

# RamSan Solutions

The World's Fastest Storage™

## Client: Follett Higher Education Group

“Our investment has been right on target... I will recommend it any day.”

The nation's largest college bookstore provider needed faster storage to keep up with their growing business. They contacted Black Diamond Technologies to increase their Oracle database I/O performance. Black Diamond Technologies is an experienced value added reseller of the Texas Memory Systems RamSan solution and has seen the impact of Solid State Disk at other Oracle shops. The RamSan solid state disk from TMS was used to address Follett's I/O bottleneck.

**Follett Higher Education Group** is a family-owned bookstore provider that has operated with integrity and respect for over 130 years. They manage more than 740 campus bookstores in North America and provide management systems, support services and used textbooks to over 1,800 independently managed bookstores. Follett pioneered selling textbooks online in 1995 and introduced [efollett.com](http://efollett.com) in 1999, which now serves more than 900 campuses nationwide. Follett serves more than four million students through their "click and mortar" approach to products and services.

Follett's eCommerce application has 900 storefronts and the associated customer services tools for each store. It receives over 150,000 visits and serves over 60GB of pages each day. The application needed to scale to support a higher load as Follett's



business expanded. Storage I/O performance became the limiting factor.

### Challenge: Increase Oracle I/O Performance!

“My focus for considering solid state was for performance. I already knew what tables I had issues with.” said Clyde Remedios, Sr. Tech Analyst at Follett.

Follett Higher Education Group worked with Black Diamond Technologies to find out how solid state would fit in their environment. “We knew compatibility with Oracle and IBM were requirements for any storage they considered” said Michael Kupfer, President of Black Diamond Technologies. “The RamSan is IBM Total Storage Proven™ and Texas Memory Systems is an experienced Oracle Partner, so we knew that the RamSan would be a perfect fit.”

### Quick facts:

- **Industry:**  
College bookstore management/services
- **Application:**  
eCommerce, providing storefronts and customer service tools for more than 900 campuses
- **Operating System**  
IBM AIX
- **Environment**  
Oracle 9i database for IBM WebSphere Commerce, IBM p650 Server, IBM FASTT 600 Storage
- **Challenge:**  
Increase Oracle database performance by reducing sequential I/O bottleneck
- **Solution**  
Mirrored pair of RamSan-320s connected via redundant data paths



"We chose the RamSan over the competitors because of the company reputation and quality of the product," said Steven Simmons, Manager eCommerce Technology at Follett.

### **Solution: RamSan Solid State Disk**

The RamSan-320 delivers an incredible 250,000 I/Os per second and has an access time 250 times faster than hard disk drives. Clyde Remedios needed the ability to scale to much higher I/O loads and knew that this performance could not be matched by other solutions. "I thought about adding an additional IBM drawer for more spindles, but determined that solid state disks were the best option."

Follett Higher Education Group installed a mirrored pair of RamSan-320s that are connected via fully redundant data paths. Combined with the extreme reliability already designed into the RamSan, this hardware setup provides highly available data around the clock.

After careful evaluation and identifying the most resource-intensive objects, the team at Follett moved key tables, indices and redo logs to the RamSan.

### **Result: The ability to scale to significantly higher loads without impacting response time**

According to Clyde Remedios, "After moving those key objects to the RamSan, we totally resolved our sequential I/O bottleneck." The bookstore provider's peak business season, the "efollett.com rush," was a huge success. The load on the database increased significantly and response time easily stayed within the acceptable range.

Follett is currently increasing the RamSan's capacity to move more items off of the IBM FASTT Storage. Follett Higher Education Group plans to reevaluate their database each year to determine if more items need to move to solid state disks, "to provide major performance increases."

**"The RamSan has been fantastic from the performance perspective. Our investment has been right on target ... I will recommend it any day."**

*Clyde Remedios,  
Sr. Tech Analyst at Follett Higher Education Group*

For more information, visit [www.superssd.com](http://www.superssd.com) or contact us at [sales@superssd.com](mailto:sales@superssd.com).

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## **About Texas Memory Systems**

Since 1978, Texas Memory Systems (TMS) has specialized in high bandwidth, low latency, I/O-intensive storage systems. While the primary feature of our products has always been high performance, we achieve this performance without resorting to overly complex circuitry or unwieldy protocols. This emphasis on simplicity allows TMS to deliver outstanding performance using mature technologies and readily available off-the-shelf components. Our record of success, however, is as much a function of close customer relationships as it is a function of our technology. As we continue to grow, we will strive to maintain these close customer relationships and we will continue to provide outstanding customer support.

TMS products were originally designed to meet the needs of the US defense industry, a primary TMS customer throughout our history. This market has always demanded the ultimate in performance and TMS has always delivered it. Texas Memory Systems now brings its expertise to the commercial SAN market. The RamSan, TMS' eighth generation SSD product, delivers a level of performance previously unavailable in a commercial storage product.

Texas Memory Systems  
10777 Westheimer, Suite 600  
Houston, TX 77042

713-266-3200  
[www.superssd.com](http://www.superssd.com)

