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Hybrid Bee Ant Colony Algorithm for Effective Load Balancing and Job Scheduling in Cloud Computing

Authors : Thomas Yeboah

Abstract : Cloud Computing is newly paradigm in computing that promises a delivery of computing as a service rather than a product, whereby shared resources, software, and information are provided to computers and other devices as a utility (like the electricity grid) over a network (typically the Internet). As Cloud Computing is a newly style of computing on the internet. It has many merits along with some crucial issues that need to be resolved in order to improve reliability of cloud environment. These issues are related with the load balancing, fault tolerance and different security issues in cloud environment.In this paper the main concern is to develop an effective load balancing algorithm that gives satisfactory performance to both, cloud users and providers. This proposed algorithm (hybrid Bee Ant Colony algorithm) is a combination of two dynamic algorithms: Ant Colony Optimization and Bees Life algorithm. Ant Colony algorithm is used in this hybrid Bee Ant Colony algorithm to solve load balancing issues whiles the Bees Life algorithm is used for optimization of job scheduling in cloud environment. The results of the proposed algorithm shows that the hybrid Bee Ant Colony algorithm outperforms the performances of both Ant Colony algorithm and Bees Life algorithm when evaluated the proposed algorithm performances in terms of Waiting time and Response time on a simulator called CloudSim.

Keywords : ant colony optimization algorithm, bees life algorithm, scheduling algorithm, performance, cloud computing, load balancing
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