

RamSan Solutions

The World's Fastest Storage®

Client: IC Source

RamSan Keeps 40 Million Line Items and 3,000 Customers Up To Date



IC Source, Inc. has been serving the time-critical and complex needs of electronic components brokers since 1996 with its advanced inventory database application. OEM design specifications and the requirement for electronic components change rapidly. Therefore, the ability to quickly source parts and dispose of excess inventory before it becomes obsolete is critical. IC Source helps thousands of these manufacturers and brokers, in 40 countries, source and sell components by with the most advanced online component parts database available.

In this fast moving market, IC Source maintains a leadership position with a strong reputation for reliability and value, offering its customers the unique promise of instant inventory updates

in a secure environment. For a modest monthly fee, customers have unlimited access to detailed inventory data for over 40 million line item components as well as vendor information. Customers can post and update their available inventory directly online and determine what brokers can view it.

In IC Source's world, time is critical and enabling its customers to pinpoint the best deal is at the core of their business. IC Source has developed an extensive suite of applications that work with SQL Server database to provide a powerful interface and customized search capability to its customers. IC Source also offers a customizable version of the database that brokers can post on their websites, enabling visitors to determine inventory availability and submit requests for quotes in real time. Unlike competing offerings that have significant delays in updating data, IC Source differentiates itself by helping customers get to the best data faster.

The Challenge: Eliminate backlog of updates to the inventory database

Ensuring that component inventory data is accurate and up to date is the key to helping customers pinpoint the best deals. Therefore current inventory data is core to IC Source's business. To maintain this data the company has developed a proprietary application suite that works with SQL Server to optimize performance for inventory data updates as well as for rapid search capabilities. This places performance demands on the database for simultaneous read and write activity. With its customer base and the number of inventory components growing, performance delays started to create a backlog for inventory updates.



Quick Facts

- **Customer:**
IC Source
www.ICSource.com
- **Industry:**
E-Commerce
- **Application:**
Inventory Database
- **Operating System**
Microsoft Windows
- **Environment:**
HP Servers running
Microsoft SQL Server
- **Challenge**
Improve inventory
database by eliminating
backlog of updates
- **Solution:**
128GB RamSan-400
- **Result:**
400% performance
improvement

Unless the company could eliminate the backlog and improve database performance its ability to offer the industry's fastest, most accurate component inventory data was threatened.

IC Source had optimized their database application for performance and found that the bottleneck they were experiencing was in the inability of its RAID storage system to access data quickly enough. They tried to resolve the latency bottleneck by expanding the storage system and adding twice as many hard disk drives (HDD). They hoped that spreading the data over more spindles would improve access times. "When we doubled the number of hard disks in our external RAID array we had a zero-percent improvement in performance," said Peter Moran, President of IC Source. "Monolithic RAID is very expensive and we were not seeing improved performance."

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IC Source needed a solution that was able to reduce storage access latency and increase performance for both read and write access. Users needed read access to search and view the available inventory while the 40,000 inventory line items were being concurrently updated in the database. If customers couldn't access the information they needed in real time they would go elsewhere.

IC Source was aware solid state disk (SSD) had been successfully used to improve performance of I/O bound databases alongside hard disk drives by many other organizations. In typical database scenarios, only parts of the databases are "hot" and require frequent access, so only indexes and select tables are stored on SSD, while the bulk of the data is stored on conventional hard disk. By tiering data across SSD and HDD storage in this way, many companies have built high-performance storage infrastructures very economically. However, since IC Source's entire database was essentially "hot" both in terms of write and read access requirements, they would need a solid state disk solution with sufficient capacity to store the entire 70+ gigabyte database.

Given the central role the database occupies in IC Source's business, the solution they needed would not only have to deliver performance improvement with large capacity, but would also have to be extremely reliable, as downtime is not acceptable.

The Solution: Texas Memory Systems RamSan Solid State Disk

After researching SSD vendors, IC Source contacted solid state disk leader Texas Memory Systems. They were happy to learn that the Texas Memory Systems' RamSan-400 solid state disk could provide ample capacity to store their entire database in a 128 gigabyte configuration.

When IC Source deployed the RamSan in their data center they immediately saw a 400% improvement in performance.

IC Source initially set up the RamSan-400 in a demonstration environment at their office. Within half an hour they had it up and running and did not require any technical assistance at all. They found it extremely easy to use. When IC Source deployed the RamSan in their data center they immediately saw a 400% improvement in performance.

"From our research, we discovered that the SSD capacity available from Texas Memory Systems' competitors were too small", according to Mr. Moran. "The RamSan-400 can easily accommodate our 70 gigabyte database with room to grow. Plus Texas Memory Systems has a great reputation, and

lots of happy customers. We were also pleased to work with a US-based company with tech support in the US.”

“However, we were initially nervous about deploying SSD,” continued Mr. Moran. “Were we going to spend a lot of money and have nothing to show for it, as we did adding disks to the HDD RAID array? Would there be reliability issues? If it hadn’t been completely reliable it would not have worked in this environment. But it’s been great, not a single issue. [TMS] tech support even helped us configure our Fibre Channel switch.”

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IC Source was surprised at how easy the RamSan is to install and manage, calling it “near-toaster simple”. In their experience, alternate hard disk drive systems require significant time, expertise and understanding to configure, format and manage, while the RamSan solid state disk simply requires an IP address and deciding how big to make the LUNs. It took mere seconds to provision LUNs using the RamSan’s simple and straightforward interface, compared with the multiple hours the same operation takes on their RAID system. Mr. Moran commented, “I don’t think it could get any simpler to set up and operate the RamSan. I could take any reasonably savvy college student and have them set it up without any previous knowledge.”

The Result: “The World’s Fastest Storage” eliminates backlog, delivers 400% performance improvement to database and helps ensure IC Source’s competitive edge

As soon as the Texas Memory Systems RamSan-400 solid state disk was deployed in the data center, IC Source immediately observed a 400% improvement in performance.

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Peter Moran, President, IC Source

“For us this was a big deal because before the RamSan some of the routines that we were running to import inventories into the database were taking eighteen hours,” commented Mr. Moran. “With the RamSan this dropped down to under 4 hours. For us that was a major breakthrough in speed. Let’s say you send inventory at 8:00 AM. With the old RAID array you would be lucky to have it in the database by 1:00 PM. Now with the RamSan, you can expect to see it online within the hour. In some cases the inventory is updated in just seconds.”

By putting the inventory data in front of buyers right away there is a better opportunity to sell it and avoid obsolescence. For IC Source, the increased performance enables the company to be highly competitive and ensure far greater customer satisfaction. If IC Source delays getting inventory updated, they increase the chance of a mismatch between reported inventory and actual inventory. In situations like this the seller has to deal with frustrating and wasteful calls and contacts. The RamSan has eliminated that problem.

“By increasing performance and actuating sales more rapidly, IC Source has built a significant competitive advantage,” concludes Mr. Moran. “I don’t think hard disk is the way to go if you have a serious, heavy duty database that needs a performance boost. I don’t think you have an option. You just have to go with SSD. We got back every penny of our investment in the RamSan. It was money well spent.”

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About IC Source

IC Source, Inc. is a privately held company that was formed in 1996 as one of the first companies to serve the unique needs of electronic components brokers and has built a leading reputation for reliability and real value. IC Source takes communication between brokers to the next level and is the only source that can promise instant inventory updates in a secure environment. IC Source has in excess of 3,000 members and its database lists over 40 million line items. Learn more at www.icsource.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 Texas Memory Systems 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.

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

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