

# Compact Zynq UltraScale+ MPSoC for the Software Designer

Online Live

Workshop

Applicable Technologies	Requirements	Contact
Xilinx® Zynq® UltraScale+™ MPSoC and RFSoc	Basic knowledge of digital system architecture Basic knowledge in VHDL or Verilog language and C/C++ is an advantage	Michael Schwarz P. +49 7664 91313-15 E. info@plc2.de
Fee (net per person)	Inclusive	Duration
<b>OL</b> € 1,900	Training material	3 days
<b>WO</b> € 2,300	Plus beverages during breaks Lunch	3 days

## Workshop

This three-day course will enable the software developer to get the best possible start on software development for the Zynq® UltraScale+™ MPSoC family.

This course explains the Zynq® UltraScale+™ MPSoC architecture and working with the Xilinx® Vitis™ and XSDK to develop the embedded design applications using Linux, FreeRTOS and BareMetal. Symmetric and asymmetric OS support, open source Linux kernel and rootfs build using Yocto and/or PetaLinux, FreeRTOS usage for the real-time processing unit, hypervisor architecture and software support, and at least mechanisms of individual boot configurations are shown and elaborated in exercises.

Debugging in simulation supported by QEMU or debugging on hardware targets – both are important integral parts of the methodology. While multiple processors in the UltraScale+™ MPSoC architecture are typically not running simultaneously in full performance mode, the power management of resources is software programmable and so enables power reduction in the runtime system.

Due to accompanying exercises, the course offers in-depth and practice-oriented training. Attendees of the online live course will do the practical exercises in the afternoon on their own.

## Agenda

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| 01. Zynq® UltraScale+™ MPSoC processing units       | 07. Symmetric multiprocessing                 |
| 02. Arm® TrustZone® technology                      | 08. Linux, PetaLinux, and Yocto               |
| 03. Hardware and software virtualization            | 09. Understanding device drivers              |
| 04. BareMetal application development and debugging | 10. FreeRTOS                                  |
| 05. Linux application development and debugging     | 11. Platform Management Unit (PMU)            |
| 06. Deploying OpenAMP in a heterogeneous system     | 12. Power management using the PMU            |
|   | 13. Boot configuration, FSBL, and boot images |