博士论坛

能耗受限时实现性能最大化的作业管理模型

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摘要　　在诸如星载并行计算机这样的系统中，一定周期内，系统能耗存在上限。围绕高产出率计算的概念，针对这种能耗受限条件下性能最大化的作业管理需求，提出了一种作业分配的模型。该模型基于计算节点、作业的性能和能耗参数，动态地进行作业分配，从而在满足能耗上限的前提下获得尽可能大的计算性能。通过模拟实验，验证了该算法的有效性。
关键词　　高产出率计算　作业管理　能耗受限　性能最大化
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Job management model to achieve performance maximum in environment of limited energy

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Abstract

In such systems as paralle computers on satellites，there exists a up limit with the system energy reserve during a period.The issue expands the idea of how to maximize the performance utilities in the conditions with the concept of High Productivity Computing（HPC）.A job management model is proposed that distributes the jobs dynamically based on the computing nodes'　and jobs'　parameters of performance as well as energy consumption，to achieve the maximum performance under the circumstance that energy consumption is limited.Through the simulation，the algorithm is proved to be effective.

Key words　　High Productivity Computing　job management　limited energy consumption performance maximized

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