



MKS Toolkit for Enterprise Developers

Today's successful corporations and ISVs base their IT investments on power and flexibility. For the enterprise that means heterogeneous environments are the norm, rather than the exception. Organizations can no longer only deliver large-scale, UNIX-based systems to customers; the marketplace requires additional offerings. With an increasing demand for PC-based, multi-platform products in the market, enterprises around the world are looking for solutions that can bridge UNIX and Windows, so that they can offer more than a single-platform product and remain competitive. MKS Toolkit[®] for Enterprise Developers (formerly NuTCRACKER) is that solution.

MKS Toolkit for Enterprise Developers is the proven solution for porting robust, mission-critical UNIX applications to Windows.

MKS Toolkit for Enterprise Developers Benefits

MKS Toolkit for Enterprise Developers enables organizations to:

- Reduce Total Cost of Development.
- Leverage Existing Investments in UNIX.
- Maintain a Single Source Code Baseline.
- Evolve Applications to Windows Technologies.
- Deploy Throughout the Enterprise.
- 64-bit Windows Migration

With over 2700 UNIX APIs and a full command-line development

environment, MKS Toolkit for Enterprise Developers is the ultimate in UNIX to Windows migration. No other product can match the full support for C, C++, and Fortran; for UNIX process management including fork(), signals, alarms, message queues and threads; for file system and security management; and for curses, X, Motif, and OpenGL. And no other product matches MKS Toolkit's access to Windows APIs for Windows integration and interoperability.

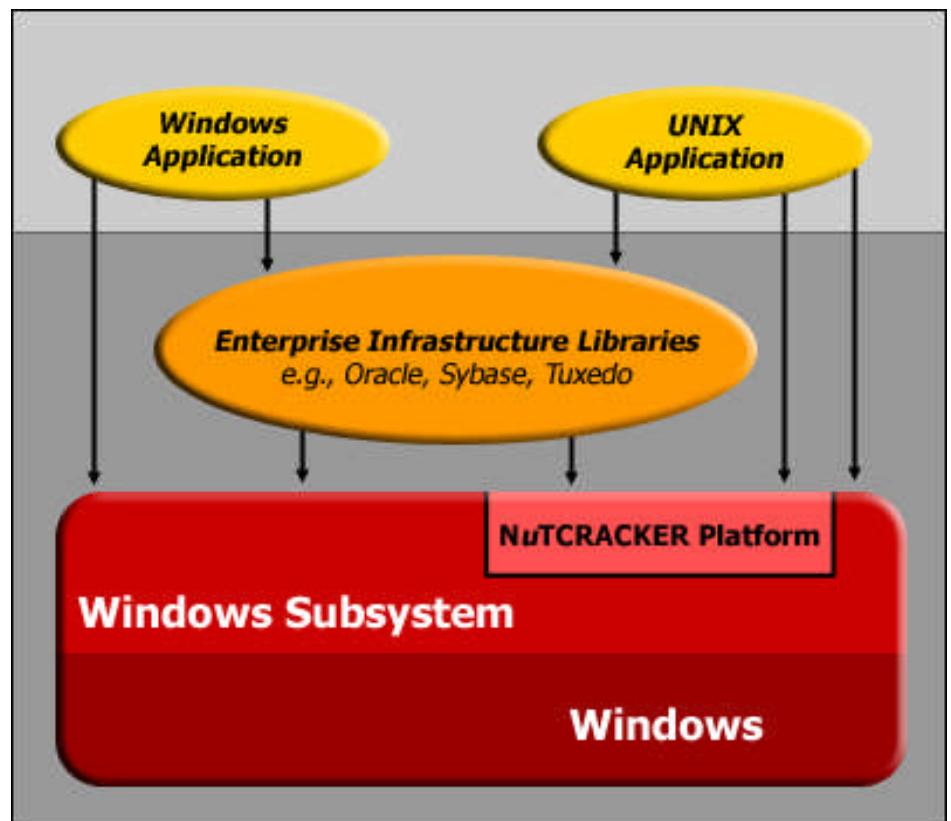
Reducing the Total Cost of Development

Software compatibility solutions generally have a price, such as

high cost, limited functionality, or reduced performance. MKS Toolkit for Enterprise Developers eliminates these problems by running UNIX and Windows based applications together in a tightly integrated, high-performance Windows environment.

For mission-critical applications, the cost of writing and testing new code falls between \$3.90 and \$4.90 per line of code according to International Data Corporation (IDC). MKS Toolkit for Enterprise Developers dramatically reduces the time and cost of migrating existing UNIX code to Windows.

For example, an application with 200,000 lines of code can be



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ported by two developers and will be ready for testing/quality assurance within days. If, after testing, it is then deployed on 250 Windows Workstations, the total licensing cost for MKS Toolkit for Enterprise Developers will be under \$30,000. The total cost of labor involved in porting and testing might run somewhere between \$50,000 to \$60,000 (mostly for QA). The cost of a rewrite (assuming that 100,000 lines of code can be reused) would be somewhere around \$400,000 and probably will take at least ten times longer than with the MKS Toolkit for Enterprise Developers.

The option of re-writing mission-critical systems is more time consuming and more costly. MKS Toolkit for Enterprise Developers allows the reuse of existing source code keeping development costs down considerably.

Shoemaster is an application that represents 30 years of development. We ported it to Windows in about 90 days, without any loss of performance or quality.

Ian Paris
Managing Director
CSM3D International Limited

Leverage Existing Investments

MKS Toolkit for Enterprise Developers enables the full utilization of existing UNIX-related in-house resources, including engineers' skills, experience and software source code. This helps preserve high quality applications while lowering costs throughout the development process.

The MKS Toolkit for Enterprise Developers solution offers software developers the ability to recompile and reuse UNIX and

Linux source code (C, C++ and Fortran) to produce native Windows executables that look like, act like and interact with other Windows applications.

Further, with its intuitive interface and comprehensive set of UNIX utilities, MKS Toolkit for Enterprise Developers makes it easy for UNIX trained developers to quickly become productive in the unfamiliar Windows environment.

Decrease the Time to Market

Whether your customers are internal or external, with MKS Toolkit for Enterprise Developers projects can be completed in less than half the expected development time. By re-using in-house experience and resources, businesses can cut costs through the efficient use of MKS products. This productivity gain enables developers to include additional features to enhance their products and solutions, allowing corporations to maintain their competitive edge and exceed customer expectations.

Single Source Code Baseline

MKS Toolkit for Enterprise Developers makes it possible to maintain a common source code base across both the UNIX and Windows platforms, which can equate to substantial savings.

Standard-based UNIX tools and APIs allow porting to proceed quickly and with minimal source code changes:

- Support for high performance workstation and server applications with over 2,700 UNIX APIs including: XWindows, Motif, OpenGL, threads, etc.
- UNIX shells and over 450 UNIX utilities to support automated builds and command-line development.

Software maintenance represents the lion's share of development expenses and using MKS Toolkit for Enterprise Developers takes that into account as well. Having one source code base makes supporting both the old and new environments significantly easier throughout the lifetime of the product.

One well-known supplier of packaged UNIX applications ported its core 7-million line UNIX application in 2 days using MKS Toolkit for Enterprise Developers and released its Windows product within two months. This occurred after its best programmers could not produce a native Win32 version of the application despite more than 13 man-years of effort.

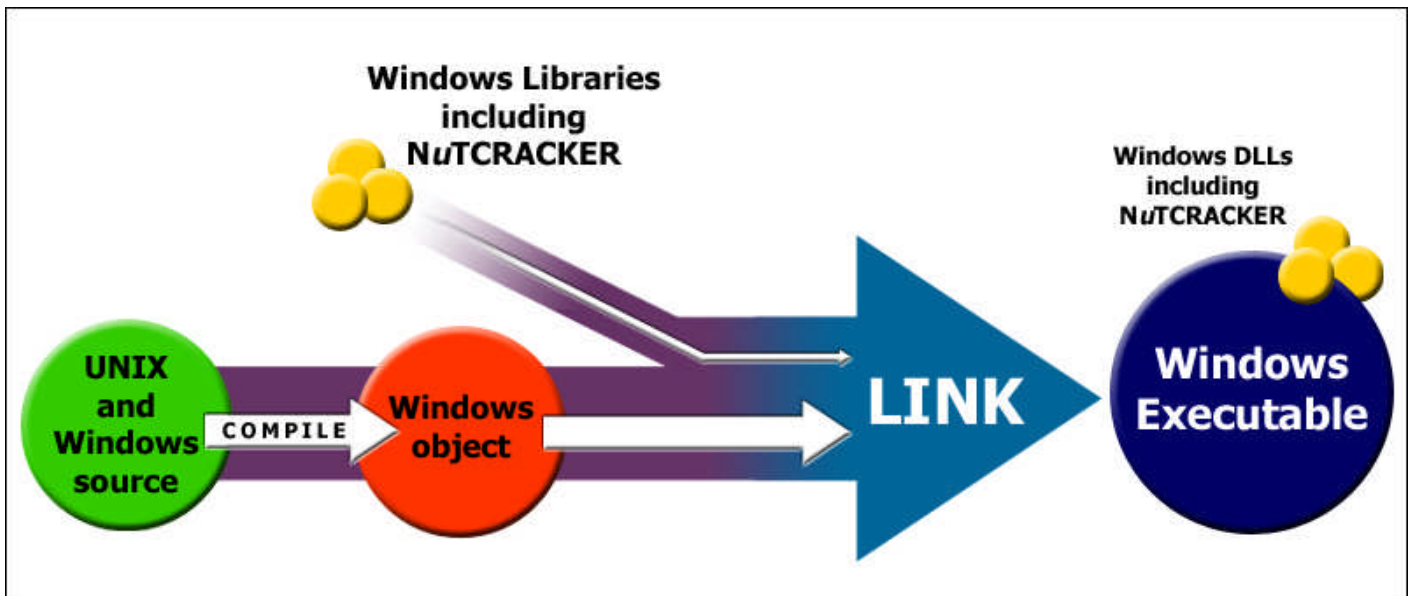
The Aberdeen Group

Evolution to Windows Technologies

MKS Toolkit for Enterprise Developers supports converting UNIX software to componentized objects that can be deployed across UNIX and Windows, integrated with desktop productivity tools (such as Word and Excel), and used from browsers in web-enabled applications.

- Integrate with Desktop Applications
- Web Enable Existing UNIX Applications
- Componentize Legacy Business Logic
- Architecture Modernization
- Component Standardization
- Create Distributed Services
- Integrate with Multiple Scripting Hosts
- Reuse Existing User Interface Technology

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- Create Language Independent Applications

MKS Toolkit for Enterprise Developers allows you to easily run UNIX applications as native Windows programs that take full advantage of COM, .Net and other Windows constructs.

Enterprise Deployment

Compare the total costs of development and deployment with products from any of the competitors and you will find MKS Toolkit for Enterprise Developers is the least expensive total solution on the market! This is because the software required to deploy and run ported applications is where you will spend the most money.

With the Application Packaging Wizard and a wide variety of runtime options, MKS Toolkit for Enterprise Developers includes a complete framework for deploying ported UNIX and Linux as well as native Windows cross-platform applications. Available runtime options are:

- NuTCRACKER Workstation – a full UNIX runtime compatibility environment for workstation platforms.
- NuTCRACKER Server – the server counterpart of NuTCRACKER Workstation for servers and all machines with more than two processors.
- Power User Utilities – a set of UNIX utilities for runtime support of automation and scripting capabilities.
- Developer Utilities – more comprehensive set of UNIX utilities for advanced support of application automation and scripting capabilities.
- Connectivity Suite – a complete suite of connectivity tools and services providing runtime support for access to and from remote UNIX and Windows systems.
- SCO/Tarantella X Server – a full array of X Servers for displaying X Window System-based graphical applications. Available in both English and Japanese versions.
- Hummingbird 3D OpenGL – for porting high performance OpenGL applications.
- XRT PDS Widgets from Quest.
- Wintif – a replacement runtime library for Motif providing a Windows look and feel.

64-bit Windows Migration

64-bit Windows operating systems are ideal for applications that require large amounts of memory and high-performance mathematical computation, such as Web caching, data warehousing, complex mechanical design and analysis, scientific applications and research.

MKS Toolkit for Enterprise Developers 64-bit Edition simplifies the migration of 32-bit and 64-bit UNIX applications to 64-bit Windows enabling customers to deploy their UNIX/Linux applications on both Extended Architecture (i.e. AMD64/EM64T) and Itanium-based platforms.

MKS was the first to 32-bit Windows and now MKS Toolkit for

MKS Toolkit

We would never have even attempted this project without MKS. It would have cost too much and might have taken years. With MKS Toolkit for Enterprise Developers we just ported it over to Windows, got it to compile, and brought up Windows. It was very simple—and very fast.

Rob Pynaker, CogniSeis

Enterprise Developers 64-bit Edition is the ONLY solution for porting robust, mission-critical 32 and 64-bit UNIX/Linux applications to 64-bit Windows.

MKS Toolkit for Enterprise Developers Features

- Over 2700 UNIX APIs including X11R6.4, Motif 2.1, OpenGL, and XView.
- Over 450 UNIX and Windows command-line utilities (full POSIX.2 specification).
- Full support for multibyte/Unicode characters within file content, file and directory names, pipes, environment variables, console displays, and other areas.
- An integrated command-line build environment including utilities such as ar, cc, cxx, ld,

make, lex/yacc, and flex/bison.

- Process management: fork(), exec(), signals.
- POSIX, DCE, and Solaris threads.
- Real time application support from the Single UNIX Specification v3 such as Message Queues, Memory Locks, and Barriers.
- File system handling: mount(), umount(), symlink().
- IPC and Networking: sockets (including UNIX-domain sockets), shared memory, message queues, semaphores, and FIFOs.
- UNIX to Windows file and user security mapping.
- UNIX to Windows file path and file system mapping, including devices such as /dev/null and /dev/lp.
- Curses and terminal handling.
- A fully network-capable X server, for displaying both local and remote X Windows applications.
- Access remote UNIX, Linux, and Windows systems with Secure Shell utilities (secsh/secshd, scp, sftp),

Remote Shell utilities (rsh/rshd, rexec/rexecd, rlogin, rcp), a Telnet service (telnetd), and xterm.

- A powerful scheduling interface as well as a suite of command-line utilities (at, batch, crontab, taskrun, and wts) for automating routine tasks.
- SNMP (Simple Network Management Protocol) services and utilities that allow you to control network devices and their functions.

In a Nutshell

MKS Toolkit for Enterprise Developers provides the ability to reduce maintenance costs by utilizing a single source base, leveraging existing investments in UNIX source and expertise, and significantly reducing development and deployment time.

Request an evaluation copy of MKS Toolkit for Enterprise Developers and learn more about the rest of the MKS Toolkit line of products and services by pointing your browser to www.mkssoftware.com.



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