Abstract

Distribution of the tasks amongst the various computing nodes is itself an intellectually challenging problem in the high performance distributed computing systems. To choose the appropriate strategy for the required system is difficult without the meaningful comparison of the existing task partitioning and load balancing strategies. The effectiveness of the strategy depend on the number of factors-efficiency, interconnection topology, communication mode, program structure, throughput and computing capabilities of the structure. A number of task partitioning and load balancing strategies have been proposed, each of which perform remarkable results under different circumstances. The main goal of the paper is to unravel the mystery of strategies and to classify when and where each strategy is appropriate. In this paper, taxonomy of task partitioning and load balancing is presented in an attempt to provide a common terminology and classification mechanism.

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Index Terms

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