



CASE STUDY

Solution at-a-glance

Company

AOK Baden-Wuerttemberg

Industry

Health insurance

Employees

8,000

Storage application

- Storage performance
- Storage capacity
- Batch processing

StorageTek® solutions

- Shared Virtual Array® (SVA™) 9500 disk subsystem
- V2X SVA disk subsystem
- SnapShot software

Business results

- More reliable batch processing
- Optimized operating system functions

AOK Baden-Wuerttemberg

Virtual disk and virtual SnapShot provide for more secure operation at AOK Baden-Wuerttemberg.

AOK Baden-Wuerttemberg health insurance insures about 4.2 million persons, or nearly 50 percent of the legally health-insured in the state of Baden-Wuerttemberg, Germany. More than 8,000 employees take care of the needs of these customers on a daily basis and generate the data that is processed and stored in the central computer center in Stuttgart, Germany. AOK Baden-Wuerttemberg primarily relies on mainframe systems.

The situation

AOK Baden-Wuerttemberg introduced the first StorageTek disk solutions in 2001. At that time the IT personnel of AOK Baden-Wuerttemberg were faced with a new challenge. Until then the entire IT structure had been divided into 13 production areas that could be processed in parallel. These 13 production areas were to be consolidated into a master data file for better customer coverage. This project was no problem for the very modern large z-series computers. The existing storage components, however, were another matter because the capacity — and especially the performance — had not increased to be able to handle a consolidated data file. Nightly batch processing could not always be completed in the allotted time.

The solution

According to the first evaluations, it was evident that new storage solutions must be created. In 2001, AOK Baden-Wuerttemberg decided in favor of eight Shared Virtual Array (SVA) 9500 disk systems with a total storage capacity of 15 terabytes because these disk arrays had sufficient performance and storage capacity. A further and decisive advantage of the StorageTek disk arrays was the use of StorageTek's SnapShot virtual software to copy large amounts of data to file level in a few seconds. In this way it was possible to produce backup copies in a very short time.

AOK Baden-Wuerttemberg uses this advantage today in very different applications and thus can achieve more reliable batch processing in the available time window.

The data processing system of AOK Baden-Wuerttemberg was rebuilt at the beginning 2002. Additional storage components had to be created for this. After the good experience with the SVA 9500 solutions, AOK Baden-Wuerttemberg decided in favor of StorageTek for expanding the storage solutions. The V2X virtual disk array has additional capacity, performance and, above all, an essentially higher number of addresses than the SVA disk system. Therefore, AOK Baden-Wuerttemberg ordered four additional V2X disk systems with about 20 terabytes of storage volume. The disk arrays were installed in mid-2002 and immediately proved that the batch processing time could be significantly shortened again, and faster and better data distribution could be achieved by the higher performance V2X and SnapShot.

"It was possible to integrate the new V2X systems into our IT infrastructure in a short time and without problems. Significant improvements already appeared in the test. The V2X systems operated up to four times faster than the former disks. In particular, this saves us time and thus also financial resources," said Hubertus Weilandt, project manager at AOK Baden-Wuerttemberg.

More reliable batch processing

Virtual SnapShot was a decisive component in the creation of the storage systems. This is currently the only SnapShot tool that can provide backup copies in seconds in virtual storage environments of large data files. AOK Baden-Wuerttemberg uses virtual SnapShot to secure the individual stages in the nightly batch processing. If an error in the processing should appear, a restore process can be carried out in seconds.

A corresponding security measure via tape technology would require hours and explode the time window available at AOK Baden-Wuerttemberg. With virtual SnapShot, the systems are up and available the next morning.

"Virtual SnapShot brought us many advantages in batch processing. We not only process our data in a time window. We make up to six backup copies at the same time in the same period," according to Weilandt. "These backup copies are our guarantee of smooth and, above all, timely processing of our batches. Further copies are produced analogously for test data files. All of this is an enormous security advantage for our data processing."

Optimized operating system functions

In addition to the decisive advantages of virtual SnapShot in the nightly processing, AOK Baden-Wuerttemberg also uses the tool for maintenance work on the operating system level. For example, in several SMS storage groups, the hard drives are defragmented daily. This operation without SnapShot would take hours and greatly impair the operation. With SnapShot, it takes only about 10 minutes, and IT managers gain a decisive advantage. The defragged disks are checked for the amount of data stored. If only very little is stored on a disk, the data is transferred to another disk. SnapShot takes only a few minutes to "shovel clear" the disks, which are an important prerequisite for reliable nightly batch processing.

"Virtual SnapShot, in combination with the StorageTek disk solutions, allows us to perform work procedures that could be carried out only rarely or not at all in the past. With the disk systems we have acquired good storage. In particular, the connection of hardware and SnapShot software is a real solution for us, which fulfills our requirements for the storage structure," said Weilandt.

About the solution

The V2X Shared Virtual Array is designed for storage environments on mainframe as well as Open Systems platforms. With V2X, customers can consolidate their storage resources for both platforms with one disk and optimize their investments in online storage cost effectively. The solution is based on StorageTek's advanced virtual architecture and makes possible 100 percent utilization of the invested disk capacity.

Essential advantages are:

- **Error tolerance is improved.** By means of the RAID 6+ disk, customers obtain automatic data recovery, even in the case of two simultaneous disk errors in one array. Using the V2X disk system, no additional disks are necessary to create a RAID 1 mirroring for double data security.
- **Automatic data processing eliminates the management of 'hot spots.'** The V2X disk system reduces the time for data management. IT departments can use their costly personnel resources more effectively. In addition, the V2X increases the performance of applications. This system exclusively stores real data and information; there is no allocation of capacities and thus no wasted disk space.
- **SnapShot functionality provides rapid backup copies with minimal storage expense.** Data centers can also create data-intensive backup copies rapidly and in any number without impairing the data availability for applications.

About AOK Baden-Wuerttemberg

AOK Baden-Wuerttemberg includes 38 AOK district offices with more than 275 customer centers. Approximately 4.2 million people are AOK-insured, plus more than 1.2 million family members insured. This is almost half of the persons with legal health insurance in Baden-Wuerttemberg. About 255,000 employers in the state are covered by AOK Baden-Wuerttemberg.

AOK Baden-Wuerttemberg is a public corporation with parity self-management by representatives of insured persons and employers.



ABOUT STORAGETEK®

Storage Technology Corporation (NYSE: STK), a \$2 billion worldwide company with headquarters in Louisville, CO, has been delivering a broad range of storage management solutions designed for IT professionals for over 30 years. StorageTek offers solutions that are easy to manage, integrate well with existing infrastructures and allow universal access to data across servers, media types and storage networks. StorageTek's practical and safe storage solutions for tape automation, disk storage systems and storage integration, coupled with a global services network, provide IT professionals with confidence and know-how to manage their entire storage management ecosystem today and in the future.

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WORLD HEADQUARTERS

Storage Technology Corporation
One StorageTek Drive
Louisville, Colorado 80028 USA
1.800.877.9220 or 01.303.673.5151

Case study company: AOK Baden-Wuerttemberg www.aok.de

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Hubertus Weilandt, project manager, AOK Baden-Wuerttemberg

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