CloudPerfect Project: Enhancements in Cloud Management and Performance Evaluation

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Project Overview

- **Area of Activity:** H2020
- **Period:** 1/Dec/16 – 30/Nov/18
- **Coordinator:** ENGINEERING – Ingegneria Informatica Spa
- **Partners:**
  - Universities (2x)
  - Industry Partners (5x)
  - Operators (1x)

Partners

ENGINEERING

cognity

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COSMOTE
our world is you

OTEC INGEGNERIA

ICON
Technology Process Consulting

Valeo
SMART TECHNOLOGY FOR SMARTER CARS

ulm university universität ulm

CloudPerfect Main Objectives

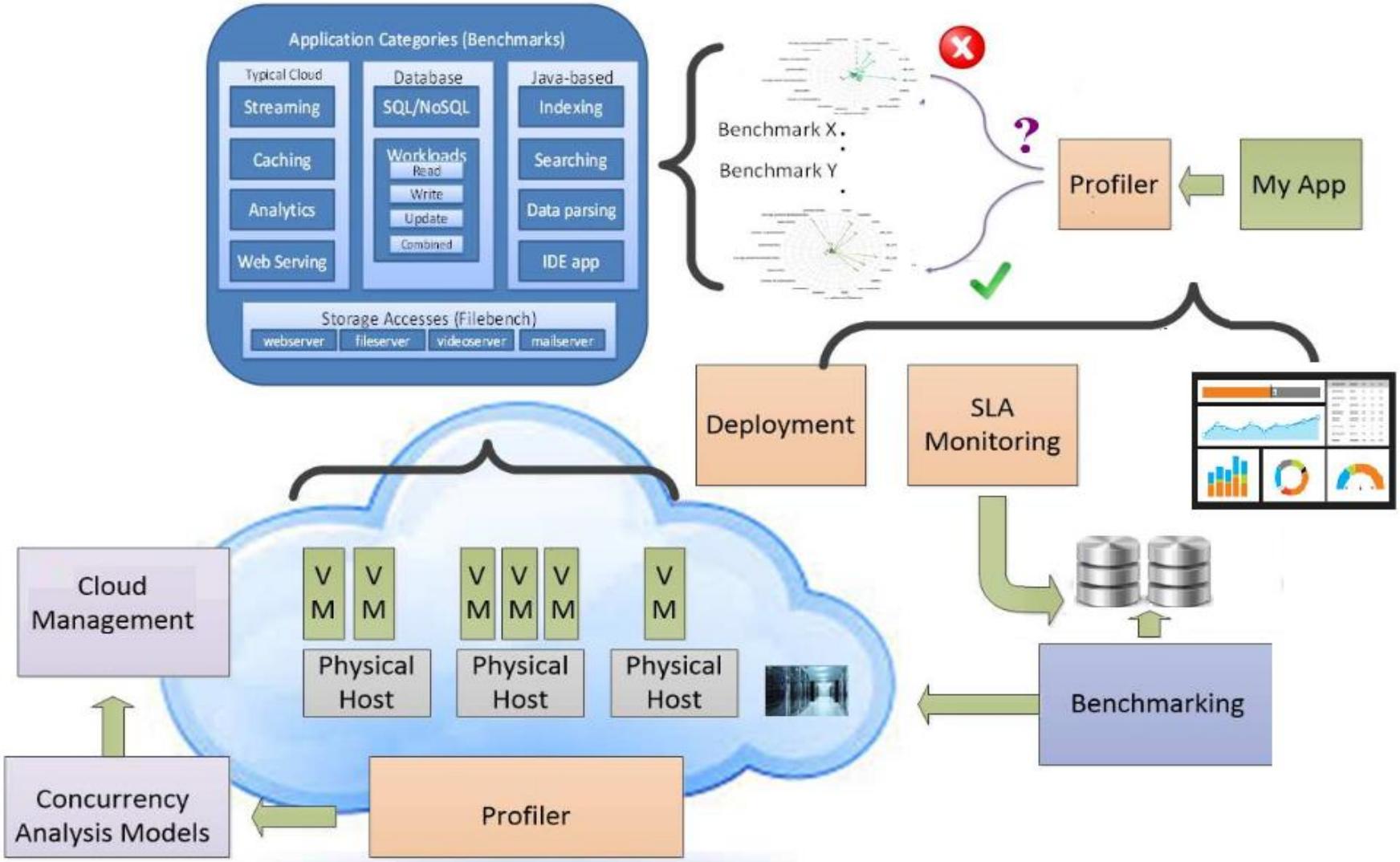
CloudPerfect aims to deliver an architectural approach and processes for:

- **IaaS/Cloud providers** to enhance the stability and performance of their infrastructures, through ***applications modeling/profiling***, optimal ***grouping of concurrently running services*** and efficient ***cloud resources management***.
- **Cloud adopters** (especially HPC and SaaS owners) to ***estimate the resource requirements of their applications*** more accurately, can minimize the cloud provider selection, procurement and deployment time by ***having access to benchmarking data***, and can ***monitor the maintenance of their SLA***.
- **3rd parties** to be enabled to act as independent validators of IaaS offerings, through a ***constant monitoring and benchmarking process***.

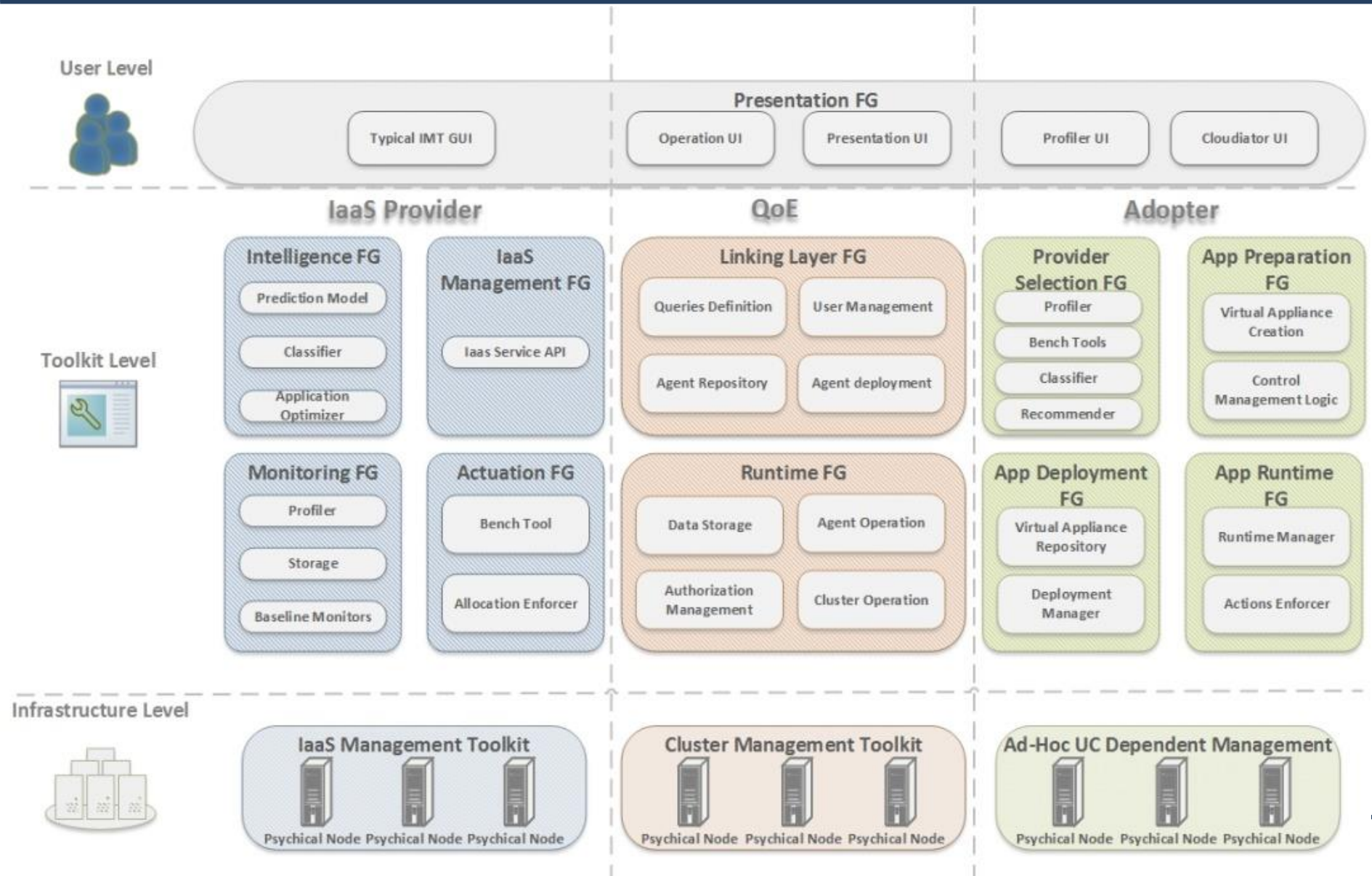
Technical Approach (1/2)

- The CloudPerfect Architecture relies on a number of toolkits and on the logical grouping between complementary components included in these toolkits.
- Three primary toolkits have been defined:
  - The **Cloud Adopter toolkit**
  - The **IaaS Provider toolkit** and
  - The **QoE Entity tools**, enabling service performance statistics retrieval and IaaS providers' benchmarking.
- Each toolkit consists of a subset of the following functions:
  - Application Profiler
  - Concurrency Analysis models
  - Cloud Management and Deployment Service
  - SLA Monitoring Agent
  - Benchmarking Suite

Technical Approach (2/2)



Architecture Overview



Use Cases and Demonstration

- Three Use Cases will be demonstrated in 3 different testbeds provided by UULM (Germany), ENGINEERING (Italy) and COSMOTE (Greece).
- **IaaS Provider resource allocation and performance optimization**
- **SaaS/Application owner Provider selection and application deployment & monitoring**
  - Provision of Services with High Computational Demands (Computational Fluid Dynamics)
  - Provision of Business Operation Services (CRM/ERP services)

Thank You!

CloudPerfect Project

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Engineering Ingegneria Informatica S.p.A.

Project website: https://cloudperfect.eu/
Twitter: https://twitter.com/cloud_perfect