

Demanding growth at wireless distributor TESSCO signals need to migrate mission-critical applications to HP StorageWorks and BladeSystem platform



"We went with the HP StorageWorks XP24000 disk array for our enterprise storage because it's built to survive just about anything. We know it's not going down."

– Hal Kuff, Vice President of Technology Development Services, TESSCO Technologies Inc.

Industry: Distribution & Supply Chain Management

HP customer case study: HP StorageWorks XP Storage Array, XP Continuous Access Software and MSL tape libraries; HP BladeSystem Integrity and ProLiant server blades and enclosures; HP OpenVMS

Objective:

A robust and flexible enterprise-class business technology infrastructure to support mission-critical, Oracle-based applications for customer-facing services while reducing total cost of ownership (TCO) and enhancing business continuity

Approach:

Migrate critical order management and distribution center applications from an AlphaServer IT infrastructure to the high-performance HP BladeSystem- and HP StorageWorks-based environment

Business technology improvements:

- Provides common, consolidated server and storage architecture
- Supports multiple operating systems
- Yields faster storage-to-network connections
- Eliminated 50 physical servers through virtualization

Business benefits:

- Savings of \$200,000 per year in lower total cost of ownership (TCO)
- Improved business-continuity options with platform consolidation
- Enhanced disaster-recovery plan
- Reduced risk to revenue stream and reputation
- Saved one full-time equivalent (FTE) through server virtualization
- Received licensing credit in migration from AlphaServer to Integrity server blades



With FY2008 sales of \$521 million, TESSCO Technologies is a leading provider of integrated product and supply-chain solutions for the wireless communications industry. Founded in 1982, the firm provides one-stop shopping – for both commercial customers and consumers in more than 100 countries – via direct sales and e-commerce sites. TESSCO commercial customers include public carriers, network operators, resellers, governments and self-maintained users (SMUs).

In the highly competitive and fragmented wireless industry, TESSCO succeeds by delivering what it calls Your Total Source® solution. This combines more than 25,000 high-quality products from 300+ manufacturers via a sophisticated supply-chain-management system to ensure excellent service, completeness, reliability and timely delivery. The firm fulfilled more than 1 million customer orders last year from its distribution centers in Hunt Valley, Maryland,

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and Reno, Nevada. TESSCO's custom-built Order Entry System (OES) and Configuration, Fulfillment and Distribution (CFD) application based on INFOR's WMS system are the heart of the firm's operations and support customer orders taken by phone, e-mail and through web sites such as TESSCO.com.

Strong growth signals need for change

TESSCO has experienced strong, steady growth in recent years. This growth, in combination with changes in its mix of customers and products/services, has led to increased pressure to migrate the mission-critical OES application from a legacy AlphaServer platform to a new, consolidated enterprise infrastructure.

"As soon as HP certified OpenVMS for its Integrity server blades, we began making plans to migrate OES," notes TESSCO's Vice President of Technology Development Services Hal Kuff. However, with the firm's data demands growing at 25 percent each year, TESSCO first looked to reinforce its storage infrastructure before tackling the servers that were powering its mission-critical applications.

The firm relied for years on two mirrored HP Enterprise Virtual Array (EVA) systems at its main data center in Hunt Valley, and a third EVA at its Reno distribution center. The plan was to replace the two EVAs in Hunt Valley with a single, larger storage array.

"TESSCO is dedicated to HP infrastructure – our data center is like an HP lab," Kuff says. "However, we still explore every option when it comes to major technology upgrades. We looked at HP, EMC, Hitachi and NetApp systems. We have had an HP

StorageWorks XP10000 at our Timonium, Maryland backup site for about 18 months, and it is an extraordinary machine. So, the leap from the EVA to a larger XP system was our thought from the outset."

Above all, Kuff and his team demanded a system that would provide total reliability. "We have been StorageWorks fans for more than 20 years," Kuff explains. "We learned just how rugged HP StorageWorks systems are when our primary data center was flooded in December 2002. An eight-inch water main broke and flooded the data center, blasting our storage arrays across the room. Out of 500 hard drives, we lost only two; but none of our data was lost."

After carefully considering all his alternatives, Kuff chose the HP StorageWorks XP24000 array to be the mainstay of TESSCO's enterprise environment: "We liked the fact that the XP24000 doesn't require a lot management oversight, and really liked that we can fine tune the system to optimize it for our critical applications – to create our own throughput models. We are able to leverage our experience with the XP10000. It was also critical that the XP24000 is built to survive just about anything. We know it's not going down."

Servers get the next call

After dealing with TESSCO's storage needs, Kuff and his team next moved to upgrade and consolidate the multi-platform infrastructure the firm has relied on for many years: Microsoft® Windows®, Linux and OpenVMS AlphaServer systems. "We were very satisfied in the reliability and performance of our HP ProLiant and AlphaServer systems, but felt that we could gain both improved operational efficiencies and strengthen our business continuity position by consolidating to one architecture – the HP BladeSystem."

TESSCO is a long-time HP customer, and the OES application was originally developed and has run for more than two decades on AlphaServer systems under OpenVMS. The firm's CFD application runs under Windows on HP ProLiant servers. Both applications depend on multiple HP ProLiant Linux server clusters running Oracle® 10g databases.

Other important enterprise applications, including Microsoft Exchange Server and Oracle Financials, run on ProLiant rack and server blade systems under Microsoft Windows and Linux. The desire to migrate the OES application was tempered by the risks associated with any migration. These risks were heightened due to TESSCO's reliance on

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OES to support mission-critical e-commerce and merchandising programs it hosts for its customers – including outsourced call centers, private-label Internet sites and catalog sales. In addition, OES and CFD support the firm's largest accounts – including a large OEM's repair/replacement materials distribution services and a Tier One national carrier's warranty support and accessories program.

BladeSystem provides consolidation base

The move to the HP BladeSystem provides TESSCO with an ideal virtualization and consolidation platform with reduced power requirements, a smaller footprint, unified management and flexible configuration. The full-size BladeSystem c7000 chassis and c3000 "shorty" chassis can support both HP Integrity and ProLiant blades, multiple operating systems and storage blades.

"We just completed the migration of 20 AlphaServer systems and our OpenVMS applications to clustered Integrity BL860c blades in three c7000 chassis," Kuff says. TESSCO was also able to transfer some of its OpenVMS licensing credits from its AlphaServer systems to the new Integrity server blades equipped with Intel Itanium processors. "Our licensing cost for porting to the Integrity blades was close to zero," Kuff adds. "We also expect to save about one full-time equivalent in labor and about \$200,000 per year in reduced total cost of ownership. In addition to the AlphaServer systems, our long-term goal is to migrate about 100 rack-mounted ProLiant servers to the BladeSystem."

Kuff's team has already retired 50 older ProLiant rack servers by virtualizing their functions using VMware ESX Server on HP ProLiant BL465c and BL495c server

blades. "You hold one of these HP server blades in your hands," Kuff observes, "then you look at the 10+ rack servers that can be consolidated onto it, and you don't need to break out the slide rule to determine that it makes good sense."

Improved coverage for business continuity

A consolidated technology infrastructure has made business-continuity planning far easier as well. "The BladeSystem environment offers us disaster-recovery options we didn't have before," Kuff notes. "Before, we had to provide separate AlphaServer and ProLiant environments at both our main data center and our backup site. Now, we have one, unified architecture to support. That makes our lives easier, and saves time and money."

TESSCO's XP24000 links via a fiber optic connection (2.5 Gbit/s OC-48 fiber) to the firm's XP10000 at the Timonium backup site, about three miles away from the Hunt Valley data center. HP StorageWorks XP Continuous Access software provides an asynchronous replication link between the two arrays to provide an up-to-the-minute copy of critical data for business continuity and disaster recovery. The firm uses the Commvault Simpana Backup Solution for its Windows and Linux servers and the OpenVMS BACKUP utility to back up OES data to HP StorageWorks MSL tape libraries, equipped with HP Ultrium drives and cartridges.

"Our competitive advantage stems from our ability to provide the highest level of customer service and deliver products and solutions on time, every time," explains Kuff. "Our OES and CFD applications must be available around the clock, truly 24x7x365. We call it responding to the 'moment of truth' – when the customer is ready to order or needs assistance; we have to be ready, without fail."

"An outage to either our OES or CFD systems could mean millions of dollars in lost revenues for us and our partners for every day we're down," Kuff emphasizes, "not to mention the hit we would take to our reputation. The 2002 flood hit us Saturday night, and by Sunday morning we had OES and our WMS application back on line at a backup site Sunday morning. That gave us time to move in and recover the rest of the data center, which took about a week. We learned a lot from that experience, and our business-continuity preparation is a top consideration."

HP Services is part of the plan

HP Software Consulting Services installed the XP24000 in TESSCO's main data center in Hunt Valley, and helped Kuff and his team to a fast start

Customer solution at a glance

HP StorageWorks XP Storage Array, XP Continuous Access Software and MSL tape libraries; HP BladeSystem Integrity and ProLiant server blades and enclosures; HP OpenVMS

Primary applications

- Order management and fulfillment
- E-Commerce B2B and B2C
- Supply-chain-management and distribution-center systems

Primary hardware

- 2 HP StorageWorks XP storage arrays, models XP24000 and XP10000
- HP Integrity BL860c server blades
- HP ProLiant BL465c and BL495c server blades
- HP BladeSystem c7000 and c3000 enclosures with Virtual Connect modules
- HP StorageWorks MSL4048 tape libraries with Ultrium LTO3 and LTO4 drives and HP Ultrium tape media
- 120 ProLiant racked servers, including DL585 and DL385
- 500 HP desktop systems, including Series 5000 and 7000
- 400 HP notebooks
- 200 HP printers and scanners

HP Services

- HP Financial Services – leasing
- 3-year warranty and support
- On-site storage consulting and support
- Support – 24x7 4-hour response

Primary software and applications

- HP StorageWorks Continuous Access XP Software
- HP OpenVMS v8.3 operating system
- HP Systems Insight Manager
- HP Integrated Lights Out 2 (iLO 2) Advanced Pack
- Oracle 10g database
- Oracle E-Business Suite Financials
- Microsoft Windows Server 2003 and 2008 operating system
- Microsoft Exchange Server 2003
- Red Hat and Oracle Unbreakable Linux operating system
- CommVault Enterprise Backup Solution
- VMware ESX Server
- OES & CFD applications

Why HP?

- Long-time, satisfying business relationship with HP
- One-stop shopping and services
- Unified platform achieves efficiency
- Proven Integrity-OpenVMS solution
- HP commitment to OpenVMS
- Local sales and support from HP

with the new system. "The HP consultant came on site and gave us unbelievable mentoring that far exceeded our expectation. He really went above and beyond!"

TESSCO leases its XP24000 from an HP value-added reseller and HP server blades from HP Financial Services. "We have leased many times with HP Financial Services and they are absolutely first-class," Kuff says. "We're very impressed with the HP leasing organization. They partner with us in providing the solution and are genuinely concerned in helping us leverage value."



About TESSCO

TESSCO Technologies Incorporated (TESSCO.com) is a value-added provider of the product solutions needed to design, build, run, maintain and use wireless systems. The firm was named to *Forbes* magazine's 200 Best Small Companies in America in both 2007 and 2008. TESSCO assures customers of on-time availability, while streamlining their supply-chain process and lowering inventories and total costs.

Technology for better business outcomes

For more information, go to www.hp.com/go/storage

For more HP StorageWorks customer stories, go to
www.hp.com/go/storage/casestudies

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