# 多维 QoS 约束云任务调度研究

任金霞，钟小康
（江西理工大学 电气工程与自动化学院，江西 赣州 341000）

摘要：云任务调度是目前研究的热点，为了在给定用户满意度的前提下缩短任务完成时间，建立了具有用户满意度约束的云任务调度数学模型，提出一种多维 QoS 约束的改进模拟退火云任务调度算法对模型进行求解.以任务完成时间为目标，引入多维 QoS 约束时间贪心策略产生初解，实行简单模拟退火过程，始终处于用户 QoS 约束下搜索最佳分配方案.仿真实验表明，该调度策略能够保证用户满意度的同时缩短任务完成时间，是一种用户和云服务提供商同时兼顾的有效调度策略.
关键词： 云计算；服务质量；贪心策略；模拟退火算法

# Cloud Task Scheduling Research with Multidimensional QoS Constraints

REN Jin-xia, ZHONG Xiao-kang
(College of Electrical Engineering & Automation, Jiangxi University of Science and Technology, Ganzhou 341000, China)

Abstract： Cloud task scheduling is a hotspot of current research, in order to shorten the task completion time on the premise of a given user satisfaction. Mathematical model of Cloud task scheduling with user satisfaction constraint is established. And an improved simulated annealing cloud task scheduling algorithm with multi-dimension QoS constraints is proposed to solve the model in the paper.The task completion time as the goal, time greedy strategy of multi-dimension QoS constraints is introduced to produce initial solution. The algorithm adopt simple simulated annealing process to search the best scheme under the user's QoS constraints.Simulation experiments show that the scheduling policy to ensure customer satisfaction and shorten task completion time. It is a kind of effective scheduling strategy that consider both users and providers of cloud services.
Key words： cloud computing ; quality of service; greedy strategy; simulated annealing algorithm ing algorithms［J］. Software: Practice and Experience,2011,41：23-50.

作者简介：
任金霞女，（1970-），副教授.研究方向为智能控制、智能优化算法.
钟小康(通讯作者)男，（1988-），硕士研究生.研究方向为云计算，智能优化.E-mail:zhongxiaokang88@163.com.