

PTC MKS Toolkit 10.4 and PTC X/Server 10.4

PTC announces the releases of:

- **PTC MKS Toolkit 10.4 leader in UNIX to Windows scripting, connectivity, and application migration**
- **PTC X/Server 10.4, provides secure, seamless access to character and X-based UNIX applications from the Windows desktop**

PTC MKS Toolkit for Developers is an award winning and industry-leading Windows/UNIX interoperability solution that dramatically improves the compatibility between Windows and UNIX environments. It enables developers and system administrators to customize, control, and automate their software development and administrative processes. PTC MKS Toolkit for Developers speeds the software development and administration process and reduces errors by eliminating the time spent on tedious manual tasks.

- Powerful scripting allows you to simplify and automate the execution of repetitive tasks
- New technology integration enables you to easily control and manipulate today's dynamic infrastructures
- Component-based architecture provides you with the ability to easily customize a solution configured to the needs of your organization

PTC MKS Toolkit for Enterprise Developers (formerly NuTCRACKER) is the proven solution for porting robust, mission-critical UNIX applications to Windows. No other product can match our full support for C, C++ and Fortran; for UNIX process management including fork(3), signals, alarms, and threads; for file system and security management; and for curses, X, Motif, and OpenGL. And no other product matches PTC MKS Toolkit's access to Win32 APIs for Windows integration and interoperability.

- Run UNIX applications as native Windows programs taking full advantage of COM, .NET, and other Windows features
- Maintain a single source base across UNIX and Windows saves time and money for years to come
- Cut development time - 70%, 80%, even 90%
- Easily deploy ported applications with built-in packaging wizard and a wide variety of UNIX runtime options.

PTC MKS Toolkit for Enterprise Developers will run on either 32-bit or 64-bit Windows systems. The application ported using PTC MKS Toolkit for Enterprise Developers will install and run on either 32-

bit or 64-bit Windows systems. However, on 64-bit Windows systems the application will run as a 32-bit application.

PTC X/Server for Windows provides secure, seamless access to character and X-based UNIX applications from the Windows desktop. This allows you to leverage the benefits of new desktop platforms while connecting to UNIX applications throughout the enterprise. Because PTC X/Server is a Windows X Server containing a rich feature set that is easy to use, users can optimize their personal computing environments while minimizing their overall cost of ownership over time.

MKS Toolkit 10.4 and X/Server 10.4 are available to customers with current support or subscription by requesting an upgrade from <https://www.mkssoftware.com/support/upgradeform.asp>.

Highlights of MKS Toolkit 10.4

- Windows 11 and Windows Server 2022
 - Tested through Windows 11 Build 22000.21H2. Since Windows 11 is 64 bit only (x64 and ARM64) which matches the new native 64 bit installers in MKS Toolkit 10.4
- Visual Studio 2022
 - Visual Studio 2022 is recognized by the installer and used to set up “cc” wrappers for each variant of MKS Toolkit
- Native only 64 bit
 - Previous versions of MKS Toolkit were a mixture of x86 and x64 binaries (a hybrid install). MKS Toolkit 10.4 has 3 different installers, for x86, x64 and arm64 native binaries. Native x64 binaries make sense for Windows Server 2016 and later with the WOW64 layer removed.
- ARM64
 - Once native x64 binaries were being built, it was fairly easy to also build for ARM64. PTC recognizes that ARM is an evolving platform for Windows – but prefers MKS Toolkit use starts out as native binaries and not x86 or x64 “emulation”. MKS Toolkit 10.4 ought to be considered a beta release on ARM – but the platform has passed all regression tests and seems very stable. There was an ARM64 version Windows 10 which is untested. It is expected that Windows 11 will be the base release for all ARM64 usage.
- Clang 10.0.1 for NuTCRACKER Platform 10.4.
 - Please see [clang 10.0 release notes](#) for details of changes. As with MKS Toolkit 10.3, the NuTCRACKER platform may be accessed from VC++ or clang/clang++ compiled source. There is also an ARM64 target where an ARM64 NuTCRACKER Platform SDK is installed using `--target=aarch64-pc-mks-msvc`.
- Libc++ 10.0.1 for clang++ and Visual C++ 2022
 - Version 6 of libc++ is still used with Visual C++ 2019 but version 10 is added for use with the more compatible Visual C++ 2022.

- New pseudo tty implementation
 - Previous versions of MKS Toolkit used some code cribbed from the expect open source slave driver to implement a form of pseudo tty for sshd, telnetd, xterm, kterm and script. This implementation basically ran child processes debugged and intercepted calls to console read and writes. Rather than porting this to ARM64 it was decided to use the newer Windows API that provides a pseudo console. This should improve performance and reliability across all platforms (and allow you to debug processes running as children of these programs) where this API exists (Windows 10 build 1809 and Windows Server 2019 and later).
- New utility “lsmsi”
 - Microsoft used to have a very nice tool (msispy) to look at the installed state MSI delivered applications. PTC had built an MFC app to implement much of this for internal use when the Microsoft tool started to disappear. It has been useful enough to us that we thought we would share it with you in beta form for native x86, x64 and arm64 platforms.

PTC MKS Toolkit 10.4 Release notes: https://www.mkssoftware.com/docs/rn/relnotes_tk104.asp

PTC MKS Toolkit 10.4 Fixed Problems: <http://www.mkssoftware.com/support/104problems.asp>

Highlights of X/Server 10.4

- Windows 11 and Windows Server 2022
 - The MKS Toolkit was given native only installers and binaries – mostly because of the option to remove the WOW64 layer from recent Windows Server releases. Given that the primary target platform for X/Server is a workstation/client version of Windows, version 10.4 is still a hybrid install having many x86 pieces.
- ARM64 native install and binaries – for Windows 11
 - Unlike the intel versions – version 10.4 of X/Server for Windows 11 (while it should still be considered a beta release) is almost entirely Arm64 native binaries.

PTC X/Server 10.4 Release Notes: https://www.mkssoftware.com/docs/rn/relnotes_mkxs104.asp

PTC X/Server 10.4 Fixed Problems: <http://www.mkssoftware.com/support/xs104problems.asp>

For the most up-to-date information concerning this release, or for detailed information on new features in PTC MKS Toolkit and PTC X/Server, please visit the [PTC eSupport Portal](#). To ensure you stay fully informed of new information as it happens, we recommend you subscribe to our news & alerts feed. In the [PTC eSupport Portal](#), navigate to Tools, then Manage Notifications. *Important Note: if you have previously subscribed, we suggest you verify the subscriptions you selected are still active.* If you have any questions, log a support case or telephone (800-477-6435).