



that was easy.<sup>sm</sup>

*I'd say very plainly, if you are looking for an overall business resiliency solution you can't do better than MIMIX.*

Jon Weigens, Senior Consultant, Systems Engineering/Ops, Staples

## Business Profile

Company name:  
Staples, Inc.

Headquarters:  
Framingham, Massachusetts (USA)

Industry:  
Retail and business-to-business  
office products

Revenues:  
\$18.2 billion (fiscal year 2006)

Employees: 74,000

Business Environment:

- Public company. Trades on NASDAQ under the symbol SPLS.
- Operates more than 2,000 office superstores and also serves its customers through mail order catalog, e-commerce and contract businesses.
- Serves consumers and businesses ranging from home-based businesses to Fortune 500 companies in 22 countries throughout North and South America, Europe and Asia.

Vision Solutions Product:  
MIMIX HA for i5/OS

## Critical Issue

Staples runs its global business operations, including systems that support 24x7 Web sales, on System i servers in two data centers located in proximity to its head office location. Because competitors are just a click away, any business stoppage will result in considerable lost sales and customer dissatisfaction. With financial losses from downtime potentially costing millions of dollars per hour at any given time, Staples needs systems that keep running no matter what, including during scheduled maintenance and unplanned system outages.

## Results

- Enhanced business continuity confidence.
- Avoided millions of dollars of lost sales by switching to backup servers during downtime events.
- Reduced high availability administration requirements to minutes a day.
- Avoided considerable disaster recovery costs.
- Deferred system upgrades by offloading backup & read-only tasks to replica servers.

## Technologies

- MIMIX<sup>®</sup> HA for i5/OS<sup>®</sup> from Vision Solutions
- Production Servers: Two IBM<sup>®</sup> System i<sup>™</sup> Model 595s & one Model 570
- Remote Backup Servers: One IBM System i Model 595 & One Model 840

## Business Challenge

Staples' business is divided into three major segments: North American Delivery, North American Retail and International.

The North American delivery business is run on two partitions on a System i Model 595 server. The North American retail business is run on three partitions on another Model 595. International operations are run in a partition on a Model 570 server located in the U.S. These six partitions generate more than two billion journal transactions per day. Additional partitions on other System i servers support other Staples' strategic business units.

In addition to the billions of daily transactions, customer service representatives add considerable read-only query workloads to the systems.

Staples' revenue flows are not constant throughout the year. Busy times—including, among others, the Christmas, back-to-school and tax time shopping periods—can generate significantly higher than normal transaction volumes for the delivery and retail sides of the business. No matter when it may occur, business downtime would result in significant lost sales, not to mention considerable customer dissatisfaction. Moreover, the costs would be enormous if a lengthy unexpected outage occurred during one of the busy periods. Staples is not willing to let that happen, which is why it uses MIMIX HA from Vision Solutions.



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## Solution

Staples uses MIMIX HA to help guarantee uptime for its critical business operations. MIMIX HA replicates the five partitions (split across two System i servers) that run North American operations to five partitions on single System i server. This backup server is 20 miles from the production servers. The partition supporting International operations, which is run on a System i server in the same location as the North American backup server, is replicated to a partition on another System i server in the North American Production location. This scenario provides Staples with additional overall data center redundancy.

Being able to switch between the primary and secondary replica servers eliminates the need for downtime to accommodate regular maintenance and system failures.

MIMIX HA also provides Staples with a disaster recovery (DR) solution that ensures much shorter recovery times and lower data loss risks than the company's previous DR solution. And, because DR is inherent in the MIMIX HA solution, it comes at no additional cost. Before implementing MIMIX HA, Staples contracted the services of a third-party DR provider. In the event of a disaster, Staples could load its backup tapes onto systems maintained at the third-party recovery site. But recovering from tape would have been a lengthy process. Because MIMIX HA replicates all data and objects to a remote company-owned site, Staples was able to eliminate this costly service. Now, there is no need to recover from tapes after a disaster. Instead, users can be switched to the remote site with minimal downtime.

Staples runs regular tests to ensure that MIMIX HA will be able to keep the business running should a production server become unavailable. Thanks in part to the experience gained through regular testing, the company now consistently performs role swaps (switching the roles of the production and backup servers) in less than 15 minutes, with a recent role swap being performed in under seven minutes.

This rapid role swap capability provides peace-of-mind. "When we can meet our service level agreements and people don't even know that they're now running on another system, that's really satisfying," said Jon Weigens, a senior consultant, systems engineering/ops at Staples. "All users know is that the information they need is there when and where they need it."

MIMIX HA has also helped Staples to defer costly server upgrades. When users run a read-only task, such as a query, Staples' systems automatically transports them to the replica server, thereby removing the workload from the production system.

Reliability and simplicity of use and management are other MIMIX HA benefits. "MIMIX is very easy to work with," declared Weigens. "I spend only a few minutes a day validating that it's running properly. That allows me to focus my time on building a more robust, sophisticated overall environment." Weigens went on to say, "MIMIX is so reliable that you almost don't think about it. When my boss comes to me and asks, 'Can we role swap?,' my immediate answer is, 'Yes! No problem.'"

Weigens also appreciates the ease of MIMIX HA maintenance. "The installation process for MIMIX upgrades and service packs is thoughtfully designed with the customer in mind. There's a GUI-based installation wizard that I can run from home. I've upgraded 10 systems at a time. You just tell the wizard what systems you want to upgrade and it distributes the software to the various servers. It does everything behind the scenes. I just have to come back every once in a while to click 'next' on the screen. It's a pleasure to use and a tremendous time-saver."

Like all companies, Staples keeps a sharp eye on the bottom line. "One of the big things for Staples is return on net assets," noted Weigens. "Because we can swap and move the workload around from system to system, we can better use the resources we already have rather than buying more hardware or faster processors as we grow."



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