



ConPaaS Generic Service for Automated Application Deployment in Distributed Clouds

Myriads project-team

Rennes - Bretagne Atlantique
Inria research centre

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Head of Myriads team



San Francisco, 05/11/2015

Team objectives and local collaborations

Myriads objectives

- Design and implementation of system services for dependable application execution in clouds
 - Multi-site and multi-domain distributed clouds
 - Mobile cloud computing
 - Energy efficiency in clouds



Objectives related with “Smart City & Mobility Innovations: Towards environmental and social sustainability”

- Cloud support for mobile and IoT applications
- Frameworks for efficient data stream processing in clouds

Myriads in Inria@SiliconValley program

- Christine Morin, scientific coordinator of Inria@SiliconValley (2011-2013)
- DALHIS Inria associate team with the Data Science and Technology department at Lawrence Berkeley Lab
- Participant in Inria City Lab project



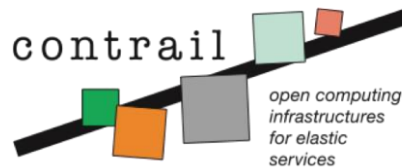
Quality of Experience in Mobile Interactive Apps

Mobile interactive apps require **low latency** (<50 ms) access to services
Today's mobile networks slow & unpredictable → **bad user experience**

→ **Deploy apps in a data center close to the user**

Genesis of the ConPaaS Generic Service

- ConPaaS open source PaaS created in Contrail European project
- ConPaaS PaaS further developed in Harness European project
- From research to innovation with the EIT ICT Labs MC-DATA project
 - Deployment of interactive applications in multi-cloud environments



ConPaaS Generic Service

Deploy any application in a multi-data center environment

Creation of a Manager & an Application VM from

- an application package
- a set of scripts for init, start, scale out

Features under development

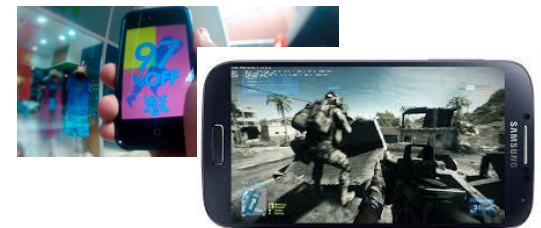
- Automatic selection of the best cloud for low latency
- Roaming: efficient VM migration

Upcoming ConPaaS release including the **Generic Service**

The screenshot shows a management interface for a 'WordPress PHP service'. At the top, there is a 'php' logo, the service name 'WordPress PHP service', and a 'stop' button. Below this, it indicates the service is 'running' and 'started a few moments ago'. There are links for 'access application' and 'manager log'. A section titled '3 instances running on Amazon EC2' contains a table with the following data:

Instance ID	Role	IP Address
Instance i-728af315	manager	ec2-23-20-0-55.compute-1.amazonaws.com
Instance i-80f78ee7	proxy web	23.22.0.53
Instance i-fcec959b	php	50.16.139.103

Below the table, there is a section 'add or remove instances to your deployment' with buttons for '0 proxy', '0 web', '+2 php', and a 'submit' button.



Mobile Interactive Applications



Social apps



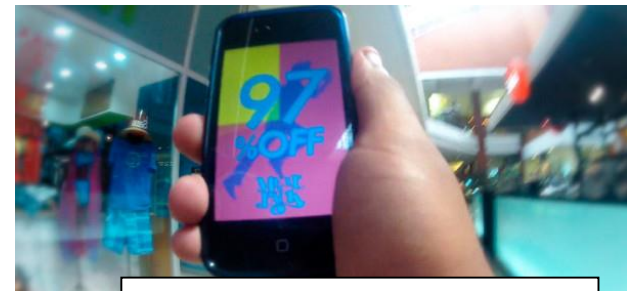
Real-time augmented reality (Google Glass)



Multiplayer games/
Cloud gaming



E-Health
(Apple Watch)



Hyper-local advertising

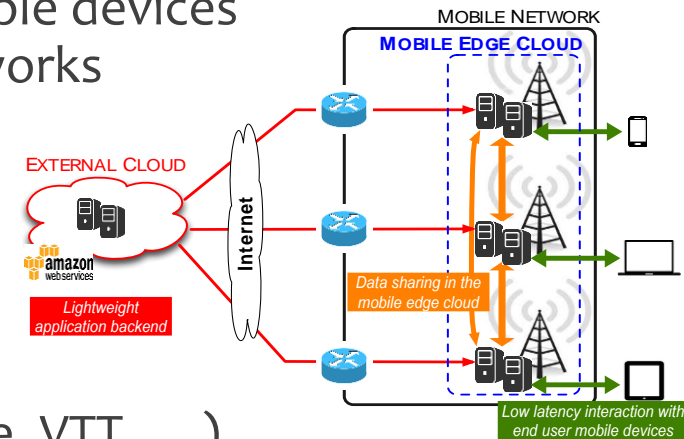
Next steps

Future work

- Quality of experience in multi-user applications running on off-the-shelf mobile or wearable devices connected by regular mobile phone networks
- H2020 European project submitted

Expected collaborations with industry

- Application providers (U-hopper, Proxible, VTT, ...)
- Mobile network operators (Vodafone, Ericsson, ...)



Thank you

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See a demo today

Teodor Crivat, software engineer, University of Rennes 1

More information: <http://www.conpaas.eu>