Making Change

Bunzl Distribution USA assembles success with Power Systems and SAN

By Jim Utsler

"One of the things I like most about my job is the challenge," says Bunzl Distribution USA Technical Support Manager Cindy Baur. "No two days are the same, and I'm always learning something."

That's fortunate, because something—from the mundane to the mission-critical—always comes up. For example, after the company outgrew its IBM System i* servers, it decided to move to two new IBM Power Systems* 570s and an IBM storage-area network (SAN) solution.

New servers and more power sound great, but in Bunzl's case, that upgrade—not only to Power 570s and two IBM System Storage* DS8100s, but also to IBM i 6.1—presented a host of unexpected challenges, including, most significantly, performance issues.

Hardly a wallflower, Baur decided to take charge of the situation, using Midrange Performance Group's (MPG's) Performance Navigator to monitor her systems and identify the bottlenecks. Using that vital data, she then worked with IBM to resolve her performance problems.

"It took them a while to believe what I was telling them, but they finally came around and began issuing PTFs to help out not only me, but also others who were experiencing similar problems," she says. "Without a performance-monitoring tool such as Performance Navigator, I might not have known what the root

Bunzl Distribution's Cindy Baur says IBM storage experts and weekly massages helped her through a complicated upgrade.

CUSTOMER: Bunzl Distribution USA
HEADQUARTERS: St. Louis
BUSINESS: Distributor of food packaging, disposable supplies and cleaning products for the food processing and retail markets
CHALLENGE: Keeping up with growing demand for increased processing and storage
SOLUTION: Upgrading its servers and operating system and moving to a SAN-based storage environment
HARDWARE: Two IBM Power Systems 570s and two IBM System Storage DS8100s
SOFTWARE: Midrange Performance Group's Performance Navigator and a heavily modified ERP solution

Bunzl uses the two new Power Systems servers for day-to-day business. One 570 resides at its headquarters in St. Louis and the second, a Capacity Backup (CBU) 570, is offsite in Chicago. The production 570 runs six LPARs and the CBU 570, acting as a failover box for the production system, has another four. Both data centers have a DS8100 storage device, with the production SAN device mirroring to the other for data backups.

Before this configuration, the company used an IBM System i 570 for production and a System i 520 for failovers. But as with many businesses, especially those acquiring other companies and deploying new technologies, these older systems began to show their age. "We were struggling," Baur says, "because we were having to move processors around depending on workloads. We were robbing Peter to pay Paul."

Fortunately, Baur was well aware of the situation, thanks to her use of the MPG Performance Navigator. In fact, she uses the product daily to proactively monitor system performance. That's how she knew "many, many months ahead of time," as she puts it, that things were beginning to spiral out of control.

"As we continued to grow, so did our memory requirements, our disk requirements, our processor requirements and our storage requirements. That's how we got to the situation we were in. So it was time to rethink nearly everything, even from a performance perspective, because we have a lot of batch subsystems that require a great deal of processing power," Baur says.

Obviously needing to address these and other issues, Bunzl decided to upgrade its existing servers to the Power Systems servers and, wanting to move away from internal storage, a DS8100-based SAN. For assistance, the company turned to Tamalpais Group, which helped acquire and install the new environment.

Bunzl initially hesitated to go with a SAN, not having any prior experience with that type of storage infrastructure. But its fears were alleviated after it attended an IBM executive storage briefing in Tucson, Ariz., about SANs. "The IBM storage experts gave me some warm fuzzies," Baur says. "They were very knowledgeable about what we wanted to do, how to do it and, in the end, helped—along with the Tamalpais Group—deploy the DS8100s."

causes were. Now, we have more than enough performance to accommodate both current and future growth."
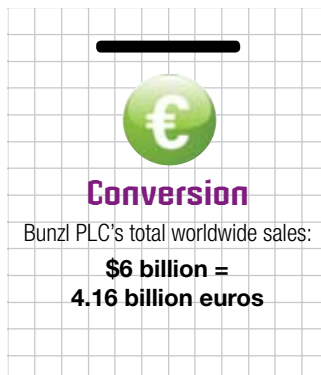
Peter and Paul

Based in St. Louis, Bunzl offers more than 250,000 products—food packaging, disposable supplies such as gloves, and cleaning and safety products—to food processors and retailers, including supermarkets. "We distribute things like the plastic containers prepared foods come in, sanitary tissues used in bakeries and plastic bags lunch meats are put into. Supermarkets are our primary market," Baur says.

Notably, Bunzl has a stake in all 50 U.S. states and Puerto Rico, Canada, the Caribbean and parts of Mexico. Some 3,500 employees work at its headquarters or in its approximately 90 warehouses. The company, one of the leading nonfood consumable-products suppliers in North America, is part of an international company, London-based Bunzl PLC, with total worldwide sales exceeding $6 billion (4.16 billion euros).

As is typical with distribution companies, orders come into the company (mainly via EDI, Baur says), are processed at the warehouse, shipped to customers and invoiced upon transaction completion. On the other end of the business, Bunzl places orders with manufacturers based on customer needs, receives and processes those orders at the warehouses and pays for those goods via accounts payable. For both accounts payable and accounts receivable, Bunzl uses a heavily modified ERP application that runs on IBM i. "The vendor got out of the distribution business, so we bought the code and have been updating it ever since," Baur says.

Conversion

Bunzl PLC's total worldwide sales:

$6 billion = 4.16 billion euros

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>
> —Cindy Baur, technical support manager, Bunzl Distribution USA

Sweating Bullets

But a SAN posed its own set of challenges, even beyond the initial learning curve. For example, the move from internal to external storage required Bunzl to migrate to IBM i 6.1. This shouldn't have been a big deal, but it turned out to be. For one thing, some of Bunzl's 35-plus third-party applications weren't yet 6.1 compliant. "If we had been a typical distribution shop with maybe a handful of third-party apps, it would have been a piece of cake. But our biggest issue was having so many of them, and we had to contact all of the vendors to make sure their software would work under 6.1. So, some of the packages required fixes or upgrades to become compliant, and some of the vendors drug their feet throughout the year previous to us going live. To make matters even worse, some of them didn't even want to become 6.1 compliant, so we had to go look for replacement packages," Baur says.

Because of these and other issues, Bunzl chose to deploy 6.1 and its supporting applications on testing and development

For more on SANs, see "Fruitful Storage" (http://www.ibmsystemsmag.com/ibmi/july09/coverstory/25603p1.aspx?)

LPARs on the backup System i 520 to make sure they would work after the operating-system upgrade. The company began this process in February 2008 and continued through the official launch of 6.1 in March 2008 and the hardware order date in December 2008. Production-LPAR upgrades weren't completed until Feb. 14, 2009, a mere week before the new Power Systems servers were installed and the migration process began. "We were sweating bullets all the way through," Baur says.

But that wasn't the end of it. Although most of its third-party applications had by then proven 6.1 compliant and were functioning in the company's production environment within the new servers, Baur began noticing system lags that shouldn't have existed, especially after the performance boosts the company had hoped to gain by moving to a Power Systems environment. Curious to see what was going on, she used Performance Navigator to drill down through processes, immediately noting that system utilization had skyrocketed from 5 percent to 25 percent.

Details, including specific jobs, in hand, Baur called IBM for help. In response, IBM issued a PTF that brought that utilization back into the normal range. However, Baur also noticed that QTFTP jobs were consuming many more system resources than needed, sometimes up to 8 percent of CPU for each job. Again using Performance Navigator, she discovered that those jobs had jumped from between 400 and 500 a month to more than 700,000.

"Once I got (IBM support's) ear, they began working on a solution for me. Oddly, I was the first customer to have contacted them with this problem. Not long after, though, another got in touch with them for the very same issue, so it was becoming apparent to them that this wasn't an isolated issue."

After applying several more PTFs, Baur's expected performance-utilization rates, as well as the number of QTFTP jobs, fell back into line, with system utilization dropping back to 5 percent and the monthly QTFTP job numbers falling back to 400 to 500.

Strong Support

As with any major hardware upgrade, operating systems and/or applications, issues are sure to crop up. But Bunzl could get through them with the strong support from Performance Navigator, Tamalpais Group and IBM.

"My weekly massages didn't hurt either," Baur jokes. "In fact, that might be one of the most important factors that got me through this—that and the birth of my first grandchild. That was actually the highlight of my life during this time. Now, I can sit back and relax a little." P

Jim Utsler, *IBM Systems Magazine* senior writer, has been covering technology for more than a decade.