Abstract

With the growing adoption of the Service Oriented Architecture (SOA) in the industry and the wide deployment of Web services, users are increasingly requiring services that are capable of
meeting their quality-of-service (QoS) requirements. In this paper, we propose a novel framework for QoS-aware Web service provisioning, which relies on QoS brokers, to mediate between clients and service providers, and a QoS Notification Broker that implements a publish/subscribe model to handle notifications on significant changes in QoS offerings. Furthermore, we describe a multi-attributes algorithm for the selection of potential service providers that can fulfill clients’ requests. The algorithm calculates the utility value of each service provider, per Web service type, based on the client QoS requirements. One of the advantages of the approach is that service providers may provide several service types. These services may be simple Web services or composite Web services aggregated from other services. The publish/subscribe model allows QoS brokers to be aware of significant changes in the QoS offerings of service providers; and consequently, be able to make informed selection decisions. Besides, the proposed selection algorithm allows ranking service providers by matching their up-to-date QoS offers against the QoS required by the client.

Reference


Index Terms

Computer Science

Internet Computing

Key words

Web services

Service Oriented Architecture

QoS

QoS management
QoS Broker

Notification broker