Abstract

Multiprocessors have evolved as powerful computing tools for executing dynamic real time tasks. The continual evolutions of the multiprocessor and real-time systems in the last few decades have encouraged the research and development of a new and efficient algorithm for dynamic scheduling of real-time task in multiprocessor systems. This paper proposes a compact study on dynamic real time task scheduling in multiprocessor environment using Genetic Algorithm (GA) which is a typically NP-complete problem. GA exploits the power of parallel computing which drives the solution towards optimal one. The GA, inspired by biological genetics and the process of natural selection, comprises fixed size chromosome and biological inspired genetic operators like mutation and crossover. This paper investigates the various scheduling algorithms and compares the simulation result in terms of fitness value and
the percentage of success for scheduling real-time tasks.

References


Index Terms

Computer Science

Algorithms
Keywords
Dynamic task scheduling  Genetic Algorithm  Multiprocessor system  NP complete problem
Real time system

Earlier Deadline First (EDF)

Shortest Computation First (SCF).