HIGHER: European Heterogeneous Cloud Infrastructures for Next Generation Hybrid Services

Description

HIGHER brings together 11 partners from industry and academia to jointly develop and validate open-source designs for high-densityrack-scale systems capable of supporting cloud and edge services at scale in standards-based data center environments. Starting withthe ARM RHEA2 and RISC-V EPAC processors from EPI and the RISC-V EUPilot processor chip, HIGHER adopts the Open ComputeProject (OCP) Server family of standards to build processor modules for computation and acceleration, alongside a system security/control module, all operating with fully-featured operating systems and runtimes. HIGHER aims to design OCP server mechanics toprovide modular rack systems incorporating reusable standards-based infrastructure, encompassing hardware, low-level firmware,and systems software, ensuring trustworthy functionality for managing, securing, and controlling servers. The project's open-sourcehardware and software outcomes will enhance European Digital Autonomy and facilitate wide adoption. Furthermore, the project willassemble representative software stacks supporting a range of use cases, including accelerated data processing and analysis forconverged Cloud and HPC platforms, Infrastructure-as-a-Service with standardized management and monitoring, Platform-as-a-Service facilitating large-scale data processing for ML inference and data analytics, and memory pool management at the server racklevel, with access control safeguards aligned with maturing CXL standards.

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