



FAST NAVIGATION-PLACEMENT TREE ALGORITHM FOR RECONFIGURABLE COMPUTING SYSTEM

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ABSTRACT—Due to its potential to greatly accelerate a wide variety of applications, reconfigurable computing has become a subject of a great deal of research. In this paper, we explore the representation models of 1D routing structure and 2D routing structure, we also focus on the task scheduling that targets these representation models. A fast navigation-placement tree algorithm is proposed to formulate the scheduling problem for guarantee-based scheduling of hardware tasks. We present two heuristics, the horizon and the vertical technique, which can be summarized on bin-packing and applied to the problem of placing tasks on guarantees. Simulation experiments evaluate the performance and runtime efficiency of the proposed algorithm.

Key Words: dynamic reconfigurable system, navigation-placement tree, task placement