Perfecting Motion

Blum turns the opening and closing of furniture into an experience and significantly increases the comfort of motion in all areas of the house, especially the kitchen. The Blum fittings systems convince with well-thought-out function, renowned design and high durability. They are designed to spark inspiration turn kitchen tasks into an emotional experience.

Over 4,500 employees worldwide realise the company's goal to create perfect motion for Blum fittings systems. The needs of the customers are always prioritised.

Julius Blum founded his company on March 1st, 1952 and produced his first product: a horseshoe stud. Today, more than 50 years later, Blum is a worldwide acting company with production plants in Austria, Poland, Brazil and the USA. Blum is headquartered in Höchst, Austria. The central IT department of Blum operates an IBM mainframe with the z/OS operating system. In addition, numerous Windows systems with DB2/LUW are in use in Austria and abroad. Programming language on the mainframe is PL/I. The production data is stored in DL/I and DB2/zOS databases. Mr Otto Büchele, Manager Information Systems Architecture says, "Our installations abroad are autarkic systems, especially the warehouse system of our Polish subsidiary. These systems run DB2/LUW and the databases must be closely synchronised with our central databases. We also use ORACLE for our data warehouse. Several Application Servers with Java applications complete the picture of our 'open system' environment."

Various facts were the reason that Blum got in touch with B.O.S. Software in 2008. Otto Büchele, "We dealt with our replication problems. Attempts to solve them with our own solutions had failed. We had to deal with multiple projects that should have been completed long ago: Parallel maintenance of our master data in DB2 and DL/I, migration from DL/I to DB2, the implementation of an operational data store involving a near real-time copy of our operational data for reporting purposes, a continuous and bidirectional data replication between headquarter and subsidiaries, unidirectional replications between different systems, i.e. between the mainframe and the ORACLE Data Warehouse. We could go on and on with this list, so we had to do something about it! A newsletter we received from B.O.S. caught our attention and we asked for a visit." A meeting was scheduled at the end of 2008. Walter Griesser, Database Administrator at Blum, "We discussed our needs with the B.O.S. team and agreed to conduct a workshop to create replication prototypes with tcVISION and tcACCESS that would meet our requirements." The workshop took place in early 2009 and was very successful. Walter Griesser, "The concept of the B.O.S. solutions was a positive surprise to us and we especially liked the flexibility and the short time it took to implement replication scenarios between different systems, databases and platforms." Towards the end of the first quarter of 2009, the decision was made to go ahead with the B.O.S. solutions..

Less than half a year later the first replication scenarios were in production. Walter Griesser, "We were able to implement the scenarios based on the workshop prototypes. The replication between DB2/zOS on the mainframe in our headquarters and the DB2/LUW on the Windows system of our subsidiary in Poland has been in

production for a while. This is a bidirectional replication. Both systems are of equal priority and changes applied to both systems must be replicated. We use the near real-time replication method provided by tcVISION. tcVISION extracts all changes found in the DB2 Active Log for tables with the 'Change Data Capture' attribute and replicates them to the partnering system. Since the replication is bidirectional, it is important to assure that changes already applied to one system are not replicated back. tcVISION provides functions to check this in the replication scripts and we can avoid a possible loopback effect." The replication between the DB2/zOS and the DB2/LUW uses a dedicated LINUX machine. Walter Griesser, "It was our goal to have as little overhead as possible on the two production systems. On the mainframe tcVISION only captures the changed data and sends it to the LINUX system where the data is converted and transformed. The resulting changes are converted and applied to the target DB2/LUW in Poland using DRDA. It works the same in reverse: The changed data is captured by tcVISION on the Windows system and sent to the central LINUX system where the data is converted and applied to the DB2/zOS using the DRDA protocol. The replication is performed by tcVISION on a transactional level. The received script collects the changed data per LUW (Logical Unit of Work) and sends the complete LUW to another script that actually applies it to the target system. Using this technique we can kill two birds with one stone: We reduce the overhead at the database server to a minimum and have the flexibility to include multiple systems in new replication scenarios in the near future."

Additional replication applications have been implemented:

The tcVISION DBMS-Extensions capture changes applied to defined DL/I databases in real-time (Batch and Online). These changes are propagated to DB2/zOS on the mainframe. Otto Büchele, "One of the reasons why we decided to go with tcVISION is the flexibility of the product. It is no problem to perform a direct replication even between mainframe databases. This can happen within the same or between multiple LPARs."

Blum uses the tcVISION replication method Batch Compare to capture deltas in DB2 tables at the end of the daily batch window. As the name implies, Batch Compare compares the current DB2 table with a tcVISION snapshot, determines the deltas and propagates to the different target systems (DB2/LUW, DB2/400, ORACLE). Mr Griesser, "To implement this method, tcVISION must first create a snapshot file. This file is then used for the comparison with the current level of the database. During the compare process the snapshot file is also updated to reflect the status quo of the database."

Another implementation is the replication of changes from the ERP tool "Microsoft NAVISION" into an ORACLE database on a LINUX system. Walter Griesser, "This application was not on our official to-do list, but we discussed it with B.O.S. during the workshop and implemented it. Batch Compare not only works with standard mainframe file systems but also with ODBC resources. tcVISION identifies the deltas and applies the changes to ORACLE using OCI (ORACLE Call Interface). This application is also in production as a really nice side effect for us."

Blum also participates in a B.O.S. beta program for the new version of tcVISION. Walter Griesser, "The new functions of the new version of tcVISION help us considerably in the migration from DL/I to DB2/zOS. The new version utilises a central Repository that contains all replication paths, rules and attributes. Several relational databases can be used for the Repository. We decided to use DB2/zOS. We even extended the use of the Repository - we use it to store our own information relevant to our replication initiatives. Even complex replications involving multiple tables and different record types are supported without any programming efforts."

Otto Büchele draws a conclusion, "We are very happy with the B.O.S. solution. During our collaboration, B.O.S. was a very competent and attentive partner. The responsiveness and cooperation of B.O.S. were more than satisfying. B.O.S. enjoys our full confidence for all further constructive cooperation."
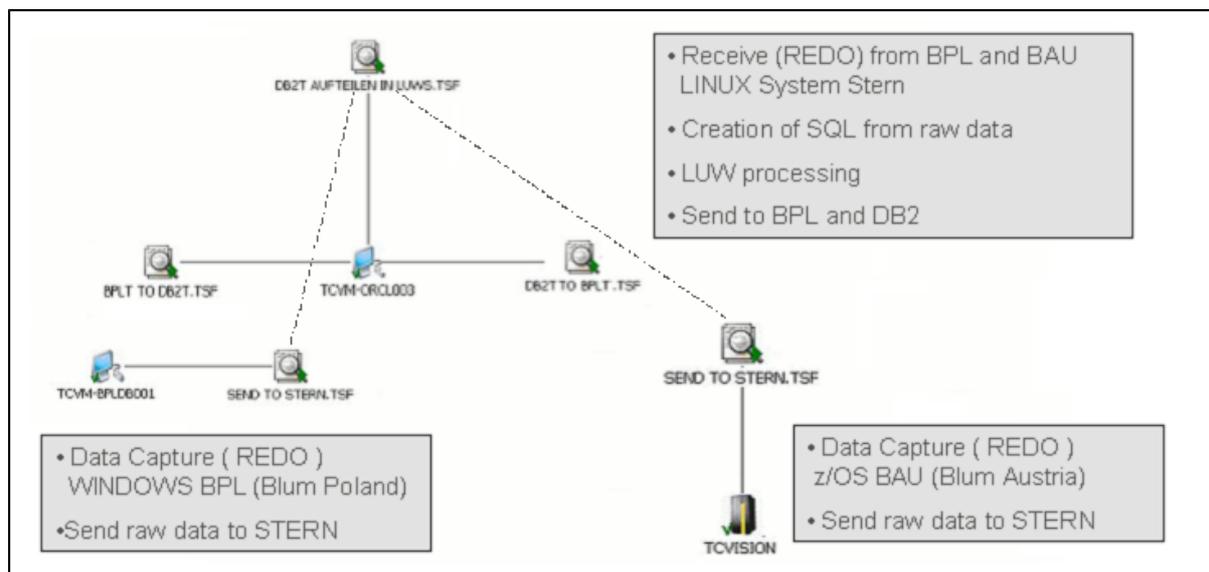
The figure shows the replication paths between the mainframe based DB2/zOS of Blum Austria (BAU) and the Windows DB2/LUW of Blum Poland (BPL).

tcVISION processes the active DB2 logs on z/OS and on Windows and selects all changes applied to DB2 tables that have the attribute "Change Data Capture". The changed data is sent as raw data to the distribution system STERN (Linux), tcVISION receives the data, creates LUWs and propagates these to either DB2/zOS or DB2/LUW. Changes that have already been applied are detected (Loopback Processing).

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