Baldor integrates new corporate acquisition, cuts IT costs as proportion of sales by 50 percent

Overview

The need

Following the success of a major consolidation project, Baldor Electric wanted to continue to drive down operational costs in its virtualized SAP Business Suite software environment.

The solution

Baldor non-disruptively migrated its SAP Business Suite applications from an IBM® System z10® Enterprise Class server to an IBM zEnterprise® EC12 server.

The benefit

Delivers 35 percent more capacity with no increase in energy footprint. Sustains a reduction in energy costs of more than 60 percent, and a cut in IT administration costs as a proportion of sales revenue by 50 percent.

Baldor Electric Company is located in Fort Smith, Arkansas, and builds industrial electric motors, mechanical power transmission products, drives and generators. Baldor, part of the ABB Group's Discrete Automation and Motion division, sells its products worldwide to distributors and original equipment manufacturers in more than 70 countries.

The company operates from 50 sales offices and warehouses in North America, and 26 offices serving international markets. The company also runs 26 manufacturing sites in the U.S., Canada, England, Mexico and China.

When Baldor acquired one of its major competitors it also acquired approximately 200 heterogeneous stand-alone servers, running various operating systems and applications.

The increase in server numbers and system complexity threatened to increase IT costs considerably. Baldor aims for continual reduction in IT costs as a proportion of sales revenue, so the new acquisition sparked a review of the hardware and software landscape. Baldor wanted to integrate the two organizations as rapidly and cost-effectively as possible. To achieve this objective, Baldor migrated its heterogeneous server environment to an IBM System z10™ Enterprise Class server.

Mark Shackelford, Vice President of Information Services, explains: "We saw that our System z® platform had never suffered a hardware outage. Our Linux environments, on System z and on other servers, were similarly robust from an operating system perspective. We were already running Baldor's SAP Business Suite applications on SUSE Linux Enterprise Server on System z, and chose to make this our preferred combination for all mission-critical services."

Smaller footprint, lower costs

Baldor transferred its business systems and processes from the 200 acquired systems to just one z10 Enterprise Class server. When the migration was complete, the former servers were decommissioned and removed from the data center.

Solution Components

Hardware

- IBM® zEnterprise® EC12
- IBM zEnterprise 196
- IBM System Storage® DS8800
- IBM System Storage TS7680G ProtecTIER® Deduplication Gateway
- IBM XIV® Storage System
- IBM System Cluster 1350 for SAP NetWeaver Business Warehouse Accelerator

Software

- IBM DB2® 10 for z/OS®
- IBM z/OS
- IBM z/VM®
- IBM FlashCopy®
- SAP Business Suite
- SUSE Linux® Enterprise Server

Cut IT administration costs as a proportion of sales revenue by **50 percent**

"This consolidation exercise basically reduced the size of our data center by 50 percent," says Mark Shackelford. "We freed up an area of about 3,000 sq. ft., which is now office space. This also dramatically reduced the power and cooling requirements of our infrastructure – cutting electricity costs by 60 percent."

Following the successful implementation of the IBM System z10, Baldor decided to install a second System z server. The company chose an IBM zEnterprise 196 (z196) with three zIIP processors supporting an IBM DB2® database running on z/OS®, along with 16 IFL processors for z/VM® and Linux.

Working together with IBM, the Baldor IT team configured the z196 and z10 servers as a Parallel Sysplex® – enabling the continuous availability of SAP Business Suite production workloads in the event of a planned outage or an unplanned interruption. With the production DB2 databases supported by both servers in the Parallel Sysplex, the solution means that Baldor can now support near continuous operations for its SAP Business Suite software operations.

To further enhance its ability to support its SAP Business Suite software landscape and other applications cost-effectively, Baldor decided to upgrade the older of its two mainframes to a new IBM zEnterprise EC12 server.

"When we heard about the IBM zEnterprise EC12, we immediately recognized its potential value to the business," says Mark Shackelford. "Because it has fewer, more powerful processors, we calculated that migrating our SAP Business Suite environment to the IBM zEnterprise EC12 would enable us to drive significant savings on software licensing, energy and maintenance."

Baldor implemented an IBM zEnterprise EC12 server, and non-disruptively migrated the environment from its IBM System z10 Enterprise Class server to the new platform.

Mark Shackelford comments: "The IBM zEnterprise EC12 solution has delivered all of the positive results we expected. For the same physical and energy footprint as the z10, we get 35 percent more compute capacity. Furthermore, because this capacity is distributed over 24 percent fewer processors than the previous solution, we have cut our spending on software licensing – helping us to meet our targets for the continual reduction of operational IT costs."

"Our new backup and recovery plan has enabled us to streamline operations by completely eliminating physical tape, and all the transportation and storage costs associated with it."

— Mark Shackelford, Vice President of Information Services, Baldor Electric

"Upgrading to zEC12 and z196 servers has given us such an increase in performance over the previous generation that we can run all the new systems on the same number of processors and still have plenty of headroom to spare."

— Mark Shackelford, Vice President of Information Services, Baldor Electric

Today, Baldor runs its core Business Suite software landscape on IBM zEnterprise EC12 and IBM zEnterprise 196 servers. Its IBM DB2 10 for z/OS databases run in IBM z/OS partitions, while 70 virtual servers under z/VM provide Linux environments that act as Business Suite application servers. The company uses twelve Central Processors for general-purpose workload, as well as six System z Integrated Information Processors (zIIPs) and 32 Integrated Facility for Linux (IFL) processors.

"One of the great things about System z is its ability to reduce costs by deploying specialty engines," comments Mark Shackelford. "We run about 40 percent of our DB2 workload on zIIPs, which brings the licensing cost down compared to an Intel or UNIX infrastructure. All of our Linux environments run on IFLs, which again deliver a very considerable cost saving."

High-performance storage

Baldor has also rationalized and consolidated its storage infrastructure, moving operational data onto two IBM System Storage® DS8800 storage devices with solid-state drive technology. The two DS8800 systems hold total data volumes of 160 TB, and are linked to the Parallel Sysplex by IBM FICON® channel ports, enabling transfer rates of up to 8 Gbps.

"The production environment alone accounts for 4 TB of data, so it was important to us to find a cost-effective storage platform that would still provide the high performance that the SAP Business Suite software environment requires," comments Mark Shackelford. "The DS8800 meets all these needs, and also provides features such as FlashCopy®, which makes it possible to complete full off-site backups and perform disaster recovery tests very rapidly."

Following extremely positive experiences with the manageability, efficiency, and data compression of IBM DB2, which has helped to reduce the total data volume by an average of 50 percent, Baldor has upgraded to DB2 10 for z/OS. After upgrading to DB2 10, the main production SAP Business Suite software subsystem was able to sustain four times as many concurrent threads as the previous DB2 9 system.

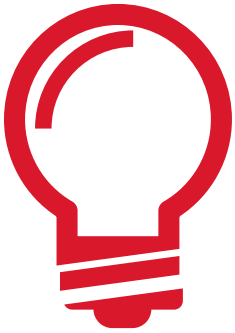
"Some of the larger tables in the 100-200 GB range have been reduced by up to 90 percent," adds Mark Shackelford. "And the great thing is that the compression doesn't impact performance – in fact, it actually improves it."

Strong resiliency

IBM DB2 10 for z/OS has also helped Baldor to reduce the manual effort required to back up its databases, using the DB2 BACKUP SYSTEM utility. This solution enables completely non-disruptive backup of all the SAP Business Suite databases using FlashCopy

"Thanks to the zEC12 and z196 solution, we have been able to absorb the acquisition's infrastructure while still reducing our overall IT costs as a proportion of sales revenue by 50 percent."

— Mark Shackelford, Vice President of Information Services, Baldor Electric



Cut energy costs by **more than 60 percent**

technology, and facilitates the recovery of DB2 databases to any prior point-in-time. By utilizing DB2 BACKUP SYSTEM and FlashCopy, Baldor has eliminated the need to perform time-consuming DB2 imagecopy backups.

The company's IT team has also deployed IBM FlashCopy technology to enhance its backup and recovery strategy. Using an IBM System Storage TS7680G ProtecTIER® Deduplication Gateway and an IBM XIV® Storage System installed at its data center, Baldor's SAP Business Suite production backups are automatically copied to the virtual tape library by FlashCopy software. Backups for both data and DB2 logs are then replicated over the internet to an identical IBM TS7680G configuration at an IBM data center.

Baldor also benefits from the automated replication of data to the remote TS7680G Virtual Tape Storage. During the process, data is deduplicated, dramatically reducing costs, and only changed data is transmitted to the remote VTS library, cutting the volume by up to 90 percent. Based on this reduced data set, backup processes complete more rapidly than before, and require less total storage space.

IBM storage technologies are enabling Baldor to deliver cost-effective storage solutions that meet the company's recovery time objective and recovery point objectives to help reduce business risk. Previously, Baldor's recovery time objective (RTO) was 25 hours, with a recovery point objective (RPO) of one hour.

"Our new backup and recovery plan has enabled us to streamline operations by completely eliminating physical tape, and all the transportation and storage costs associated with it," says Mark Shackelford. "Because the IBM TS7680G virtual tape server uses data de-duplication technology, we can today achieve an RTO of six hours with a RPO of just five minutes, for an extremely cost-effective price point."

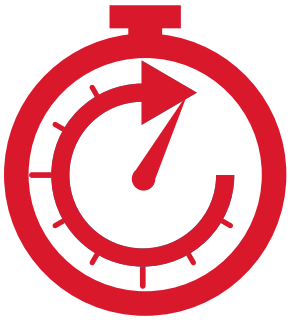
Getting the best out of SAP Business Suite

The new infrastructure delivers response times of less than 500 milliseconds in the SAP Business Suite application environment, enabling the company's 4,300 SAP Business Suite software users to access real-time business data in SAP BusinessObjects instead of waiting for batch reporting processes.

To offer even greater business visibility, Baldor has recently gone live with the IBM Intelligent Cluster™ 1350 for SAP NetWeaver Business Warehouse Accelerator software. The high-performance cluster configuration runs on IBM BladeCenter servers and allows users to generate reports at the touch of a button. Across the business, from finance to manufacturing to sales, users can rapidly gain the business insight they need to make better, faster, more accurate decisions.

"With the IBM Intelligent Cluster 1350 for SAP NetWeaver Business Warehouse Accelerator, one sales report that previously took five hours to run is now generated in 13 seconds. Business users can now routinely run this report to fine-tune their sales, go-to-market and what-if scenarios."

— Mark Shackelford, Vice President of Information Services, Baldor Electric



Reduced time taken to generate sales reports **from five hours to 13 seconds**

"With the IBM Intelligent Cluster 1350 for SAP NetWeaver Business Warehouse Accelerator, one sales report that previously took five hours to run is now generated in 13 seconds – a reduction in time of over 95 percent," notes Mark Shackelford. "Business users can now routinely run this report to fine-tune their sales, go-to-market and what-if scenarios."

Mark Shackelford concludes, "Upgrading to zEC12 and z196 servers has given us such an increase in performance over the previous generation that we can run all the new systems on the same number of processors and still have plenty of headroom to spare.

"Thanks to the zEC12 and z196 solution, we have been able to absorb the acquisition's infrastructure while still reducing our overall IT costs as a proportion of sales revenue by 50 percent.

For more information

To learn more about how IBM products, services and solutions are supporting SAP environments around the world, please visit **ibm-sap.com**

IBM Corporation
Systems and Technology Group
Route 100
Somers, NY 10589

Produced in the United States of America
May 2013

Please Recycle

SPC03425-USEN-02