



## MKS Toolkit Case Study

### S.W.I.F.T

Transferring sums that large takes powerful software. With its PC-based market growing rapidly, this supplier of secure interbank messaging services needed to port its UNIX-based interface application onto Microsoft Windows in a hurry. Porting software that powerful onto a new platform takes targeted expertise. So when S.W.I.F.T. decided to create a Microsoft Windows based version of its UNIX-based interface application, it turned for help to MKS, makers of MKS Toolkit for Enterprise Developers (formerly NuTCRACKER), the sophisticated UNIX-to-Windows migration tool.

#### In a Race Against Time

SWIFTAlliance is the name of the interface software that connects users to the S.W.I.F.T. network. Banks and other institutions use this application to create, transport, and download financial messages across S.W.I.F.T.'s dedicated X.25 network, which carried almost 700 million messages in 1996.

SWIFTAlliance was originally developed for the UNIX environment. But as PC-based operating systems such as Microsoft Windows rapidly gained acceptance, "the low-to-medium end of our market found our UNIX-based product less attractive because of perceived cost and complexity concerns," said S.W.I.F.T. product manager Guy Vanleemput. The company needed an entry-level interface product that would function on low-cost PC hardware.

"And we needed it in a hurry," explains Vanleemput, "or we risked losing market share in this segment of the banking industry. The competition from companies with similar products was getting tougher."

#### A Very Important Project

Accordingly, S.W.I.F.T. decided early in 1995 to port SWIFTAlliance onto the Microsoft Windows operating system, the most flexible, cost-effective operating system for the client/server environment. The new Windows based product would be a stripped down but still highly functional version of the UNIX-based product, aimed at entry-level customers. Consequently, the new version was named SWIFTAlliance Entry, while the original UNIX-based product was renamed SWIFTAlliance Access.

To speed up product development and assure consistency across systems, S.W.I.F.T. wanted SWIFTAlliance Entry to use as much of the existing code in SWIFTAlliance Access as possible. This would also reduce maintenance costs, as the solution to problems on one platform would typically be the same on the other.

"Because of the amount of code involved and because its function is so critical to the success of our business, it was a very important project," says Dirk Bogaert, project manager for SWIFTAlliance Entry. SWIFTAlliance Access contains more

#### Company Profile

S.W.I.F.T., the Society for Worldwide Interbank Financial Telecommunication, is a bank-owned cooperative supplying secure messaging services and interface software to more than 5,500 financial institutions in 150 countries. S.W.I.F.T.'s wide range of products and services help customers reduce costs, raise productivity, control risk, and strengthen the security of global financial communications.

#### Situation

With pressure building among smaller clients for a PC-based version of its interface software, S.W.I.F.T. decided to port the system, named SWIFTAlliance, onto the Microsoft Windows operating system. But they would have to conduct the migration quickly if they were to avoid losing market share in the small-to-medium end of the banking industry.

#### Business Solution

Instead of rewriting code to create the Windows based version of SWIFTAlliance, S.W.I.F.T. used NuTCRACKER, the powerful UNIX-to-Windows migration tool from MKS Inc. To meet S.W.I.F.T.'s needs, MKS actually rewrote NuTCRACKER to support multi-threaded systems such as SWIFTAlliance. That enabled S.W.I.F.T. to migrate nearly half a million lines of code in just six months.



than half a million lines of code, most of which would be reused in the new product. Migrating all of that code to Windows would have been a daunting task if done manually.

## Major Product Improvement

Instead of rewriting code to create SWIFTAlliance Entry, S.W.I.F.T. used NuTCRACKER, the powerful UNIX-to-Windows migration tool from MKS Inc.

SWIFTAlliance Entry has two major parts: a server component and a client component. The S.W.I.F.T. project team chose to write a totally new client component and use NuTCRACKER to port the far larger server side of the product onto the Microsoft Windows platform. "The server component accounts for more than 80 percent of the code," says Bogaert.

The porting effort began by adapting NuTCRACKER to S.W.I.F.T.'s challenging needs. "Like a lot of projects of this nature, it began with some difficulties and uncertainties," explains Bogaert. "There was a lot of complexity to deal with, because this was the first time NuTCRACKER had been used to port a product of this magnitude. But thanks to the willingness of MKS's support people, we were able to isolate problems and then quickly resolve them."

The biggest initial problem was that NuTCRACKER had been designed for use in single-threaded environments, so it could process only one transaction at a time. SWIFTAlliance Access, however, is a demanding multi-threaded product that processes many events at once. To meet S.W.I.F.T.'s need, MKS actually rewrote NuTCRACKER to work in multi-threaded environments, a major product improvement.

## Ready for Use in Six Months

For S.W.I.F.T., getting to market quickly was a major concern. NuTCRACKER came through for them. The initial porting work began in April 1995, and within six months, S.W.I.F.T. was sufficiently confident of the new application's robustness to demonstrate it publicly at the SIBOS exhibition, a S.W.I.F.T.-sponsored international showcase for new banking-industry products and services. The exhibition attracts attendance from over 2,000 financial institutions.

Since SWIFTAlliance Entry's debut, seven client banks have tested the product in pilot programs. The new product became commercially available worldwide in March 1996, just one year from the project's beginning. At the time of press, over 100 clients are already using the application daily.

NuTCRACKER helped cut development time significantly. Without NuTCRACKER, says Bogaert, "we would have had to take out all the UNIX functionality and replace it with the Win32 version on our own." Thanks to the quicker development, S.W.I.F.T. began marketing SWIFTAlliance Entry to the Windows sector of the banking and financial industries while the window of opportunity was still open - and before its competitors had captured this market segment.

S.W.I.F.T. now plans to use the multi-threaded version of NuTCRACKER to develop a Windows based version of SWIFTAlliance Access.

## Benefits

NuTCRACKER helped cut development time significantly. That, in turn, enabled S.W.I.F.T. to get the new Windows based version of SWIFTAlliance to market more quickly - before the competition could capture the PC segment of the banking and financial industry for themselves.

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## Dirk Bogaert

Project Manager, SWIFTAlliance Entry  
S.W.I.F.T.



## A Difficult Task Made Easier

With its intuitive interface and comprehensive set of UNIX utilities, NuTCRACKER makes application developers instantly productive in what for many is the still unfamiliar Windows environment. NuTCRACKER also enables application developers to maintain a single set of source code for both UNIX-based and Windows based applications.

"NuTCRACKER made a potentially difficult task much easier," says Bogaert, "and we also received superb technical support throughout from MKS." With NuTCRACKER, predicts Bogaert, "developing the new Windows based version of SWIFTAlliance Access will be a question of months, not years."

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