

WIND RIVER

Wind River ICE

As processors become more complex, developers need the best tools available in the market to fully leverage new technologies to differentiate their products, lower costs, and shorten time-to-market. Wind River ICE, a feature-rich JTAG debugging tool, provides industry-leading debug capabilities that enable users to accelerate the hardware and software development process in this complex target environment.

True Multicore Debugging Capability

Wind River ICE can be used to debug multiple processors at once, and it also provides simultaneous support for homogeneous or heterogeneous microprocessor architectures. This allows developers significant savings in their tools investment. Wind River ICE also offers the ability to debug complex multiprocessor systems with one debugging application.

Wind River ICE features Wind River's JTAG Server technology, which enables developers to:

- Access a single device on the scan chain, or multiple devices simultaneously to provide synchronous start and stop.
- Set breakpoints within a single microprocessor to halt the execution of multiple microprocessors.
- Make JTAG debugging connections to many microprocessors, regardless of their architecture.
- Establish and remove connections without affecting any microprocessor or device on the scan chain.

Scalable, Upgradeable Solution

Wind River ICE grows with your project needs. It enables developers to add capabilities, such as trace support, through a simple plug-in module. The broad processor and operating system support offered for Wind River ICE allows developers to use the tool in a wide range of projects across the organization. With the easy addition of processor families via software upgrades and interchangeable adapters for connection to target boards, Wind River ICE makes protecting your initial hardware investment an easy task.

Remote Debugging

Wind River ICE supports a 10/100 Ethernet connection and can be remotely located and accessed via an internal IP network or the Internet. This facilitates the ability to support remote debugging, when your device and/or emulator are not located next to the debugging host. With Wind River ICE, your device and development team can be located anywhere. By using the target console port, Wind River ICE supports remote debugging by allowing developers to backhaul the serial output port of the target device via an Ethernet connection.

Full Integration with Industry-Leading Technologies

Wind River ICE is fully integrated with Wind River Workbench, the industry's leading JTAG development environment that brings together hardware and software development debugging and analysis tools into a standards-based Eclipse framework. Wind River ICE provides leading download speeds and flexibility in the development environment. The tool also supports other leading debugging tools provided by Wind River, including the Wind River On-Chip Debugging API, Wind River Trace, and Wind River Connect.

Features

Wind River ICE lets you control a target by using the on-chip debugging services embedded in the microprocessor of that target. It operates effectively as a standalone system, communicating with the on-chip debugging services resident in the microcode of the chip. Wind River ICE includes the following features:

- **Multicore debugging:** Enables users to debug multiple devices on a scan chain using JTAG Server.
- **JTAG Server:** Provides the ability to control and manipulate multiple devices on a single scan chain ring.
- **High-performance JTAG:** Eliminates slow download times and run control when developing with on-chip debugging microprocessors.
- **High-speed Ethernet connection:** Provides high-speed download to the target.



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- **On-chip debug target run control:** Allows users to start and stop the target, set internal hardware and software breakpoints, take a target snapshot, reset the target, step one statement or instruction into function calls, and step over or out of a function.
- **Built-in hardware diagnostics:** Includes a comprehensive suite of RAM tests, scope loops, and CRC tests.
- **Target console port:** Permits remote monitoring of applications and the serial port by channeling the serial port back through the network to the host.
- **Additional custom registers:** Supports 32 custom register groups, with a total of 960 custom registers.
- **Flexible boot options:** Provides three booting options: dynamic boot, static boot, and remote boot. Dynamic boot allows developers to boot the device without the application loaded; static boot will load a default target driver when Wind River ICE is booted; remote booting allows Wind River ICE to boot from firmware via TFTP from a remote host.
- **Wind River ICE firmware update:** For future expansion and upgrades, you can send new firmware to the ICE unit using the Firmware Update Utility in Wind River Workbench.

Technical Specifications

Host OS Support

- Red Hat Enterprise Linux 4, 32-bit, x86
- Red Hat Enterprise Linux 5, 32-bit, x86
- Red Hat Enterprise Linux Workstation 5, 64-bit, x86-64
- Fedora Core 7, 32-bit, x86
- OpenSUSE Linux 10.2, 32-bit, x86
- SUSE Linux Enterprise Desktop 10, 32-bit, x86
- Solaris 9 and 10, 32-bit, SPARC
- Windows XP Professional with Service Pack 2, 32-bit, x86
- Windows Vista, 32-bit, x86

Host Operating System Requirements

Specific host OS requirements depend on the host software connected to Wind River ICE. Refer to product information for Wind River Workbench and On-Chip Debugging API for more details.

Target OS Support

Wind River ICE provides support for the following target operating systems:

- VxWorks 6.3, 6.4, 6.5, and 6.6
- VxWorks 5.5
- Wind River Linux, Wind River Real-Time Core, as well as Linux 2.4.26 and above versions of the Linux kernel, including 2.6.x versions.
- Express Logic's ThreadX

Customizable target OS awareness capability for Wind River Workbench, On-Chip Debugging Edition enables support for other target operating systems.

Processors and Operating Systems

Wind River ICE supports a wide range of processors and operating systems. Please visit www.windriver.com/products/OCD/workbench_OCD for a current list. Supported operating systems include Wind River's industry-leading VxWorks and Linux, in addition to kernel.org Linux and ThreadX. Other commercial operating systems and in-house proprietary operating systems can be integrated by Wind River Professional Services.

How to Purchase Wind River Solutions

Please visit www.windriver.com/company/contact/index.html to find your local Wind River sales contact. To have a sales representative contact you, please call 800-545-9463 or write to inquiries@windriver.com.