

Topic 2: FPGAs technologies and their application Configurable computing

Abstract

Over the last 30 years FPGA design applications have increased exponentially. They have moved from designs only involving digital logic to other areas such as embedded controllers, Digital Signal Processing, communication, and configurable computing. The Xilinx Zynq FPGA family is a perfect example of how far FPGA's have come, providing plenty of FPGA fabric and two embedded ARM hard cores that can implement a full blown Linux Operating System. This has made exposure to and mastering of FPGAs very important to many people in the industry and academia. It utilizes a mixture of theory and hands on laboratories to give students what they need to know in VHDL programming, simulation and implementation of multi-disciplinary applications targeting FPGAs. Labs and homework are provided to reinforce the key concepts.