

A State-Of-The-Art Review on Web Services Adaptation

Authors : M. Velasco, D. While, P. Raju, J. Krasniewicz, A. Amini, L. Hernandez-Munoz

Abstract : Web service adaptation involves the creation of adapters that solve Web services incompatibilities known as mismatches. Since the importance of Web services adaptation is increasing because of the frequent implementation and use of online Web services, this paper presents a literature review of web services to investigate the main methods of adaptation, their theoretical underpinnings and the metrics used to measure adapters performance. Eighteen publications were reviewed independently by two researchers. We found that adaptation techniques are needed to solve different types of problems that may arise due to incompatibilities in Web service interfaces, including protocols, messages, data and semantics that affect the interoperability of the services. Although adapters are non-invasive methods that can improve Web services interoperability and there are current approaches for service adaptation; there is, however, not yet one solution that fits all types of mismatches. Our results also show that only a few research projects incorporate theoretical frameworks and that metrics to measure adapters' performance are very limited. We conclude that further research on software adaptation should improve current adaptation methods in different layers of the service interoperability and that an adaptation theoretical framework that incorporates a theoretical underpinning and measures of qualitative and quantitative performance needs to be created.

Keywords : Web Services Adapters, software adaptation, web services mismatches, web services interoperability

Conference Title : ICWS 2016 : International Conference on Web Services

Conference Location : Madrid, Spain

Conference Dates : March 24-25, 2016