

Course Description

This two-day course is structured to provide system architects with an overview of the capabilities and support for the Zynq® UltraScale+™ MPSoC family.

Level – Embedded System Architect 3

Course Duration – 2 days

Course Part Number – EMBD-ZUPSA-ILT

Who Should Attend? – System architects interested in understanding the capabilities and ecosystem of the Zynq UltraScale+ MPSoC device.

Prerequisites

- Suggested: Understanding of the Zynq-7000 architecture
- Familiarity with embedded operating systems

Software Tools

- Vivado® Design Suite 2017.3
 - May require special Zynq UltraScale+ MPSoC family license
- Hardware emulation environment:
 - VirtualBox
 - QEMU
 - Ubuntu desktop
 - PetaLinux

Hardware

- Host computer for running the above software*

* This course focuses on the Zynq UltraScale+ MPSoC architecture. Check with your local Authorized Training Provider for the specifics of the in-class lab environment or other customizations. This version of the class does not use a physical board, but rather a local emulation environment and the Vivado Design Suite.

After completing this comprehensive training, you will have the necessary skills to:

- Effectively use power management strategies and leverage the capabilities of the platform management unit (PMU)
- Identify mechanisms to secure and safely run the system
- Outline the high-level architecture of the devices
- Define the boot sequences appropriate to the needs of the system

Course Outline

Day 1

- Zynq UltraScale+ MPSoC Overview {Lecture, Demo, Lab}
- Zynq UltraScale+ MPSoC HW-SW Virtualization {Lecture, Demo, Lab}
- QEMU {Lecture, Demo, Lab}
- Zynq UltraScale+ MPSoC Security and Software {Lecture, Demo}

Day 2

- Zynq UltraScale+ MPSoC Power Management {Lecture, Demo, Lab}
- Zynq UltraScale+ MPSoC System Coherency {Lecture}
- Zynq UltraScale+ MPSoC DDR and QoS {Lecture, Demo, Lab}
- Zynq UltraScale+ MPSoC Booting {Lecture, Lab}
- Zynq UltraScale+ MPSoC Ecosystem Support {Lecture}

Topic Descriptions

Day 1

- Zynq UltraScale+ MPSoC Overview – Overview of the Zynq UltraScale+ MPSoC device.
- Zynq UltraScale+ MPSoC HW-SW Virtualization – Covers the hardware and software elements of virtualization. The lab demonstrate how hypervisors can be used.
- QEMU – Introduction to the Quick Emulator, which is the tool used to run software for the Zynq UltraScale+ MPSoC device when hardware is not available.
- Zynq UltraScale+ MPSoC Security and Software – Defines what safety and security is in the context of embedded systems and introduces several standards.

Day 2

- Zynq UltraScale+ MPSoC Power Management – Overview of the PMU and the power-saving features of the device.
- Zynq UltraScale+ MPSoC System Coherency – Learn how information is synchronized within the API and through the ACE/AXI ports.
- Zynq UltraScale+ MPSoC DDR and QoS {Lecture, Demo, Lab} – Understand how DDR can be configured to provide the best performance for your system.
- Zynq UltraScale+ MPSoC Booting – How to implement the embedded system, including the boot process and boot image creation. Also how to detect a failed boot.
- Zynq UltraScale+ MPSoC Ecosystem Support – Overview of supported operating systems, software stacks, hypervisors, etc.

Register Today

Xilinx's network of Authorized Training Providers (ATP) delivers public and private courses in locations throughout the world. Please contact your closest ATP for more information, to view schedules, or to register online.

Visit www.xilinx.com/training and click on the region where you want to attend a course.

Americas, contact your training provider at www.xilinx.com/training/atp.htm#NA or send your inquiries to registrar@xilinx.com.

Europe, contact your training provider at www.xilinx.com/training/atp.htm#EU or send your inquiries to eurotraining@xilinx.com.

Asia Pacific, contact your training provider at www.xilinx.com/training/atp.htm#AP, or send your inquiries to education_ap@xilinx.com, or call +852-2424-5200.

Japan, contact your training provider at www.xilinx.com/training/atp.htm#JP, or send your inquiries to education_kk@xilinx.com, or call +81-3-6744-7970.