



Research Report

Violin Memory Extends All-Flash Array Portfolio at Both Ends

Introduction

Violin Memory, well known for its leadership in all-flash storage platform solutions, has added two new options – the FSP 7600 and the FSP 7250 – to its product line. This extends the company’s flash offerings at both the high-end and the low-end, enabling enterprise customers to address both current and emerging applications/ workloads. And it enables customers to take advantage of the many benefits of all-flash storage: high-performance, scale, capacity, simplicity and cost-savings. These new offerings take aim at primary storage and extreme performance markets, and also introduce entry level capacity.

Violin Flash Storage Platform

Violin Memory’s all-flash arrays and the Violin Flash Storage Platform (FSP) provide a vertically integrated purpose-built platform that delivers highly-tuned hardware, firmware and software that functions as primary storage for enterprise data centers. This end-to-end platform is optimized to exploit flash technology for consistent high performance and low latency, and to deliver software-based services such as continuous data protection, in-line granular data deduplication and compression, application-consistent snapshots, and capacity pooling. Violin Symphony is a single- pane-of-glass management GUI that administers data services, data reduction, and configuration made possible by Concerto OS 7 to provide consistent, reliable performance and low latency, while maximizing the value of the data reduction techniques and data services.

This purpose-built architecture combined with the many patented (40 patents in the US, and 41 US pending) flash software capabilities enable Violin FSPs to provide lower cost, higher efficiency and better performance than HDD-based (hard disk-based) arrays.

The FSP 7000 series comes with industry-leading enterprise services such as asynchronous replication, synchronous mirroring, stretch clustering with zero RPO and zero RTO, snapshots, clones, and other services. The FSP series includes the existing FSP 7300, ideal for multiple and mixed workloads, which offers 8 to 70 TB raw capacity and up to 217 TB of effective capacity in three rack units and 1.1 million IOPS in under 1ms; and the FSP 7700, a highly scalable, high-performance modular scale-up platform with up to 1.40 PB raw and greater than 2 PB effective in a single namespace at 2.2 million IOPS in under 1ms.

As all-flash storage is being used increasingly as primary storage, users are demanding a broader range of choices that reduce complexity and provide cost-effective, optimized performance for a full range of applications and use cases including performance oriented applications (such as transaction processing, analytics and billing), primary storage applications (such as messaging, database and virtual servers), and capacity-optimized

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applications (such as virtual desktop and collaboration). New options in the Violin product portfolio enable customers to address this broad range of workloads with varying capacity and performance requirements, so that workloads and applications can be closely matched to the appropriate storage platform.

Violin's Recently Announced Storage Arrays

Violin FSP 7600

The Violin FSP 7600 is a high-density array designed to deliver extreme performance to address the high end of the all-flash array market extremely low latency and high I/O density.

- 35-140TB of raw flash in three rack units
- 1.1 million IOPS under 500-microsecond latency, reducing latency while simultaneously driving up high I/O density

Violin FSP 7250

The Violin FSP 7250 includes “always on” data reduction and provides an entry level point into all-flash storage that is below \$100,000. This allows small and mid-size customers to experience the benefits of flash and easily scale as their capacity and performance needs change.

- 8-26TB raw capacity in three rack units
- Up to 93TB effective (based on 6:1 data reduction ratio)

As with the rest of the FSP 7000 product line, both new models are offered with Violin's flexible “Pay As You Grow” capacity-based pricing model, allowing customers to purchase storage capacity as it is consumed without committing to future usage, enabling simple upgrades in real-time, non-disruptively and requiring no downtime.

Summary Observations

As the cost of flash storage continues to drop and software-driven capabilities such as deduplication and compression enable businesses to store more Big Data using less storage capacity, the popularity of flash as primary storage has grown. Today's enterprise customers recognize the value of storing and analyzing these ever-increasing volumes of Big Data, both structured and unstructured (including social media, mobile, web etc.), to derive business insight, improve customer satisfaction, and increase revenue. To address Big Data computing needs, cost-effective, high performance, large-scale storage is critical.

Violin Memory, founded in 2005 and headquartered in Santa Clara, California, is a pioneer in all-flash storage. The company's patented design, the Flash Fabric Architecture (FFA) uses flash optimization algorithms to create a high performance, highly resilient mesh architecture that parallelizes input/output for efficient read/write performance; and enhances flash system performance while providing redundancy and full RAID data protection with its patented vRAID technology.

Violin's Flash Storage Platform provides a single platform architecture and operating system for a broad range of workloads and use cases, spanning from entry-level to extreme

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performance – enabling Violin to make all-flash storage a reality for many businesses in many industries. High-end, high-performance applications such as analytics will drive demand for high-performance scale-up flash, while collaborative departmental and small business applications will benefit from all-flash at an entry-level price point.

Violin's investments in technology and innovation and its resulting patents enable the company to protect its intellectual property while continuing to deliver outstanding performance and highly-differentiated software-driven functionality to its customers. The new additions to the FSP 7000 series enable Violin to deliver all-flash storage with cost-effective high performance and low latency, as well as a full range of data reduction software and data services, for a broader range of businesses, workloads and applications. Businesses should carefully consider the benefits of all-flash storage arrays, and of Violin Memory's all-flash arrays in particular.

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