

VENTURE DEVELOPMENT CORPORATION

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GHS Technology Conference – December 2006

VDC attended the 4th annual GHS Technology conference in Santa Barbara, California last week. This show is hosted each fall by Green Hills Software (GHS) and features presentations from the company's internal development team, industry end users, and a variety of embedded software market leaders and experts. The show again provided valuable information on some of the key trends in the embedded market and updates on Green Hills Software's latest capabilities. This bulletin presents a summary of the event.

IT'S ALL ABOUT SECURITY...

Green Hills' Dan O'Dowd kicked off the show with a thought-provoking discussion on how security attacks are on the rise, how both embedded and non-embedded software in current use has done little to prevent determined attacks, and how device vulnerabilities across all categories threaten the reliability of these systems – ultimately leaving the public at risk. This presentation set the tone for the entire show, as Green Hills continued to demonstrate the areas in which it has focused on building advanced security features around its entire product line, and certifying its software to the highest security standards.

KEY TECHNOLOGY EXHIBITS

As the key theme of the show centered on security and its importance to all markets, one of the first announcements was the release of the Green Hills **Platform for Secure Networking**. This platform is oriented at a number of device types, from network infrastructure to consumer electronics, and is based on the MILS (Multiple Independent Levels of Security) separation kernel technology within the INTEGRITY operating system. The platform is designed with a number of key security features including guaranteed resource allocation, application partitioning, access control, and others.

In addition, the company reviewed and demonstrated a number of key product announcements and technology developments that have occurred over the past year. Some of the key product milestones in 2006 included:

- The release of version five of GHS's **MULTI** development environment, including:
 - The **DoubleCheck** static analysis tool
 - The **Distributed Build** technology, allowing companies to use processing power across their development workstations to speed compile/download times
 - Fast virtual hardware simulation
 - Advanced visualization and analysis capabilities
 - New tools for improved multicore development

- The release of the 10th Anniversary Edition of **INTEGRITY**, which Green Hills expects to be the first operating system to be evaluated to EAL 6+ in early 2007. Some of the latest improvements include:
 - Support for non-uniform memory architectures (NUMA) and symmetric multiprocessing (SMP)
 - A new “pure virtual” device driver for improved security, reliability, and safety certification
 - A new “debug agent” and “kernel aware” debugging through the integrated MULTI 5 environment
- Green Hills Software’s release of the new ultra-small footprint operating system, **µ-VeIOSity**.
- Enhancements to the **TimeMachine** product line including TraceEdge-PCI, TraceEdge-PMC, and In-Memory Time Machine capabilities
- POSIX certification for INTEGRITY Workstation
- The release of the **Enhanced Platform for Automotive Systems**

In addition to these and other product announcements, discussions, and demonstrations about Green Hills Software’s technology, the two day event also included presentations from a number of clients and independent experts. Some of the most interesting included a presentation from the IPv6 Summit discussing the opportunities that will result from the rollout of the “new Internet” through IPv6, and a presentation from the Idaho National Laboratory on efforts to protect infrastructure critical to national security.

VDC’S THOUGHTS ON SECURITY IN THE EMBEDDED MARKET

In today’s international landscape of terrorism and ever-advancing network connectivity, security certainly should have strategic relevance to all companies building embedded devices. Recent accounts of security attacks and the level of vulnerability across most of today’s computing systems will make security one of the more critical challenges faced by device manufacturers over the long term.

The key question is whether the problem of security vulnerability currently represents the primary concern of today’s computing manufacturers. Surely, within key verticals such as aerospace and defense, where security is more akin to reliability, this is currently the case. In addition, within networking and telecommunications, this is becoming an even more relevant issue. However, in other markets, VDC suspects that there is less attention paid to security than other pressing development requirements, perhaps to the detriment of the end user. VDC believes this will likely change over time, however, several factors could drastically change the level of focus on security in the short term:

- An acute, large-scale global security event
- Government mandate(s)
- Drastic increases in security attacks directly impacting device manufacturers financially, possibly through:
 - Law suits,
 - Disruption of services, and/or
 - Loss of current or potential customers.

In the absence of such catalysts in the short term, the goal of improved security may continue to receive second billing behind other factors on the minds of developers such as development cost, time-to-market, and inclusion and integration of new device features.

Fortunately for Green Hills, the company continues drive toward improving the quality of its development tools across these other areas as well, with new development tools and platforms offering more efficient development, a royalty-free real-time operating system, improved support for multi-core environments, hardware simulation, testing and debugging, and many others. As a result, many companies may ultimately select Green Hills' solutions for reasons other than security, and later on down the road be glad that Green Hills had the foresight to be thinking about embedded device security.

ALSO SEE

[Richard Goering's Article on the event in EE Times](#)

ABOUT VDC

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