MKS Toolkit Case Study

Siemens AG

Industrial Projects and Technical Services (ATD)

Background:
In today's fast-paced world of business, it is imperative to have efficient systems in order to respond to rapid change and competitive threats. By integrating IT systems and creating increased automation, organizations immediately begin to see an increase in productivity.

IT Plant Solutions (IT PS), a subdivision of Siemens ATD, supports its customers in the manufacturing and industrial sectors by implementing solutions orientated around customer benefits. These solutions can be implemented cross industry while still offering some vertical specialization. As a global supplier of IT solutions, IT PS optimizes and simplifies complex information flow through industrial processes while adhering to business management objectives. The ability to simplify, blend and implement technology throughout a business distinguishes IT PS from its competition.

IT PS Solution to the Data Management Problem DB4Web
Conventional client server applications are fast becoming too expensive to maintain, complex to upgrade and slow to update. The Internet, however, allows fast and easy upgrade paths and the ability to run on any device. DB4Web allows data from CORBA, SAP. Informix, DB2, SESAM/SQL, ODBC, BS2000 or other database, ERP or PDM application to be shown simultaneously on a screen allowing access to all data online worldwide. This enables organizations to function as a virtual whole with complex company-wide applications running across web browsers. This approach saves time and money, which results in increased profits. Previous to DB4Web, this would have been technically impossible Existing client/server applications can be integrated easily into any application environment. Using open standards such as HTTP, HTML, Java and CGI, thin client technology can be deployed. Users can browse in HTML or query databases, using the standard browser interface. DB4Web promises considerable cost savings because it dispenses with the need for expensive maintenance.

Benefits of DB4Web include:

- Infinitely scaleable architecture
- Simultaneous access to all types of data
- High level of availability and reliability
- Intelligent load distribution management (even between individual computers)
- Compatible with all database systems and operating systems

Migrating UNIX based DB4Web onto Windows
The growing Windows marketplace promised new markets for IT PS, however the company wanted to be able to offer its customers the same quality and reliability they had grown to expect with their UNIX versions. Rather than rewrite the application which would be costly and time sensitive, IT PS decided to locate a UNIX to Windows migration tool which would result in a Windows version as feature rich as the one currently running on UNIX.

The MKS Solution
After careful consideration of its options, IT PS chose to use MKS Toolkit for Enterprise Developers (formerly NuTCRACKER) to handle the migration of their existing UNIX product to Windows. NuTCRACKER is an extension to Microsoft's native Win32 development platform that adds comprehensive UNIX compatibility, including application program interfaces, shells, commands, and utilities. Therefore, the product doesn't merely emulate UNIX functionality on

the Windows operating system, but actually lets developers recompile their UNIX C, C++, or Fortran source code and link it to N*u*TCRACKER DLLs. The result is a native Win32 application.

In order for IT PS to release the version of DB4Web, 150,000 lines of source code had to be ported. N*u*TCRACKER helped to speed the development cycle considerably. Developers were able to use the run-time library and shell environment where they would otherwise have had to adapt numerous run-time functions. In total the conversion lasted three months, with the first month spent on validation. The second month was spent on the porting process itself with a final month spent on a testing and continuous flow phase. The result was a Windows product which ran with the same look and feel of their UNIX version. The company estimates by using N*u*TCRACKER they saved about nine person-months and the UNIX commands and utilities included in the package have saved them at least another year in development time.

"N*u*TCRACKER has entirely fulfilled our expectations. Our ported Windows application exhibits the same full range of services as our UNIX installations." said Jürgen Bernhardt, Development Manager, IT PS.

Software compatibility solutions generally have a price, such as high cost, limited functionality, or reduced performance. N*u*TCRACKER eliminated these problems by running UNIX and Windows based applications together natively in a tightly integrated, high-performance Windows environment. Software maintenance represents the lion's share of development expenses and the N*u*TCRACKER conversion took that into account as well. N*u*TCRACKER makes it possible to maintain a common source code base across both the UNIX and Windows platforms, which can equate to substantial savings.