

**EN** English

## Table of Contents

<b>1. Introduction</b> .....	<b>2</b>
1.1. Safety.....	2
1.2. Rack System Precautions.....	2-3
1.3. ESD Precaution.....	3
<b>2. Preparation</b> .....	<b>3</b>
2.1. Before you begin.....	3
<b>3. Unpackaging the Storage System</b> .....	<b>3</b>
<b>4. Mounting the System into the Rack</b> .....	<b>4-5</b>
<b>5. Installing Modules</b> .....	<b>5</b>
<b>6. Installing the PSU Modules</b> .....	<b>5</b>
<b>7. Installing the Dual Fan Cooling Module</b> .....	<b>6</b>
<b>8. Installing the I/O Modules</b> .....	<b>6-7</b>
<b>9. Connecting Storage System to Host</b> .....	<b>7</b>
<b>10. Installing Drives</b> .....	<b>8</b>
<b>11. Power On</b> .....	<b>8</b>
<b>12. I/O Module</b> .....	<b>8-9</b>

# 1. Introduction

## European Regulations

This equipment complies with European Regulations EN 55022 Class A: Limits and Methods of Measurement of Radio Disturbance Characteristics of Information Technology Equipments and EN50082-1: Generic Immunity.

## USA Federal Communications Commission (FCC)

This equipment has been tested and found to comply with the limits for a class A digital device, pursuant to part 15 of the FCC rules.

## 1.1. Safety

All plug-in modules and blank plates are part of the fire enclosure and must only be removed when a replacement can be immediately added. The system must not be run without all modules in place.

Permanently unplug the unit if you think that it has become damaged in any way and before you move it.

- The enclosure can weigh up to 32kg (70.4lb). Do not try to lift it by yourself.
- Do not lift a populated enclosure by the module handles or those on the front of the enclosure, they are not designed to support the weight of the populated enclosure.
- In order to comply with applicable safety, emission and thermal requirements no covers should be removed and all bays must be fitted with plug-in modules.
- The enclosure must only be operated from a power supply input voltage range of 100-120VAC or 200-240VAC.
- The power supply is used as the main disconnect device. Ensure that the socket outlets are located near the equipment and are easily accessible.
- The equipment is designed to be operated with two working power supply modules.
- To prevent overheating do not operate the enclosure with one power supply removed for more than 30 minutes.
- Disconnect all supply power for complete isolation.

- The power connection should always be disconnected prior to removal of the Power Supply module from the enclosure.
- A safe electrical earth connection must be provided to the power cords. Check the grounding of the enclosure before applying power.
- Provide a suitable power source with electrical overload protection to meet the requirements laid down in the technical specification.

## 1.2. Rack System Precautions

The following safety requirements must be considered when the unit is mounted in a rack.

- The rack design must incorporate stabilizing features suitable to prevent the rack from tipping or being pushed over during installation or in normal use.
- To avoid the danger of the rack tipping over, do not slide more than one enclosure out at once.
- When loading a rack with the units, fill the rack from the bottom up and empty from the top down.
- The rack design should take into consideration the maximum operating ambient temperature for the unit, which is 40°C.
- The system must be operated with low pressure rear exhaust installation (back pressure created by rack doors and obstacles not to exceed 5 pascals (0.5mm water gauge)).
- The rack must have a safe electrical distribution system. It must provide over-current protection for the unit and must not be overloaded by the total number of units installed in the rack. Consideration of the electrical power consumption rating shown on the nameplate should be used when addressing these concerns.
- The electrical distribution system must provide a reliable earth for each unit in the rack.
- Each power supply in each unit has an earth leakage current of 1.5mA max at 60Hz, 264VAC per PSU. The design of the electrical distribution system must take into consideration the total earth leakage current from all the power supplies in all the units. The rack may require labelling with "HIGH LEAKAGE CURRENT. Earth connection essential before connecting supply".
- The rack when configured with the units must meet the safety requirements of UL 60950-1 and IEC 60950-1.

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**WARNING:** Do not remove covers from the PSU. Danger of electric shock inside. Return the PSU to your supplier for repair.

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**CAUTION:** If this equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.

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### 1.3. ESD Precautions

It is recommended that you fit and check a suitable anti-static wrist or ankle strap and observe all conventional ESD precautions when handling LaCie 12big rack serial plug-in modules and components. Avoid contact with backplane components and module connectors, etc.

## 2. Preparation

### 2.1. Before You Begin

**Before you begin, make sure the site where you intend to set up and use your storage system has the following:**

- Standard AC power from an independent source or a rack power distribution unit with a UPS.
- Host computer with the correct firmware, BIOS and drivers. Contact your supplier for the correct software levels.

The Accessory Box contains the power cables and other ordered accessories.

Before setting up your enclosure ensure you have the following:

- SAS HBA
- Mini-SAS to Host Cable
- Power Cable
- Rack kit (if installing within a rack)

Refer to your supplier for a list of qualified accessories for use with the enclosure.

## 3. Unpacking the Storage System

Position the shipping packaging within reasonable distance of the site where you intend to install the storage system.

Inspect the packaging for crushes, cuts, water damage, or any other evidence of mishandling during transit. If any damage appears to be present, it is suggested to take photographs before opening any boxes. You may wish to contact the shipping company if there is apparent damage.

Open the carton top and remove the accessory kit.

Remove the foam component on top of the enclosure.

Using an assistant, lift the enclosure from the carton and place it on a stable work surface.

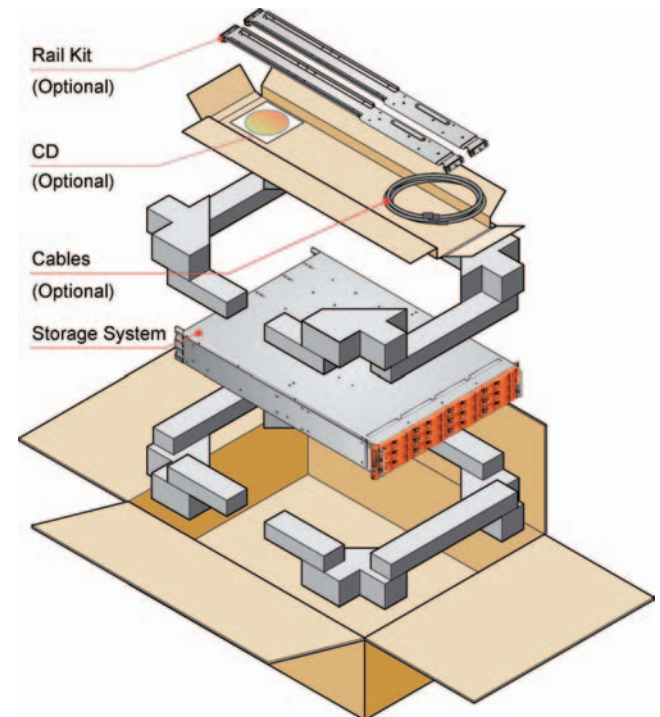


Figure 1: Unpacking the Storage System  
(Populated Enclosure)

## 4. Mounting the System into the Rack

1. Remove the Rack Mounting Rail Kit from the Accessory Box and check for damage. Attach the left and right chassis slides to the enclosure sides using six M3x4 button head screws. Three screws each side see *Figure 2* for locations.
2. Attach left and right chassis slides to the enclosure sides using 8 M3 x 4 buttonhead screws (see *Figure 2*).
3. Assemble the left and right chassis latches using the special chassis latch screws. Ensure the latch is orientated as shown in *Figure 2*, with the spring arm located against its stop. On the right hand side this is at the top, on the left at the bottom.
4. Assemble the rack brackets to the rack posts as follows (see *Figure 3*):
  - a. Position the location pin at the rear of the rail into a rear rack post hole. Attach the bracket to the rear rack post using the washers and screws supplied. The screws should be left loose.
  - b. Extend rail to fit between the front and rear rack posts.
  - c. Attach the bracket to the front rack post using the washers and screws supplied. The screws should be left loose.
  - d. Tighten the two clamping screws located along the inside of the rear section of the rack bracket (see *Figure 3*).

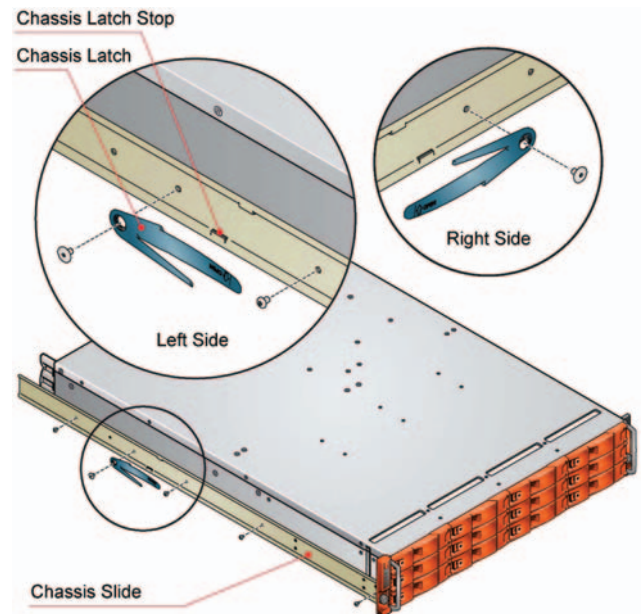


Figure 2: Securing Chassis Slides to Enclosure

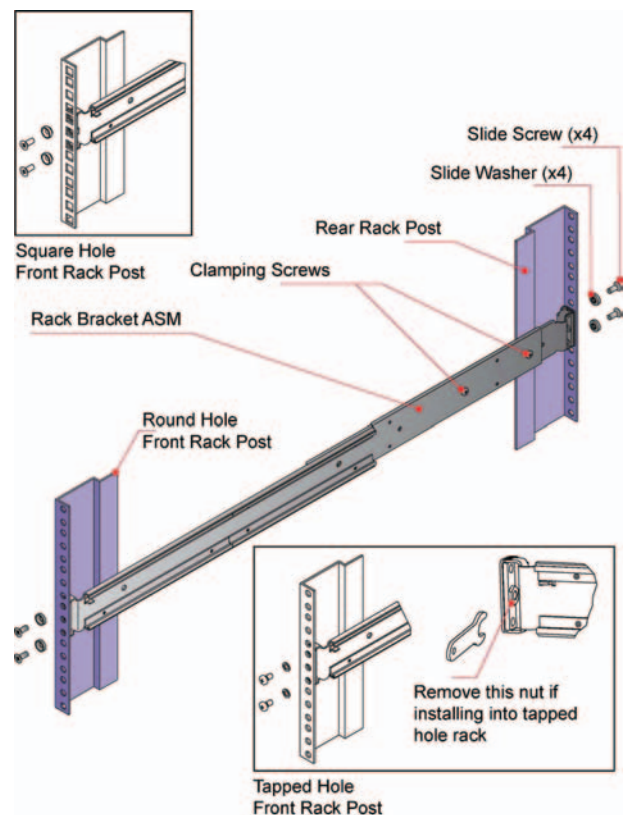


Figure 3: Securing Brackets to Rack

5. Mount the enclosure into the rack as follows (see Figure 4):
  - a. Lift the enclosure and align it with the rack rails.
  - b. Carefully insert the chassis slides into the rack rails and push fully home.
  - c. Tighten the rear rack bracket mounting screws.
  - d. Withdraw enclosure until it reaches the hard stops (approx. 400mm) and tighten the front rack bracket mounting screws.
  - e. Return the enclosure to the fully home position and attach it to the rack using the captive fasteners on the front flanges.

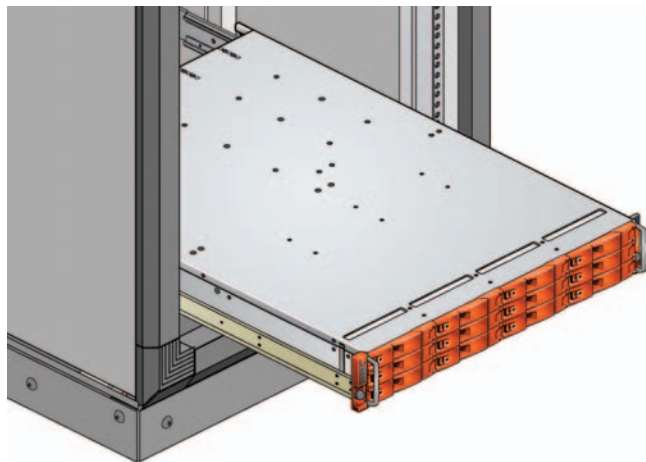


Figure 4: Mounting the System into a Rack

## 5. Installing Modules

Fit the modules into the bays defined in Figure 5.

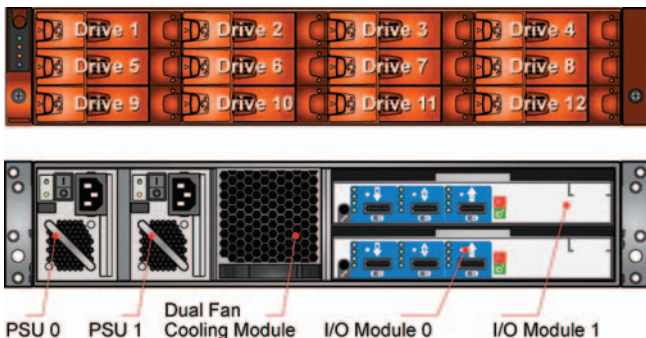


Figure 5: Module Locations

## 6. Installing the PSU Modules

**WARNING:** Do not mix PSUs of different types or makes.

**CAUTION:** Handle the module carefully and avoid damaging the connector pins. Do not install if any pins appear to be bent.

**IMPORTANT:** To prevent overheating, do not operate the enclosure for more than 30 minutes with one PSU removed.

1. Check for damage, especially to the rear connector of the PSU.
2. Slide the PSU into the enclosure (see Figure 6).
3. Continue to push the PSU until it fully seats. A click should be heard as the handle latch engages.
4. Connect the power cables to the power source and to the PSU.
5. Engage the retaining spring.

**Note:** The alarm will sound until the PSU is operating correctly.

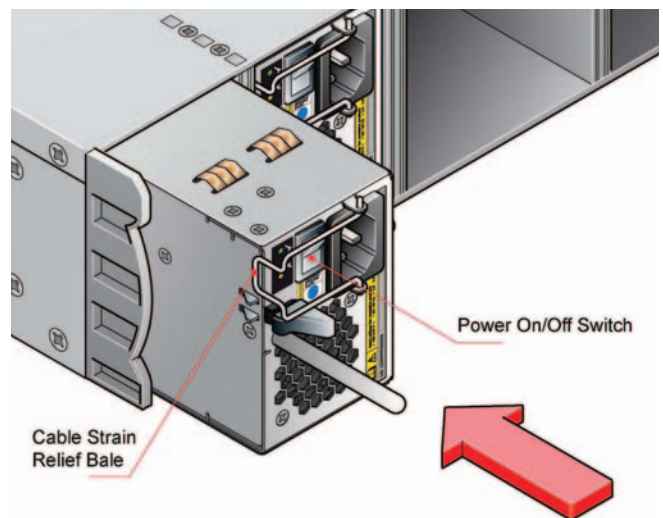


Figure 6: Installing the AC Power Supply Module

## 7. Installing the Dual Fan Cooling Module

**CAUTION:** Handle the module carefully and avoid damaging the connector pins. Do not install if any pins appear to be bent.

1. Check for damage, especially to the rear connector of the module.
2. With the latch in the open position (see Figure 7), slide the module into the enclosure until the latch engages automatically.
3. Secure the module by manually closing the latch. A click should be heard as the module latch engages.

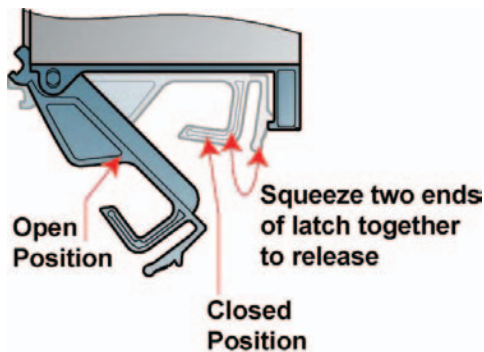


Figure 7: Cooling Module Latch

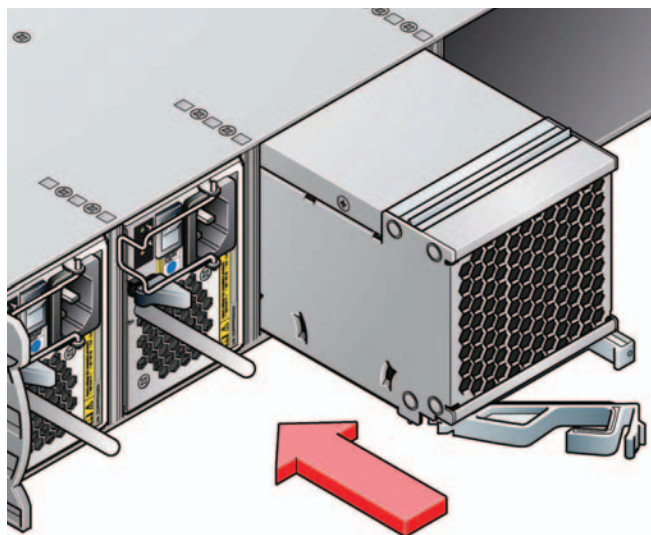


Figure 8: Installing the Dual Fan Cooling Module

## 8. Installing the I/O Modules

**IMPORTANT:** If only one I/O module is fitted, it must be installed into the lower (Slot 0) location, otherwise direct SATA will not work.

**CAUTION:** Handle the modules carefully and avoid damaging the connector pins. Do not install if any pins appear to be bent.

1. Check for damage, especially to the rear connector of the module.
2. With the latch in the open position (see Figure 9), slide the module into the enclosure until the latch engages automatically.
3. Secure the module by manually closing the latch. A click should be heard as the module latch engages.

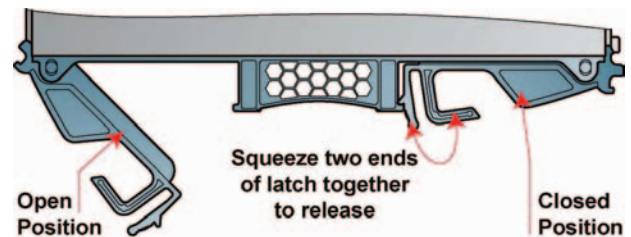


Figure 9: I/O Module Latch

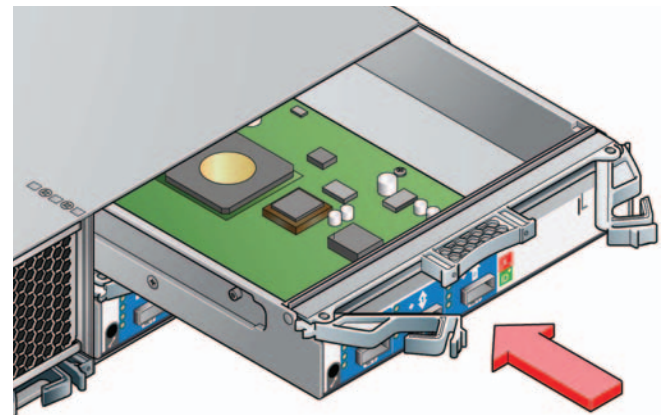


Figure 10: Installing the I/O Module (1)

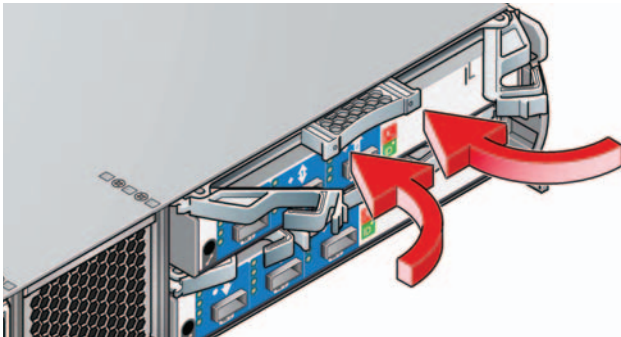


Figure 11: Installing the I/O Module (2)

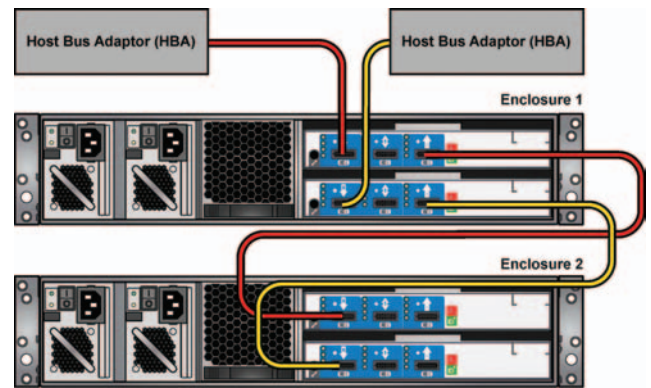


Figure 14: Dual Host, Single Connection

## 9. Connecting Storage System to Host

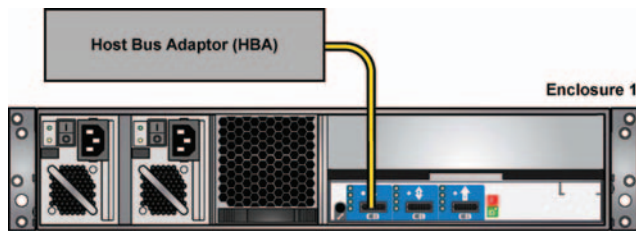


Figure 12: Basic Configuration

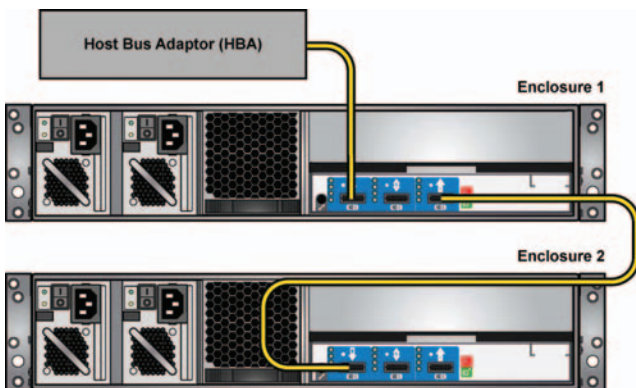


Figure 13: Single Host, Single Connection

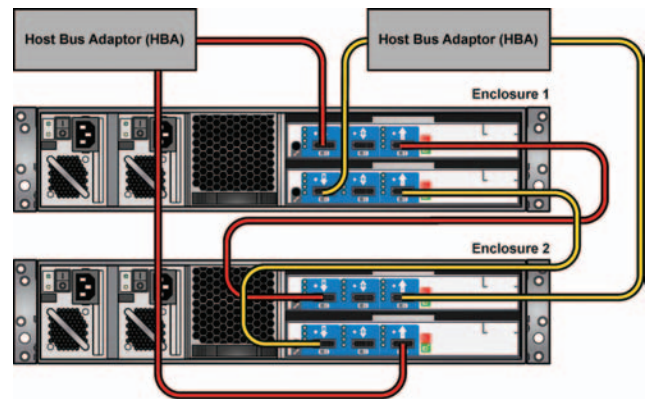


Figure 15: Dual Host, Dual Connection

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**IMPORTANT:** Refer to release note for configuration of maximum number of enclosures.

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## 10. Installing Drives

**CAUTION:** All drive bays must be fitted with either a drive carrier or dummy carrier module. No bays should be left empty.

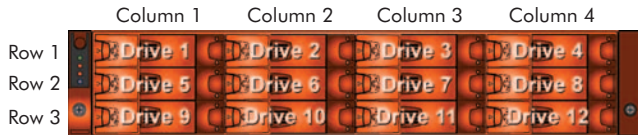


Figure 16: Bay Number Definition

The 12big rack serial enclosure system supports SAS and SATA drives. However, mixing of drive types within a single enclosure is not supported. The enclosure has no restrictions on drive location.

1. Ensure the anti-tamper lock is disengaged (see Figure 15).
2. Release the carrier handle by pressing the latch in the handle towards the right and insert the carrier into the enclosure.
3. Gently slide the carrier all the way into the enclosure until it is stopped by the camming lever on the right of the carrier (see Figure 16).

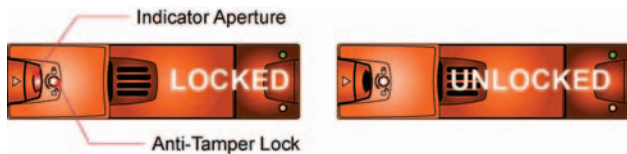


Figure 17: Drive Anti-Tamper Lock

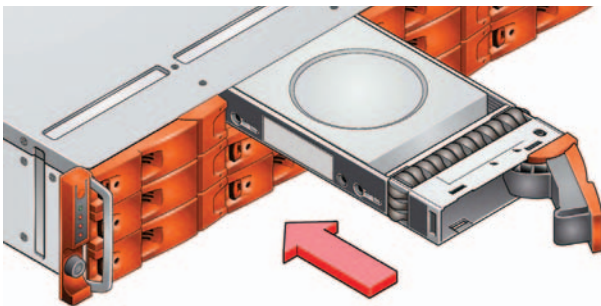


Figure 18: Installing a Drive Carrier (1)

4. The camming foot on the base of the carrier will engage into a slot in the enclosure. Continue to push firmly until the handle fully engages. A click should be heard as the latch engages and holds the handle closed (see Figure 17).

5. Carefully insert the anti-tamper lock key provided into the cutout in the handle and rotate the key in a clockwise direction until the red indicator is visible in the aperture beside the key (see Figure 15).

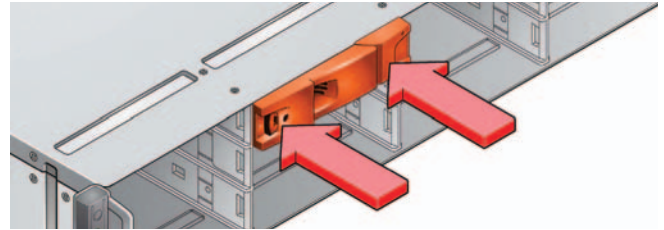


Figure 19: Installing a Drive Carrier (2)

## 11. Power On

Power on the storage system by connecting the power cables to the power distribution unit (PDU), powering on the PDU, moving the PSU switches to the ON position, and then powering on the host system.

All LEDs on the Ops Panel should illuminate and the alarm will beep momentarily when power is activated. Wait for one minute before accessing the system(s).

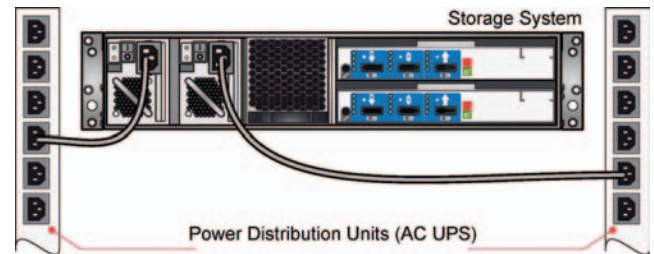


Figure 20: Connecting the AC Power Cables to the PDU

## 12. I/O Module

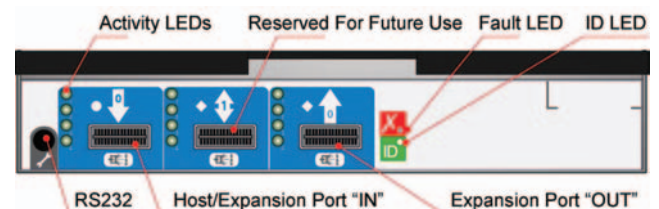


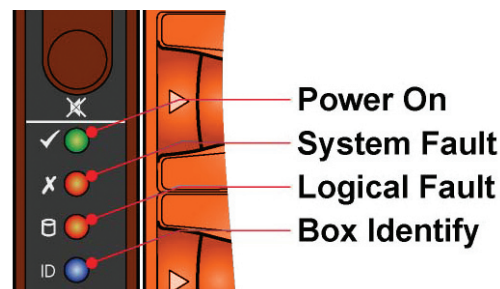
Figure 21: I/O Module



Ops Panel LEDs				Other Associated LEDs or Alarms	State Description
Power On (Green)	System Fault (Amber)	Logical Fault (Amber) <sup>3</sup>	Box Identify (Blue)		
On	On	On	On	12big rack serial Module activity LEDs flash	Ops Panel power on test state.
On	Off	any	any		Power On. All functions good.
On	On	any	any	Dual Fan Cooling Module Fault LED on. Continuous beep.	Dual Fan failure.
On	Flash	any	any	Dual Fan Cooling Module Fault LED on. Intermittent beep.	Single Fan failure.
On	Flash	any	any	PSU Module Fault LED on. Intermittent beep.	Single PSU failure.
On	Flash	any	any	Intermittent beep.	PSU removed.
On	Flash	any	any	Intermittent beep.	Over or under temperature warning.
On	On	any	any	Continuous beep.	Over or under temperature critical.
On	On	any	any	Continuous beep.	Voltage critical.
On	Off	As per Drive fault LED	any	None	Drive critical.
On	Off	As per Drive fault LED	any	None	Drive non-critical.
On	On	any	any	12big rack serial Fault & ID LEDs on. Continuous beep.	12big rack serial Module watchdog failure.
On	Flash	any	any <sup>2</sup>	12big rack serial Fault & ID LEDs on. Intermittent beep.	12big rack serial Module soft (or POST) failure.
On	Flash	any	any <sup>2</sup>	12big rack serial Fault & ID LEDs on. Intermittent beep.	Other 12big rack serial Module fault.
LED operation set via SES Control page 0x02					
On	any	Off	any		Power On. All functions good.
On	any	As per Drive fault LED	any	Drive Bay Fault LED flash.	POST fault bit set for any Array Device Element.
On	any	As per Drive fault LED	any	Drive Bay Fault LED flash.	Other Array bits set for any Array Device Element.
On	On	any	any	Continuous beep.	UNRECOV bit set in Audible Alarm element.
On	any	any	any	Intermittent beep.	INFO, NON-CRIT, CRIT bits set in Audible Alarm element
On	any	any	any	Continuous beep.	UNRECOV bit set in Audible Alarm element.
On	Flash	any	any		REQUEST WARNING bit set in Enclosure element.
On	On	any	any		REQUEST FAILURE bit set in Enclosure element.
On	any	any	Flash		RQST IDENT bit set in Enclosure element.

**Notes**

1. The 12big rack serial alarm pattern is a 1 second on, 1 second off sequence, applied to all 12 Activity LEDs.
2. If an 12big rack serial fault LED is fitted, this will be set for all the above conditions. In addition this LED will flash for an 12big rack serial module soft failure.
3. The Logical Fault LED will take the state of the highest priority drive bay fault LED.



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