

Development of a Web Service Client Framework for GUISET

Esau L. MATHONSI and Matthew ADIGUN

Center of Excellence for Mobile e-Services Dept of Computer Science University of Zululand,
elmathonsi@gmail.com and madigun@pan.uz.ac.za

Abstract- As more and more Web Services become available on the Web selecting the most appropriate Web Service among a group of Web Services which are offering similar functionality is a challenge. Quality of Service (QoS) is becoming an important criteria for selecting the best Web Service. We propose a broker based framework that will facilitate the selection of Web Services based on consumer's QoS requirement. This work will also show the importance of QoS measurement, QoS monitoring, QoS negotiation and Service Level Agreement during the selection of QoS aware Web Services, and combine these capabilities into the proposed QoS aware framework.

INTRODUCTION

Web Service technology is becoming increasingly popular and with the increasing number of Web Services on the web, Web Service consumers are always presented with a group of services offering similar functions. How to discover and find out the most appropriate Web Service among the large number of Web Services from service grouping continues to receive attention. The initial Service Oriented Architecture (SOA) specification of Web Service which is register—find—bind model is not sufficient to solve the above problem. This is because its discovery mechanism is only based on what the Web Service does without considering Quality of service (QoS) guarantee. QoS is becoming a key aspect in the Web Services competition “market” since the Web Service consumers are faced with the inevitability of selecting the right service provider among competitors; QoS is also essential as a useful mechanism to differentiate the Web Services which offer similar functions [6]. Again the current register—find—band model is neither accountable nor responsible for the QoS descriptions. To address the above issues we intend to propose a middle tier component that will mediate between the client, service provider and the UDDI register. The middle tier component must be QoS aware. This middle tier

component is also referred to as broker/dispatcher [7]. A typical QoS broker is a service which is capable of (1) accepting incoming requests from customers, (2) maintaining information about the resources and services rendered by Web Services' providers, (3) finds, through the registry, the set of QoS-aware Web Services able to deliver the customer required service, (4) selecting the most appropriate Web Services able to satisfy the customer required QoS, and (5) notifying customers of the approval or rejection of their request (6) Negotiating QoS between the Web Service consumer and the Web Service provider, (7) Measuring QoS to measure the Web Service guarantee from the Web Service provider's side. (8) Monitoring QoS to monitor any changes of the Web Service guarantee. (9) Using SLA to keep records of what level of QoS has been reached between the service provider and service consumer. The QoS broker model may implement various criteria depending on each organization's requirement; for example, all of the last four QoS broker capabilities mentioned above may not be found in one broker, but the first six capabilities are found in all of the brokers implemented for QoS-ware Web Service selection.

RELATED WORK

During QoS-aware Web Service provisioning it is important to consider QoS measurement, QoS negotiation, QoS monitoring and Service Level Agreement (SLA). There is a need to measure the QoS information published by the service provider, this is because service providers may want to give strong guarantees concerning the QoS of their services, especially when having in mind that unfulfillment leads to degradation in ranking, even exclusion from the registry and also the fact that without any QoS information given, a certain Web Service would possible never be selected. There is need to allow the Web Service consumer to negotiate with the service provide for any QoS guarantees.

There is to monitor that all the guaranteed Quality of service are delivered as it was promised and also we need to keep records of what level of QoS has been reached between the service provider and service consume incase one of the party violates the guaranteed QoS. [1] Propose a QoS aware service selection framework and this work fuses more on studying approaches and existing QoS tModels for representation of QoS information in current UDDI. However, in their service selection process they considered QoS negotiation but QoS Monitoring, QoS Measurement and Service Level Agreement is excluded. Another QoS ware framework proposed at [2] did consider the issue of QoS measurement although the author called it QoS verification and certification that measures the QoS information published by the Service Provider and this measurement is performed every time when a Web Service is published, but again the author did not consider monitoring the QoS information, QoS negotiation and Service Level Agreement. The work at [3] proposed a model of reputation enhanced QoS based Web Service discovery and they also used the tModel to publish QoS information in the UDDI but the they did not consider QoS measurement, QoS negotiation, QoS Monitoring and Service Level Agreement. From this related work it is clear that none of the existing frameworks has ever combined QoS measurement, QoS negotiation, QoS monitoring and SLA into one framework, our work is based on filling in this gap. The remainder of all the literature reviewed is presented on table 1

Frame-works	Capab-ilities	QoS measure	QoS negotiate	QoS monitor	SLA
[5]		Yes	No	Yes	No
[6]		No	No	No	No
[7]		No	Yes	Yes	Yes
[8]		Yes	Yes	Yes	No
[1]		No	Yes	No	No
[2]		Yes	No	No	No

Table 1: Literature Review Summary

3. PROPOSED RESEARCH APPROACH

This research intends to formulate a QoS aware service selections framework that will combine QoS

eamurement, QoS negotiation QoS Monitoring and SLA. This framework will be the first of its kind to combine these capabilities into one framework. The proposed framework will be used in our proposed GUISET infrastructure provide better QoS aware service selection.

Reference

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