Abstract

Load Balancing is one of the major issues in computational Grids. Research has proved that load balancing on Grid Computational Environment is best solved by Heuristic approach. The main motive behind load balancing is to equally spread the load on each node of the Grid. In this paper, ASRank (Rank based Ant system) is proposed to provide shortest path from PE (Processing element) to RN (Resource node) while balancing the load on each RN. ASRank will determine the best resource to be allocated to the jobs, based on their paths as well as their load. ASRank reads the pheromone value, such that solutions with shorter paths will have higher pheromone value. This pheromone value is used by other PE's with the help of a process named as Stigmergy, to reach to the RN. This will maximize the efficiency of the Grid and will result in high throughput. Thus, it increases the performance in the Grid Computational Environment.
Dynamic Load Balancing in Grid Computational Environment using Ant Algorithm

References


Index Terms

Computer Science
Algorithms

Keywords

Grid Computing  Load Balancing  Asrank Ant Algorithm  Processing Element
Resource Node

Stigmergy

Pheromone Value