

基于负载均衡的云计算资源分配算法

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摘 要: 针对云计算资源分配过程中负载不均问题, 提出了一种基于能耗成本和用户成本的改进蚁群算法 (CLB-ACO). 首先, 在云环境下建立用户成本及运营商能耗成本的函数模型; 其次, 在信息素更新机制中引入动态调节因子 DRF, 使算法经过多次迭代后达到负载均衡状态; 最后, 在 Cloudsim 仿真平台上进行仿真测试, 测试结果表明, 该算法能较好地降低任务执行成本, 满足资源负载均衡.

关键词: 云计算; 蚁群优化算法; 资源分配; 成本函数模型; 负载均衡

Resource Allocation Algorithm for Cloud Computing

Based on Load Balancing

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Abstract: In this paper, an improved ant colony algorithm based on the cost of energy consumption and user is proposed to solve the problem of load imbalance in the process of cloud resource allocation. First, the energy consumption cost function model of users and operators is established in the cloud environment. Secondly, we have introduced the dynamic adjustment factor DRF in pheromone update mechanism, which makes the algorithm achieves load balancing state after several iterations. Finally, the simulation test is carried out on the cloud simulation platform named Cloudsim. The experimental results show that the algorithm can reduce the task execution cost, and meet the resource load balancing well.

Key words: cloud computing; ant colony optimization; resource allocation; the cost function model; load balancing

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