Maschinenfabrik Reinhausen boosts SAP performance and cuts costs by migrating from Oracle to IBM DB2

Overview

■ ***The Challenge***

With the growth of its international business, Maschinenfabrik Reinhausen was introducing more data, new applications and additional users into its SAP ERP environment. Support for additional languages also required the introduction of Unicode, which increased data volumes further. As a result, Oracle database performance was suffering, which impacted user productivity and business efficiency.

■ ***The Solution***

Working with IBM Global Technology Services, the company migrated data from Oracle to IBM DB2, utilizing the DB2 Deep Compression feature to reduce data volumes and boost performance for the company's SAP ERP and SAP NetWeaver Business Warehouse environments. Having previously used Sun machines, Maschinenfabrik Reinhausen chose to migrate its SAP landscape to IBM technology, migrating first from Sun to the IBM Power Systems platform with POWER5 processors, subsequently to POWER6 processors, and finally from Oracle to DB2 database.

■ ***The Benefits***

DB2 Deep Compression has reduced total database sizes by around 40 percent, and delivered significant performance improvements. Query response times have been reduced by 25 percent, batch processes by 44 percent, and backups by 71 percent. DB2 also reduces SAP database licensing and maintenance costs compared to Oracle. Faster database response has improved total business productivity, with reports available more quickly and higher transaction throughput.

■ ***Key Solution Components***

Industry: Manufacturing
Applications: SAP® ERP 5.0, SAP NetWeaver® Business Warehouse
Hardware: IBM® Power® 550, IBM System Storage® DS4800
Software: IBM AIX®, IBM DB2®
Services: IBM Global Technology Services

Maschinenfabrik Reinhausen is a specialist engineering and manufacturing company, whose main products include regulators for electrical transformers, components for power composites and power quality management solutions. Based in Regensburg, the company is expanding both within Germany and internationally, and now has 2,500 employees working in 15 countries worldwide. The company generates annual revenues of more than €570 million.

To support its financial, manufacturing and supply chain management processes, Maschinenfabrik Reinhausen uses ERP software from SAP.

"We first implemented SAP ERP in 1999, and originally decided to run it on Sun hardware with an Oracle database," explains Franz Moser, Chief Information Officer of Maschinenfabrik Reinhausen. "Then, in 2005, we replaced the Sun hardware with two IBM Power Systems servers. The initial performance improvements were significant."

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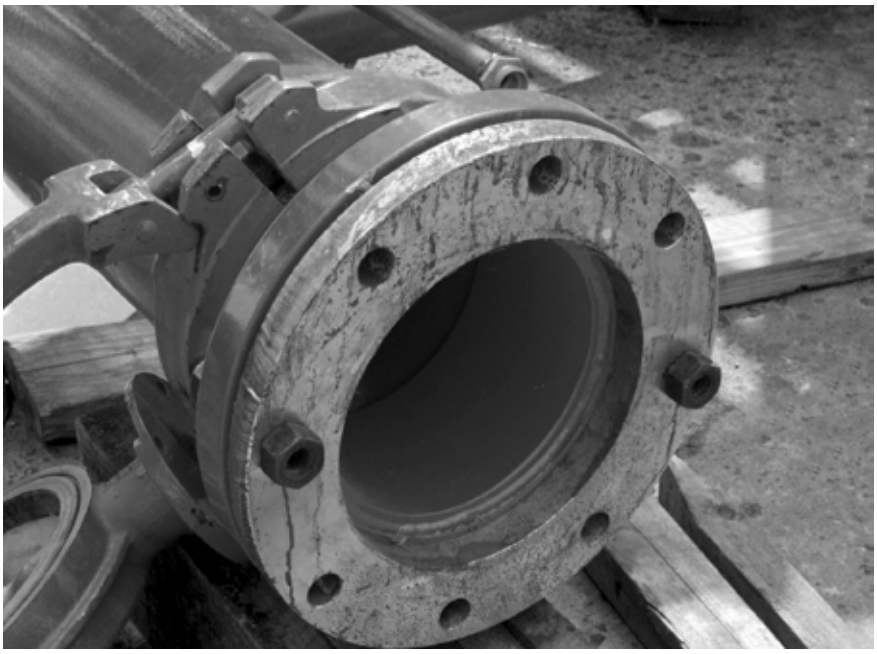
"Moving from Oracle to IBM DB2 has made a very significant contribution to our ongoing performance improvement strategy – without requiring expensive hardware upgrades or complex database optimization work."

Franz Moser
Chief Information Officer
Maschinenfabrik Reinhausen

Coping with business growth

As the business grew, the demand for IT resources was increasing, as more data, new applications and additional users were introduced into the SAP ERP and SAP NetWeaver Business Warehouse environments. With international expansion, Maschinenfabrik Reinhausen also wanted to enable support for additional languages, by converting the database from ASCII to the Unicode character set. This increased data volumes even further.

"Our Oracle databases for SAP ERP and the business warehouse were about 1.2TB and 550GB respectively," comments Franz Moser. "Our 1,100 users were noticing unsatisfactory response times for database queries, our overnight batch processes took four-and-a-half hours, and backups took almost 12 hours, so it was getting difficult to manage the environment effectively."



At the beginning of 2009, the company had upgraded to IBM POWER6 processors, which improved performance by around 10 percent. The volume of data in the Oracle databases still remained a critical bottleneck, however.

"For the SAP ERP environment, we introduced some additional Intel-based application servers and optimized the database, which helped to improve the response times significantly," explains Franz Moser. "But this was not an option for the business warehouse environment, so reporting was getting slower and slower. We did not want to keep buying more hardware, so we started looking for alternative solutions."

Moving to a different database platform

Inspired by IBM, the IT team at Maschinenfabrik Reinhausen considered migrating to a different database platform, and was intrigued by the new DB2 Deep Compression feature.

"The idea was that DB2 could reduce the size of our databases significantly, and that this would lead to improved performance," says Franz Moser. "We were also aware that IBM and SAP have built a strong relationship in recent years: SAP itself uses DB2 for its internal SAP solutions."

Proving the concept

Maschinenfabrik Reinhausen decided to work with software specialists from IBM Global Technology Services to perform a proof of concept that would test the ability of DB2 Deep Compression to deliver the expected results.

This proof of concept was a success, so the company decided to go ahead with the full migration of its production systems from Oracle to DB2.

"IBM provided very good assistance and support," says Franz Moser. "The IBM consultants were highly competent, and the collaboration between them and our in-house team was smooth and seamless."

Stephan Sieber, Chief Operating Officer of SAP AG & Co. KG, comments, "SAP Germany worked very closely with IBM in this project, and the combined SAP and IBM team delivered an attractive proposal to Maschinenfabrik Reinhausen for cost reduction and IT infrastructure optimization."

Dramatic improvements

When the migration was complete, the SAP ERP database had been reduced to 700GB and the Business Warehouse database to 350GB – a reduction of approximately 40 percent in both cases.

"The reduction in database size means we won't have to invest in new storage hardware for some time," explains Franz Moser. "More importantly, performance has improved significantly: query response times have been reduced by 25 percent, batch and reporting processes by 44 percent, and backups by 71 percent.

"We're no longer struggling to complete our overnight processes, and users are seeing a noticeable improvement in real-time performance."

Cutting licensing costs

The move to DB2 has also enabled the company to reduce its SAP database licensing costs as SAP offers lower licensing costs to customers using its preferred database platform. Combined with the projected reduction in storage costs over the next few years, the project has been highly cost-effective for Maschinenfabrik Reinhausen.

Franz Moser concludes: "The availability and speed of our SAP applications is absolutely critical to the business, so our philosophy is that whatever level of performance we achieve, it is still not fast enough. We must continually search for ways to increase performance for the users and improve the cost-to-benefit ratio, and IBM Power Systems play a key role in that search.

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TECHNICAL LANDSCAPE

Servers: IBM Power 550, nine IBM POWER6 processors, six for production and three for development and testing, replacing SUN

Software: IBM DB2, IBM AIX, SAP ERP 5.0, SAP NetWeaver Business Warehouse

Users: 1,100 total users

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