

基于混沌猫群算法的云计算多目标任务调度

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摘 要: 对于云计算中多目标任务调度问题, 提出了一种基于混沌猫群算法(chaos cat swarm optimization, CCSO)的多目标任务调度模型. 该模型中把任务执行时间和系统负载均衡做为优化目标. 模型中使用的调度算法通过搜寻和跟踪两种模式以及 Logistic 混沌映射对实验数据进行处理, 进而得到最优任务调度解集. 在 CloudSim 仿真平台上, 将实验结果与遗传算法和粒子群优化算法进行比较. 结果表明混沌猫群算法不仅缩短了任务执行时间也使系统负载更加趋于均衡, 从而能更高效的完成云计算中多目标任务调度.

关键词: 云计算; 任务调度; 混沌猫群算法; 执行时间; 负载均衡; 多目标优化

Multi-objective task scheduling based on chaos cat swarm optimization in cloud computing

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Abstract: Aiming at the multi-objective task scheduling problem in cloud computing, A multi-objective task scheduling model based on chaotic cat optimization algorithm (CCSO) is proposed. The scheduling algorithm used in the model processes the experimental data by searching and tracking two modes and Logistic chaotic map, and then obtaining the optimal task scheduling solution set. On the CloudSim simulation platform, making the simulation results compared with genetic algorithm(GA) and particle swarm optimization algorithm(PSO). The results show that the chaotic cat group algorithm not only shortens the time of task execution but also makes the system load more balanced, so that the multi-objective task scheduling in cloud computing can be completed more efficiently.

Key words: cloud computing; task scheduling; chaos cat swarm optimization; execution time; load balancing; Multi-objective optimization

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