AN IMPLEMENTATION OF A GENERAL-PURPOSE PARALLEL SORTING ALGORITHM

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Abstract

A parallel sorting algorithm is presented for general purpose internal sorting on MIMD machines. The algorithm initially sorts the elements within each node using a serial sorting algorithm, then proceeds with a two-phase parallel merge. The algorithm is comparison-based and requires additional storage of order the square root of the number of elements in each node. Performance of the algorithm on the Fujitsu AP1000, Thinking Machines CM5, and nCUBE2 is discussed. The performance is good: efficiencies of 0.8 to 0.9 are typical when sorting a large number of elements.

Comments

Only the Abstract is given here. The full report appeared as [4] and a shorter version appeared as [2]. For related work, see [1, 3, 5, 6].

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