areca ®
At the Heart of Storage

ARC-8040 RAID Subsystem

(8-Bays 6Gb/s SAS to SAS RAID Subsystem)

Compact 8-Disk RAID

- 800Mhz RAID-On-Chip
- Up to 6Gb/s per SAS port
- Greater than 2TB per disk drive support

SAS for Maximum Scalability

The ARC-8040 is the most complete 8-bay subsystem with RAID control capabilities. The ARC-8040 unleashes a truly innovative 6Gb/s SAS to SAS RAID solution for both PC and Mac. SAS 2.0 is designed for backward compatibility with SAS 1.0, twice speed data transfer 6Gb/s than previous available. The SAS 2.0 interface supports both 6Gb/s SAS disk drives for data-intensive applications and 6Gb/s SATA drives for low-cost bulk storage of reference data. The ARC-8040 supports flexibility interface configuration; one 4 lanes 6Gb/s SAS host with one 4 lanes 6Gb/s SAS expander or two 4 lanes 6Gb/s SAS host for easy expansion and performance. When expander port used with SAS 6Gb/s expander, the ARC-8040 can provide up to (122) devices through one or more 6Gb/s SAS JBODs, making it an ideal solution for enterprise-class storage applications that call for maximum configuration flexibility.

Unsurpassed Data Availability

Designed and leveraged with Areca's existing high performance solution, this controller delivers high-capacity at the best of cost/ performance value. It supports the hardware RAID 6 engine to allow two HDDs failures without impact the existing data and performance. Its high data availability and protection derives from the many advanced RAID features. The ARC-8040 RAID subsystem allows easy scalability from JBOD to RAID. It can be configured to RAID levels 0, 1, 1E, 3, 5, 6, 10, 30, 50, 60, Single Disk or JBOD. With innovative new RAID-on-Chip 6Gb/s SAS feature and support for SATA, SAS and SSDs, the ARC-8040 provides small to mid-sized enterprises with superior levels of RAID performance and scalability for external storage. Using cost-effective SATA disk drive and completely integrated high-performance and data-protection capabilities, it can meet the performance and features of a midrange storage product at an entry-level price.

Unparalleled Performance

The 6Gb/s host interfaces make ARC-8040 RAID subsystem well suited for professionals who need large capacity and exceptional performance with connectivity. The ARC-8040 incorporates onboard high performance 800MHz RAID-on-Chip storage processor and on-board 512MB DDR2-800 SDRAM memory to deliver true hardware RAID. Applications demand for higher computing power, networking bandwidth and support for virtualization applications are driving RAID subsystem for improved architecture internal bus interface and RAID performance. The powerful new LSI's LSISAS2116 6Gb/s SAS RAID-on-Chip integrated 16 x 6Gb/s SAS ports on chip delivers high performance for NAS, server RAID solutions, supercomputing, near-line backup, security systems, streaming and cloud computing applications.

Easy RAID Management

Configuration and monitoring can be managed either through the LCD control panel, RS232 port or Ethernet port. The firmware also contains an embedded terminal emulation via the RS-232 port. The firmware-embedded web browser-based RAID manager allows local or remote to access it from any standard internet browser via a 1Gb/s LAN port. The controller also supports API library for customer to write its own monitor utility. The Single Admin Portal (SAP) monitor utility can support one application to manage multiple RAID units in the network. The Disk Stress Test (DST) utility kicks out disks meeting marginal spec before the RAID unit is actually put on-line for real business. The hardware monitor can monitor subsystem environment and show the warning message.

Adapter Architecture

- 800 MHz RAID-on-Chip for RAID core and SAS microcode
- 512MB on-board DDR2-800 SDRAM with ECC protection
- NVRAM for RAID event log & transaction log
- Write-through or write-back cache support
- Redundant flash image for adapter availability
- Real time clock support
- Battery Backup Module ready (Option)

RAID Features

- RAID level 0, 1, 1E, 3, 5, 6, 10, 30, 50, 60, Single Disk or JBOD
- Multiple RAID selection
- Online array roaming
- Offline RAID set
- Online RAID level/stripe size migration
- Online capacity expansion and RAID level migration simultaneously
- Online volume set growth
- Instant availability and background initialization
- Automatic drive insertion / removal detection and rebuilding
- Support global and dedicated hot spare
- Greater than 2TB per volume set (64-bit LBA support)
- Greater than 2TB per disk drive
- Disk scrubbing/ array verify scheduling for automatic repair of all configured RAID sets
- Login record in the event log with IP address and service (http, telnet and serial)
- Support intelligent power management to save energy and extend service life
- Support NTP protocol to synchronize RAID controller clock over the on-board LAN port
- Max 122 devices
- Max 128 LUNs (volume set) per controller

Monitors/Notification

- Push Buttons and LCD Display Panel for setup and status
- Environment and drive failure indication through LCD, LED and alarm buzzer
- Keep silent and adequate air flow and cooling by intelligent cooling fan speed controller
- Subsystem management ready (SES-2)

Drive Interface

- Up to 8 x 6Gb/s internal port
- Up to 122 devices using SAS expanders (one external SFF-8088 connector port1)
- Up to 6Gb/s per port

Host Interface

- 6Gb SAS-to-SAS
  One (port0) or two (port0 & port1) external SFF-8088 6Gb/s SAS ports-600MB/sec per PHY link

RAID Management

- Field-upgradeable firmware in flash ROM
- Firmware-embedded manager via RS-232 port and LCD
- Firmware-embedded browser-based RAID manager, SMTP manager, SNMP agent and Telnet function via 1Gb/s LAN port
- API library for customer to write its own monitor utility
- SAP management feature to easily manage multiple RAID units in the network

Software Drivers

- OS Independent

LCD Panel with Keypad

RS232
LAN Port
SAS Port (Host)
SAS Port (Host/JBOD)

◀ ARC-8040 Rear Side

◀ ARC-8040 Front Side

ARC-8040 RAID Subsystem

Form Factor	Compact – 8 Disk Compact Tower
Operation temperature	0° ~ 40°C
Operation humidity	5% ~ 95 %, Non-condensing
Cooling Fan	2 x 2700rpm/0.135A Brushless Fan
Power Supply/In/out	220W / 90-256V AC / +12V/16A, +5V/16A, +3.3V/14A
Dimension (W x H x D)	146 x 302 x 290 mm
Weight	14.9 lbs / 6.8Kg (Without Disk)

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