

Radian Memory Systems Emerges from Stealth Mode

Calabasas, Ca., August 4, 2015/PRNewswire/ — Radian Memory Systems® today emerged from stealth mode to unveil breakthrough software technology that enables the next era of Flash storage for data centers. The technology utilizes conventional SSD hardware to deliver 80% improvements in I/O performance and 10x improvements in critical latency metrics, while at the same time significantly reducing hardware acquisition costs and extending usable product life.

“The biggest barriers to extending Flash penetration in data centers are cost, unpredictable latency spikes, and wear out. At Radian we took a unique approach that addresses each of these challenges at the system level, where applications and data centers can realize the advantages,” said Mike Jadon, Radian’s CEO and co-founder.

Radian’s Symphonic™ technology is a combination of SSD firmware, host libraries, and an API that replace the Flash-Translation-Layer (FTL) traditionally found on SSDs. System software, e.g., file systems, block virtualization managers, or object/key value stores have comprehensive capabilities to intelligently manage storage media. But this system software is not equipped to directly perform some of the unique processes required to manage Flash memory. Radian’s Symphonic technology abstracts lower level Flash attributes while enabling the host system software to perform what the company calls Cooperative Flash Management (CFM).

According to leading analyst, George Crump of Storage Switzerland, *“At the system-level, hyperscale and purpose-built storage have been struggling with how much performance and cost they can extract from Flash devices. Flash-Translation-Layers (FTLs) have provided a ‘one size fits all’ approach, but they’re an obstacle for system designers trying to eliminate latency spikes while minimizing overprovisioning. Radian’s Symphonic technology takes these factors into account, providing architects the system-level design space they need to realize the QoS and cost savings possible with Flash.”*

The challenges associated with removing the SSD FTL have involved potentially significant modifications to system software, scalability as additional devices are added to a system, and the reliability/serviceability functionality required for data center class products. Symphonic addresses these requirements by turning the SSD into an offload accelerator engine, minimizing host system resource consumption and enabling linear scalability across metrics as additional SSDs are added to a system. Including specialized geometry emulation and configurable addressing capabilities, the Symphonic software minimizes modifications to existing system software while providing essential data center features, including Forward Compatibility to future proof system software from vendor-specific and evolutionary changes in Flash silicon geometries.

“FTLs enabled rapid NAND flash adoption and high-end disk displacement,” said Robin Harris of Storage Mojo. *“But the well-documented mismatch between FTLs and host software means that*

to realize flash's full performance potential a new software model is required. Radian's Symphonic technology is a major step forward. By addressing existing host stacks along with the next gen architectures, it helps future-proof today's investments in SSDs. Users get higher performance and vendors get higher margins. It's a win-win for all."

In addition to ground breaking performance benchmarks, the Symphonic technology also substantially reduces costs, both in terms of up front acquisition and TCO. By operating in host address space, Symphonic-based SSDs do not require the additional 15% to 30% of overprovisioning of raw Flash typically reserved inside a data center class SSD in an attempt to mitigate latency spikes. And because Symphonic reduces write amplification factors 50% to 100%, the usable life of the Flash hardware can be doubled.

"As flash has become prevalent in the data center users have grown more sophisticated," said Jim Handy, general director of Objective Analysis. *"These users have shifted their focus away from simple IOPS ratings and now try to reduce overall latency and eliminate latency spikes. Any solution that can minimize latency spikes, especially under varying write loads, will find broad acceptance."*

Along with the Symphonic software technology, Radian Memory Systems is introducing a line of purpose-built SSDs for the data center. Beginning with the RMS-250, a 2.5" NVMe 2TB SSD, each Radian SSD includes the Symphonic firmware and respective host-based libraries to enable Cooperative Flash Management.

Radian's team includes a unique blend of storage device and system-level expertise which is reflected in the architecture of the company's products. Much of the business and technical leadership comes from Micro Memory [Curtiss-Wright], where the Radian team members were responsible for creating and supplying the industry's leading fault tolerant PCI/PCIe NVRAM storage devices. This included shipping over 100K units in production deployments to OEMs such as EMC (Clariion line), NetApp, Dell, Isilon [EMC], Data Domain [EMC], Nimble Storage, Tintri, Avere Systems, Quantum, and X-IO. This device-based experience has been complemented by Radian engineers and architects with system-level storage experience from Isilon [EMC], Veritas [Symantec], Data Direct Networks, Dot Hill and various system network equipment manufacturers.

The Radian technology and products target system OEMs, cloud and service providers, and licensing to device-based manufacturers to support primary storage requirements throughout the data center. User applications range from the latest webscale and 'big data' frameworks to virtual machines and transaction processing. Sales are handled directly and in partnership with industry leading distributors. To learn more about Radian Memory Systems contact the company at (U.S.) 818 222 4080, info@radianmemory.com, or visit www.radianmemory.com

Radian Memory Systems will also be presenting and exhibiting at the Flash Memory Summit, August 11, 2015.

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