Flash-Enabled Snapshots for Oracle

Many database systems now run with 24x7x365 availability requirements and have little or no downtime for maintenance. The question is “What is the most efficient way to protect production applications, and still achieve all the other tasks that depend on production data?”

With increasing data volumes and the rise of analytics, IT organizations are finding that their Oracle databases are ever-more critical for maintaining business continuity. IT management has to balance production data availability while not compromising application performance.

Snapshots

A popular way to make production data available to non-production users is with a snapshot. Snapshots are logical views of data where any changes made to the data are catalogued in order to allow users to share access to the same underlying blocks. When changes are made to the primary volume duplicate blocks are created in order to provide a coherent view of the original data at the time the snapshot was taken.

The Challenge with Snapshots

The performance of disk-based snapshot technologies is severely limited by the mechanical nature of disk. Disk suffers from the mechanical penalties associated with seek time and rotational latency. The result is a slow snapshot.
The Violin Memory Difference

One of the most important aspects of Violin Memory’s all Flash Arrays is their ability to offer ultra-low sustained latency regardless of the random or sequential nature of I/O. Many customers have already taken advantage of the zero contention performance of flash to run their businesses and applications at the speed of memory. But this transformational approach can also be applied to snapshots. Violin Memory allows near-instantaneous snapshots to be taken of entire databases without disruption to production users. Flash-Optimized Snapshots allow customers to explore many new avenues on the road to delivering higher-quality IT services at lower costs. The ability to create near-instantaneous replica copies of entire data sets to business users is transformative:

- **Offload Decision Support and Analytics Systems** – increase return on investment by processing more data at higher speed while minimizing the impact of refreshing data from production. Remove data marts to save on additional storage costs and invest back into the infrastructure.

- **Improve Data Continuity and Risk Avoidance** – allow for protection against faults and human errors by keeping historical data accessible at the speed of memory. Offload resource intensive backups by mounting snapshots onto secondary servers and increase frequency for improved availability.

- **Enable Testing and Training with Real Performance** – allow testing teams and trainee staff to experience production performance and with real word data run production-like workloads against snapshot copies without any degradation of end user experience.

- **Introduce Development Agility** – create opportunities for self-service environments in order to increase the agility of development, test and training teams. By allowing multiple, space-efficient replica environments to be created using API calls, management time is reduced while development agility increases dramatically.

To review a comprehensive white paper on this topic see “Transforming Oracle Snapshots with Flash Memory” by Violin Memory.