

## AI-ACCEL (v1.0)

### Course Description

This workshop demonstrates the tools and techniques required for software design and development using the the Vitis™ unified software platform.

Learn how to migrate from SDK and develop, debug, and profile new or existing C/C++ and RTL applications in the Vitis™ unified software environment targeting both embedded and data center (DC) applications. Also learn how to run designs on the Xilinx Alveo™ accelerator card using Nimbix Cloud.

The emphasis of this course is on:

- Reviewing the basics of using the Vitis platform
- Developing software applications using the Vitis platform
- Customizing board support packages (BSPs) for resource access and management of the Xilinx Standalone library
- Demonstrating the Vitis environment GUI flow and makefile flow for both DC and embedded applications
- Describing the Vitis platform execution model and XRT
- Describing kernel development using C/C++ and RTL
- Utilizing the Vitis analyzer tool to analyze reports
- Explaining the design methodology to optimize a design
- Building a software application using the OpenCL API and the Linux-based Xilinx runtime (XRT) to schedule the hardware kernels and control data movement on an embedded processor platform
- Building a software application using the OpenCL™ API to run hardware kernels on Alveo accelerator cards

**Level** – Embedded Software 3

#### Course Details

- 1 day
- Lectures
- Demos
- Work along labs using your computer with Vitis 2019.2\*
- \*A limited number of shared computers will be available if you do not have a laptop with Vitis

**Price** – \$99 or 1 Training Credit

**Course Part Number** – FTL-WS-VITIS

**Who Should Attend?** – Anyone migrating from SDK to Vitis and those who need to accelerate their software applications using FPGAs, SoCs (such as Zynq®-7000 SoCs, Zynq UltraScale+™ MPSoCs), and Versal™ ACAPs

#### Prerequisites

- Basic knowledge of Xilinx FPGA architecture
- Comfort with the C/C++ programming language
- Software development flow

#### Software Tools

- Vitis unified software environment 2019.2

#### Hardware

- Architecture: FPGAs, SoCs, ACAPs, and Xilinx Alveo accelerator cards

### Course Specification

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

- Implement an effective software design environment for a Xilinx embedded system using the Vitis unified software platform
- Write a basic user application and run it on an embedded system platform
- Describe how the FPGA architecture lends itself to parallel computing
- Explain how the Vitis unified software environment helps software developers to focus on applications
- Create kernels from C, C++, or RTL IP using the RTL Kernel Wizard
- Profile the design using Vitis

### Course Outline

- Introduction to the Vitis Unified Software Platform
- Vitis IDE Tool Overview
- Migrating Xilinx SDK Projects to the Vitis Platform
- Driving the Vitis Software Development Tool
- Introduction to Hardware Acceleration
- Alveo Data Center Accelerator Cards Overview
- Introduction to the Nimbix Cloud
- Profiling
- Debugging
- Introduction to C/C++ based Kernels
- Using the RTL Kernel Wizard to Reuse Existing IP as Accelerators
- Vitis Accelerated Libraries

### Register Today

Visit the [Xilinx Customer Training Center](#) to view schedules and register online.