



Starboard AC72 Storage System™

Click. Provision. Perform.





The AC72 from Starboard Storage Systems is Application-Crafted Storage™, bringing the skills to manage enterprise-class storage within the reach of all IT administrators.

With simple, optimized application consolidation onto a single storage system, Starboard Storage dramatically simplifies managing mixed workload environments while delivering twice the performance at half the cost of legacy SAN and NAS systems. Starboard Storage tackles the toughest storage problem facing IT administrators at small and medium enterprises today — managing mixed storage workloads that include unstructured, virtualized, and structured data.

Simplify with Starboard Application-Crafted Storage

With the AC72's Application-Crafted Storage, you have the freedom to manage your applications, not your storage. The AC72 provides simple, efficient consolidation onto a single storage system, optimizing the configuration for each application by creating a Dynamic Storage Pool with virtual volumes tuned for each workload.

The Starboard Storage AC72 also introduces the SSD Accelerator Tier, a second-generation, autonomic tiering architecture that lowers operational overhead and provides predictable performance when and where it's needed. The SSD Accelerator Tier boosts performance for both reads and writes, providing optimally tuned storage that maintains consistently high performance for mixed workloads.

Combining dynamic storage pooling and automated SSD acceleration for each application workload offers small and medium enterprises a new level of simplicity in managing mixed workload environments.

In addition, Starboard Storage Apps simplify provisioning of volumes across multiple storage protocols including CIFS, NFS, iSCSI and Fibre Channel. Since the AC72 was specially designed to manage mixed workloads, IT administrators can dramatically reduce their time and costs in managing storage.

That's Application-Crafted Storage.

Starboard Storage has reduced the complexity of managing storage by introducing an advanced architectural system. Starboard provides real value by enabling storage to meet application demands with the use of dynamic pooling. Starboard manages to do this while improving performance that has been measured at a factor of 2X, while delivering the solution at half the cost of existing SAN and NAS systems.

*—Randy Kerns
Senior Strategist, Evaluator Group*

Save Costs and Consolidate Mixed Workloads

Starboard's next-generation Mixed-workload, Application-Crafted Storage Tiering (MAST) architecture introduces dynamic storage pooling, cutting administrative complexity in half by eliminating the concept of RAID groups. There's no more complicated RAID group setup or management, no meta-LUNs, no protocol layering, and no lengthy re-builds or re-striping.

The Starboard Dynamic Storage Pool is the missing link between the physical and virtual volumes, taking raw physical storage devices on one side and providing virtual LUNs with the required size, redundancy and storage class characteristics on the other.

You get simple and cost-effective scalability with the ability to mix and match drive speeds and capacities; adding drives results in an immediate boost in capacity and performance. The storage pool is thin provisioned, and the AC72 offers space reclamation in those environments that support the capability. Dynamic pooling also increases reliability, offering a radically improved management scenario for administrators juggling mixed workloads.



The AC72 provides an efficient, dynamic storage pooling architecture that provisions optimized storage for each workload.

Twice the Performance at Half the Cost

The Starboard Storage AC72 allows users to share information quickly and reliably by combining the virtually instantaneous access of solid state technology with the state-of-the-art performance optimization features of the SSD Accelerator Tier. You get twice the performance of traditional SAN/NAS systems at half the cost with a system optimized for both dollars per GB and dollars per IOP.

The AC72 intelligently understands the I/O characteristics of each application workload, and using the innovative Starboard Storage SSD Accelerator Tier, optimizes the performance per workload. Because of its design, the SSD Accelerator Tier is uniquely able to handle the dynamic requirements of unpredictable mixed workloads, with no management required. Rather than relying on complex upfront workload analysis and policy settings that make first-generation tiering architectures unresponsive to changing workloads, the SSD Accelerator Tier provides intelligent I/O stream detection to boost performance for both reads and writes on demand. Data is placed in the SSD Accelerator Tier and tiers of disk drives based on use, with hot data residing on the high-performance SSD drives that make up the Accelerator Tier.

The result is optimally tuned storage that maintains consistently high performance for mixed workloads. The AC72 Storage System offers the best density with leading dollar per GB and dollar per IOP, providing consistently balanced, industry-leading performance.

Whether you're storing and managing an ever-increasing number of large images, workflow documents, document management files, streaming video, email, or databases, the Starboard AC72 Storage System is optimized to bring a new level of simplicity to managing mixed workloads.

“With Starboard Storage, we were able to consolidate all data types under the AC72 to improve storage utilization and management. We’ve seen exceptional I/O performance, 20 times faster than the previous iSCSI solution.”

*–Shane Brown
CEO, DigeTekS*

Enterprise-Class Features

In addition to the simplicity, provisioning, and performance capabilities that set the AC72 Storage System apart from other mid-tier storage solutions, the AC72 offers the software features of an enterprise-class storage system and is built on a next-generation hardware platform. See Table 1 for a list of AC72 Storage System features.

Simplified Provisioning	
Dynamic Storage Pool	Storage capacity tuned for each workload <ul style="list-style-type: none">• Eliminates concept of RAID groups• No complex setup or management• No lengthy re-builds or risky re-stripes
Capacity Expansion	<ul style="list-style-type: none">• Capacity added on the fly with automatic load balancing across new drives; no re-stripes• Performance increases as drives are added
Performance	
SSD Accelerator Tier	Second-generation, autonomic tiering architecture that lowers operational overhead and provides predictable performance <ul style="list-style-type: none">• Built-in solid state drives with intelligent caching and data movement optimize system performance• Hot files are placed in the Accelerator Tier for performance• Natural Acceleration reduces the latency of other tiering architectures in moving large writes to disk
Enterprise Hardware	
Best-in-Class Hardware	<ul style="list-style-type: none">• Dual, fully redundant storage nodes• Multi-core CPUs and large memory footprint• 6Gb SAS disk drive infrastructure
Enterprise Features	
Management Console	Easy-to-use, professional management console, with intuitive reporting
Thin Provisioning	Fully automated thin provisioning delivers outstanding capacity utilization rates with no reservations, no administrative overhead, and absolutely no performance impact
Snapshots	Writable snapshots simplify backup and recovery processes
Remote Replication	Efficient asynchronous replication between remote sites to ensure business continuity

Table 1. Starboard AC72 Storage System Features

Enterprise-Class Hardware

The AC72 Storage System is built on next-generation hardware technology based on a fully redundant Storage Bridge Bay (SBB) 2.0 hardware architecture, Intel® Core 5600 processors, leading-edge solid state drives (SSD), SAS2 6Gb/s drive interface, and a dual passive backplane in a 3U 16-bay chassis — resulting in a winning combination of high performance, high capacity and high availability. With its redundant nodes, power supplies and fans, the AC72 provides a highly available, mission-critical platform to meet the most demanding application requirements. A patented airflow process increases CPU I/O efficiency resulting in higher CPU performance, lower energy costs and a lower total cost of ownership.

	Performance	Expandable Performance	Capacity	Expandable Capacity
Starting Capacity	7.2TB		24TB	
Standard Drives	12 X 15K rpm SAS		12 X 2TB nearline 7200 rpm SAS	
SSD Accelerator Tier	2 X 100GB mirrored write cache, 1 X 200GB spillover read cache			
Storage Nodes	Dual redundant hot swappable			
Software	Starboard OS with thin provisioning, replication and writable snapshots			
Processor(s) per Node	Single Intel Xeon™ 5600	Dual Intel Xeon™ 5600	Single Intel Xeon™ 5600	Dual Intel Xeon™ 5600
Memory per Node	24GB DDR3 ECC registered	48GB DDR3 ECC registered	24GB DDR3 ECC registered	48GB DDR3 ECC registered
I/O Interfaces per Node	Two PCIe ×4 and one PCIe ×8; Dual 1GbE ports for management Dual 10GbE interconnect (Internal); IPMI with KVM over LAN support			
Expansion Cards	1 and 10Gb Ethernet, 8Gb Fibre Channel			
Capacity Expansion via 6Gb SAS	2 ES16 or 1 ES45 Expansion shelves	6 ES16 or 5 ES45 Expansion shelves	2 ES16 or 1 ES45 Expansion shelves	6 ES16 or 5 ES45 Expansion shelves

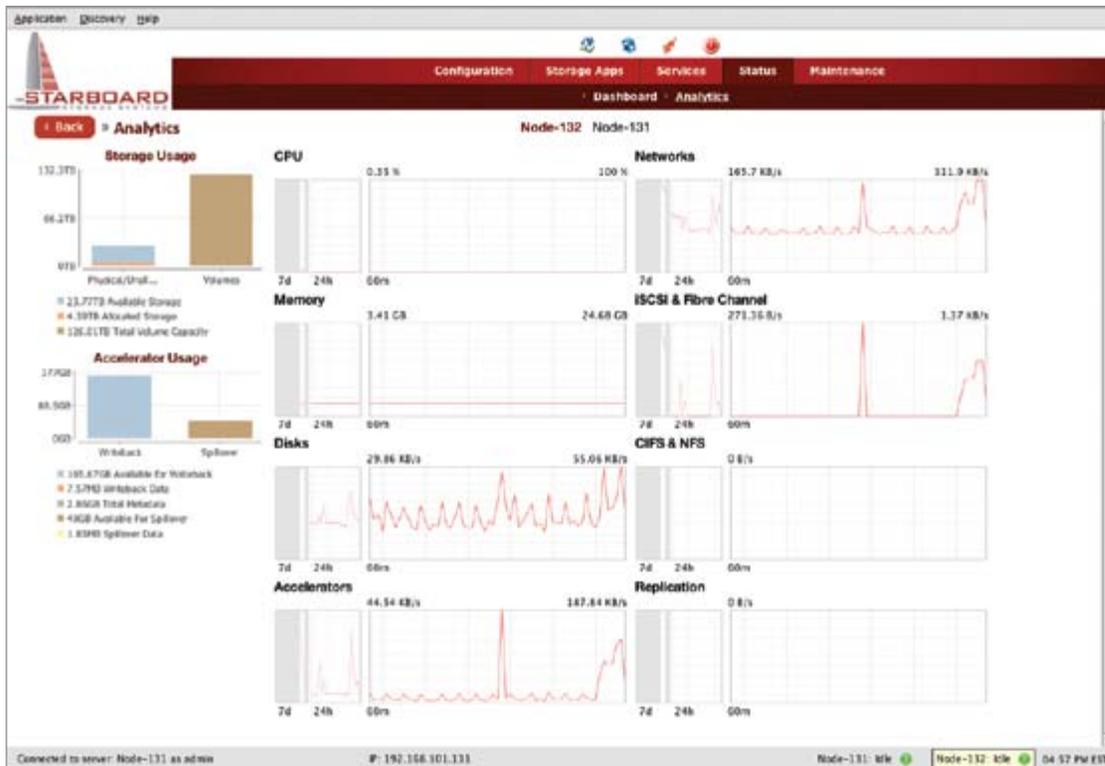
Table 2. Hardware Configurations

Easy Expansion Up to 474 Terabytes

The AC72 Storage System supports both a 16-bay and 45-bay expansion shelf, providing easy and affordable capacity expansion options for up to 474TBs of total capacity behind a single AC72.

The 16-bay 3U expansion shelf provides highly available storage expansion for the AC72, supporting up to six additional expansion shelves with the option of 7200 rpm and 15K rpm SAS drives.

The 45-bay 4U expansion shelf provides capacity-optimized expansion for the AC72, supporting up to five additional expansion shelves with the option of 7200 rpm and 15K rpm SAS drives.



The Starboard Storage AC72 enables intelligent system management through sophisticated analytics reporting.

Learn more about how the Starboard Storage AC72 is bringing enterprise-class storage capabilities within the reach of all IT professionals by simplifying mixed workload environments and delivering the industry's best price/performance. For more information, contact Starboard Storage Systems at 1-888-734-7726 or sales@starboardstorage.com.



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