

QoS aware descriptions for RESTful service composition: security domain

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Abstract

Current research on QoS aware service composition focuses on a WSDL/RPC service paradigm, characterized by a centralized, synchronous, and stateful approach. In this paper, we explore QoS aware RESTful services composition, which is characterized by a decentralized, stateless and hypermedia-driven environment. We focus particularly on the security domain since current security practices on the Web illustrate the differences between both the centralized, function-based approach and the decentralized, hypermedia and resource-based approach. We rely on ReLL (a REST service description) that can be processed by machine-clients in order to interact with RESTful services. Our approach identifies key security domain elements as an ontology. Elements serve to model hypermedia-based, decentralized security descriptions supporting simple and complex interaction such as protocols and callbacks. In this paper, we propose an extension to ReLL that considers security constraints (ReLL-S) and allows a machine-client to interact with secured resources, where security conditions may change dynamically. A case study illustrates our approach..

Keywords

Service composition, Security, REST, Choreographies.