Appendix C

Specifications

C.1 Technical Specifications

Environmental Specifications	
Humidity	5 ~ 95% (non condensing)
Temperature	*Operating*: 0º to 40ºC *Non-operating*: -20º to 60ºC
Altitude	*Operating*: 12 000 ft *Packaging*: 20 000 ft

Power Requirements	
Input Voltage	90VAC @ 8AC 260VAC @ 4AC with PFC (auto-switching)
Frequency	47 – 63Hz
Power Consumption	460W

Dimensions	
Height	131 mm
Width	447 mm
Length	500 mm
EMI/EMC	
• FCC Class-A • CE • UL	

Safety Requirements
• UL60950

Shock	
Half-sine	*Operating:* 10G peak, 11ms duration *Non-operating:* 100G, 180 in/sec 240G, 2ms, half-sine
Square	240G, 2ms, half-sine

Vibration	
Operating	5~500Hz, 0.5G, X/Y/Z
Non-operating	5~500Hz, 1.5G, X/Y/Z

Warning Alarms
• Audible Alarms, • System LEDs, • Event notification via the RAIDWatch manager

C.2 Controller Specifications

C.2.1 Configuration

Specification	
RAID Levels	0, 1(0 + 1), 3, 5, 10, 30, 50, JBOD, and Non-RAID disk spanning
Host O/S Compatibility	Host O/S Independent
Host Interface	2GB FC **OR** SCSI-160
Host Channels	Pre-configured host channels
Drive Interface	Support up to 16 Channels of 1.5GB SATA.
Drive Channels	All drive channels are pre-set and cannot be changed.
Cache Mode	Write-through or write-back
Cache Memory	Up to 1GB SDRAM with/without ECC, non-register
Number of LUNs	Up to 32 per SCSI ID
Multiple Target ID's/host Channel	Yes
Aliases for target IDs	Yes
Firmware on Flash Memory	Yes
Drive Hot-swapping	Yes
Controller Hot-swapping	Yes (redundant controller models only)

C.2.2 Architecture

Specification	
Dimensions (W x L)	255mm (L) x 142mm (W)
CPU	400MHz PowerPC 750Cxe
Fibre Controllers	Qlogic ISP2312
DIMM Slot	One 168 pin DIMM module
PC-133 Support	Yes
ASIC	64-bit chipset
Flash ROM	32Mbit (4MB)
NVRAM	32Kb with RTC
Hardware XOR	Yes
I/O Channel Bandwidth	1 – 2GB/s
Real-Time Clock	For Event Messages with time record

C.2.3 Environmental Specifications

Specification	
Input Voltage	+5V DC +12V DC
Power Consumption	
MTBF (under 40°C)	> 300 000 hours > 280 000 hours
Operating temperature	0 – 40ºC
Relative Humidity	15 ~ 95% non-condensing
Altitude	0 – 40 000ft

C.3 Drive Tray Specifications

Specification	
Tray Pitch	27.6mm
Tray Width	< 110mm
Tray Carrier Depth	180mm
Tray Plastic Depth	30mm
Total Depth	210mm (= 180mm + 30mm)
Key Lock	Yes

C.4 Power Supply Specifications

Specification	
Dimension	265mm (D) x 107mm (W) x 42.2mm (H)
Nominal Power	460W
DC output	**12.0V:** 32A – 38A (peak) **5.0V:** 25A **3.3V:** 20A
Input Frequency	47 ~ 63Hz
AC Input	90VAC @ 8AC – 260VAC @ 4AC with PFC
Power factor correction	Yes
Hold-up time	At least 16ms at 115/230VAC full load after a loss of AC input
I^2C	Through backplane to controller
Over temperature protection	Lost cooling or excessive ambient temperature
Cooling Fans	Two fans for each unit (inside PSU)

C.5 RAID Management

S ecification	
Performance Monitoring	Yes
Remote control and monitoring	Yes
Event Broadcast/Alert	Yes (via Java-based RAIDWatch manager and Event Monitor)
Event Notification	Yes (Via RAIDWatch's sub-module, NPC)
Hardware Connection	In-band over Fibre, Ethernet, or RS-232C
Configuration on Disk	Configuration Data stored on disks for logical drive assemblies to exist after controller replacement.
Failure Indicator	Via Alarm, LCD Panel, RAIDWatch Manager, or terminal emulation.

C.6 Fault Tolerance Management

Specificat on	
Drive S.M.A.R.T Support	Yes (with user-configurable detect only, clone and replace and perpetual clone functions).
Battery Back-up option	Yes
ISEMS (Info Simple Enclosure Management Service) via I^2C interface	Yes
Automatic Drive Failure Detection	Yes
Automatic rebuild on spare drives	Yes
Regenerate Logical drive parity	Yes
Bad block re-assignment	Yes
Automatic rebuild upon failed drive replacement	Yes

Manual Clone of suspected failed drive	Yes
Concurrent Rebuild on Multiple drive in a RAID (0 + 1) logical drive	Yes
Salvage the 2nd temporary failed drive in a RAID 1, 3 or 5 logical drive	Yes
Salvage the 1st temporary failed drive in a RAID 0 logical drive	Yes

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