success story

Southeastern Freight Lines,
a regional shipper relies
on hp SANs and clusters
for the long haul

SOUTHEASTERN FREIGHT LINES

One of the keys to success for Southeastern Freight Lines is its innovative use of HP storage-area networks (SANs), storage software and clustered servers. The HP solution helped Southeastern reduce backup times, improve storage management efficiency and free up valuable computer room space. "Everything we do takes less effort and time than before we began using HP StorageWorks SANs."

hp StorageWorks

In the world of less-than-truckload (LTL) shipping, Southeastern Freight Lines of Lexington, S.C., is the gold standard among regional haulers. The recipient of more than 225 quality awards from leading companies worldwide, Southeastern takes pride in delivering high quality distribution and shipping services to 40,000 customers throughout 10 southeastern U.S. states and Puerto Rico.

As the use of LTL haulers – companies that specialize in carrying partial shipments to multiple locations in a specific region – has increased in recent years, customer demands have also grown. While price is important, customers care most about on-time performance, value and service. Southeastern, with $480 million in FY2000 sales, responds to increased customer demands by deploying automation and advanced information- technology (IT) solutions at its headquarters, 58 service centers and onboard its trucks.

SAN speeds imaging performance

The regional carrier has used server, storage and software solutions from Hewlett-Packard Company since 1986. The company now depends heavily on HP StorageWorks storage-area network (SAN) technology to help it manage: growing document imaging demands, mission-critical applications and enterprise productivity applications such as the Microsoft® Exchange platform. More than 85 percent of Southeastern's 22,000 daily shipments must be delivered overnight by the company's 2,000 drivers, requiring quick and efficient processing of orders, invoices and other paperwork.

To streamline document handling, Southeastern uses a sophisticated document-imaging network, which links company trucks, service centers and customers. Employees scan up to 60,000 documents per day – about 2GB of data – into the system and send them via frame relay to the company's headquarters near Columbia, S.C.

Until recently, Southeastern stored images in three optical-jukebox systems connected to a cluster of HP AlphaServer systems. "We began using document imaging in 1993," notes Vice President of MIS Dave Robinson, a 20-year Southeastern veteran. "We primarily scan bills of lading and delivery receipts, and transmit that information back to our HP OpenVMS cluster. We must keep this document information for about three years and access it when needed. This creates a complex storage and retrieval problem."

Robinson explains that when the optical jukeboxes reached obsolescence about two years ago, Southeastern analyzed the price of disk storage and decided it was cost-effective to invest in an HP SAN based on the HP StorageWorks enterprise modular array 12000 system. A SAN also made sense from a service perspective, providing faster access to archived images. The modular components of the HP StorageWorks EMA12000 system, no single point of failure and support for clustered services provide a scalable, high-performance solution for archival needs. Along with the SAN, the carrier implemented the HP StorageWorks enterprise volume manager (EVM) solution, which enables the IT staff to perform snapshot backups in just seconds and move backup processes to an off-line backup server.

second SAN delivers faster backups

Shortly after implementing the SAN for its document-imaging functions, Robinson's staff looked at other areas where SAN solutions could augment performance, such as the company's older direct-attached, storage-supporting, clustered HP AlphaServer systems.

The 50-year-old carrier installed a second HP StorageWorks SAN to support numerous mission-critical applications running on the HP OpenVMS cluster, including central billing, rate calculation, shop maintenance, parts inventory, invoicing, accounts payable, office automation and the carrier's LASER automated dispatch system.

According to Robinson, the company saw immediate performance gains. "The tires really hit the road when we brought in the HP StorageWorks SAN. A daily file-cleanup process – which kept users off the system for about 15 minutes – now takes just two minutes to run," he says.

The staff performs more extensive file-maintenance operations each weekend. Before installing HP SAN storage, file-maintenance operations took more than 12 hours. Those same operations now take just three hours, freeing staff for more productive IT tasks and customer service activities. Robinson attributes the increased performance to the high-speed disk drives and Fibre Channel connections of HP StorageWorks EMA12000 systems.

data backup snapshots bring smiles to IT staff

One of the most important benefits, according to Robinson, is the ability to capture snapshot backups of critical disk volumes using HP StorageWorks EVM. Snapshots are point-in-time copies of data, which can be created in seconds, providing Southeastern with minimal system disruption. Before implementing the HP StorageWorks SANs, it took the carrier three hours to perform a daily incremental backup of mission-critical files. With the HP StorageWorks EVM snapshot capability, the company can create a virtual copy of its data – essentially a full backup – in a few seconds.

"During an incremental backup, which may take three hours to complete, the data and backup are not exactly in synch," Robinson says. "With a snapshot enabled by HP StorageWorks EVM, we get a complete backup of our data at a specific point in time – a 100-percent backup and a clean cutoff. It's a substantial improvement in performance and backup quality."

The carrier's IT staff uses the snapshot copies and HP StorageWorks EVM, running on an HP AlphaServer 8200 system, to back up physical files from the SAN to Southeastern's HP StorageWorks ESL9198DLX tape library. This easily expandable DLT tape library allows the IT staff to add library modules as backup needs expand. The backup process, which occurs off-line from the company's production systems, has no impact on users or applications and only requires about an hour, thanks to the HP StorageWorks ESL9198DLX tape library and Veritas NetBackup.

HP StorageWorks EVM and SAN technology accelerated Southeastern's daily backup operations and full backups during the weekend. According to Robinson, performing a full backup of 600GB of mission-critical data dropped from eight hours to just four.

"Everything we do takes less effort and time than before we began using HP SANs," Robinson notes. "We're spending about 80 percent less time managing our storage resources. Our backups now are basically lights-out operations. We also freed up a substantial amount of computer room space by eliminating three optical jukeboxes and at least five disk-drive cabinets."

hp SANs carry investment protection

Over the years, Robinson has appreciated the investment protection his HP systems provided. "As we upgrade our processors and storage, we rarely throw anything away," he says. "We recently added an HP AlphaServer GS160 system to our HP OpenVMS cluster to replace an HP AlphaServer 8400, which our development group now uses for

program testing and other functions. Instead of putting our older HP servers out to pasture, we find other work for them to do."

The HP AlphaServer GS160 provides Southeastern with the power and flexibility it needs to manage growth and easily handle all of the firm's real-time transaction processing. "We have our HP AlphaServer GS160 configured into two partitions, each with four processors and 16GB of memory," Robinson explains. "Each partition runs its own copy of the HP OpenVMS operating system. We can expand later to the full 16 processors in the same cabinet. It's reassuring to know our investment is protected for years to come."

Robinson is a firm believer in the HP OpenVMS cluster technology and appreciates the high availability and flexibility the system provides: "Since the beginning, we have led this industry in applying technology. We pride ourselves in providing quality; quality in the trucking industry means on-time delivery, without damages or shortages. The scalability and reliability of our clustered HP systems help us meet these goals."

Additionally, Southeastern's deep experience with HP systems and solutions extends to the desktop and Microsoft NT worlds. The company uses approximately 1,000 HP iPAQ desktop thin-client systems, as well as more than 25 HP ProLiant servers, including DL320, DL360, DL380 and DL580 models. These HP ProLiant systems run numerous applications, including Microsoft Exchange Server 2000, fixed assets, DNS server, domain controller, file and print, Web server, intranet server and time clock.

migration path in place

Recently, Southeastern installed a third HP StorageWorks SAN system to support its HP ProLiant servers. The IT staff plans to move the company's Microsoft Exchange server to the SAN first, and eventually will migrate all of the locally attached drives to the third SAN, amounting to approximately 1TB of storage.

business results:

- HP StorageWorks SANs provide unlimited growth potential and investment protection for Southeastern's mission-critical document imaging system.

- The HP StorageWorks enterprise volume manager provides Southeastern with "lights-out" backup operations and fast snapshots, which reduced daily backups from three hours to just seconds, and full backups from eight hours to four.

- Improved operational performance and automation solutions reduce storage management by 80 percent.

- HP StorageWorks SANs freed valuable computer room floor space by eliminating optical jukeboxes and DAS storage cabinets.

- HP AlphaServer and HP ProLiant servers ensure 24x7 uptime and system-management ease.

- HP OpenVMS clustering delivers highly available, scalable power, which enables Southeastern to manage rapid growth.

While Southeastern's IT staff is highly experienced in managing HP systems, the carrier uses HP Services to implement its SAN systems – a technology that's still somewhat new to them. "HP Services sets up our SAN zoning, configures our mirrored sets, parity and all that good stuff. They also helped us install the HP Archive/Backup System for HP OpenVMS, and provided training in the use of our tape library," Robinson says. "We also have a hardware maintenance contract."

Southeastern customers count the carrier as an integral part of their supply chains. For example, one of

what makes it work:

hardware:

- three HP StorageWorks enterprise modular array 12000 (EMA12000) storage-area network systems for a total of 8TB of storage

- HP StorageWorks HSG80 Fibre Channel controllers

- HP StorageWorks 16-port Fibre Channel switches

- HP StorageWorks ESL9198DLX tape library

- HP ProLiant servers, including models DL320, DL360, DL380, DL580, 1850R, 5500R and 6400R

- HP AlphaServer systems, including models GS160, GS140, 2100, 8200 and 8400

- 1,000 HP iPAQ desktop thin-client systems

software:

- HP StorageWorks enterprise backup solution

- HP StorageWorks enterprise volume manager

- HP Archive/Backup System for HP OpenVMS

- HP OpenVMS cluster operating system

- Veritas NetBackup

hp services:

- SAN zoning, implementation and integration services

- ongoing 24x7 technical support

- extended warranty services for server and storage hardware

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the country's largest building-supply retailers relies on Southeastern to pick up bulk shipments from top manufacturers, then break up those shipments into smaller units for delivery to numerous retail locations. High quality service means fast access to information, not only for Southeastern, but also for its customers. Electronic data inter-change, voice response, Internet access and fax-on-demand services are some of the ways Southeastern provides customers with information access. "HP SANs and servers form the heart of this information network and play a key role in Southeastern's success," concludes Robinson.

For more information on how working with HP can benefit you, contact your local HP service representative, or visit us through the Internet at our World Wide Web address: http://www.hp.com

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