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

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Abstract

Nowadays, Web services technologies are adequate for designing and implementing complex inter-enterprise business applications. 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. This type of checking is based on the services descriptions. Enriching services descriptions by including their behaviours is becoming more and more important. This behaviour can be described by business protocols representing the possible sequences of message exchanges. 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. 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.