

Return Path, a supplier of services to high-volume email users, found that poor performance from an outdated spinning-disk storage system threatened its ability to meet its service-level agreements for website availability. With the installation of all-flash arrays from Pure Storage, problems with high latencies and lagging performance have completely gone away, dramatically improving the performance of customer-facing websites.



BUSINESS TRANSFORMATION

Customers experience much faster responses to their queries, helping them make more timely improvements to their email campaigns. At the same time, Return Path spends far less time managing storage, freeing up resources to address other IT priorities.

GEO

North America

INDUSTRY

Software as a Service

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Jeorg Houck,
director of system operations

PURE STORAGE MAKES A SPECIAL DELIVERY FOR EMAIL DATA SOLUTIONS PROVIDER RETURN PATH

Any organization seeking to build closer, safer, and smarter connections with customers should learn about Return Path, the leading provider of email data solutions. The company’s core services include Email Optimization, which helps email marketers improve the performance of their email program; Email Fraud Protection, which empowers brands to detect, block, and respond to phishing and spoofing threats; and Consumer Insight, which leverages purchase receipt data to offer visibility into consumer preferences and behaviors.

“We handle multiple terabytes of data every day,” noted Jeorg Houck, director of system operations with Return Path.

To support the intense data processing required by this volume of email, the company has built a sophisticated IT infrastructure based largely on open systems technology. This includes Linux servers that run data-analysis programs on Oracle, and Hadoop and Elastic Search databases using tools such as R. Customers access the company’s services through client-facing websites. Constant attention must be paid to keeping these systems operating at peak performance and enhancing their ability to handle ever-more complex questions from clients who want to find nuggets of insight buried in mounds of email. Return Path’s clients want to better understand consumer patterns in areas such as product searches and purchases.

AGING OR POORLY PERFORMING SYSTEMS REQUIRE REPLACEMENT

In early 2015, the IT staff identified two areas of its infrastructure that needed improvement – its Oracle databases, and its VMware environment.

“We were running Oracle on old UNIX servers and a traditional SAN, and both of them were at the end of their life and out of capacity,” Houck said. “The reliability of the SAN had degraded to an unacceptable level, and was expensive to maintain. So, we migrated to new Linux servers and started to look for new storage.”

The urgency of the task was emphasized when a hardware failure caused a complete outage of the legacy SAN. “Fortunately we had a standby database configuration in our secondary data center, but we were struggling with the vendor to get the original storage back on line, a process that took a week. Imagine losing your entire staff’s resources for a week just to fight one fire!”

COMPANY:

Return Path
<https://returnpath.com>

USE CASE:

- Database – Oracle®
- VSI – VMware® vSphere®

CHALLENGES:

- Existing storage for Oracle databases was out of capacity and at the end of its lifespan.
- High storage latencies were disrupting VMware virtual machines, interrupting the availability of key websites and endangering SLA commitments.

IT TRANSFORMATION:

- Average latencies dropped from 50-100 ms to below 1 ms.
- Rack space in co-located data center cut in half.
- Highly reliable storage improved ability to deliver on SLAs.

“The average response times on our production websites dropped by 40%, which was a huge win for us. No amount of code tuning could possibly have moved the needle that far.”

Jeorg Houck,
director of system operations

The selection of Pure Storage came after Houck discussed Return Path’s needs with Red Sky Solutions, a consulting and systems-integration firm. Paul Prata, who leads the Red Sky team serving Return Path, said that after studying the client’s needs, “it was obvious that high performance and reliability would be top priorities, given the volume of data they handle and the SLAs they promise.”

Red Sky had experience with successful installations of Pure Storage arrays with other clients, and concurred with Houck’s suggestion that Return Path evaluate Pure.

“One of our system engineers had read about Pure Storage, so we contacted them and they gave us a proof-of-concept unit,” Houck said. “We tested it with the new servers, and were so impressed with how it performed that we went ahead and bought one.” The company currently uses three Pure arrays — two at the main data center in Colorado and one at a backup facility in Texas.

IMPROVED PERFORMANCE ON MULTIPLE APPLICATIONS

After applications and data were moved onto the Pure array, “the average response times on our production websites dropped by 40%, which was a huge win for us. No amount of code tuning could possibly have moved the needle that far,” Houck said.

“The response time to run an Oracle query went from 900 ms to less than 100 ms,” he added. “And that has a direct impact on the experience our customers have when using our websites. Response time directly impacts how well people enjoy using the website.” Another benefit, Houck noted, has been the data-reduction rates achieved on the Pure Storage array, which have consistently run around 3:1. As a result, “we’ve reduced the footprint in our data center significantly and we don’t have to worry about running out of space anytime soon.”

He estimates rack space in the data center has been cut in half by the introduction of Pure Storage arrays.

CONSOLIDATING KEY WORKLOADS ON FLASH

After successfully moving the Oracle databases onto Pure Storage, Houck and his team determined that Pure would be the appropriate solution to another challenge they faced — poor performance of their VMware virtual machines.

“We had significant performance issues in our VMware environment,” Houck noted. “Several servers running ZooKeeper were timing out, and we had Linux servers going into read-only mode on file systems. All of these issues pointed to I/O and latency issues. And sure enough, when we started measuring it, we were seeing 50 to 100 ms of latency on the storage. We even saw peaks of almost 1,000 ms. That was a problem directly impacting production servers.

“Based on the experience we had with the Oracles database servers, we immediately looked to Pure Storage to provide a solution for us. And it did. Our problems went away — completely.”

The latencies that had been averaging 50-100 ms “are now well below 1 ms.”

SIMPLICITY OF MANAGEMENT A MAJOR PLUS

In addition to the performance improvements he's seen on the company's websites, Houck pointed out the extreme ease of use for the Pure Storage products. "I have my challenges these days, but they're not with storage. We've been able to focus more on other challenges we have, such as optimizing networking and updating older systems that we previously didn't have time for," he explained.

"The ability of Pure Storage to perform live firmware updates, with no downtime, has been a huge plus for the team," Houck added. "With our previous storage system, upgrades meant downtime. And that required weeks of planning and communication with our customers about possible outages, taking the application suite down, and then getting things back up. Now, we can do a completely non-disruptive upgrade on a weekday in the middle of normal production runs."

The ability to do live upgrades is very important, Houck noted, because Return Path has stringent service-level agreements (SLAs) with all of its customers that require at least a week's notice of any possible downtime. "Pure Storage has eliminated the need to worry about this."

"Our problems went away — completely."

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info@purestorage.com
www.purestorage.com/customers



11925 S. 700 E, Draper, Utah 84020 T: 877-553-9665 www.redskysol.com