

Abstract

In this paper, we propose and analyze a new interconnection network, the k -ary hypercube. This new architecture captures the advantages of the mesh network and those of the binary hypercube. We show that the hamiltonicity of this network and its capability of efficiently simulating other topologies. It has a smaller degree than that of its equivalent binary hypercube (the one with at least as many nodes) and has a smaller diameter than its equivalent mesh of processors.