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PSO应用于QoS偏好感知的云存储任务调度

Apply PSO into cloud storage taskscheduling with QoS preference awareness

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英文关键词: [cloud storage](#) [PSO algorithm](#) [task scheduling](#) [preference awareness](#)

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中文摘要:

研究有QoS偏好要求的云存储任务调度。首先,分析云存储与云计算的差异,用存在矩阵避免无效解的产生。其次,归纳云存储的QoS需求为时间、代价与质量3大类,并据此修改PSO算法的适应度函数用权重因子调节QoS偏好。实验发现,在不同优先级任务分布不均的情况下,分布广的任务的偏好会掩盖其他任务的偏好,因而不适宜用PSO进行整体性调度,而必须进行分级调度。实验证明,改进后的分级PSO算法对QoS偏好具有较好的感知能力。

英文摘要:

The task scheduling algorithm in cloud storage area with QoS preference awareness was studied. Firstly, the differences between cloud storage and cloud computing were pointed, and exist matrix was used to avoid the creation of useless solutions. Secondly, QoS factors were summarized into three classes: time, cost and quality classes. Based on the three classes, the fitness function of the PSO was improved by using weighted factors to adjust the QoS preference. The simulation results release that PSO is not fit for the overall scheduling when the task distributions of different degrees are unevenness because the QoS demand of wide distribution tasks may cover the QoS demand of other tasks. So a hierarchical scheduling based on degree is necessary. The simulation results show that the improved hierarchical PSO scheduling algorithm can aware the QoS preference relevantly.

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