Embedded Design with AMD PetaLinux Tools

3 days - 21 hours

OBJECTIVES

- After this training, you will have the necessary skills to:
  - 1 - Use open-source embedded Linux components
  - 2 - Use the PetaLinux tool design flow
  - 3 - Configure the Linux environment, the root file system and network components
  - 4 - Create and debug an application
  - 5 - Build the environment and boot the system
  - 6 - Describe the Linux device driver architecture and develop custom hardware and custom drivers

PREREQUISITES

- FPGA Basic knowledge
- Knowledge/experience with C language and embedded software design

CONCERNED PUBLIC

- Technicians and Engineers in Digital Electronics
- All our training courses are given at a distance and are accessible to people with reduced mobility.
- Our partner AGEFIPH accompanies us to implement the necessary adaptations related to your disability.

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NOTES

- Release date: 22/05/2023

MVD Training - SIRET : 510 766 066 00011 - Tax Id : FR 74510766066 - NAF : 8559A
Training center registration: 73 3105366 31

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CHAPTERS

DAY 1
- Objective 1
  - Introduction to Embedded Linux {Lecture}
  - Embedded Linux Components {Lecture, Lab}
- Objective 2
  - Driving the PetaLinux Tool {Lecture, Lab}
  - PetaLinux Tool Design Flow {Lecture}
  - PetaLinux Application Development {Lecture, Lab}
- Objective 3
  - Customizing the Project {Lecture}

DAY 2
- Objective 3
  - Customizing the Root File System {Lecture}

- Networking and TCP/IP {Lecture, Lab}
- Objective 4
  - PetaLinux Application Debugging {Lecture, Lab}
  - Upgrading the Workspace {Lecture}
- Objective 5
  - PetaLinux Booting and Packaging {Lecture}
  - Basic Hardware Design Process with the Vivado Design Suite {Lecture, Lab}

DAY 3
- Objective 6
  - Linux Device Drivers Overview {Lecture}
  - User Space I/O and Loadable Kernel Modules {Lecture, Lab}
  - Custom Hardware Development {Lecture, Lab}
  - Custom Driver Development {Lecture, Lab}
  - PetaLinux: Advanced Configurations {Lecture}

TEACHING METHODS

- Inter-company online training :
  - Presentation by Webex by Cisco

  - Provision of course material in PDF format
  - Labs on Cloud PC by RealVNC

METHODS OF MONITORING AND ASSESSMENT OF RESULTS

- Attendance sheet
- Evaluation questionnaire
- Evaluation sheet on:
  - Technical questionnaire
  - Result of the Practical Works
  - Validation of Objectives
- Presentation of a certificate with assessment of prior learning

SUPPORT

- Authorized Trainer Provider AMD : Engineer Electronics and Telecommunications ENSIL
  - Expert AMD FPGA - Language VHDL/Verilog - RTL Design
  - Expert AMD SoC & MPSoC - Language C/C++ - System Design
  - Expert DSP & AMD RFSoC – HLS - Matlab - Design DSP RF
  - Expert AMD Versal – AI Engines – Heteregenous System Architect

PC RECOMMENDED

- Software Configuration :
  - WebEx Cisco
  - RealVNC Viewer
  - Vitis 2022.2
  - PetaLinux 2022.2
- Hardware configuration:
  - Recent computer (i5 or i7)
  - OS Linux 64-bits
  - At least 16GB RAM
  - Display resolution recommended 1920x1080

PARTNERS

AMD
Authorized Training Provider

CONTACT

Administratif / Formateur : (+33) 06 74 52 37 89
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Qualiopi
processus certifié
RÉPUBLIQUE FRANÇAISE

La certification a été délivrée au titre
de la catégorie d'action suivante :
ACTIONS DE FORMATION

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