



success²

More Capacity, More Security, More Performance: The New Storage Infrastructure at the City of Cologne



THE CUSTOMER

City of Cologne,
Office for
Information
Processing

THE PROJECT

Consolidation of
the storage
and backup
infrastructure

THE SOLUTION

Disaster-tolerant,
high-performance
Storage Area
Network (SAN)
across all
platforms with
CentricStor,
Symmetrix
systems from
EMC, and Scalar
robots from ADIC

"With the modern, disaster-tolerant and extremely scalable SAN architecture implemented by Fujitsu Siemens Computers, the city of Cologne has considerably improved municipal administration and can even offer its IT services to other cities and communities."

Jürgen Thomas, Director of Information Processing, City of Cologne



Good news for the residents of Cologne and employees in the city's various administrative offices and departments: Key data is now very safe and secure – even in the face of unexpected catastrophes that can strike without warning. Since the existing solution in Cologne had reached its performance and capacity limits, city officials decided to install a high-availability Storage Area Network (SAN) covering the 27 kilometers between the data centers in Deutz and Chorweiler. This guarantees access to data and applications even if one of the data centers fails entirely. The general contractor for implementing this solution was Fujitsu Siemens Computers, which had been selected for this project in a Europe-wide bidding process.

The Customer

More than one million residents, more than 466,000 jobs, some 416,000 motor vehicles, and nearly two million visitors annually – these numbers give you an idea of the major challenges facing administrative employees in various municipal departments in Cologne, the fourth largest city in Germany. No matter what the task is, from renewing passports to granting marriage licenses, changing residential addresses or registering automobiles, large volumes of confidential

information are processed by the city of Cologne. This requires maximum data security, which is ensured by a modern, high-performance infrastructure that supports fast data access and guarantees that high-quality municipal services are available to all city residents. The basis for this efficient scenario was designed and implemented by the city of Cologne together with Fujitsu Siemens Computers by consolidating the existing storage and backup infrastructure.

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The Project

As is the case in most of today's enterprises and large organizations, the IT infrastructure at the city of Cologne is distributed over various types of server and operating system platforms, such as BS2000, Unix, Linux and MS Windows. Such distributed environments pose difficult challenges because they require storage and backup solutions that can guarantee the highest levels of security for data and applications, regardless of the platforms installed in the data center. In Cologne such high security levels were, in the past, only possible for BS2000 and selected Unix servers. Furthermore, all of the platforms in the municipal scenario were reaching their limits due to the constantly growing amounts of data being processed. This became obvious as the time required for data backups continued to increase. "The time had come for a new end-to-end solution," according to Wolfgang Volberg, data center manager for the city of Cologne. "We needed to introduce a cross-platform, high-availability storage solution that would support flexible resource management and that could be enhanced at a reasonable cost at any time in the future."

Fujitsu Siemens Computers, together with its partners Brocade, EMC and Siemens, offered the best concept for this project based on a SAN solution that would encompass both data centers in the city districts Deutz and Chorweiler. The SAN

is designed so that even if one location is inoperable during a disaster, the application, data and data backup systems are still fully functional. One EMC Symmetrix 8830 disk storage system with a capacity of four terabytes was installed at each data center location. The online storage for all the servers, which can be extended to 70 terabytes, gives city administrators fast access to data and has ample reserves for future enhancements. Two CentricStor 3595 virtual tape libraries from Fujitsu Siemens Computers form the core of the standardized data backup for all operating systems in use. Each CentricStor has eight ESCON connections for mainframes, ten Fibre Channel ports for other server systems, and 2.5 terabytes of tape volume cache. The CentricStor systems guarantee extremely fast backups because the RAID systems, which can be enhanced up to 38 terabytes, simulate the backup drives with high throughput rates for the various servers, while the tape library itself writes the data to the Scalar 10K robot archive from ADIC. This results in a major benefit for the city of Cologne: If the demand for more archiving increases, the memory capacity can be increased without affecting the servers in the configuration. The concept behind the Scalar 10K offers ample space because it allows the system to be expanded in increments from 100 slots to accommodate up to 9,582 cartridges. Despite the relatively long distance of 27 kilometers between both data centers, high performance is ensured by four



multiplexers installed by Siemens that bundle the data communication lines. At each data center SilkWorm 12000 directors from Brocade maintain seamless connectivity between the servers and the disk storage systems and the data backup systems. The entire storage network linking both locations is managed by the city's own IT experts. ControlCenter management software from EMC has been installed to handle resource management tasks.

Benefits for the City of Cologne

- > Disaster-tolerant, high-performance storage infrastructure
- > Standardized data backup for all system platforms
- > Ample capacity reserves for future enhancement
- > Considerable time savings with virtual data backup

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