



M RAID

Welcome to mRAID: The Next Generation of Storage Evolved

mRAID was specifically designed to meet the evolving challenges of modern broadcast and post-production storage infrastructures. It represents years of engineering development with strong input from our extensive user base, which includes some of the largest and most recognized media production companies in the world.

mRAID is more than a next-generation product, it's a technology platform showcasing the latest advancements in high-throughput, low-latency storage performance for real-world media applications. The mRAID employs a hardware and software architecture model designed specifically for expansion. From the SMP-aware Linux-based RAID kernel to the high-speed PCIe expansion I/O ports, mRAID is ready to take on your growing storage performance and capacity challenges.



Because mRAID is designed as an integral part of the mMedia Platform, it offers scalability in performance and capacity, while utilizing the single management interface that is shared between all mMedia Platform systems.

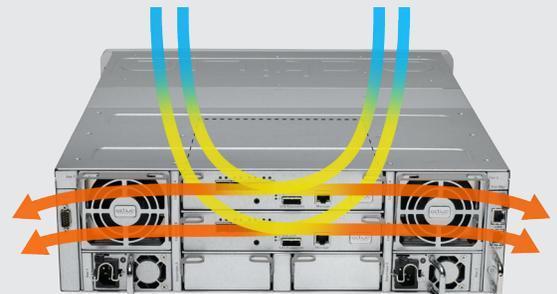
mRAID is designed to withstand the grueling 24/7, 365 days a year deployments and severe duty cycles of media production and archive. Because mRAID is based on the same rock-solid RAID kernel and Linux OS that ActiveRAID uses, you can rely on it to perform flawlessly under the harshest conditions. With thousands of ActiveRAIDs deployed in the largest and most punishing media production environments, Active Storage, Inc. knows what it takes to meet deadlines and offer consistent results.

Key Features

- Unmatched performance optimized for mSAN and Xsan® networks
- Next-generation storage processor design
- Proprietary self-optimizing architecture
- Native Mac OS X management suite
- iOS/iPhone™ Active Viewer monitoring app
- Enterprise performance and reliability without enterprise complexity
- Ready to deploy right out of the box
- Active Storage Management Suite profiling and statistical monitoring tools

Superior CrossFlow Cooling™ Design

Our CrossFlow Cooling design ensures that every component in the system receives equal airflow and cooling to help eliminate hot spots and component failure. This includes proper cooling of the hard drives, RAID controllers, backup batteries and I/O systems. Our CrossFlow Cooling design is also highly efficient, not only using less power during normal conditions, but also providing ample cooling headroom when used in less than ideal conditions and under heavy loads.



Environmental Processing Engine™

mRAID's processing power is immense. It can move huge amounts of content from the SAN to disk and back, leaving additional headroom for other functions such as optimizations, Active Storage's proprietary adaptive caching routines, background data scrubs, as well as error checking. The one area we did not want mRAID's processor to be loaded down was the uninterruptible power supply (UPS) control and environmental process handling. The Environmental Processing Engine is a new feature of the mRAID—although the concept is well proven. This control center for the system environment is a dedicated, specialized processor that controls systems indicators, out-of-band communications with expansion systems, and UPS control.

Advanced System Design

The system design of the mRAID is based on everything Active Storage has learned over years of building award-winning storage systems and servers, and our latest mSAN appliance design. Quite simply – mRAID is designed to deliver the highest possible throughput and the lowest latency. The overall design is a complete integration of hardware and software, leveraging the strengths of each in order to produce a cost-effective, highly-reliable platform.

Unmatched Application Performance

- RAID kernel and open controller design provide an unmatched level of fine-grain tuning and minimum overhead
- Designed specifically for modern OS systems
- Redundant pathing, multiple Fibre Channel ports and large caches guarantee maximum bandwidth
- Controllers automatically balance load to provide highest throughput as user needs grow

Modern, High Availability

- All components are redundant – controllers, drives, and power supplies
- Failover and failback are truly seamless
- Native support for Mac OS X multipathing
- Complete support for all popular UPS systems
- SNMP and CLI support for enterprise environments
- Automatic parity rebuild and data integrity check
- Battery-backed cache – guaranteed 72-hour support

Management for Today and Tomorrow

- Apple-friendly native Mac OS X management suite
- iOS/iPhone™ Active Viewer monitoring app
- E-mail notification engine
- Bonjour discoverable out of the box
- Set up one or one hundred systems with no scripting
- Non-disruptive software and firmware updates

Technical Specifications

RAID Support

- **RAID Levels:** JBOD, 0, 1, 5, 6, 10, 50, 51, 60
- **LUN Support:** Auto-configuring for performance, up to 512 LUNS
- **Drive Roaming:** Full support between primary and secondary expansion systems
- **Redundant:** True active/active operation with seamless failover and failback
- **Sparing:** Global hot sparing
- Online data scrubbing with online parity regeneration
- Bad array recognition and repair
- Full S.M.A.R.T. reporting

Configurations

- 16 drive 6Gb SATA III per primary or expansion system
- SMP-aware designed RAID controller, 4GB cache per controller mirrored across bidirectional paths
- Primary System Features: Active/active quad channel 8Gb Fibre Channel to SAS RAID controllers, 8 x 8Gb/s ports, dual 6Gb SAS I/O, independent management/ enclosure monitoring

Statistics

- Full per port statistics package with graphs and charts
- Controller CPU load (percentage of idle time free)
- Fibre Channel activity reporting
- Fibre bit error rate
- Fibre average throughput (MB/s)
- Fibre IOPS
- Cache hit ratio statistics per LUN (Volumes)

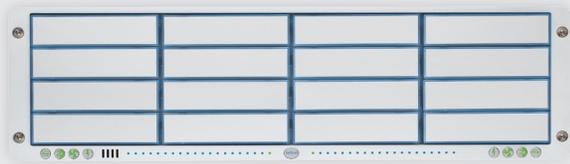
- Average throughput per LUN (Volumes)
- IOPS per LUN (Volumes)
- Average throughput per LUN (MB/s)
- Number of stripes remapped by the controller per disk

Management and Monitoring

- Out-of-the-box support on Mac OS X v10.5, v10.6.x (Intel®), and v10.7.x
- Guided setup assistance can be used to optimize configuration of a single system in a single location, or multiple systems in single or multiple locations
- 128-bit SSL security on Active Admin™ management tool
- Support for all popular UPS systems and controls
- Automated software update service
- Online portal support for analysis of event log transactions
- Non-disruptive firmware upgrades
- Remote diagnostics and service center monitoring and analysis tool
- Drag-and-drop configuration tool for sophisticated and complex environments
- Proprietary performance profiling for determining future requirements

System Based Monitoring

- Front: Fibre Channel activity and link per controller, drive activity and system status. RAID controller, cooling modules, system temperature, and power supplies.
- Rear: All modules are field replaceable and have health and status indicators



Front view



Rear view

Configurations

48TB SATA III

64TB SATA III

128TB SATA III

Overall Capacity

48TB expands to 228TB by adding mVault

64TB expands to 304TB by adding mVault

128TB expands to 608TB by adding mVault

Hard Drive Modules

Hot swap 3TB 64MB cache

Hot swap 4TB 64MB cache

Hot swap 8TB 64MB cache

Controller Type and Spec

Active Storage Design, quad 8Gb/s FC, 4GB Cache

Active Storage Design, quad 8Gb/s FC, 4GB Cache

Active Storage Design, quad 8Gb/s FC, 4GB Cache

Power and Cooling

Redundant hot swap power and cooling Modules

Redundant hot swap power and cooling Modules

Redundant hot swap power and cooling Modules

Battery Back Up

Included – 72hr Support

Included – 72hr Support

Included – 72hr Support

Rack Mounting Kit

Included

Included

Included

Suggested Retail†

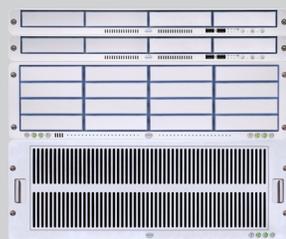
\$19,999

\$23,999

\$34,999

*Usable capacity will vary depending on drive configuration and RAID level

†Suggested MSRP in U.S. Dollars for North America. Pricing in other currencies and locales may differ to reflect local exchange rate and shipping. Please contact your reseller or Active Storage for more information for your region.



mMedia is more than a collection of components, it's a complete media creation storage platform that stores and manages content from ingest to archive.

The mMedia Platform is powerful yet simple. As a building block technology, the mMedia Platform provides all the components needed to build end-to-end workflows. And because the mRAID is the heart of the mMedia Platform, future applications can meet future needs.

The combination of mSAN, mRAID and mVault can meet any online media production challenge. Nothing can scale to more users, greater resolutions or higher throughputs, all with the lowest latency and easiest deployment and management, using all the production tools and asset management software you are using today.

The mMedia Platform can manage your content from ingest to petabytes of content archive. You will not only have disk performance from your archive, but at a much lower cost and much smaller footprint than typical primary storage.