DataLogix Sees the Logic of Fusion ioMemory™

Innovative marketing analysis company meets SLAs and improves business intelligence without adding servers.

Summary of Benefits

- 4x faster response time on web pages
- 40x faster queries
- 6x faster business intelligence processing
- The most competitive value on both a capital and operational cost basis
- Simple and flexible implementation

The Challenge

DataLogix is a leading provider of marketing data gathering and analysis solutions. Its innovative products and services match customer advertising to targets with the highest return rates. To keep its edge, it had to provide increasingly rich capabilities over ever-growing amounts of data. This presented its data center with the following challenges:

1. Ensuring its Internet matching application did not impact page-load times. It had demanding SLAs (Service Level Agreements) that required being virtually imperceptible - Datalogix's application could add no more than 50 milliseconds to response rates.
2. Providing best-in-class business intelligence for online and direct customers over a large and continually growing Oracle RAC (Real Application Cluster) data warehouse.

The SanDisk® Solution

Always looking to stay on top of the game, DataLogix added some Fusion ioMemory™ ioDrive® cards to its web application and data warehousing databases. The results were better than it had hoped.

Powering Web Databases to Meet Demanding SLAs

Minimizing its web application's response time was a critical factor in supporting DataLogix's future growth. Its customers required complex real-time analysis of end-users' browsing habits without perceptibly slowing page-load times. The challenge was finding a scalable and cost-effective solution that allowed the company to maintain low latency levels over a growing MySQL database, while also supporting increasingly dynamic web functionality.

As Dave McCabe, director of data center operations discovered, the SanDisk Fusion ioMemory solutions are a breed apart when it comes to reducing application latency. DataLogix's existing system's 8-disk arrays were barely meeting its SLA of 50 millisecond latencies. Replacing the disk arrays with an ioDrive card reduced latency to just 12 milliseconds.

The reduced latency offered the following benefits:

- Improved application performance and end-user experience
- Greatly increased the number of transactions each server could support, giving DataLogix significant headroom for future growth
- Added performance capacity it could use to enrich its application's capabilities

Dave told us, "A single ioDrive card in each server meets our existing performance needs. But our rapid growth requires massive scalability. The Fusion ioMemory solution's linear scaling allows us to double our performance capabilities with a single card. Consequently, we purchased two cards for each server and expect this to deliver the highest levels of performance for 24 months of expected growth.

SanDisk®
a Western Digital brand

With the disk drive upgrades we were looking at, we would be upgrading again in just six months."

A Smarter Oracle RAC Data Warehouse

In addition to improving its real-time Internet application performance, DataLogix also wanted to improve the sophisticated data mining and analysis services it provided to online and direct-mail customers. Dave knew that improving query response times was key to this effort. It would allow the application to process more jobs and more complex queries in less time.

Dave redesigned the data warehouse architecture to store I/O intensive log files and several large, frequently accessed tables with tracking data on the drives. The result was SAN-like performance without the expensive scale out.

Fusion ioMemory reduced the time it took to complete a set of queries against a heavily-used table from two hours to fewer than three minutes—an incredible 40x improvement.

"With Fusion ioMemory installed in our data warehouse, jobs process around six times faster, and we no longer have to worry about jobs completing on time. We also have plenty of performance headroom as queries grow in complexity and the warehouse increases in size," Dave said.

Query Time

With SanDisk 3 minutes
Without SanDisk 2 hours

40X FASTER

The Smart Buy

DataLogix investigated many other solutions and determined SanDisk offered the best overall value on the market.

Dave said, "The Fusion ioMemory solutions were clearly the best value. Our growth rate is so high that we outgrew our spinning disk solutions every six months. We investigated other PCI Express form factor devices, but all of these required a significantly higher capital investment."

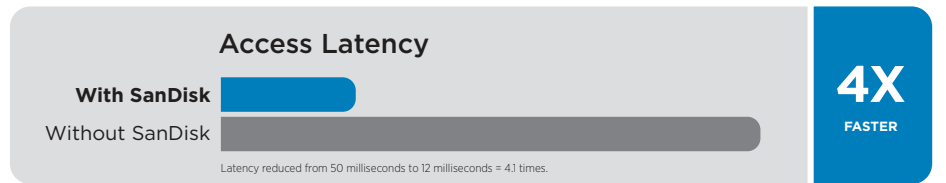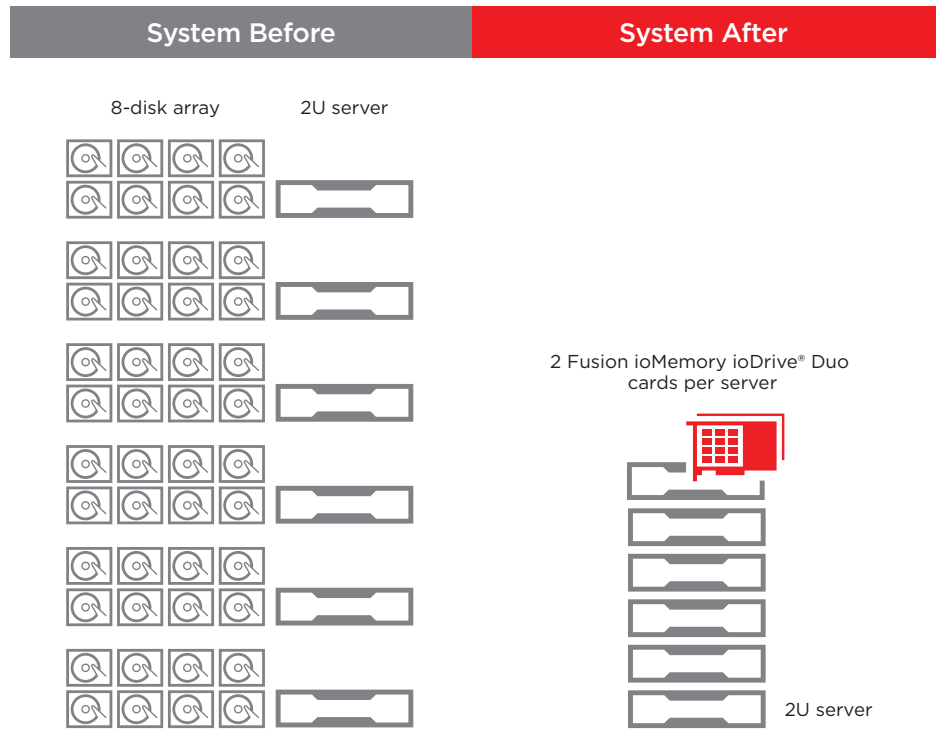## Easy and Flexible Implementation

Another benefit the Fusion ioMemory solution offered over alternatives was easy installation and implementation. In fact, they were so easy to implement that DataLogix's colocation facility felt comfortable installing the drives themselves.

Dave told us, "We can just ship the ioDrive cards to our colocation and they will install them. It's not like sending them a SAN they have to modify their environment for; they are just putting a card in a server."

Once its colocation facility installed the ioDrive cards, DataLogix could easily administer them remotely.

Dave said, "We can use software to easily break or rebuild RAIDs, which provides a lot of flexibility. While our initial requirements for the data warehouse called for just one ioDrive card in each Oracle server, we added another so we could dynamically flip-flop cards to do live updates. We soon discovered that it was extremely easy to configure the cards and the databases, and we didn't need the redundancy. Changing the configuration to RAID for capacity was fast and easy."

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Web Application System

System Before	System After

8-disk array   2U server

2 Fusion ioMemory ioDrive® Duo cards per server

2U server

Access Latency

With SanDisk

Without SanDisk

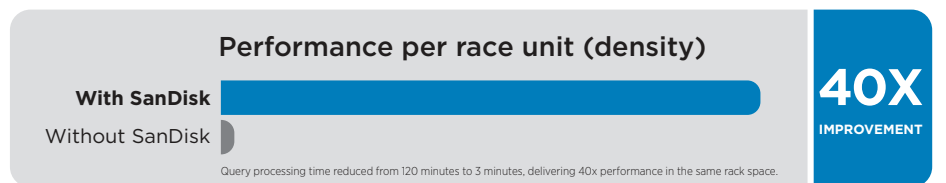Latency reduced from 50 milliseconds to 12 milliseconds = 4.1 times.

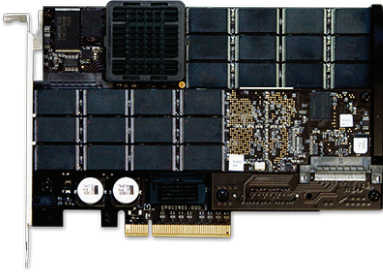**4X FASTER**

Data Warehouse System

SAN-Based System
- 6X HP Proliant DL380 G5
- 6X HP EVA8000 SAN FC Storage
- Application: Oracle 10g
- Database must access all data across the network

Fusion ioMemory Powered System
- Added one 320GB ioDrive card to the Oracle database server
- Moved I/O intensive logs and frequently accessed tables to ioDrive card

Performance per race unit (density)

With SanDisk

Without SanDisk

Query processing time reduced from 120 minutes to 3 minutes, delivering 40x performance in the same rack space.

40X IMPROVEMENT

Fusion ioMemory™ - ioDrive® Duo

Summary

Implementing Fusion ioMemory gave DataLogix the following benefits:

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DataLogix is thrilled with its purchase and has definite plans for more purchases as it grows. Dave said, "The ioDrive cards' high performance density, combined with their linear, incremental scaling capabilities definitely made them the best choice for the long term."

About the Company

DataLogix™ is a privately-held company based in Westminster, CO. It provides data and technology-driven solutions for leading direct marketers and brand advertisers to increase the effectiveness of customer acquisition, retention and branding programs across online and traditional channels.

It's product lines include DLX Direct™, the largest database of SKU-level consumer purchasing behavior, and DLX Platform™, the leading online ad platform for Real-World Data™.

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