



A MULTITHREADING BASED ENHANCED PROCESS SCHEDULING TECHNIQUE FOR HETEROGENEOUS DISTRIBUTED ENVIRONMENT

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ABSTRACT: In computer architecture, multithreading is ability of a central processing unit (CPU) or a single core within a multi-core processor to execute multiple processes or threads concurrently, appropriately supported by operating system. This approach differs from multiprocessing, as with multithreading processes & threads have to share resources of a single or multiple cores: computing units, CPU caches, & translation lookaside buffer (TLB). Multiprocessing systems include multiple complete processing units, multithreading aims to increase utilization of a single core by using thread-level as well as instruction-level parallelism. Objective of research is increase efficiency of scheduling dependent task using enhanced multithreading. gang scheduling of parallel implicit-deadline periodic task systems upon identical multiprocessor.



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[1] INTRODUCTION

The multithreading paradigm has become more popular as efforts to further exploit instruction-level parallelism have stalled since late 1990s. This allowed concept of throughput computing to re-emerge from more specialized field of transaction processing; even though it is very difficult to further speed up a single thread or single program, most computer systems are actually multitasking among multiple threads or programs. Thus, techniques that improve throughput of all tasks result within overall performance gains.

[2] LITERATURE REVIEW

Yeh-Ching Chung wrote on “Applications & Performance Analysis of A Compile-Time Optimization Approach for List Scheduling Algorithms on Distributed Memory Multiprocessors”

They have proposed a compile-time optimization approach, bottom-up top-down duplication heuristic

(BTDH), for static scheduling of directed+cylic graphs (DAGS) on distributed memory multiprocessors (DMMs). In this paper, they discuss applications of BTDH for list scheduling algorithms (LSAs). There are two ways to use BTDH for LSAs. BTDH can be used with a LSA to form a new scheduling algorithm (LSA/BTDH). It could be used as a pure optimization algorithm for a LSA (LSA-BTDH)..

Ishfaq Ahmad¹ & Yu-Kwong Kwok² wrote on “On Parallelizing Multiprocessor Scheduling Problem”

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