



MSS
International

البنك الأردني الكويتي
JORDAN KUWAIT BANK 

Migration Case Study



Business Problem

Jordan Kuwait Bank is one of the largest banks in Jordan with branches in Cyprus and Palestine. Its core banking package was developed in the proprietary Linc language and ran on a Unisys Clearpath machine. The bank felt that the Linc technology was limiting it in terms of flexibility and the ability to use newer technologies – web browser access etc. It is also very difficult to obtain programmers trained in Linc.

Business Solution

JKB decided to use MSS International to port the application and database to open systems technology, and chose SUN to supply the enterprise-scale Unix platform. The database of choice was Oracle and the migration route for the online system was the tried and tested PL/SQL / JSP combination also supplied to KOC Bank and Scottish Life. In addition the bank requested that MSS provide batch code migrated into Java as well as into SqC. These two variations can be mixed and, as the bank staff become more proficient in Java, can be rationalised under their control into a standardisation on Java.

JKB staff took standard classes on Oracle database and languages supplemented by MSS training on the specifics of the migrated programs and libraries. The project went live with no significant problems and was well received by the user community who required no special training in the new system. The system is now deployed in Jordan itself as well as Cyprus and Palestine, and JKB is now able to move forward using much lower cost hardware and software into a standards based future.

Overview

JKB is a large bank based in Amman with branches in Cyprus and Palestine. The bank had been a user of Unisys Clearpath mainframes (NX5600s) for many years.

In 2006 JKB decided to lower their cost base by moving to Unix equipment. MSS was asked to migrate all the programs using **migrate!LINC** technology into a modern development and operational framework. MSS used automated software to migrate the online system into the Oracle PL/SQL language, the batch system into SqC (C with PL/SQL-like extensions) and, using **migrate!WFL**, the job control programs into standard shell scripts. An Oracle database schema was created by use of **migrate!DATA** which also generated data migration programs. The screen handling was implemented using the MSS JSP library approach. A three tier architecture (web servers, application servers, database server) was created based on SUN Solaris servers. The migration took 6 months and involved a team of about 12 JKB staff.

Each of the two distinct Linc systems migrated consisted of about 1200 ispecs (screen layouts), 1000 reports (batch programs) and 500 global logic routines. Additionally several Cobol NOF programs (e.g. ATM interface handler) were rewritten in Java. The system now supports over a thousand users and has been deployed in 3 countries for JKB and for its foreign branches.

In order to be able to completely discard the Unisys environment, a replacement for the Cobol share dealing system was implemented by the bank, with MSS providing the data migration element.

Challenges

In 2006, JKB decided that they needed to move to an open system from their proprietary mainframe, a Unisys Clearpath NX5600. The technical migration went very smoothly but with some challenges that had not been seen before by MSS.

The large code base had to be migrated from Unisys Linc to Open Systems languages – Oracle PL/SQL and SqC – and the screen formats and supporting infrastructure replaced.

The database definition and data would also have to be migrated with integrity checks on the data as it ‘landed’ in the target Oracle database.

One particular challenge was the use of Arabic script in the data and on screens. Although the translation from one character set to another is a standard procedure, usually the number of characters does not change. In the translation of EBCDIC Arabic to ASCII Arabic, most characters are a one-for-one equivalent, but a few single EBCDIC characters map to 2 ASCII characters. This gives rise to an unpredictable increase in the number of characters stored or displayed in a field. JKB and MSS jointly worked out a method for handling these and overcame the issue satisfactorily.



Challenges cont.

Another major challenge was the extensive use of NOF programs that provided the interface to the branch systems, the ATM network and the web interfaces. These were originally written in Cobol74 running under COMS and accessing the DMSII database directly. It was decided that, since there would not be any other need for Cobol in the new environment, they should be rewritten in Java. This in itself did not create an issue but the programs (provided by a third party) and the protocols adopted were not well documented. By extensive testing and monitoring of the existing system, however, all the necessary information was obtained and the protocols reproduced.

Solution

MSS used the **migrate!LINC** software to perform the main code conversion. The new application is deployable on any mainstream platform. The Bank chose SUN as their hardware partner and installed large scale Solaris servers to replace the Unisys mainframe.

JKB chose to implement the JSP architecture using MSS JSP approach developed by MSS which is an optional module of **migrate!LINC**. JKB IT staff were trained in depth by MSS on how to configure the MSS JSP software and, in particular, made use of the security feature whereby, using configuration screens alone, the system can be directly interfaced to an existing Microsoft Active Directory.

MSS rewrote all the NOF interface programs in Java. Because not all of the code (based on a generalised skeleton) was used, the new application design is effectively much simpler than the original. To be able to route the messages rapidly and reliably, the MSS **MCS!Lite** product was used. This takes very little overhead and has the capacity to route thousands of messages per second, yet provides all of the COMS features that were used in the original implementation.

Solution cont.

The Oracle database schema and data migration programs are both products generated by the **migrate!DATA** migration software and the Bank needed no special software to move the data smoothly and with no loss of integrity from DMSII to the new database.

JKB found the new system and the Oracle database gave excellent response times and more throughput than DMSII running on the Clearpath.

Once the application had been fully tested JKB performed a cut-over of the Cyprus and then Palestine branches. After 2 months of successful live running, the main system running the bank's operations in Jordan was made live. All of the cut-over weekends were uneventful and no significant issues emerged in the first weeks of live running.

Results

The migration was completed in 6 months and went live in phases completing at the end of 2006. The cut-overs went extremely smoothly and the new platform performed substantially better than the previous one, with a shortened batch window and a good gain in performance.

Migration Summary

ENVIRONMENT	SOURCE	TARGET
CPU:	MCP Unisys	Sun
Database:	DMSII	Oracle
Language:	LINC, Cobol, WFL	Java, SqC
Data Comm:	COMS	JSP

“The contribution of your team at MSS was the major factor leading to the fact that the system is now running with absolutely no performance bottlenecks, and that the bank has saved a decent amount of money and an enormous amount of agony. Your team endured us during our learning process and helped in smoothing our team’s learning curve by providing timely and invaluable support and education to our team.”

Nasser M. Khraishi, PhD, Assistant General Manager, Information Technology, JKB