



Photo: BLG LOGISTICS GROUP

Porting for the BLG LOGISTICS GROUP on Time and in Budget

Applications for Automated Container Handling System Ported from the Mainframe to UNIX

By Robert Berlinski

MaK DATA SYSTEM has ported BLG LOGISTICS GROUP's applications for automated container handling from the mainframe to Unix systems, with no noticeable changes for the user. In just a few months, a team from the Kiel IT migration specialist implemented the migration of SIRON reports in NATURAL in their own computer center, ported the databases, and migrated the applications themselves.

Initial situation

The BLG LOGISTICS GROUP (BLG) uses applications for operational control of the container handling system and for the preparation of data for later invoicing in NATURAL and ADABAS on the mainframe (OS/390). The 4GL language SIRON is used for report generation, allowing access to all company data under VSAM and ADABAS. The systems first ran in BLG's own computer center, and later were outsourced to a service provider's computer center.

As a part of the main project "host replacement", BLG decided to mi-

grate the applications CTOS and CAS from the mainframe onto UNIX. Already between 1997 and 2000, other applications, for instance for the consolidation of auto parts and supply for overseas fabrication plants, were ported from the mainframe to UNIX systems. Since that time, some of the applications were running once more in BLG's own computer center in Bremen on SUN servers running the SOLARIS operating system. During the first port, the SIRON reports belonging to the applications had already been translated into NATURAL, since in the meantime all

production data was available on ADABAS and copies were only being kept in VSAM for the reports. Since there are no VSAM files under UNIX, this was a good opportunity to clean up the redundant data storage and to implement the reports directly on ADABAS in the future, then directly in NATURAL.

During the port of the first applications, BLG had already redesigned the operating system-dependent environment for NATURAL and ADABAS: processes for printing, for batch processing, for job



Beate Lentes, project manager BLG IT-Services

Project order and organization

MaK DATA SYSTEM was asked in the middle of 2004 to port the applications Container Terminal Operation System (CTOS) and Container Abrechnungssystem (Billing System) (CAS) from the mainframe (OS/390) to UNIX. The ported application had to be integrable into the already existing infrastructure. CTOS and CAS consist of about 2400 Natural objects, 30 SIRON programs, 220 job steps, and 50 ADABAS files.

The target system was a newly installed high-availability server by SUN. BLG was also planning on a development and testing system. Although CTOS and CAS run physically separate from the other NATURAL applications, care was taken that the installation of the products and environments be uniform. This minimized the additional ongoing costs for monitoring the applications in production.

Since the porting of the applications CTOS and CAS by MaK DATA SYSTEM was planned in parallel to BLG's procurement and installation of the new server, and the execution of the contract was largely to be performed in MaK DATA SYSTEM's own facilities in Kiel, the standard environment of BLG's UNIX systems was simulated on all the development computers in MaK DATA SYSTEM's computer center. Here, the specialist team for the porting tasks was

available and could react flexibly depending on the needs of different requirements.

The greater part of the work of porting CTOS and CAS consisted of the translation of the SIRON reports into NATURAL. Even though the SIRON programs appear self-explanatory on first glance, it turned out that careful detail work was required in the group change processing and list design.

Transfer of the database

The ADABAS data were transferred using the usual procedure: dump, decompress, transfer to UNIX, compress, and load. An automatic process with jobs on the mainframe end and scripts on the UNIX end was implemented and thoroughly tested. Particularly the timeframe for the acceptance of the current data, which must be performed one last time on the day production moved to UNIX, was planned in excruciating detail.

In order to keep transfer times low, the container data of unnecessary terminals on the host were sorted out at runtime by an assembler program. The decompressed ADABAS files were written to temporary files and then immediately recompressed with a compression utility. This added up to about 90% savings on the storage space required and a lot less time was needed for transmission of the data from the host to the UNIX system.

On the UNIX side, the data were again converted into the decompressed format needed by the ADABAS utilities and then loaded into the databases. Carefully configured translation tables ensured that umlauts and special characters contained in the data were retained during the platform change.

Application migration

This process of data transmission was repeated many times over the course of the project in order to obtain fresh data for testing. At the same time, the data transfer became routine, so that the transfer into pro-

duction for the last time wouldn't be a problem.

The Natural objects (programs, maps, DDMs, and so on) were transmitted from the host onto the development computer and there subjected to automatic analysis as text files. Here, the program points were marked which would have to be examined more closely during the course of the port. These were particularly points where the different sort orders of the encodings (EBCDIC on the host, and ASCII under UNIX) might result in erroneous results. But operating system dependencies like printer names, non-NATURAL subprograms, hexadecimal values, and so on were also marked. Many of the places found can be automatically reworked in the end. Many of them, however, have to be looked at in order to decide whether rewriting is necessary. The rewrites themselves are then usually very simple. All changes are marked uniformly, so that the changes can then later be assigned to the port.

While cataloging the application, typically some missing objects turn up. Moreover, a few adjustments are also necessary here, because the syntax checker in NATURAL on UNIX is somewhat more exact, and some undocumented constructions by the developers are not accepted. Finally, the application was subjected to a test by MaK DATA SYSTEM.

Delivery on time

In mid-September, the databases were first transferred with empty files to BLG development server, which had been installed in the meantime. The installation of the server was performed by BLG staff according to their own standards. Then, the data were transferred for the first time to the BLG computer in Bremen. Right on schedule on September 30, the Natural application was transmitted to the development server and implemented there. Only a few SIRON reports needed to be delivered by MaK DATA SYSTEM in the beginning of October.

“Our cooperation with MaK DATA SYSTEM was pleasant and uncomplicated. We worked together very constructively and stayed on time and within budget”, summarizes Beate Lentes, project leader on the part of BLG IT Services.

Test and startup

After the port, the first integration tests were performed at BLG by the BLG project leader and selected users. Users of the application include, for instance, BLG Cargo Logistics, BLG International Logistics, DCP (Dettmer Container Packaging GmbH), as well as shipping companies and brokers. Finally, the application was moved to the production server. On the server intended for production, the test activities were first executed in the individual departments, and the results were compared with the host version still in production. The many

interfaces to other applications were also thoroughly tested at this time.

The move to production under UNIX was planned for the second weekend in December 2004. MaK DATA SYSTEM staff were available in Kiel, ready to jump in action if needed. They followed the progress of the activities closely, until Saturday afternoon the system was already declared ready for production. Hard-working staff in the departments were convinced of the quality of the data transmission and had actually already performed some work which was scheduled for Monday. Since 12/13/2004, the users are now working with the applications on the new system. For the users – as is proper for a successful migration – operation of the system almost hasn’t changed at all. “The look and feel are more or less identical. The users have given us very positive feedback,” says Gerhard Brandes, CIO for the Contract Division at BLG

Logistics Group. With no noticeable transitional effort or operational delays, the users can work with their container management application just as before.

For further information contact:

Michael Voelkel
 Phone: +49 (0)431/3993-531
 eMail: voelkel@makdata.de



BLG LOGISTICS GROUP

The BLG Logistics Group, headquartered in Bremen, concentrates its operational business on the three business areas of automobiles, contracts, and containers. Their strategic goal is to continue to expand their service depth and geographic reach. The BLG Logistics Group has about 6,800 employees (in 2004). Their annual sales last year were about 650 million Euros. www.blg.de

BLG LOGISTICS AUTOMOBILE:

Complete logistics for finished vehicles, from manufacture to the dealers in the country of destination. In all, more than 3.7 million vehicles are handled each year. Technical services are integrated right up to final finishing. Terminals and subsidiaries exist in Europe, Africa, and North and South America.

References:

BMW, DaimlerChrysler, and other European and Asian manufacturers.

BLG LOGISTICS CONTRACT:

Procurement, production, and distribution logistics for industry and trade. Focus is on system services (supply chain management) for the areas of automotive (production logistics), nonfood, and business electronics. Other areas are factory supply and trade logistics. Services are rendered using modern terminals, logistics centers, and subsidiaries in many countries around the world.

References:

DaimlerChrysler, Tchibo, Konica-Minolta, Siemens, Ikea

BLG LOGISTICS CONTAINER:

EUROGATE, with its terminal network in Bremerhaven and Hamburg, along with seven other facilities in Italy and Portugal, is a European market leader. Overall volume in the past year reached 11.5 million standard containers. Terminal services are augmented by a dense service and transport network.

References:

Globally operating container shipping companies