



SevOne Powers Enterprise Network Performance with Fusion ioMemory™ Solutions

Expert network performance management solutions provider uses Fusion ioMemory ioDrive® cards to create a turnkey appliance capable of monitoring millions of network elements and reporting on billions of data points

Summary of Benefits

- **Small physical footprint** fit into single turnkey appliance without occupying hard-drive bays
- **Enabled real-time monitoring** of millions of elements
- **Dramatically improved the speed** of real-time current and historical reporting over billions of baseline data points
- **Improved data protection** by caching to non-volatile ioDrive cards rather than RAM
- **Improved data protection** by adding a fast, short-term and non-volatile backup

The Challenge

SevOne provides next-generation network performance management solutions and services that enable enterprises and service providers to keep their complex networks running at peak performance. The company helps customers evaluate needs and provides a turnkey appliance including hardware and software (operating system, database, and monitoring software).

When a large enterprise customer's load began taxing SevOne's high-end appliance, SevOne sought a solution. The customer needed to track more than two million elements, each with forty indicators, resulting in SevOne's application needing to analyze literally billions of baseline data points every day. SevOne realized that this signaled a growth trend in global network traffic and visibility needs. The company took the initiative to create a best-in-class solution for the most demanding environment.

The Solution

SevOne Solutions Engineer Manuel Harnisch thought the ideal solution would be to load the customer's short-term database into RAM. However, this approach wasn't practical from a cost standpoint, and required significant logistics work to manage the RAM volatility. That's when the company ordered some Fusion ioMemory ioDrive cards to test.

Benchmarking

Because SevOne's goal was achieving the highest performance possible, the SevOne team benchmarked the ioDrive cards against RAM rather than performance striped disk arrays. The team tested two appliances that used the exact same hardware. On one, they tested a number of operations against a database on a RAM disk. On the other, they tested the same operations against a database stored on an ioDrive card.

"We found that the numbers were very close to one another," Manuel said. "The baseline data we wanted to store on the ioDrive cards can grow up to 40GB, so we were looking at doubling the RAM in our appliance. The price difference between doubling RAM versus adding an ioDrive card made the ioDrive cards an easy choice."

Delivering Real-Time Monitoring and Analysis

SevOne excels at giving enterprise organizations and service providers visibility into network performance so they can anticipate performance degradation indicators and take preventative steps before degradation occurs. It also provides historical reporting capabilities that allow its customers to perform more complex analysis.

“Network performance is critical for our customers’ underlying businesses,” commented Tanya Shea, Senior Vice President of Operations for SevOne. “For example, we have global trading customers that need to know what’s happening this second, not last minute. Our real-time monitoring and reporting capabilities can save our customers millions of dollars by detecting, managing, and correlating service events.”

While ioDrive cards benchmarked at near RAM performance, the real test was putting them into deployment. SevOne added an ioDrive card to its most challenging customer’s appliance and then moved the database table containing its baseline data to the ioDrive card.

The ioDrive card-equipped appliances delivered. Shea told us, “The ioDrive cards performed like the data was in RAM. After testing them at our most challenging customer site, we decided to make them standard in two of our top-tier appliances.”

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SevOne

Protecting Customer Data

SevOne used the ioDrive cards to do much more than just improve performance. It also implemented several innovative techniques to enhance data protection in the event of power failure.

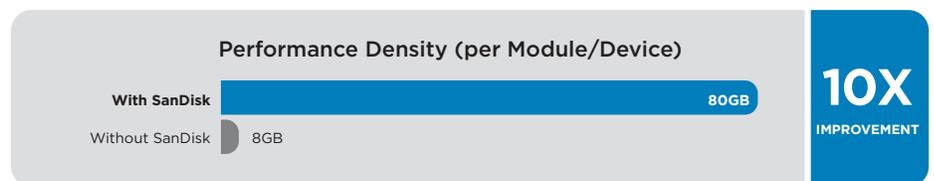
First, SevOne caches its baseline data on the ioDrive cards instead of in RAM. The ioDrive card’s non-volatile flash provided immediate protection against power failures without the complex redundancy schemes and backup power supplies that RAM would have required.

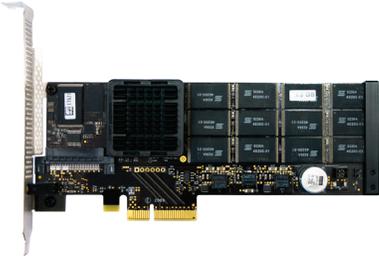
Second, SevOne modified its application to save short-term backups to both the ioDrive card and the hard disks. “We flush data in RAM to a short-term backup about once an hour,” Manuel said. “By flushing to both disk and the ioDrive card, we protect customers from losing data that might be stuck in the disk queue if power fails.”

Scalable Performance from a Single Appliance

A primary concern of SevOne was to meet I/O performance requirements in a single appliance. Hard disk arrays were simply not up to the task. The company determined that RAM’s cost and volatility made an all RAM database impractical.

As SevOne’s testing showed, the ioDrive cards delivered the performance they needed while still leaving hard drive bays open for conventional storage. Additionally, the ioDrive cards’ linear scalability provided an easy upgrade path for SevOne customers as performance needs increased.





Fusion ioMemory™ - ioDrive®

SevOne's ioDrive Card-Equipped Product

The SevOne PAS 60K is the largest network performance management appliance offered by SevOne, scaling up to 60,000 network elements. Designed for large enterprise and service provider networks, and incorporating advanced technology such as the Fusion ioMemory ioDrive card, the SevOne PAS is designed for real-time performance and scalability, supporting high-frequency polling down to one second, and up to 15 million flows per minute.



Summary

Implementing Fusion ioMemory solutions gave SevOne the following benefits:

- **Small physical footprint** fits into a single turnkey appliance without occupying hard-drive bays
- **Enabled real-time monitoring** of millions of elements
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- **Improved data protection** by caching to non-volatile ioDrive card rather than RAM
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"We chose SanDisk® as our partner because their core values and technology aligned well with ours — to provide the fastest, most scalable, and flexible solutions in our respective industries," said Tanya.

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

About the Company

SevOne Inc. provides a distributed network performance management solution that delivers the fastest, most scalable, and comprehensive real-time monitoring, troubleshooting and performance reporting solution to ensure application performance and reliability. The SevOne Performance Appliance Solution (SevOne PAS™) enables enterprises, cloud and service providers, and government organizations to keep increasingly complex networks, servers and applications functioning at peak performance levels. The SevOne solution is capable of monitoring millions of IT elements and flows, providing IT operations teams with the most accurate and timely data available to ensure enterprise-wide performance and reliability for business applications.

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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 SevOne internal 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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