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学术探讨

多处理器并行EDPF优化实时调度算法

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摘要 实时多处理器系统的任务调度问题始终都是一个重要课题。针对该系统须保证任务截止期和有效性的特点，提出了一种并行EDPF（Earliest Deadline and Processing Time First）优化调度算法。该算法适用于可并行任务，并在考虑到了任务集的截止期和资源因素基础上，加入了运行时间因素，达到了减少调度返回次数以及提高有效性的目的。最后通过大量的仿真，分析了一些必要参数对调度成功率的影响，并通过比较证明了该算法明显优于Myopic算法。

关键词 实时多处理器 任务截止期 并行 调度返回 调度成功率

分类号

Parallelized EDPF real-time optimization scheduling algorithm for multiprocessors

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Abstract

Real-time multiprocessors scheduling is always an important subject in real-time system research.In this paper，according to the characters of these systems as deadline requirement and effectiveness，we develop an optimization scheduling algorithm based on parallelized EDPF.The improved algorithm is suitable for the parallelized tasks.It takes processing time into account besides the deadline and resource requirement of the task sets in order to reduce scheduling backtracks and increase effectiveness.After a great deal of simulation，we analyze the effect of success ratio by several parameters.At last，the new algorithm is proved to be better than the Myopic algorithm.

Key words real-time multiprocessors deadline parallelized scheduling backtrack success ratio

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