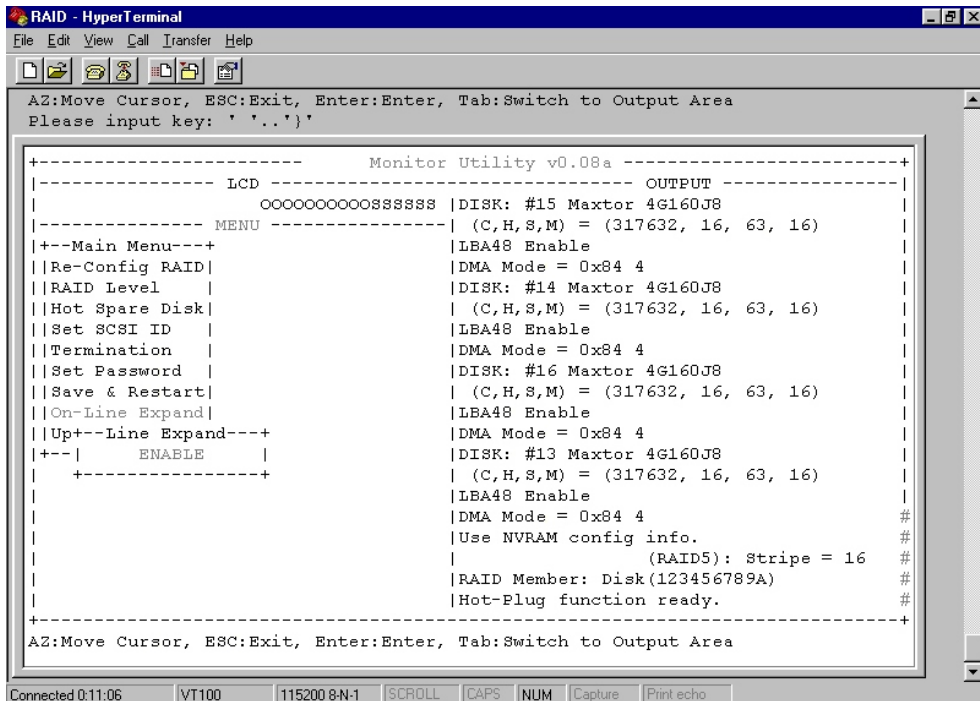## Capacity Expansion

The RAID capacity can be expanded by add one or more Disk Drive into the existing RAID group and properly setup procedures.

1. Add new HDD into the RAID system.

2. Configuration through the RS-232 Terminal mode, move the cursor to " **On-Line Expand** " and " **Enable** " and press " **Enter** " to confirm it.

(If you have not add any new HDD into the RAID group the " **Enable** " item will not show up.)

```
RAID - HyperTerminal                                              _ 8 X
File  Edit  View  Call  Transfer  Help

AZ:Move Cursor, ESC:Exit, Enter:Enter, Tab:Switch to Output Area
Please input key: ' '..'}'

+-----------------------        Monitor Utility v0.08a -------------------------+
|-------------- LCD ------------------------------- OUTPUT ---------------|
|              OOOOOOOOOOOSSSSSS |DISK: #15 Maxtor 4G160J8                |
|--------------- MENU ---------------| (C,H,S,M) = (317632, 16, 63, 16)    |
|+--Main Menu---+              |LBA48 Enable                             |
||Re-Config RAID|              |DMA Mode = 0x84 4                        |
||RAID Level    |              |DISK: #14 Maxtor 4G160J8                |
||Hot Spare Disk|              | (C,H,S,M) = (317632, 16, 63, 16)      |
||Set SCSI ID   |              |LBA48 Enable                             |
||Termination   |              |DMA Mode = 0x84 4                        |
||Set Password  |              |DISK: #16 Maxtor 4G160J8                |
||Save & Restart|              | (C,H,S,M) = (317632, 16, 63, 16)      |
||On-Line Expand|              |LBA48 Enable                             |
||Up+--Line Expand---+         |DMA Mode = 0x84 4                        |
|+--|      ENABLE     |         |DISK: #13 Maxtor 4G160J8                |
|   +----------------+          | (C,H,S,M) = (317632, 16, 63, 16)      |
|                               |LBA48 Enable                             |
|                               |DMA Mode = 0x84 4                      # |
|                               |Use NVRAM config info.                 # |
|                               |          (RAID5): Stripe = 16         # |
|                               |RAID Member: Disk(123456789A)          # |
|                               |Hot-Plug function ready.               # |
+-------------------------------------------------------------------+
AZ:Move Cursor, ESC:Exit, Enter:Enter, Tab:Switch to Output Area

Connected 0:11:06    VT100    115200 8-N-1   SCROLL   CAPS   NUM   Capture   Print echo
```

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

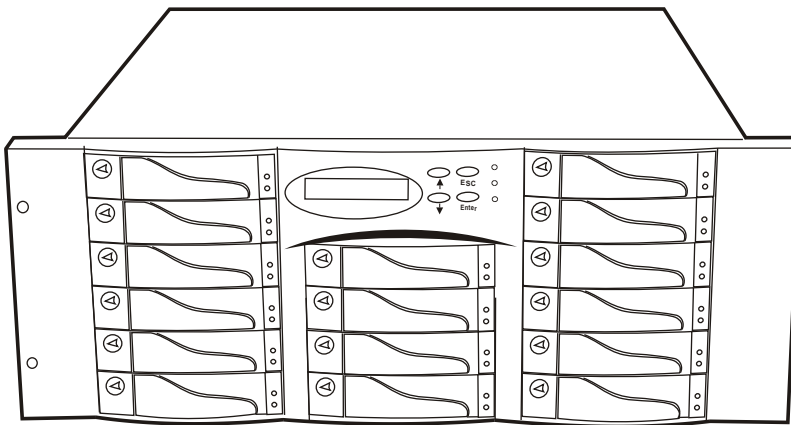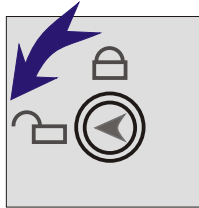### a. Unlock the HDD tray
(When a HDD error occurs, the HDD LED indicator lights up "RED")

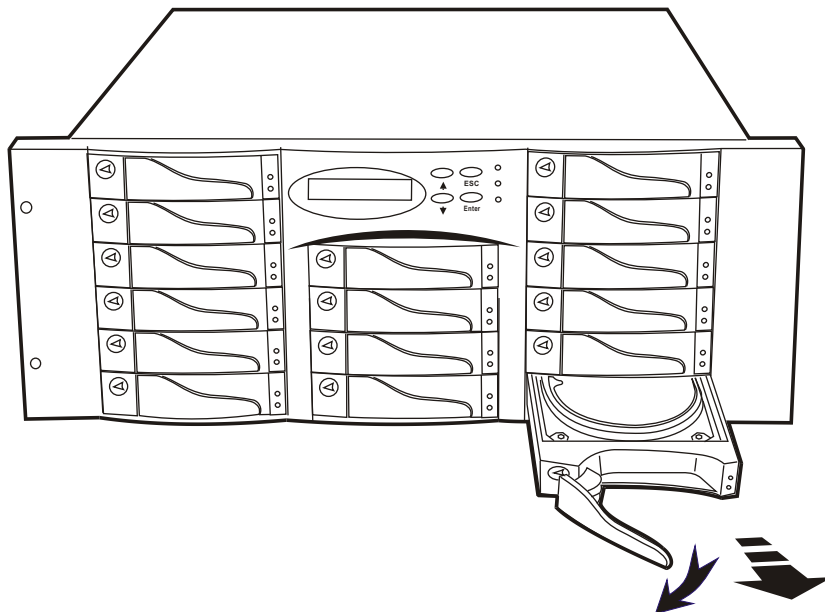Figure : Swap HDD (Unlock)

b. Gently pull-out the HDD tray

Figure : Swap HDD (Pull-out)

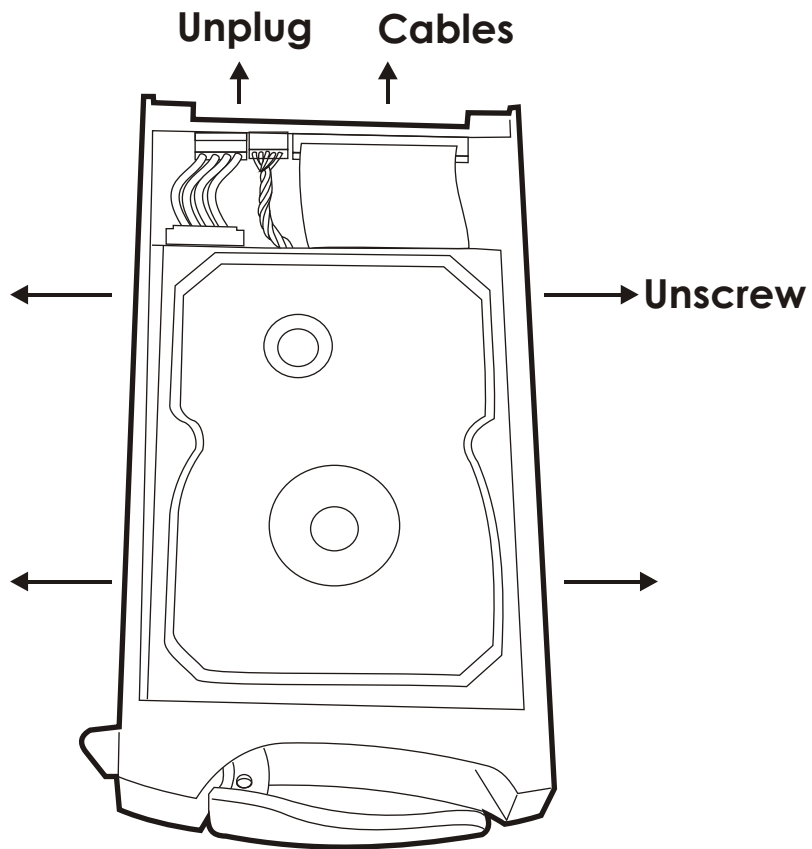c. Unscrew and unplug the cables

Unplug   **Cables**

Unscrew

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.

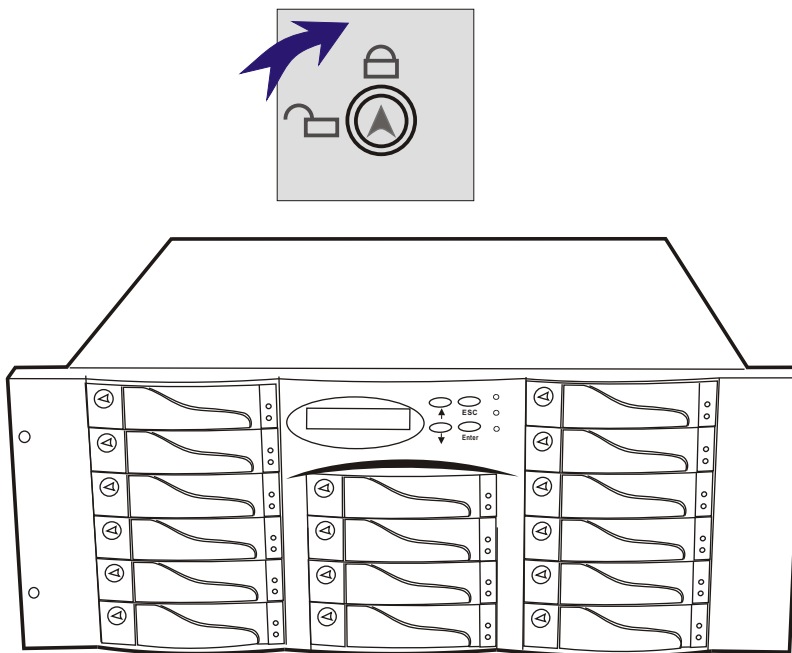* Data Auto-Rebuild will be started automatically when you lock up the HDD tray.

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 power-on the #1st LED indicators lights up " Green ", if any one them fail, the #2nd LED indicator will lights up " Red " and the power supply's 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 power supply to find the failed power supply unit (LED indicator go off) and follow these steps to swap it.

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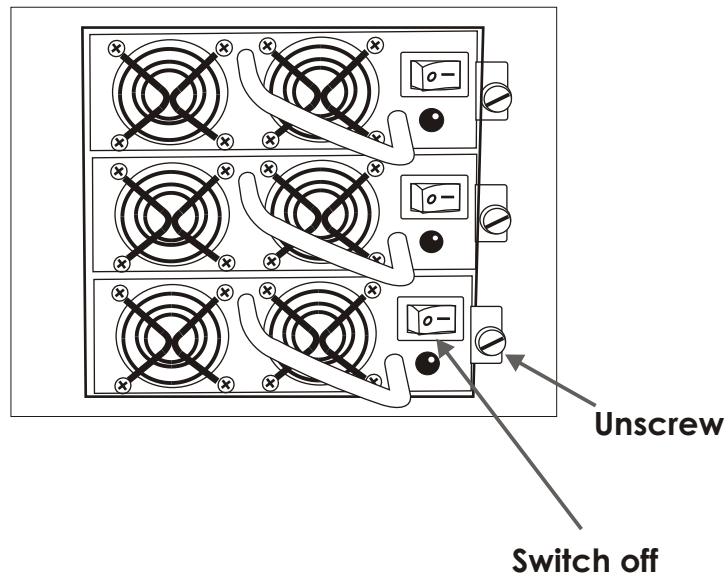(For Safety reasons, you should switch off the faulty unit's power switch)

Unscrew

Switch off

Figure : Swap P/S unit (Unscrew)

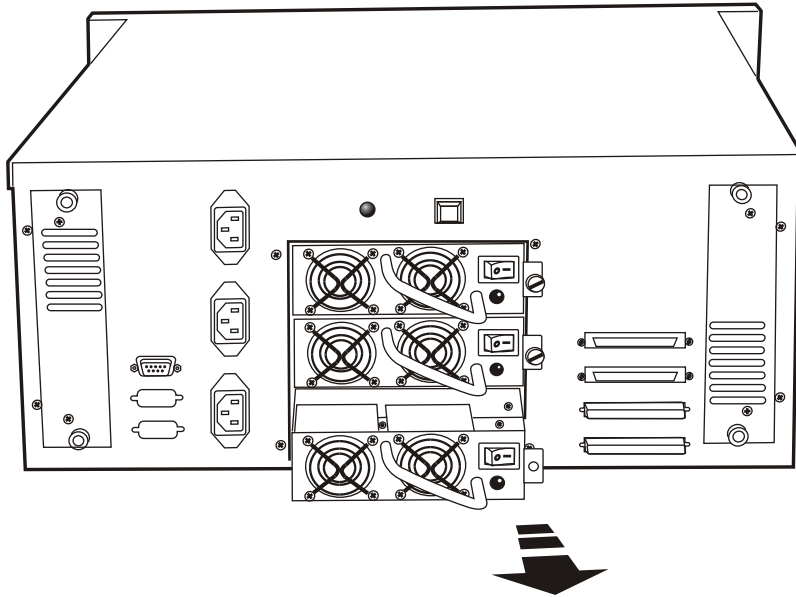## b. Replace with a new power supply unit

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

Reset Here
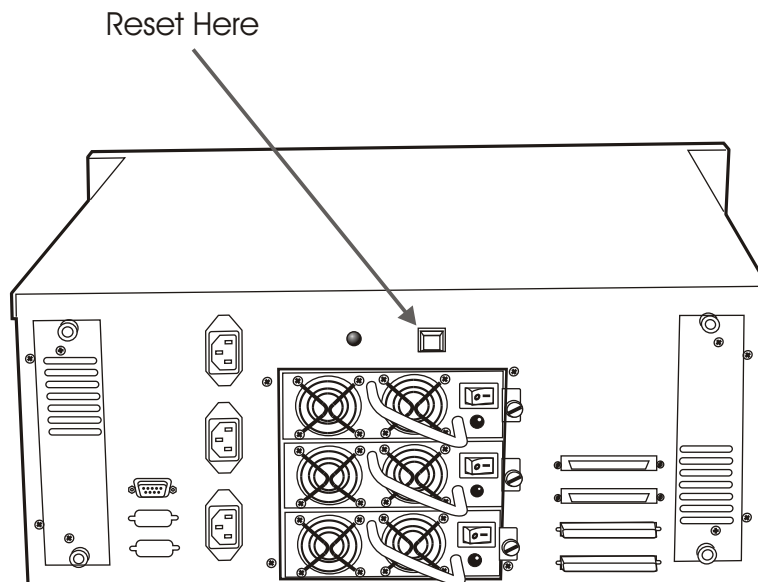
Removing / Installing Cooling Fans

· 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,
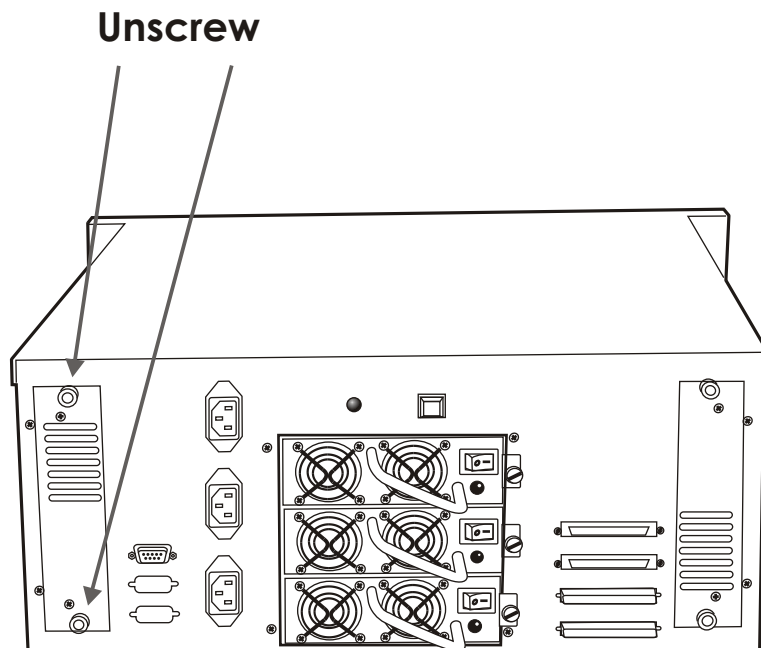Unplug the Fan power connector first.

Unscrew

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.
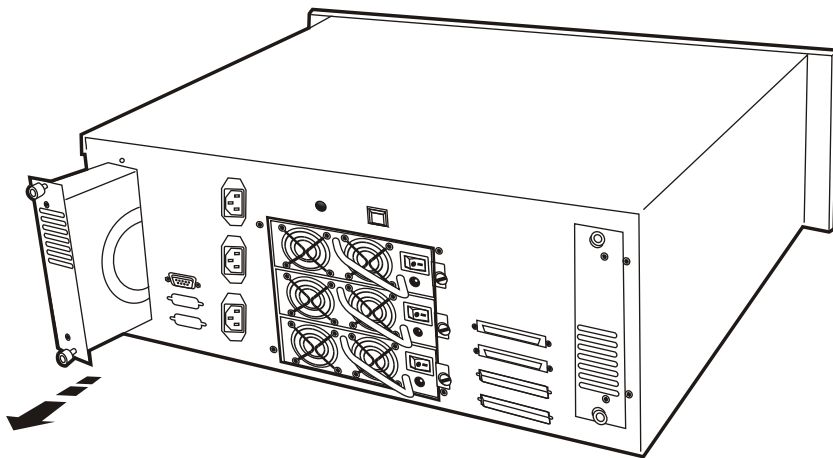
☆ **The Cooling Fan will only fit in one orientation.**

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

Technical Specifications

Microprocessor	Intel i80303 (64-bit RISC processor)
Cache Memory	128MB* 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   16* EIDE ATA-100

Drives   Hot Swap, User Replaceable
                                Up to Sixteen 3.5" drives (1" height)
Maximum Fault   >2TB
Tolerant Capacity

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
                                2 Fans

Power Supply Capacity   320W *3 Independent Power
                                Supplies

AC Input Voltage   90V ~ 260 V (+/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   25 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.
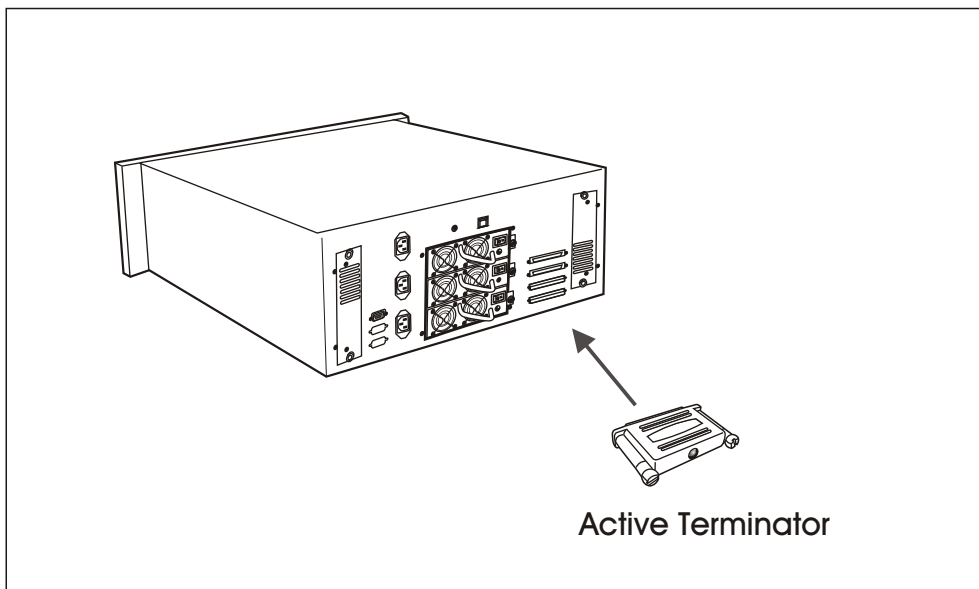B. Go to " Termination " and select "Disable" than "Save & Restart" the Disk Array.

Active Terminator

Figure : Active Terminator