Abstract

This paper presents a report of a study carried out to develop a job coordination model for the active resources on a mobile wireless computational grid. This was with a view to addressing the problem of frequent disruptions in connections and high computation time for a job resulting from the mobility of the mobile resources actively processing tasks. The proposed framework is a load-balancing three tier hierarchical system configuration and scheduling policies employing mobile Agents coordinating messengers carrying data and instructions among the hierarchical structured nodes. The model achieves a remarkable performance as compared with theoretical values in that there were reduction in response times and latencies when simulated with various workloads. The proposed migration and checkpointing approach ensures that currently executing processes are not always migrated because of loss of signal only, but only with
reduction in battery power of the mobile hosts within the allocated time for processing a task.

References


Index Terms

Computer Science

Wireless
Keywords
Mobile wireless computational Grid  Mobile Agents  load-balancing  hierarchical scheduling