

WIND RIVER

Wind River Linux 4

Wind River Linux is the market-leading commercial embedded Linux development platform and the first to bring device manufacturers the advantages of open source software without the risks. Built to embed, Wind River Linux assembles, integrates, and validates all the components companies need to develop, test, and support highly differentiated devices quickly and cost-effectively.

Based on the Linux 2.6.34+ kernel and gcc 4.4.1/eglibc 2.11/gdb 7 toolchains, Wind River Linux 4 offers customers the latest available technology with the greatest possible stability. It supports the full range of embedded hardware architectures and offers the industry's broadest selection of virtualization and multi-core offload capabilities, from kernel-based KVM to the multi-OS Wind River Hypervisor, enabling customers to innovate with today's most advanced multiprocessors.

Complete Platform Enables Innovation

Wind River Linux provides everything you need to create powerful devices based on the most flexible operating system available today. Start development on day one, choosing from hundreds of open source packages, and benefit from the industry's broadest hardware support for all major embedded architectures. Build on thoroughly tested and fully supported open source code that allows you to exactly trace the lineage of your product from its open source origins through any modifications from the addition of patches, packages, or proprietary code. This transparency is invaluable when it's time to test, debug, and document your licenses or modify your product.

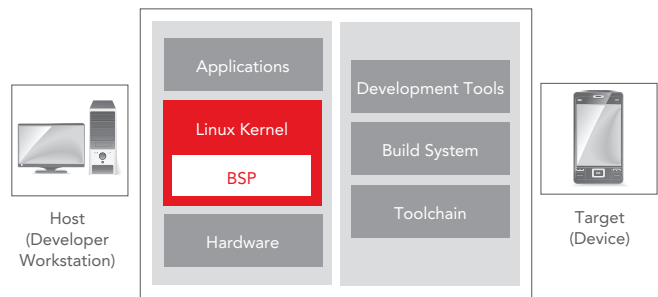
Preconfigured Profiles Speed Time-to-Market

Wind River Linux provides preconfigured system profiles for specific industries and device types to fast track your development process. By identifying, assembling, and integrating commonly used packages, Wind River Linux saves you weeks or months of non-differentiating labor, so you can focus your resources on creating highly customized devices.

Powerful Build System Reduces Complexity

From easy installation and modification of the kernel and root file system to the cross-compiling unique to embedded development, Wind River's open, intuitive build system provides a methodology for saving time, achieving clarity, and managing, storing, and sharing parts of the development system among projects and teams, even across the largest companies.

Based on "layers," Wind River Linux Distribution Assembly Tool (LDAT) rationalizes and simplifies every step of the Linux development process, from reviewing and reversing changes to quickly addressing performance issues, bugs, or defects.



A complete embedded Linux development platform

Because a layer can be as small as a single package or as complex as a distribution, teams can use LDAT to expedite workflow and eliminate redundant effort. Layers also provide a simple and systematic way to separate open source and proprietary software.

Tools Choice Empowers Development Teams

Wind River Linux comes bundled with Wind River Workbench, the award-winning Eclipse-based development suite. Workbench not only provides deep capability across the entire development life cycle, it facilitates multi-OS and multi-core development and hosts a number of powerful plug-ins for analysis and on-chip debugging. Additionally, Wind River Linux embraces and extends the capabilities of open source tools, for example, adding full back-trace capability to oprofile and mpatrol—to make them more powerful and better suited to embedded development.

New in Wind River Linux 4, the Target Communication Framework facilitates communication between multiple hosts and targets. For developers who prefer command-line programming, Wind River Linux provides a rich set of tools.

Standards Compliance Ensures Quality

Wind River Linux was the first to be officially certified to the Carrier Grade Linux 4.0 specification. Wind River Linux 4 was built to comply with the next-generation CGL 5.0 requirements for high availability, serviceability, and real-time performance. Additionally, Wind River Linux 4 complies with the forthcoming Linux Standards Base 4 (LSB) requirements for application portability and open APIs. And Wind River Linux satisfies U.S. government export regulations.

Virtualization Solutions Leverage Latest Hardware

Through the Workbench development environment and Wind River Hypervisor, Wind River Linux users can take full advantage of the performance, cost, and power consumption benefits associated with asymmetric multiprocessing (AMP) and symmetric multiprocessing (SMP) and multi-core development for embedded systems, even in environments that require certification and real-time.

Wind River's market-leading multi-core and virtualization solutions are built on close partnerships with leading chip vendors and optimized for a range of leading hardware architectures as well as for Wind River's industry-standard real-time operating system, VxWorks. Wind River Linux 4 fully supports all Kernel Virtual Machine (KVM) capabilities of the Linux 2.6.34 kernel.

Commercial Advantages Mitigate Risk

Wind River Linux is commercial-grade and enterprise-ready thanks to the depth of test, maintenance, support, services, legal resources, and partners behind it:

- **Test:** Wind River is committed to providing quality products for both proprietary and open-source-based technologies. Our quality policies include formal code inspections, peer reviews, project reviews, program audits, and traceable requirements change management. Wind River Linux was created following a methodical process to thoroughly test key features on every supported reference configuration (defined by development host, kernel, and package configurations and supported board). Wind River Linux 4 underwent more than 300,000 automated test runs before release.
- **Maintenance:** To the Wind River Linux team, maintenance means not just keeping current with the open source community; it's a question of maintaining secure products in a fast-evolving and highly connected marketplace. We dedicate a team of full-time engineers to monitor and address the thousands of security alerts issued each year by the Linux community, government agencies, and other institutions worldwide. In addition, Wind River keeps you current with the latest patches, service packs, and updates so your project and your products are always up-to-date.
- **Customer support:** Wind River Linux provides global 24/7 local language support from Wind River's certified, award-winning support team.
- **Professional services:** Wind River Professional Services, a CMMI Level 3–certified organization, offers a Linux Services Practice that enables you to reduce risk and focus on development activities that add value and differentiate your product design. Our professional services team offers hardware and other customizations, time-to-market acceleration, and workforce augmentation to companies using Wind River Linux.
- **License management:** Wind River performs thorough legal reviews of the compilation and documentation of the General Public License (GPL) and other licenses that control each major release of Wind River Linux. Combining human legal expertise and proprietary automated tools, Wind

River examines each open source package that comes into the product to identify and resolve potential intellectual property issues before the product is released. Customers receive extensive documentation to assist them in the protection of their intellectual property.

- **Partner ecosystem:** Wind River's partner ecosystem ensures tight integration between our core technologies and those of the premier hardware and software companies we've chosen to build out our solutions. Our partners extend the capabilities of Wind River Linux by offering out-of-the-box integrations and support. Our team is trained to troubleshoot partner technologies in use with Wind River products.
- **Broad hardware support:** Wind River Linux 4 is supported on the full range of embedded architectures, including MIPS, MIPS64, ARM, x86, x86-64, and PowerPC and enabled with more than 60 board support packages (BSPs).

New in Wind River Linux 4

Kernel

- KVM paravirtualized device drivers (x86)
- perf/trace-cmd (ftrace)
- user space trace points
- kdb
- Autopatch for async BSPs

Packages

- 95 new packages
- 125 packages uprevved to latest open source versions
- 142 packages improved

User Space

- Componentization to streamline workflow
- Target side application compiler for x86 (32/640)
- New LSB templates for standard and CGL-compliant run-time libraries

Tools

- Easy package debug
- Enhanced visualization and analysis capability in many tools
- Application-as-package import capability
- Target Communication Framework

Power Management

- powertop for x86
- Kernel additions to Advanced Configuration and Power Interface (ACPI)
- Tickless kernel
- Low-power hypervisor

Wind River Linux Developer Community

- Peer-to-peer support and problem solving
- Resource sharing, use cases, and tips and tricks
- Roadmap visibility and input
- <http://developer.windriver.com/>

WIND RIVER

Wind River is a leader in embedded and mobile software. We enable companies to develop, run, and manage device software faster, better, at lower cost, and more reliably. www.windriver.com

© 2010 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. 10/2010