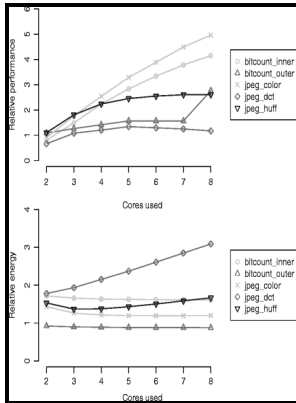


Exploiting doacross parallelism in tightly-coupled multiprocessors

National Library of Canada - Introduction of Multiprocessor and Multicomputer



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Introduction of Multiprocessor and Multicomputer

The user can explicitly declare that certain tasks of the program be executed in parallel. The object logically appears to be a single entity, but the server may keep a thread pool running to implement object calls for a variety of clients. Software Specialisation Loki aims to permit a programmer to exploit a wide-range of execution patterns, mirroring the techniques used by many different architectures, e.

Parallel sorting algorithms for tightly coupled multiprocessors

The cache bank also has a channel map table which has been configured to send data back to channel 2 of the core. Turbo tiling: Leveraging prefetching to boost performance of tiled codes. This would bypass much of the network, and reduce latency to zero cycles, at a cost of larger multiplexers at ALU inputs.

Multiprocessors and Multicomputers

We will discuss multiprocessors and multicomputers in this chapter. It turned the multicomputer into an application server with multiuser access in a network environment.

Parallelization of DOALL and DOACROSS Loops—a Survey

Processors that share the same memory segment agree by convention not to use the memory segment unless the semaphore is equal to 0, indicating that memory is available. If the subtasks of the computation are organized in such a way that the communication is minimum, the performance of the system will be the highest.

Parallelization of DOALL and DOACROSS Loops—a Survey

Hopefully, this chapter will induce creative research in this direction. The work in this paper is currently being extended to explore different ways in which cores across multiple tiles can be used.

Parallel sorting algorithms for tightly coupled multiprocessors

In this section we explore some of the many parallel execution patterns possible when fast and efficient inter-core communication is available. Groups can be defined either by name or by topology.

GTS: Extracting full parallelism out of DO loops

The two methods mentioned previously use software based procedures that require the ability to tag information in order to disable caching of shared writable data.

Parallelization of DOALL and DOACROSS Loops—a Survey

Instruction packets may be sent directly between cores, enabling the execution of short instruction sequences at remote cores e. This can be implemented on traditional multi-core architectures, but we have more flexibility on Loki: each pipeline stage can be made parallel useful for eliminating bottlenecks and cheaper communication allows finer-grained stages. Status bits residing in common memory are generally used to indicate the condition of the mailbox, whether it has meaningful information, and for which processor it is intended.

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