

## Avago Syncro® 9361-8i Solution

### Shared DAS High Availability for Cluster-in-a-Box



#### Key Features

- Shared storage in a 12Gb/s DAS infrastructure
- Cost-effective high availability for Cluster-in-a-Box
- 2x the throughput from previous generation
- Facilitates application failover for internal Cluster-in-a-Box nodes
- Reduced latency on server failure migration
- Simple, easy to manage uptime solution
- Suitable for small business and data centers alike
- Built on MegaRAID® reliability and data protection

Achieve continuous application uptime and enterprise-level data protection that is also simple and cost-effective with Avago Syncro solutions. Developed for Cluster-in-a-Box systems, the Syncro 9361-8i provides high-availability features, consistent with Storage Area Networks (SAN), at a cost and support model consistent with Direct Attached Storage (DAS) environments. Small and medium businesses, remote offices, and data centers can all utilize existing administrative infrastructure while ensuring critical applications remain up and running.

#### The Next Generation of High Availability Direct Attached Storage

The Avago Syncro solution uses a self-contained 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 9361-8i delivers 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.

#### Reduced Footprint Cluster-in-a-Box

Controlling resource costs is paramount to the success of any business. Data centers, small and large, control costs by managing server power, space and cooling requirements. Cluster-in-a-Box delivers on data center cost requirements by providing multiple server nodes in a single, reduced form factor chassis. These self-contained server clusters share common components, minimizing the necessary power and cooling required for maintaining multiple single-node servers.

#### Coherent Caching for Performance Acceleration

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 controller's WRITE-back data from the primary server in order to prevent data loss, and allow the applications to run continuously. The Syncro cache coherency 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 9361-8i	
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	<ul style="list-style-type: none"> <li>• Two (2) Syncro CS 9361-8i HA controllers with CacheVault (each includes CV power module, CV clip and remote cable)</li> <li>• Getting Started Guide</li> <li>• Two (2) LP Brackets</li> </ul>
Controller Physical Dimensions	MD2 Low Profile (6.6" x 2.5")
Controller Internal Connectors	Two mini-SAS HD x4 SFF-8643
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 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 <sup>®</sup> 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	<ul style="list-style-type: none"> <li>• Dual Active HA w/shared storage across 2 server nodes</li> <li>• Server Storage Cluster HA topology support</li> <li>• Write Back HA cache mirroring</li> <li>• Up to 64 virtual drives with Shared host access</li> <li>• Up to 64 virtual drives with Exclusive host access</li> <li>• Planned/Unplanned failover modes</li> </ul>
Key RAID Data Protection Features	<ul style="list-style-type: none"> <li>• RAID levels 0, 1, 5, and 6</li> <li>• RAID spans 10, 50 and 60</li> <li>• Auto resume after loss of system power during array rebuild</li> <li>• Single controller Multipathing (failover)</li> <li>• Single controller Load Balancing</li> <li>• Configurable stripe size up to 1MB</li> <li>• Fast initialization for quick array setup</li> <li>• Check Consistency for background data integrity</li> <li>• Patrol read for media scanning and repairing</li> <li>• 64 virtual drive support per controller (64 total in HA domain)</li> <li>• Up to 64TB LUN support</li> <li>• DDF compliant Configuration on Disk (COD)</li> <li>• S.M.A.R.T support</li> <li>• Global and Dedicated Hot Spare Support <ul style="list-style-type: none"> <li>–Automatic rebuild</li> <li>–Enclosure affinity</li> </ul> </li> <li>• Enclosure management <ul style="list-style-type: none"> <li>–SES (inband)</li> </ul> </li> <li>• 4K native Drive support</li> <li>• 512e Drive support</li> <li>• DIF Drive support</li> <li>• SED/FDE Drive support</li> </ul>
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

MPN:	OPN:	Description
05-25420-16	LSI00457	Syncro 9361-8i kit with two (2) controller cards and two attached CacheVault modules with separate supercap modules.



Visit the Avago Server Storage website at: [avagotech.com/server-storage](http://avagotech.com/server-storage)

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