An automatic subdigraph renovation plan for failure recovery of composite semantic Web services

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Abstract

A Web service-based system never fulfills a user’s goal unless a failure recovery approach exists. It is inevitable that several Web services may either perish or fail before or during transactions. The completion of a composite process relies on the smooth execution of all constituent Web services. A mediator acts as an intermediary between providers and consumers to monitor the execution of these services. If a service fails, the mediator has to recover the whole composite process or else jeopardize achieving the intended goals. The atomic replacement of a failed Web service usually does not apply because the process of locating a matched Web service is unreliable. Even the system cannot depend on the replacement of the dead service with a composite service. In this paper, we propose an automatic renovation plan for failure recovery of composite semantic services.