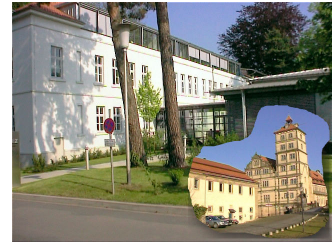


## We integrate innovations

The Kommunale Rechenzentrum Minden-Ravensberg/Lippe (KRZ), located in Lemgo is in operation since 1972 and acts as the provider of Information Services to 35 cities and municipal authorities, three counties and approx. 350 other customers. Development, implementation and maintenance of traditional municipal applications as well as a professional data-center are the traditional key activity aspects. To meet the requirements and challenges of a steadily faster changing IT-landscape and the customer-orientation of the KRZ, a widespread offering of software-applications, network- and PC-services and general services including consulting, training and education, maintenance and support is available.

A total of 8000 PC-workstations is being supported by KRZ. All of them are located at the different cities and municipal authorities.

The usage of state-of-the-art technology by the highly motivated 135 employees of KRZ and their ongoing training guarantees the realization of the corporate goals.



The KRZ is in direct neighborhood of the picturesque Castle of Brake, a well-known and important Weser-renaissance museum. KRZ manages a highly complex technical infrastructure that guarantees high availability because most of the company critical hardware components are installed multiple times.

Buzzwords like ‚Remote Mirroring‘ (Mirroring of databases at two different locations), Backup volumes at different locations, permanent surveillance of the entire IT on a 24/7 scheme are long practiced by the KRZ.

Only by following these principles, the high expectations on security, availability and reliability can be met!

An IBM Z800 with the operating system z/OS acts as the central server. Some part of the company critical data is already provided on some of the 90 different PC servers. Only Windows 2000/2003 and Linux operating systems are in use.

A variety of municipal applications are part of the services provided by the KRZ. This also includes the application to manage the various information about residents (EWO-application). This IMS-based application has been developed by the City of Duisburg early in the seventies and is still in production at various cities of North-Rhine-Westphalia. The segments of the IMS-databases are highly compressed to save disk space and all have variable segment lengths. Ralf Maxim, Manager Data-Management and System-Service, remembers: "We were looking for a simple way to mirror the IMS-data into a data ware-house environment. It was important to us to access the complex data-structures and select the data based upon any criteria. From the very beginning we wanted to use SQL for this process." The first contact to tcACCESS was established during spring of 2000. Ralf Maxim visited a road show from B.O.S. Software GmbH about tcACCESS in Düsseldorf. Mr. Maxim: "Approximately one year later it became a concrete issue. In the meantime our colleagues at KDVZ Rhein-Erft-Rur have successfully installed tcACCESS. They were using tcACCESS and had accessed the databases of the EWO-application. We had the advantage that we could use the definitions made by the KDVZ guys and could also share their experiences with tcACCESS." (Refer to User Story "Hierarchical data at KDVZ").

tcACCESS was installed during summer of 2001 and the first tests were performed against the IMS-databases. The tcACCESS definitions and meta-data created by KDVZ were used. Gerhard Ritter, application developer at KRZ, created the first proto-types. He says: "Accessing the IMS-data was easy and really not complicated. We have been able to access the data with SQL and to store the result sets directly into a MS-SQL-Server table. It was important to us that we did not have to worry about the compression and decompression of the data and the various key-fields. All the necessary compression- and decompression was being performed by tcACCESS."

tcACCESS is now in production since the beginning of 2002. On a scheduled base the EWO databases are being processed by

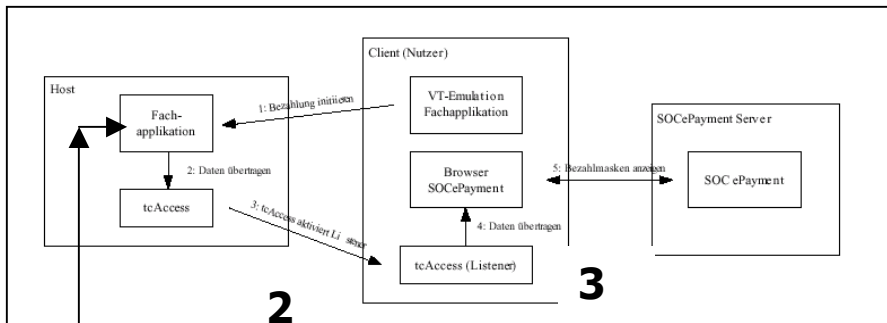
tcACCESS, the joined data will be selected and inserted into DB2-tables. The different end-user departments will then process these DB2-tables using Crystal Reports. Ralf Maxim: "Our customer support team has defined about 150 different reports that can be used by our end-users. These reports range from statistics about population development to statistics about age distribution of the population. We use the tcACCESS ODBC-driver to access the DB2-tables on the mainframe. All municipal authorities using this application can also perform the extraction of the IMS-databases on their own."

At the beginning of 2003 KRZ decided to expand their product portfolio and to offer a new e-payment application that could be used to perform the payment procedures at the municipal car registration offices. The project was being established and advertised for bids. Ralf Maxim: "We wanted the new application to be browser-based. The important factor however was, that the application must directly communicate with a host IMS/DC-application. The IMS/DC programs must pass data to the e-payment application. Because of the previous excellent experiences we decided to give green light to tcACCESS."

The user in the car registration office uses the browser- and the host-application at the same time. "Virtually at the push of a button all data relevant to the payment process will be passed by the IMS/DC program to the tcACCESS JAVA-Listener that resides on the central Web-Server." Ralf Maxim describes the application. The e-payment system has been developed in JAVA. The JAVA-Listener of tcACCESS receives the data and parameter sent by the IMS/DC program and passes them to a defined JAVA-class of the e-payment system. Ralf Maxim: "The development- and implementation-time of the application has been surprisingly short. All in all we are talking a total of three months, from the start of the project to the production implementation. The tcACCESS API that we use in the IMS COBOL-program is very easy to implement. The adaptations necessary in the host application were minimal and we performed a very successful test during the initial stages of the project. We have been able to pass data from the IMS-program to the JAVA-class during the very first try."

The e-payment system was implemented and became productive with the opening of a new car registration office at January 12 2004. During the first 4 weeks of operation approx. 1500 payments have been processed using the new e-payment application with tcACCESS acting as the connector between the IMS- and the JAVA-application. Other car registration offices were implemented in the following weeks and additional will follow in the future. Ralf Maxim: "tcACCESS runs without any problems and has met our expectations more than we anticipated. I would like to mention the excellent support that we get from B.O.S. Very professional and reliable. It's a pleasure to work with the support people of B.O.S."

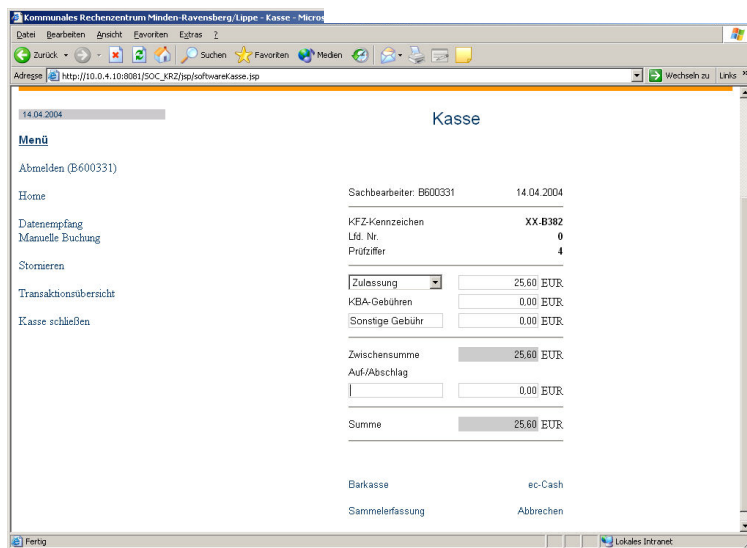
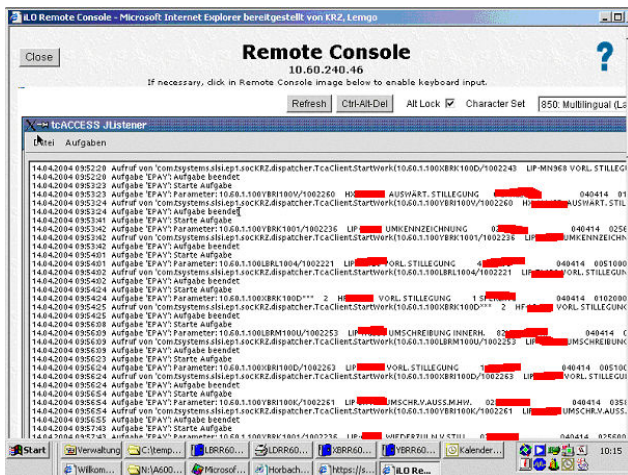
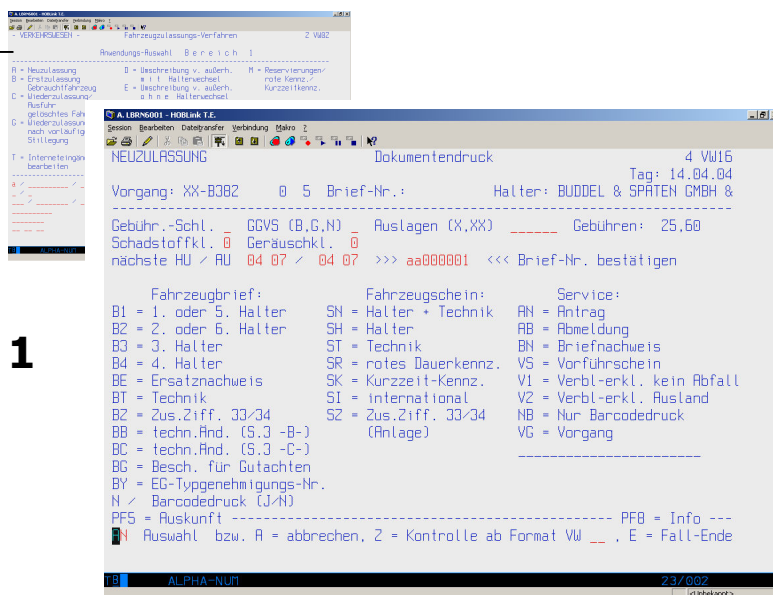
# ePayment in the car registration office



1. The host based IMS/DC application passes all data and parameter relevant to the payment process to tcACCESS. The communication protocol between the IMS/DC-application and the tcACCESS region is TCP/IP. The IMS-application simply performs a CALL to a tcACCESS module and passes the parameter.

2. The tcACCESS host-component uses a TCP/IP connection to the tcACCESS JAVA-Listener. The Listener is installed on the ePayment Server. The Listener will be provided with the data from the host-program.

3. The tcACCESS Listener starts a JAVA-class of the ePayment-application and passes the host-data to the class. Error-codes, return-codes or messages will be passed back to the IMS/DC program.



The tcACCESS Listener creates a communication protocol that includes all payment processes that have been initiated by the host application. The protocol also keeps track of all parameter that have been passed.