Ph: 9585554590, 9585554599
Email: support@salemsmartreach.com
URL: www.salemsmartreach.com

Compatibility-Aware Cloud Service Composition under Fuzzy Preferences of Users

Abstract:

When a single Cloud service (i.e., a software image and a virtual machine), on its own, cannot satisfy all the user requirements, a composition of Cloud services is required. Cloud service composition, which includes several tasks such as discovery, compatibility checking, selection, and deployment, is a complex process and users find it difficult to select the best one among the hundreds, if not thousands, of possible compositions available. Service composition in Cloud raises even new challenges caused by diversity of users with different expertise requiring their applications to be deployed across difference geographical locations with distinct legal constraints. The main difficulty lies in selecting a combination of virtual appliances (software images) and infrastructure services that are compatible and satisfy a user with vague preferences. Therefore, we present a framework and algorithms which simplify Cloud service composition for unskilled users. We develop an ontology-based approach to analyze Cloud service compatibility by applying reasoning on the expert knowledge. In addition, to minimize effort of users in expressing their preferences, we apply combination of evolutionary algorithms and fuzzy logic for composition optimization. This lets users express their needs in linguistics terms which brings a great comfort to them compared to systems that force users to assign exact weights for all preferences.