

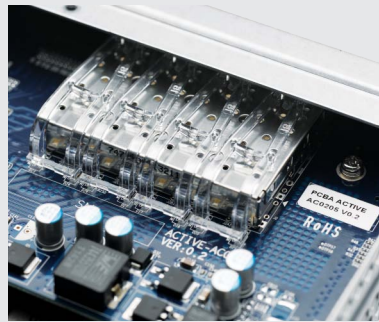
# M RAID



## Welcome to mRAID Meet the Next Generation of Storage Evolved

mRAID was designed specifically to meet the evolving challenges of modern broadcast and post production storage infrastructures. It represents many years of engineering development with the strong input of Active's 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 truly ready to take on the challenges of a growing storage performance and capacity requirements.



Because mRAID is designed as a component of the mMedia platform, it offers scalability in performance and capacity while utilizing the single management interface that is shared between all mMedia components.

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

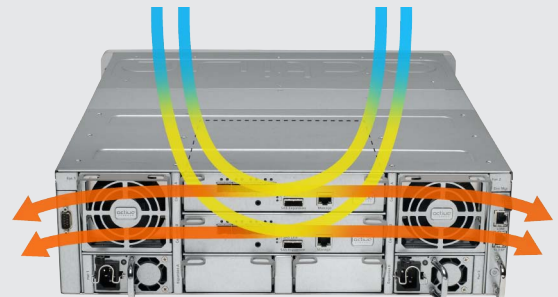
Your business cannot afford to fail; neither can your storage. If you care about performance, reliability, and finest support anywhere – mMedia is your only choice.

### Key Features

- Unmatched performance optimized for Xsan/StorNext and ActiveSAN networks
- Next Generation Storage Processor Design
- Proprietary self-optimizing architecture
- Native Mac OS X management suite
- iOS/iPhone™ monitoring app
- Enterprise performance and reliability without Enterprise complexity
- Ready to deploy right out of the box
- Performance profiling and statistical planning tools

### Superior CrossFlow Cooling™ Design

Our CrossFlow Cooling design ensures that every component in the system receives equal airflow and cooling to eliminate hot spots and component failure. This includes proper cooling of the hard drives, RAID controllers, back up batteries and IO systems. Our CrossFlow Cooling design is also highly efficient, not only using less power under normal conditions, but also providing ample cooling headroom when used in less than ideal conditions and 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's proprietary adaptive caching routines, background data scrubs, as well as error checking. But the one area we did not want mRAID's processor to be loaded down was UPS control and environmental process handling. The Environmental Processing Engine is a new feature with 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 has learned over many years of building award-winning storage systems and servers and our latest ActiveSAN appliance design. Quite simply – it's 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 on 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 multi-pathing
- Complete support for all popular UPS systems
- SNMP and CLI support for Enterprise environments
- Automatically 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 monitoring app
- Email 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
- On-Line data scrubbing with on-line parity regeneration
- Bad Array recognition and repair
- Full SMART reporting

### Configurations

- 16 Drive 6Gb SATA III per primary or expansion system
- SMP-aware designed RAID controller, 4GB cache per controller mirrored across bi-directional paths
- Primary System Features: active/active quad channel 8Gb Fibre to SAS RAID controllers 8 x 8Gb/s ports, dual 6Gb SAS IO, 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)

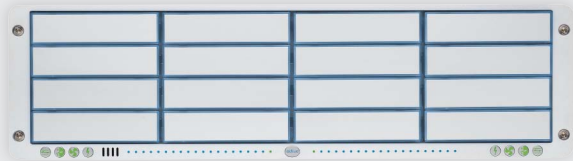
- Average throughput per LUN (Volumes)
- IOPS per LUN (Volumes)
- Average throughput per LUN (MB/s)
- Number of stripes remapped by the controller per disk

### Management and Monitoring

- Out-of-the-box support on Mac OS X v10.5, v10.6.x (Intel), and v10.7x
- 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
- On-line 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

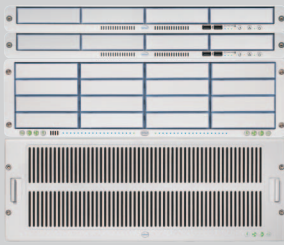
- **Front Panel** – Fibre Channel activity and link per controller, drive activity and system status – RAID controller, cooling modules, system temperature, power supplies
- **Rear Panel** – All modules are field replaceable and have health and status indicators



mRAID, Front



mRAID, Rear



More than a RAID system, mRAID is a key building block in the mMedia Platform. mMedia is a complete media creation storage platform that stores and manages content from ingest to archive.

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

The combination of mRAID and ActiveSAN can meet any on-line 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.

## Pricing

	48TB SATA III
<b>Overall Capacity</b> ††	48TB expands to 228TB by adding mVault enclosure
<b>Hard Drive Modules</b>	Hot swap 3TB 64MB Cache
<b>Controller Type &amp; Spec</b>	Active Storage Design, Quad 8Gb/s FC, 4GB Cache
<b>Power &amp; Cooling</b>	Redundant hot swap power & cooling modules
<b>Battery Back Up</b>	Included - 72hr Support
<b>Rack Mounting Kit</b>	Included
<b>Suggested US Retail</b>	Contact your Active Storage Reseller for pricing

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