https://cloudskin.eu/
@cloudskin2023
https://github.com/cloudskin-eu/

ABOUT THE PROJECT

Project title | CloudSkin: Adaptive virtualization for AI-enabled Cloud-edge Continuum
Programme | Horizon Europe
Call | HORIZON-CL4-2022-DATA-01
Duration | January 2023 - December 2025 (36 months)
Project Coordinator | Universitat Rovira i Virgili
Funding from the EC | €3,405,322.50

PARTNERS

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EUCloudEdgeIoT.eu
Funded by the European Union

CloudSkin

Adaptive virtualization for
AI-enabled Cloud-edge Continuum

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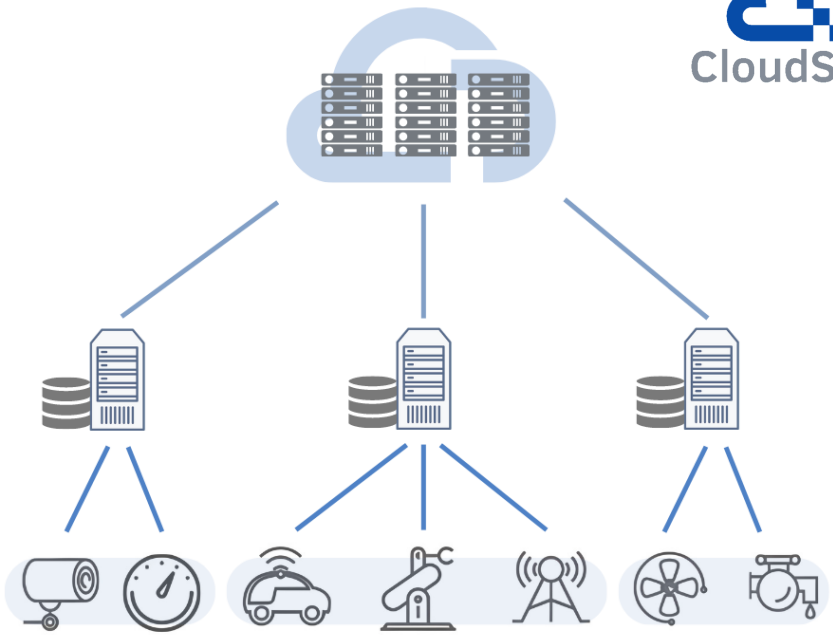
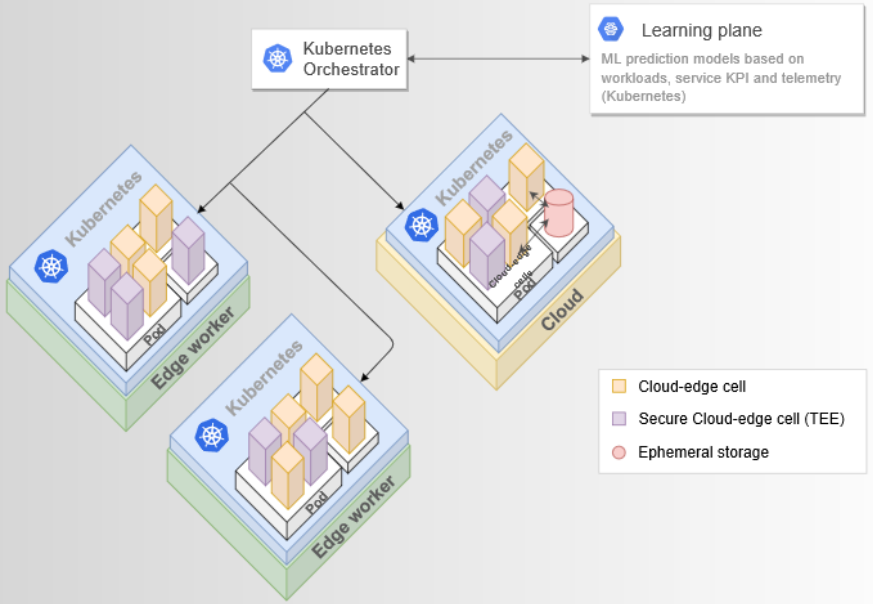
CloudSkin



OBJECTIVES

CLOUDSKIN aims to design a **cognitive cloud continuum platform** to fully exploit the available Cloud-edge heterogeneous resources, **finding the "sweet spot" between the cloud and the edge, and smartly adapting to changes in application behavior via AI.** To facilitate automatic deployment, mobility and security of services, CloudSkin will build an innovative universal container-like execution abstraction based on WebAssembly that **allows the seamless and trustworthy execution of (legacy) applications across the Cloud-edge continuum**.

- Smart management for the Cloud-edge continuum: Apply AI methods to transparently orchestrate Cloud-edge resources, in cooperation with the application execution framework and continuum infrastructure.
- Virtual execution for the Cloud-edge continuum: Developing a universal execution abstraction paired with trusted computing, we called it "Cloud-edge cells", to enable the trusted execution of applications across the continuum.
- Infrastructure support for the Cloud-edge continuum: Design an infrastructure to deliver bare metal resource performance to storage, despite virtualization and dynamic reallocation.



MISSION

Smartly adapting to changes in application behavior via AI

Building a universal container-like execution abstraction based on WebAssembly and TEEs

Designing a high-performance infrastructure for the cloud continuum, tailored to the short-lived, also bursty, execution of Cloud-edge tasks

USE CASES

Edge orchestration and video analytics
Orchestration of edge apps with matching cloud performance and the creation of AI video-analytics

Metabolomics
Edge/on-premise batch analytics and reduction of cloud offloading for the METASPACE metabolite annotation platform

Surgery
Real-time edge video analytics with dynamic resource allocation and Private Deep & Federated Learning at the edge

Agriculture IoT
Dynamic cloud offloading to match detail level and creation of an IoT-based agriculture data space