# Chapter 5 : " Hot Swap "

This chapter explains how to remove and install the "Hot-Swap" parts without interrupting the data access while the disk array is on.

The "Hot-Swap" parts include :

- Hard Disk Drives
- Redundant Power Supply Units
- Cooling Fans

Follow the steps below and refer to the diagrams to remove and install the "Hot-Swap" parts.

## Removing / Installing Hard Disk drives

### a. Unlock the HDD tray

(When a HDD error occurs, the HDD LED indicator lights up "RED")

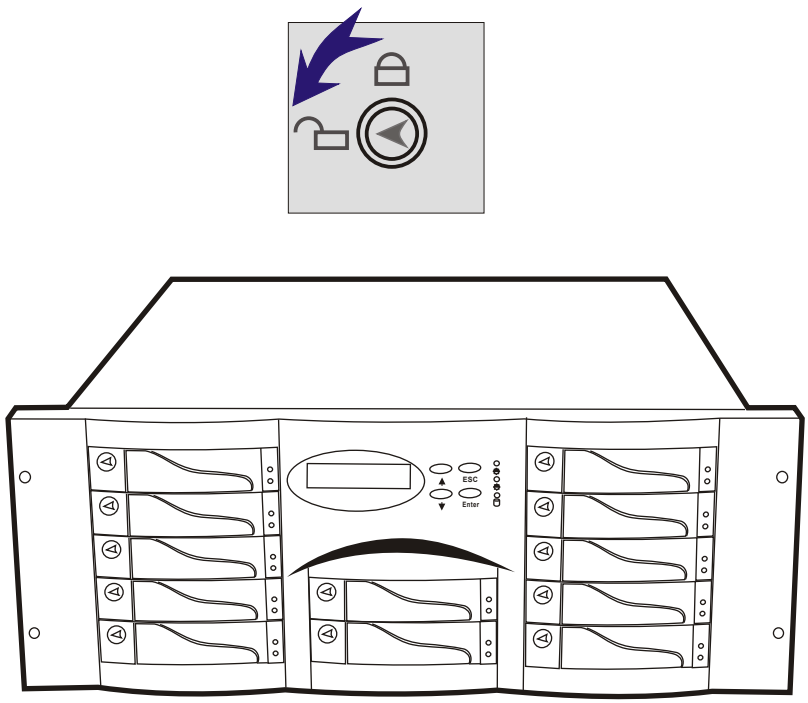



Figure : Swap HDD ( Unlock )

b. Gently pull-out the HDD tray

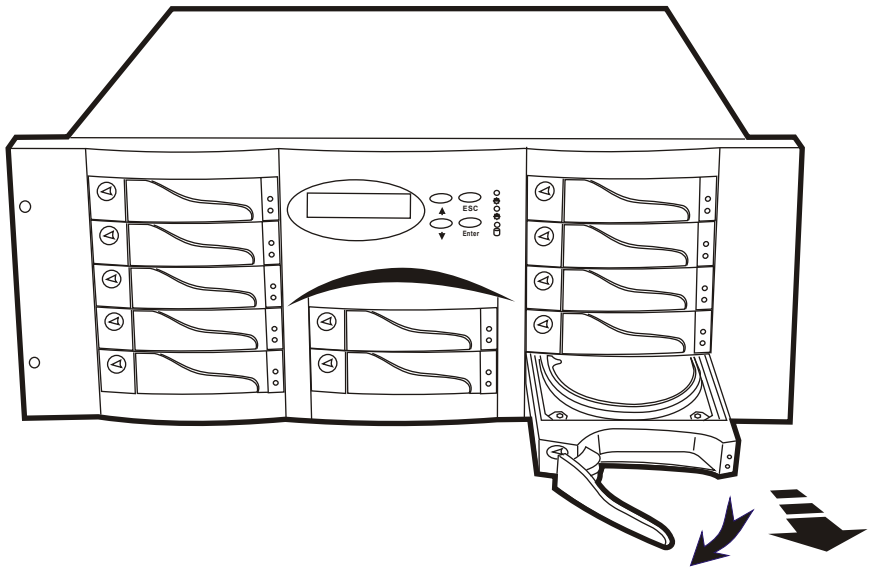



Figure : Swap HDD ( Pull-out )

c. Unscrew and unplug the cables

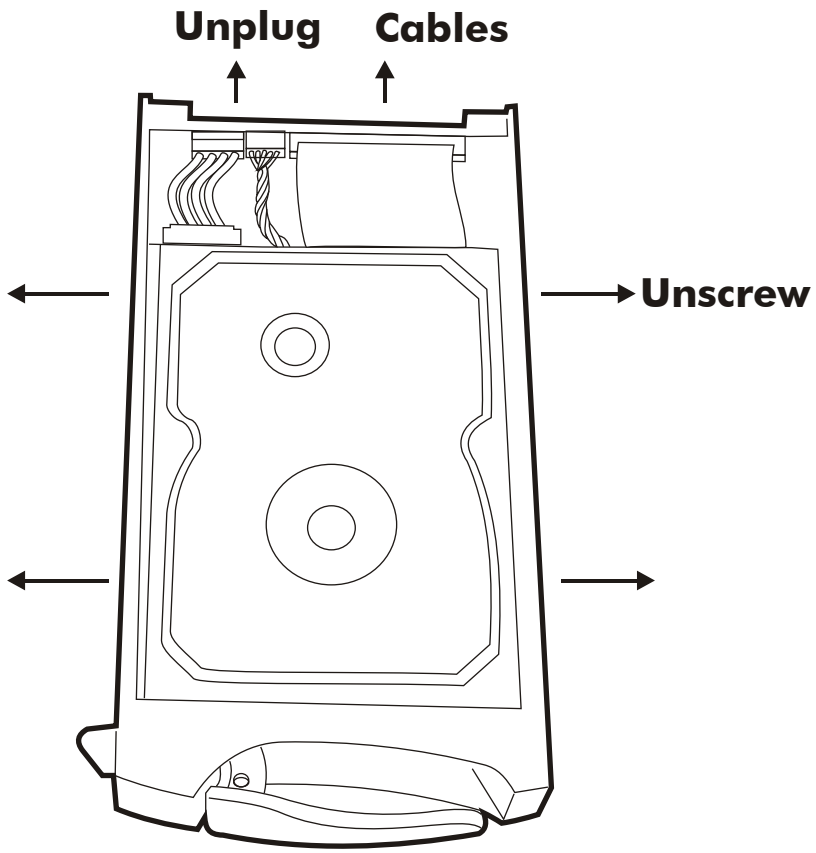



Figure : Swap HDD ( Unplug cables )

## d. Replace with a new Hard Disk Drive

It must be same capacity or greater than the faulty drive, if you replace with a Hard disk Drive of insufficient capacity, the Disk Array's built-in buzzer will sound and the intelligent Auto-Rebuild function will not be started.

* For best performance, we recommend you swap with an identical Hard Disk Drive.

## e. Gently Slide-in the HDD tray and lock up to start the Auto-Rebuild

When you have installed the replacement disk drive, screw in all the screws and plug in the cables, you may now gently slide in the HDD tray into the chassis and lock up it.

* Data Auto-Rebuild will be started automatically when you lock up the HDD tray.

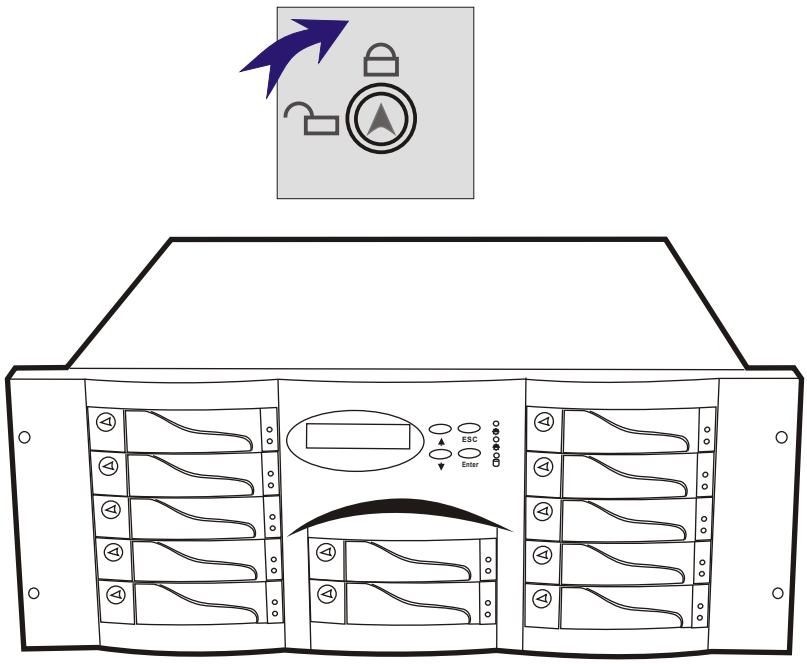



Figure : Swap HDD ( Lock Up )

## Removing / Installing the Redundant P/S Unit

There are two LED indicators on the front panel which display the status of the redundant power supplies. While the power supply is working properly the two LED indicators light up " Green ", if any one of them fail, the LED indicator will go off and the redundant power supply buzzer alarm will sound.

When you need to replace the redundant power supply unit , refer to the redundant power supply status LED indicator on the front panel to find the failed power supply unit and follow these steps to swap it.

### a. Unscrew the faulty unit

(For Safety reasons, you should switch off the faulty unit's power switch)

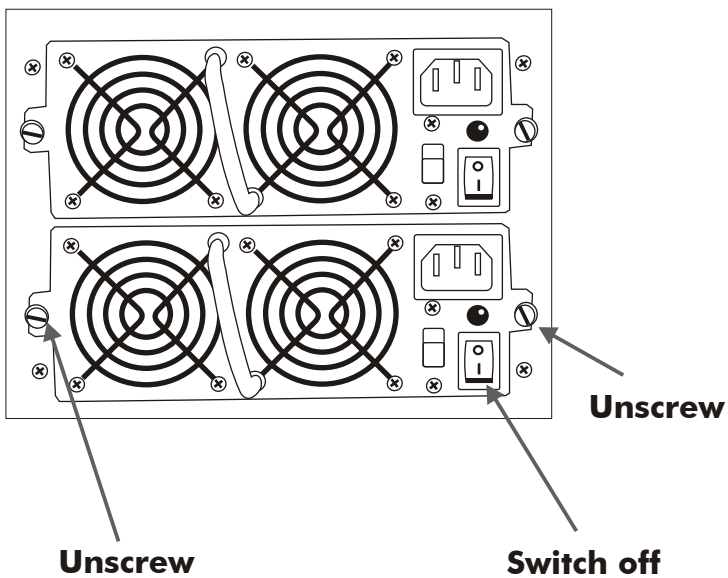



Figure : Swap P/S unit ( Unscrew )

## b. Replace with a new power supply unit

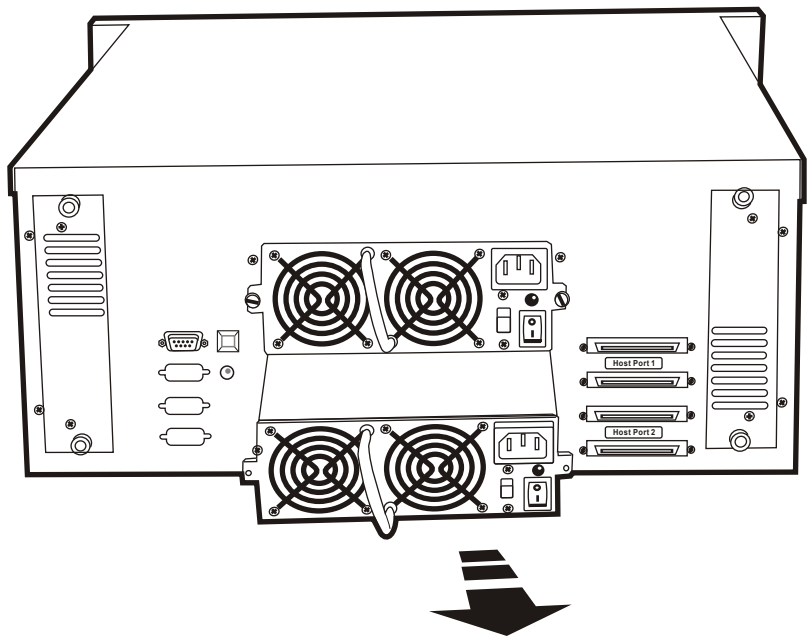


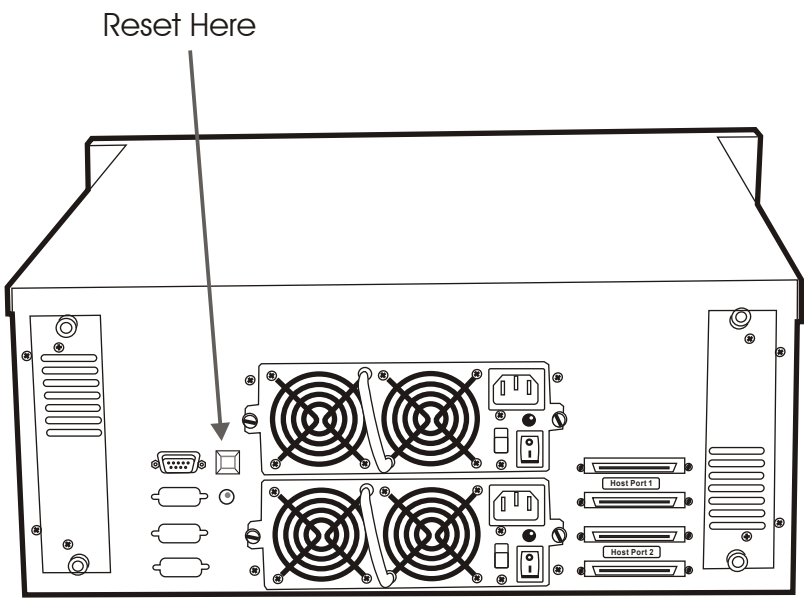

Figure : Swap P/S unit ( swap with a new unit )

## c. Press the Power Supply Alarm Reset switch

When you replace a new power supply unit, you should then push the power supply reset switch to stop the buzzer alarm and link the two power supply units together.

◎The new power supply unit will link with the other unit immediately and will start working after you press the power supply reset switch, and the buzzer warning noise will stop.

• Reset from the rear panel



## Removing / Installing Cooling Fans

- Unscrew the Fan door and open the door.

! Caution : Be careful , the high speed rotating fans may harm you. Don't touch the rotating Fans, If necessary, Unplug the Fan power connector first.

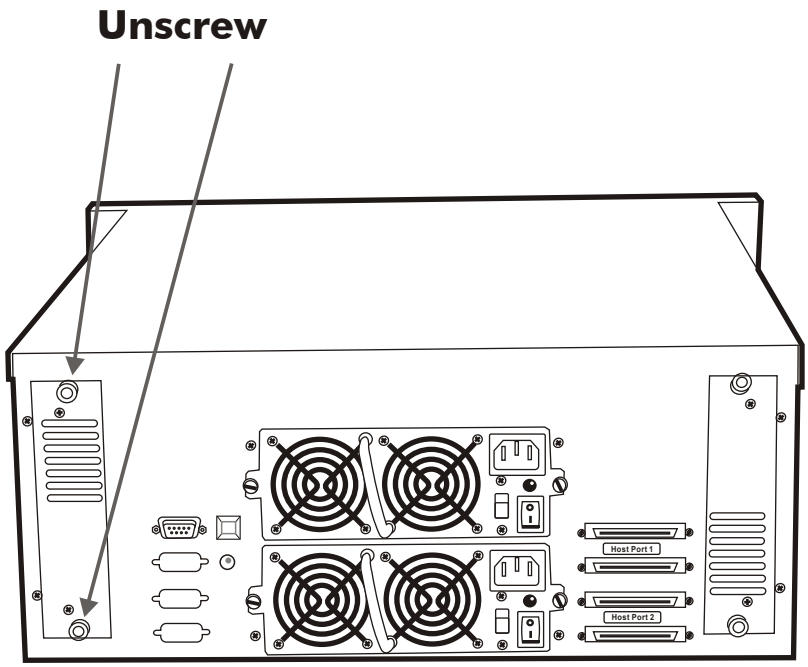



Figure : Swap cooling Fan ( Unscrew )

- Unplug the Fan connector
- Unscrew the faulty cooling fan and replace with a good one

  ☆**Important !** The cooling fan's air flow must point to the fan door, please refer to the label on the cooling fan.

- Plug in the fan connector, close the fan door and screw it in

  **! Caution :** The cooling fan will rotate immediately when you plug in the fan power connector.

☆ <u>The Cooling Fan will only fit in one orientation.</u>

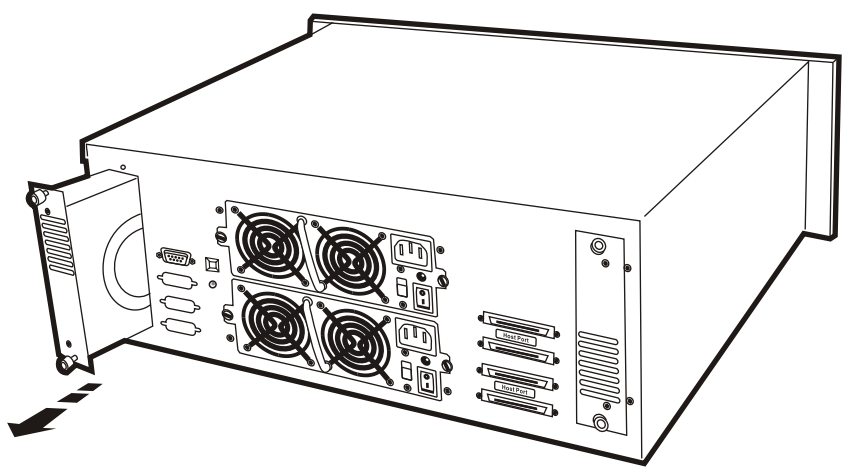


Figure : Swap Cooling Fan ( swap with a new Fan )

## Technical Specifications

| | |
|---|---|
| Microprocessor | Intel i80303 (64-bit RISC processor) |
| Cache Memory | 128MB*<br>Maximum 512MB |
| DRAM Slots | One |
| Module Type | 144 Pin DIMM |
| DRAM Type | SDRAM |
| DRAM Speed | PC100/133 |
| Parity | Non-Parity |
| Read Cache | Read-Ahead |
| Write Cache | Write Back* |
| Firmware | Flash EEPROM ,256K x 8 |
| SCSI I/O Processor | LSI SYM53C1010 |
| Serial Port | 1x RS232 (Asynchronous) Port |
| Ba ud Rate | 115,200 (Bits Per Second) |
| Da ta Bits | 8 |
| Sto p Bit | 1 |
| Pari ty | None |
| RAID Levels | 0 , 1 , 0+1, 3 or 5 |
| Data Transfer Rate | Up to 160MB/s (Synchronous) |
| SCSI ID Assignment | 0 ~ 14 ( 0* ) |
| Tagged-command queuing | Up to 255 simultaneous data requests |

| | |
|---|---|
| Interface : Host Channel | 2* Ultra 160 LVD SCSI (68 pin) |
| Disk Channels | 12* EIDE ATA-100 |
| Drives | Hot Swap, User Replaceable<br>Up to Twelve 3.5" drives ( 1" height ) |
| Maximum Fault Tolerant Capacity | >1TB |
| Drive MTBF | >1,000,000 hrs |
| Host Requirement | Host Independent |
| Operating Systems | O/S Independent and Transparent |
| Data Rebuild | Automatic Data Regeneration |
| LCD Display Panel | 2 x 16 Characters |
| Cooling Fans | 12cm DC-Blower<br>2 Fans |
| Power Supply Capacity | Dual 450W Independent Power Supplies |
| AC Input Voltage | 115 / 230V ( +/10% ) , 60/50 Hz |
| Environmental | |
| Relative Humidity | 10% to 85% Non-condensing |
| Temperature Operating : | 5℃～40℃ |
| Storage : | -25℃～60℃ |
| Safety testing | Under apply UL, CE and FCC Class B |
| Dimensions | 483mm(W) * 500mm(D) * 176mm(H) |
| Weight | 19.5 kgs ( W/O Disk Drive ) |

" * " Default Settings

*** Various trademarks belong to their respective owners.

## How to Setup Active Terminator

For better data integrity, we suggest you always add an active terminator on the Disk Array.

Please follow the Steps below :

### *1. Plug-in the Terminator before Power-On :*

You can find two ports for the host channel adapter on the back of Disk Array. You can connect the top one with your Host Computer, and plug in the active terminator on the second one.

### *2. Turn the Software Termination OFF :*

You must "disable" the SCSI terminator on the Disk Array built-in configuration program.

A. Press the "Enter" button on the front panel to access the built -in configuration program.

B. Go to " Termination " and select "Disable" than "Save & Restart" the Disk Array.

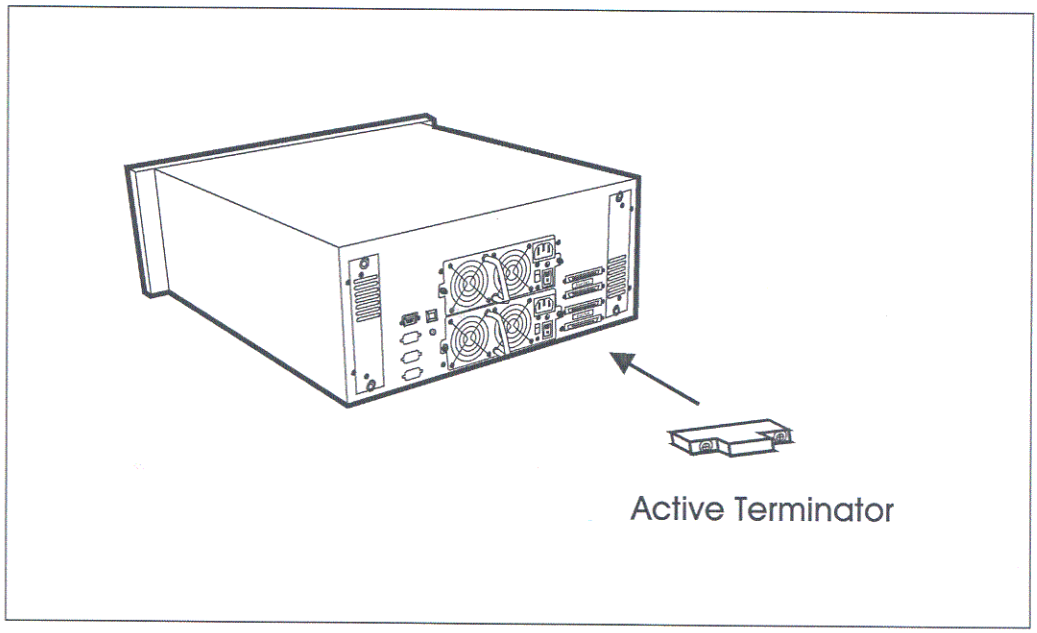



Figure : Active Terminator

# Warning and Certifications

## FCC (applies in the U.S. and Canada)

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with this user's guide, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

* Reorient or relocate the receiving antenna.
* Increase the separation between the equipment and receiver.
* Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
* Consult the dealer or an experienced radio/TV technician for help.

This device complies with Part 15 of FCC Rules. Operation is subjected to the following two conditions:

1) this device may not cause harmful interference, and
2) this device must accept any interference received, including interference that may cause undesired operation.

## Warning:

Use only shielded cables to connect I/O devices to this equipment.

You are cautioned that changes or modifications not expressly approved by the party responsible for compliance could void you authority to operate the equipment.

CE This device is in conformity with the EMC