

论文

基于SOA的协同设计网络性能优化

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摘要:

为了优化协同设计网络的服务性能,引入服务容器分层注册机制和基于服务质量(quality of service, QoS)的动态消息路由访问策略,提出了面向服务体系结构中的企业服务总线改进模型. 该模型通过构建服务容器间的树形结构关系,用深度优先搜索法实现服务查找,将查找范围限定在以服务请求容器和服务注册容器为叶节点的最小子树,增强了局部注册访问性能,减少了中心总线的请求负荷和网络开销,并在QoS 加权算法中综合当前测试数据和历史数据进行服务评估,以获取高质量的动态服务. 应用实例表明:当并发访问量较大时,改进模型的平均响应时间比现有全局注册模式减少30% 以上,并且在网络服务质量变差时能自动调整路由恢复到良好状态,提升了协同设计系统的效率.

关键词: 协同设计 企业服务总线 分层注册模式 动态消息路由

Performance Optimization of Collaborative Design Network Based on Service-Oriented Architecture

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Abstract:

In order to optimize the service performance of collaborative design network, an improved enterprise service bus(ESB) model with a layered service registry and QoS-based dynamic message routing was proposed in service-oriented architecture. By setting up a tree-like hierarchy among the service containers, this model uses a depth-first search to implement lookup service and narrow the search area to a minimal subtree with the service request container and service registry container as its leaves. This enhances the efficiency of local registry access to reduce the request load and network overhead of the central bus. Besides, a weighted quality of service (QoS) algorithm is adopted in the model for analysis of the current and historical measurement data, so that high-quality dynamic services are achieved. The results of application to the collaborative design system in a survey and design enterprise show that the improved ESB model reduces the average response time of the current global service registry by more than 30% under heavy access concurrency, and can automatically adjust the message route to regain a good working condition when the quality of network services is getting worse. Therefore, the efficiency of the collaborative design system is improved.

Keywords: collaborative design enterprise service bus layered service registry dynamic message routing

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1. 李柏林;何 刚 .一种协同设计系统的体系结构 [J]. 西南交通大学学报, 2007,42(1): 80-83

2. 李柏林;卢茂华 .协同设计系统中基于角色的访问控制 [J]. 西南交通大学学报, 2005,40(3): 330-333

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