Vitis Introduction Workshop

Embedded Software 3

AI 3

VITIS 1D (v1.0)

Course Specification

Workshop Description

This workshop demonstrates the tools and techniques to design and develop advanced programmable systems using the the Vitis™ unified software platform.

The emphasis of this workshop is on:

- Reviewing the basics of using the Vitis platform
- Migrating existing SDK projects to the Vitis platform
- Developing software applications using the Vitis platform

Level – Embedded Software 3

Workshop Details

- 1 day
- lectures
- demos
- Follow along lab using your computer with Vitis 2019.2*

Price – $299 or 3 Xilinx Training credits

March 25, 2020 – Fargo, ND (Done)

April 2, 2020 – Hoffman Estates, IL (Closed due to COVID 19)

April 8, 2020 – Orono, MN (Register MN)

April 16, 2020 – Cedar Rapids, IA (Register IA)

Workshop Part Number – VITIS 1D

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

Prerequisites

- C or C++ programming experience, including general debugging techniques
- Conceptual understanding of embedded processing systems as it relates to the Xilinx ecosystem (specifically writing and modifying scripts, user applications, and boot loader operation)

Next steps:

- Migrating to the Vitis Embedded Software Development IDE workshop
- Embedded Design with PetaLinux Tools
- C-based Design: High-Level Synthesis with the Vivado HLx Tool
- Accelerating Applications with the Vitis Unified Software Environment

Software Tools

- Vitis unified software platform 2019.2

Hardware

- Architecture: Zynq® UltraScale+™ MPSoC
- Architecture: Xilinx Alveo accelerator cards, SoCs, and ACAPs
- Demo board: Zynq UltraScale+ MPSoC ZCU104 board

*A limited number of shared computers will be available if you do not have a laptop with Vitis 2019.2 installed.

** Check with Morgan Advanced Programmable Systems, Inc. for the specifics of the in-class lab board or other customizations.

After completing this workshop, you will be familiar with:

- Implementing an effective software design environment for a Xilinx embedded system using the Vitis unified software platform
- Writing a basic user application and run it on an embedded system platform
- How a combined SoC/FPGA architecture lends itself to parallel computing
- Vitis unified software environment's ability to help software developers focus on applications
- Creating hardware kernels from C, C++, or RTL IP using the RTL Kernel Wizard
- Profiling an advanced programmable system using Vitis

Workshop Outline

The following workshop outline is tentative. Some topics may be added or removed as time permits.

- **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**

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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.

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- 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.

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