



Solution Brief

Silvercor and AMD Achieve Scalable, Enterprise-class Storage with 'SAN in an Ethernet Flash Drive' Technology

Big Data analytics, cloud infrastructure and flash storage have emerged as core technologies in the enterprise IT domain, enabling users to harness huge data sets across a distributed network of servers and storage arrays for a wide range of business purposes. With this decentralization of hardware infrastructure to harness the performance of flash technology, new approaches to storage networking and the underlying processing platforms are needed.

Conventional storage arrays and servers are typically architected around centralized controllers or boards that process the aggregate storage IO via general purpose CPUs. In these systems, the processor is the main bottleneck of data flows to and from the system, so system vendors design in the highest performing CPUs they can, adding significant expense and power consumption in the process.

With increased performance of flash drives, the CPU performance bottleneck increases causing reduction in overall system performance. Silvercor's solution decentralizes storage hardware infrastructure, giving IT administrators the flexibility to deploy storage resources incrementally in 'building block' fashion wherever these resources are needed in the distributed network. By equipping each individual Silvercor Magnum Ethernet flash drive with a high-performance, power efficient multi-core SOC with AMD Embedded 64-bit APU cores, the aggregate number of processor cores in the storage network can exceed the amount of cores within legacy storage systems, allowing users to process more data at the same rate or faster - cost effectively, with great performance and low power consumption.



A SAN IN THE PALM OF YOUR HAND

From expensive, monolithic storage arrays to commodity servers with direct attach storage (DAS) architectures, legacy enterprise storage systems can add considerable cost, management complexity and power consumption and sacrifice Flash performance.

With AMD Embedded APUs (Accelerated Processing Units) at the heart of its drive portfolio, Silvercor is helping achieve the performance of direct attached Flash over LAN allowing storage administrators achieve enterprise-class storage performance and versatility.





Simple PoE powered from the switch with 10 Gig Ethernet allowing very high throughput to accommodate Flash

Start implementing iSCSI SAN with a single Silvercor Magnum Ethernet flash drive and add more drives as storage performance and capacity requirements increase - with little or no downtime or disruption - helping to provide a low total cost of ownership.

Low Power Consumption– PoE standards enable Silvercor to offer multiple low power Ethernet drive models. These drives utilize different power budgets, ranging from PoE to PoE+. PoE technology also enables Silvercor to offer a true standalone Ethernet drive model without the need for costly backplanes.

Built-in Virtualization Support – The ability to run virtual machines (VMs) natively on a Silvercor Magnum flash drive enables storage administrators to run Object Storage and Big Data VMs directly on the drives.

Simplified Management and Interoperability:

- iSCSI VM compliant and out-of-the-box Windows Server® and Linux® support.
- X86 cores allowing VMs direct operations in the drive.
- Object storage and big data support in the drive.

Optimized support for Big Data and Cloud Storage Applications – With multicore AMD processors embedded locally in each individual Silvercor drive, optimal performance is virtually assured for distributed, scale-out computing architectures. Hadoop and OpenStack run natively on the drive, helping minimize performance degradation of the cluster when adding or replacing nodes. Additionally, Silvercor’s innovative caching solution helps enable operators to achieve challenging performance and service level objectives.

Power	PoE
CPU:	Quad core 2.0Ghz
Interfaces:	2SFP+ 1G -10G Ethernet
Management port:	1G Ethernet
Capacity:	120Gb, 480Gb, 960Gb, 2Tb, 4Tb
Storage protocols:	iSCSI compliant

AMD APU FOR NEXT-GENERATION STORAGE SYSTEM ARCHITECTURES

AMD Embedded G-Series x86 processor has enabled Silvercor’s design team to achieve aggressive design and functionality goals cost effectively.

Offering seamless integrated rich ecosystem of industry-standard x86 software, drivers and tools, and supported by AMD’s technical support team.

- **Ultra-Compact form factor** - The AMD G-Series processor is a highly integrated SOC with a small footprint, allowing Silvercor’s designers to architect extremely dense 3.5” drive systems that can be configured 12 across in a standard 19” rack.
- **High Performance Processing** – The combination of a general purpose CPU and discrete-class GPU on a single silicon die assists in high-speed parallel processing that helps improve the performance of each individual Silvercor drive ‘node.’
- **Low Power Consumption**– Supporting thermal design power (TDP) profiles from 5.5 W to 18 W, AMD G-Series APUs are an optimal fit for Silvercor’s advanced PoE power distribution approach, and help to lower system-level heat generation considerably.

www.silvercor.com www.amd.com/embedded



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