FUJITSU

City of Ludwigshafen

City of Ludwigshafen selects pay-per-use for storage

Challenge

- High-performance, scalable SAN-on-demand
- Storage split between two production towers at two locations
- High complexity, due to data center relocation and latency optimization
- Unpredictable data growth because of digitization
- Global, component-related supply problems.

Solution

- Fujitsu uScale in data center on Premises
- All-Flash technology: equal priority for all applications
- Flexible capacity adjustment: add or remove capacity as needed
- Real-time access to archive data (eFiles, among others).

Outcomes

- Zero CAPEX approach: no investments, monthly billing
- Risk minimization and cost transparency, thanks to pay-per-use
- Rapid data availability for many users simultaneously
- Cloud advantages in data center on Prem.

"Digitization confronts us with unprecedented demands on storage systems. Fujitsu's pay-per-use solution is a precise fit for our requirements that need a high-performance and scalable storage infrastructure, with high availability and a performance buffer for future growth."

Bernd Gerber, Department Head DC Services and Network Services

Data
available to users rapidly and simultaneously

The initial situation

Regardless of whether it's about environmentally sensitive traffic management (UVM), a voice dialog system for the 115 service number or the "workplace of the future" transformation project, the city of Ludwighafen am Rhein sees itself as a role model when it comes to projects for digital, customer-oriented, and sustainable administration.

Yet that's not all: with its "Workplace of the Future" project, the city was awarded second prize in the 2022 eGovernment competition, in the category of Digital Transformation. One year earlier, as a partner of KommunalCampus, Ludwigshafen was among the winners of the eGovernment competition.

The digitization of files is one of the major modernization projects. Here, the Ludwigshafen administration faces a mass of data and metadata that needs to be stored. This, in turn, calls for high-performance access.

The transformation to a digital administration service provider – keyword Smart City – requires a powerful and scalable storage infrastructure. The goal is clear: provide administration staff, citizens, and companies with fast access to data.

The requirement

Bearing the end of the contract for the existing infrastructure in mind, the team, with Thorsten Langguth as its IT Planning Team Leader, already started searching for a new, high-performance storage solution early on. This solution had to be able to up- and downscale capacities, in addition to linking two remote locations to one another.

"When we planned the new storage system with two high-availability production towers for two new data centers, we had to master extraordinary challenges. We were relocating to new premises during ongoing operations, while the old data center was in the process of being demolished. As if that were not enough, we had to ensure the optimal division of the infrastructure between two new locations. There also was the hard-to- assess data growth, considering digitization, and the global component supply difficulties," Thorsten Langguth recalls.

Take, for instance, the example of paper archive digitization: This task places completely new demands on storage systems, since no one can predict how quickly the data volume will increase. Currently, citizens have to go to the building inspectorate to obtain information about a parcel of land. In the future, information will be available electronically. "At the latest when someone submits a new building application, which has to be digitally submitted in accordance with the Building Document Inspection Ordinance, an archive file must be scanned to establish the basis, thus allowing all processes to be traced electronically," Thorsten Langguth explains.

"Then there is the perspective of inter-municipal cooperation – which presently still is a calculation with several unknown parameters. This involves the question of which additional data from other local authorities we could store in the future. That requires a high-performance, multi-tenant storage system," Langguth says.

After a detailed planning stage, the formal invitation to bid was issued, which was followed by the review of bids and negotiations with bidders.

About the customer

With 172,000 inhabitants, the city of Ludwigshafen am Rhein is one of three major cities in the Rhine-Neckar metropolitan region and an economic powerhouse in Rhineland-Palatinate, with global companies in the chemical industry located there. The city administration is split into five departments, which employ around 3,900 people. The IT Services department, with a total of 54 employees, is assigned to Department 1 and is divided into the departments New IT Solutions with Strategic Expansion, IT Process Support, Data Center Services and Network Services, SAP HCM and Reports, and IT Management. The IT Services department sees itself as a modern service provider not only for the administration, but also for the city group and the surrounding area. Management. The IT Services department sees itself as a modern service provider not only for the administration, but also for the city group and the surrounding area.

The solution

Once the decision-making stage was completed, the best price/performance ratio tipped the scales in favor of Fujitsu's uScale pay-per-use solution and Concat AG as the service provider. With the use-based contract construct, the new storage infrastructure is located in the data centers of the city of Ludwigshafen, yet belongs to Fujitsu. A use-based, monthly flat rate is paid for the utilized capacities.

The city of Ludwigshafen selected two Fujitsu ETERNUS AF250 S3 with almost 400 TB gross volume each as productive systems for the two data center locations. An ETERNUS DX200 with 672 TB acts as the backup-to-disk system. Two Fujitsu Quorum servers, which are located at a third, redundantly connected site of the city's municipal administration for KRITIS reasons, ensure a high fail-safety rate. These check, day, and night, whether both ETERNUS AF250s are productive. If one site should fail, the other takes over the entire load.

Thanks to Concat's support, Thorsten Langguth's team also ensured the Fibre Channel infrastructure is prepared for what the future holds. With the total of six new Brocade switches, 32 instead of 16 GBit per second is now possible. They connect the storage systems to the VMware server environment, both within and across sites. In addition, the multiplex systems had to be provided between the two data centers, which results in the fewest possible delays in the data transfer, because of the distance.

Ludwigshafen has signed a five-year support contract with Concat for ensuring the smooth operation of the storage infrastructure, SAN switches, multiplexing systems, and backup software. The technical team is responsible for the complete storage infrastructure operation. This includes monitoring, troubleshooting, proactive management of backups, as well as storage upgrades.

The benefits

"The migration went smoothly, was completed faster than expected, and without any losses, which is very good," Thorsten Langguth summarizes. Initially, the IT planning team had a time window of four weeks for the infrastructure relocation and the data migration. Thanks to good preparation, which included intensive tests, and the speed of the Fujitsu systems, the entire transfer was completed within two weeks in spring 2022.

Fujitsu's zero CAPEX approach and easy expandability were key criteria for picking uScale. "The fact that we did not have to make any investments was particularly positive. As a public sector customer, we are not as free in our decision-making abilities as the business community," Thorsten Langguth explains.

The planning expert cites the pure, all-flash technology with fast SSD disks as the new productive systems' major benefit. The Fujitsu systems offer an enormously high number of IOPS for simultaneous access by multiple users: five to ten times that of the previous systems. "Now, every application gets equally fast response times, which has allowed us to completely replace the previous tiering model with price classes," a delighted Thorsten Langguth says. "This also simplifies the internal billing of performance, as there is now only one flat rate price for storage space."

A total of 600 different software types are in use at the city of Ludwigshafen's municipality. The main applications are the financial system, the geo-information system, databases and file services, as well as the usual procedures required by larger municipal administration services, such as the foreigners registration authority or the public order office.

With the uScale financial model, the city of Ludwigshafen's municipality now has maximum flexibility over the next five years.

Customer:

Ludwigshafen
Stadt am Rhein

Fujitsu

cic_services@fujitsu.com