



NetApp™
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Customer Success Story

BSH Group streamlines SAP® data protection & dev/test with NetApp solutions



B/S/H/

KEY HIGHLIGHTS

Industry
Manufacturing

The challenge

BSH had to meet explosive data growth and increased availability requirements within a consolidated SAP environment; SAP development, dev/test and repair were to accelerate

The solution

Together, BSH and NetApp developed a single solution set with FAS storage and snapshot-based data management to ensure business continuity for SAP while significantly reducing dev/test time and resources

Benefits

- Database restore & recovery to any point in time within 4 hours
- Fast & easy provisioning of production copies of databases for dev/test
- NetApp FlexClone® software reduces database repairs from days to minutes
- Virtual cloning saves 65-80% storage resources and lowers cost

CUSTOMER PROFILE

BSH Bosch und Siemens Hausgeräte GmbH was founded in Germany in 1967 as a 50% joint venture of Bosch and Siemens. Today, BSH is a global player and number 3 worldwide in this market, holding 14 renowned international and regional brands. The product range marketed under these brands encompasses large home appliances and consumer products. Together with a global network of sales and customer services, the BSH Group is made up of about 70 companies in more than 40 countries, employs about 39,000 people and operates 43 factories in Europe, the Americas and Asia. BSH produces about 40 million home appliances per year with annual sales of more than 8.8 billion EUR in 2007. www.bsh-group.com

THE CHALLENGE

Accelerate and safeguard backup and disaster recovery for SAP databases

Global businesses require a globalized IT infrastructure—a term that perfectly fits BSH Group's IT strategy to support its international growth. In 2003 BSH began the process of globalizing its IT infrastructure. More than 50 locally operated SAP R/3 production systems had to be centralized and consolidated within a totally new environment based on SAP Enterprise with modules such as PP, MM, FI, CO, master data, etc. Proprietary and

legacy systems were migrated to a central SAP-based solution where possible. The new environment spans five corporate SAP systems distributed across two datacenter sites in Germany.

As planned, the consolidation led to fewer but larger systems. This however opened up new challenges with backup and disaster recovery. Harald Geringer, manager corporate data center with BSH Group, explains: "Our data growth rates were raising, fueled by business requests for new SAP functions and by BSH's growing global business. We experienced a 30% increase in data just from using Unicode as the standard. Given this data growth, the basic tape backup solution in place wouldn't have been able to meet the short backup and restore windows required to ensure productivity for our worldwide, 24x7 business."

Beyond backup, restore and disaster recovery, there was a second challenge: Development, QA and test, essential tasks in any SAP environment, were projected to take more and more time given data growth and the planned increase in development activity. In the past, failures in the data cloning process hampered delivery cycles and increased cost. Also since copies required the same space as the original dataset large investments in storage were needed to support development and test activities.

“NetApp is a valuable component of BSH’s SAP environment and helps us to ensure business continuance.”

Harald Geringer

manager corporate data center, BSH

THE SOLUTION

NetApp ensures fast and reliable data protection and dev/test

BSH had the idea of combining standard components such as a standby or shadow database for fast switchover, snapshot disk backup to avoid tape restores and a replicated mirror to the DR site to protect against unforeseeable failures. In an assessment, NetApp was selected out of 9 competitors as the main contractor because of its efficient and flexible features and its high load capability. The final solution was implemented in a close collaboration between BSH, NetApp and Oracle®. The basic requirements included database sizes of up to 4TB, the ability to deal with a load of 350GB redo logs per day for each of the systems and the capability to eliminate every single point of failure. BSH deployed two NetApp FAS6080 clusters with 160TB to ensure high performance and highly reliable data retention for production-related data. The production cluster was hosted near

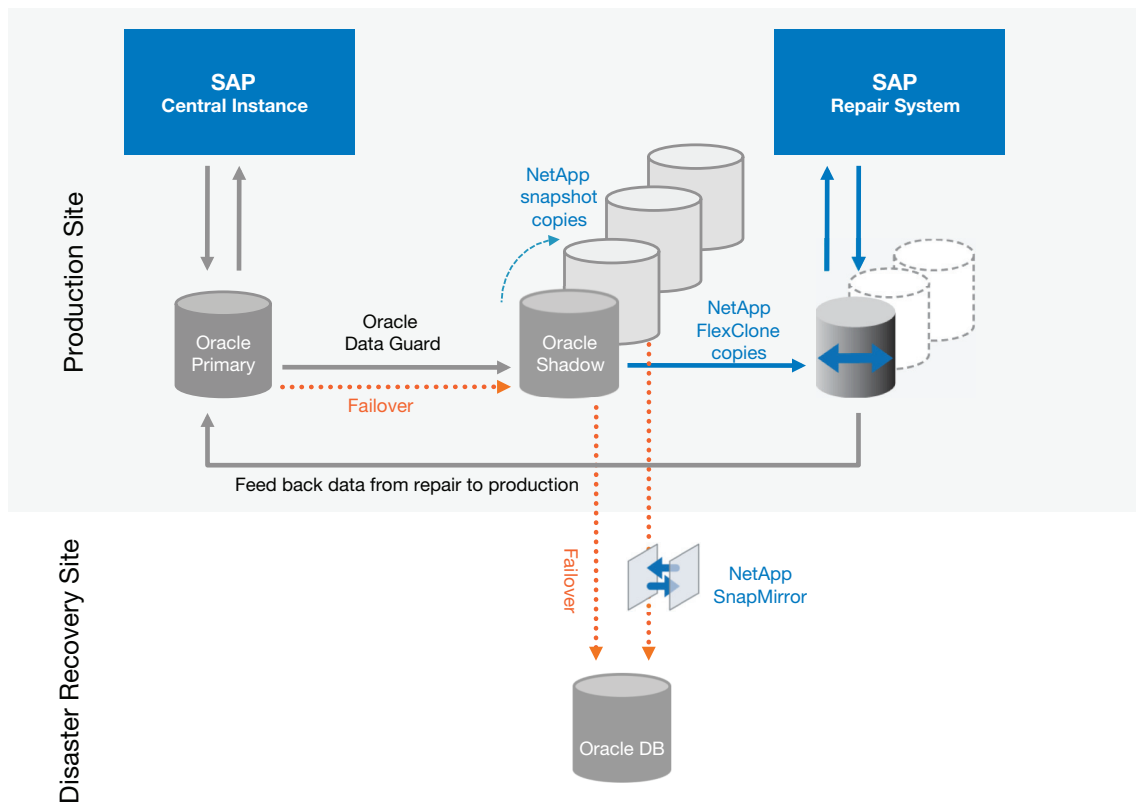
Stuttgart. The DR site was located next to Munich, 70 miles away. SnapMirror® was used to replicate the data to the DR Site.

“The shadow database is definitely the centerpiece for SAP data protection and dev/test at BSH,” says Geringer. “NetApp’s snapshot and replication technology helps us to fulfill demanding SLAs and to act very quickly in case of SAP data corruption and other mission-critical events.”

Oracle redo logs are transferred from the production environment based on primary storage from Hitachi Data Systems® to the FAS system using Oracle’s Data Guard tool. These are the basis for the shadow database which is updated continuously. The standby database runs with a delay of 4 hours. NetApp snapshots are then taken regularly on a basis of 4 hours and replicated remotely to the DR site with NetApp SnapMirror. Production copies for the QA, test & repair systems are delivered by using NetApp’s FlexClone software.

SAP landscapes usually consist of three systems for development, consolidation and production. The consolidation and test systems are regularly updated from production to ensure that tests can be done with appropriate data. Today, repairs of the production system are easy and quickly done, states Geringer: “We apply NetApp’s FlexClone software to any interval or daily snapshot we made in the last 10 days. A repair system is started to analyze and check the data and transfer it back to production. And there is no need to interrupt the production or shadow database which makes recovery processes really smooth.”

Proof-of-concept occurred when the content of a table in the SAP finance system was corrupted by a transport. Extracting the necessary data from the clone-based repair system helped solve the issue in a couple of minutes.



BUSINESS BENEFITS

NetApp FlexClone software helps BSH ensure business continuance while reducing cost and time

Using NetApp, BSH is able to cover a range of protection levels with a single solution. Redundant hardware prevents data losses caused by technical failures. For corrupted databases, a repair or failover process limits data loss to a few transactions. Reconfigurations in the event of a database switchover are obsolete. Real disasters can be overcome by starting SAP and Oracle with the replicated data at the disaster site.

“Besides the reliability of the NetApp data protection, we benefit most from fast cloning of the shadow database. This allows us to extract data sets to repair the production data from corruptions or deletions and to keep BSH’s business workflow up and running. The combination of FlexClones and a temporary repair system allows us to immediately find the last correct state before an event happened”, says Geringer

and mentions such a case: “We had a bug in an application server OS which set the date back to 1970 and, even worse, due to a bug SAP disp&work accepted transactions with that date. Thanks to NetApp Snapshots and FlexClone we just needed to analyze the Oracle redo logs and retrieved the original data from a FlexCloned SAP system instead of restoring data from tape which would have taken hours.”

Transports are a crucial component of any SAP environment. Errors can easily corrupt the production system. Now, in the event of a corruption, data can be exported directly from the shadow database with a recovery point of 4 hours. At BSH, the IT team experienced this problem once and fixed it within 20 minutes. Previously this task would have taken more than 36 hours. Most of this time would have been spent on restoring data from tape and setting up the environment to be able to access this data. Additionally, it would have required much more hardware to store the data.

NetApp FlexClone software optimizes SAP dev/test

Along with the database protection, BSH decided to go virtual with its dev/test environment as well. BSH sets up QA test and repair systems four times a year as part of all SAP release cycles. Previously they had to physically copy TBytes of data over the network—a very time-consuming process with a series of manual steps and the risk of failures. Due to the huge number of consolidation and repair systems, traditional system copies would have posed high pressure on budgets, resources and handling as each system needed its own copy of several TBytes.

“Our innovative concept to use the NetApp features helped us to revolutionize the whole process of data cloning for QA, test, repair and more,” says Geringer. “The copy process is done virtually within a snap of one’s fingers. The virtual SAP data volumes act just like the real ones and there is no functional limitation.”

“With NetApp’s fast FlexClone technology, we can meet even the most demanding SLAs. And it’s highly efficient. We need 65-80% less storage.”

Harald Geringer
manager corporate data center, BSH

“At the beginning we had no idea of how much storage we could reduce, but the results proved to be tremendous. Each environment now accesses a clone of the shadow database instead of its own physical copy. As only changed data blocks are stored, we reduce the storage requirements by 65-80%. That’s an important point as we face a data growth rate of about 30% per year.”

Today, Geringer and his team are able to meet their goal of delivering requests in a short time-frame and with high efficiency. Even ad hoc requests for a data clone can be provided within 2 hours, including all SAP-related re-work. Previously, they needed at least 24 hours to complete such a task. This allows BSH to efficiently build up systems for training purposes, migration tests, and other purposes. And it created a huge improvement in productivity as the BSH teams can now get copies of multi-terabyte databases for test, QA and repair in minutes instead of hours or days.

“NetApp ranks the approach of BSH as an industry benchmark and beyond state-of-the-art. BSH proves again to be highly innovative, and is at the leading edge in IT infrastructure and datacenter management,” said Andreas König, Senior Vice President and General Manager EMEA. “We are really excited about this outstanding scenario based on NetApp.”

From a business perspective, the NetApp solution is a critical component in BSH’s SAP environment and supports the company’s growth and business development. Multi-level data protection and fast and reliable SAP data provisioning for QA and dev/test help BSH to optimize business processes and to ensure business continuance.

SOLUTION COMPONENTS

NetApp products

FAS6080 clusters, FlexClone, Snapshot, SnapRestore®, SnapMirror

Protocols

NFS

Environment

SAP R/3, Oracle, Sun™ Solaris™, Sun clusters



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