

## 优化的资源配置算法在网格计算系统中的实现

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**摘要:** 资源配置算法是影响网格计算系统性能的一个最重要的因素.本文提出了一个基于资源优化配置算法的网格计算系统,系统包含网格用户、网格 broker, 网格资源和网格信息服务中心四个部分.其中重点介绍了资源优化配置算法,包含了用户端的资源配置与资源端的请求排列两部分.通过这两部分算法的优化,可以将请求分配到最合适的资源并且按照用户要求被处理.最后将本算法与两个已有的资源配置算法依据请求完成成功率、完成时间、平均等待时间三个参数进行对比,体现出本系统的优越性.

**关键词:** 网格计算系统; 资源配置; 请求排列; 完成时间; 平均等待时间

## Research and Realization of an Optimized Resource Allocation Algorithm in Grid Computing System

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**Abstract:** Grid computing has become one of the most popular topics in both research community and commercial companies. Allocation policy is one of the most important factors, which affect the performance of Grid Computing system. A new Grid Computing System based on an optimized resource allocation algorithm was proposed in this paper. It contains four components: Grid User, Grid Broker, Grid Resource and Grid Information Service. The optimized resource allocation algorithm, consisting of user side resource allocation and resource side job scheduling, was emphasized in this paper. With the combination of both sides' efforts, the jobs will be allocated to the most appropriate resources and completed in the most suitable order to meet the requirements of users. At last, the experiments and results comparison with traditional particle swarm optimization and Max-min scheduling are presented, which proves that the proposed algorithm has better performance than the other two algorithms.

**Key words:** grid computing system; resource allocation; job schedule; completion time; average waiting time

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