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Improving Service Quality by Simplifying the Storage Environment: A Case Study on Gateway Health Plan

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Overview

Gateway Health Plan is a leading managed care organization that provides service to more than 244,000 members eligible for medical assistance. Gateway Health Plan *Medicare Assured HMO*, a special needs plan for Medicare and Medicaid patients, is one of the nation's largest Medicare programs. In 2007, Gateway realized the need to make major changes in its storage environment to support business growth and customer demands. The primary objective was to improve the reliability of its production database environment to support customers during disasters.

To determine the optimal solution, Gateway Health Plan estimated that it could quadruple its data capacity, migrate its primary site to a NetApp filer, and add a second backup site using NetApp for roughly the same costs as expanding its current environment, which would only double capacity. It selected NetApp and went into production in the summer of 2008.

Implementation

Gateway Health Plan deployed a NetApp solution in two datacenters that included two fully loaded filers, SnapManager for Microsoft Exchange, SnapManager for Microsoft SQL Server, FlexClone, SnapMirror, and Snapshot. The migration lasted approximately two weeks with the help of NetApp Professional Services and one Gateway manager.

The company quadrupled overall storage capacity by doubling its disk and SAN capacity in both datacenters. Gateway achieved this for about \$100,000 less than had been allocated for its other option.

Business Value Highlights

Organization: Gateway Health Plan

Operational challenge: To improve the risk profile by setting up a second datacenter

Solution: NetApp

Benefits:

- Average annual savings of \$338,000 in infrastructure spending
- Average user productivity savings of 10 hours per month per user
- Increased IT productivity by 30%
- Average annual benefit of \$1.5 million
- Three-year ROI of 296%
- Payback in 6.1 months

Simplifying the Environment

Gateway Health Plan's current computing environment has been greatly simplified. It did not have fully dedicated storage resources, relying instead on two network engineers to support storage operations. These engineers found the previous storage fabric complicated, requiring constant training on the tools. As a result, they were spending nearly 50% of their time managing storage. NetApp's Professional Services group assisted the company in moving to a virtualized environment, reducing the total number of servers from 35 to 12. "NetApp facilitated virtualization," noted David Guilinger, Director of IS. "We would have virtualized our server environment anyway, but NetApp made it much simpler by architecting the storage virtualization as part of the same project."

NetApp's SnapMirror data replication solution facilitated Gateway's replication between its two SANs. "It's been seamless," a company manager said. The NetApp environment is also "bandwidth friendly" — the company has a DS3 between the two datacenters and has not experienced any bandwidth-related problems since the deployment.

Additionally, Gateway moved to iSCSI and eliminated its more complex Fibre Channel (FC), which freed up IT resources heretofore dedicated solely to managing storage. Gateway's IT staff had limited experience with FC technology. Making changes to the FC fabric components (switches and HBAs) was difficult and time consuming. By moving to iSCSI, which is based on an Ethernet and IP foundation, the company was able to avoid the deployment of FC management tools at the remote site as well as eliminate new FC training for support staff. As Guilinger said in the interview, "What we saw with NetApp was that it was a much simpler environment to administer and to learn." Gateway estimates that now, despite quadrupling its storage capacity from 30TB to 120TB, it can manage the current NetApp storage environment with one-third of a full-time equivalent (FTE).

Service Quality

In addition to simplifying the storage environment, the NetApp implementation has enabled better service quality in the following ways:

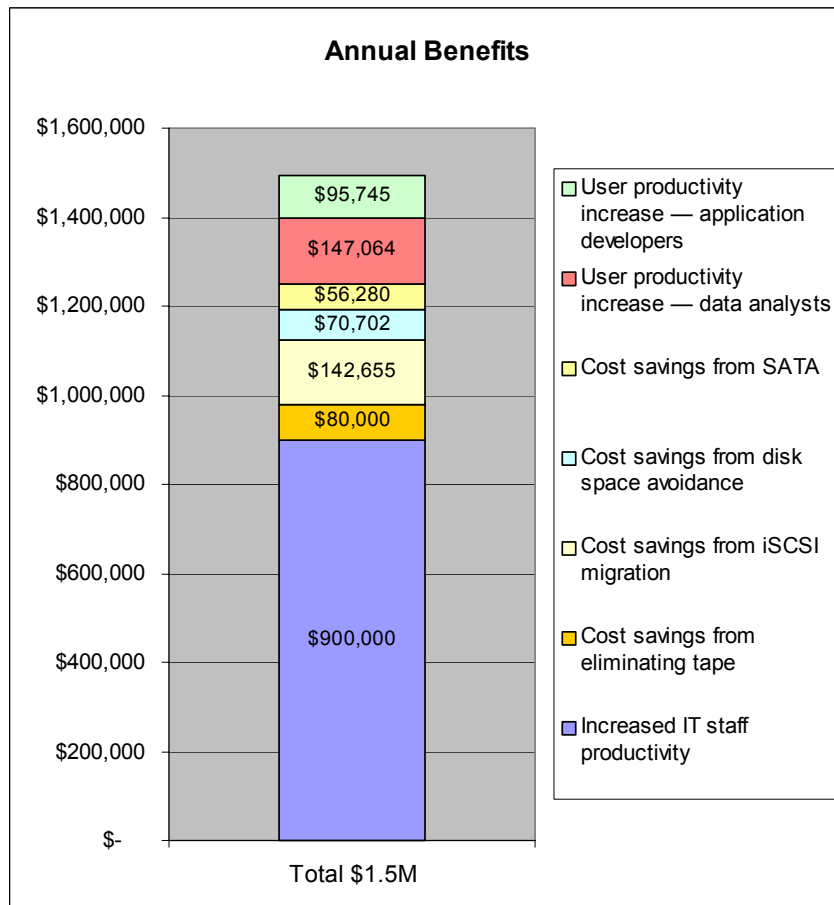
- **Increased storage capacity.** The NetApp environment has allowed Gateway Health Plan to move away from tape for backup, thereby improving availability and recovery times. By lowering the risk and costs associated with recovery, Gateway can now add the capacity it needs to support its growing business without the additional IT labor costs.
- **Increased backup frequency.** The NetApp solution has reduced the backup window such that Gateway Health Plan now backs up its production, Exchange, SQL, and Oracle environments every four hours. Previously, the organization was able to back up each of these applications only once a day.
- **Ability to test data recovery processes.** Previously, DR testing was done once a year, required two days, and usually resulted in a failure due to corruption. Now tests are completed in under four hours, and Gateway Health Plan is doing recovery testing four times per year without any failures.

- **Better customer service through thin provisioning.** Before the implementation, the storage staff had conflicts with its customers about demand for storage. Now, the staff leverages thin provisioning to deliver services, permitting customers "to see" their full account but consume only what they use. This has made it easier on the IT staff to provision storage more efficiently, which results in faster provisioning times and happier customers.
- **Better customer service through FlexClones.** The 30 data analysts require full copies of the database. Before, it was difficult to support their demands for testing because a member of the IT staff had to make a copy of the database. This full copy also consumed a lot of disk space. As a result, they could not always do the testing they needed, and quality suffered. With NetApp FlexClone, each analyst has what feels like a full copy of a system, but it consumes only a small percentage of the storage of the original system. For test and development and or special analysis, they can provide virtual copies and not impact the production environment. The analysts save time, and Gateway's customers experience fewer errors.

Benefits of NetApp

Simplification and improved services drove the following financial benefits: reduced infrastructure costs, increased IT staff productivity, and increased user productivity. These benefits are discussed in detail in the following sections. The average annual savings are shown in Figure 1.

Figure 1.



Source: IDC, 2010

Cost Reduction

Gateway Health Plan was able to move completely off tape, which enabled it to eliminate its tape library and saved it \$70,000 annually for the tape, maintenance, storage, and vaulting.

Prior to the migration, Gateway Health Plan added only 5–10TB per year, less than what it needed to support business growth. It was held back by the labor costs to support the additional capacity and the increasing risk due to the potential impact of disasters. The problem was that it could not take full advantage of all that new capacity. Guilinger estimated that if the company had maintained the old storage technology and just added the second site, it would have needed 20% more in disk volume per year than it has today, which equates to about \$60,000–80,000 saved annually.

Additionally, since the implementation, Gateway Health Plan has not added any IT staff. Guilinger said, "We are primed for about two years and will not need additional headcount. On top of that, we are getting maybe 30% more business done."

The organization is now using tiered storage because of its requirements for perpetual retention and the amount of archived data currently residing in the environment. All of that archived data sits on SATA disk, which reduces the company's disk costs by nearly two-thirds. Guilinger said in the interview, "I have to say, I feel good at night knowing that I'm not paying premium or what I call Park Avenue real estate [prices]. These are Jersey City prices."

Migrating to NetApp rather than expanding the old environment meant Gateway Health Plan did not need to replace the two director-class fiber switches, which were in their last year of use. Replacing those switches would have cost approximately \$150,000. This generated annual amortized equipment savings of \$30,000 plus an additional \$22,500 annually in maintenance costs. The equipment reduction brought "green" savings by reducing the power and cooling requirements for about a half rack.

Gateway's future plans include continued expansion. The company has finished its migration to iSCSI and is looking at NFS over the next couple years, which would be a natural migration. In the future, the organization's filer-head will be at "end of life," and Gateway is already looking forward to what NetApp will offer in the next generation of technology.

User Productivity

The primary beneficiaries of the increased service quality have been 30 data analysts. Previously, these analysts were limited and could not do proper testing, which led to lower-quality work. But Gateway Health Plan has increased testing by fourfold, leading to a time savings of at least 10 hours per month per analyst while greatly increasing quality. There are also 15 application management professionals and developers in the organization. Similar to the data analysts, they now have pristine test environments with about 10 hours per month of more productivity.

Increased IT Staff Efficiency

The simplified, easy-to-manage NetApp environment needs far less support. Before the deployment, Gateway Health Plan had two quasi-dedicated storage engineers spending 50% of their time supporting storage. Now the total time required for storage support is around three FTEs, and this is for four times the storage capacity.

The primary savings areas have been:

- Space reclamation
- Provisioning new capacity
- Database tuning
- Storage allocation
- Database reorganization

The direct benefit is that NetApp has freed up the two engineers to support more business-critical activities. As Guilinger said, "In short, what we've done is free up resources. We are administering more servers, taking on other server projects and more initiatives." Furthermore, Gateway Health Plan, within the first year after deployment, has implemented a single sign-on solution — a project led by an IT staff member who two years ago would not have had the time available. Overall, Gateway estimates that it is getting 30% more business done, including infrastructure support and application development and management. It is confident that with the optimized IT infrastructure, it is positioned for the next two years of business growth without additional headcount.

NetApp ROI Results

IDC entered the data from the interview with Gateway Health Plan into a three-year analysis. Three-year discounted savings total \$3.6 million on less than \$1 million investment. The return on the investment is 296%, and payback occurs in six months. The results are displayed in Table 1.

Table 1.

Three-Year ROI Analysis	
Benefit (discounted)	\$3,584,336
Investment (discounted)	\$904,735
NPV	\$2,679,601
ROI	296%
Payback	6.1 months
Discount rate	12%

Source: IDC, 2010

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