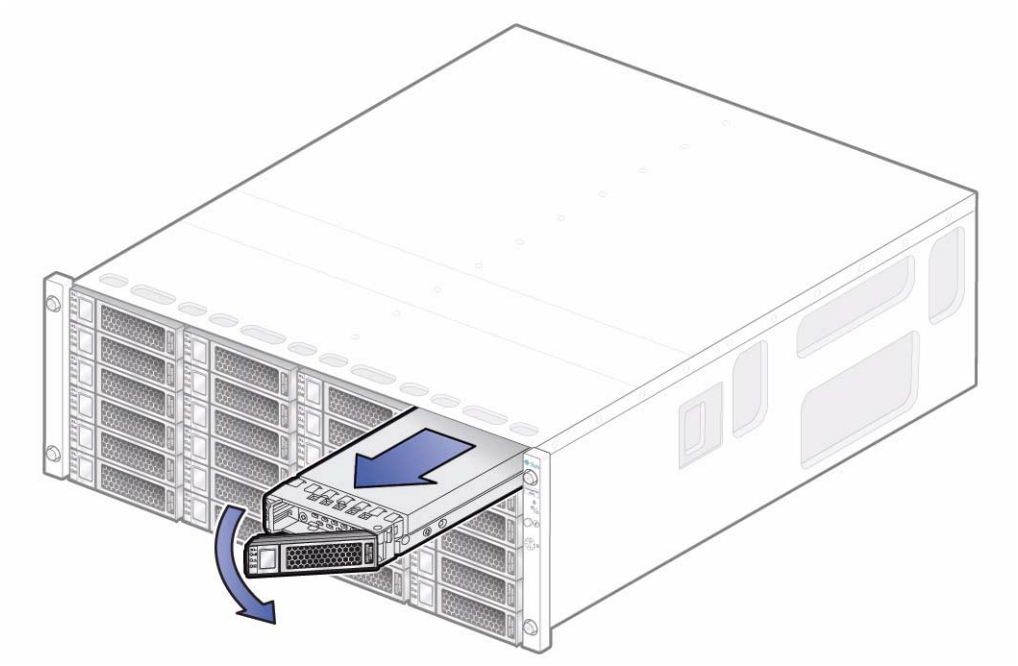
c. **Grasp the middle of the disk drive and pull it toward you to remove it from the chassis.**

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. **Place each disk drive on a static-free surface or in static-free packaging.**

FIGURE 4 Removing a Disk Drive or Disk Filler Assembly



10. **After you have removed all of the components from the chassis, remove the chassis from the cabinet:**

Caution – The empty weight of a chassis is approximately 13.6 kg (30 lbs). You might need two people to remove the chassis from the cabinet.

   a. **From the back of the cabinet, remove the two system locking clips from the lower corners of the rear chassis (**FIGURE 5**).**

      Use a screwdriver for leverage to help you pull out each clip.

   b. **Set the clips aside.**

FIGURE 5 Removing the System Locking Clips

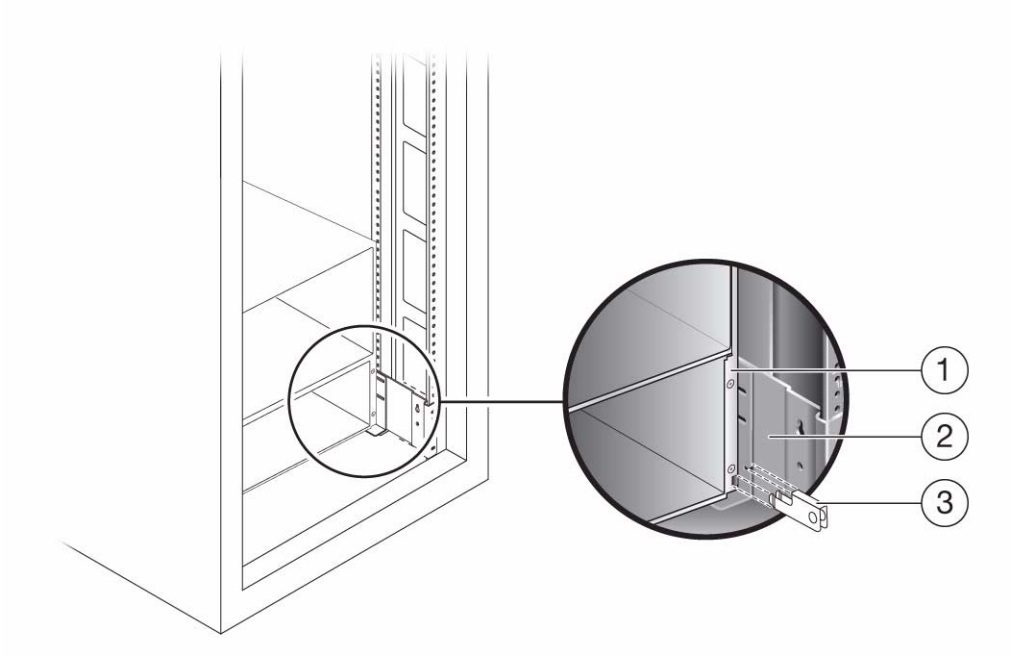


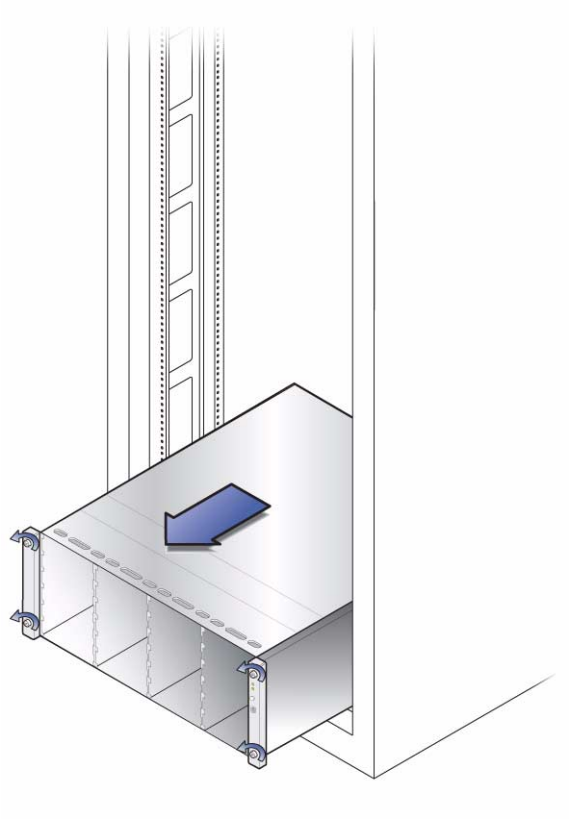
Figure Legend

1	Disk shelf
2	Mounting rail
3	Locking clip

c. From the front of the cabinet, loosen the four captive screws, two on either side of the chassis.

d. Grasp each side of the chassis and pull it toward you, and remove it from the cabinet (FIGURE 6).

FIGURE 6 Removing the Chassis From the Cabinet



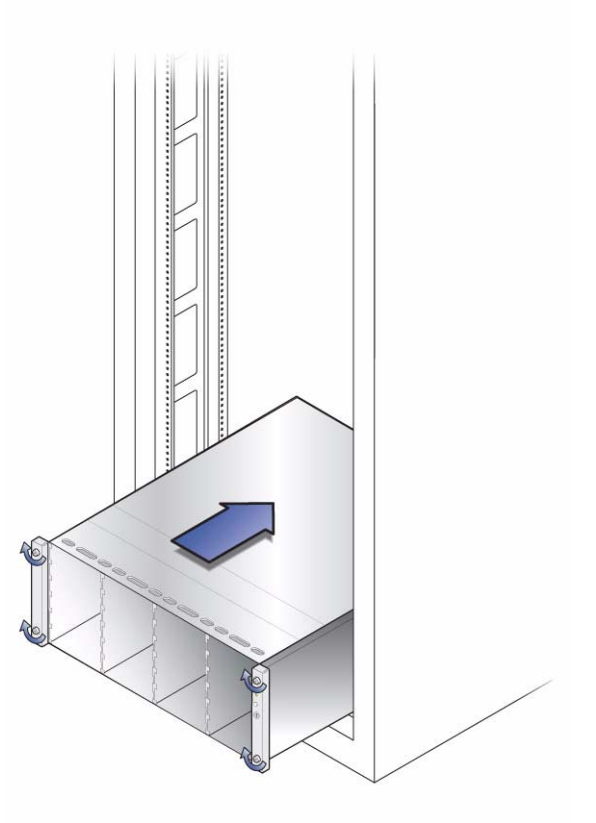
e. Package the chassis and return it to Oracle.

▼ To Install the New Chassis

Caution – Follow all ESD precautions (see "ESD Precautions" on page 1) 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 (**FIGURE 7**).**

FIGURE 7 Installing the New Chassis Into the Cabinet



2. **Tighten the captive screws, two on each side of the chassis 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 (**FIGURE 8**).**

   Use a screwdriver for leverage to help you push in the clip.

FIGURE 8 Installing the System Locking Clips

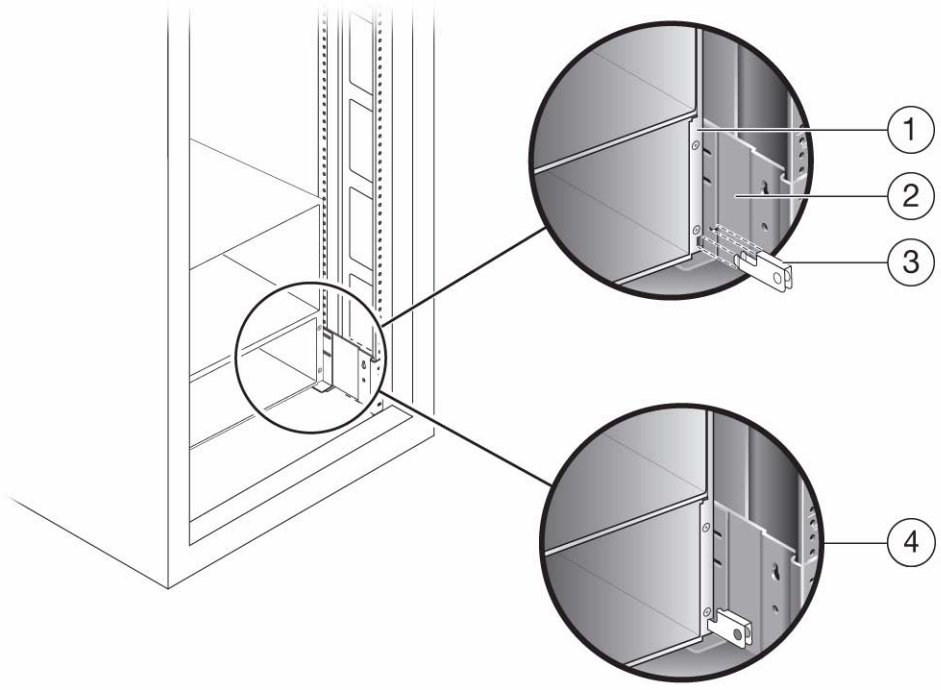


Figure Legend

1	Disk shelf
2	Mounting rail
3	Locking clip
4	Locking clip installed

▼ To Install Components Into the New Chassis

1. **From the front of the cabinet, install each disk drive and disk filler assembly into the chassis by completing the following steps for each drive and filler (**FIGURE 9**):**

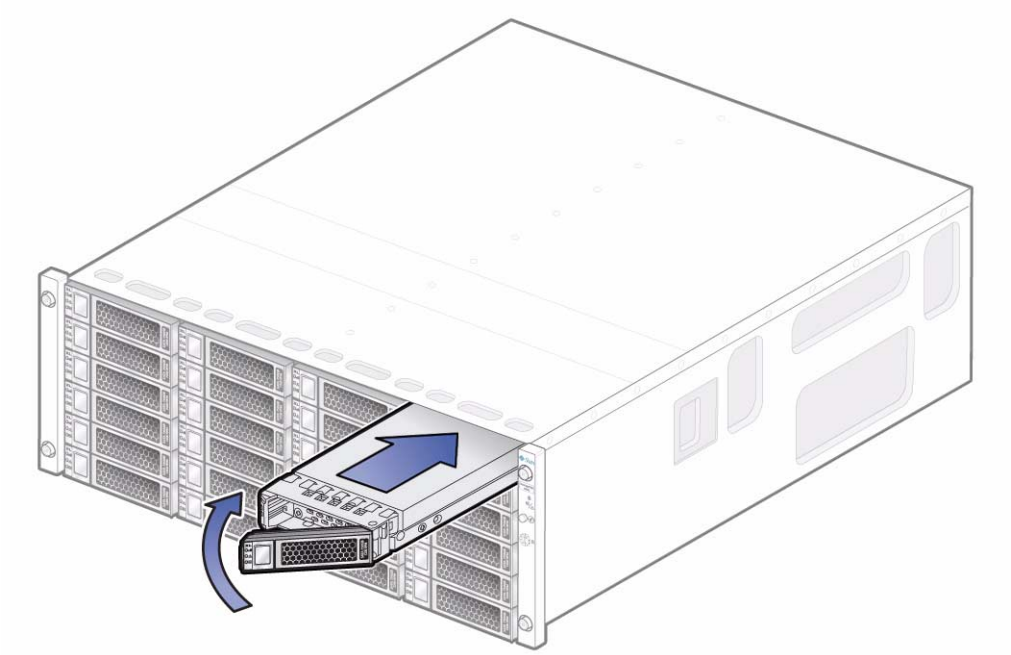
Caution – Possible loss of configuration data. Reinstall each drive into the identical slot location from which it was removed in the failed chassis, as defined by the notation written on the drive outer case when each drive was removed.

   a. **Unlatch and swing the disk drive ejection lever to its fully open position.**

   b. **Align the disk drive with the open slot and slide the drive into the chassis until the ejection lever engages with the chassis connectors and the lever begins to swing closed.**

   c. **On the disk front panel, press the ejection lever closed until it snaps in place on the disk front panel to seat the drive into the chassis.**

FIGURE 9 Installing a Disk Drive or Disk Filler Assembly



2. **From the back of the cabinet, install the two SIM boards into the chassis SIM slots (FIGURE 10) by completing the following steps for each SIM board:**

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.

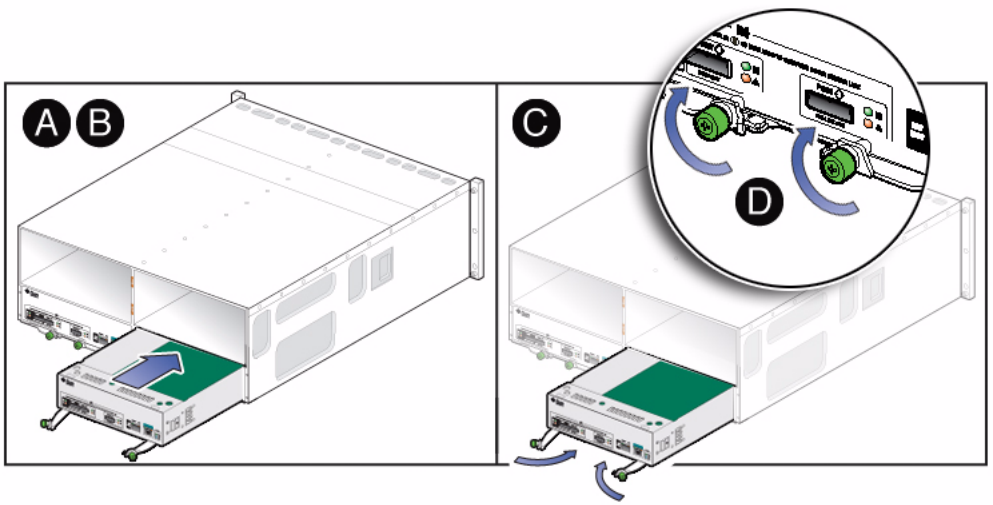
a. **Swing both SIM board ejection levers to the fully open position.**

b. **Align the SIM board with the open slot and slide it into the chassis until it engages with the chassis connectors and the ejection levers begin to swing closed.**

c. **Simultaneously push both ejection levers toward the middle of the board to seat it in the chassis.**

d. **Tighten the two ejection lever captive screws to secure the board.**

FIGURE 10 Installing a SIM Board



3. **From the back of the cabinet, install the two power supplies into the chassis slots by completing the following steps for each power supply (FIGURE 11):**

   a. **Swing both power supply ejection levers to the fully open position.**

   b. **Align the power supply with the open slot and slide it into the chassis until it engages with the chassis connectors and the ejection levers begin to swing closed.**

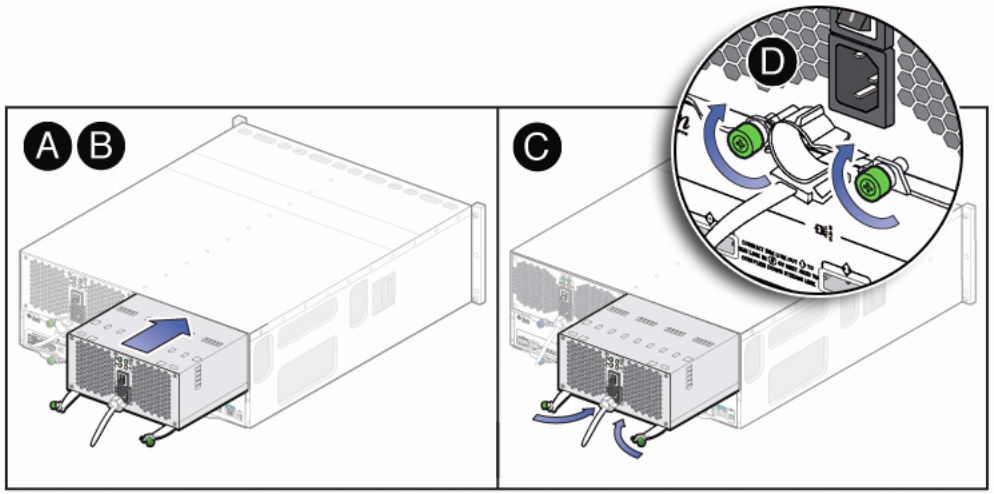
Caution – Be careful to not damage the circuit board connector extending from the back of the power supply.

   c. **Simultaneously push both ejection levers toward the middle of the power supply to seat it in the chassis.**

   d. **Tighten the two ejection lever captive screws to secure the power supplies.**

   e. **Ensure that the power supply on/off switch is in the "O" (off) position.**

FIGURE 11 Installing a Power Supply



▼ To Reconnect Power and Cables

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. **Reconnect the mini-SAS cables to the appropriate connections as recorded on labels when the cables were removed (FIGURE 12).**
2. **Reconnect the power cables to the power supply connectors (FIGURE 12).**
3. **Replace the power cord tie strap on each power cord.**
4. **Turn on the power switches on the disk shelf power supplies.**
5. **Turn on the cabinet circuit breakers, if applicable.**

FIGURE 12 Reconnecting the Power Cables and Mini-SAS Cables

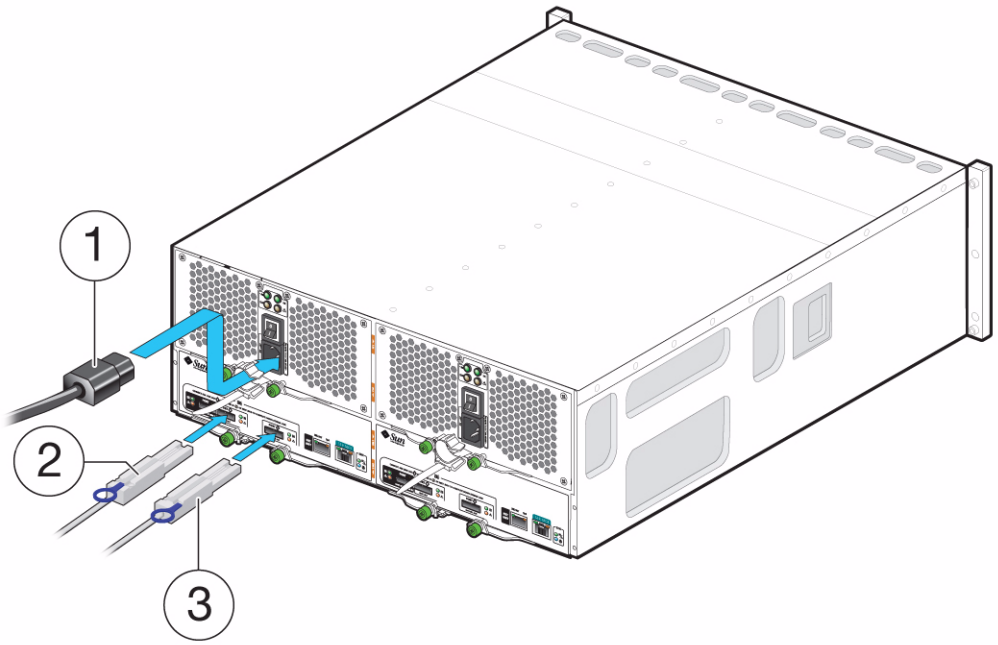


Figure Legend

1	Power cord
2	Mini-SAS cable connection
3	Mini-SAS cable connection

6. **Check the status of the chassis.**

   The amber fault LED for each component in the chassis should be off.

   If the amber fault LED is lit for any component, reseat the component to ensure that it is properly installed. If the amber fault LED remains lit, contact Customer Service Personnel.

Documentation, Support, and Training

Function	URL
Documentation	http://docs.sun.com
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