

CASE STUDY:

Grocery Outlet Is Sold on the Benefits of Converged Storage

Nimble Storage enables leading discount grocery chain to accelerate primary storage performance, slash backup and restore times, and streamline storage management

Grocery Outlet has a long history of family ownership, and that feeling still pervades the company today. “Most of our 149 independently owned and operated retail outlet stores are operated by locally based families,” noted Steve Tuscher, director of IT for Grocery Outlet. “Our reputation for quality and good service are important to us as a corporation, but also to the communities we serve.”

Grocery Outlet’s corporate IT team manages all of the purchasing, distribution, and other IT infrastructure services for its many retail outlets from the company’s main datacenter in Berkeley, California. “There are three major components of our IT operations – the AS/400s, our Microsoft application servers, and the point of sales servers,” explained Tuscher. “But much of our critical data, including our main financial application, is on our Windows servers.”

Challenge: Inadequate Primary Storage Performance

Grocery Outlet relied on direct-attached storage (DAS) until just a few years ago. “Capacity growth was a major pain point for us with our DAS systems,” stated Tuscher. “We wanted to centralize our storage, so we implemented an iSCSI SAN in 2004. However as the amount of data grew over time, performance had started to decline for some key applications, and this was impacting day-to-day business operations. “We needed a way to accelerate the performance of our primary servers without making major investments in new infrastructure,” Tuscher noted.

Storage Profile: Grocery Outlet

Challenges

- Needed cost effective SAN to handle capacity growth and support virtualization initiative
- Oracle application performance significantly degraded as the database grew.
- Backups regularly exceeded backup windows. Full backups were spilling over the weekend into Monday.
- New Oracle.net-based application required more powerful platform
- Needed to improve DR execution with more reliable data replication

Solution

- Deployed two Nimble CS240 converged storage arrays

Immediate Benefits

- Obtained converged, easy-to-manage primary storage and backup solution
- Achieved high performance for primary storage
- Slashed backup time from hours to minutes
- Enabled efficient, zero-copy cloning
- Cut costs by eliminating separate primary storage backup tiers

Long-Term Objective

- Consolidate all storage onto the Nimble platform
- Go live with DR initiative based on Nimble replication to remote site
- Implement Nimble snapshot-based backups
- Deploy virtual desktops using the Nimble arrays

Challenge: Backup and Restore Processes Took Too Much Time, Consumed Excessive Bandwidth

Grocery Outlet was backing up its iSCSI SAN to EMC Data Domain deduplication storage systems using Symantec BackupExec software. All new primary data was backed up each night, with a complete backup of all systems over the weekend which was then replicated to the company's disaster recovery site in Sacramento to another Data Domain box.

Backup times had started to exceed the company's designated maintenance windows, requiring constant juggling of operations. "A lot of data moves between our main office and our DR site," explained Tuscher. "We have a 10Mb link between the two sites, 80% dedicated to replication during the day and 100% at night. But even using Data Domain's compression capabilities, there was simply too much data to back up. As a result we were at least 24 hours behind on replication jobs. We needed to find a way to reduce the volume of data, make the backup process more efficient, or spread it out throughout the day – creating a more timely and reliable data flow for our DR site."

Choosing the Nimble Solution

Grocery Outlet purchased two Nimble CS240 storage arrays in the summer of 2010. The company's IT team planned to test the performance, replication, and backup and restore functionality for two of its key apps on the Nimble arrays, one SQL-based and one Oracle Windows-based application. The test was designed to compare the usability, reliability, and performance of the Nimble Storage arrays with the existing SAN.

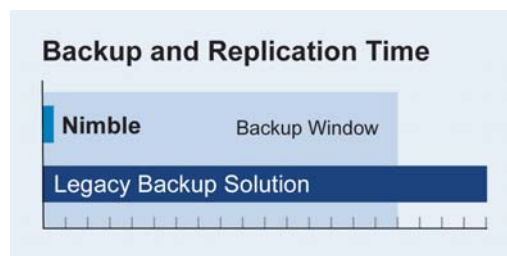
"Nimble provided the exciting proposition of high-speed storage that could serve as both primary and backup in one array," related Tuscher. "This was an entirely new concept in the industry. The idea of converged storage and backup, plus the ability to easily replicate to our DR site with a second Nimble array – was too irresistible to pass up. We jumped at the chance to get on the ground floor of that kind of device."

"One of the big attractions for us was the fact that Nimble was using flash as a front-end cache for frequently accessed data," explained Gordon Yee, senior network manager for Grocery Outlet. "All data is on the spindles, but a big portion is kept in the large flash cache to speed access time for applications that require rapid access and retrieval, like our Oracle based financials."

As an early adopter of Nimble Storage, trust was a key component of Tuscher's decision. "We had developed a very strong relationship with the people that work for Nimble and had tremendous confidence in what they were promising. But what really what drove us to Nimble was the opportunity to not only radically improve the performance of our primary storage, but also cut down our backup time and replication processes as well."

Benefit: Instant, Integrated Backups

The Nimble arrays have enabled Grocery Outlet to completely eliminate the nightly backup windows with instant, optimized backups on the same array. “There’s no need to move data from the iSCSI SAN to the Data Domain boxes anymore, so backups and restores can be performed in seconds,”



explained Tuscher. “The Nimble backups are extremely fast and non-disruptive – they don’t impact our application or storage performance at all.”

Benefit: Saving Time and Space with Nimble Compression and Zero-Copy Cloning

Unlike existing architectures that store data as fixed-size blocks, Nimble arrays store data as variable-size blocks, enabling real-time 2-4x data compression with no added latency. “The inline compression process on the Nimble arrays is just phenomenal,” said Yee.

Zero-copy cloning with the Nimble arrays enables Grocery Outlet to make multiple copies of databases with no incremental capacity consumption. “We love the Nimble zero-copy cloning capabilities,” noted Yee. “We had a situation recently where we had to quickly produce 16 Windows 7 desktop environments. With the Nimble Storage cloning process, we were able to replicate and deploy the copies in a manner of minutes. Our end users were amazed!”

Benefit: Simplified Management and Reduced Costs

Storage management has also improved significantly for Grocery Outlet, much to the delight of the IT organization. “The Nimble arrays eliminate the complexity of provisioning and managing separate devices for storage, backup, and disaster recovery,” noted Yee. “It completely removes the administrative overhead of managing massive data copies between tiers and simplifies management of application-consistent backups and replicas for our Oracle applications and databases.”

Yee was also impressed with the stability of the Nimble devices. “The Nimble arrays don’t need any day-to-day management at all. The platform is extremely stable and very aware. I did have one power supply that went out a few months ago, but it didn’t affect operations because there are redundant power supplies. Nimble was able to respond to that problem within minutes of the failed power supply via an automated email alert. Nimble Technical Support called to notify me that a replacement power supply would be shipped for next-day delivery and replacement.”

Benefit: Meeting the Performance Needs of the New Oracle Platform

Grocery Outlet recently transitioned its financial system from an Oracle forms-based application to an Oracle .Net-based framework. “We were the first company to implement the new version based on the latest Oracle platform,” Tuscher explained. “I don’t think it would have worked at all without

the performance of the Nimble arrays. From the way the new Oracle application is architected, it absolutely requires Nimble's solid-state performance."

Future Plans: Consolidating all Storage onto the Nimble Arrays

Tuscher also has plans to implement more of the Nimble functionality. "We haven't fully deployed Nimble's snapshot capabilities across all of our applications yet, but it's one of our top IT priorities for this quarter. I'm also interested in using Nimble for virtual desktops, because of its superior performance and efficient cloning."

Summary: A Long-Term Relationship with Nimble

The Nimble approach significantly reduces Grocery Outlet's storage costs by eliminating the need for a separate backup tier. It also reduces the complexity and administrative overhead of managing massive data copies between tiers.

"It has been a very pleasurable experience working with Nimble Storage, both as a company as well as with the devices," concluded Tuscher. "We don't have this depth of relationship with every vendor – only with those who have really helped us succeed and who have demonstrable, superior products. We are looking forward to a long-term relationship with Nimble Storage."



About Grocery Outlet

Grocery Outlet has been a tradition for bargain-seeking customers since 1946. Today, Grocery Outlet is a privately held company, recognized as the nation's largest grocery extreme-value retailer.

Headquartered in Berkeley, California, Grocery Outlet currently encompasses 149 independently operated stores in six western states, in cities large and small. Grocery Outlet offers brand name products at up to 40% below traditional retailers. The company's offering include groceries, frozen, deli and refrigerated, produce, fresh meat, general merchandise, and a most impressive inventory of beer and wine.



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