OPTIMIS: Optimized Infrastructure Services

Description

With the challenges of service and infrastructure providers as the point of departure, OPTIMIS focused on open, scalable and dependable service platforms and architectures that allowed flexible and dynamic provision of advanced services. The OPTIMIS innovations can be summarized as a combination of technologies to create a dependable ecosystem of providers and consumers that were the foundation of an efficacious operation of services and infrastructures. This included innovations for optimizing the whole service lifecycle, starting from service construction. Trust, risk, eco-efficiency and cost are all crucial for optimizing deployment and execution, capturing the essence of the optimized cloud ecosystem produced by the trust on consumers and providers and the risk of not accomplishing specific ecological or economical goals. Adaptive self-preservation is key to meet predicted and unforeseen changes in resource requirements. Identification of new market roles and value activities calls for new business models and investigations of legal and regulatory aspects for governing cloud operation.

Part of the OPTIMIS outcome were architectures, an open specification, and a software toolkit for provisioning of sustainable IT services capable of satisfying key societal and economical needs. OPTIMIS supported the requirements of a variety of scenarios central to the next generation cloud service ecosystem by providing a toolkit with a set of key tools accompanied by reference architectures illustrating their use in a few scenarios of broad interest. The scenarios in focus were:

1. service providers utilizing cloud bursting to complement local capacity for peak loads
2. service providers making use of multiple clouds
3. infrastructure providers subcontracting resources in a cloud federation.

A core of the OPTIMS Toolkit was the OPTIMIS Base Toolkit comprising tools for assessing and managing aspects of trust, risk, eco-efficiency, and cost. By addressing the whole service lifecycle, taking into account the multitude of future cloud architectures, and a by taking a holistic approach to sustainable service provisioning, OPTIMIS provided a revolutionizing foundation for a reliable, sustainable, and trustful cloud market.

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