POWER SYSTEMS
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MICHAEL KARASIENSKI, CARHARTT'S IBM I SUPERVISOR

RUGGED and Flexible

Carhartt saves money and improves performance by upgrading to POWER8 and new storage

By Jim Utsler ➤ Photography by Brian Kelly

Your systems are maxed out, storage is reaching capacity and the future looms, with all of the new, helpful, gee-whiz technologies that come with it. The obvious fix? Upgrade, upgrade, upgrade. But when reviewing the raw numbers involved, it can cause gasps and groans, as in, "How are we going to pay for this?" or "This is going to crater our budget."

In truth, however, upgrading can actually be cost beneficial. You're getting not only improved server processor performance and increased storage capacity, but also plenty of room for growth. This is particularly true if you can consolidate workloads on multiple systems to fewer physical boxes, thereby reducing server overhead, including administration and maintenance, data-center floor space and energy consumption.

That's what Carhartt did when it took a measured two-pronged approach to addressing both its development and production environments. In the former case, it consolidated five IBM POWER5* and POWER7* servers onto a single POWER8* system and decreased the number of internal disks to a single external array. The savings are estimated to be around $400,000 over the course of three years.

The cost benefits regarding Carhartt's production have been even more substantial. By moving from an out-of-capacity POWER7 server to a POWER8 server and switching to an external all-flash storage device, the company projects it will save even more money.

As Michael Karasienski, Carhartt's IBM i supervisor, explains, "We were able to get more compute, storage, performance, etc., for less than we were previously paying, as well as accommodate for growth and additional project capacity. We internally calculated our financial savings for this project over the next 48 months will save us roughly $1.1 million."

Future Growth

Some 130 years ago, Hamilton Carhartt decided it was time to give railroad workers, ranch hands, soldiers and others clothing that could keep up with their dirty and demanding jobs. With five employees, two sewing machines and the belief that his customers should get "honest value for an honest dollar," he delivered just that, with a rugged and affordable line of coveralls, denims and uniforms.

Fast-forward to 2017, and it's clear that Hamilton Carhartt's vision was a long-term one. Today, his namesake company counts on those hardworking folks, including men, women and children, as part of its growing consumer base, in addition to the fashion trendy. As Carhartt continues to manufacture durable, purpose-built workwear products, its footprint has also grown to include hardworking consumers from around the globe.

Based in Dearborn, Michigan—with its European headquarters in Amsterdam—Carhartt uses several channels to reach its consumers, including online at Carhartt.com, its 30 company-owned retail stores, third-party retailers and large-scale distributors. Carhartt employs more than 5,000 associates worldwide, who, over the past 15 years, have helped the company produce more than 80 million garments and accessories in the U.S.

The company uses IBM Power Systems* servers

UP CLOSE

CUSTOMER: Carhartt

HEADQUARTERS: Dearborn, Michigan

BUSINESS: Designer, manufacturer, retailer and distributor of workwear apparel

CHALLENGE: Preparing for the future using a maxed-out server and inefficient storage

SOLUTION: Partnering with Mainline Information Systems to consolidate its backup, development and testing servers, and upgrade its production system—without breaking the bank

HARDWARE: Two IBM POWER8 servers, an IBM Storwize V7000 and Storwize V9000

SOFTWARE: Several SAP applications, Manhattan Associates WMi, IBM WebSphere Application Server and IBM WebSphere Commerce

throughout its operations, including development, testing and production, making the platform an essential part of its business. As Carhartt's system of record, it runs a variety of software resources, including several SAP applications, Manhattan Associates WMi, IBM WebSphere* Application Server and IBM WebSphere Commerce. These currently run on the company's POWER8 production server.

"We never have to worry about this environment. In fact, in all of the time I've been here, we've had only one outage due to a minor hardware failure—and that's it. It just runs, and I never have to worry about it. It doesn't require many people to support it, which means we can leverage our team's experience to grow for the future," says John Hill, CIO at Carhartt.

A Boatload of Payments

And that's what Carhartt did in 2015. It decided to use that expertise to consolidate its off-site disaster-recovery and developing and testing environment. At the time, it had five Power Systems servers, ranging from POWER5 to POWER7, all with onboard storage.

"One of my jobs is to find the best value for Carhartt," Karasienski said. "So with that in mind, I began working with Randy Moeller at Mainline Information Systems to address those five older servers that we were paying a boatload in maintenance for.

"We had a traditional architecture where every system had its own I/O card. So Mainline said, 'Hey, why don't we start looking at virtual I/O server (VIOS) facilities.' And we did, allowing us to consolidate our previous systems onto a single POWER8 system. This reduced our data-center footprint from three full racks to roughly half a rack."

During this process, Carhartt also decided to ditch its internal disk-based storage system in favor of a multitier IBM Storwize* V7000 device that contains both flash and disk. Using real-time compression, the company was able to move all of its dedicated Power Systems storage down to a single array that's faster and more efficient than what it had previously been using. In fact, the company is now experiencing a roughly 75 percent compression ratio for its IBM i and SAP data.

Karasienski estimates that—between administration

and maintenance costs and a significantly reduced server and storage footprint, among other benefits—the company will save around $400,000 over the course of its first lease, while still being able to take advantage of POWER8 and V7000 performance increases in just its development environment.

Flagged Projects

Carhartt was far from finished with its upgrade plans, however, in part because of the success it had with its previous consolidation effort on the development and disaster recovery (DR) system. It now had its eye on its production systems, including its then-POWER7 server, which also had internal disk.

The reasons for this undertaking were several-fold, as Chris Walker, director of technology at Carhartt, explains. "We had a couple of big projects we flagged as being the main drivers. One was an upgrade to our SAP environment, which required higher performance power. And then there was the growth our ecommerce site was experiencing. We also wanted to take advantage of the expanded resources to add a couple of other apps that previously ran Windows* to a Power Systems server, which would be a great opportunity for us to lessen our x86 footprint."

Indeed, Carhartt's IT infrastructure was growing faster than planned when the company installed a POWER7 server in 2013. It had put a higher priority on business analytics and processes that ultimately drove the utilization of the POWER7 server to the point of needing an upgrade. "It was pretty much out of room," Karasienski notes.

These and other constraints—increased brand awareness, growing success in the marketplace and the globalization of its ecommerce site, which is hosted on the production server—demanded the increased scaling of performance and headroom, in the form of additional processors and memory.

Carhartt certainly could have added those resources to its existing POWER7 server, and with a year and a half remaining on its lease, that may have made some fiscal sense. But Karasienski was certain there had to be an economical way to justify upgrading to a POWER8 server that would take it well past the POWER7 server lease terms.

Based on the internal proof point of its previous upgrade, Carhartt sat down with Moeller and Mainline again—a long-time business partner—to discuss how to migrate its production POWER7 server to POWER8, in hopes of reducing costs, footprint and space, all while increasing

performance and gaining headroom.

"We spent a few months pouring through performance graphs and coming up with the proper sizing needed to achieve our Power Systems performance needs, as well as our storage needs. With more than a year left on our current lease, financial justification was going to be critical. The goal was to rework our lease, upgrade the existing Power Systems server and reduce the costs associated with the environment," Karasienski recalls. "It seemed like an impossible task."

John Hill (left to right), Randy Moeller, Michael Karasienski and Chris Walker are photographed in Dearborn, Michigan.

Return on Investment

It wasn't impossible. Walker explains, "Early last year, Mike and a team member immediately started pitching the need for us to do a full replacement. The planning process actually started way back, with Mainline, and they concocted a proposal to address not only our growth needs, but also flexibility and improving server and storage performance. As we got closer to our budgeting season, we went hot and heavy with a proposal to make it a '17 or '18 initiative."

2017 turned out to be the magic year. In fact, according to Hill, it quickly became clear that upgrading to another Power Systems server was the way to go, thanks to the upfront work Karasienski and Mainline had put into the proposal.

"We did a comparison of what it would mean to keep our current environment and add capacity to it versus doing an entire server upgrade. We conducted that comparison because that's what obviously drove the ROI. We knew we were going to have to add capacity no matter to the current environment," Hill said. "So I took the upgrade proposal to my boss and the CFO and said, 'It's pretty straightforward from a business perspective. Here's the investment and here's the return.' It was probably a 30-minute conversation."

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The growth of its ecommerce site was one of the reasons Carhartt wanted an upgrade

With everyone on board, Karasienski and Mainline began making their proposal a reality. The first step was to reach out to all of Carhartt's application vendors and third-party products to start the process of gathering new license keys. Although Karasienski admits this process wasn't fun, the company has what it calls a "software matrix," which is essentially a list of the software on every LPAR, complete with serial numbers for each. "People sometimes skip getting new keys, and when they migrate, they wonder why nothing works. Yeah, it's a pain, but it's also necessary," Karasienski adds.

After Carhartt received its new hardware—a Power Systems 870 and an all-flash Storwize V9000—in December 2016, it began working with both IBM and Mainline to put the pieces into place to begin the migration of its applications and 31 LPARs.

With a firm deadline to get everything transitioned by the end of March 2017, Carhartt and its partners began working in earnest. "Financially, we had to be off the old hardware to avoid

incurring penalties by having to continue paying maintenance on the POWER7 server. We had to be done before IBM recovered it," Walker says.

That deadline in mind, Karasienski began working with application leaders to assist in the migration. He also pitched in with the LPAR migrations, working with Mainline Professional Services resource David Harlow to ease the transition. (He now refers to that drain process as Dave's Drain Process.) The migration of all 31 LPARs was completed by the first week of March 2017, well before the month-end deadline. And during that process, Karasienski adds, "The longest outage we had was roughly two hours."

Quickly and Smoothly

Upon completion of the production-server migration project, Carhartt's rack space was reduced from two full racks to roughly half a rack. Despite this lessened footprint, the company now has the capacity to accommodate any future growth, and with the additional V9000 array, it has experienced reduced response times, with current disk access outperforming the old internal disk array by a factor of three.

"System performance has improved across the board," Walker said. "For example, reports started completing in about a quarter of the time than before. We even had a number of folks reaching out saying that their reports were failing because they were coming back as complete so quickly. We had to explain to them that, actually, no, they're fully processing but they're processing significantly faster."

These and other anecdotal tales are why Carhartt is a prime example of how upgrading improves both server and storage performance, adding capacity for ongoing and future growth, and reducing data-center clutter and energy costs—all at a savings of an estimated $1.1 million over the course of 48 months.

As Hill notes, "We were able to go to advanced flash storage, an advanced server environment and more capacity, and our annual operating costs actually decreased. This is a testament to everyone involved, including Mike (Karasienski), Chris (Walker), our management team, the IT staff and Mainline. I've never seen a migration happen that quickly and smoothly before." P