

Integrated Development Environment

Overview

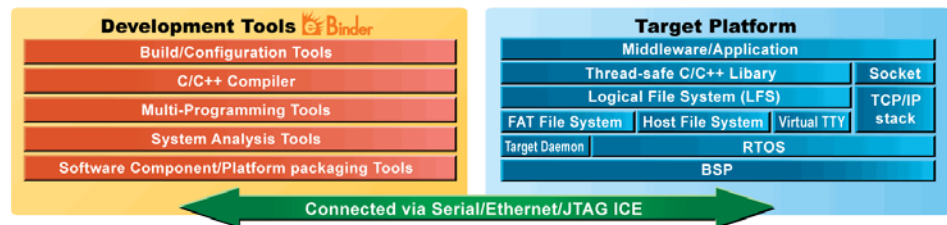
The eBinder integrated development environment is an embedded system development package that provides a comprehensive range of integrated development tools and software components for debugging multi-threaded applications. The eBinder IDE is an Integrated Development Environment with a built-in multicontext debugger for eSOL's real time kernels (PrKERNELv4 / eT-Kernel) and is seamlessly integrated with the kernel and middleware (TCP/IP, file system and USB stack) products from eSOL as an out-of-the-box solution.

Product Concept

The waterfall development process is no longer effective for many of today's embedded applications due to their increasing size and complexity. A new model known as iterative development has become the standard practice in today's embedded systems development. eBinder is designed to support this new development model by facilitating rapid cycling through the "coding, testing, debugging, analyzing, and optimizing" development phases, resulting in high quality, optimized performance and a shorter development cycle. Faster development cycles lead to increased flexibility to responding to new requirements during the product development period.

Cross Development Environment

eBinder creates a cross-development environment using a ROM monitor. This allows communication between the host (PC) and the target board without using special hardware such as an ICE.



Key Features

- ❑ **Cross Compiler:** The leading industry-standard cross compiler for each platform is bundled with the eBinder package.
- ❑ **Thread-safe C Library:** Reentrant C library for real time applications
- ❑ **Multicontext Debugger:** Multiple tasks can be debugged concurrently while the system continues to run.
- ❑ **Dynamic Loading:** An unlinked object file can be dynamically loaded into the target system while the system is running.
- ❑ **Parts Configuration:** RTOS and software component configuration is performed through a File Explorer-like GUI.
- ❑ **System Build:** Includes a make utility with a simple drag and drop user interface.
- ❑ **PartScope:** Provides a detailed snapshot of the system status for the kernel and middleware, including the file system, through a File Explorer-like GUI. Information can be updated in real time, and the tool includes a powerful search capability.
- ❑ **EventTrek:** Analyzes, traces and displays target module information via a user friendly GUI. In addition, kernel awareness provides context-based analysis such as stack usage and CPU utilization for each context.
- ❑ **Realtime Profiler:** Realtime Profiler is a sampling based profiling tool. It probes the target system's program counter and task ID at regular intervals using kernel timer interrupts. Approximate percentage of spent CPU time of functions and tasks are shown as profiling result to find bottlenecks.
- ❑ **Virtual TTY:** Assign a virtual console input/output for a task to facilitate debugging.
- ❑ **Shell:** Any C or assembly function can be invoked with the desired parameters in a task context from a command console, all while the system continues to run. Also provides a command-based user interface to Object Viewer information
- ❑ **Platform packaging feature:** Using eBinder's platform packaging feature, platform developers can create a platform package (PLP) from an already verified and configured platform (a set of verified software and configurations for the target) to distribute to platform users.
- ❑ **RTOS Support Included:** Drop-in integration of our proven kernels, PrKERNELv4 and eT-KERNEL, is included with eBinder.
- ❑ **Logical file system (LFS):** A UNIX-like streaming file I/O interface. Access a different I/O stream by opening a path. It supports POSIX-like file APIs.
- ❑ **Host file system:** Access the host (Windows) file system from a target application using file I/O.
- ❑ **Board Support Packages:** Supports widely-used evaluation boards.
- ❑ **PackageBuilder:** An object-oriented software module packager. Build a complete package from software components
- ❑ **JTAG Integration:** Allows eBinder to use the JTAG as a debug port (when serial or Ethernet debug ports are not available). All eBinder multi-programming debug functions and all JTAG features are available through the JTAG/eBinder integration.

- ❑ **eB-SIM** (available for ARM platforms): High-performance instruction set simulator (ISS) that simulates a target board environment on a PC. eB-SIM combines ISS technology with techniques used in

kernel simulation to achieve true interrupt simulation. eB-SIM allows developers to run a real cross-compiled RTOS in the same way it would run on real target hardware.

eBinder Packaging

eBinder includes a cross compiler, an RTOS-aware multi-context debugger, and development tools for system configuration, system build, advanced testing and optimization.

Based on Software Components

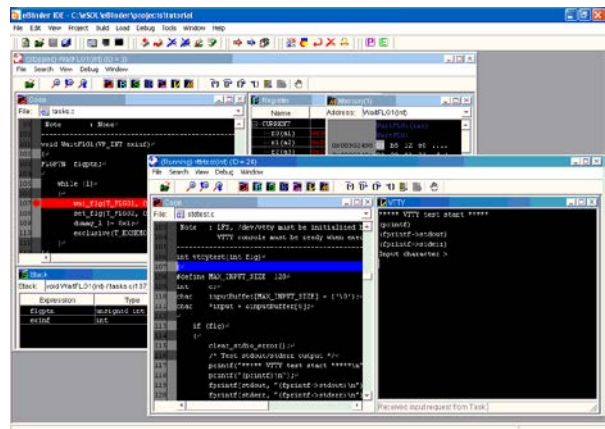
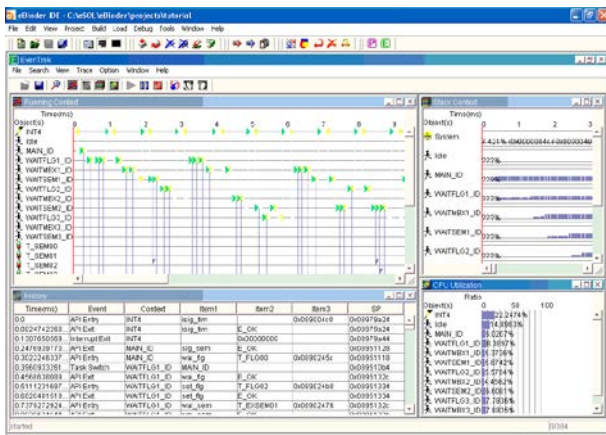
All of the tools that make up eBinder are designed to allow the user to configure their system by combining software components. The optional PackageBuilder provides advanced eBinder functions for packaging user-developed components and efficiently incorporating them into a system.

Processors Supported

- ARM7/9/10/11 & MPCore, Freescale DragonBall iMX/L, MIPS 4K/5K, Renesas SH 3/4, SH3-DSP, Texas Instruments TMS320DM320/35x/36x/644x/646x
- Supported Compilers: RVCT (ARM), GCC (MIPS, SH)
- Many Board Support Packages are available

eBinder Package	Availability
Compiler	RVCT included for ARM. GCC included for MIPS and SH.
Debugger	Included
Editor	Included
Shell (Command-line based)	Included
Platform package builder	Included
Thread-safe C Library	Included
PartScope (Task-state Monitor)	Included
EvenTrek (System Analysis Tool)	Included
Realtime Profiler	Included
Virtual TTY	Included
Target Monitor	Included
Board Support Package	Select one BSP from the list
JTAG Driver	Optionally available for ARM Multi-ICE, Signum JTAGjet, KMC Partner J and YDC advicePLUS
eB-SIM	Optionally available for ARM and SH
PackageBuilder (Software component packaging tool)	Optionally available

Screenshots



License

eBinder is licensed per development workstation and is available for both node locked and network floating license at the same cost. Licenses are managed by FlexLM.

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