A Cloud Interoperability Framework and Platform for User-Centric, Semantically-Enhanced, Service-Oriented Application Design, Deployment and Distributed Execution

Cloud4SOA Vision

Cloud4SOA is providing an open semantic interoperable framework for Platform as a Service (PaaS) developers and providers, capitalizing on Service Oriented Architecture (SOA), lightweight semantics and user-centric design and development principles.

The Cloud4SOA system supports Cloud-based application developers with multi-platform matchmaking, management, monitoring and migration by semantically interconnecting heterogeneous PaaS offerings across different providers that share the same technology.

These are value-added capabilities for the developer that facilitate the access and lifecycle management to the PaaS offering that best matches their computational needs, as well as empowering them with application portability in contrast to vendor lock-in. The results push towards a more open and dynamic market segment for rising PaaS providers and their potential developers.

What do we mean by Semantic Interoperability?

It is the ability of applications and their data to seamlessly be managed and migrated between Cloud PaaS offerings that are using the same technological background but different data models and Application Programming Interfaces (APIs).

Cloud4SOA Capabilities

Matchmaking

Cloud4SOA supports searching among the existing PaaS offerings for those that best match developers’ needs. The matchmaking algorithm computes the degree of relation between the semantic descriptions of PaaS offerings and application profiles.

Monitoring

Cloud4SOA provides a PaaS monitoring functionality based on unified platform-independent metrics, such as latency and application status, to allow application developers to proactively monitor the health and performance of business-critical applications hosted across multiple platforms.

Management

The management module builds an application deployment descriptor according to the format of the selected PaaS offering. It then checks if a valid SLA contract has been previously agreed between the specific PaaS offering and the application and initiates the deployment process using the Cloud4SOA standard API.

Migration

The Cloud4SOA framework aims to support a seamless migration between platforms, tackling semantic interoperability conflicts to allow portability of an application and its data.

Cloud4SOA is an R&D project selected under the “Software and Service Architectures & Infrastructures” track of the EU’s FP7 Programme.

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Budget: 4.13 M Euros

Maximum Community Contribution: 2.73 M Euros

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