Champion SOLUTIONS GROUP
Evolve to Simplicity

Application Brief

Shoe Retailer Racks up Savings, Doubles Throughput with Champion Storage Architecture

Highlights:

INDUSTRY
Retail

CHALLENGE
A leading footwear retailer struggled with poor response times for its mission-critical Oracle application, which was supported by direct attached storage.

SOLUTION
Champion architected an IBM System Storage DS6800 SAN solution with high-speed fibre channel disks to replace the company's legacy storage subsystems.

RESULTS
Since implementing the Champion/IBM architecture, the retailer has doubled its data throughput, with an average response time reduction of 109 percent. Backup windows have been compressed to a fraction of their previous time as well. Management of the SAN is intuitive and the company can scale easily for three to five years of growth. Additional monetary savings has been realized through consolidation.

What began as a small shoe store in Salisbury, N.C. in the 1920s has evolved into one of the fastest-growing shoe retailers in the nation. Today, Rack Room Shoes has more than 300 stores located in 24 states and is dedicated to providing customers great service and great shoes at a fair price. When this family footwear retailer encountered sub-par response times for its mission-critical Oracle application, leaders quickly engaged Champion Solutions Group to design a high throughput storage solution. With a new IBM® SAN storage architecture now in place, Rack Room Shoes has more than doubled data throughput, shortened backup windows and gained flexibility in management and growth potential. With the help of Champion and IBM, this shoe retailer is once again a step ahead of the competition.

Slow Response Times Drive Technology Change
At its corporate headquarters in Charlotte, NC, Rack Room Shoes employs Oracle software for its enterprise human resources and accounting processes, allowing users to aggregate and manage employee and financial data for the company's more than 300 stores. This business-critical Oracle application was running on an infrastructure comprised of IBM servers and five direct attached storage (DAS) systems with older SSA disk technology. The company was using a traditional disk-to-tape back-up solution for its nearly seven terabytes of data.

In 2007, it became clear the company had outgrown the performance and expansion capabilities of its storage infrastructure. Input/output (I/O) response times were so slow that the company's accounting staff was frequently forced to work overtime due to batch job processing delays. The long waits were not only an inconvenience; they were starting to negatively impact the bottom line.

"We were experiencing unacceptably long processing times for all of our disk-oriented production jobs as well as lengthy backup windows on both the client and server sides," said Roger Shaffer, senior systems administrator for Rack Room Shoes. "It was imperative that we increase the flexibility and performance of our storage environment."

Determined to make a change, Rack Room called on Champion Solutions Group, an IBM Premier Business Partner, to recommend a solution.

Moving to a Storage Area Network
"We knew that the Rack Room Shoes would achieve immediate benefits from moving to a storage area network (SAN) architecture, not only for the performance gains, but also for the flexibility and scalability it would provide," said John Lee, client manager for Champion Solutions Group. "Rack Room Shoes needed high levels of availability and throughput, and the IBM System Storage DS6800 meets those requirements in a compact, energy-efficient and modular package."

Champion invited Rack Room Shoes to gain hands-on experience with the solution at its demo center in Boca Raton, Fla. Over a two-day period, Champion's technical experts reviewed the storage architecture, best practices for management, and discussed the best way to optimize the solution for the company's Oracle application.

Champion architects were able to gauge performance on Rack Room Shoes' legacy SSA subsystems using proprietary IBM software. That information helped the architects calculate the I/O operations per second (IOPS) required and accurately size the DS6800 to ensure peak performance. Based on those results, Champion recommended a 64-disk drive or ½ rack configuration with high-speed fibre channel disks.

"We evaluated other manufacturers' SAN storage solutions, but Champion's specialists were invaluable throughout the selection process. Their demonstrated expertise and responsiveness to requests – coupled with the strength of the IBM product - made them the compelling choice for us. The knowledge transfer that occurred during the demonstration alone gave us confidence in our ability to implement the DS6800 system in production."
Roger Shaffer, Senior Systems Administrator – Rack Room Shoes

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Gaining Efficiencies at Every Turn

Following implementation, the new storage architecture at Rack Room Shoes has resulted in impressive gains in operational efficiencies while lowering the company's total cost of ownership.

Because Oracle is a database-driven application, the high speed data transfer capabilities of the DS6800 allow Oracle reports and transactions to run much more quickly. Rack Room Shoes gathered before and after averages for more than 200 Oracle and database-specific processes. The average run-time reduction was 109 percent, with individual processes achieving reductions from 10 to 500 percent.

"Our disk-oriented production jobs are completed more than twice as quickly on the new SAN," said Shaffer. "Processes that we thought had rock solid run times previously still realized significant reductions, completing in a fraction of the time they did before. We were nothing less than astounded by the system performance."

The new storage architecture also enables faster and more reliable backups than the company's previous tape-based infrastructure. Rack Room Shoes' IT administrators have been able to compress the company's daily backup windows by allocating disk pools. Full production database backups now consume a mere 84 minutes. Dane Mutter, Database Manager, estimates that the company will realize a 25 percent savings in administrative cloning efforts as well.

Provisioning storage and adding capacity has never been easier. IT administrators can add or subtract disk drives with point and click ease from a central location - all without worrying about downtime. "With the SAN in place, it takes a matter of minutes to allocate storage, compared to hours with our previous solution," explained Shaffer. "Even better, modifications don't create outages so changes can be made with little to no end-user knowledge."

The solution also provides flexibility for growth and future applications. Lee estimates that the architecture will scale easily with Rack Room Shoes for the next three to five years. The company already has plans to deploy VMware on the SAN, enabling it to provide high-availability and throughput to its Windows environment as well as to Oracle.

Importantly, the solution has allowed the company to regain valuable floor space in the data center, replacing five storage devices with less than a half rack of storage. The DS6800 has significantly lower power and cooling requirements than the direct attached subsystems – adding to the savings even further.

"At every turn, we're realizing new operational efficiencies and monetary savings as a result of this implementation," concluded Shaffer. "Response times, backups, flexibility and administrative effort have all shown dramatic improvement. Champion guided us to the ideal solution for our business - one that allows us to better serve our internal business users and positively impact the bottom line."

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For more information about this application brief or Champion Solutions Group's ability to architect a solution to meet your needs, please call 800.771.7000 and speak with a Champion Solutions Specialist.

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