



Scale-out Clustering with Violin Memory and Symantec

Ultimate performance. Unmatched reliability. Unparalleled flexibility.



Regain control of your data center by building a true All-Persistent Memory Database Appliance with Violin Memory Arrays and Veritas Storage Foundation Cluster File System from Symantec

Highlights

- Scalable to Millions of IOPS
- Sub-millisecond latencies
- Instant database failover
- Scalable, flexible architecture
- Scalable to 100's of TBs

Reliable and immediate access to business-critical data dictates the success of your business over the competition. Slow, under-performing storage continues to hold IT back from significantly accelerating databases and applications. Monolithic database appliance solutions such as Oracle Exadata deliver incremental performance improvements at the cost of compromising operating efficiencies with a vendor-locked, tightly controlled, and inflexible solution.

What if your databases and business-critical applications ran at the speed of memory, with an open flexible architecture that can be fully customized to meet changing needs? Violin Memory arrays, together with Veritas Storage Foundation Cluster File System from Symantec, provides the perfect combination of memory-like performance, relentless high availability and hassle-free operational experience for running your Oracle databases – all at a fraction of the cost of Oracle Exadata.

Ultimate Performance

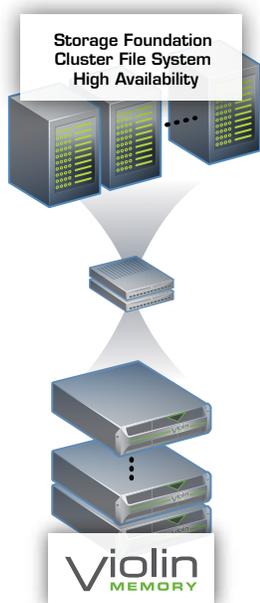
Violin Memory arrays are the industry's first all-silicon storage systems, architected to deliver sustained high performance with up to 1 Million IOPS at sub-millisecond latencies. The predictable low latency drives higher levels of productivity by driving down database query response times and increasing transactions per second (TPS).

Veritas Cluster File System from Symantec delivers near-local performance for parallelized access from up to 64 compute servers connected to Violin Memory arrays. Veritas Cluster File System from Symantec allows you the flexibility of non-disruptively adding or removing compute nodes to dynamically match the business demands, while the Violin Memory array operates as a high throughput shared storage backend. This scalable compute architecture helps you better manage licensing costs for Oracle. The combined solution from Violin and Symantec offers:

- Sustained throughput of up to 1 Million IOPS and sub-millisecond latencies
- Database acceleration with Oracle Disk Manager (ODM) extensions
- Integrated with Oracle Real Application Clusters (RAC) for scalable performance

Unmatched Reliability

All active components in the Violin Memory 6000 series array, from the memory gateways, power supplies, array controllers, all the way down to the flash memory modules have built-in hardware controlled redundancy and are hot swappable. Patented flash optimization algorithms such as vRAID deliver the level of resilience and endurance required to meet the stringent availability demands of business-critical environments.



Sample configuration

- Violin Memory 6000 series
- Veritas Storage Foundation Cluster File System from Symantec HA
- Up to 64 database servers
- Operating System of your choice
- Oracle 10g, 11g Standard, Enterprise

Veritas Cluster File System from Symantec provides concurrent access from all the database servers to the Violin Memory array. As a result, in the event of application or server outage, failover time is limited to the time it takes Oracle to restart. The built-in resilience of Violin Memory array, together with the advanced fault detection and application failover capabilities of Veritas Cluster File System from Symantec, provides instant recovery for Oracle databases, without any of the under-the-hood complexity of the Oracle Exadata appliance.

- Full redundancy and built in High Availability, with Violin Memory's patented vRAID algorithm
- Enterprise-ready HA/DR toolset with Intelligent Monitoring Framework for Oracle databases
- Advanced Oracle RAC aware data integrity protection to handle network "split brain" situations

Unparalleled Flexibility

The closed architecture of Oracle Exadata prevents any other application from running on the appliance. This means that administrators have to carve out infrastructure silos for each application, increasing operational expenses and overhead. Because Violin Memory arrays handle up to 1 Million IOPS, multiple applications can run on the same array, thereby driving down costs through effective consolidation. With support for Fiber Channel, 10GE iSCSI, 40Gbps Infiniband and PCIe, Violin Memory arrays fit into your infrastructure with no disruption and breaks Exadata's artificial interlock of compute and storage into a single tightly coupled architecture.

Veritas Storage Foundation Cluster File System from Symantec supports all major operating systems, providing the flexibility to continue using the operating system of your choice, be it AIX, HP-UX, Linux, or Solaris. The rich enterprise-ready toolset from Symantec simplifies operations, while allowing for effective use of existing infrastructure. For instance, Veritas Cluster File System FlashSnap allows slower storage to be used for storing snapshots of databases that are active on Violin Memory arrays. Similarly, it provides replication of data from Violin Memory arrays at the production site to slower storage at the Disaster Recovery site.

- Support for all leading types of connectivity – FC, iSCSI, InfiniBand, PCIe
- Support for all major operating systems – Linux, Solaris, AIX, HP-UX
- Advanced data management and storage optimization feature set

Amazing Economics

Database servers typically waste a major portion of the compute cycles waiting for the storage layer to complete the I/O, increasing compute requirements and the associated licensing costs. The sub-millisecond latency of Violin Memory arrays eliminates this vicious I/O wait cycle and maximizes CPU efficiencies. In turn, this reduces the compute requirements and dramatically lowers the database and application license costs.

SmartTier functionality provided by Veritas Storage Foundation Cluster File System from Symantec allows the most frequently accessed parts of the database to be retained on Violin Memory arrays, while moving the less accessed data to slower storage enabling low cost archive options. Furthermore, it provides file system compression to reduce storage footprint used for archival log files, data files or table spaces.

- Reduced database license costs and server footprint by eliminating "I/O wait"
- Flexible open architecture instead of closed vendor-locked appliances
- Higher performance and more flexibility at 25% the cost of Oracle Exadata

Now you can regain control of your data center

The power-packed combination of Violin Memory arrays and Veritas Storage Foundation Cluster File System from Symantec beats Oracle Exadata in every aspect – performance, resilience, as well as economics. Contact your Violin Memory or Symantec sales representative today to learn more about this joint solution from Violin Memory and Symantec Corporation.



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