Abstract

A distributed operating system is one that looks to its user like an ordinary centralized operating system, but runs on multiple, independent nodes. A distributed operating system should:

control resource allocation to allow their use in the most effective way;

provide the user with a convenient virtual computer that serves as a high-level programming environment;

hide the distribution of the resources;

provide mechanisms for protecting system resources against access by unauthorized users.

The main purpose of this research is to explore and use the idle resources and to share the wireless distributed system fairly among the processes. Reliability is taken into account to
achieve the goal of scheduling. The comparison study, based on both randomly generated graphs and the graphs of some real applications, shows that proposed scheduling algorithm can achieve reliable task scheduling and improves system reliability significantly. For experimental performance study, a real world application as well as synthetic workloads have been considered. It can be stated that shortening scheduling times improves performance of the system. Hence if scheduling algorithms are applied in parallel to reduce scheduling times, the performance of the heterogeneous clusters will be further enhanced.

References


7. Xiao Qin, Hong Jiang, “A Dynamic and Reliability-Driven Scheduling Algorithm for Parallel Real-time Jobs on Heterogeneous Clusters” at Department of Computer Science, New Mexico Institute of Mining and Technology.


34. He, Zili Shao, Bin Xiao, Qingfeng Zhuge, Edwin Sha, “Reliability Driven Task Scheduling for Heterogeneous Systems”.


Index Terms

Computer Science Wireless

Keywords

Dynamic scheduling, heterogeneous systems, performance, evaluation, processor utilization, reliability, schedulability.