

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

Price – \$1,600 or 16 Xilinx Training Credits

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 2018.1
 - 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. This version of the class does not use a physical board, but rather a local emulation environment and the Vivado Design Suite.

** Check with [Morgan Advanced Programmable Systems, Inc.](http://www.morgan-aps.com) for the specifics of the in-class lab board or other customizations.

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

Morgan Advanced Programmable Systems, Inc. (MAPS, Inc.) delivers public and private courses in locations throughout the central US region; including Iowa, Illinois, Kansas, Minnesota, Missouri, Nebraska, North Dakota, South Dakota and Wisconsin.

Visit morgan-aps.com/training, for full course schedule and training information.



You must have your tuition payment information available when you enroll. We accept credit cards (Visa, MasterCard, or American Express) as well as purchase orders and Xilinx training credits.

Student Cancellation Policy

- Students cancellations received more than 7 days before the first day of class are entitled to a 100% refund. Refunds will be processed within 14 days.
- Student cancellations received less than 7 days before the first day of class are entitled to a 100% credit toward a future class.
- Student cancellations must be sent [here](#).

MAPS Inc. Course Cancellation Policy

- We regret from time to time classes will need to be rescheduled or cancelled.
- In the event of cancellation, live on-line training may be offered as a substitute.
- MAPS may cancel a class up to 7 days before the scheduled start date of the class; all students will be entitled to a 100% refund.
- Under no circumstances is MAPS responsible or liable for travel, lodging or other incidental costs. Please be aware of this cancellation policy when making your arrangements.
- For additional information or to schedule a private class contact us [here](#).