Using Solid State Storage to Accelerate Share-Nothing Database Mirrored Architectures

Wine.com Case Study

What you will learn today……

- Solid-state storage's performance and reliability enables best of class solutions
- "Shared nothing" architectures is the most cost effective alternative to "shared memory" or "shared disks"
- Database mirroring together with solid-state storage creates the foundation for a high performance, high availability and low cost OLTP system

Online Retailer's Dilemma: *Wine.com*

Challenge

- Meet demand of 2008 Holiday buying and gifting season
- Support a significant growth in new customers and transactions
- Minimum 30% improvement needed
- Storage and performance bottlenecks
- Finite budget and low resources

Problem

- Website slow
- Operating at capacity
- Shared storage obsolete
- Long maintenance windows that affected customer experience
- Marketing queries take hours
- SAN upgrade alone is expensive with only short-term scalability
- Lack of Concurrency

What did Wine.com accomplish with Fusion-io

Accomplishments

- 1,200% improvement on average WRITE operations
- 1,400% improvement on average READ operations
- Ability to return to operations without any loss of data in less than 10 minutes (down from more than 8 hours)
- Average latency on WRITE: Down from 4 ms to 1 ms on ioDrive™
- Average latency on READ: Down from 12 ms to 1 ms on ioDrive™
- Average SQL transaction shortens from 345 ms to 88 ms
- Full database backups reduce from 2 hours to 6 minutes
- Full database restores shrink from 3 hours to 15 minutes
- 500ms transactions in a 1 hour window drops from 3011 to 163
- 100 invoice post batch processing finish in 10 seconds(prev. 2 minutes)
- Accounting can generate invoices at the same time as the warehouse is shipping orders