



## Modrus Adds Zip to Zenoss Network Monitoring

UK-based provider of IT solutions enhances network monitoring for customers, increasing per-server processing capability by 6x

### Solution Focus

- Cloud Computing
- Zenoss Network Management

### Summary of Benefits

- 6X data points processed on 1/3 server footprint
- 3:1 server consolidation
- Recovered 4 staff-hours per week
- 24X higher performance density than SSD-based servers

### The Challenge

London-based Modrus Limited provides hosting, cloud, and virtual IT solutions for its customers. Founded in 2004, Modrus is an experienced supplier of outsourced computing and telephony solutions, as well as an industry-respected retailer of networking and VoIP equipment.

Modrus uses Zenoss Network Management software to spot network issues before they ever become problems for its customers. But as its customer base and corresponding network load grew, its hosted Zenoss system servers began to slow.

Modrus's Managing Director, Edward Armitage described the difficulty: "Zenoss generates a significant amount of disk I/O. Our systems were running close to 100% capacity, so any small performance issue would massively impact the monitoring system."

To ensure slowness never affected the company's quality of service, Mr. Armitage promptly began looking for a solution that could deliver the following:

1. Performance to handle their current workload, and scalability to support an increasing customer base
2. Reliability it could trust to protect network integrity of its mission-critical hosting infrastructure
3. A stable system that required less monitoring

### The Solution

#### A Cut Above: Providing Enterprise-Level Reliability

After researching options, Mr. Armitage determined Fusion ioMemory™ solutions had a proven track record for reliability: "We identified Fusion ioMemory use cases through Internet forums that equaled or exceeded our performance requirements, and which had been running for many years."

#### Making Performance Problems and Server Footprint Disappear

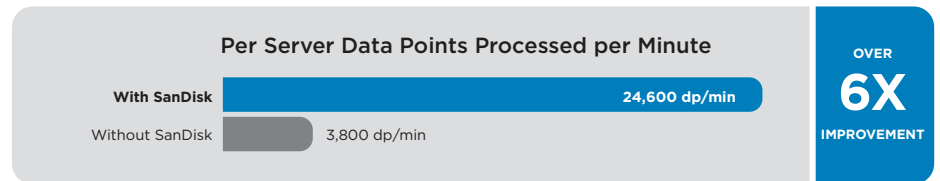
The data load on the system had exceeded the capability of Modrus' previous servers. Mr. Armitage was concerned about how to handle future growth while maintaining the best-in-class monitoring service they provided their customers.

#### Maximizing Performance per Server

With those goals in mind, Mr. Armitage added a Fusion ioMemory™ ioDrive Duo® 640GB card to one of its Zenoss servers and moved the Round Robin Database (RRD) data onto it. He found that the performance problems disappeared. Mr. Armitage said, "We processed a total of 11,400 data points per minute across three

servers in the old system. With an ioDrive Duo card we can process 24,600 data points on just one server. This tells me that one server is processing six times the data of the old configuration.”

The chart below shows the server performance improvements.

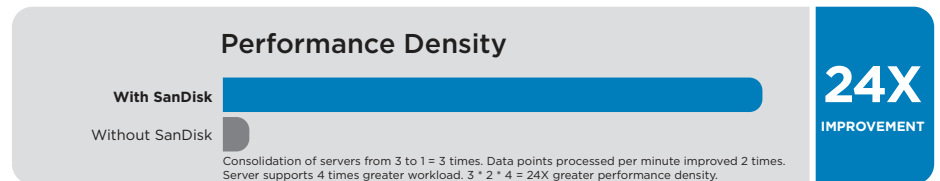


### Driving Costs Down Now and In the Future

The three-to-one footprint consolidation the ioDrive Duo cards enabled had a significant impact on Modrus’s current hardware costs. “SanDisk® has really reduced our costs. We’ve managed to decommission some hardware and simplify our monitoring platform,” Mr. Armitage explained.

He also pointed out that these cost savings would continue well into the future: “The SanDisk-powered server is only running at 25% capacity. Not only are we now delivering a better quality of service to our customers, but our workload can increase significantly before we need to add more hardware.”

The chart below shows the performance density improvements:

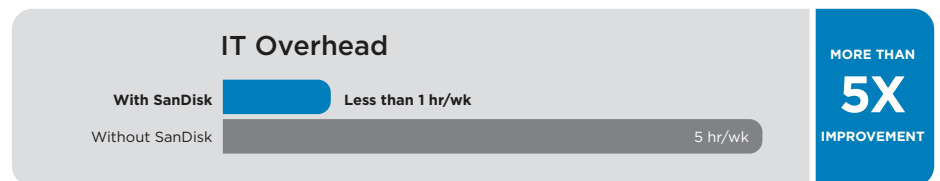


*“SanDisk® has really reduced our costs. We’ve managed to decommission some hardware and simplify our monitoring platform so that we are running one server at 25% capacity, and processing more data points than we did on three servers, all at 100% capacity.”*

**Edward Armitage,**  
Managing Director, Modrus Limited

### Less Administration, More Value-added Work

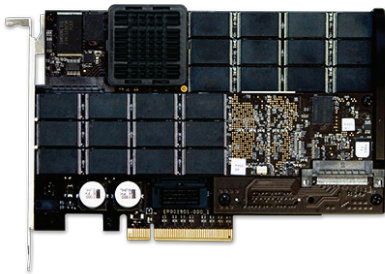
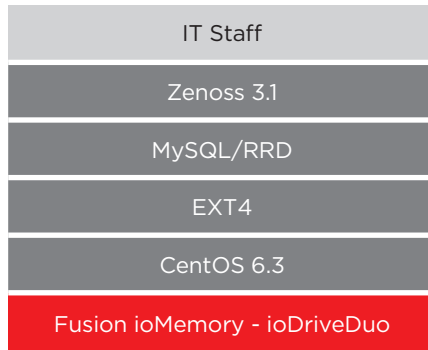
Modrus realized an additional cost benefit by implementing Fusion ioMemory solutions: the simpler, more powerful system was much easier to maintain.



Mr. Armitage said, “We spent a great deal of time coaxing the old system along. We were spending an average of an hour a day ensuring that the system didn’t lose data. The new infrastructure is significantly better. Our guys now spend less than an hour a week monitoring the system.”

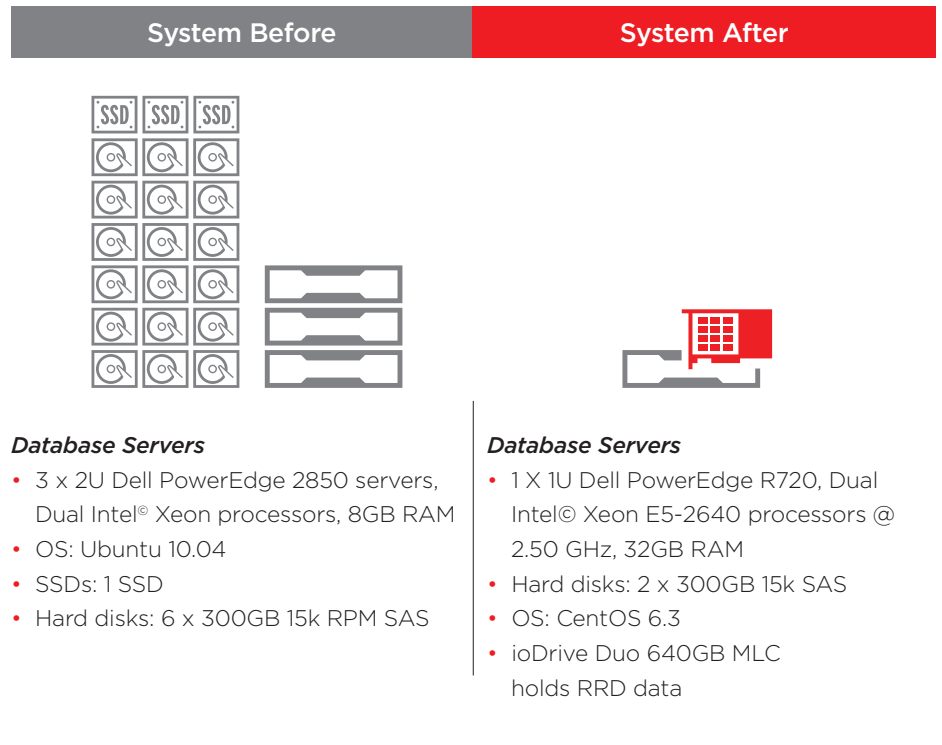
This freed staff to spend time on more value-added activities. Mr. Armitage added, “In essence, the engineer has moved from a daily tactical role to a more strategic role, where he has the time to look for ways we can improve our infrastructure monitoring.”

## SanDisk Powered Software Stack



Fusion ioMemory™ ioDrive Duo®

## System Overview



### Database Servers

- 3 x 2U Dell PowerEdge 2850 servers, Dual Intel® Xeon processors, 8GB RAM
- OS: Ubuntu 10.04
- SSDs: 1 SSD
- Hard disks: 6 x 300GB 15k RPM SAS

### Database Servers

- 1 X 1U Dell PowerEdge R720, Dual Intel® Xeon E5-2640 processors @ 2.50 GHz, 32GB RAM
- Hard disks: 2 x 300GB 15k SAS
- OS: CentOS 6.3
- ioDrive Duo 640GB MLC holds RRD data

## Summary

Implementing Fusion ioMemory solutions gave Modrus the following benefits:

- 6X data points processed on 1/3 server footprint
- 3:1 server consolidation
- Superior reliability to SSDs
- Recovered 4 staff-hours per week

Mr. Armitage concludes, "We're now considering using the ioDrive Duo cards elsewhere because it's a guaranteed fix. You know you can get a performance improvement with an ioDrive Duo card."

## About Modrus

Modrus, founded in 2004, is an experienced supplier of outsourced computing and telephony solutions, as well as an industry respected retailer of networking and VoIP equipment. The business employs 40 staff, of which 35 are members of the customer facing sales and technical support team. Modrus has a deep understanding of enterprise networking, collectively having had many years of experience architecting, managing and supporting complex network environments.

### Contact information

sales-dell@sandisk.com

### Western Digital Technologies, Inc.

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

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The performance results discussed herein are based on internal Modrus 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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