AVAGO TECHNOLOGIES | STORAGE BY LSI™

Product Brief

Avago Syncro® 9380-8e Solution

Shared DAS High Availability with MegaRAID® Data Protection

Key Features

- Shared storage in a 12Gb/s DAS infrastructure
- Cost-effective high availability
- 2x the throughput from the previous generation
- Facilitates application failover for 2-node server clusters and large virtualized environments utilizing server cluster pairs
- Reduced latency on server failure migration
- Simple, easy to manage uptime solution
- Built on MegaRAID reliability and data protection

Avago Syncro solutions deliver a simple, cost effective means to achieve continuous application uptime and enterprise-level data protection. Built on MegaRAID technology, the Syncro solution provides high-availability features, consistent with Storage Area Networks (SANs), at a cost and support model consistent with Direct Attached Storage (DAS) environments. Small and medium businesses (SMBs), remote offices and data centers can utilize existing administrative infrastructure while ensuring that critical applications remain up and running.

The Next Generation of High Availability Direct Attached Storage

The Avago Syncro 9380-8e uses the Serial Attached SCSI (SAS) interconnect to share storage and communicate between server nodes. This enterprise-level storage medium allows each Syncro controller to measure the opposing controller's heartbeat while maintaining coherency of WRITE-back cache.

The 12Gb/s Avago Syncro controllers deliver continuous application availability and shared storage with twice the SAS throughput of the previous generation. Doubling the speed of the SAS bus means more consistent heartbeat monitoring and reduced cache transfer occupancy while moving twice the data from storage in the same amount of time.

Advanced Caching with Zero Data Loss

Avago maintains its commitment to data protection through Syncro caching for performance acceleration. In the event of a power failure or server failure, unprotected WRITE-back cache data can be lost from DRAM. Measures must be taken to ensure that data in DRAM is preserved and maintained to avoid application/OS corruption or file loss.

Avago CacheVault® technology protects against power outages by directing WRITE-back cache data to non-volatile flash at the instant power is lost. Temporary power, provided by a low-maintenance supercap energy cell, enables DRAM to off-load the data to flash components. Once power is restored, WRITE-back data is returned to DRAM so applications can return to normal operation.

In the event of a primary server failure, applications are transferred to run on a secondary server node. The secondary server will need access to the Syncro 9380-8e WRITE-back data from the primary server in order to prevent data loss and allow the applications to run continuously. The Syncro cache coherency solution maintains a mirror copy of the primary server's controller WRITE-back cache data on the secondary server's controller. The high-speed SAS interconnect provides a direct link for cache data mirroring between Syncro controllers. This optimal solution protects data and maintains application continuity while accelerating WRITE performance.

Avago Syncro 9380-8e	
Solution Provided	Fully redundant shared storage and application failover for ROBO, SMB and data center customers without the cost and complexity of storage networking hardware.
In the Box	• Two (2) Syncro CS 9380-8e HA controllers with CacheVault (each includes CV power module, CV clip and remote cable) • Getting Started Guide • Two (2) LP Brackets
Controller Physical Dimensions	MD2 Low Profile (6.6" x 2.5")
Controller Internal Connectors	Two mini-SAS HD x4 SFF-8644
Device Support	Up to 96 ea 12G SAS and/or NearLine-SAS dual-ported HDDs and SSDs (w/SCSI-3 Persistent Reservation Command) Up to 31 6G SAS enclosure/expander devices Maximum of 120 dual-ported SAS devices in the HA storage domain. Please see on-line compatibility matrix on lsi.com
Host Bus Type	x8 lane PCI Express® 3.0 compliant
Data Transfer Rates	Up to 12Gb/s per port
I/O Processor / SAS Controller	LSISAS3108 Dual-Core RAID on Chip (ROC)
Cache Memory	2 GB 1866MHz DDRIII SDRAM
Cache Protection	MegaRAID CacheVault flash cache protection (included)
Key High Availability Features	• Dual Active HA w/shared storage across 2 server nodes • Server Storage Cluster HA topology support • Write Back HA cache mirroring • Up to 64 virtual drives with Shared host access • Up to 64 virtual drives with Exclusive host access • Planned/Unplanned failover modes
Key RAID Data Protection Features	• RAID levels 0, 1, 5, and 6 • RAID spans 10, 50 and 60 • Auto resume after loss of system power during array rebuild • Single controller Multipathing (failover) • Single controller Load Balancing • Configurable stripe size up to 1MB • Fast initialization for quick array setup • Check Consistency for background data integrity • Patrol read for media scanning and repairing • 64 virtual drive support per controller (64 total in HA domain) • Up to 64TB LUN support • DDF compliant Configuration on Disk (COD) • S.M.A.R.T support • Global and Dedicated Hot Spare Support –Automatic rebuild –Enclosure affinity • Enclosure management –SES (inband) • 4K native Drive support • 512e Drive support • DIF Drive support • SED/FDE Drive support
SSD Optimization	MegaRAID Fast Path Software for Syncro designed to provide high-performance I/O acceleration for SAS SSD arrays connected to Syncro controllers
Controller Operating Temperature	Maximum ambient: Controller Card with included CacheVault module: 55°C
Controller Operating Voltage	+3.3V, +12V
Controller MTBF (Calculated)	1,343,187 hours
Hardware Warranty	3 years, free technical support, advanced replacement option
Regulatory Certifications	EN55022, EN55024, EN60950, EN 61000-3-2, EN 61000-3-3; FCC Class A, Class B; UL1950; UL; CSA C22.2; VCCI; RRL for MIC; BSMI;C-tick; RoHS; WEEE
Syncro CS Management	MegaRAID Management Suite™: MegaRAID Storage Manager™, StorCLI (command-line interface), WebBIOS, SMI-S
Compliances	EMC: Class B-US (CFR 47, P15B); Canada (ICES-003); Japan (V-3/02.04); Europe (EN55022/EN55024); Australia/New Zealand (AS/NZS 3548); Safety: EN60950
OS Support	Microsoft® Windows® Server 2008 R2 & SP2 (64 bit); Microsoft Windows Server 2012, Storage Server 2012 (64 bit); Microsoft Windows Server 2012 R2, Storage Server 2012 R2(64 bit); Red Hat Enterprise Linux 6.4 and 6.5; SuSE Linux Enterprise Server 11 SP2 and SP3

Ordering Information

Ordering Part Number	Description
LSI00458	Syncro 9380-8e kit with two (2) controller cards and two attached CacheVault modules with separate supercap modules.

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Visit the Avago Storage by LSI website at: lsi.com