



Vmirror™ 4G

4Gbit/sec High-Availability Appliance for Xserve RAID with Video SAN Acceleration, Monitoring and Management



Built for 4 Gbit/second performance, Vmirror™ 4G is the newest addition to Vicom's family of high-availability SAN appliance and software solutions for Apple's Xserve RAID storage systems. Vmirror appliances add continuous, high-availability access and data protection to Apple storage systems—key requirements in business-critical server, digital video post-production, and broadcast applications.

Vmirror is designed for easy operation with Apple storage. Mirroring and failover is managed automatically by Vmirror, fully transparent to host system operations. To connected hosts, Vmirror-protected Xserve RAID appears as an unbreakable volume, impervious to component outages. No host software or drivers are required, reducing administration and eliminating CPU overhead.

Guaranteed Data Access

The Vmirror 4G appliance makes it easy to build a high-availability, enterprise-grade storage solution using Xserve RAID. Vmirror installs easily with dual Xserve RAID units and switches, and optionally, Xsan software, to create a high-performance storage system with instantaneous failover and no single point of failure. Embedded hardware mirroring protects data continuously with no CPU overhead, while clustered SAN engine operation creates and monitors redundant data paths between Xserve host and Xserve RAID storage. If component outage occurs, access is instantly switched to alternate storage ensuring applications continue to run without interruption. Depending on specific data protection and application needs, Vmirror can be used to mirror the entire data store, mission-critical data sets, or, metadata only when used with Xsan.

Enhanced Availability Options

Enhanced availability levels are additionally provided by Vpath™ software and specially designed Vmirror 4G hardware options. When installed on Xserve host systems, Vpath software continuously monitors HBA operation through the SCSI device services layer. By providing HBA failover protection in addition to safeguards built into Mac OS X device drivers, Vpath software ensures fast, trouble-free failover in the event of data path outages. For video applications, Vpath's *dual-channel read* option can be paired with *video read mode* to enable concurrent streaming of either primary or mirrored Xserve RAID LUNs at maximum rates based on caching and inter-switch traffic optimization. Should an interruption occur on the data path, Vmirror 4G shifts to the alternate path, at full streaming rates—with no frame drops.

Key Features

High Availability

Clustered, dual active-active appliance design combines with Xserve RAID to provide enterprise-quality storage solutions for business-critical IT and video applications.

Optional host software enhances availability and performance of business-critical video applications.

Continuous Data Protection

Embedded hardware mirroring protects data continuously in native Xserve RAID format with no CPU overhead.

Major Performance Boost for Xserve RAID

With a throughput of over 700 MB/second, Vmirror 4G accelerates Xserve™ RAID performance by 60-140 percent. Caching and selectable read and streaming optimization modes further enhance performance for video applications.

Easy to Manage

Simple, centralized appliance operation and administration. Administration performed using intuitive GUI from local or remote client.

Highly Affordable

The Apple-Vmirror solution offers a 3:1 to 5:1 competitive price advantage over conventional storage and video system alternatives.

Twice the Performance—and More

Vmirror 4G delivers a sustained throughput of over 700MB/sec when used with mirrored Xserve RAID, doubling the throughput achieved with the same storage and original Vmirror appliance. Faster throughput comes not only with 4Gbit Fibre Channel implementation, but also through caching and read and performance-enhancing options that include:

- LUN-selectable, *read and write caching* that uses sequential video streaming patterns and cache memory to reduce disk-related latencies.
- *Video read mode* that can be paired with Vpath's *dual-path* read option for isochronous high availability or *preferred path* read to increase overall throughput by increasing cache hit rates and reducing traffic between switches.
- A *command re-ordering* mode that enables sequential I/O reading, which accelerates read performance by reducing disk latencies.
- A *read/write filter command* option that eliminates video slowdowns caused by stream unfriendly commands such as "sync cache."

Video SAN Monitoring, Management, and Control

Designed to increase the number of SAN clients that Vmirror 4G can support, Vpath software increases overall performance by monitoring, controlling, and managing client I/O demands imposed on the Apple SAN. When installed on SAN-attached clients, this software provides:

- Tunable, failover sensitivity to reduce streaming interruptions caused by poor data path connectivity.
- Selectable, read-performance enhancement options including:

<i>Round robin</i>	Evenly distributes read operations among data paths.
<i>Preferred Path</i>	Directed access from single, preferred data path and in event of failure, from alternate path.
<i>Multi-read</i>	Reads issued to all available paths, and read from path where data is first available.
- I/O throttling for SAN-attached clients to ensure adequate bandwidth is continuously available for high-priority processes.

Vmirror 4G CONFIGURATIONS AT-A-GLANCE

Model Number	VM4-2-VS	VM4-2-VS-E
<i>Packaging</i>	1U enclosure with hot-swap SAN engines dual power supplies/fans	
<i>4Gb SAN Engines</i>	2	2
<i>Data Availability</i>	High	High
<i>Data Protection</i>	Continuous	Continuous
<i>Data Throughput</i>	700MB/sec	700MB/sec
<i>Host OS Support</i>	<i>Mac OS X , Windows, Linux, Solaris, VMware</i>	
<i>Max. Host Systems</i>	32	96
<i>Max. Xserve RAID</i>		
<i>Video</i>	8	8
<i>IT</i>	16	16
<i>SAN Client Software</i>		
<i>Vpath Licenses, Incl.</i>	2	2

Vicom Systems

Vicom Systems is a privately held company in Redwood City, California. Vicom specializes in the delivery of transparent, wire speed data services for systems and storage. Vicom delivers on the long-standing promise of SANs: seamless mobility and consolidation, any-to-any connection, simplified management, and high availability. Vicom products and services have been selected by OEMs including IBM, Sun Microsystems, and Hewlett-Packard. Enterprise and video customers include Deutsche Bank, Bloomberg, Caterpillar Tractor, NFL Films, and Korea Broadcasting.

