



## CASE STUDY



# Taking off in the Great White North: SanDisk® and Savanna Energy Services Flying High in Canada

Oil drilling and energy company propels payroll processing time by 32X to power employee and system productivity.

### Solution Focus

- Microsoft® SQL Server 2008 R2
- Spira Command (field ticketing application)
- Energy

### Summary of Benefits

- **32X faster** payroll processing
- **4 to 1** batch job consolidation
- **Regained up to 52 days of productivity** for 10 employees
- **80% performance** headroom for future growth
- **Added a year** to the life of its SAN

### The Challenge

Savanna Energy Services Corp. (Savanna) is a premiere North America energy services provider headquartered in Calgary, Alberta, whose primary offerings include conventional drilling, hybrid drilling, and well servicing.

Savanna Network Infrastructure Manager, Jim Clarke, described a major difficulty Savanna had in running weekly payroll for approximately 457 field employees: “The main reason we were struggling was that when we would run payroll jobs, they took approximately 8 -10 hours to complete. When that process was being run, our SQL Server 2008 database with local disk was completely maxed out from an I/O perspective, and could not be used for other tasks; the server was completely inaccessible—no one else could go on the system and do anything.”

Jim’s team was looking for a solution that could accomplish the following:

1. Significantly reduce payroll batch processing times.
2. Enable the system to be used by employees while payroll jobs are running.
3. Scale to future growth.

In Jim’s words, his team was “grasping at straws” to find a solution to the I/O bottleneck. Enter SanDisk’s Fusion ioMemory™ solutions.

### The Solution

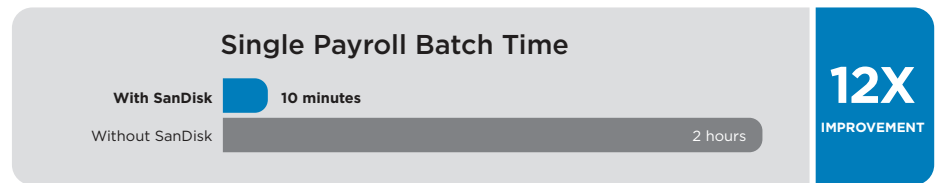
As Jim investigated solutions, his infrastructure team came across Fusion ioMemory products. They quickly initiated a proof-of-concept.

### Propelling Payroll Job Processing

Prior to implementing the Fusion ioMemory solution, Savanna’s entire payroll batch exceeded Spira’s three-hour time-out window. Consequently, they had to break up payroll into four separate batch jobs, each of which took around two hours.

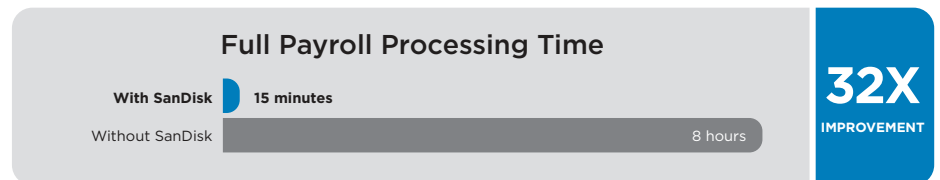
Savanna’s existing system consisted of a Microsoft® SQL Server database with local disks backed by a SAN. Jim’s team moved the production server’s database onto a Fusion ioMemory ioDrive® card in a test database server. On the very first test, a payroll batch that typically took two hours to run completed in just 10 minutes, including SQL indexing.

Jim said, “We thought something was wrong; there’s no way it is done. That’s not even possible.” But it proved to be true.



### Freeing the System from Batch Process Blockage

After seeing the speed that the ioDrive card delivered, Jim decided to attempt running the entire payroll process in one batch. The SanDisk-powered system came through in this scenario as well: the entire job time was reduced from 8 hours to 15 minutes, well under the time-out window.



*“Prior to implementing SanDisk, we had to break up the payroll job into four separate batches to prevent the application from timing out. The entire job took 8-10 hours. With the new system, we can run payroll as a single batch in 15 minutes.”*

**Jim Clarke,**  
Network Infrastructure Manager  
Savanna Energy Services Corp.

Jim commented, “The benefits have been incredible. We are now fully utilizing the CPU, while the ioDrive cards aren’t even breaking a sweat. We have successfully pushed the resource bottlenecks to the CPU and RAM on the servers, while the ioDrive cards can support 80-85% more workload.”

### Delivering Human Resources from I/O Tyranny

Previously the payroll process stalled work for 10 payroll employees all day, every Wednesday—and may have indirectly affected the work of many more employees. The SanDisk-powered system not only shrank the payroll-processing window to just 15 minutes, it eliminated the resource contention that prevented these employees from working with the system during this time.

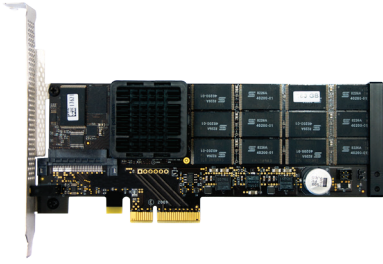
Jim said, “Before, maybe 10 employees couldn’t work in our field ticketing application, Spira. Now, the entire payroll job takes around 15 minutes and employees can continue using the system even while the job is running. It also frees our IT staff from checking for application time-outs and restarting stalled jobs—something that was part of the routine before.”

### A Single Solution for Payroll and SAN Scalability

The benefits of investing in the Fusion ioMemory solution extended beyond freeing system and personnel resources; it also increased Savanna’s return on investment and ensured that savings will continue even as the company grows.

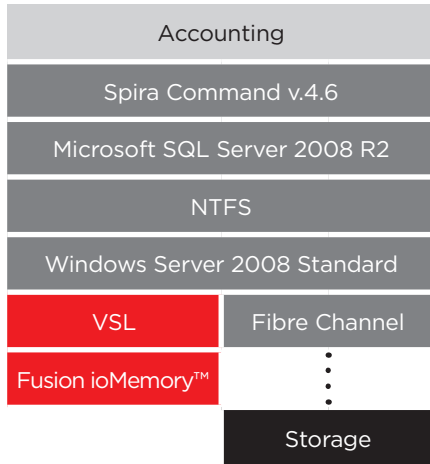
Jim said, “Even under the servers’ maximum workload, we are using just 20% of the ioDrive card’s performance capacity, which gives us good room to grow.”

Jim also noted how moving the database to Fusion ioMemory cards freed its storage system for other processes, deferring the need for an upgrade: “The SAN is a very reliable piece of hardware and has been great. Because we aren’t using it for high-transaction processing, we can now use it for many other processes. The SanDisk implementation gave us another year with this system by better balancing its workload.”

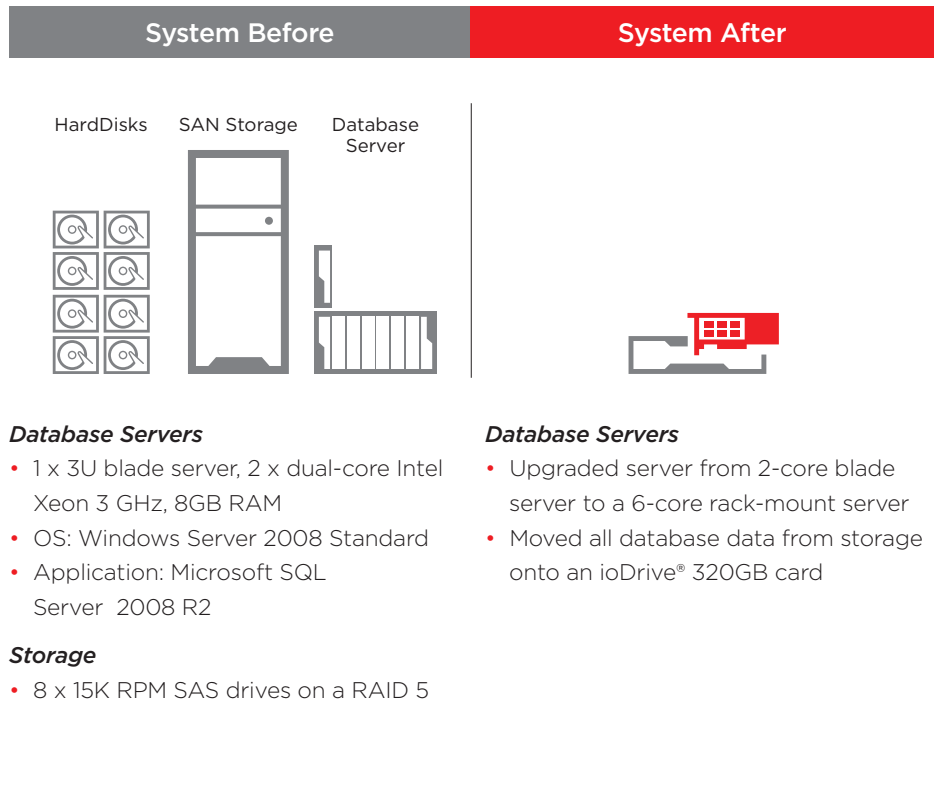


Fusion ioMemory™ - ioDrive®

### SanDisk Powered Software Stack



### System Overview



#### Database Servers

- 1 x 3U blade server, 2 x dual-core Intel Xeon 3 GHz, 8GB RAM
- OS: Windows Server 2008 Standard
- Application: Microsoft SQL Server 2008 R2

#### Storage

- 8 x 15K RPM SAS drives on a RAID 5

#### Database Servers

- Upgraded server from 2-core blade server to a 6-core rack-mount server
- Moved all database data from storage onto an ioDrive® 320GB card

### Summary

Implementing the Fusion ioMemory solution gave Savanna Energy Solutions the following benefits:

- **32X faster** payroll processing
- **4 to 1** batch job consolidation
- **Regained up to 52 days of productivity** for 10 employees
- **80% performance headroom** for future growth
- **Added a year** to the life of its SAN

### About Savanna Energy Services Corp.

Savanna Energy Services Corp. (Savanna) is a premiere North American energy services provider headquartered in Calgary, Alberta.

Savanna's primary offerings include conventional drilling, hybrid drilling, well servicing, and comprehensive oilfield services such as oilfield equipment rental, which meet the needs of their diverse oil and gas customer base. Savanna is uniquely positioned in the energy services industry, incorporating Aboriginal partnerships and community involvement with leading technology that includes PLC-controlled service rigs and patented hybrid drilling rigs.

#### Contact information

[fusion-sales@sandisk.com](mailto:fusion-sales@sandisk.com)

#### Western Digital Technologies, Inc.

951 SanDisk Drive  
Milpitas, CA 95035-7933, USA  
T: 1-800-578-6007

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#### SanDisk Europe, Middle East, Africa

Unit 100, Airside Business Park  
Swords, County Dublin, Ireland  
T: 1-800-578-6007

#### SanDisk Asia Pacific

Suite C, D, E, 23/F, No. 918 Middle  
Huahai Road, Jiu Shi Renaissance Building  
Shanghai, 20031, P.R. China  
T: 1-800-578-6007

For more information, please visit:

[www.sandisk.com/enterprise](http://www.sandisk.com/enterprise)

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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.

The performance results discussed herein are based on internal Savanna testing and use of Fusion ioMemory products. Results and performance may vary according to configurations and systems, including drive capacity, system architecture and applications.

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