



# Host Europe GmbH Eliminates Massively Multiplayer Online Gaming Database Bottleneck with SanDisk®

Leading European managed hosting service provider dramatically reduces infrastructure and costs for its customers, while increasing virtualized database performance capabilities.

## Solution Focus

- Cloud Computing
- Software as a Service (SaaS)
- Virtualization (KVM)
- MySQL

## Summary of Benefits

- **2 to 5x more workload** per server
- **Virtualized multiple databases** with varying workloads
- **Over 30% less hardware**
- **Eliminated worry** over application service interruptions
- **Best price/performance ratio** to extend more attractive pricing to customers
- **Expert staff** helped design a simple, easy-to-deploy system

## The Challenge

Host Europe Group has over one million customers. Its subsidiary, Host Europe GmbH, is a leading provider of managed hosting services, with over 200,000 customers and 700 managed hosting customers in two data centers. One of its customers hosts a browser-based MMOG (Massively Multiplayer Online Game) at Host Europe's data center.

This customer maintains multiple virtualized databases, each with different I/O requirements. The customer had been scaling performance by continually adding servers, but the system's performance capabilities were reaching its limit. On top of this, the management burden and costs to maintain the growing server farm were beginning to strain its business model.

Thomas Ebbers, Host Europe's Head of Product Management, told us, "To maximize this customer's infrastructure investment and flexibility, we virtualized the databases. However, the different I/O profiles resulted in unpredictable workloads that could not be consistently and affordably handled with traditional storage."

When the customer asked Host Europe GmbH about ways to consolidate, the hosting provider was confident it could find an innovative solution that was cost-efficient, while ensuring its end-users best-in-class performance.

## The Solution

After attending a workshop and live demo, Host Europe GmbH was confident a SanDisk's Fusion ioMemory™ products were the right solution for its customer's problems.

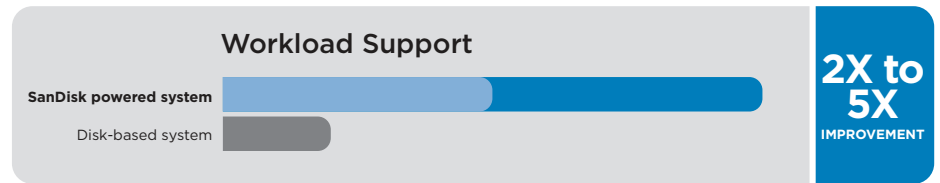
Host Europe moved its customer's database to the Fusion ioMemory solution and found it completely resolved the performance problems.

"The Fusion ioMemory ioDrive® cards provided consistently high performance for the workloads of massively parallel-managed virtual machines. We don't have to worry anymore about load spikes that might cause servers to crash or interrupt application service," Thomas said. "This is a solution that will help all of Host Europe's customers. It enhances the capabilities of virtualization, allowing us to guarantee high service levels to all applications, under any load."

*“The ioDrive cards provide consistently high performance for the workloads of massively parallel-managed virtual machines. We don’t have to worry anymore about load spikes that might cause servers to crash or interrupt application service.”*

**Thomas Ebbers,**  
**Head of Product Management**  
**Host Europe**

Thomas told us the SanDisk-powered system supports two to five times the workload of the previous system and added, “The ioDrive cards deliver the performance we need for I/O-intensive VMs.”



### Improved ROI with Support for More Virtualized Applications and Databases

Thomas noted that in addition to improving database performance, the ioDrive cards allowed them to use hardware much more efficiently to significantly cut infrastructure, operating costs, and the need for future scale-out.

“The ioDrive cards clearly have the best price/performance ratio,” Thomas said. “We would have needed to scale out our 60-server hosting platform with an additional 162, 15k hard disks just to meet our existing performance needs. The ioDrive cards allowed us to combine the application and databases onto the same servers, cutting our server footprint to just 24 servers, while giving us plenty of headroom for future workload needs.”

By reducing the hardware Host Europe needed to guarantee best-in-class service, SanDisk enabled them to maintain attractive pricing while improving bottom line.

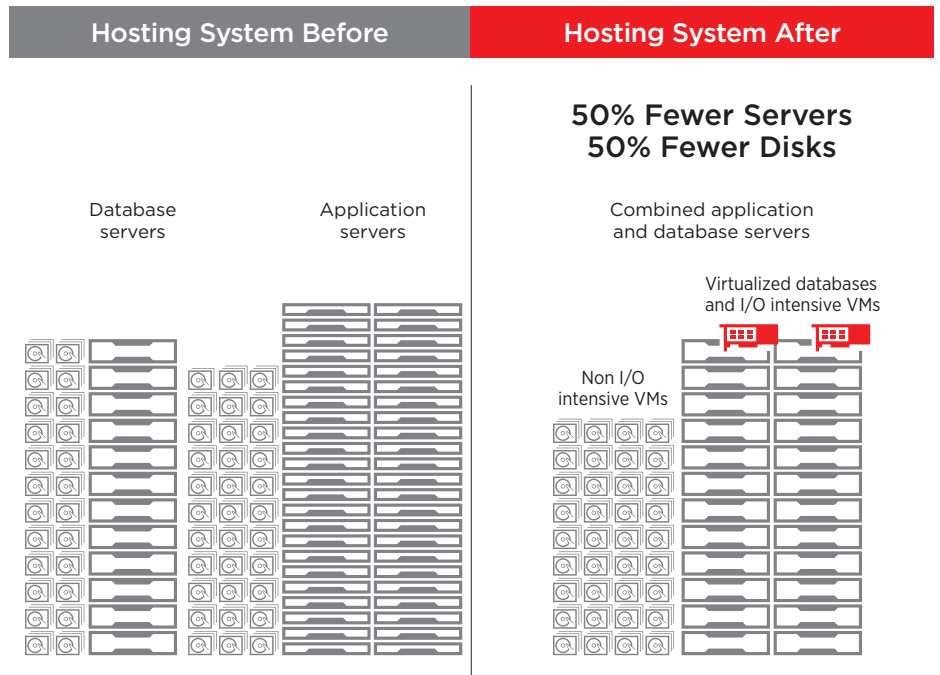
Additionally, Thomas noted that offering this performance saves its customers valuable engineering resources: “The ioDrive cards offer such exceptional performance that our customers no longer need to optimize applications to perform well on hard disks, which adds to the value Host Europe provides them.”

### Expert Support

As if eliminating performance problems at a lower cost wasn’t enough, the SanDisk staff made implementing the system easy.

“From our early discussions, it was clear that the SanDisk team understood our business demands. They provided us with expertise and a system that was very helpful for some customers we consulted for,” said Thomas. “After closing the deal, SanDisk remained actively engaged with us, and we had a system ready to move into production in just a few minutes. We made the right decision in partnering with SanDisk.”

## System Overview



### 12 database servers

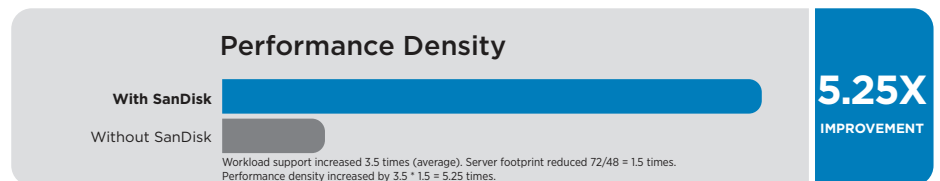
- 2U servers, Dual Quad-Core 2.33GHz processor, 8GB RAM
- Hard disks: 6 x 146GB FC 15K, in RAID 10
- OS: Debian Linux
- Virtualization Layer: KVM
- Application: MySQL

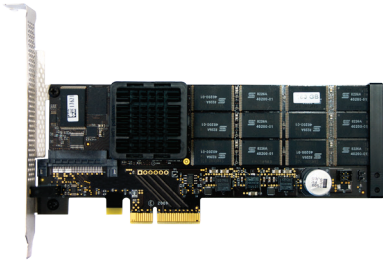
### 48 application servers

- 1U Servers, single Quad-Core 2.40 GHz X3430 processor, 4GB RAM
- Hard disks: 2x 1000GB SATA 7.2K in RAID 1

### Consolidated database and application servers

- 24 x 2U servers Quad-core AMD Opteron 6168, 1.9GHz processor, 96GB RAM
- Hard disks: 4 x 500GB SATA 7.2K in RAID 1
- 1 x ioDrive 160GB card in each





Fusion ioMemory™ - ioDrive®

## Summary

Implementing the Fusion ioMemory solution gave Host Europe GmbH the following benefits:

- 2 to 5x more workload per server
- Virtualized multiple databases with varying workloads
- Over 30% less hardware
- Eliminated worry over application service interruptions
- Best price/performance ratio to extend more attractive pricing to customers
- Expert staff helped design a simple, easy-to-deploy system

Needless to say, Thomas is thrilled. "SanDisk's technology and staff helped us complete a critical strategic project. We will be turning to SanDisk whenever I/O is a problem."

## About Host Europe GmbH

Host Europe Group has over 1,000,000 customers. Its subsidiary, Host Europe GmbH is a leading provider of managed hosting services, with over 200,000 customers and 700 managed hosting customers in two data centers. It is Europe's second largest virtualization solution provider with over 25,000 virtual machines in service and has provided solutions for over 200,000 customers. It was the winner of the "Nachhaltigkeitspreis" of the "Ethikbank" in 2008 and the eco e.V. Internet Awards in 2005, 2007 and 2009 for hosting and data center operation. Host Europe GmbH was founded in 1997 and is based in Cologne, Germany. Host Europe GmbH operates as a subsidiary of Host Europe Group.

---

### Contact information

fusion-sales@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/enterprise](http://www.sandisk.com/enterprise)

---

# 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.

The performance results discussed herein are based on internal Host Europe 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).