Fraport AG cuts costs and boosts performance for SAP

Migrating from Oracle to IBM DB2

Overview

Business challenge
Fraport AG operates Frankfurt International Airport and is involved in 12 other airports around the world. To succeed in this highly competitive industry, the company needs to keep its costs as low as possible while maintaining excellent service levels. The SAP® systems are a key component of operations at Frankfurt International Airport; but data volumes were growing rapidly, making these systems increasingly expensive to support.

Solution
Working with IBM®, the company migrated its SAP applications from the Oracle database platform to IBM DB2®. Following a successful proof of concept project and a month of careful planning, the main migration of the 26 SAP systems hosted in the data centre in Frankfurt was completed within just five months. Subsequently, Fraport AG upgraded its server landscape to the latest IBM POWER7® technology, delivering further benefits.

For 75 years, Fraport AG has been a leading airport operator. Frankfurt Airport is one of the top ten airports worldwide. Furthermore, Fraport is a major shareholder in a two other companies that operate twelve additional airports on four continents. In total, it transports more than 164.7 million passengers and 3.6 million tonnes of cargo every year. Fraport Group has 20,000 employees worldwide, and achieved sales of nearly €2.2 billion in 2010.

Like all aspects of air transport, the airport management industry is highly competitive and operates on very tight margins. As a result, Fraport maintains a continual focus on operational efficiency, seeking to cut costs across every aspects of its business while maintaining and improving service levels. The company's IT teams make a key contribution to this cost reduction effort – both by developing innovative solutions that automate business processes, and by minimising the operational costs of the systems themselves.

Creating a cost-effective SAP landscape
"One of the most important system landscapes within Fraport is our SAP environment," comments Wolfgang Pelzer, Senior Executive Manager for Application Development and Maintenance. "It supports a very wide range of processes across numerous areas of the business – everything from financial accounting and sales through to HR, project management, and even facilities management and maintenance.

"We first implemented SAP in 2000, supported by the Oracle database platform. Since then, the landscape has grown considerably: we now have 26 different systems, the largest of which has 12,100 users. Over the years, data volumes also increased enormously: before we embarked on the recent DB2 project, the SAP landscape had grown to a size of 11.5 TB."

Finding a solution
Due to these large data volumes – and the resultant need for additional high-speed disk storage and processing power – the cost of maintaining the SAP environment was rising rapidly. Fraport began to look for ways to improve the situation, and IBM suggested migrating from Oracle to the DB2 database platform.

Business Benefits

- Reduced total cost of ownership for the SAP database platform by 45 percent.

- Compressed and reorganised databases, reducing sizes by an average of 47 percent and saving nearly 6 TB of disk storage.

- Improved SAP performance by 10 percent on average, and up to 25 percent on critical billing processes.

- Simplified management processes, minimising the need to retrain database administrators.

- Utilised IBM POWER7 technologies to boost performance by a further 30 percent, even while reducing the total number of processors by half.

"We are very experienced Oracle users, so initially the idea of moving to a different platform seemed like a strange idea," comments Wolfgang Pelzer. "However, IBM stimulated our interest, and our management board was keen to achieve cost savings, so we decided to perform a proof of concept to find out whether DB2 could be a viable solution for us."

Targeting cost reduction

The main factors in the decision to test the IBM solution were the lower licensing costs (SAP currently charges eight percent for DB2 environments, compared to 11 percent for Oracle), and the deep compression features of DB2.

"We wanted to take advantage of DB2's compression features, which provide a technological edge in the market at the moment," explains Wolfgang Pelzer. "If we could cut the size of our databases, we would not only save on storage costs, but also reduce processing requirements, improve performance, and reduce backup times."

Proving the concept

For the proof of concept, the Fraport team decided to migrate the company's second-largest SAP system to DB2 as a test.

"When we started, we did not have much DB2 experience in-house, and we were perhaps too ambitious in choosing such a large system," comments Karina Erichsen, Manager Basic IT Infrastructure. "Subsequently, we made sure that consultants from IBM were available on-site to help us establish a process, oversee the migration, and provide training. As a result, the migration was a success, and the proof of concept delivered such good results that we decided to go ahead with the full project."

Completing the migration

Using the same migration process that had been established during the proof of concept, the Fraport team was able to migrate 26 SAP systems (including production, development and quality assurance environments) from Oracle to DB2 within a period of just five months. The main applications include SAP ERP 6.0, SAP ERP Human Capital Management (HCM), SAP Customer Relationship Management (CRM), SAP Supplier Relationship Management (SRM), SAP NetWeaver Portal, SAP NetWeaver Business Warehouse (BW), and SAP NetWeaver Process Integration (PI).

Cutting data volumes

"The combination of reorganising the databases and enabling DB2 deep compression delivered very good results in terms of reducing data volumes," comments Martina Buck, Senior Manager for SAP Systems. "We saw an average reduction of 47 percent for our eight main SAP applications, and in our three largest systems – ERP, HCM and BW – it was even higher. In total, we reduced the size of the landscape from 11.5 TB down to just 6 TB, and in terms of backups, we went from 36 TB down to 26 TB."

Solution Components

Software
- IBM® AIX®
- IBM DB2®
- SAP ERP
- SAP ERP Human Capital Management
- SAP Customer Relationship Management
- SAP Supplier Relationship Management
- SAP NetWeaver Portal
- SAP NetWeaver Business Warehouse
- SAP NetWeaver Process Integration

Servers
- IBM Power Systems™ servers
- IBM System Storage® DS8000

Services
- IBM Global Technology Services

"We have succeeded in reducing the total cost of ownership by 45 percent, delivering a fast return on investment for the project, and keeping maintenance costs low both now and in the future."

— Wolfgang Pelzer, Senior Executive Manager for Application Development and Maintenance, Fraport

Wolfgang Pelzer adds: "Reducing the volume of data is not just good from a storage point of view – it also has a beneficial effect on many other areas. For example, since the databases are smaller, it requires less processing power to run them effectively, so we have saved the equivalent of four processors. We have also been able to accelerate our backup process: it runs 40 percent faster now than it did before."

Performance improvements

General performance in the SAP environment has improved too, by approximately 10 percent on average. In larger batch processes, such as monthly billing runs, the improvements are even greater – up to 25 percent in some cases.

"The performance improvements delivered by the DB2 migration have been impressive, and we have subsequently improved performance even further by upgrading our hardware from IBM POWER5 and POWER5+ processors to the latest POWER7 technology," says Karina Erichsen. "This has delivered an additional 30 percent boost to performance, even though we have reduced the total number of processors by 50 percent."

Ease of use

From a management perspective, Fraport has been impressed by the ease of use of the DB2 solution.

"Our database administrators were able to start using DB2 without much retraining; for someone with experience of Oracle, it is relatively easy to move to DB2," says Martina Buck. "Moreover, from an SAP point of view, many aspects of database management are identical – for example, the SAP Database Cockpit is identical for both databases."

Delivering cost efficiency

Above all, the DB2 solution has delivered on its promise to reduce costs for Fraport's SAP environment, as Wolfgang Pelzer concludes:

"When we include all the factors – the lower licensing cost from SAP, the reduction in processor requirements, and most importantly the significant reduction in disk storage capacity – we can see that the decision to migrate to DB2 has been a good one for Fraport. We have succeeded in reducing the total cost of ownership by 45 percent, delivering a fast return on investment for the project, and keeping maintenance costs low both now and in the future."

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