Today’s Market Challenges

- Complex products are difficult to specify
- Product features are largely driven by software content
- Software development is dependent on hardware availability
- System design must consider both hardware and software
- Modern systems are increasingly difficult to debug

Zynq-7000 EPP Virtual Platforms: Streamlining software development

- Pre-hardware prototyping and configuration
- Hands-on system specification development
- System application development (Linux, RTOS, device drivers and bare metal applications)
- Full run control and hardware register visibility for enhanced debug capabilities
- Fault injection and Metric-driven hardware and software verification

Virtual Platform Overview

A virtual platform enables the development, integration and test of full software stacks without access to real hardware. Virtual platforms also provide new capabilities that can significantly reduce development time compared to traditional hardware-based approaches.

Xilinx provides multiple virtual platform choices to address the cost, capability and extensibility needs of different developers. Each virtual platform can be described as a functional simulator which includes a fast instruction set simulator for the ARM® Cortex™ A9 MPCore™ processor, models of the Zynq™-7000 EPP peripheral set, memory, and ancillary peripherals necessary to create a full development platform. Every device model is register-accurate, ensuring that they will run the same production binaries as the actual hardware.

Zynq-7000 EPP QEMU System Model

Open source-based solution for the Zynq-7000 EPP:

- Zero cost virtual platform for Zynq-7000 EPP
- Models key processing system peripherals
- Supports early software development: OS porting, device drivers, application development
- Hardware independent / pre-silicon solution
- Connects to real-world Ethernet, USB, video, and serial console

Extensible Virtual Platforms

Built upon Cadence® Virtual System Platform (VSP) technology, the Zynq-7000 EPP Software Developer and Zynq-7000 EPP System Creator virtual platforms provide stable, feature-rich, fast and functionally accurate models of the Zynq-7000 EPP processor system, its peripherals, memory and I/O allowing developers to run a range of operating systems and applications. These high-performance virtual platforms allow Linux™ to boot in under ten seconds.
ZYNQ-7000 EPP Virtual Platform

ZYNQ-7000 EPP Software Developer Virtual Platform
- Models ARM Cortex™-A9 MPCore™ processor
- Fast simulator with NEON and floating point support
- Models all major blocks of Zynq-7000 EPP devices
- Full run control – pause/restart
- Runs Linux, RTOS and bare metal applications

ZYNQ-7000 EPP System Creator Virtual Platform
- Supports advanced verification, analysis and profiling
- Integrated with Cadence System Development Suite
- Extensible with device and platform models written in TLM/SystemC and C
- SystemVerilog and VHDL are supported with additional Incisive® licenses
- Exports customized virtual platform for execution in the Software Developer Virtual Platform
- Supports metric-driven verification of hardware and software fault conditions

Take the NEXT STEP
For more information about the Zynq-7000 family, visit www.xilinx.com/zynq