1-Checking Compatibility and Replace ability in Web Services Business Protocols with Access Control

Abstract

Web services applications are built by the coordination between set of Web services. Checking the compatibility between two services to guarantee that they can interact correctly is an important issue. In case of service update or replacement, there is a need for checking the replace ability to ensure that the new service is compatible with all the services which were compatible with the replaced one. These two type of checking are based on the services descriptions. This behavior can be described by business protocols of the service. Since a lot of Web services use access control policies to restrict the access to authorized consumers, these policies should be a part of the service description. Checking compatibility and replace ability between Web services by analyzing their business protocols after assigning the access control policies is the main contribution of this work.

2-Compatibility and Replace ability Analysis of Timed Web Services Protocols

Abstract

Nowadays, most enterprises use web services as a framework for facilitating application-to-application interaction within and across them. Describing behavior of web services is becoming more and more important. This behavior can be described by timed business protocols representing the possible sequences of message exchanges. Studying the behavior of web services by analyzing their timed business protocols is the main contribution of this work. This paper introduces notions of compatibility and replace ability w.r.t. timed business protocols together with the corresponding verification algorithms.

3-From Implicit to Explicit transitions in business protocols: A Semantic-Based Transformation

Abstract

Modeling Web services is a major step towards their automated analysis. One of the important parameters in this modeling, for the majority of Web services, is the time. A Web service can be presented by its behavior which can be described by a business protocol representing the possible sequences of message exchanges. To the best of our knowledge, automated analysis of timed Web services such as compatibility and replace ability checking are very difficult and in some cases are not possible with the presence of implicit transitions (internal transitions) based on time constraints. This paper presents an approach for converting any protocol containing implicit transitions to an equivalent one without implicit transitions before performing analysis.

4-Selecting Web Services for Choreography Implementation: Compatibility Checking Approach with Access Control

Abstract

Web services choreography defines the required behaviors of Web services which participate in implementing such applications with their interactions through message exchanges. The designer of the application collects the Web services that implement the defined choreography. The selected services must be compatible and perform the required operations of the application. Therefore, checking the compatibility between Web services to guarantee that they can interact correctly is a main step in the verification process. Selecting compatible Web services for implementing service choreography is the main contribution of this work. This is achieved by modeling and checking the compatibility between Web services by analyzing their business protocols after assigning the access control policies which will be presented using an ontology.

5-Timed Web services analysis after removing complex implicit transitions

Abstract

Time is an important parameter in modeling and analyzing Web services. A Web service can be presented by its behavior which can be described by a business protocol representing the possible sequences of message exchanges. Automated analyses of timed Web services such as compatibility checking are very difficult and in some cases are not possible with the presence of implicit transitions (internal transitions) based on time constraints. The semantics of the implicit transitions is the source of this difficulty because most of well-known modeling tools do not express this semantics (e.g., epsilon transition on the timed automata has a different semantics). This paper presents an approach for removing complex implicit transitions of the timed business protocols before performing the interoperability analysis without changing the semantics of the protocols.