PrEstoCloud

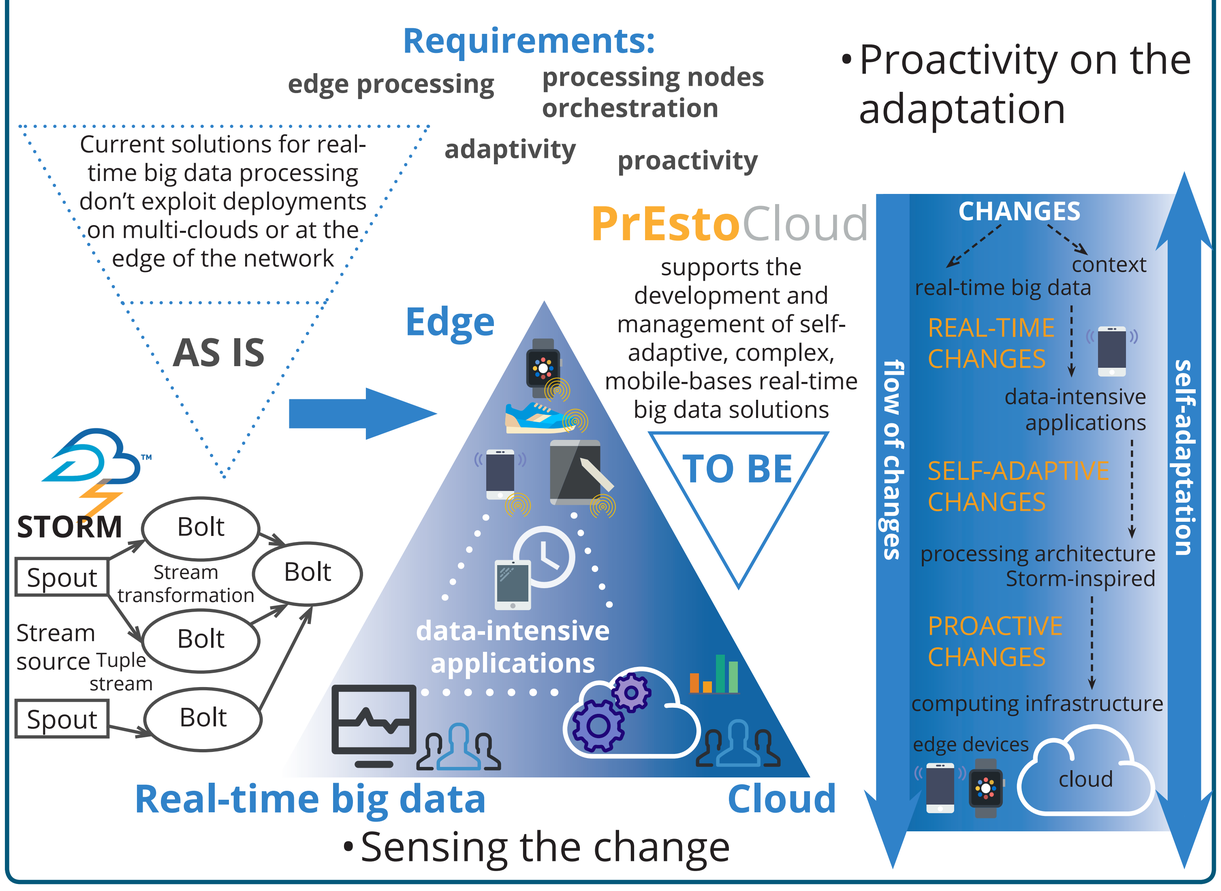
Proactive Cloud Resources Management at the Edge for Efficient Real-Time Big Data Processing

PROJECT DESCRIPTION

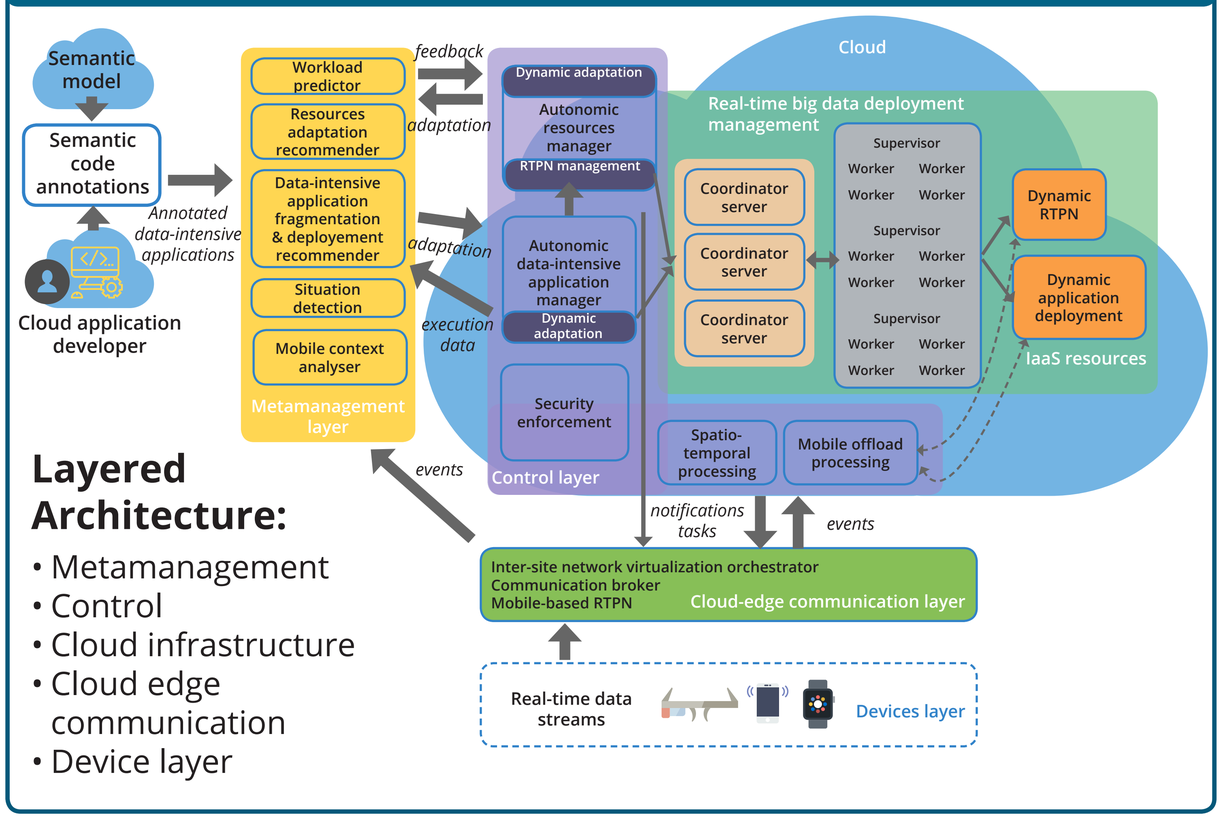
Among the greatest challenges of cloud computing is to automatically and efficiently exploit infrastructural resources in a way that minimises cloud fees without compromising the performance of resource demanding cloud applications. In this aspect the consideration of using processing nodes at the edge of the network, increases considerably the complexity of these challenges. PrEstoCloud idea encapsulates a dynamic, distributed, self-adaptive and proactively configurable architecture for processing big data streams.

CHALLENGES

- Exploit multi-cloud environments for deploying big data processing frameworks extended to the extreme edge of the network
- Make intelligent cloud placements and configurations of applications based on the anticipated processing load with respect to data volume and velocity
- Elaborate on components that are capable to recommend and implement adaptations in real-time
- Proactivity on the adaptation
- Sensing the change



PROJECT OVERVIEW



Layered Architecture:

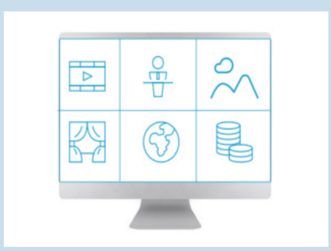
- Metamanagement
- Control
- Cloud infrastructure
- Cloud edge communication
- Device layer

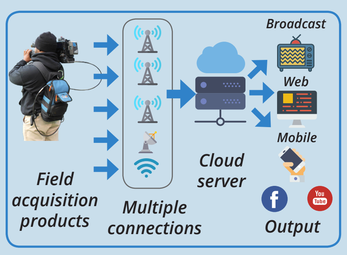
USE CASES

Transport (CVS)

A vehicle/fleet management processes real-time information and alerts – based on data streams from GPS, on-board diagnostics, tire sensors and others.

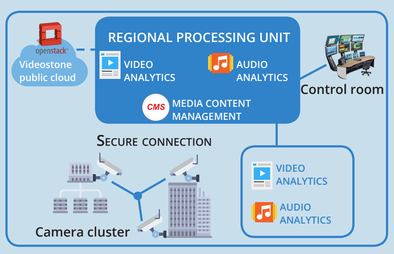
Media (LiveU)





A media prosumer platform offers personalized and flexible consumption of real-time stories by combining freelance reporting, traditional broadcasting and social media streams.

Surveillance (ADITESS)



A surveillance solution combines real-time data streams from cameras and pre-processing results from groups of unmanned aerial vehicles.

OBJECTIVES

- Inter-site network virtualization and security management
- Multi-layer cloud resource management and monitoring
- Distribution management
- Adaptive scheduling of IoT big data processing tasks between devices and the cloud
- Proactive cloud adaptation
- Test and validate the proposed approach in complementary use cases

CONSORTIUM

Activeeon – SCALE BEYOND LIMITS
CVS mobile – ADVANCED TELEMATICS
software AG
ICCS
cnrs
aditess – Advanced Integrated Technology Solutions & Services
UBITECH – ubiquitous solutions
Nissatech – innovation centre
IJS
N. Amram Technology
LiveU

http://prestocloud-project.eu/
info@prestocloud-project.eu
@PrEstoCloud PrEstoCloud Project

European Commission
HORIZON 2020

PrEstoCloud
Jan 2017 - Dec 2019