

Wind River Workbench 3.1

Developing device software means choosing from a range of tools and development environments, from command line to generic Eclipse to full commercial suites. Many developers feel they must trade off short-term productivity and familiarity with tools they use now for the extensibility that a commercial-grade integrated development environment like Wind River Workbench offers.

As organizations implement devices based on complex 32-bit, 64-bit, and multicore architectures, free or legacy tools are no longer sufficient. Developers need a scalable tools platform that is highly productive to use, flexible, and tightly integrated with their operating systems to improve time-to-market for advanced silicon requirements.

Rapid Application Development

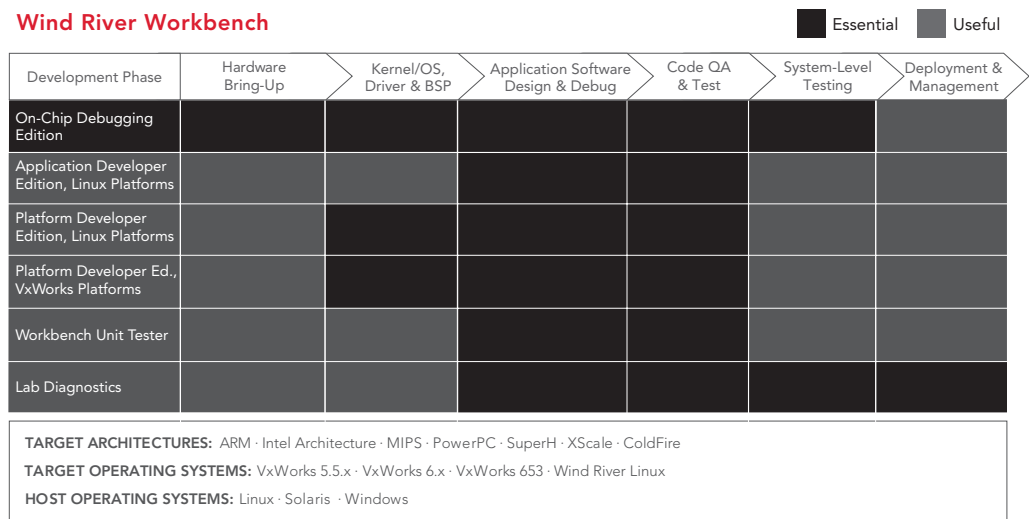
Wind River Workbench is designed from the ground up to make even the most complex software projects less challenging for the most seasoned developers and helps dramatically reduce the learning curve for new programmers. Since Workbench is easy to learn and use, its intuitive Eclipse-based views and perspectives help developers find and fix problems in complex code early on. Workbench accelerates application development, helps reduce device code complexity, improves code quality, and shortens time spent in test cycles. Using native Eclipse integration capabilities, Workbench enables developers to take advantage of home-grown or commercial plug-ins for application design, development, and test to further speed application development and reduce time-to-market.

The Integrated, Open, Extensible Development Solution

Most proprietary development solutions limit flexibility, restrict interoperability of systems and tools, and actually increase the costs of development. Wind River has taken a different approach to helping our clients succeed. Based on the Eclipse platform, Wind River Workbench is a collection of tools that accelerates time-to-market for developers building devices with VxWorks and Wind River Linux. Through tight integration with the industry's leading real-time operating system (RTOS) and the leading device Linux distribution, Workbench offers the only end-to-end, open standards-based collection of tools for device software design, development, debugging, test, and management.

Powerful Tools for the Entire Development Life Cycle

From hardware and board initialization to device management, Workbench offers deep capability throughout the development process in a single integrated environment, with complete platform integration and tools for debugging, code analysis, advanced visualization, root-cause analysis, and test.



Wind River Workbench integrates the industry's most powerful development tools to monitor, analyze, and debug at each phase of development, providing early detection of potential defects and increasing the overall quality and reliability of your product. Workbench's support for multiple operating systems, architectures, and programming languages gives companies unprecedented flexibility to standardize

Figure 1: Wind River Workbench for all phases of the development life cycle

on a single development framework across the enterprise. Workbench offers tightly coupled analysis and instrumentation tools for Wind River frameworks, so customers have only one tool suite to purchase and manage for both VxWorks and Linux development.

Workbench can be extended via IPL Cantata++ for Wind River Workbench (formerly Wind River Workbench Unit Tester), a plug-in for unit testing, code integration testing, and test coverage analysis. Also, Workbench On-Chip Debugging aids system developers early in the development cycle, while Wind River ICE 2 and Wind River Probe provide hardware-based debugging capabilities.

Simplifying Device Software Complexity

Wind River Workbench is easy to learn and use, with intuitive tools that help developers find and fix problems in complex code early on. Workbench accelerates application development, helps reduce device code complexity, improves code quality, and shortens time in test cycles. Using native Eclipse integration capabilities, Workbench enables developers to take advantage of other application design, development, and test plug-ins to further speed application development.

Eclipse Leadership

Wind River is a leader in the Eclipse development community and standards body, guiding the top-level Device Software Development Platform (DSDP) project. In association with the DSDP, Wind River has contributed more than 300,000 lines of code to Eclipse to improve device software development capabilities. Wind River leads the Device Debugging and Target Management subprojects that are an integral part of DSDP. Our active partner community—including Coverity, IBM Rational, I-Logix/Telelogic, IPL, Klocwork, and National Instruments—offers Eclipse-based solutions that extend Workbench within the same Eclipse shell.

Development Capabilities in Workbench 3.1

VxWorks-Specific

- VxWorks symmetric multiprocessing support (SMP and AMP)
 - System and task mode debugging across multiple cores
 - Task migration visualization
 - CPU utilization per time unit
 - Ready state analysis
 - Performance profiling across multiple cores
 - Function tracing across multiple cores
 - Simulator support for multiple cores
 - Host-based simulation of multiple processor systems
- Debugging over MIPC with WDB proxy for VxWorks A MP systems
- VxWorks Source Build configuration tool

Wind River Linux-Specific

- Enhanced 64-bit target profiling and analysis tools support
- GCC 4.x compiler support
- ARM compiler support
- Patch Manager with support for the open source utility quilt

Wind River Workbench

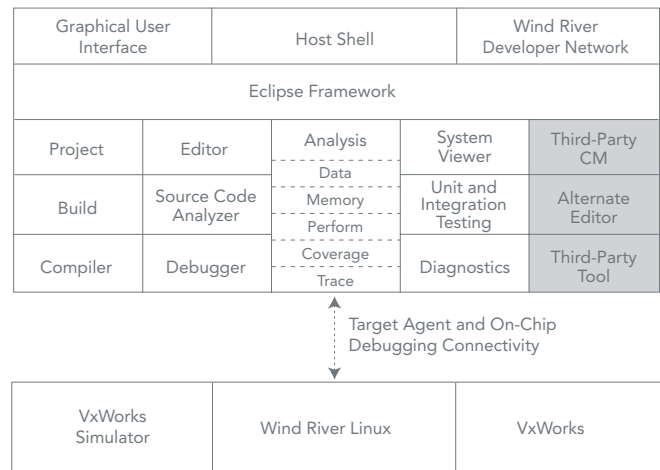


Figure 2: Wind River Workbench component architecture

- Enhanced GUI interface for QEMU emulator
 - Dynamic printf() for rapid instrumentation of compiled code
 - Emacs integration for debugging and building VxWorks and Wind River Linux targets
 - Integration with Eclipse C/C++ Development Tooling (CDT)
 - Increased APIs and compatibility with Eclipse plug-ins
 - Incorporation of CDT Editor, Target Management, and Device Debugging views
- Performance and scalability enhancements for large applications
- New Workbench Welcome Experience
- New Host OS Support: Windows Vista, Ubuntu, Fedora, open-SUSE, Red Hat and SUSE Enterprise editions, Solaris 10
- Based on Eclipse 3.4 framework

Workbench Components

- Eclipse framework (Ganymede) 3.4
- C/C++ Development Tooling (Eclipse CDT project) 5.0
- DSDP 1.0
- Project System and Build System
- Index-based global text search-and-replace
- Wind River Compiler for VxWorks; Wind River GNU Compiler
- Debugger
- Host Shell and Kernel Shell
- VxWorks Kernel Configurator; Linux Kernel and User Space Configurators
- Linux File System Configurator
- Run-time analysis tools:
 - System Viewer
 - Memory Analyzer (formerly MemScope)
 - Performance Profiler (formerly ProfileScope)
 - Data Monitor (formerly StethoScope)
 - Code Coverage Analyzer (formerly CoverageScope)
 - Function Tracer (formerly TraceScope)
- Wind River Workbench, On-Chip Debugging Edition
- On-chip debugging hardware: Wind River ICE 2; Wind River Probe; Wind River Trace 2
- IPL Cantata++ for Wind River Workbench

Workbench Acceleration Services

Wind River Workbench Acceleration Services is a comprehensive suite of offerings to help your development team speed integration of Workbench into daily processes and workflow. Our services professionals help developers quickly and fully achieve the benefits of Workbench by smoothing the technology adoption process. Workbench Acceleration Services solve the technical, process, and knowledge challenges typically associated with the implementation of an integrated development environment such as Workbench.

A Complete Solution

Working with Wind River can significantly improve your odds for success. A stable, publicly held company, Wind River provides a complete solution for device software development. In addition to Workbench, our solution includes a Service Capability and Performance (SCP)–certified customer support organization, a CMMI Level 3–certified professional services organization, and an extensive ecosystem of partners. This comprehensive offering includes the following:

- Improves time-to-market with tools that help developers visualize complex configurations, debugging, and test
- Makes managing your tools investment easier through common adoption of Eclipse and Workbench across your organization
- Enables developers to take advantage of additional design, development, and test plug-ins through Eclipse integration
- Simplifies third-party tools integration and allows you to choose best-of-breed add-ins



Wind River is the global leader in Device Software Optimization (DSO). We enable companies to develop, run, and manage device software faster, better, at lower cost, and more reliably. www.windriver.com

© 2009 Wind River Systems, Inc. The Wind River logo is a trademark of Wind River Systems, Inc., and Wind River and VxWorks are registered trademarks of Wind River Systems, Inc. Other marks used herein are the property of their respective owners. For more information, see www.windriver.com/company/terms/trademark.html. Rev. 01/2009