Virtual Prototyping Solution Accelerates Software Development

Synopsys, a world leader in software and IP for semiconductor design, verification and manufacturing, announced the availability of Synopsys' Virtualizer tool set as part of its next-generation virtual prototyping solution. Virtualizer addresses the increasing development challenges associated with software-rich semiconductor and electronic products by enabling companies to accelerate both the development of virtual prototypes and the deployment of these prototypes to software teams throughout the design chain. Prototypes created with Virtualizer allow engineers to accelerate software development schedules by up to nine months, and deliver up to a 5X productivity boost over traditional approaches to teams performing software development, hardware/software integration, system-on-chip (SoC) verification and system validation.

"As designs increase in complexity and software content to meet the demand for smart devices, companies need to reduce the risk of embedded software project delays and improve developer productivity," says Steve Balacco, director, embedded software and tools practice, VDC Research. "Synopsys delivers a virtual prototyping solution that directly addresses the debug and analysis needs of embedded software developers in semiconductor and electronic products companies, while bridging the gap with hardware development flows."

Virtualizer leverages proven technologies from Synopsys' acquisitions of Virtio, VaST and CoWare as well as expertise gained from deployments at more than 50 leading semiconductor and electronic systems companies. For developers creating a virtual prototype, Virtualizer's graphical design entry, software debug, and analysis components combined with Synopsys' broad portfolio of system-level models deliver the fastest time to prototype availability. For software engineers using a virtual prototype of their system to create, integrate, and verify software, Virtualizer Development Kits (VDKs) offer a cost-effective development platform capable of executing unmodified production code at near real-time speed. VDKs provide fast and accurate virtual prototype simulation combined with unmatched multicore-aware software debug and analysis capabilities, concurrent hardware/software analysis, and synchronized debugging with third-party software debuggers and integrated development environments (IDEs). Open and standards-based, Virtualizer supports key industry standards such as OSCI TLM-2.0 and SystemC and runs on both Windows and Linux operating systems.

"Companies deploying virtual prototypes need to easily integrate with existing software development tools," said Norbert Weiss, international sales and marketing manager at Lauterbach. "The integration of Lauterbach's TRACE32® with Synopsys' Virtualizer enables development teams to start software development earlier in a more productive way, as well as expand these benefits from semiconductor to electronic systems companies."

Virtualizer's broad set of integration capabilities enables development teams to be more efficient and increase the degree of concurrent engineering in their product development process. Combined with FPGA-based prototyping such as Synopsys' HAPS systems, Virtualizer facilitates faster SoC validation and software bring up at near real-time performance. Connecting Virtualizer with RTL simulators such as Synopsys' VCS and emulation platforms such as EVE's ZeBu enables the use of embedded software in hardware verification environments. Software developers can integrate prototypes based on Virtualizer with their existing debuggers and IDEs, retaining their existing software tool investment. Virtualizer also gives electronic product developers the ability to conduct system validation by networking multiple virtual prototypes together with physical system simulation, testbenches and virtual I/Os. With this broad range of integration capabilities, Virtualizer is uniquely positioned to support the entire electronic supply chain by accelerating development at all stages of the product design cycle.

"With growing hardware complexity, it is critical for verification engineers to start their work as early as possible, and exercise the design with as much real system software as possible," says Lauro Rizzatti, general manager and marketing vice president of EVE. "The customer-proven integration of Synopsys' leading virtual prototyping solution and EVE ZeBu's fast emulation platform enables true software-driven scenarios, extending verification coverage and confidence and reducing verification schedules by up to six months."

"We are focused on helping our customers address their top system-level design challenges: starting software development earlier, accelerating hardware/software integration, and performing full system validation and testing," says John Koeter, vice president of marketing for IP & systems at Synopsys. "Synopsys' complete virtual prototyping solution – which includes Virtualizer, an extensive model library, services and support – enables our customers to start software design up to 12 months before first silicon is available. In addition, VDKs cost-effectively enable the development and integration of software throughout the design chain, from IP to SoCs to full systems. At a time of exploding software content at all levels of electronics, Virtualizer enables semiconductor and systems companies to start their software tasks earlier and avoid the risk of surprises late in the development cycle."

Availability

Virtualizer is available immediately. Virtualizer Development Kits (VDKs), which incorporate a subset of Virtualizer features specifically targeted for end use cases by software and hardware developers, are also available immediately. For more information, please visit: http://www.synopsys.com/Virtualizer [1].

Visit Synopsys online at http://www.synopsys.com [2].

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