In a Flash: Fusion ioMemory from SanDisk®
Transforms SQL Server Environments
to Achieve Better Business Outcomes

Fast just isn't fast enough in a mission-critical Microsoft SQL Server environment. But before you add new servers to support escalating performance demands, be aware: That will send you on a quick descent into server sprawl. Instead, consider following the lead of thousands of enterprises that have redesigned their data centers by adding SanDisk flash technology to increase business productivity by 4x, serving customers significantly faster, with lower solution costs.

Fusion ioMemory can take on your most significant challenges associated with both Online Transaction Processing (OLTP) and Online Analytical Processing (OLAP) applications.

Fusion ioMemory™ application accelerator, the anchor of storage and memory giant SanDisk's PCIe Flash portfolio, brings capacity onto the server itself, close to the processor and the application workloads. This allows each server to handle more transactions and process more data faster. And because you can handle higher workload volumes much faster and with fewer CPU resources, you can consolidate the number of servers you need. This means cutting capital costs and decreasing power and cooling expenses, as well as reducing license fees. SanDisk flash memory gives you the speed injection your business needs to outperform your competition.

Need for Speed

This speed advantage is critical. Faster CPUs and advances in Microsoft SQL Server itself mean businesses are processing more data and running more transactions. However, traditional storage infrastructures haven't kept pace, leaving a significant gap between the response time of the CPU and disk arrays. As a result, processors sit idle, waiting on disks. Even the fastest disk arrays are thousands of times slower than the CPU.

This delay results in a costly waste of resources, which SanDisk flash memory can eliminate entirely. Fusion ioMemory is deployed on the server near the CPU as memory, rather than disk storage. The inMemory storage, thousands of times faster than disk storage, breaks through the latency and throughput logjams associated with disk arrays that can slow application and database performance to a crawl. In a recent survey of SanDisk customers, 70% of customers reported a 50% or greater decrease in latency via Fusion ioMemory. Enterprises gained 4X increase in transactions per second (TPS).

Fusion ioMemory can take on your most significant challenges associated with both Online Transaction Processing (OLTP) and Online Analytical Processing (OLAP) applications. The performance improvement versus traditional external Hard Disk Drives (HDDs) is dramatic. The combination of SanDisk flash with Microsoft SQL Server enables enterprises to improve customer experience, serve more customers, improve business productivity, and deliver on internal SLA's.

The SanDisk flash memory technology supports three distinct Microsoft SQL Server deployments. The first, standalone — or direct — is for the smallest footprint and the maximum acceleration for I/O intensive applications. Enterprises that have a

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SAN deployed can use a virtualized arrangement, in which the most frequent Input/Output Per Server (IOPS) cache moves from the SAN to the server to accelerate performance. Businesses can also deploy flash memory in a clustered or shared implementation in which flash memory is made available to multiple servers.

The Payoff

Businesses that invest in flash memory technology report fast returns. With Fusion ioMemory, Japanese social media company Mixi was able to cut its server count and consolidate its SQL Server data center server footprint by 75%.With less hardware, the company reduced power and cooling costs by 80%.[1]

U.S.-based food manufacturing company Quaker Maid turned to SanDisk flash memory to break through the bottlenecks putting a chokehold on its ERP system.Adding SanDisk flash to its servers took less than an hour, and yielded immediate performance gains. Report generation time improved from 600 seconds to just 15 seconds, while volume report production was increased by 40 times. The company recovered between 10 and 15 working hours a day, and as a result the IT team estimated it also saved upwards of $50,000 annually through increased employee productivity. Along with the productivity improvements, Quaker Maid cut capital and operational costs.[2]

Chinese online retailer JD.com deployed SanDisk flash in an effort to give its underperforming application infrastructure a boost.The company's website was straining under the volume of daily page views of more than 100

million and orders in excess of 500,000 a day. The retailer was able to accelerate IOPS by 10X and increase overall site stability for the query-based fulfillment system. The performance gains allowed the retailer to consolidate its servers, with one system now handling the load that previously required three. [3]

Flash Justified

The criticality of the applications running in your Microsoft SQL Server environment makes SanDisk flash memory a requirement for your data center, not an option. Fusion ioMemory delivers microsecond data access latency, lower memory utilization and greater resource utilization efficiency. With flash, you will need fewer CPU cores to support more transactions and process more data faster.

As you make your decision, consider your costs per transaction and scale. You don't have to deploy flash on every Microsoft SQL Server in your data center. You can start with a limited deployment and scale out as your needs change.

SanDisk flash memory is built to drive better business outcomes. SanDisk flash can take out cost, increase efficiencies, and streamline your SQL Server data center architecture to make it more manageable. The resulting infrastructure is one that is optimized for productivity and growth.

To learn what flash technology can do for your business, contact your SanDisk sales representative for a demonstration or a proof of concept to see how SanDisk Fusion ioMemory can help you optimize your Microsoft SQL Server environment.

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At SanDisk, we're expanding the possibilities of data storage. For more than 25 years, SanDisk's ideas have helped transform the industry, delivering next generation storage solutions for consumers and businesses around the globe.

[1] http://www.sandisk.com/assets/case-studies/Mixi_CS_Dell.pdf
[2] http://www.sandisk.com/assets/case-studies/Mixi_CS_Dell.pdf
[3] http://www.sandisk.com/assets/case-studies/JD_CS_SanDisk.pdf