AT INTERNET

CASE STUDY

AT Internet Accelerates Analytics Six Times on 1/6th the Servers

Leading European web, mobile and social analytics provider's innovative Fusion ioMemory™ system improves customer service and its bottom line.

Solution Focus

- Microsoft SQL Server 2008 R2
- Web Analytics

Summary of Benefits

- 6x faster database requests
- 6 to 1 server consolidation
- Meet customer SLAs under any traffic
- Cut software licensing costs by 85 percent
- Cut power and cooling costs by 75 percent
- Turned database tuning into a proactive benefit instead of a reactive requirement
- Cut floor space needs by 50 percent

The Challenge

Established in 1995, AT Internet is a leading independent web, mobile and social analytics solution provider in Europe. Its expertise in the field of online intelligence has enabled it to develop unique and innovative solutions, allowing it to measure web traffic, Internet user behaviour, the performance and availability of websites, and management of the company's online reputation.

AT Internet Technical Architect Thomas Fisher described the growing problem with AT Internet's database: "For the past three years, we have offered customers real-time statistics (under 1 minute) on website usage. As our customer-base grew, it became harder and harder for our SQL Server database to meet this SLA. Each additional server provided less and less performance. We were up to 12 database servers and needed to find a more affordable and scalable solution."

Thomas' team needed a solution that could give AT Internet the following:

1. High performance to provide users real-time information
2. A smaller footprint than its existing system
3. A cost-efficient and scalable system to serve a growing customer base without breaking the budget

The Solution

Performance

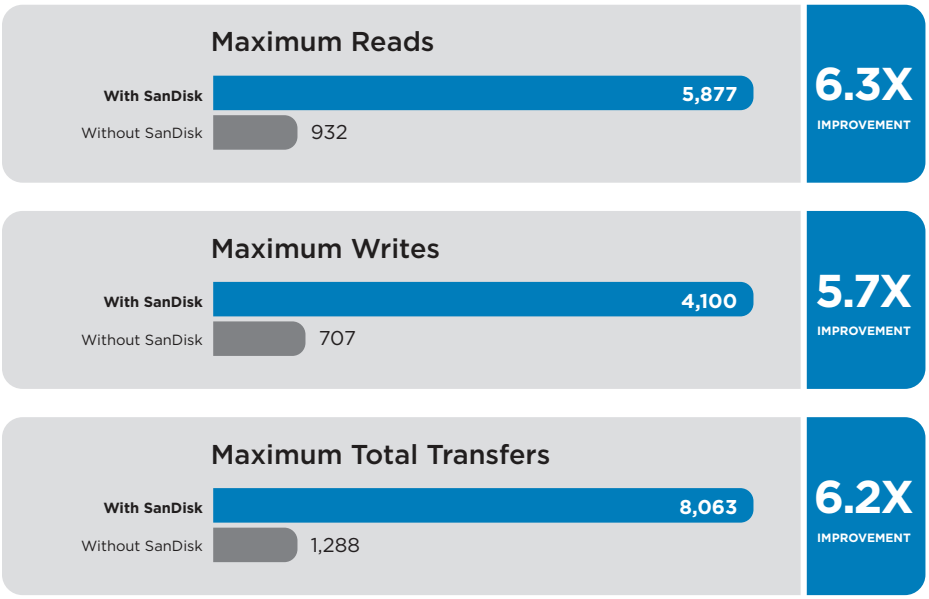
The motivating driver behind Thomas' investigation into the SanDisk® solution was to get more performance with less scale-out.

Thomas moved the most active databases onto Fusion ioMemory ioDrive® products while keeping the tempDB on disks and cooler databases on a SATA disk array. He quickly discovered just how well the Fusion ioMemory solution met his needs. "Each server with a six-disk array peaked at about 1,400 total disk transfers per second. The Fusion ioMemory-based servers peaked at over 8,000 disk transfers per second and an additional server scaled performance to nearly 14,000 disk transfers per second."

SanDisk®
a Western Digital brand

The chart below shows his results:

Single Server Transfer Rates (per Second)

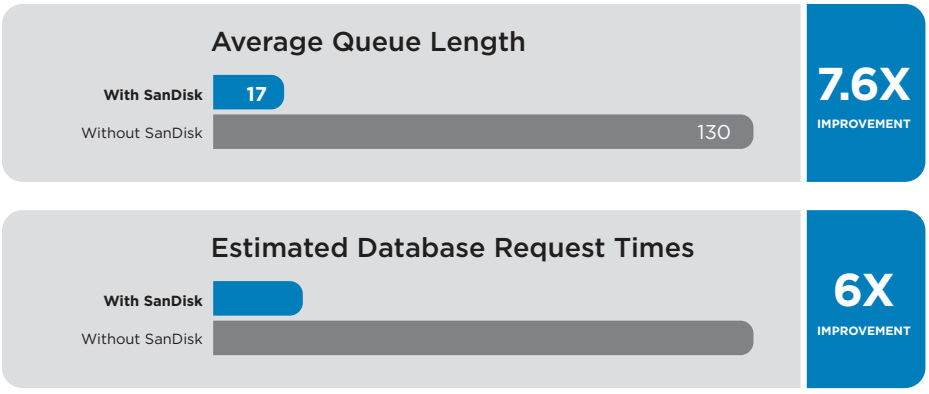


"We considered purchasing a SAN, but it would have taken 200-300 disks, plus we would have had to install a Fibre Channel system and Fibre Channel cards just to meet our needs. It only took two servers with a single ioDrive card in each to give us six times the performance we had before."

Thomas Fisher,
Technical Architect, AT Internet

"Importantly, the Fusion ioMemory-based servers achieved this performance without any noticeable queuing, which insulates us against traffic spikes," Thomas added. "I estimate the ioDrive performance has reduced database request times by six times."

The charts below show the average disk queue length and the request times.



Ultimately, the reason why Thomas' team implemented its innovative solution was to improve AT Internet's customer service. The SanDisk powered system delivered.

"Our system runs continuous batch jobs on the day's data—and it now does so much faster. Processes that used to take three seconds now complete in less than a second, which means our customers can always see site activity in real-time," Thomas said. "When our system was under heavy load, customers real-time reports might take from three to five minutes to complete. We can now deliver these in under a minute, even under the largest traffic spikes."

Stopping the Scale-Out

Not only did Thomas's team improve the performance of its Microsoft SQL Server database by six times, but they also did so with one-sixth the number of servers. The ROI was clear.

SanDisk®
a Western Digital brand

Thomas said, “In our previous system, the return on investment for each new server was reaching its limit. Our databases have a write-intensive workload that makes disk performance extremely expensive. We considered purchasing a SAN, but it would have taken more than 100 disks, plus we would have had to install a Fibre Channel system and Fibre Channel cards just to meet our needs. It only took two servers with a single ioDrive card in each to give us six times the performance we had before.”

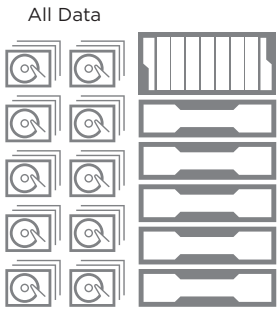
The Cost-Saving Multiplier of Consolidation

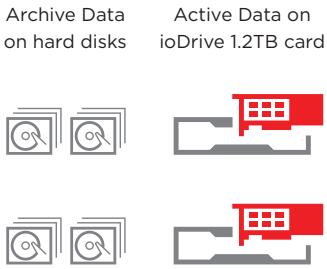
The cost savings AT Internet realized were significant, and include the following:

- Reduced software licensing costs. “By consolidating from 12 servers with dual processors to just two servers with dual processors, we now have to pay for just four licenses instead of 24,” Thomas said. “These savings alone nearly paid for the ioDrive cards.”
- Reduced power. Thomas said, “While we upgraded to more powerful servers, we still estimate we cut our power and cooling costs by 75%.”
- Reduced floor space needs. “AT Internet wants to be smart about its system, and and high-density is becoming important,” explained Thomas. “It probably would have taken a full rack of SAN hardware to equal the performance of the two Fusion ioMemory-based servers.”
- Reduced maintenance overhead. Thomas told us, “Before, we were doing everything we could to improve performance, including different RAID configurations and continual tuning just to meet our SLAs. With the ioDrive solution, we know exactly what workload each server can handle and just put them into production without complex configuration. We can now focus tuning efforts proactively, instead of reactively.”

System Overview

System Before[1]	System After





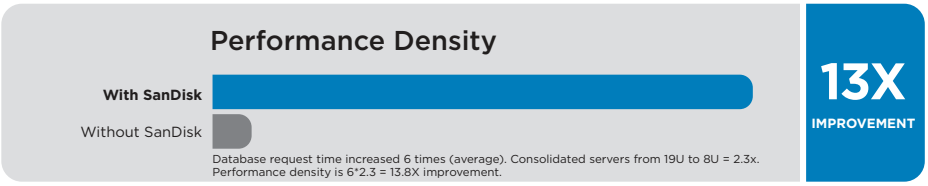
5 x 2U servers, 4 x quad-core 2.66GHz processors, 16GB RAM

9 x blade servers (in 9U Enclosure), 6 x quad core 2.26GHz processors, 16GB RAM

- OS: Windows Server 2008 R2 Std
- Application: Microsoft SQL Server2008 R2 Std
- Hard disks: 6 x SAS disks per server

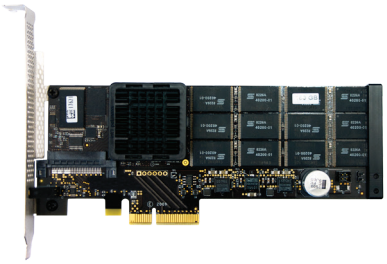
2 x 4U HP DL580 servers, octa-core 2.13GHz processor, 64GB RAM

- Moved active databases onto one ioDrive 1.28TB MLC (daily databases from the last 15 days)
- Used 6 x SATA disks per server for cooler databases (databases older than 15 days)



Database request time increased 6 times (average). Consolidated servers from 19U to 8U = 2.3x. Performance density is 6*2.3 = 13.8X improvement.

SanDisk®
a Western Digital brand



Fusion ioMemory™ - ioDrive®

Summary

Implementing Fusion ioMemory gave AT Internet the following benefits:

- 6x faster database requests
- 6 to 1 server consolidation
- Meet customer SLAs under any traffic
- Cut software licensing costs by 85 percent
- Cut power and cooling costs by 75 percent
- Turned database tuning into a proactive benefit instead of a reactive requirement
- Cut floor space needs by 50 percent

About AT Internet

Established in 1995, AT Internet is a leading independent web, mobile and social analytics solution provider. A leader in Europe in the field of online intelligence, its expertise and technology have enabled the company to develop unique and innovative solutions allowing it to measure web traffic, Internet user behaviour, the performance and availability of websites, as well as to manage a company's online reputation. AT Internet has approximately 3, 500 clients worldwide, including some of the largest companies and institutions in the world. With its Headquarters in Bordeaux, and thanks to its subsidiaries, AT Internet operates in 9 different countries worldwide including Germany, England, Ireland, Spain and Canada. It currently employs 150 people on an international level, with approximately 60% of its staff working in R&D.

Contact information

sales-hp@sandisk.com

Western Digital Technologies, Inc.
951 SanDisk Drive
Milpitas, CA 95035-7933, USA
T: 1-800-578-6007

Western Digital Technologies, Inc. is the seller of record and licensee in the Americas of SanDisk® products.

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/hp

SanDisk®
a Western Digital brand

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 Server models varied widely. Specifications listed are those for the majority of each type.

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

©2016 Western Digital Corporation or its affiliates. All rights reserved. SanDisk is a trademark of Western Digital Corporation or its affiliates, registered in the United States and other countries. Fusion ioMemory, ioDrive, and others are trademarks of Western Digital Corporation or its affiliates. Other brand names mentioned herein are for identification purposes only and may be the trademarks of their respective holder(s).