



Hierarchical data in a relational robe

The Kommunale Datenverarbeitungszentrale (kdvz) Rhein-Erft-Rur acts as a regional data center for municipal services provided by the districts of Düren, Erftkreis and Euskirchen as well as 34 independent cities in the western part of North Rhine-Westphalia.



The catchment area of the **kdvz** covers over 2700 km². More than 850000 citizens profit from the service provided by the **kdvz** to the local government authorities. **kdvz** looks after more than 6000 working places, which are either equipped with decentral local applications or which use central mainframe based applications using a 3270 emulation.

kdvz operates an OS/390 Version 2.8 system running on an IBM 9672-RB 5 with 1 GB of central storage. The main goal of **kdvz** was to provide direct access from any PC based application to the individual mainframe databases for any of the connected government agencies. Security aspects must be guaranteed, i.e. the individual user can only access the data, where access is permitted by the RACF profiles. The access should be performed from MS-Office components, especially MS-WORD, MS-EXCEL and MS-ACCESS. A project was set up by **kdvz** beginning of 2000. Different software suppliers were invited to present their solutions. Amongst them was B.O.S. Software GmbH. After the presentation of tcACCESS, the product was installed and tested. **kdvz** decided to use the IMS databases containing information about citizens for the test. These databases were designed and the application was developed about 30 years ago. The project then was headed by the City of Duisburg. The databases and the application are still in use at several cities of North Rhine-Westphalia. Because disk space was limited and expensive in the early 70s, the database is highly compressed and is based on variable segment lengths. Subroutines exist, which compress and decompress the segments. The standard exit facility of tcACCESS has been used to integrate these subroutines. The result is, that tcACCESS allows to read and write the databases as if they were relational objects. Information, which are physically stored as bit values are presented as character information to the user and the applications. Using the tcACCESS ODBC component, these legacy databases can be easily accessed using SQL statements issued by a MS-WORD VBA-macro. The data will be retrieved and is then inserted into a document. Another example: EXCEL spreadsheets directly read information from the IMS database using SQL statements issued by MS-Query. Data now can be processed directly and in real time. All variations of the standard SQL syntax are supported by tcACCESS. It is even possible to join multiple IMS databases or join any IMS segment with other mainframe files (i.e. VSAM, DB2, ORACLE or PDS-files).

After tcACCESS was purchased, the usage of the product has been extended to other IMS databases.

"Using tcACCESS for new application processes has been simple and uncomplicated" quotes Michael Lankes, Manager of the application group responsible for supporting tcACCESS. "Because all the applications are in production, we have COBOL or Assembler definitions which describe the structure of the databases. These Copy Books are automatically processed and analyzed by tcACCESS and the result is stored as a relational table definition on the Virtual Disk of tcACCESS. All relevant information needed to access the IMS databases, like SSAs, are extracted from the corresponding PSB and DBD definitions" Michael Lankes adds.

Important for the production use of tcACCESS is the complete and transparent integration into the existing security policies of **kdvz**. tcACCESS is integrated into RACF profiles. The scope of RACF has even been expanded by tcACCESS because security aspects can now be implemented on a VIEW basis. Peter Szablewski, member of the Lankes team and mainly responsible for tcACCESS, says: „The security concept of tcACCESS combined with the RACF philosophy has offered security mechanisms for IMS which did not exist before!"

The number of tcACCESS users is constantly adding up. During the middle of 2001, tcACCESS was made available to all departments. Mayors of cities are already using tcACCESS to evaluate the citizens data and use them for birthday gratifications and honours for residents. The main applications used to access the IMS databases via tcACCESS are the MS-Office applications. **kdvz** already has plans for additional usage of the product. The Virtual Disk capability offers valuable aspects to act as a global communication media between the private networks of the cities.

"The purchase of tcACCESS is already paying back. The support provided by B.O.S. is excellent. tcACCESS has become an integral part of our everyday life and cannot be missed." Michael Lankes states his judgement.

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