

TOP TO BOTTOM

we know

they know

END TO END

SWK STADTWERKE KREFELD AG energizes SAP applications with IBM virtualization technologies

Overview

■ The Challenge

Regulatory demands and liberalization of the German energy market prompted SWK STADTWERKE KREFELD AG (SWK) to reconsider its IT infrastructure. New workload and the need to compete in an open market required a flexible approach that would enhance customer service and help to reduce total costs.

■ The Solution

SWK chose to implement and optimize a range of new SAP applications that would provide vastly more detailed reporting for clients, and would meet the regulatory requirements. To operate these applications, SWK selected IBM System p5 590 servers using advanced virtualization, IBM System Storage DS8000 disk arrays, IBM DB2 and IBM Tivoli Storage Manager to provide a comprehensive, integrated IT infrastructure.

■ The Benefits

Enhanced system performance ensures SWK meets its service level agreements, and the new infrastructure allows the company to add new services very rapidly. Server virtualization allows a close match between workload and processor capacity, with very high CPU utilization, offering highly cost-effective exploitation of hardware investments.

■ Key Solution Components

*Industry: Energy, Utilities
Applications: SAP® ERP 6.0, SAP NetWeaver® Business Intelligence, SAP Human Resources
Hardware: IBM® System p5™ 590, IBM System Storage™ DS8000™
Software: IBM DB2® 9, IBM Tivoli® Storage Manager,
Services: IBM Business Partner Comparex, Sirius Consulting, IBM Global Financing*

STADTWERKE KREFELD AG (SWK) is the communal utility company for Krefeld, Germany. It offers services such as energy, water, natural gas, district heating, public transport and waste management for Krefeld and the surrounding region. Krefeld has 240,000 inhabitants and is located northwest of Düsseldorf in North Rhine-Westphalia.

SWK has been an IBM customer since the 1960s, and started using SAP applications in the mid-1980s, replacing legacy and self-developed software. Management and IT services are concentrated in a holding company, SWK STADTWERKE KREFELD AG. The IT department provides its services for SWK, its subsidiary companies, and for external clients.

In the course of EU-enacted energy market deregulation, Bundesnetzagentur (the federal regulatory authority for the energy sector) has demanded that utility companies fulfil certain specifications for billing systems and general business processes. This requires



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Georg Beran
IT Manager
SWK STADTWERKE KREFELD AG

the separation of supported IT environments for each purpose.

Georg Beran, IT-Production Manager at SWK, comments, “Stadtwerke Krefeld had to transform its operations both to meet the governmental requirements and to compete successfully in the energy market with very low operational costs.”

Rapid deployment through virtualization

To meet its needs, SWK chose to modernize its SAP ERP applications, including project management, human resources, SAP NetWeaver Business Intelligence, the SAP Utilities solution portfolio and the Waste and Recycling solution portfolio.

The advanced functionality of the new SAP applications would enable SWK to streamline its business processes, meet its regulatory obligations, and use new information and reporting capabilities to exploit new markets. These changes would increase the

total IT workload beyond the capacity of the existing infrastructure. SWK engaged with IBM Business Partner Comparex to consider solutions to enhance underlying IT systems, which would support around 5,000 users.

To provide the required capacity, SWK choose to upgrade its SAP application infrastructure with two IBM System p5 590 servers, making extensive use of server virtualization to introduce enhanced levels of flexibility and resilience.

Georg Beran explains, “Server virtualization is a very important feature for SWK, as flexibility is essential when meeting demands in the project business. Using virtualization, for input/output as well as the servers themselves, the IBM solution is able to offer very fast setup of test environments.”

Right-sized solution

SWK has implemented between 15 and 18 logical partitions (LPARs) on each p5-590 server: 50 per cent of the LPARs are dedicated to production SAP applications, and the remaining ones are used for shorter-term project work, test instances and quality assurance environments. These can be spontaneously created or adjusted to meet emerging requirements.

To increase the flexibility of the environment, each server also includes a Virtual I/O (VIO) server, which allows multiple LPARs to share a smaller number of physical I/O adapters. I/O configuration, commissioning and decommissioning are all managed through the VIO



server without the need to source and install physical separate adapters. This minimizes cost and effort by cutting the time taken to deploy new services, and it also significantly reduces complexity and dependency on peripheral networks.

"CPU capacities can be assigned very easily, and we can ensure that each LPAR is given the correct I/O resources without patching LAN- and SAN-networks, allowing our service levels to be met without wastage. Processor capacity utilization is therefore much higher than with previous systems, and we have not had to over-invest to meet our performance targets," says Georg Beran.

Resilience and security for data

With all of its clients, SWK has service level agreements in place to provide better than 99.9 per cent availability. To meet this commitment, it operates twin data centers, with an IBM System Storage DS8000 disk array at each location. IBM Tivoli Storage Manager runs on two dedicated servers, providing backup, archive and restore services, with daily incremental and weekly full backups. The data held by Tivoli Storage Manager is then backed up to an automated tape library, with tapes stored offsite to enable full recovery in the event of a disaster.

The SAP applications are supported by IBM DB2 database and information management software. DB2 offers very close integration with SAP applications, allowing database administration tasks to be conducted from within the SAP

software. Combined with advanced data compression techniques, DB2 provides very low administration costs for SAP application environments.

"Using the Deep Compression capabilities of DB2 9, we have reduced the size of our SAP databases by an average of 50 per cent, freeing up disk capacity for other applications and directly saving costs on adding storage space."

With DB2 Deep Compression, SWK reduced the size of its SAP BI database by 65 per cent (from 1,2TB to 380GB). The SAP ERP database was reduced by 45 per cent, from 420GB to 230GB. Overall database performance, for all DB2 operations, has improved by approximately 5 per cent.

The new reporting requirements have been met without the need to invest in additional server hardware, thanks to the excellent performance of the POWER5 CPUs combined with the dynamic LPAR capabilities of the p5-590 servers. Specific virtual server LPARs are created to prioritize and control the reporting workload. Whenever reporting requirements cease, the PowerVM Hypervisor can release the associated compute resources and return them to the shared processor pool, where they instantaneously become available to other workloads.

Challenges for the IT service provider

The deregulation of the energy sector has forced SWK to compete with other service providers, which in turn means that the IT department has to prove

"Using the Deep Compression capabilities of DB2 9, we have reduced the size of our SAP databases, freeing up disk capacity for other applications. DB2 offers excellent performance and ease-of-management for our SAP environment."

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its economic efficiency and adjust its service structures and processes to the service level agreements with its customers. Offering such proof includes being able to provide performance statistics. These figures help the IT staff to take selective action for efficiency improvement.

For example, SWK now offers a Service Desk (based on the SAP application) as single point of contact. The Service Desk has enabled significantly increased customer satisfaction, the measurability of services, transparency in the process of problem solving, qualified documentation and access to information (ticket tracking) are crucial. The advantages for the IT department are higher efficiency and transparency, shorter processing times, improved communication and availability of meaningful data for IT management reporting.

Marion Küppers, IT-Organisation and Controlling Manager at SWK, comments, "Existing service level agreements with customers require extensive and detailed reporting capabilities. For Incident Management and Configuration Management, we chose to adhere to ITIL [Information Technology Infrastructure Library] standards, which has considerably reduced the workload and cost by systematizing our processes. The next steps will be to introduce processes and workflows covering financial management, service level management and change management."

Partner expertise

SWK worked with Sirius Consulting, which assisted with the introduction of ITIL service standards, as Marion

Küppers reports, "Sirius Consulting is the ideal partner to help SWK implement ITIL service standards. As the SWK solution is mainly based on SAP standards, the experience brought by Sirius was a great advantage."

To ensure that the complete solution was delivered within the relatively tight budgets available to SWK, the hardware, software and services were combined into a single cash-efficient financing deal by IBM Global Financing.

Non-disruptive scalability

Now that the p5-590 servers are in place and that virtualization has become a standard feature of the SAP application environment, SWK intends to introduce further management functionality. This includes financial and service level management, additional reporting, and problem and change management.

The lasting advantage of the IBM infrastructure is the ability to incorporate new workloads by introducing suitably resourced LPARs for each application from the existing processor capacity. Should the total requirements rise, spare processors on the p5-590 servers can be activated rapidly and non-disruptively through IBM Capacity Upgrade on Demand.

"With the new SAP applications running on the IBM p5-590 and DS8000 infrastructure, we have significantly improved customer satisfaction, as well as enhancing the cost-efficiency and flexibility of IT service provision," concludes Georg Beran.



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