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基于组合上下文的服务替换方法
Service substitution method based on composition context

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作者　　　　　　　　　　　　　单位

王海艳，李思瑞　　　　　　　　南京邮电大学 计算机学院，江苏 南京 210003

中文摘要：

　　随着用户需求的多样性和网络环境的日益复杂性，组合服务的复杂程度越来越高，在对失效服务进行替换时，为了减少被替换服务的冗余信息和提高替换方法的准确性，提出以待替换服务的组合上下文为研究对象，通过以下2个步骤完成替换：第一，基于已有的着色petri网服务工作流建模方法，提出服务的组合上下文信息采集算法(CCICA, composition context information collection algorithm)，以服务的组合上下文为服务信息采集源；第二，提出基于编辑距离的服务替换方法(LDBSSM, levenshtein distance-based service substitution method)，并将服务接口的依赖关系加入到了算法中。仿真实验表明，该方法不仅较好地减少了被替换服务的信息冗余，而且有效提高了服务替换的准确性，具有更好的实用价值。

英文摘要：

　　With the variety of requirements from service requesters and the increasing complexity of network environments, service composition has become more and more complicated. In order to decrease redundant information of the substituted service and improve the accuracy of service substitution, the composition context was regarded as the matching criteria and tried to substitute failed service with the following two steps. First, a composition context information collecting algorithm (CCICA) was proposed based on the color petri net model of the service workflow, and regarded the composition context as the collecting source of service information. Second, a levenshtein distance-based service substitution method (LDBSSM) was given, which was integrated with dependencies between service interfaces. Simulation results show that the proposed LDBSSM method is practical because it can not only reduce redundancy of substituted service information but also effectively improve the accuracy of service substitution.

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