

云平台海量任务的多约束调度算法优化研究

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摘 要: 提出一种新的云平台海量任务的多约束调度算法, 将任务优先级、资源服务能力、完成时间和费用作为约束条件建立多约束调度模型, 通过效用函数将云平台海量任务多约束调度模型转换成效用, 将最大化全部用户的总效用作为目标函数. 依据蚁群原理, 将云平台中被频繁调度的计算资源与数据资源之间的传输链路看作是蚂蚁经过的路径, 将信息素引入云平台任务调度中, 获取符合约束条件的计算资源, 达到调度目标最优. 实验结果表明, 此算法不仅效率高, 而且负载均衡性强, 所需总费用较低.

关键词: 云平台; 海量任务; 多约束; 调度

The Optimization of Many Constraints Scheduling

Algorithm Based on Cloud Mass Task

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Abstract: Put forward a new cloud platform massive task constraint of scheduling algorithm, will be completed task priority, resource service capacity, time and cost as constraint condition to establish more constrained scheduling model, through the utility function will cloud platform with massive task constraint scheduling model transformation efforts, and to all users to maximize the total utility as the target function. According to the principle of ant colony, is frequently scheduling in the cloud computing and data resources transmission link between the route as ants, introducing a pheromone task scheduling in the cloud platform, access to conform to the constraints of computing resources, to achieve the optimal scheduling objectives. The experimental results show that the proposed algorithm has not only high efficiency, and the load balance is strong, the overall cost is low.

Key words: cloud platform; massive task; many constraints; scheduling

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