👋 DUG#8 Shameless Plug 👋

- 🌱 **Growth & Transparency:** Showcasing our evolution and commitment to open-source.
- 📚 **Historical Record:** A resource for 3mdeb, future customers, and the privacy/security community.
- 📈 **Explore Business Model:** Learn from our open-source firmware journey, including potential pitfalls.

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What we will talk about

- Hardware,
- Services,
- Pace Enterprise Training,
- Dasharo Entry Subscription (aka Dasharo Pro/Enterprise Package)
- Merchandise,
- Everything available in 3mdeb shop: https://shop.3mdeb.com

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Hardware

TPMs

TPM 2.0

25,00 €
(ex. VAT)

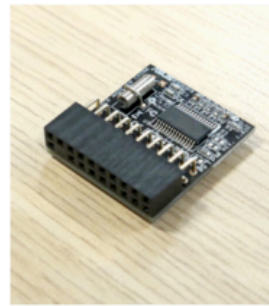
ADD TO CART

Sold out!

TPM 2.0 MSI MS-4462

12,00 €
(ex. VAT)

READ MORE



TPM Module for ASUS KGPE-D16

19,00 €
(ex. VAT)

ADD TO CART

TPM 1.2 compatible with Raptor Computing Systems Talos II mainboard

32,00 €
(ex. VAT)

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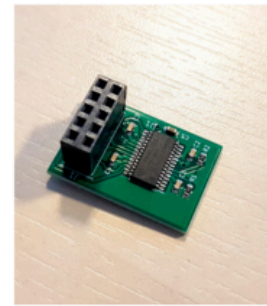

Dasharo TPM 2.0 for PC Engines APU3, APU4, APU6

25,00 €
(ex. VAT)

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https://shop.3mdeb.com/product-category/modules/

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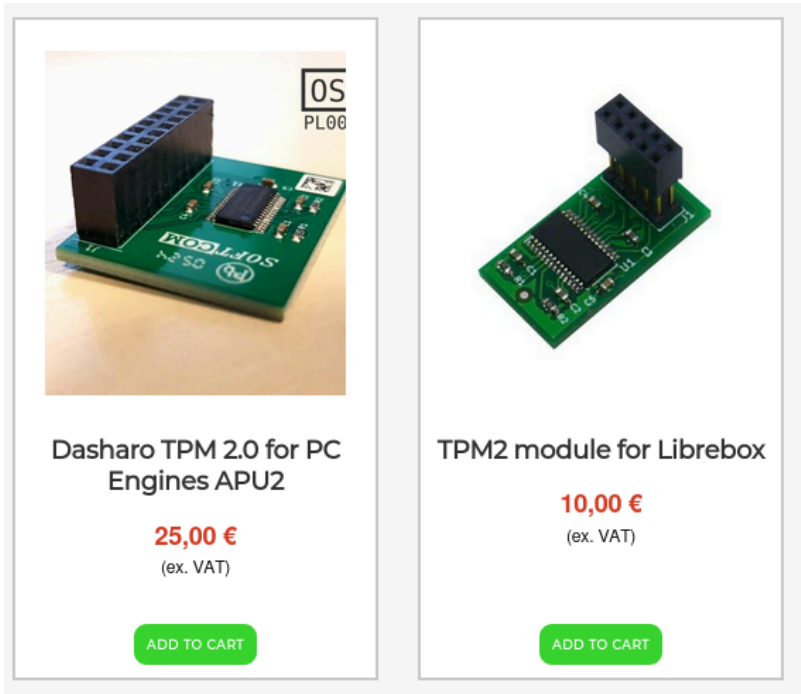
TPMs



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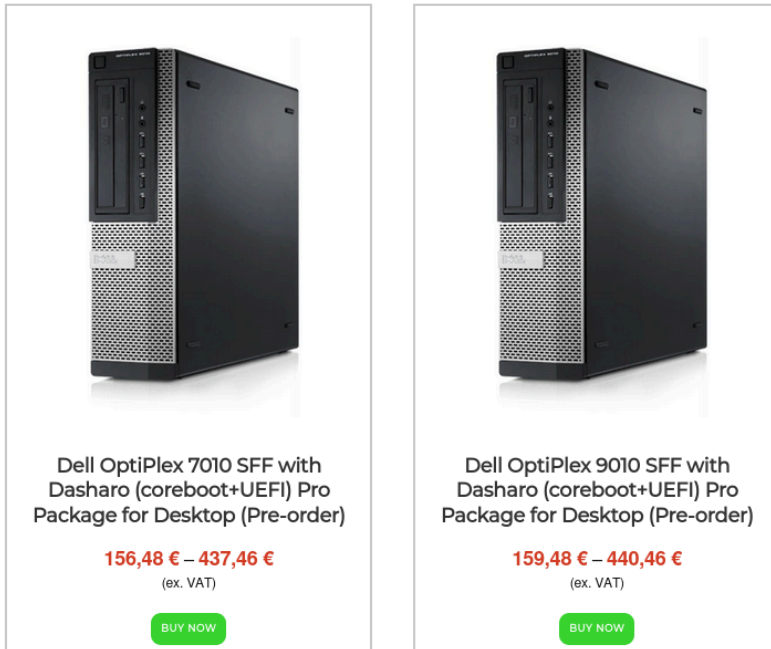
Dasharo Supported Hardware



https://shop.3mdeb.com/product-category/dasharo-supported-hardware/

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Dasharo Supported Hardware

https://shop.3mdeb.com/product-category/dasharo-supported-hardware/

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NS70 Series 17.3" Dasharo laptop by NovaCustom

BUY NOW

NV41 Series 14" Dasharo laptop by NovaCustom

BUY NOW

V54 Series 14" Dasharo laptop by NovaCustom

BUY NOW

V56 Series 16" Dasharo laptop by NovaCustom

BUY NOW

https://shop.3mdeb.com/product-category/laptops/

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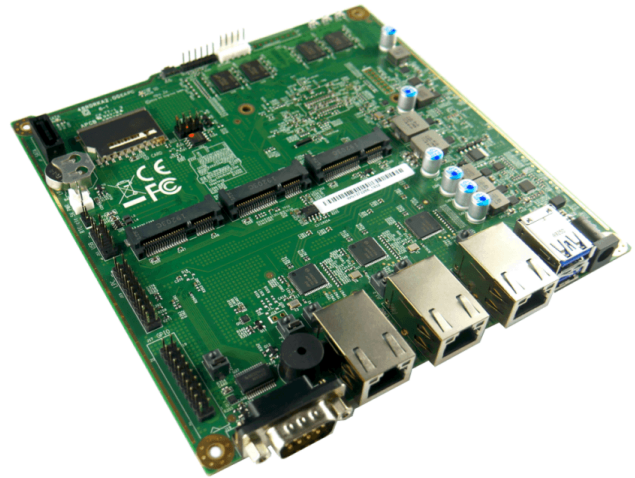

https://shop.3mdeb.com/product-category/system-boards/

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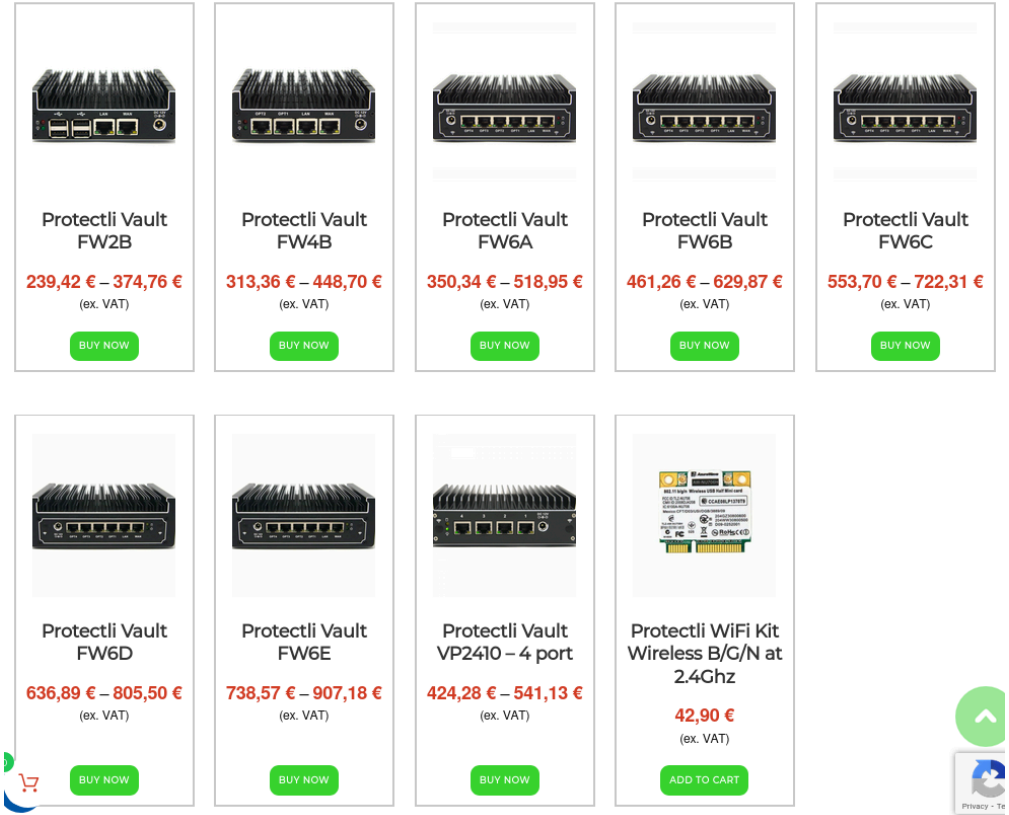

https://shop.3mdeb.com/product-category/vaults/

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Pace Enterprise Training

DS01CBI: coreboot for embedded linux developers

Overview

- modern x86 architecture
- firmware design principles by examples
- boot flow from power on to system take off
- Coreboot walk through
- firmware build process based on Coreboot
- coreboot developer workflow
- remote testing environment
- SPI flash theory of operation
- flashing and debugging tools
- writing payloads hands-on workshop
- FSP – from theory to integration
- firmware security basics in Coreboot ecosystem
- MinnowBoard – hands-on workshop using previously
- gained knowledge

Duration

5 days

40 hours (8h/day)

70% lectures

30% hands-on workshop

https://paceenterprisetraining.com/

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DS02RTA: Intel Root of Trust training

Overview

- Based on OST2 Arch4001, Arch4021, TC3001, TC3011 and TC3211
- UEFI introduction
- Modern x86 architecture
- Where is firmware and why blobs
- Intel x86 feature set and boot process
- Intel Root of Trust Technologies
- Other Root of Trust technologies overview
- Intel Management Engines features, vPRO, me_cleaner
- Workshops using Intel Skylake-based COMe module showing the process of enabling Boot Guard and practical examples of its features

Duration

4 days

17 hours (8h/day)

100% lectures

Materials

All training materials presentations and source code will be available for the client's internal usage.

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DS03SSI: System Security training

Overview

- Based on OST2 Arch2001, Arch4001 and Arch4021
- x86 assembly
- x86 operating system internals
- x86 boot process
- PCI and PCI Express
- Modern Intel system architecture
- DMA and IOMMU
- ISA and Plug and Play
- Debugging with GDB and core dumps
- System emulation with QEMU
- UEFI introduction
- UEFI Secure Boot
- Introduction to Roots of Trust and Trusted Computing Technologies

Duration

9 days

37 hours (4h/day usually, except for once 5h/day)

of lectures with hands-on labs

Materials

All training materials presentations and source code will be available for the client's internal usage.

Language

English

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ZH01ELI: Building and Development of Embedded Linux Systems

Overview

- Open source development overview
- Brief history of Linux
- Linux kernel introduction
- Using Git for source code management
- Introduction to Embedded Linux
- Getting kernel source code
- Linux kernel configuration and compilation
- Cross development
- Linux kernel modules
- Character device drivers
- Linux kernel debugging
- Device Tree files
- Typical Embedded Linux bootloaders
- Introduction to Build Systems
- Building custom Embedded Linux system for typical hardware target
- Embedded Linux tools
- Embedded Linux application development and debugging

Duration

4 days

32 hours (8h/day)

50% lectures

50% hands-on workshop

Materials

All training materials presentations and source code will be available for customer internal usage.

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ZH02YPI: Yocto Project Development

Overview

- Overview of an Embedded Linux system architecture
- Overview of the Yocto Project and OpenEmbedded ecosystem
- Using Yocto Project documentation
- Building emulation image
- Building image for the development board
- Board Support Packages and Yocto Project metadata
- Customizing the build with layers
- Image customization
- Extending existing recipes
- Overview of some of the existing build systems (Autotools,
- CMake, Meson)
- Creating a custom recipe
- Creating a custom image

yocto PROJECT

Duration

4 days

28 hours (7h/day)

40% lectures

60% hands-on workshop

Materials

All training materials presentations and source code will be available for customer internal usage.

https://paceenterprisetraining.com/

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https://hardwear.io/usa-2025/training/mastering-uefi-secure-boot.php

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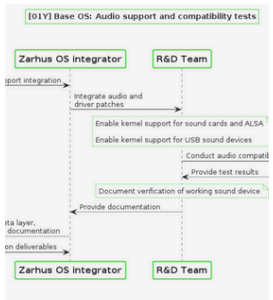
Services

Zarhus Services



Zarhus OS: Base OS – Audio support and compatibility tests

4200,00 €

(ex. VAT)

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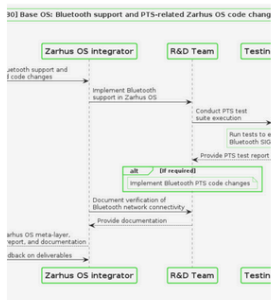

Zarhus OS: Base OS – Bluetooth support and PTS-related Zarhus OS code changes

5900,00 €

(ex. VAT)

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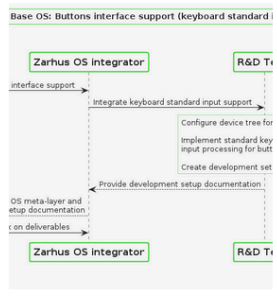

Zarhus OS: Base OS – Buttons interface support (keyboard standard input)

2450,00 €

(ex. VAT)

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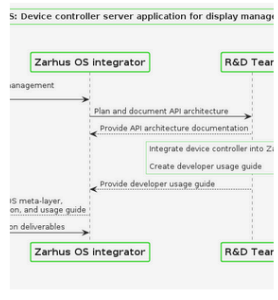

Zarhus OS: Base OS – Device controller server application for display management (HTTP)

6300,00 €

(ex. VAT)

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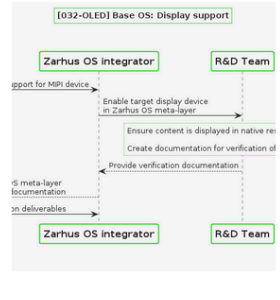

Zarhus OS: Base OS – Display support (3x OLED mono/color)

2450,00 €

(ex. VAT)

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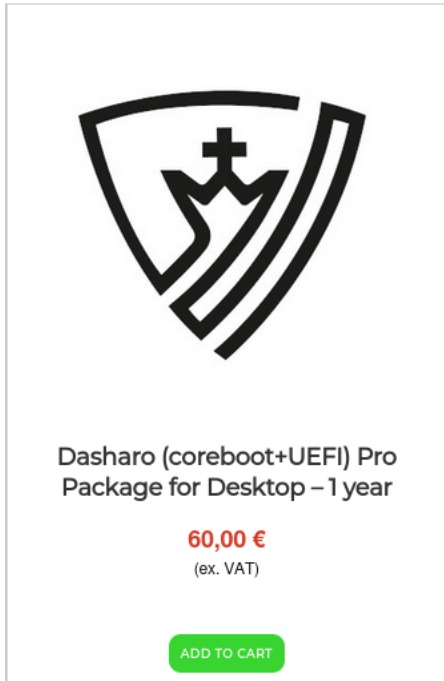
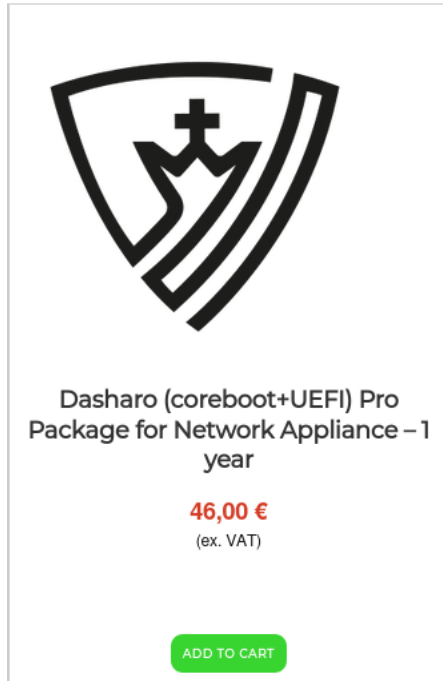
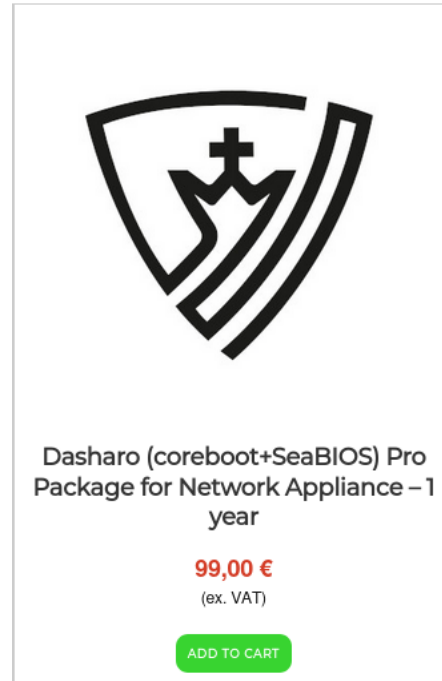
Dasharo Pro/Enterprise Package

(formerly Dasharo Entry Subscription)

Dasharo Pro/Enterprise Package







https://shop.3mdeb.com/product-category/dasharo-pro-package

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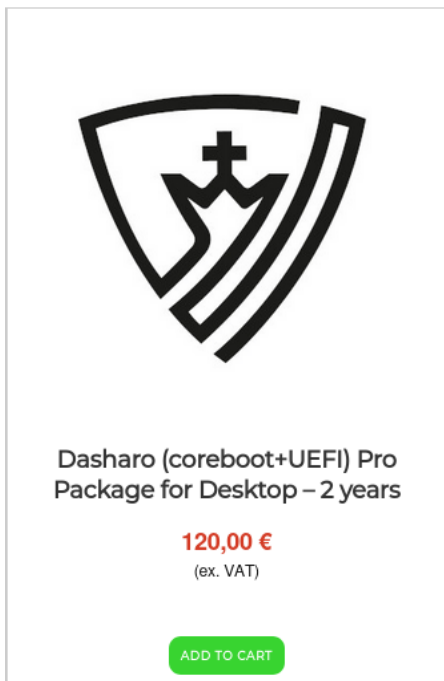
Dasharo Pro/Enterprise Package



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