Abstract

Grid computing which is based on the high performance computing environment, basically used for solving complex computational demands. In the grid computing environment, scheduling of tasks is a big challenge. The task scheduling problem can be defined as a problem of assigning the number of resources to tasks where number of resources is less than the number of available tasks. Particle swarm optimization (PSO) algorithm is one of the heuristic search based optimization technique. It is an effective optimization technique for different continuous optimization problems. In this work, modified version of PSO algorithm with smallest position value (SPV) is used and implemented on grid task scheduling problem. Here in the modified PSO algorithm, one additional phase in the form of mutation operator is used and smallest position value is used for enhancing local search. Proposed work is compared with the genetic algorithm and PSO algorithm. Experimental results show that the proposed work is better than previous algorithms.

Index Terms

Computer Science
Algorithms
Keywords
Particle Swarm Optimization  Genetic Algorithm  SPV rule  Mutation  Grid task scheduling
PSO.