



What's New in Platform Builder 7

Windows Embedded Compact 7 Technical Article

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Abstract

This article describes the new features and the functionality enhancements in Platform Builder 7. Use Platform Builder 7 to design, create, build, test, and debug a Windows Embedded Compact 7 OS design.

Introduction

Platform Builder 7 for Windows Embedded Compact 7 provides all the tools needed for developers to quickly create and build embedded systems. Platform Builder is an integrated development environment (IDE) for building customized embedded platforms based on the Windows Embedded Compact 7 OS. The listing in this article of new features and functionality for Platform Builder 7 is not comprehensive but covers the major new features and enhancements to Platform Builder 7.

What's New in Platform Builder 7

Compiler

- **Embedded-Application Binary Interface (EABI)** calling convention (-Gx command line switch). The EABI calling convention is more efficient than the existing implementation. EABI provides better performance for function calls that have floating-point parameters.
- **ARM Vector Floating Point (VFP)**
 - Now supported by the floating-point C runtime.
 - Hardware VFP support can be enabled by an OEM in a Board Support Package (BSP).
 - Kernel no longer attempts to auto-detect VFP.
 - **VfpOemInit** function for OEMs to call to initialize hardware VFP support.
 - Full in-lined VFP can increase floating-point-intensive performance by 20 times or more over the previous integer emulation code.
- **ARMv5, ARMv6 and ARMv7 compiler support** that provides native code generation, taking advantage of ARM version-specific instructions.
- **OpenMP compiler switch and runtime** with API that supports shared-memory parallel programming in C/C++.
- **Post-Link dependency checker** for checking dependencies in pre-SYSGEN linking scenarios.

Checked Build Availability

Checked builds (or debug builds) now make it easier to identify and diagnose OS-level issues. Checked builds have the same optimizations as retail builds, plus they have some of the macros of debug builds enabled (DEBUGMSG, DEBUGCHK, ASSERT).

Debugger and Connectivity

- **Conditional breakpoints** that occur when a condition evaluates to true.
- **Data breakpoints** that break when a virtual memory address is written; a command-line interface is provided for Platform Builder.
- **Thread affinity** that supports the reliable stepping through of multithreaded code.

- **Improved connectivity and user experience** where a device status window shows the connection status when downloading to a device or when connected to a device.
- **SMP support** is available with the support of symmetric multi-process-capable (multi-core) chips while maintaining compatibility to debug single-core from new host.

IDE

- **Faster install** because an install no longer includes a multi-gigabyte prebuilt OS.
- **Configurable IDE options**
 - XLM data files used to compose and display the user interface.
 - Custom build commands that can easily change the behavior of the build and rebuild menu items.
- **New Platform Builder 7 script support** simplifies the automation of common Platform Builder 7 tasks together with combining build automation with device automation.
- **Enhanced error-handling** and a **new error list parser** that generates an error list for both live builds and post-build diagnosis.
- **Improved solution explorer view**
- **Support of alternate release directories**

New Remote Tools

- **New Remote Tools Framework (RTFX)** tool development is available to create your own remote tools.
- **New Time Line Viewer** tool that integrates data from three tools: **Kernel Tracker**, **Performance**, and **Power Monitor**.
- **New Profiler** tool that provides application and kernel-level profiling of processes running on the OS.
- **New Resource Consumer** tool used to adjust the available CPU, memory, storage, and process resources that are available on the device to compare the resulting effect on device stability and performance.
- **New Resource Leak Detector** tool that reports resources not freed in native applications/modules.
- **New System Information** tool that displays information about the properties and system settings of devices.

Windows Embedded Developer Update

The **Windows Embedded Developer Update** tool makes it easy to stay current with the most recent Windows Embedded innovations, features, and product updates. Developers can receive automatic notification, access to, and quick installation of Windows Embedded updates into their development environment.

Conclusion

The addition of new features and functionality enhancements to the compiler, Checked builds, debugger, IDE, and remote tools make it easier than ever to design, create, build, test, and debug a Windows Embedded Compact 7 OS design. The listing in this article of new features and functionality for Platform Builder 7 is not comprehensive. In addition to those listed in this article, a user can expect to discover other new features and enhancements.

Additional Resources

- [Windows Embedded website](http://go.microsoft.com/fwlink/?LinkId=183524) (http://go.microsoft.com/fwlink/?LinkId=183524)

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