

Compact Vitis for the Software Designer

Online Live

Workshop

| Applicable Technologies | Requirements | Contact |
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| Zynq®-7000 SoC Zynq® UltraScale+™ MPSoC Versal® ACAP | Conceptual understanding of embedded processing systems Basic experience in C or C++ programming Vitis™ unified development environment running on Linux | Michael Schwarz P. +49 7664 91313-15 E. info@plc2.de |
| Fee (net per person) | Inclusive | Duration |
| OL € 1,900 | Training material | 3 days |
| WO € 2,300 | Plus beverages during breaks Lunch | 3 days |

Workshop

This course focuses on embedded software related topics of the Xilinx® Vitis™ unified software platform. Vitis™ principal operation and project setup are presented for various scenarios, deploying the Zynq®-7000 SoC and Zynq® UltraScale+™ MPSoC or Versal® ACAP devices. This is also valuable for hardware developers to get hands on the respective processing system with the CPUs, e.g., for turn on of new designs.

The course drives knowledge for an embedded software designer to set up an embedded application on a given FPGA platform design. The attendees learn how to apply Vitis™ features and underlying concepts during the software development phase of a design cycle. Examples are based on the Zynq® MPSoC families' powerful Processing System (PS), which will be briefly introduced along with its peri-

pherals. Developing the software in a standalone environment will help to understand the low-level software and the provided libraries. An overview of embedded Linux is provided to let the attendee acquire knowledge to write Linux applications in Vitis™ IDE. The methods of debugging and profiling are applied to bring up the projects in live environments. Techniques presented in this workshop are set for approaching high-level system design workflows as the acceleration concepts forwarded in the workshop »Compact Vitis for Acceleration«.

Due to accompanying exercises, the course offers in-depth and practice-oriented training. All exercises for hands-on experience are ready for the execution board ZCU104 and QEMU.

Attendees of the online live course will do the practical exercises in the afternoon on their own.

Agenda

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| 01. Introduction to the Vitis™ unified software platform | 09. Migrating from SDK to the Vitis™ platform |
| 02. Overview of embedded software development | 10. Operating Systems |
| 03. Zynq® UltraScale+™ MPSoC architecture overview | 11. Concepts of the Linux OS |
| 04. Driving the Vitis™ software development tool | 12. Linux software application development |
| 05. System debugger | 13. Driving the PetaLinux tool |
| 06. Standalone software platform development and coding support | 14. Building and booting a Linux application with the Vitis™ IDE |
| 07. Basic Git version control in Vitis™ | 15. Software profiling overview |
| 08. Using linker scripts | 16. Understanding device drivers |
| | 17. Customizing and adding functionality |