



ARM Cortex-A7 MPCore Software Development

Summary:

This training course covers the issues involved in developing software for platforms powered by the ARM Cortex-A7 application processors.

Prerequisites:

- Basic understanding of ARMv7-A exception model
- Familiarity with ARM assembler and C programming
- Experience of embedded system development is helpful but not essential

Audience:

This course is aimed at software developers writing low level and bare-metal code for ARMv7-A processors, concentrating on the Cortex-A7 processor.

Length:

3+ days

Modules:

Optional Day 0:

ARM Architecture Fundamentals.

Recommended for audiences developing low level code on ARM for the first time. This optional day introduces the ARMv7-A ISA, exception model and memory model.

Day 1-3

- Introduction to the ARM Architecture
- Cortex-A7 MPCore Overview
- Caches and Branch Prediction
- Using the MMU
- Writing C for ARM
- Booting a Cortex-A7 MPCore
- Booting Workbook
- Barriers
- OS Support
- Synchronization
- Cache Coherency
- Programming the GIC
- GIC Workbook
- Multi-Cluster
- Cortex-A Power Management
- Debug
- PMU Workbook
- NEON Overview
- TrustZone
- Virtualization

Optional Day 4:

Exploring one subject in more detail. Available topics are:

- TrustZone
- NEON
- Fast Models