

Wind River Workbench, On-Chip Debugging Edition

The introduction of 32-bit and 64-bit processor technologies has created new challenges that require an innovative approach to JTAG debug and analysis. Wind River offers the industry's leading Eclipse-based development environment for on-chip debugging that takes you from early hardware bring-up to test and manufacturing. The advanced hardware diagnostics and patent-pending multicore debugging capabilities of Workbench help you unlock the power of today's advanced microprocessor technology.

Wind River Workbench On-Chip Debugging software is based on the industry-standard Eclipse framework, providing the industry's leading Eclipse-based JTAG debugging environment that can be easily extended through in-house, third-party, open source, or commercially available Eclipse plug-ins. For example, you can integrate software version control and change management solutions like CVS and ClearCase. You can also integrate UML-based software visualization and code-generation tools, enhanced static analysis solutions, and simulation/virtualization software.

Wind River on-chip debugging solutions enable you to take advantage of the growing Eclipse ecosystem to improve the collaboration between hardware, firmware, and software developers, ensuring a smooth handoff in the debug process.

Centralized, Project-Oriented Environment

Workbench On-Chip Debugging provides a centralized, standards-based development environment that automates the debugging and analysis process. Its project-oriented methodology simplifies the handoff between the different phases of development, from initial hardware bring-up to firmware design, OS implementations, and platform and application development.

The Workbench development environment efficiently manages hardware and software development projects. Its flexible, configurable project interface enables you to customize project data based on type of project and development activity. Wizards and utilities walk you through the creation of new projects to get you up and running quickly.

From a single console, you can see information about multiple project files, multiple targets, and the software running on those targets. Because different stages of development require different debug views and capabilities, you can specify a particular developer perspective that provides only the information relevant to a specified task.

The Workbench On-Chip Debugging perspective delivers the starting point for JTAG debugging, including the views required for connection to Wind River emulators, as well as the specific tasks associated with JTAG debugging.

Key Features

- An Eclipse-based JTAG debugging solution reduces development costs and extends easily with third-party or open source tool integration.
- A centralized project-oriented environment simplifies end-to-end debugging.
- Advanced editing capabilities reduce the complexity of the edit-compile-debug cycle.
- Connection and configuration management streamlines connections to multiple targets.
- Industry-leading features support debug of an entire system from a single console.
- Flexible flash programming quickly resolves common problems.
- Internally and externally buffered trace enables debugging of complex and intermittent code defects.
- Patent-pending multicore technology debugs even the most complex 32-bit and 64-bit multicore processors.
- Extensive scripting capabilities are included.
- A wide range of processor and operating system support is included.

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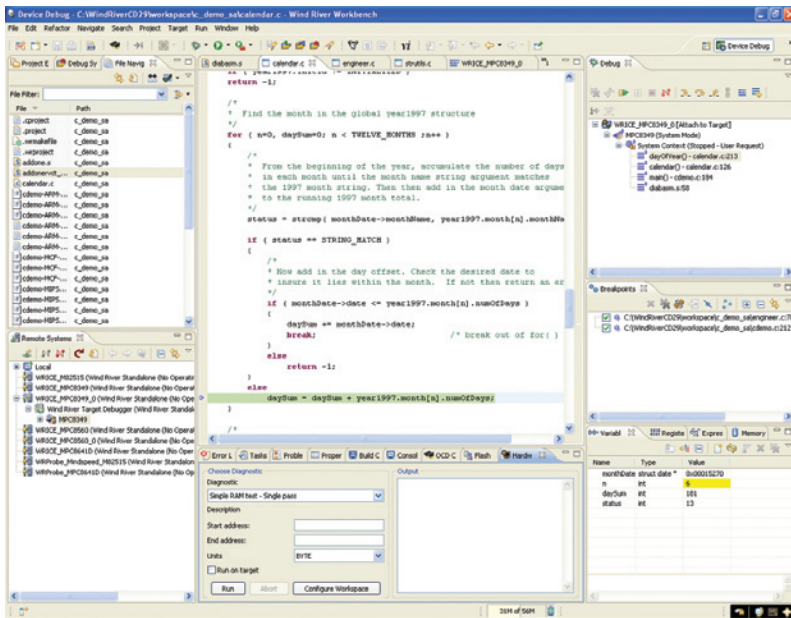


Figure 1: Wind River Workbench, On-Chip Debugging Edition

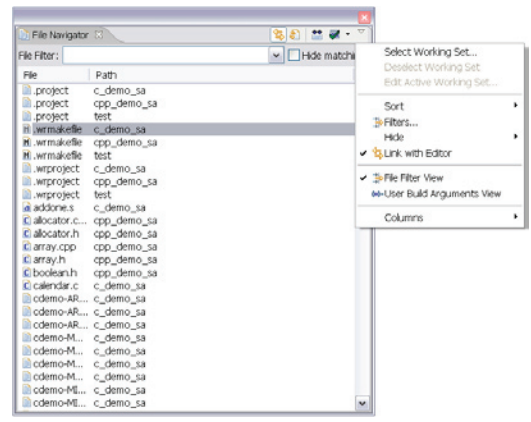


Figure 3: Workbench File Navigator allows you to quickly find symbols and functions

Perspective in Eclipse

“Perspective” is a specific term in the Eclipse platform that refers to the visible actions and views within a window. It includes an input attribute, which defines the resources in a workspace and a type attribute, which defines the actions and views in the user interface.

Project Navigation Capabilities

Advanced project navigation capabilities reduce the complexity of managing multiple projects. You can organize and manage all the software components in a device software development project. Moreover, you can create and share projects among other development team members, reducing setup and configuration time and improving collaboration.

When combining software debugging with on-chip debugging, you can tighten the project handoff between hardware and software developers.

Integration with CVS enables you to identify when other developers are editing the same code, in order to prevent editing conflicts. The Workbench file navigator feature also allows you to quickly search and find symbols and functions within all files loaded in the project workspace, shortening development time.

Comprehensive Build System

The Workbench On-Chip Debugging Build System provides the tools, options, and parameters for device software build management, enabling you to define everything from global build parameters to fine-grain control of an individual file. By using a single build environment, you can reduce the time associated with managing multiple environments. With build capabilities built directly into the software, you have a centralized solution for the entire edit, compile, and debug process.

Advanced Editing Capabilities

The Editor provides state-of-the-art editing, including vi emulation. Performance-enhancing features, such as code completion, parameter hinting, and syntax highlighting of source files, improve edit-compile-debug cycle time and reduce errors. The Editor is tightly integrated with the Project System, Build System, Source Code Analyzer, and Debugger in Workbench, enabling you to move back and forth easily between various source-code debugging tasks.

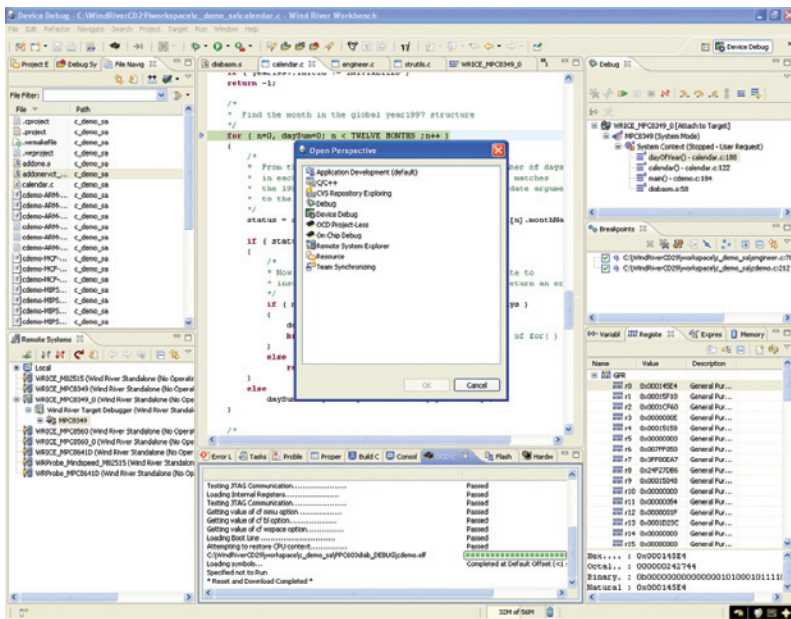


Figure 2: Workbench On-Chip Debugging allows you to specify perspectives relevant to a specified task

JTAG Editor

In addition to software editing capabilities, Workbench On-Chip Debugging offers a JTAG Editor to create and modify board configuration files. The Editor allows you to connect a Wind River JTAG emulator to a board with multiple devices on its scan chain. The Editor then provides a graphical view of the layout of devices on the scan chain, expediting the update of board configuration files.

When you only have one or two devices in a scan chain, it is easy to set up the connections and configurations. As devices are added, complexity increases—and so does the chance for error. A graphical view enables you to easily see and configure the devices in the chain, so you know how to configure the emulator to support the correct number of devices. The JTAG emulator will also need to know how to address the various devices on the scan chain, so it can access specific devices for a debug task while the rest of the devices are set in bypass mode. The Editor saves this information and downloads it to the emulator.

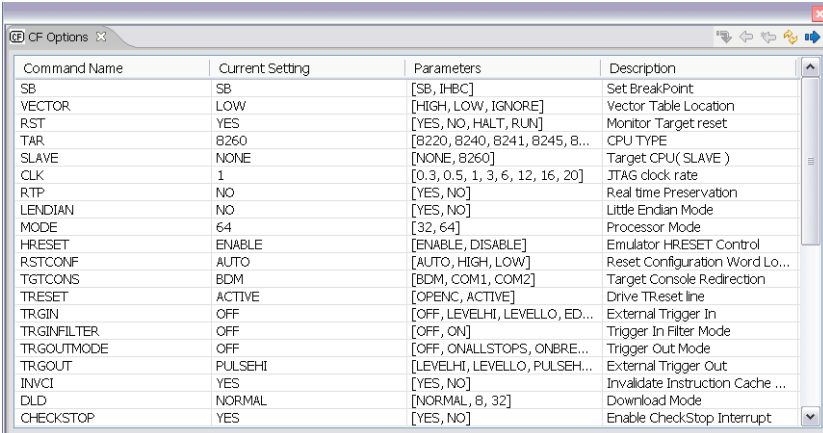
Connection and Configuration Management

Workbench On-Chip Debugging centralizes all target configuration and connection management in a single graphical view, eliminating the need to toggle between multiple GUIs or manually configure connections via CLI. These connections can be cores, processors, processes, or simulators. You can even manage multiple connections simultaneously.

Eclipse Launch Capability

The Quick Target Launch Utility in Workbench On-Chip Debugging leverages the powerful Eclipse launch capability, enabling device software developers to easily define cross-target launches. Developers may also select from a list of predefined launches, either taking control of an already running target or starting a target from reset, which results in the user's quick movement from target launch selection to debugging complex hardware and software problems.

Launches may be used to establish a target connection, download an image to



Command Name	Current Setting	Parameters	Description
SB	SB	[SB, IHBC]	Set BreakPoint
VECTOR	LOW	[HIGH, LOW, IGNORE]	Vector Table Location
RST	YES	[YES, NO, HALT, RUN]	Monitor Target reset
TAR	8260	[8220, 8240, 8241, 8245, 8...	CPU TYPE
SLAVE	NONE	[NONE, B260]	Target CPU(SLAVE)
CLK	1	[0.3, 0.5, 1, 3, 6, 12, 16, 20]	JTAG clock rate
RTP	NO	[YES, NO]	Real time Preservation
LENDIAN	NO	[YES, NO]	Little Endian Mode
MODE	64	[32, 64]	Processor Mode
HRESET	ENABLE	[ENABLE, DISABLE]	Emulator HRESET Control
RSTCONF	AUTO	[AUTO, HIGH, LOW]	Reset Configuration Word Lo...
TGTCONS	BDM	[BDM, COM1, COM2]	Target Console Redirection
TRRESET	ACTIVE	[OPENC, ACTIVE]	Drive TRreset line
TRGIN	OFF	[OFF, LEVELHI, LEVELLO, ED...	External Trigger In
TRGINFILTER	OFF	[OFF, ON]	Trigger In Filter Mode
TRGOUTMODE	OFF	[OFF, ONALLSTOPS, ONBRE...	Trigger Out Mode
TRGOUT	PULSEHI	[LEVELHI, LEVELLO, PULSEH...	External Trigger Out
INVCI	YES	[YES, NO]	Invalidate Instruction Cache ...
DLD	NORMAL	[NORMAL, B, 32]	Download Mode
CHECKSTOP	YES	[YES, NO]	Enable CheckStop Interrupt

Figure 4: Workbench On-Chip Debugging graphical display allows visualization of all CF options associated with the Wind River emulator for a specified target

the target, load symbol information into the debug engine, or run scripts, or any combination of these tasks. In addition, users may create batch launches, which group together individual launches and enable Workbench On-Chip Debugging to establish connections or download software to multiple cores or processors simultaneously.

On-Chip Debugging Command Shell

The On-Chip Debugging Command Shell provides CLI access to the target via a Wind River emulator. The Command Shell and associated logging capabilities allow you to make target and emulator configuration adjustments. You can also write low-level scripts for target initialization and download sequences to automate commonly occurring tasks.

The Command Shell is used to load target register files into the emulator then execute low-level commands through the emulators. Sessions in the Command Shell can be recorded and replayed as scripts. There are two command log options: input logging and full logging. Input logging only records input commands, while the full logging option records input commands and their associated results. These files can be saved and played back later.

Console for Target Status Reporting

Workbench On-Chip Debugging also includes a console specifically for JTAG connections, providing data on target connection status and the events executing on the target, verifying that a given task executed as instructed.

Graphical Display of All Configuration File Options

To expedite the configuration process, Workbench On-Chip Debugging provides a target register configuration file (CF) for the majority of supported processors. You can customize these configuration files using the Workbench On-Chip Debugging CF Options view.

With the graphical display, you can visualize all the CF options associated with the Wind River emulator for a specified target, including command name, current setting, parameters, and description data.

Expanded Register View Capability

Get your target up and running quickly with the built-in information on the bit-level registers. With one click, you can access a wide range of information on peripheral registration configuration options. This eliminates the time-consuming task of sorting through processor documentation.

In addition, you can create a graphical representation of custom peripheral register groups to more effectively manage custom configurations. Specific capabilities include:

- Target registration configuration file utility to modify the target initialization file
- Custom register files to manage additional peripherals
- Bit-level details on a specific processor's peripheral register configuration options

Binary Upload and Compare Utility

The Binary Upload and Compare Utility enables developers to quickly extract information from any area of memory on the target system, assuaging worries about overwriting the boot ROM or boot loader shipped with the processor vendor's reference board. This capability is particularly useful when trying to save/store boot ROMs or boot loaders that may be shipped with a target for safekeeping on the host PC.

The Binary Upload and Compare Utility enables developers to graphically select an area of memory on their device, including sectors of flash, and upload the image into a file on their host PC. Once the image is stored on the host PC, it can be used by the Compare Utility to identify and resolve file corruption issues on the target system. The Compare Utility compares images on the target with the content of binary files stored on the host PC. Any differences between these files are recorded, and the information is displayed in the Workbench On-Chip Debugging Editor view.

Analysis and Diagnostics

Advanced Hardware Diagnostics

At the hardware level, Workbench On-Chip Debugging provides comprehensive hardware diagnostic capabilities that eliminate the need for certain standalone hardware diagnostics tools, reducing capital and training costs. By integrating preconfigured test routines and scope loop tests into a single interface, you do not have to spend valued development time writing your own test tools for data and address bus diagnostics.

Wind River provides robust and integrated software that quickly isolates and resolves hardware layout and bus issues. You are guided by a set of wizards to configure and run the various diagnostic utilities:

- Address and data bus tests verify address and data bus performance and quickly identify and resolve issues.
- Cyclic redundancy check (CRC) calculations are made for a defined section of memory.
- A range of RAM tests, from simple to full, write a consecutive pattern of three values into a defined area of memory,

then read it back for errors or execute in a single pass or continuous test pattern, walking a "1" bit through memory and then "0" bit, reading the values back as they are written.

- Scope loop tests put a known pattern on the address and/or data bus for monitoring by an external data scope.

Source Code Analyzer

The Source Code Analyzer simplifies the process of documenting the code structure of a file system to support effective integration of large project file systems. This is especially valuable when multiple developers are writing code, code is reused among projects, or newly developed code must be integrated with a legacy code base. You can quickly and completely understand the code written by someone else and integrate it effectively into the existing project. In addition, you can instantaneously see the impact of a proposed change in the existing code, improving overall development productivity and reducing errors.

Statistical Code Profiling

Built-in performance analysis and code coverage profile software identify system bottlenecks to optimize software execution on a target processor. Unlike a typical profiling solution, no configuration or instrumentation is required. It is easy to select a function from the statistical code profiler, then see where the function resides in the Source Editor view.

Profiling is as simple as identifying a section of code. The Workbench On-Chip Debugging software does the rest, displaying the results in a chart, table, or histogram that includes:

- Function name
- Full path to the function
- Start and end addresses for the function
- Percentage of time within the function for all functions to be executed on the target

Cache Memory Analysis

Tracking cache coherency issues with main memory can be a challenge for a single-core device application. The complexity of multicore implementations makes it almost impossible without sophisticated cache memory analysis. The cache analysis capabilities in Work-

bench On-Chip Debugging monitor execution on one or more targets and identify differences between data stored in memory versus data stored in cache. You can quickly identify the source code and function for each instruction in cache, and easily toggle to its location in the Editor/Source Code view or symbol browser.

Comprehensive JTAG Debugging Engine

Debugging is the most time-consuming and costly phase of any development cycle. Wind River provides a single console for debugging multiple projects across multiple targets. With these debug collaboration capabilities, different developers can easily share information, dramatically improving debug cycle time.

The advanced debug engine supports multiple debug connection types, including JTAG tools, agents, and simulators, providing maximum flexibility in debugging both hardware and software from the early hardware diagnostic stages to application development. You can debug from any host OS to any target OS. Multicore debugging is easier, since you can set cross-correlated break-points and track information across multiple targets.

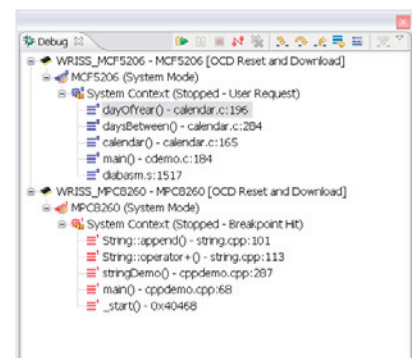


Figure 5: Debug view monitors, controls, and manipulates active tasks

Debug visualization shows at a glance the processors being debugged and the active debug tasks through color-coded and numbered debug sessions. It provides the following information:

- **Standard run control capabilities:** Start/Resume, Stop/Suspend, Terminate, Step-In, Step-Over, Step-Return, Source Mode, Function Mode, and Assembly Mode debugging

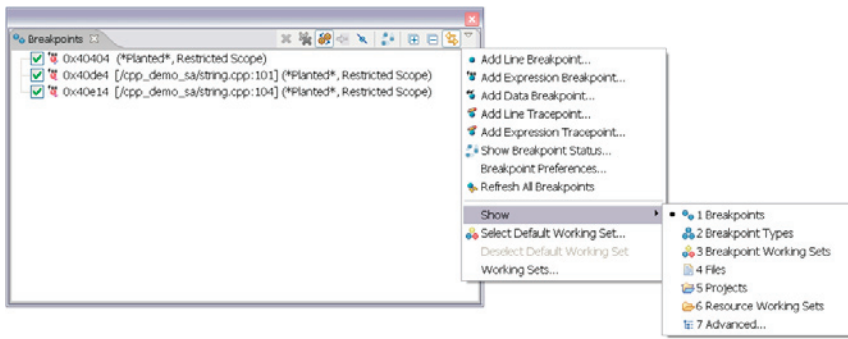


Figure 6: Graphical view of all breakpoints on a target improves management of multiple breakpoints

- **Data on the target or process attached to the target:** Stack frame, threads, processes, and tasks
- **System information:** Memory views, Register views, Watch view, local and global variables
- **Multicore Debug view of the stack frame:** Every process or target running under debugger control displayed in the Debug view, color-coded, and numbered
- Multicontext awareness, allowing breakpoints to stop the specific core or processor in context with an event
- Ability to stop the entire system when the event the breakpoint is associated with occurs
- Range of icons to manage breakpoint configuration and settings
- Execution of a Host Shell script upon hitting a breakpoint

Common Scripting Framework

Workbench On-Chip Debugging comes with a Host Shell scripting framework to control all debugger activities. It supports standard scripting languages, such as GDB command syntax for low-level debug commands and TCL or C interpreters for high-level flow control. The Host Shell is supported on Linux, Solaris, and Windows hosts.

Breakpoint Options

Breakpoints are a valuable tool used to stop the target or process running on the system when a specific user-defined event occurs. Workbench for On-Chip Debugging supports hardware and software breakpoints configured as either data or expression breakpoints. A graphical view of all breakpoints on a target provides more effective management of multiple breakpoints. You can set breakpoints from the Breakpoint, Source/Edit, Register, and Memory views.

Specific breakpoint features include:

- Hardware breakpoints
- Software breakpoints
- Expression, line, or data breakpoints
- Enablement and disablement of any event in the system
- Saving to a file and redeploying among multiple projects

Flash Programming

Workbench On-Chip Debugging simplifies the configuration of flash memory, enabling you to store images into flash memory on the target board faster than the traditional manual CLI process allows. The flash programming utility supplies common algorithms and diagnostics to pinpoint flash programming issues, enabling you to:

- Configure the flash address and RAM workspace, supporting flexible memory configuration and user-defined allocation of flash programming algorithms into RAM.
- Choose files for download; you can select and manage the files to be flashed onto the target from a single console.
- Execute erase and program operations by selecting one or more sectors.
- Verify the resulting data residing in flash with the file to be flashed.
- Program NOR and NAND devices.

Support for new or unusual flash devices can be easily added by utilizing the provided sample source code and build instructions.

Trace Support

Workbench On-Chip Debugging provides support for the internal and external buffered trace features of leading SoC vendors. You can quickly spot challenging intermittent defects that take a long time to analyze with

traditional debug methods. The Wind River emulators can be extended with optional trace modules to provide externally buffered trace capabilities on ColdFire, AMCC 40x, and AMCC 44xx processors. Workbench On-Chip Debugging also supports the Freescale MPC85xx internal trace capabilities with all Wind River emulators.

You can view the events that occur in the execution of the trace, such as the start of the trace and end of the trace, along with a description of the event. You can then select an event from the trace event field to locate the specific event occurrence in the trace buffer. Specific trace fields include:

- **Event occurrences (unlabeled):** Type of trace event
- **Address:** Address or line number of trace event
- **Absolute time:** Elapsed time since the beginning of the trace
- **Delta time:** Change in absolute time since the last trace entry
- **Instruction (unlabeled):** Executed instructions that can be configured to display code at the function, source, or disassembly stage

The flexible trace configuration options enable you to configure and set up the display of trace data, clear the trace buffer, reset the Trace view, save the trace to file, set trace rules, and configure trace filtering.

Multicore Technology

Multicore refers either to a single chip containing multiple logical devices capable of executing code, or multiple processors on a single target board. In addition, in system-level design, you may have multiple processors across multiple boards. The emergence of these multi-core processors is creating new debug challenges, requiring innovative technology that leverages the open environment of the Eclipse framework.

Multicore Debugging Challenges

Multicore offers more functionality and higher performance, but it also poses new debug challenges for hardware and software developers:

- How to effectively visualize and manage the edit-compile-and debug cycle across multiple cores

Value of Eclipse in Multicore Debugging

A common debug framework with a strong ecosystem is the foundation of a multicore debug strategy. While some take a proprietary approach in integrated development environments, Wind River leverages the Eclipse framework to reduce the complexity of the edit-compile-debug process.

- How to optimize the JTAG interface with many SoCs, leveraging a single JTAG interface to save on costs
- How to manage real-time performance requirements for multicore debugging
- How to support multiple processors from different vendors
- How to support the debug of multiple operating systems across different cores

The Workbench On-Chip Debugging solution offers a single project-oriented framework for debugging the most complex multicore scenarios. It allows you to view all your multicore projects from a single interface, whether the cores are on a single board or on multiple boards in an integrated system.

Target Connection Manager

An easy-to-use target connection manager simplifies the attachment to multiple cores and supports multiple connection methods,

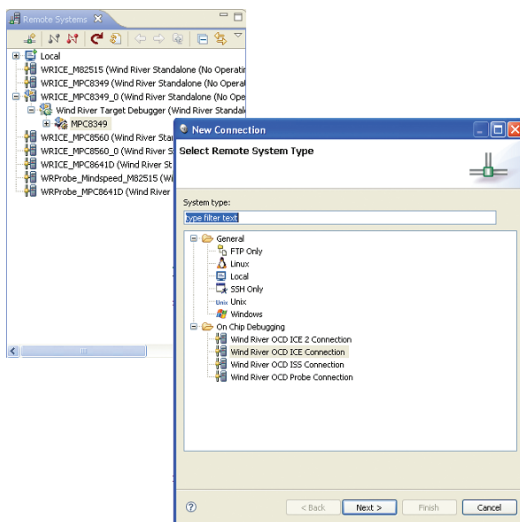


Figure 7: Target connection manager simplifies attachment to multiple cores and supports multiple connection methods

including the JTAG emulator, Wind River's Transparent Mode Driver (TMD), software agent, or simulator. The Wind River solution connects to up to 128 cores in a system and debugs up to eight of those cores simultaneously through a Wind River emulator JTAG connection, solving the problem of managing multiple cores through a single JTAG interface. In addition, the Wind River Connect extension module for the Wind River emulators connects up to four different scan chains simultaneously to provide the scalability required in system-level multicore development.

The Target Connection Manager is based on the Eclipse Remote System Explorer (RSE) framework, providing you with remote access to target file systems through a number of network-based protocols.

Advanced Debugging Features

When you're debugging multiple cores, managing and tracking hardware and software breakpoints becomes even more critical. Workbench On-Chip Debugging synchronizes the run control of a system to start and stop the entire system. You can set cross-correlated breakpoints and track sessions with multiple targets. The debug sessions are color-coded and numbered, so you can quickly spot an issue on an impacted core.

With advanced multicore diagnostics, you can inject errors, such as taking down a specific core, and analyze the impacts on other cores in the system to quickly spot software and hardware dependencies across multiple cores.

Cache memory management tracks cache coherency issues with main memory across multiple cores, including the ability to monitor instruction execution and identify the difference between data stored in memory versus cache. By tying the Cache view back to the Editor, you can identify the source code and function for each instruction in the Cache view, improving the troubleshooting of cache coherency problems across multiple cores.

High-Performance JTAG Server

Traditional JTAG Servers have limitations in multicore debugging environments, such as low performance and a limited range of semiconductor processor debug support. Wind River brings you all the advantages of a JTAG Server: the ability to leverage the debug capabilities of the processor and manage multiple cores with a single JTAG connection, without any of the problems associated with older single-core JTAG Server technology.

Wind River's patent-pending technology optimizes the performance of the JTAG Server, providing the speed and reliability required for real-time application debugging. The scope of processor support ensures deep debug and analysis capabilities on the leading SoCs.

OS and Processor Support

Workbench On-Chip Debugging supports many operating systems, including Wind River's VxWorks, Wind River Linux (including Wind River Real-Time Core for Linux), Linux 2.4 and 2.6 kernels, and Express Logic's ThreadX. Wind River Professional Services ports are available for OSE and Nucleus.

Linux and VxWorks support provides visibility and debugging at the OS level, as well as applications executing on the target, allowing debugging of complex application-kernel interactions.

Linux user-mode debugging support is also provided for debugging application code on Linux devices. Workbench On-Chip Debugging gives developers the ability to debug the Linux kernel, user applications, and shared libraries, without requiring kernel instrumentation. The software also enables developers to see both system and user application contexts when debugging in Linux, and eases debugging of system-application interaction issues.

The Third-Party Operating System (TOS) API allows Wind River Professional Services to add support for an in-house proprietary operating system or a third-party commercial operating system. Kernel object data structure is captured using XML, enabling debug support for all defined kernel objects and their task context associated views. The API comes with documentation, an XML file template, and a VxWorks 6 reference file.

Wind River Hardware

Wind River Probe

Wind River Probe is the most comprehensive tool on the market for board bring-up, flash programming, and production/test. It uses embedded on-chip debugging services in a microprocessor and Wind River JTAG Accelerator technology to deliver high-performance debugging over a USB connection, offering fast download speeds (in excess of 1.5 Mbps on some processors), high debug throughput, and unprecedented debug efficiency. Probe can also support the internal trace buffer provided on Freescale's MPC85xx processor family.



Figure 8: Wind River Probe

Wind River ICE and Wind River ICE 2

These advanced network-based emulators have been designed for today's complex processor environments, including 32-bit and 64-bit single and multicore implementations. Simple enough to support the most basic debugging needs, but robust enough to debug multiple JTAG devices simultaneously in a single scan chain of up to 128 individual EJTAG/JTAG devices, Wind River ICE and Wind River ICE 2 excel in complex system debugging and multisite development. The same emulator used in the development process can be deployed in test and manufacturing to ensure end-to-end integration.

Through its JTAG server capability, Wind River ICE and Wind River ICE 2 support multiple JTAG/EJTAG devices on a single scan chain, as well as multiple debugger



Figure 9: Wind River ICE 2

connections to these devices. They also offer the ability to support the internal trace buffer provided on Freescale's MPC85xx processor family.

In addition, Wind River ICE, in combination with Wind River Trace, can support externally trace-buffered SoCs, such as AMCC's PPC405 and 440 families and Freescale's MCF5xxx family.

Wind River Trace

This external trace hardware connects to Wind River ICE or Probe and provides visibility into the hardware/software interaction in the trace buffer. Its high-performance capture and buffering capability—more than 900,000 lines of trace data from the target—makes Wind River Trace ideal for debugging difficult intermittent system problems.



Figure 10: Wind River Trace

Technical Specifications

Host OS Support

- Red Hat Enterprise Linux Workstation 4 (Update 3), 32-bit x86
- Red Hat Enterprise Linux 5, 32-bit x86 and 64-bit x86-64
- Solaris 9, 32-bit SPARC
- Solaris 10, 32-bit SPARC
- OpenSUSE 10.2, 32-bit x86
- SUSE Linux Enterprise Edition, Service Pack 1, 32-bit, x86
- Fedora Core 7, 32-bit x86
- Windows XP Professional with Service Pack 2, 32-bit, x86
- Windows Vista, 32-bit x86

Target OS Support

- VxWorks 6.3, 6.4, 6.5, and 6.6
- VxWorks 5.5
- VxWorks 653
- Wind River Linux platforms (including Wind River Real-Time Core for Linux)
- Linux 2.4 and 2.6 kernels (Workbench On-Chip Debugging only)
- Native Linux development on Red Hat Enterprise Linux 4
- ThreadX 4.0 and 5.0 (Workbench On-Chip Debugging only)

Customizable target OS awareness capability for Workbench On-Chip Debugging enables support for other target operating systems to be added.

VxWorks 6.x

- List of kernel tasks and object/stack summary for each
- List of RTPs and object summary for each
- List of RTP tasks and object/stack summary for each
- List of semaphores and object summary for each
- List of message queues and object summary for each
- List of I/O devices and object summary for each
- List of I/O drivers and object summary for each
- List of I/O file descriptors and object summary for each
- List of ISRs and object summary for each
- List of memory partitions and object summary for each
- List of triggers and object summary for each
- List of watchdogs and object summary for each
- List of sockets and object summary for each
- List of shared libraries and object summary for each

VxWorks 5.5

- Task/process

Wind River Linux

- List of processes
- List of threads
- User-mode application contexts showing application variables, stack trace, and labels

ThreadX

- Thread list
- Mutex list
- Semaphores
- Block pools
- Byte pools
- Event flags (type of message queue, not as robust)
- Timers (similar to watchdog timers)

Processor Support

Vendor	Architecture	Processor Family	Processor	Wind River Probe	Wind River ICE	Wind River ICE 2
AMCC	PowerPC	IBM PPC40x	405 (Generic)	Y	Y	Y
AMCC	PowerPC	IBM PPC40x	PPC403GCx	Y	Y	Y
AMCC	PowerPC	IBM PPC40x	PPC405CR	Y	Y	Y
AMCC	PowerPC	IBM PPC40x	PPC405EP	Y	Y	Y
AMCC	PowerPC	IBM PPC40x	PPC405EX	Y	Y	Y
AMCC	PowerPC	IBM PPC40x	PPC405GP	Y	Y	Y
AMCC	PowerPC	IBM PPC40x	PPC405GPr	Y	Y	Y
AMCC	PowerPC	IBM PPC40x	NPE405L	Y	Y	Y
AMCC	PowerPC	IBM PPC40x	NPE405H	Y	Y	Y
AMCC	PowerPC	IBM PPC40x	PPC405PM	Y	Y	Y
AMCC	PowerPC	IBM PPC40x	PPC405STB25xx	Y	Y	Y
AMCC	PowerPC	IBM PPC40x	PPC405STB3	Y	Y	Y
AMCC	PowerPC	IBM PPC40x	PPC405STB4	Y	Y	Y
AMCC	PowerPC	IBM PPC44x	440 (Generic)	Y	Y	Y
AMCC	PowerPC	IBM PPC44x	PPC440GP	Y	Y	Y
AMCC	PowerPC	IBM PPC44x	PPC440GX	Y	Y	Y
AMCC	PowerPC	IBM PPC44x	PPC440GX - 800	Y	Y	Y
AMCC	PowerPC	IBM PPC44x	PPC440EP	Y	Y	Y
AMCC	PowerPC	IBM PPC44x	PPC440EP Rev 2.1	Y	Y	Y
AMCC	PowerPC	IBM PPC44x	PPC440EPx	Y	Y	Y
AMCC	PowerPC	IBM PPC44x	PPC440SP	Y	Y	Y
AMCC	PowerPC	IBM PPC44x	PPC440GR	Y	Y	Y
AMCC	PowerPC	IBM PPC44x	PPC440GR Rev 1.1	Y	Y	Y
AMCC	PowerPC	IBM PPC44x	PPC440GRx	Y	Y	Y
AMCC	PowerPC	IBM PPC44x	PPC440SPe	Y	Y	Y
AMCC	PowerPC	IBM PPC44x	PPC440SPe Rev 2.0	Y	Y	Y
Freescale	PowerPC	Freescale MPC5xx	MPC505	Y	Y	N
Freescale	PowerPC	Freescale MPC5xx	MPC509	Y	Y	N
Freescale	PowerPC	Freescale MPC5xx	MPC555	Y	Y	N
Freescale	PowerPC	Freescale MPC5xx	MPC560	Y	Y	N
Freescale	PowerPC	Freescale MPC5xx	MPC561	Y	Y	N
Freescale	PowerPC	Freescale MPC5xx	MPC563	Y	Y	N
Freescale	PowerPC	Freescale MPC5xx	MPC565	Y	Y	N
Freescale	PowerPC	Freescale MPC52xx	MPC5200	Y	Y	Y
Freescale	PowerPC	Freescale MPC52xx	MPC5200B	Y	Y	Y
Freescale	PowerPC	Freescale MPC55xx	VLE IS Support	Y	Y	Y
Freescale	PowerPC	Freescale MPC55xx	MPC5516	I	I	I
Freescale	PowerPC	Freescale MPC55xx	MPC5533	I	I	I
Freescale	PowerPC	Freescale MPC55xx	MPC5534	Y	Y	Y
Freescale	PowerPC	Freescale MPC55xx	MPC5554	Y	Y	Y
Freescale	PowerPC	Freescale MPC55xx	MPC5553	Y	Y	Y
Freescale	PowerPC	Freescale MPC55xx	MPC5566	Y	Y	Y
Freescale	PowerPC	Freescale MPC55xx	MPC5567	I	I	I
IBM	PowerPC	IBM PPC6xx	PPC603	Y	Y	Y
Freescale	PowerPC	Motorola MPC6xx	MPC603	Y	Y	Y
IBM	PowerPC	IBM PPC6xx	PPC603E	Y	Y	Y
Freescale	PowerPC	Motorola MPC6xx	MPC603E	Y	Y	Y
IBM	PowerPC	IBM PPC6xx	PPC603P	Y	Y	Y

Processor Support (continued)

Vendor	Architecture	Processor Family	Processor	Wind River Probe	Wind River ICE	Wind River ICE 2
Freescale	PowerPC	Motorola MPC6xx	MPC603P	Y	Y	Y
IBM	PowerPC	IBM PPC6xx	PPC603R	Y	Y	Y
Freescale	PowerPC	Motorola MPC6xx	MPC603R	Y	Y	Y
IBM	PowerPC	IBM PPC6xx	PPCEM603E	Y	Y	Y
Freescale	PowerPC	Motorola MPC6xx	MPCEC603E	Y	Y	Y
IBM	PowerPC	IBM PPC7xx	PPC740	Y	Y	Y
Freescale	PowerPC	Motorola MPC7xx	MPC740	Y	Y	Y
IBM	PowerPC	IBM PPC7xx	PPC745	Y	Y	Y
Freescale	PowerPC	Motorola MPC7xx	MPC745	Y	Y	Y
IBM	PowerPC	IBM PPC7xx	PPC750	Y	Y	Y
Freescale	PowerPC	Motorola MPC7xx	MPC750	Y	Y	Y
IBM	PowerPC	IBM PPC7xx	PPC755	Y	Y	Y
Freescale	PowerPC	Motorola MPC7xx	MPC755	Y	Y	Y
IBM	PowerPC	IBM PPC7xx	PPC750CX	Y	Y	Y
IBM	PowerPC	IBM PPC7xx	PPC750CXe	Y	Y	Y
IBM	PowerPC	IBM PPC7xx	PPC750L	Y	Y	Y
IBM	PowerPC	IBM PPC7xx	PPC750FX	Y	Y	Y
IBM	PowerPC	IBM PPC7xx	PPC750GX	Y	Y	Y
IBM	PowerPC	IBM PPC7xx	PPC750GL	Y	Y	Y
IBM	PowerPC	IBM PPC7xx	PPC750FL	Y	Y	Y
IBM	PowerPC	IBM PPC7xx	PPC750CXr	Y	Y	Y
Freescale	PowerPC	Freescale MPC74xx	MPC7400	Y	Y	Y
Freescale	PowerPC	Freescale MPC74xx	MPC7410	Y	Y	Y
Freescale	PowerPC	Freescale MPC74xx	MPC7440	Y	Y	Y
Freescale	PowerPC	Freescale MPC74xx	MPC7441	Y	Y	Y
Freescale	PowerPC	Freescale MPC74xx	MPC7445	Y	Y	Y
Freescale	PowerPC	Freescale MPC74xx	MPC7447	Y	Y	Y
Freescale	PowerPC	Freescale MPC74xx	MPC7447a	Y	Y	Y
Freescale	PowerPC	Freescale MPC74xx	MPC7448	Y	Y	Y
Freescale	PowerPC	Freescale MPC74xx	MPC7450	Y	Y	Y
Freescale	PowerPC	Freescale MPC74xx	MPC7451	Y	Y	Y
Freescale	PowerPC	Freescale MPC74xx	MPC7455	Y	Y	Y
Freescale	PowerPC	Freescale MPC74xx	MPC7457	Y	Y	Y
Freescale	PowerPC	Freescale MPC8xx	MPC801	Y	Y	N
Freescale	PowerPC	Freescale MPC8xx	MPC821	Y	Y	N
Freescale	PowerPC	Freescale MPC8xx	MPC823	Y	Y	N
Freescale	PowerPC	Freescale MPC8xx	MPC823E	Y	Y	N
Freescale	PowerPC	Freescale MPC8xx	MPC850	Y	Y	N
Freescale	PowerPC	Freescale MPC8xx	MPC850DC	Y	Y	N
Freescale	PowerPC	Freescale MPC8xx	MPC850DE	Y	Y	N
Freescale	PowerPC	Freescale MPC8xx	MPC850DH	Y	Y	N
Freescale	PowerPC	Freescale MPC8xx	MPC850DSL	Y	Y	N
Freescale	PowerPC	Freescale MPC8xx	MPC850SAR	Y	Y	N
Freescale	PowerPC	Freescale MPC8xx	MPC850SE	Y	Y	N
Freescale	PowerPC	Freescale MPC8xx	MPC852T	Y	Y	N
Freescale	PowerPC	Freescale MPC8xx	MPC855T	Y	Y	N
Freescale	PowerPC	Freescale MPC8xx	MPC857DSL	Y	Y	N
Freescale	PowerPC	Freescale MPC8xx	MPC857T	Y	Y	N

Processor Support (continued)

Vendor	Architecture	Processor Family	Processor	Wind River Probe	Wind River ICE	Wind River ICE 2
Freescale	PowerPC	Freescale MPC8xx	MPC859DSL	Y	Y	N
Freescale	PowerPC	Freescale MPC8xx	MPC859T	Y	Y	N
Freescale	PowerPC	Freescale MPC8xx	MPC860	Y	Y	N
Freescale	PowerPC	Freescale MPC8xx	MPC860DC	Y	Y	N
Freescale	PowerPC	Freescale MPC8xx	MPC860DE	Y	Y	N
Freescale	PowerPC	Freescale MPC8xx	MPC860DH	Y	Y	N
Freescale	PowerPC	Freescale MPC8xx	MPC860DP	Y	Y	N
Freescale	PowerPC	Freescale MPC8xx	MPC860DT	Y	Y	N
Freescale	PowerPC	Freescale MPC8xx	MPC860EN	Y	Y	N
Freescale	PowerPC	Freescale MPC8xx	MPC860MH	Y	Y	N
Freescale	PowerPC	Freescale MPC8xx	MPC860P	Y	Y	N
Freescale	PowerPC	Freescale MPC8xx	MPC860SAR	Y	Y	N
Freescale	PowerPC	Freescale MPC8xx	MPC860T	Y	Y	N
Freescale	PowerPC	Freescale MPC8xx	MPC862DP	Y	Y	N
Freescale	PowerPC	Freescale MPC8xx	MPC862DT	Y	Y	N
Freescale	PowerPC	Freescale MPC8xx	MPC862P	Y	Y	N
Freescale	PowerPC	Freescale MPC8xx	MPC862SR	Y	Y	N
Freescale	PowerPC	Freescale MPC8xx	MPC862T	Y	Y	N
Freescale	PowerPC	Freescale MPC8xx	MPC866	Y	Y	N
Freescale	PowerPC	Freescale MPC8xx	MPC870	Y	Y	N
Freescale	PowerPC	Freescale MPC8xx	MPC875	Y	Y	N
Freescale	PowerPC	Freescale MPC8xx	MPC880	Y	Y	N
Freescale	PowerPC	Freescale MPC8xx	MPC885	Y	Y	N
Freescale	PowerPC	Freescale MPC82xx	MPC8220	Y	Y	Y
Freescale	PowerPC	Freescale MPC82xx	MPC8240	Y	Y	Y
Freescale	PowerPC	Freescale MPC82xx	MPC8241	Y	Y	Y
Freescale	PowerPC	Freescale MPC82xx	MPC8245	Y	Y	Y
Freescale	PowerPC	Freescale MPC82xx	MPC8247	Y	Y	Y
Freescale	PowerPC	Freescale MPC82xx	MPC8248	Y	Y	Y
Freescale	PowerPC	Freescale MPC82xx	MPC8250	Y	Y	Y
Freescale	PowerPC	Freescale MPC82xx	MPC8255	Y	Y	Y
Freescale	PowerPC	Freescale MPC82xx	MPC8260	Y	Y	Y
Freescale	PowerPC	Freescale MPC82xx	MPC8264	Y	Y	Y
Freescale	PowerPC	Freescale MPC82xx	MPC8265	Y	Y	Y
Freescale	PowerPC	Freescale MPC82xx	MPC8266	Y	Y	Y
Freescale	PowerPC	Freescale MPC82xx	MPC8270	Y	Y	Y
Freescale	PowerPC	Freescale MPC82xx	MPC8271	Y	Y	Y
Freescale	PowerPC	Freescale MPC82xx	MPC8272	Y	Y	Y
Freescale	PowerPC	Freescale MPC82xx	MPC8275	Y	Y	Y
Freescale	PowerPC	Freescale MPC82xx	MPC8280	Y	Y	Y
Freescale	PowerPC	Freescale MPC83xx	MPC8313/E	Y	Y	Y
Freescale	PowerPC	Freescale MPC83xx	MPC8321/E	Y	Y	Y
Freescale	PowerPC	Freescale MPC83xx	MPC8323/E	Y	Y	Y
Freescale	PowerPC	Freescale MPC83xx	MPC8343/E	Y	Y	Y
Freescale	PowerPC	Freescale MPC83xx	MPC8343/E Rev 3.1	Y	Y	Y
Freescale	PowerPC	Freescale MPC83xx	MPC8347/E	Y	Y	Y
Freescale	PowerPC	Freescale MPC83xx	MPC8347/E Rev 3.1	Y	Y	Y
Freescale	PowerPC	Freescale MPC83xx	MPC8349/E	Y	Y	Y

Processor Support (continued)

Vendor	Architecture	Processor Family	Processor	Wind River Probe	Wind River ICE	Wind River ICE 2
Freescale	PowerPC	Freescale MPC83xx	MPC8349/E Rev 3.1	Y	Y	Y
Freescale	PowerPC	Freescale MPC83xx	MPC8358/E	Y	Y	Y
Freescale	PowerPC	Freescale MPC83xx	MPC8358/E Rev 1.2	Y	Y	Y
Freescale	PowerPC	Freescale MPC83xx	MPC8358/E Rev 2.0	Y	Y	Y
Freescale	PowerPC	Freescale MPC83xx	MPC8360/E	Y	Y	Y
Freescale	PowerPC	Freescale MPC83xx	MPC8360/E Rev 1.2	Y	Y	Y
Freescale	PowerPC	Freescale MPC83xx	MPC8360/E Rev 2.0	Y	Y	Y
Freescale	PowerPC	Freescale MPC83xx	MPC8377/E	Y	Y	Y
Freescale	PowerPC	Freescale MPC83xx	MPC8378/E	Y	Y	Y
Freescale	PowerPC	Freescale MPC83xx	MPC8379/E	Y	Y	Y
Freescale	PowerPC	Freescale MPC83xx	MPC5121E	Y	Y	Y
Freescale	PowerPC	Freescale MPC85xx	MPC8533/E	Y	Y	Y
Freescale	PowerPC	Freescale MPC85xx	MPC8540	Y	Y	Y
Freescale	PowerPC	Freescale MPC85xx	MPC8541	Y	Y	Y
Freescale	PowerPC	Freescale MPC85xx	MPC8543/E	Y	Y	Y
Freescale	PowerPC	Freescale MPC85xx	MPC8543/E Rev 2.0	Y	Y	Y
Freescale	PowerPC	Freescale MPC85xx	MPC8544/E	Y	Y	Y
Freescale	PowerPC	Freescale MPC85xx	MPC8545/E	Y	Y	Y
Freescale	PowerPC	Freescale MPC85xx	MPC8547/E	Y	Y	Y
Freescale	PowerPC	Freescale MPC85xx	MPC8547/E Rev 2.0	Y	Y	Y
Freescale	PowerPC	Freescale MPC85xx	MPC8548/E	Y	Y	Y
Freescale	PowerPC	Freescale MPC85xx	MPC8548/E Rev 2.0	Y	Y	Y
Freescale	PowerPC	Freescale MPC85xx	MPC8555/E	Y	Y	Y
Freescale	PowerPC	Freescale MPC85xx	MPC8560	Y	Y	Y
Freescale	PowerPC	Freescale MPC85xx	MPC8565/E	Y	Y	Y
Freescale	PowerPC	Freescale MPC85xx	MPC8567/E	Y	Y	Y
Freescale	PowerPC	Freescale MPC85xx	MPC8568/E	Y	Y	Y
Freescale	PowerPC	Freescale MPC85xx	MPC8572/E	Y	Y	Y
Freescale	PowerPC	Freescale MPC86xx	MPC8610	Y	Y	Y
Freescale	PowerPC	Freescale MPC86xx	MPC8641	Y	Y	Y
Freescale	PowerPC	Freescale MPC86xx	MPC8641D	Y (1)	Y	Y
Freescale	PowerPC	Freescale MPC86xx	MPC8641D Rev 2.0	Y (1)	Y	Y
Xilinx	PowerPC	IBM PPC40x	X2VP-4	Y	Y	Y
Xilinx	PowerPC	IBM PPC40x	X2VP-7	Y	Y	Y
Xilinx	PowerPC	IBM PPC40x	X2VP-20	Y	Y	Y
Xilinx	PowerPC	IBM PPC40x	X2VP-30	Y	Y	Y
Xilinx	PowerPC	IBM PPC40x	X2VP-40	Y	Y	Y
Xilinx	PowerPC	IBM PPC40x	X2VP-50	Y	Y	Y
Xilinx	PowerPC	IBM PPC40x	X2VP-60	Y	Y	Y
Xilinx	PowerPC	IBM PPC40x	X2VP-70	Y	Y	Y
Xilinx	PowerPC	IBM PPC40x	X2VP-100	Y	Y	Y
Xilinx	PowerPC	IBM PPC40x	X2VP-140	Y	Y	Y
Xilinx	PowerPC	IBM PPC40x	2VPX20	Y	Y	Y
Xilinx	PowerPC	IBM PPC40x	2VPX70	Y	Y	Y
Xilinx	PowerPC	IBM PPC40x	XC4VFX12	Y	Y	Y
Xilinx	PowerPC	IBM PPC40x	XC4VFX20	Y	Y	Y
Xilinx	PowerPC	IBM PPC40x	XC4VFX40	Y	Y	Y
Xilinx	PowerPC	IBM PPC40x	XC4VFX60	Y	Y	Y

Processor Support (continued)

Vendor	Architecture	Processor Family	Processor	Wind River Probe	Wind River ICE	Wind River ICE 2
Xilinx	PowerPC	IBM PPC40x	XC4VFX100	Y	Y	Y
Xilinx	PowerPC	IBM PPC40x	XC4VFX140	Y	Y	Y
Freescale	ColdFire	Freescale MCF5xxx	MCF5202	Y	Y	N
Freescale	ColdFire	Freescale MCF5xxx	MCF5204	Y	Y	N
Freescale	ColdFire	Freescale MCF5xxx	MCF5205E	Y	Y	N
Freescale	ColdFire	Freescale MCF5xxx	MCF5206	Y	Y	N
Freescale	ColdFire	Freescale MCF5xxx	MCF5207 - Mini-me	Y	Y	N
Freescale	ColdFire	Freescale MCF5xxx	MCF5208 - Mini-me	Y	Y	N
Freescale	ColdFire	Freescale MCF5xxx	MCF5211	Y	Y	N
Freescale	ColdFire	Freescale MCF5xxx	MCF5212	Y	Y	N
Freescale	ColdFire	Freescale MCF5xxx	MCF5213	Y	Y	N
Freescale	ColdFire	Freescale MCF5xxx	MCF5214	Y	Y	N
Freescale	ColdFire	Freescale MCF5xxx	MCF5216	Y	Y	N
Freescale	ColdFire	Freescale MCF5xxx	MCF52100	Y	Y	N
Freescale	ColdFire	Freescale MCF5xxx	MCF52110	Y	Y	N
Freescale	ColdFire	Freescale MCF5xxx	MCF52210	Y	Y	N
Freescale	ColdFire	Freescale MCF5xxx	MCF52211	Y	Y	N
Freescale	ColdFire	Freescale MCF5xxx	MCF52212	Y	Y	N
Freescale	ColdFire	Freescale MCF5xxx	MCF52213	Y	Y	N
Freescale	ColdFire	Freescale MCF5xxx	MCF52210	Y	Y	N
Freescale	ColdFire	Freescale MCF5xxx	MCF52221	Y	Y	N
Freescale	ColdFire	Freescale MCF5xxx	MCF52223	Y	Y	N
Freescale	ColdFire	Freescale MCF5xxx	MCF52230	Y	Y	N
Freescale	ColdFire	Freescale MCF5xxx	MCF52231	Y	Y	N
Freescale	ColdFire	Freescale MCF5xxx	MCF52233	Y	Y	N
Freescale	ColdFire	Freescale MCF5xxx	MCF52234	Y	Y	N
Freescale	ColdFire	Freescale MCF5xxx	MCF52235	Y	Y	N
Freescale	ColdFire	Freescale MCF5xxx	MCF52236	Y	Y	N
Freescale	ColdFire	Freescale MCF5xxx	MCF5249	Y	Y	N
Freescale	ColdFire	Freescale MCF5xxx	MCF5249L	Y	Y	N
Freescale	ColdFire	Freescale MCF5xxx	MCF5250	Y	Y	N
Freescale	ColdFire	Freescale MCF5xxx	MCF5251	Y	Y	N
Freescale	ColdFire	Freescale MCF5xxx	MCF5253	Y	Y	N
Freescale	ColdFire	Freescale MCF5xxx	MCF5270	Y	Y	N
Freescale	ColdFire	Freescale MCF5xxx	MCF5271	Y	Y	N
Freescale	ColdFire	Freescale MCF5xxx	MCF5272	Y	Y	N
Freescale	ColdFire	Freescale MCF5xxx	MCF5274	Y	Y	N
Freescale	ColdFire	Freescale MCF5xxx	MCF5274L	Y	Y	N
Freescale	ColdFire	Freescale MCF5xxx	MCF5275	Y	Y	N
Freescale	ColdFire	Freescale MCF5xxx	MCF5275L	Y	Y	N
Freescale	ColdFire	Freescale MCF5xxx	MCF5280	Y	Y	N
Freescale	ColdFire	Freescale MCF5xxx	MCF5281	Y	Y	N
Freescale	ColdFire	Freescale MCF5xxx	MCF5282	Y	Y	N
Freescale	ColdFire	Freescale MCF5xxx	MCF5232	Y	Y	N
Freescale	ColdFire	Freescale MCF5xxx	MCF5233	Y	Y	N
Freescale	ColdFire	Freescale MCF5xxx	MCF5234	Y	Y	N
Freescale	ColdFire	Freescale MCF5xxx	MCF5235	Y	Y	N
Freescale	ColdFire	Freescale MCF5xxx	MCF5307	Y	Y	N

Processor Support (continued)

Vendor	Architecture	Processor Family	Processor	Wind River Probe	Wind River ICE	Wind River ICE 2
Freescale	ColdFire	Freescale MCF5xxx	MCF5307a	Y	Y	N
Freescale	ColdFire	Freescale MCF5xxx	MCF5327 - Dragonfire	Y	Y	N
Freescale	ColdFire	Freescale MCF5xxx	MCF5328 - Dragonfire	Y	Y	N
Freescale	ColdFire	Freescale MCF5xxx	MCF5329 - Dragonfire	Y	Y	N
Freescale	ColdFire	Freescale MCF5xxx	MCF5372	Y	Y	N
Freescale	ColdFire	Freescale MCF5xxx	MCF5372L	Y	Y	N
Freescale	ColdFire	Freescale MCF5xxx	MCF5373	Y	Y	N
Freescale	ColdFire	Freescale MCF5xxx	MCF5373L	Y	Y	N
Freescale	ColdFire	Freescale MCF5xxx	MCF5407	Y	Y	N
Freescale	ColdFire	Freescale MCF5xxx	MCF5470	Y	Y	N
Freescale	ColdFire	Freescale MCF5xxx	MCF5471	Y	Y	N
Freescale	ColdFire	Freescale MCF5xxx	MCF5472	Y	Y	N
Freescale	ColdFire	Freescale MCF5xxx	MCF5473	Y	Y	N
Freescale	ColdFire	Freescale MCF5xxx	MCF5474	Y	Y	N
Freescale	ColdFire	Freescale MCF5xxx	MCF5475	Y	Y	N
Freescale	ColdFire	Freescale MCF5xxx	MCF5480	Y	Y	N
Freescale	ColdFire	Freescale MCF5xxx	MCF5481	Y	Y	N
Freescale	ColdFire	Freescale MCF5xxx	MCF5482	Y	Y	N
Freescale	ColdFire	Freescale MCF5xxx	MCF5483	Y	Y	N
Freescale	ColdFire	Freescale MCF5xxx	MCF5484	Y	Y	N
Freescale	ColdFire	Freescale MCF5xxx	MCF5485	Y	Y	N
Freescale	ColdFire	Freescale MCF5xxx	MCF54450	Y	Y	N
Freescale	ColdFire	Freescale MCF5xxx	MCF54451	Y	Y	N
Freescale	ColdFire	Freescale MCF5xxx	MCF54452	Y	Y	N
Freescale	ColdFire	Freescale MCF5xxx	MCF54453	Y	Y	N
Freescale	ColdFire	Freescale MCF5xxx	MCF54454	Y	Y	N
Freescale	ColdFire	Freescale MCF5xxx	MCF54455	Y	Y	N
ARM	ARM	ARM 9	Thumb IS (Generic)	Y	Y	Y
ARM	ARM	ARM 9	Thumb 2 IS (Generic)	Y	Y	Y
ARM	ARM	ARM 9	ARM9TDMI	Y	Y	Y
ARM	ARM	ARM 9	ARM920T	Y	Y	Y
ARM	ARM	ARM 9	ARM922T	Y	Y	Y
ARM	ARM	ARM 9	ARM940T	Y	Y	Y
ARM	ARM	ARM 9	ARM926EJ-S	Y	Y	Y
ARM	ARM	ARM 9	ARM946E-S	Y	Y	Y
Atmel	ARM	ATMEL AT9x	AT91RM9200	Y	Y	Y
Atmel	ARM	ATMEL AT9x	AT91SAM9260	Y	Y	Y
Atmel	ARM	ATMEL AT9x	AT91SAM9261	Y	Y	Y
Freescale	ARM	Freescale iMX 9	I.MX1	Y	Y	Y
Freescale	ARM	Freescale iMX 9	I.MXL	Y	Y	Y
Freescale	ARM	Freescale iMX 9	I.MXS	Y	Y	Y
Freescale	ARM	Freescale iMX 9	I.MX21	Y	Y	Y
Freescale	ARM	Freescale iMX 9	I.MX27	Y	Y	Y
Marvell	ARM	Marvell MV88F5x	MV88F5181	Y	Y	Y
Marvell	ARM	Marvell MV88F5x	MV88F5281	Y	Y	Y
Mindspeed	ARM	ARM 9	M82515	Y (1)	Y	Y
Oxford	ARM	ARM 9	OXETHU954	Y	Y	Y
TI	ARM	TI OMAP 24xx	OMAP 2430	Y	Y	Y

Processor Support (continued)

Vendor	Architecture	Processor Family	Processor	Wind River Probe	Wind River ICE	Wind River ICE 2
TI	ARM	TI Davinci DM64XX	TMS320DM6441	Y	Y	Y
TI	ARM	TI Davinci DM64XX	TMS320DM6443	Y	Y	Y
TI	ARM	TI Davinci DM64XX	TMS320DM6446	Y	Y	Y
ARM	ARM	ARM 11	ARM1136J(F)-S	Y	Y	Y
ARM	ARM	ARM 11	ARM1176JZ(F)-S	Y	Y	Y
ARM	ARM	ARM 11	ARM11 MP	Y (1)	Y	Y
Freescale	ARM	Freescale iMX 11	i.MX31	Y	Y	Y
ARM	ARM	ARM Cortex M3	ARM Cortex M3	Y	Y	Y
Luminary	ARM	ARM Cortex M3	LM3S801	Y	Y	Y
ARM	ARM	ARM Cortex A8/R4	ARM Cortex A8	Y	Y	Y
Intel	Xscale	IXP4xx	IXP420	Y	Y	N
Intel	Xscale	IXP4xx	IXP421	Y	Y	N
Intel	Xscale	IXP4xx	IXP422	Y	Y	N
Intel	Xscale	IXP4xx	IXP425	Y	Y	N
Intel	Xscale	IXP4xx	IXP450	Y	Y	N
Intel	Xscale	IXP4xx	IXP451	Y	Y	N
Intel	Xscale	IXP4xx	IXP452	Y	Y	N
Intel	Xscale	IXP4xx	IXP455	Y	Y	N
Intel	Xscale	IXP4xx	IXP460	Y	Y	N
Intel	Xscale	IXP4xx	IXP465	Y	Y	N
Intel	Xscale	IXP2xxx	IXP2325	Y	Y	N
Intel	Xscale	IXP2xxx	IXP2350	Y	Y	N
Intel	Xscale	IXP2xxx	IXP2351	Y	Y	N
Intel	Xscale	IXP2xxx	IXP2400	Y	Y	N
Intel	Xscale	IXP2xxx	IXP2800	Y	Y	N
Intel	Xscale	IOP3xx	IOP310	Y	Y	N
Intel	Xscale	IOP3xx	IOP321	Y	Y	N
Intel	Xscale	IOP3xx	IOP331	Y	Y	N
Intel	Xscale	IOP3xx	IOP333	Y	Y	N
Intel	Xscale	IOP3xx	IOP341	Y	Y	N
Intel	Xscale	IOP3xx	IOP342	Y	Y	N
Intel	Xscale	IOP3xx	IOP348	Y	Y	N
Marvell	Xscale	Marvell PXA2xx	PXA210	Y	Y	N
Marvell	Xscale	Marvell PXA2xx	PXA250	Y	Y	N
Marvell	Xscale	Marvell PXA2xx	PXA255	Y	Y	N
Marvell	Xscale	Marvell PXA2xx	PXA260	Y	Y	N
Marvell	Xscale	Marvell PXA2xx	PXA270	Y	Y	N
Marvell	Xscale	Marvell PXA3xx	PXA300	Y	Y	N
Marvell	Xscale	Marvell PXA3xx	PXA310	Y	Y	N
Marvell	Xscale	Marvell PXA3xx	PXA320 (fka PXA290)	Y	Y	N
MIPS	MIPS	MIPS 16 IS	MIPS 16 IS	Y	Y	Y
MIPS	MIPS	MTI 4kx	4Kc	Y	Y	Y
MIPS	MIPS	MTI 4kx	4Km	Y	Y	Y
MIPS	MIPS	MTI 4kx	4Kp	Y	Y	Y
MIPS	MIPS	MTI 4kx	4KEc	Y	Y	Y
MIPS	MIPS	MTI 4kx	4KEm	Y	Y	Y
MIPS	MIPS	MTI 5kx	5Kc	Y	Y	Y
MIPS	MIPS	MTI 5kx	5Kf	Y	Y	Y

Processor Support (continued)

Vendor	Architecture	Processor Family	Processor	Wind River Probe	Wind River ICE	Wind River ICE 2
MIPS	MIPS	MTI 20kx	20Kc	Y	Y	Y
MIPS	MIPS	MTI 24kx	24Kc	Y	Y	Y
MIPS	MIPS	MTI 24kx	24Kf	Y	Y	Y
MIPS	MIPS	MTI 25kx	25Kf	Y	Y	Y
AMD/Raza	MIPS	AMD AU10xx	AU1000	Y	Y	Y
AMD/Raza	MIPS	AMD AU12xx	AU1200	Y	Y	Y
Philips	MIPS	Philips PR19xx	PR1910	Y	Y	Y
Philips	MIPS	Philips PR39xx	PR3940	Y	Y	Y
Philips	MIPS	Philips PR44xx	PR4450	Y	Y	Y
Philips	MIPS	Philips PNX30xx	PNX3001	Y	Y	Y
Philips	MIPS	Philips PNX73xx	PNX7300	Y	Y	Y
Philips	MIPS	Philips PNX83xx	PNX8320	Y	Y	Y
Philips	MIPS	Philips PNX85xx	PNX8525	Y	Y	Y
Philips	MIPS	Philips PNX85xx	PNX8526	Y	Y	Y
Philips	MIPS	Philips PNX855x	PNX8550	Y	Y	Y
Broadcom	MIPS	Broadcom MIPS32	BCM1100	Y	Y	Y
Broadcom	MIPS	Broadcom MIPS32	BCM1101	Y	Y	Y
Broadcom	MIPS	Broadcom MIPS32	BCM1103	Y	Y	Y
Broadcom	MIPS	Broadcom MIPS32	BCM1104	Y	Y	Y
Broadcom	MIPS	Broadcom MIPS32	BCM1112	Y	Y	Y
Broadcom	MIPS	Broadcom MIPS32	BCM1113	Y	Y	Y
Broadcom	MIPS	Broadcom MIPS32	BCM1113R	Y	Y	Y
Broadcom	MIPS	Broadcom MIPS32	BCM1115	Y	Y	Y
Broadcom	MIPS	Broadcom MIPS32	BCM1115R	Y	Y	Y
Broadcom	MIPS	Broadcom MIPS32	BCM1190	Y	Y	Y
Broadcom	MIPS	Broadcom SB1	BCM1122	Y	Y	Y
Broadcom	MIPS	Broadcom SB1	BCM1125	Y	Y	Y
Broadcom	MIPS	Broadcom SB1	BCM1125H	Y	Y	Y
Broadcom	MIPS	Broadcom SB1	BCM1250	Y (1)	Y	Y
Broadcom	MIPS	Broadcom SB1	BCM1255	Y (1)	Y	Y
Broadcom	MIPS	Broadcom SB1	BCM1280	Y (1)	Y	Y
Broadcom	MIPS	Broadcom SB1	BCM1455	Y (1)	Y	Y
Broadcom	MIPS	Broadcom SB1	BCM1480 - Sibyte	Y (1)	Y	Y
Broadcom	MIPS	Broadcom MIPS32	BCM3349	Y	Y	Y
Broadcom	MIPS	Broadcom MIPS32	BCM3350	Y	Y	Y
Broadcom	MIPS	Broadcom MIPS32	BCM3351	Y	Y	Y
Broadcom	MIPS	Broadcom MIPS32	BCM3352	Y	Y	Y
Broadcom	MIPS	Broadcom MIPS32	BCM3360	Y	Y	Y
Broadcom	MIPS	Broadcom MIPS32	BCM3560	Y	Y	Y
Broadcom	MIPS	Broadcom MIPS32	BCM4704	Y	Y	Y
Broadcom	MIPS	Broadcom MIPS32	BCM4710	Y	Y	Y
Broadcom	MIPS	Broadcom MIPS32	BCM5365	Y	Y	Y
Broadcom	MIPS	Broadcom MIPS32	BCM56214	Y	Y	Y
Broadcom	MIPS	Broadcom MIPS32	BCM56218	Y	Y	Y
Broadcom	MIPS	Broadcom MIPS32	BCM5836	Y	Y	Y
Broadcom	MIPS	Broadcom MIPS32	BCM6348	Y	Y	Y
Broadcom	MIPS	Broadcom MIPS32	BCM6349	Y	Y	Y
Broadcom	MIPS	Broadcom MIPS32	BCM6550A (4704 Core)	Y	Y	Y
Broadcom	MIPS	Broadcom MIPS64	BCM7038	Y	Y	Y

Processor Support (continued)

Vendor	Architecture	Processor Family	Processor	Wind River Probe	Wind River ICE	Wind River ICE 2
Broadcom	MIPS	Broadcom MIPS32	BCM7100	Y	Y	Y
Broadcom	MIPS	Broadcom MIPS32	BCM7115	Y	Y	Y
Broadcom	MIPS	Broadcom MIPS32	BCM7312	Y	Y	Y
Broadcom	MIPS	Broadcom MIPS32	BCM7318	Y	Y	Y
Broadcom	MIPS	Broadcom MIPS64	BCM7320	Y	Y	Y
Broadcom	MIPS	Broadcom MIPS32	BCM7400	Y	Y	Y
Broadcom	MIPS	Broadcom MIPS32	BCM7401	Y	Y	Y
Broadcom	MIPS	Broadcom MIPS32	BCM7405	Y	Y	Y
NEC	MIPS	NEC VR41xx	VR4131	Y	Y	Y
NEC	MIPS	NEC VR41xx	VR4133	Y	Y	Y
NEC	MIPS	NEC VR41xx	VR4181A	Y	Y	Y
NEC	MIPS	NEC VR54xx	VR5432	Y	Y	Y
NEC	MIPS	NEC VR55xx	VR5500	Y	Y	Y
NEC	MIPS	NEC VR55xx	VR5500A	Y	Y	Y
NEC	MIPS	NEC VR77xx	VR7701	Y	Y	Y
Toshiba	MIPS	Toshiba Tx49xx	TX4925	Y	Y	Y
Toshiba	MIPS	Toshiba Tx49xx	TX4927	Y	Y	Y
Toshiba	MIPS	Toshiba Tx49xx	TX4955	Y	Y	Y
PMC-Sierra	MIPS	PMC-Sierra Rm7xxx	RM7900	Y	Y	Y
PMC-Sierra	MIPS	PMC-Sierra Rm9xxx	RM9000X2	Y	Y	Y
PMC-Sierra	MIPS	PMC-Sierra Rm9xxx	RM9150	Y	Y	Y
Cavium	MIPS	Cavium OCTEON MIPS 64	CN3005	Y (1)	Y	Y
Cavium	MIPS	Cavium OCTEON MIPS 64	CN3010	Y (1)	Y	Y
Cavium	MIPS	Cavium OCTEON MIPS 64	CN3110	Y (1)	Y	Y
Cavium	MIPS	Cavium OCTEON MIPS 64	CN3120	Y (1)	Y	Y
Cavium	MIPS	Cavium OCTEON MIPS 64	CN3630	Y (1)	Y	Y
Cavium	MIPS	Cavium OCTEON MIPS 64	CN3830	Y (1)	Y	Y
Cavium	MIPS	Cavium OCTEON MIPS 64	CN3840	Y (1)	Y	Y
Cavium	MIPS	Cavium OCTEON MIPS 64	CN3850	Y (1)	Y	Y
Cavium	MIPS	Cavium OCTEON MIPS 64	CN3860	Y (1)	Y	Y
Cavium	MIPS	Cavium OCTEON MIPS 64	CN5010	Y (1)	Y	Y
Cavium	MIPS	Cavium OCTEON MIPS 64	CN5020	Y (1)	Y	Y
Cavium	MIPS	Cavium OCTEON MIPS 64	CN5220	Y (1)	Y	Y
Cavium	MIPS	Cavium OCTEON MIPS 64	CN5230	Y (1)	Y	Y
Cavium	MIPS	Cavium OCTEON MIPS 64	CN5434	Y (1)	Y	Y
Cavium	MIPS	Cavium OCTEON MIPS 64	CN5440	Y (1)	Y	Y
Cavium	MIPS	Cavium OCTEON MIPS 64	CN5534	Y (1)	Y	Y
Cavium	MIPS	Cavium OCTEON MIPS 64	CN5540	Y (1)	Y	Y
Cavium	MIPS	Cavium OCTEON MIPS 64	CN5640	Y (1)	Y	Y
Cavium	MIPS	Cavium OCTEON MIPS 64	CN5645	Y (1)	Y	Y
Cavium	MIPS	Cavium OCTEON MIPS 64	CN5650	Y (1)	Y	Y
Cavium	MIPS	Cavium OCTEON MIPS 64	CN5740	Y (1)	Y	Y
Cavium	MIPS	Cavium OCTEON MIPS 64	CN5745	Y (1)	Y	Y
Cavium	MIPS	Cavium OCTEON MIPS 64	CN5750	Y (1)	Y	Y
Cavium	MIPS	Cavium OCTEON MIPS 64	CN5830	Y (1)	Y	Y
Cavium	MIPS	Cavium OCTEON MIPS 64	CN5840	Y (1)	Y	Y
Cavium	MIPS	Cavium OCTEON MIPS 64	CN5850	Y (1)	Y	Y
Cavium	MIPS	Cavium OCTEON MIPS 64	CN5860	Y (1)	Y	Y
P.A. Semi	PowerPC	P.A. Semi PA6T	PA6T-1682M	Y (1)	Y	Y

Professional Services

Wind River Professional Services helps companies to reduce risk and improve competitiveness. Our team delivers device software expertise within structured engagements that directly address key development challenges and contribute to the success of our clients. Our track record of timely delivery and in-depth understanding of market and technology dynamics makes Wind River a valuable implementation partner for clients worldwide. Based on our commercial-grade project methodology, service offerings include device design, BSP and driver optimization, software system and middleware integration, and legacy application and infrastructure migration.

Workbench Services

Wind River Professional Services knows how to jump-start your development efforts. Even if you opt for a non-Wind River platform, Linux distribution, host operating system, or target architecture, we can help. No matter which development environment you use, Wind River Professional Services can extend Workbench to adapt to your needs with the following offerings:

- Extend Workbench processor support
- Extend Workbench target OS support
- Validate Workbench on Linux host environment
- Validate Eclipse plug-ins
- Integrate agents

Installation and Orientation

Proper installation and orientation of Wind River Workbench, On-Chip Debugging Edition means you won't waste time solving easily avoidable problems before you can begin your next development project. Wind River offers an Installation and Orientation Service to ensure that your project starts on time and without hassle by delivering:

- **Onsite installation:** Guided install on your hardware and host platform, along with a sample build process, demonstrations, and examples of customizations
- **Hands-on orientation:** Architecture, development file system, adding open

source packages, porting drivers, addressing design issues

- **Advice:** Introduction to Wind River support channels and processes, additional services, project review, and consultation

The Wind River Installation and Orientation Service will expedite your path to productivity, allow you to rest assured that we have eliminated a common source of user error, and help you realize all of the platform's potential.

Education Services

Education is fundamentally connected not only to individual performance, but also to the success of a project or entire company. Lack of product knowledge can translate into longer development schedules, poor quality, and higher costs. The ability to learn—and to convert that learning into improved performance—creates extraordinary value for individuals, teams, and organizations. To help your team achieve that result, Wind River offers flexible approaches to delivering product education that best fits your time, budget, and skills development requirements.

Personalized Learning Program

Wind River offers a unique solution to minimize the short-term productivity drop associated with the process of adopting new device software technology, and optimize the long-term return on investment in a new device software platform. The Wind River Personalized Learning Program delivers the right education required by individual learners to accomplish their jobs. The program identifies work-related skill gaps, generates development plans, materials, and learning events to address these skill gaps, and quantifies the impact of the development activities for each individual user.

This programmatic, focused, and project-friendly approach to skills development results in a significant increase in the personal productivity of your team, improved efficiency in the processes they employ, and faster adoption of the technology you have purchased. Personalized Learning Programs deliver improved business performance—customers have reported a return on investment ranging from 18% to 30% over a traditional training approach.

Please consult your local Wind River sales representative for more information on Personalized Learning Programs.

Public Courses

Wind River's public courses are scheduled for your geographical convenience. They are conducted over one to five days, using a mixed lecture and interactive lab classroom format that leverages the experience of Wind River instructors and other course participants. Courses provide a fast, cost-effective way for students to become more productive with Wind River technology.

Benefits of public courses include:

- A conceptual introduction that orients students to the subject matter
- A selective examination of the details, focusing on the most commonly used areas, or on areas with which users tend to be least familiar
- Personal guidance and hands-on application of individual tools and course concepts
- The chance to grasp device software concepts, as well as the fundamental issues involved in real-time design
- The knowledge needed to develop device drivers, perform hardware porting, or develop applications
- Answers to specific questions about topics addressed in the course

Please consult your local Wind River sales representative for course schedules and fees.

Onsite Education

If you have a large project team or a number of new users, you may benefit from custom onsite education. Instructors will consult with you and, based on the workshop series curriculum, determine which topics should be included and emphasized. This type of education offers an opportunity for one-on-one discussions with our instructors about your specific project needs, technical requirements, and challenges—all in the comfort of your own office.

Advantages of onsite education:

- The entire team gains a common knowledge base.
- It helps ensure that knowledge and skills will transfer from the classroom to the workplace.
- The location saves employees both travel expenses and time away from the office.

Please consult your local Wind River sales representative for further information.

Support Services

Wind River provides full technical support for Wind River Workbench. Our global support organization is staffed with engineers who have extensive experience with Wind River products and device software development. At major support centers worldwide, our local experts can help diagnose problems, provide guidance, or answer “How do I...?” questions. Support is also available 24 hours a day at our Online Support website (www.windriver.com/support) or by email at support@windriver.com.

Visit Wind River Online Support (OLS) for fast access to product manuals, downloadable software, and other problem-solving resources for Wind River Workbench. Additional features, including patches and technical tips for common problems, are available for all customers upon subscription. OLS

visitors can also access a community of developers to discuss their issues and experiences.

If you cannot find the information you need through Online Support, please contact our global support team for access to the industry’s most knowledgeable and experienced support staff:

North America, South America, and Asia/Pacific

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Toll-free tel.: 800-872-4977 (800-USA-4WRS)
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