



SUCCESS STORIES

SACRAMENTO COUNTY DEPARTMENT OF HUMAN ASSISTANCE SIMPLIFIES BACKUP AND RECOVERY WITH NETAPP AND VERITAS

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KEITH SCOTT IT Analyst, Department of Human Assistance, Sacramento County

KEY HIGHLIGHTS

Location Sacramento, California

Industry Government

The Challenge

- Manage annual data growth of 30%+
- Complete backups within allocated time windows
- Improve speed and reliability of data recovery
- Reduce storage administration costs and time

The Solution

Integrated disk-to-disk backup solution using Veritas® NetBackup™ software from Symantec, NetApp SnapVault® software, and NetApp FAS and NearStore® storage systems. The solution uses FC SAN, IP SAN and NAS-CIFS protocols.

Benefits

- Backups performed 16 times faster
- Restores performed 6 times faster
- 80% storage space savings compared to tape backup due to data deduplication
- Backups and restores centralized using Veritas NetBackup
- Reduced reliance on tape

THE CUSTOMER:

Serving Citizens' Needs Requires Information Availability

The Sacramento County Department of Human Assistance (<http://dhaweb.saccounty.net>) helps people make the transition from public assistance to independence through employment, housing, healthcare, transportation, education, and childcare programs. The Department of Human Assistance serves the citizens of Sacramento County who are most in need of help, for example, the unemployed, the indigent, and the homeless. With a staff of 2,500 employees in 35 distributed sites, the department relies on information to provide a wide range of services.

In 2006, the IT staff became concerned about its ability to adequately protect the department's vital information due to the aging infrastructure and the growth in data. The county's NetApp storage systems and Veritas NetBackup software were performing well, but the limitations of tape-based backups were the issue. The staff often was unable to complete backups within the designated backup window because the libraries didn't have enough tape drives, and the existing drives were not fast enough.

“Our databases hold critical information that is essential to the DHA's work within the welfare and justice systems,” says Keith Scott, DHA IT analyst. “For example,

when a lawsuit is filed, we have to provide the details that have been gathered regarding the plaintiff's claim. This is supporting data that the legal team uses in the proceedings. So, if we can't produce the data—for whatever reason—it puts the department and the county at risk. That's one reason why we needed to speed up our recoveries and make sure that the data is always there.”

THE CHALLENGE: Problems with Tape

Scott elaborates on the problems with tape: “We just couldn't trust our tape backups to be reliable. When a tape is corrupted, you don't find out until you try to recover that information. Then it's too late. We found that out recently when we were unable to restore a vital Microsoft SQL database because the tape was damaged.”

In response to these issues, DHA sought a solution that would increase backup and restore performance and reduce—even ultimately eliminate—reliance on tape. The department intended to keep NetBackup as its data protection platform because it would allow employees to manage disk and tape backups with a single application. The department also knew that Veritas NetBackup offered advanced disk-based backup capabilities, including unique options that leverage NetApp hardware and software.

“By integrating two best-of-breed products—SnapVault and NetBackup—NetApp and Symantec have created a solution that unifies and streamlines backups in our heterogeneous environment. The Department of Human Assistance has realized great value from the NetApp-Symantec partnership.”

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THE SOLUTION:

Disk-to-Disk Looks Promising

As the IT staff researched potential solutions, they quickly identified a disk-to-disk architecture as the answer to their concerns with tape. “Unlike tape, disk is self-healing,” Scott explains. “If the disk detects a bad block, it goes back and recalculates parity and repairs itself. Overall, a disk-to-disk solution promised to be more reliable and speed up the backup and restore process.”

The key technology needed to speed DHA’s backups was NetApp Snapshot technology, a standard feature on NetApp FAS storage systems. “We realized that we could build a fast and reliable disk-to-disk backup solution by using the joint solutions developed by NetApp and Symantec,” Scott says. “One of these solutions allows us to combine the benefits of NetApp SnapVault software, which leverages NetApp Snapshot technology, with NetBackup. NetBackup manages scheduling, data movement, and restores while NetApp technology delivers the bandwidth and storage efficiency we need.”

Building on Past Success with NetApp

Scott already had two years of experience with NetApp under his belt. In 2005, DHA had launched a project to consolidate Windows file services, a Microsoft SQL Server environment, 40 Windows servers in a Citrix environment, and distributed file servers onto a single storage platform. At that time, DHA had evaluated NetApp against two other major vendors, quickly identifying modularity as a major differentiator in favor of NetApp.

“If we want to upgrade the storage, we can simply pull out the old head and install a new one,” Scott says. “Unlike competitive products, it’s easy to scale the NetApp system just by adding new shelves. In addition, NetApp was really willing to work with us and provide the level of customer service we were looking for.” The department chose NetApp FAS3020 and FAS3020 cluster systems, with installation and data consolidation services provided by NetApp Global Services.

NetApp multiprotocol support was also important. The HP Integrity server that DHA chose for SQL server virtualization required both FC SAN and iSCSI connections. “We’re very pleased with

the versatility of the NetApp system,” says Scott. “We have Fibre Channel and iSCSI running off the same storage system flawlessly.”

Integration of NetBackup with SnapVault Streamlines Advanced Disk-Based Backups

In 2007, DHA implemented an automated disk-to-disk backup architecture based on NetApp SnapVault software and Veritas NetBackup software, using NetApp NearStore R200 systems for secondary storage. The solution manages backups for servers attached to the NetApp primary storage and backs up files on servers using direct-attached storage.

Backing up data from the NetApp FAS3020 systems is a two-stage process automated by NetBackup. As part of a unique NetBackup-SnapVault policy, NetBackup first triggers the Data ONTAP® operating system to create a NetApp Snapshot copy, a fast and non-intrusive operation that does not impact production. Next, NetBackup instructs NetApp SnapVault to move the Snapshot data directly from primary FAS3020 storage systems to a NetApp NearStore R200 system without passing through a NetBackup media server.

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After SnapVault executes a one-time complete backup to the R200 system, it sends only the changed blocks for all subsequent backups, greatly speeding the backup process. Even though much less data is transferred and stored, every backup is effectively a full point-in-time backup, resulting in significant space savings over traditional full backups.

THE BENEFITS:

Benefits of Disk-to-Disk Backups and Restores

The centralized NetApp storage architecture and the integration of NetApp SnapVault and Veritas NetBackup are helping DHA increase storage utilization, shorten backup windows, speed restores, and simplify administration. The joint solution not only simplifies the backup of NetApp primary storage to disk, but also allows the customer to perform backups of direct-attached storage to NetApp storage using data deduplication.

The NetApp architecture helps DHA maximize its storage utilization and accommodate data growth of 30% per year. NetApp Snapshot and SnapVault technologies enable DHA to manage data growth by storing backup data more efficiently.

“With NetApp SnapVault software, we capture only changed data—unlike tape, which requires copying everything every time,” Scott says. “We currently do daily incremental backups kept for two weeks and weekly full backups kept for 60 days. Overall, due to the solution’s data deduplication capability, we’ve realized an 80% space savings over tape. Backups now finish 16 times faster—well within our backup window,” reports Scott. “Restore times have improved as well, up to six times faster on average. Best of all, no matter whether the restore is coming from tape or disk, we do it through a single pane of glass—the NetBackup console.”

Savings in Storage Administration

The NetApp and Symantec solution has relieved DHA’s staff of time-consuming administration and maintenance of tape libraries, freeing them for more strategic tasks. “It will take time, but we plan to eventually eliminate tape completely,” says Scott. “Meanwhile, we continue to grow our NetApp footprint.”

One major benefit of this approach is to streamline administration for both backups and restores. The DHA IT staff can manage the entire consolidated backup scheme from a single console. “With the integration of NetApp SnapVault and Veritas NetBackup software, all our backup operations can be scheduled,

monitored, and controlled from the NetBackup console, greatly simplifying backup administration,” says Scott. “NetBackup maintains one consolidated catalog for all backups, including those created by SnapVault.”

DHA’s NetBackup and NetApp storage architecture deliver cost savings in key areas. As expected, tape media costs have tapered off as tape backups are replaced with space-efficient disk-to-disk backups. “We’ve actually been coming up on end of life of our tape library, and would have had to purchase a new one,” Scott says. “Now we’ve used those funds to buy another NetApp FAS3020 system to deploy as part of our disaster recovery [DR] plan.” The DR plan will be a full tapeless solution, using NetApp SnapMirror® software to move data from the backup tier to the DR system in a remote location. Replicated data will preserve all the storage savings captured through deduplication of the backup data.

Scott sums up the value of the disk-to-disk backup solution: “By integrating two best-of-breed products—SnapVault and NetBackup—NetApp and Symantec have created a solution that unifies and streamlines backups in our heterogeneous environment. The Department of Human Assistance has realized great value from the NetApp-Symantec partnership.”

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SOLUTION COMPONENTS

NetApp Products

NetApp FAS3020 storage systems
NetApp NearStore R200 storage systems
Data ONTAP 7G operating system
NetApp Snapshot technology
NetApp SnapVault software

Partner Products

Veritas NetBackup 6.0

NetApp Services

NetApp Global Services installation
and data consolidation

Environment

Database: Microsoft® SQL Server
Platform: Microsoft Windows® Server
Users: 2,500 employees in 35 distributed sites



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