

# SA2U-12EHP

RUGGED NEBS LEVEL 3  
MIL-STD-810F QUALIFIED  
RACKMOUNT RAID

## RUGGED ENTERPRISE CLASS

SYSTEMS ENGINEERED TO PERFORM®



### Built in Redundancy

- Data rates up to 4Gb/sec (Fiber Channel)
- RAID 0, 1, 3, 5, 6, 10, 50
- Redundant, hot swap components
- Built-in snapshot capability
- Built-in volume copy capability
- Built-in schedule capability

### Scalability and Performance

- Dual RAID controller or JBOD
- 12TB base capacity that scales to 216TB
- OS Support - Windows, Linux, SuSE, Solaris

### Compliance and Certifications

- RoHS-5 and WEEE compliant
- Certified to NEBS Level 3 requirements
- Tested to meet MIL-STD 810F requirements for Land, Sea and Air deployment.

The SA2U-12EHP features a 12-drive array housed in a 2 rack unit (2U) enclosure providing 4Gb FC interfaces to internal SAS or SATA-II disk drives. The use of a dual internal SAS interface allows up to nine disk enclosures (including the RAID enclosure) delivering a total of 108 drives. The SA2U-12EHP adapts to a broad range of applications, and the capability to mix both SATA and SAS technology within a single disk enclosure provides an optimum tiered storage environment for Information Lifecycle Management.

### Revolutionary Performance, Availability, and Quality

The SA2U-12EHP uses revolutionary new technology that instantly and simultaneously mirrors cache between RAID controllers, leading to significant performance improvements over traditional implementations. The use of RAID cache batteries has been completely eliminated with the introduction of super capacitors, providing infinite cache backup during a power loss while being environmentally friendly. The SA2U-12EHP can be configured with built-in volume snapshot capability allowing point-in-time copies that can be used to maximize business continuity. Additional capability creates a full volume copy (vs. a logical volume copy) providing additional protection against disk failure and eliminating application I/O contention when accessing the same data blocks.

The SA2U-12EHP has been independently tested and certified as compliant to the appropriate telecommunications industry standards including NEBS Level 3 and the rigorous MIL-STD 810F requirements of the US Department of Defense for air, land and sea deployment).

### Storage Made Easy

Easily configure and manage the SA2U-12EHP with the intuitive Web Based Interface (WBI), which provides storage setup and monitoring without the need for host based software.



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## NEXT GENERATION SOLUTION

<b>General</b>		<b>SHOCK AND VIBRATION</b>	
Product Type	RAID, JBOD	Shock, Operational	5.0G, 10ms, half sine
Chassis Configuration	2U	Shock, Non-Operational	15G 11ms, half sine originally
Disk Architecture	3Gb SAS/3Gb SATA-II	Vibration, Operational	0.21Grms Random 5Hz to 500Hz
Max Drives per Chassis	12 drives		flat spectrum/feed forward
Total Capacity	12TB/108TB (with expansion trays)	Vibration, Non-Operational	0.5G 1 octave/minute 5Hz to 500Hz
			to 5Hz sine sweep
			0.5Grms Random 20Hz to-1000Hz
			flat spectrum
<b>Total Disks</b>		<b>High-Availability Features</b>	
Mounting Options	108	Redundant Hot-Swap Controllers	Yes
Max Number of Chassis	19" Rack, Rack tray	Redundant Hot-Swap Disk	Yes
Max Capacity per Chassis	9 (1 RAID and 8 JBOD)	Redundant Hot-Swap Fans	Yes
	24TB (2TB SATA-II drives)	Redundant Hot-Swap Power	Yes
		Dual Power Cords	Yes
		Hot Standby Spare	Yes
		Automatic Failover	Yes
		Multi-Path Support	Yes
		On-line Firmware Upgrades	Yes
		Snap Shots	Yes
		Volume Copy	Yes
<b>HOSTS</b>		<b>REGULATORY</b>	
Supported Hosts	Up to 8 direct connected hosts, 2/4 Gbit FC	<b>Safety</b>	
Interface Type	FCP	UL 60950-1:2003 (USA)	
External Ports	4/8 Dual Controller	CAN/CSA-C22.2 No.60950-1-03 (Canada)	
		EN 60950-1 :2001 + A11 (EU)	
		IEC 60950-1 :2001 (International)	
<b>Drives</b>		<b>Electromagnetic Compatibility</b>	
Max Number of Drives	108	CFR 47 Part 15 Subpart B (U.S.A., Class A) ICES-003 Issue 4 (Canada, Class A) EN 55022 :98 + A1 + A2 (EU, Class A) EN61000-3-2: 2000+A1,+ A2,+ A14 (Harmonics) EN 61000-3-3 :2001 (Flicker) EN 55024 :1998 + A1 (EU,Immunity) EN 300 386 v1.3.3 CISPR 22 :2005 (International, Class A) CISPR 24 :97 International, Immunity) GR-1089-CORE Issue 4 (NEBS)	
Drive Options	3Gb SAS 146GB 15K RPM 3Gb SAS 300GB 15K RPM 3Gb SAS 450GB 15K RPM 3Gb SATA-II 500GB 7200 RPM 3Gb SATA-II 750GB 7200 RPM 3Gb SATA-II 1TB 7200 RPM 3Gb SATA-II 1TB 5400 RPM 3Gb SATA-II 2TB 5400 RPM		
		<b>Environmental</b>	
		GR-63-CORE Issue 3 (NEBS) ETSI EN 300 019-2-1 v2.1.2 (EU, Class 1.2) ETSI EN 300 019-2-2 v2.1.2 (EU, Class 2.3) ETSI EN 300 019-2-3 v2.1.2 (EU, Class 3.2) Acoustics ISO7779 / ISO9296	
<b>RAID</b>		<b>RoHS and WEEE</b>	
Levels Supported	NRAID, 0,1,3,5,6,10, and 50	RoHS-5 Compliance , China RoHS, WEEE	
RAID Type	Hardware		
Cache Memory	1GB per controller	<b>Country Approvals</b>	
Cache Backup	Yes, battery-free protection	Australia/New Zealand, Canada, China (PRC), European Union (EU), Germany (GS Mark), Japan, South Korea, Taiwan, United States	
Virtual disks per System	32		
Volumes per virtual disk	256		
Volumes per System	512		
Mirrored Cache	Yes		
Super Capacitor Cache Backup	Yes		
Cache Backup to Flash	Yes - Non-volatile		
<b>MANAGEMENT</b>			
Interface Types	Mini DB9 RS232, 10/100 Ethernet		
Protocols Supported	SNMP, SSL, SSH, SMTP		
Management Consoles	WEB GUI, CLI		
Management Software	Yes		
<b>POWER REQUIREMENTS – AC INPUT</b>			
Input Power Requirements	100-240VAC 50/60Hz 4.5–1.9A		
Max Input Power	500W max maximum cont		
Heat Dissipation	1706 BTUs/hour		
<b>POWER REQUIREMENTS – DC INPUT</b>			
Voltage	-39 to -72VDC, -48/-60V nominal		
Max Input Power	500W maximum continuous		
Heat Dissipation	1706 BTU/hour		
<b>TEMPERATURE AND HUMIDITY RANGES</b>			
Operating Temperature	41°F to 104°F (5°C to 40°C)		
Shipping Temperature	-40°F to 158°F (-40°C to 70°C) Note: Derate 2°C for every km, up to 3000 meters		
Operating Humidity	10% to 90% RH @ 104°F (40°C) non-condensing		
Non-Operating Humidity	Up to 93% RH @ 104°F (40°C) non-condensing		
<b>DECLARED ACOUSTIC NOISE LEVELS</b>			
Sound Power	< 6.03B Sound Power		
Sound Pressure	< 55dBA Sound Pressure		
		<b>SUPPORT</b>	
		Software Warranty	90 Days
		Standard Hardware Warranty	36 Months
		Environmental Monitoring	Yes, via SNMP, CLI, RAIDar, SMTP
		Phone-home Capability	Yes
		Remote Diagnostics	Yes
		Non-disruptive Updates	Yes
		Non-disruptive Volume Expansion	Yes
		<b>PHYSICAL</b>	
		Height	3.5 Inches / 8.9cm
		Depth (excluding cables)	23.7 Inches / 60.2cm
		Width	17.6 Inches / 44.7cm
		Chassis Weight	45lbs. / 20.5kg
		Chassis w/500GB Drives Weight	66lbs (array only) / 29.94kg

