SDV^{IT}

Sparda-Datenverarbeitung eG

Leveraging a world-class enterprise computing system to ensure 24x7 customer service

Overview

The need
Sparda-Datenverarbeitung eG (SDV) needed a reliable and cost-efficient platform with minimum downtime to operate large databases and state-of-the-art software for banks.

The solution
SDV deployed two IBM® zEnterprise® EC12 with IBM z/VM® virtualization technology to consolidate Oracle Database and application servers on SUSE Linux Enterprise Server for System z®.

The benefit
Reduces total cost of ownership by about 50 percent, cuts administration effort and enables a team of three to manage 120 servers, accelerates deployment of new systems, and offers excellent availability by providing automated failover within seconds.

Sparda-Datenverarbeitung eG (SDV) is the IT service provider for the Sparda-Bank Group in Germany. SDV develops secure and innovative IT solutions for retail banking, payment, distribution and financing to improve the products and services of Sparda-Bank Group. The group's 12 banks employ over 7,300 people and operate more than 400 branches, serving 3.5 million customers and a total of 23 million accounts.

Ensuring uninterrupted customer service
Customers expect seamless access to banking accounts, and, particularly as use of mobile apps grows, always-on availability and fast system response become even more important. SDV wanted to boost the performance of systems that rely heavily on information from its core banking solution.

The Linux on IBM zEnterprise EC12 environment enabled the consolidation of Oracle Databases and simplifies the administration. "Today, we deploy new systems quickly and scale systems as required – optimized virtual machine sizing helped us reduce our data center costs," says Bernd Bohne, Department Head, Central Systems Technology, Sparda-Datenverarbeitung eG.
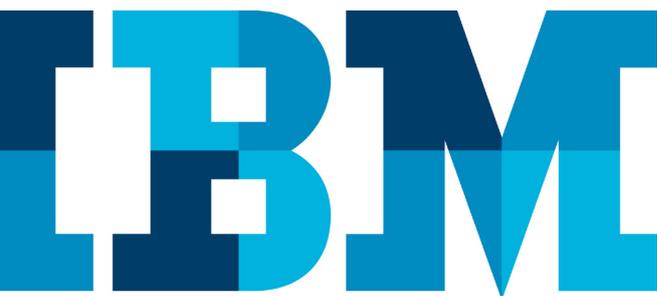
Solution components

Hardware
- IBM® zEnterprise® EC12

Software
- IBM DB2® for Linux, UNIX, and Windows
- IBM Tivoli® Storage Manager
- IBM Tivoli System Automation for Multiplatforms
- IBM Tivoli System Automation for z/OS
- IBM WebSphere® Application Server
- IBM z/OS®
- IBM z/VM®
- IBM Geographically Dispersed Parallel Sysplex™
- SUSE Linux Enterprise Server for System z
- Oracle Database
- xCAT

IBM Business Partner
- Oracle
- SUSE

Bernd Bohne, Department Head, Central Systems Technology, says: "Our clients require round-the-clock availability to provide reliable banking services to their private and corporate customers. Minimizing downtime in an event of disaster is crucial to avoid disruptions - and losses - in today's fast-paced banking environment."

Simultaneously, regulatory pressure is increasing. To comply with the new rules, Sparda-Bank Group needs tools to analyze vast amounts of data in large databases, compiling complex reports for internal controlling teams as well as external auditors.

To manage these twin challenges, SDV wanted to increase system capacity and performance, yet reduce the total cost of ownership of its mission-critical applications in order to stay fully competitive.

Innovative features for improved efficiency

Building on its long experience with the IBM System z platform and SUSE Linux Enterprise Server for System z, SDV expanded its existing Linux environment on the mainframe substantially when it migrated to the latest IBM zEnterprise EC12 technology.

The company deployed two IBM zEnterprise EC12 servers with 14 Integrated Facility for Linux (IFL) specialty engines each. In addition, both servers are equipped with eight general-purpose processors and 15 System z Integrated Information Processors (zIIPs) specialty engines using the z Application Assist Processor (zAAP) on zIIP capability to execute IBM z/OS® workloads.

SDV relies on SUSE Linux Enterprise Server for System z to operate large Oracle Database 12c systems of up to 8 TB. These databases are the foundation of a new controlling and reporting application, based on advanced analytics, that helps banks to manage their operations efficiently. The reporting features also ensure compliance with international regulations. For other applications, SDV uses IBM DB2® running on SUSE Linux Enterprise Server on the IBM zEC12 systems.

> *"The great thing about IBM Geographically Dispersed Parallel Sysplex in combination with SUSE Linux Enterprise Server for System z and all Linux workloads including Oracle Database software is that it just works reliably."*

— Oliver Röthinger, System Programmer and Administrator z/VM and Linux on System z, Sparda-Datenverarbeitung eG

As part of the upgrade, SDV also consolidated additional application servers from distributed environments to Linux on IBM zEC12. Oliver Röthinger, System Programmer and Administrator z/VM and Linux on System z, explains, "For high-performance applications where short network latency is essential, IBM System z is the ideal platform to run both database and application server in the same environment. With System z we benefit from the HiperSockets integrated in-memory networking technology, and effectively eliminate any delays in network connectivity."

Oliver Röthinger adds, "Our backup solution IBM Tivoli Storage Manager is running on Linux on System z and makes heavy use of the HiperSockets feature. It would be very difficult to achieve similar backup performance on other architectures where the data goes through several network interfaces and switches."

To provide continuous availability and protect against system outage, SDV uses Geographically Dispersed Parallel Sysplex™ (GDPS®), which provides advanced clustering technology with automated failover. GDPS is an IBM z/OS feature that provides a coordinated Disaster Recovery solution for customers running a multi-tiered architecture including the IBM z/VM hypervisor, Linux on System z and z/OS on System z. IBM GDPS enables SDV to move Linux services from one physical IBM System z server to another within seconds, helping to minimize failover and recovery time.

SDV plans to deploy IBM Tivoli® System Automation for Multiplatforms and the open source xCAT cloud management toolkit to increase administration efficiency further. Using IBM Tivoli System Automation for z/OS, the company already reached very high automation levels in the z/OS environment.

Bernd Bohne said, "IBM System z is a platform with a bright future at Sparda. We constantly work together with IBM, SUSE and Oracle to expand our environment."

"We always evaluate different options, and SUSE Linux Enterprise Server for System z is the most cost-efficient platform for our Oracle Database workloads."

— Bernd Bohne, Department Head, Central Systems Technology, Sparda-Datenverarbeitung eG

No downtime, lower total cost of ownership

SDV hugely benefits from the reliability and low administration workload of IBM System z. A team of three manages the entire Linux on System z environment. Bernd Bohne elaborates, "While we run more and more systems with SUSE Linux Enterprise Server for System z and have probably 50 percent more instances now than a few years ago, we can still manage the servers with the same team. This scalability illustrates how big the savings in administration costs are compared to other platforms.

"Additionally, the SUSE Linux Enterprise Server for System z environment permits separation of workloads in different LPARs, each with dedicated IFLs, which enables SDV to take advantage of SubCapacity pricing and usage-optimized license fees."

Since the company moved its Oracle Database instances to Linux on System z, administrators have more time for database tuning. Oliver Röthinger says, "In the past, administrators often had to deal with all kinds of system tasks. With our decision to use Linux on System z as the deployment platform for Oracle Databases, administrators can focus on their core competency and be more productive."

The fault-tolerant architecture of IBM System z supports unmatched reliability, availability, and serviceability, not only for Oracle Database. "Our clients cannot afford downtime. Their customers want to use cash machines and online banking at any time of the day. It is essential to provide fast, uninterrupted services," says Bernd Bohne. "IBM zEC12 and SUSE Linux Enterprise Server for System z allow us to run highly-versatile databases on a unique platform to ensure efficient application development and highest availability in production."

> *"IBM zEC12 with SUSE Linux Enterprise Server for System z is the perfect solution for us – it combines reliability and security features of IBM System z technology with the ease of use, stability and economics of Linux."*

— Bernd Bohne, Department Head, Central Systems Technology, Sparda-Datenverarbeitung eG

"The great thing about IBM GDPS in combination with SUSE Linux Enterprise Server for System z and all Linux workloads including Oracle Database software is that it just works reliably," said Oliver Röthinger. "It would be very difficult to provide similar business continuity on a distributed x86 architecture."

SDV has optimized the sizing of its virtual Linux environment, reducing the total cost of ownership substantially by about 50 percent. Bernd Bohne explains, "We always evaluate different options, and SUSE Linux Enterprise Server for System z is the most cost-efficient platform for our Oracle Database workloads."

Bernd Bohne concludes, "IBM zEC12 with SUSE Linux Enterprise Server for System z is the perfect solution for us – it combines reliability and security features of IBM System z technology with the ease of use, stability and economics of Linux. That is why we selected it as our Oracle Database platform. The highly flexible and scalable configuration helps us to react quickly to changing requirements without compromising business continuity – and this is what our banking clients expect from us."

For more information

To learn more about IBM solutions, contact your IBM sales representative or visit: **ibm.com**/systems/z

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