

Geographic Solutions processes huge amounts of data every day in support of employment-related programs nationwide. Any delays in information processing can adversely affect state and local governments that are trying to meet the needs of job-seekers around the country. Reaching the capacity limits of its spinning-disk storage systems mandated a new approach. Since installing all-flash arrays from Pure Storage, database access times have plummeted, clients receive critical reports with unprecedented speed, and new services are being rolled out without delay. At the same time, storage-related operating costs have been slashed dramatically, and the company can now scale capacity to ensure critical service-level agreements are met.



BUSINESS TRANSFORMATION

Geographic Solutions' customers receive critical reports that influence continued funding much faster; service-level agreements are met with greater ease; development teams can deliver new services more quickly; and the IT department has freed up capacity to pursue QA testing, redundant data center backups and support for multiple database copies.

GEO

North America

INDUSTRY

Software as a Service

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Ray Nichols,
senior database administrator

GEOGRAPHIC SOLUTIONS PUTS PURE STORAGE TO WORK IN ALL THE RIGHT PLACES

For the millions of people who at any given time are without a job, any help in the process of seeking a position or training for a new career is a welcome assist. Making that process more effective and efficient is the mission of Geographic Solutions Inc., a software-as-a-service (SaaS) provider to state and local governments. With more than 20 years' experience, the company offers a broad array of applications for labor market information, labor exchange, workforce case management, unemployment insurance and federal reporting.

A big part of the company's offerings involve data about job openings, employment assistance programs, wages and other information about labor markets. Geographic Solutions collects, analyzes and reports this data, helping state and local agencies manage job-related assistance programs more efficiently. As a SaaS provider facing "always-on" demands from its clients, Geographic Solutions is tasked with meeting demanding service-level agreements (SLAs) to ensure customer satisfaction.

With clients in more than 30 states, Geographic Solutions processes significant amounts of data provisioned at its two data centers, one in Florida and the other in California. "The data helps determine if these programs are successful, so the reports we send to customers are critical in determining if they are to continue to receive funding," notes Ray Nichols, senior database administrator at Geographic Solutions. "Our customers are hungry for this data, and it's a constant challenge to keep up with their demands for reports, analysis and 'what-if' scenarios."

Managing all this data has always been challenging, and without a dedicated storage administrator on staff, Geographic Solutions has relied on its value-added reseller, Trace3, to help with storage management.

Over time, the huge data-processing loads overwhelmed the company's legacy spinning-disk storage system. Capacity was frequently maxed out, requiring upgrades that were costly in both time and money. With co-located data centers, any additional disk storage meant increases in both capital and operating costs.

STORAGE LIMITATIONS FORCE SEARCH FOR A NEW APPROACH

The company faced a confluence of challenges with its three-year-old spinning-disk storage system, according to Jason Crossley, a solutions architect for Trace3 assigned to Geographic Solutions. "They had ever-increasing capacity requirements, both from

COMPANY:

Geographic Solutions Inc.
www.geographicsolutions.com

USE CASE:

- Database – Microsoft SQL Server

CHALLENGES:

- Legacy storage system was unable to meet ever-increasing needs for more storage capacity and higher performance
- Storage footprint continued to grow in data centers, increasing operating costs

IT TRANSFORMATION:

- Data-access times slashed by up to 97%
- Time required to generate critical reports cut by up to 70%
- Highly scalable storage capacity accommodates critical new IT initiatives

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the amount of data they handled and from the addition of new applications and services for customers. As a SaaS provider, these growing data sets pose significant challenges to maintaining uninterrupted service time. In addition, their storage demands kept exceeding the platform they had, and that meant the storage footprint in the data centers continued to grow.”

In response, Geographic Solutions and Trace3 went looking for a solution. After a lengthy analysis of the company’s needs and the options available in the market, Trace3 recommended a proof-of-concept trial between the incumbent storage vendor and Pure Storage. It didn’t take long for the evaluation team to see a stark contrast.

“The first thing that struck us was how complicated it was to perform a proof-of-concept with the incumbent’s technology versus Pure,” Crossley recalls. “Pure Storage was so simple to set up that we had it going in 20 minutes. For the other company, it was an all-day project.

“I was a storage architect and administrator for many years,” Crossley continues, “and my job was to obsess over details like spindles and RAID configurations. That’s all gone away now. With Pure, you plug it in and in a few minutes you’re off to the races.”

With improved performance considered table stakes for any supplier of flash storage, the decision was made in favor of Pure based on ease of management and the cost-effective long-term expansion path provided by Pure’s Evergreen Storage program.

PERFORMANCE PROBLEMS DISAPPEAR WITH PURE

A Pure FlashArray-420 was installed in each data center, and the first priority was to migrate the numerous SQL Server applications to the new arrays. In the months since that was accomplished, the performance improvements have been dramatic. “We have looked at a large number of batches we run, on multiple servers, before and after switching to Pure,” Nichols reports. “Overall, we have measured improvements in total run times of between 25% and 70%.”

Crossley reports that on many of the key databases used by Geographic Solutions, response times were regularly running in the range of 15 to 20 milliseconds. After installing the Pure arrays, response times have been cut to half a millisecond, an order of magnitude improvement. That is a significant improvement for a SaaS provider, whose competitive advantage depends on its ability to provide high reliability, flexibility and trouble-free expansion of services.

The impact of improved performance is seen inside and outside the company. “Many of our customers rely on our data for preparing critical reports and for making important decisions,” Nichols says. “It used to be they would have to wait a day or two to get the data from us. Now, it’s available almost in real-time.”

Geographic Solutions has SLAs with many of its customers, including maximum response times for page presentations and report generation. “With its low latency and high IOPS, Pure is vital to helping us meet those SLAs,” Nichols adds.

Improved storage performance also has brought big benefits to the IT department. “Most of our heavy batch processing occurs overnight,” Nichols notes, “which is also the time in which we have to do maintenance, testing and other jobs. It used to be that the 12-hour window wasn’t enough to accomplish everything we wanted to do. We were up against the wall because the job durations were so long. But now with Pure, the time it takes to run these big jobs has been greatly reduced, and that has opened up a lot of flexibility in the schedule. It’s been a huge benefit to us.”

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Pure's data-reduction capabilities provide another major benefit. Across the company, data consolidation has achieved an average ratio of 4.2:1, and as much as 8:1 in some areas. "We thought it would be worth it if we got 3:1," Nichols says, "so we are well above expectations." This has allowed the IT department to pursue a number of key initiatives that include:

- accelerating time-to-market for new applications produced by development teams;
- freeing up capacity for user-acceptance testing, quality assurance, and for migrating legacy applications to new platforms;
- moving ahead with plans to make the two data centers fully redundant, for back-up purposes; and
- providing as many database copies as required by various processes.

"It used to be a constant struggle to provide the number of database copies we needed," Nichols says. "Some of these environments are 4TB in size, so making a copy of that on spinning disk was a huge chore. But with Pure, it's just a fractional increase to add copies."

INITIAL SUCCESS WITH PURE LEADS TO EXPANSION

Given the multiple benefits offered by the FlashArrays, Geographic Solutions and Trace3 decided to upgrade to Pure's latest platform, the //m70, which offers expanded capacity, lower operating costs and a smaller footprint. Nichols says the company already is benefitting from the additional capacity, and over the long-term will save considerable money. "Thanks to Pure's scalable capacity, our SaaS-based services are assured of uninterrupted uptime which is critical to meeting our customers' demanding SLAs," says Nichols.

The upgrade from the FA-420s to the //m70 impressed both Crossley and Nichols. "The Flash Array //m install went incredibly well," Crossley recalls. "Pure has a very well-thought-out process. There was no downtime, even to move over to a totally new platform."

"I was so impressed that we went from one controller to the other without interruption," Nichols adds. "I can tell you unequivocally that has never been the case when we have transitioned storage. With legacy spinning-disk systems, it's always a much longer, more complicated process."

With the Pure arrays installed, the resources devoted to storage management have shrunk considerably. "Without a dedicated storage administrator, they relied on me to provide design services and technical expertise for their spinning-disk system. I was there all the time," Crossley recalls. "Now, they have a team of three IT people, none of whom is a storage expert, who share the responsibility for storage. The Pure system is so easy, anyone can do it."

Nichols concurs. "The ease of management with Pure empowers a lot of people to have an understanding of what's happening. It gives us a new confidence level and visibility into things we never saw before."



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