AMD Authorized Training Provider

Embedded Design with AMD PetaLinux Tools

COURSE DURATION

3 days - 21 hours

TARGET OBJECTIVES AND SKILLS

- 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

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.
- People with disabilities may have special training needs. Our partner AGEFIPH accompanies us to implement the necessary adaptations related to your disability. Don't hesitate to to discuss your requirements.

agefiph

PREREQUISITES

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

NOTES

- Release date: 15/11/2024

MVD Training - SIRET : 510 766 066 00037 - Tax Id : FR 74510766066 - NAF : 8559A
Training center registration: 73 3105366 31

1

COURSE CONTENT

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 AND SUPPORT - ASSESSMENT & RECOGNITION

- **Teaching methods :**
  - Alternating lectures, technical questionnaires and exercises on individual machines.
- **Pedagogical follow-up :**
  - Signed attendance sheet
- **Pedagogical assessment :**
  - Continuous assessment and progress sheet :
    - Technical questionnaire
    - Practical work results
    - Validation of objectives
- **Satisfaction survey :**
  - At the end of training: assessment form completed by the trainee
  - At 3 months: evaluation form completed by the trainee after application to the company
- **Certificate :**
  - Training certificate with assessment of learning provided to trainee
  - Certificate of completion provided to employer

TEACHING METHODS

- **Inter-company online training :**
  - Fast Internet connection, webcam, headset
  - Presentation by Webex by Cisco
  - Provision of course material in PDF format
  - Labs on individual Cloud PC by RealVNC
- **Intra-company face-to-face training on customer site : (details to be confirmed prior to training)**
  - Suggested supply by the customer :
    - Training room
    - Video projector
    - Whiteboard
    - Individual PC with AMD tools
  - Provided by MVD Training :
    - Course material in PDF format
    - Practical work on individual PCs (loan of equipment available on request)

RECOMMENDED COMPUTER HARDWARE

- **Inter-company online training :**
  - Recent computer OS Linux or Windows 64-bits
  - Fast Internet, webcam, headset
  - Software tool WebEx Cisco
  - *AMD remote tools :*
    - Software tool RealVNC Viewer
  - *AMD local tools :*
    - Software tool AMD Vitis and PetaLinux 2022.2
- **Face-to-face training on customer site :**
  - Recent computer OS Linux or Windows 64-bits
  - Software tool AMD Vitis and PetaLinux 2022.2

TEACHING STAFF

- **William Duluc, Electronics and Telecoms Engineer, AMD Expert since 2009 and AMD Trainer since 2017 :**
  - 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

TECHNICAL, EDUCATIONAL, ADMINISTRATIVE AND FINANCIAL CONTACT

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3