

SELECTING AN EMBEDDED RTOS



FEATURED INTERVIEW:

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GREEN HILLS SOFTWARE - RTOS PRODUCTS & SERVICES, 2009

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Q. First of all, tell us a little bit about yourself and your responsibilities at Green Hills Software.

A. I have been at Green Hills Software for 17 years, currently as CTO. I am responsible for the company's technology direction. I interface with sales and customers to both communicate our technology vision as well as incorporate the proceeds from those interfaces into our technology strategy and solutions.

Q. If you would, please give us a very brief, bulleted outline of your products. What sorts of real-time operating systems (RTOSes), tools, and/or services does your company offer?

A. **RTOS**

INTEGRITY: RTOS for high reliability systems.

velOSity: RTOS for flat memory model systems.

u-velOSity: tiny, ultra fast RTOS for highly resource-constrained devices

Tools

MULTI Integrated Development Environment

Optimizing C/C++/Ada Compilers

DoubleCheck Static Analyzer

TimeMachine debugging and performance analysis suite

Green Hills Probe and *SuperTrace Probe* hardware-assist debugging devices

Services

Training, Consulting, Porting, Performance Optimization, Custom Solutions

In addition, Green Hills has a subsidiary, INTEGRITY Global Security, LLC (<http://www.integrityglobalsecurity.com/>) that provides security technology and services to the enterprise market.

Q. What is Green Hills Software's "unique value proposition" for the embedded systems engineer or programmer who is considering an embedded RTOS?

What do you and your products do to help him get his product to market faster, cheaper, better?

- A. We are the leading experts in embedded software development, enabling our customers to achieve total reliability, absolute security, maximum performance, the lowest manufacturing and development costs, and the fastest time to market. We fulfill this promise by delivering the industry's best, leading edge technology, top-notch technical support, and long-term stable corporate management and customer relationships.

Q. How are you different as a company from competitors? What sets your products apart from those of other RTOS companies?

- A. Green Hills is the industry innovator, while other suppliers are followers who mimic our marketing messaging, make unfulfilled promises, and do not contribute anything novel and important for the advancement of technology. Examples include achieving POSIX conformance (Wind River promised it in 2004 and has yet to deliver; Green Hills promised it in 2003 and delivered it in 2004), achieving high levels of safety (Wind River promised DO-178B Level A certification with its VxWorks 653 product in 2002 and has yet to deliver; Green Hills delivered its first certification in 2002 and many since then), and achieving high levels of security (Wind River announced its plan to achieve high assurance Common Criteria certification in 2004 and has yet to deliver and continues to make misleading claims about how close they are to achieving an NSA EAL 6+ certification; Green Hills is the only organization to have been certified EAL 6+ by the NIAP/NSA).

Another key differentiator for Green Hills is the tight integration and completeness of solution with respect to RTOS and development tools. This tight integration provides the best possible debugging and analysis experience, enabling the highest levels of productivity, improved performance, lower memory and power, and shorter time to market.

Q. What embedded architectures do you support - e.g., Intel architecture, MIPS, ARM, PowerPC, etc.?

- A. We support all major architectures, including Intel, ARM, Power, MIPS, v850, ColdFire, and more.

Q. What additional software do you offer such as networking, file systems, TCP/IP, security, IDE, GUIs etc.? What about development tools? Are there particular partnerships with other software companies that are especially helpful?

- A. We offer a complete suite of networking, file systems, security protocols, USB, graphics, and more. Our networking offerings include a complete dual-mode IPv4/IPv6 routing stack and the *GateD routing suite*, including OSPF and BGP. For network security, we provide SSL/TLS, SSH, IPsec, and a complete crypto suite. Integrations and partnerships are numerous, including databases, GUI kits, communications services, etc.

Q. How are your products sold? What is a typical fee arrangement? Is it royalty free? Per unit royalty?

- A. Green Hills has numerous business models, including per-seat, subscription, and OEM models. Our embedded operating systems are royalty-free.
- Q. **Finally, what sort of “try before buy” experiences does your company offer? Are there free demo downloads, webinars, seminars? What web URL’s can you point us to for more information?**
- A. Evaluation versions of our development tools can be ordered online at http://www.ghs.com/eval/order_cd.html. Other requests should be directed to <http://www.ghs.com/contact/email.html> or by email to sales@ghs.com.
- Q. **Thank you for this product interview.**