Synopsys Introduces Virtualizer Native Execution on Arm Hardware to Accelerate Software-defined Product Development

End-to-End Virtual Prototyping Workflows Enable Faster Software Development and Time to Market for Automotive, HPC and IoT Systems

Highlights

- Delivers accelerated Virtualizer performance with native execution of software workloads on Arm servers
- Complete Virtualizer suite supported on Arm server hardware in the cloud or on-premise for modeling, simulation, debug, and analysis
- Leverages more than two decades of Synopsys leadership in virtual prototyping, supporting seamless scaling of existing virtual prototypes, full support of Synopsys' leading interface IP, and access to Synopsys' extensive standards-based model ecosystem
- Full integration with Synopsys' hardware-assisted verification (HAV) solutions to support additional software-centric use-cases including application-level power and performance analysis

SUNNYVALE, Calif., March 10, 2025 /PRNewswire/ -- Synopsys Inc. (Nasdaq: SNPS) today announced the availability of Synopsys Virtualizer™ Native Execution on Arm®-based hardware, transforming software development for edge devices by substantially[1] accelerating virtual prototype execution and deployment. This innovation delivers new, advanced capabilities that improve the productivity of engineering teams building software-defined products in the automotive, high-performance computing (HPC), and Internet of Things (IOT) industry segments.

"Software-defined products are driving a re-engineering of product development from silicon to systems," said Ravi Subramanian, chief product management officer, Synopsys. "Virtualizer Native Execution on Arm accelerates hardware/software co-design by enabling new agile software development methodologies for Arm-based edge and high-performance computing applications."

Synopsys Virtualizer Fully Supports Integration Into CI/CD Methodologies for Software-defined Products
Synopsys Virtualizer Native Execution leverages the commonality of instruction set architectures (ISAs) between Arm-based servers and edge devices to simplify and optimize software development, validation, and test workflows. This is achieved through common software development toolchains between the servers and edge devices, use of fast and scalable virtual prototypes in Virtualizer Native Execution on Arm, and deployment in CI/CD pipelines. The key benefits of improved productivity and faster turnaround time for software development extend throughout the product lifecycle from initial development through over-the-air and maintenance updates.

"As the automotive industry evolves, it is critical developers have the tools they need to keep pace with the rapid growth in software," said Suraj Gajendra, vice president of automotive product and software solutions, Automotive Line of Business, Arm. "With the introduction of Synopsys Virtualizer Native Execution on Arm, our mutual customers will be able to leverage the benefits of Arm in the cloud and at the edge, beginning software development much earlier, and ultimately saving time and money."

Key benefits enabled with Synopsys Virtualizer Native Execution include:

- **Faster validation turnaround time improves time to market:** By executing software binaries directly on Arm application processor cores, Virtualizer Native Execution significantly[1] increases simulation execution speeds for faster time to market. In addition, the use of common toolchains, unique Virtualizer debug and analysis, and integration into CI/CD pipelines accelerates debug cycles, enabling the deployment of higher quality software.
- **Early start for a broad set of software development use cases:** By leveraging Synopsys' extensive model libraries available on Arm hardware, including Synopsys Interface IP, accelerators, and other dedicated subsystem models, customers can start earlier integration and validation of software, from firmware through applications, to speed debug cycles and time to market.
- **Accelerated, comprehensive application-level and performance analysis:** Virtualizer Native Execution supports hybrid prototyping with Synopsys ZeBu® systems, including ZeBu Server 5, ZeBu EP1, ZeBu EP2, and Synopsys' recently announced ZeBu-200 systems. As a result, customers can accelerate execution time of software-intensive use cases, including software-based power estimation and software-based architecture performance analysis.
- **Full system-level validation with electronics digital twins:** Virtual prototypes based on Synopsys' Virtualizer Native Execution can benefit from Synopsys' comprehensive tool and embedded software ecosystem. This scalability allows customers to establish full electronics digital twins for earlier and more productive system validation, helping speed

software-defined product time to market.
- **Easy to deploy in customer's environment of choice**: Virtualizer Native Execution supports Arm-based infrastructure, such as Ampere, AWS, Google, Microsoft, and Nvidia. Developers can optimize compute resource utilization in the cloud or on-premise, balancing performance, power, and cost to align with their development workflows.

Availability and Supporting Resources
Synopsys Virtualizer Native Execution on the Arm hardware suite is available now. Additional information is available online at, www.Synopsys.com/virtualizer.

- Blog Post: Transforming Edge Software Development with Arm-based Virtual Prototyping
- Whitepaper: Virtualizer Native Execution Accelerates Software Defined Product Development for Arm Solutions

Learn more and schedule a meeting with Synopsys and Arm at Embedded World 2025, March 11-13, 2025, at https://www.synopsys.com/events/embedded-world.html.

[1] *Based on native server speeds of approximately 2-4 GHz.*

About Synopsys
Catalyzing the era of pervasive intelligence, Synopsys, Inc. (Nasdaq: SNPS) delivers trusted and comprehensive silicon to systems design solutions, from electronic design automation to silicon IP and system verification and validation. We partner closely with semiconductor and systems customers across a wide range of industries to maximize their R&D capability and productivity, powering innovation today that ignites the ingenuity of tomorrow. Learn more at www.synopsys.com.

Editorial Contact
Kelli Wheeler
Synopsys, Inc.
corp-pr@synopsys.com

SOURCE Synopsys, Inc.