

论文

基于MPI的并行有限元计算集群的构建

李海江

大连海事大学道路与桥梁工程研究所 116026

摘要:

随着工程数值计算所分析问题规模的不断扩大及工程复杂性的日益提高,对计算机计算能力的要求也越来越高,而硅芯片单个CPU计算机因其较低量级的物理极限的存在也越来越无法满足需要.在这种背景下,并行计算机也就应运而生.另一方面,计算机计算能力的

关键词:

MPI BASED PC CLUSTER DISTRIBUTED FINITE ELEMENT ANALYSIS

Li Haijiang (Department of Engineering Mechanics Dalian University of Technology, Dalian 116024 P.R.China)

Abstract:

With the emerging of huge challenging problems, single processor computer will not satisfy this requirement for the fundamental limitations of the silicon technology. Cluster based architecture, with its good cost/performance ratio, is becoming more and more popular in universities and research branches as an alternative to expensive parallel machines. Whilst MPI, one of the successful high performance message passing models, is considered the future standard. This paper describes a MPI based PC cluster distributed FEA system with emphasis on the building procedure and frame components. Such a system can make full use of kinds of advanced parallel and distributed computing tools nowadays and serve as a good base for the future grid computing.

Keywords:

收稿日期 修回日期 网络版发布日期

DOI:

基金项目:

通讯作者:

作者简介:

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