Abstract

Load balancing is all time trending topic in a cloud environment. In order to improve system performance and to protect the system against failures, the workload must be distributed among one or more server efficiently and dynamically. In this paper, we propose a Task based Approach towards Load Balancing (TB-LB) in a Cloud Environment based on clustering of virtual machines and heuristic algorithms. The proposed system is used to solve both the population based and non-population based problems. The proposed system combines three heuristic algorithms, namely simulated annealing, particle swarm optimization and genetic algorithm to balance the load and to minimize the makespan of tasks and system performance by considering the task requirement. It also uses k-means clustering approach to organize virtual machines (VMs) into groups to reduce the execution time. The simulation results show that our proposed algorithm improves the system performance by minimizing makespan and execution time.
15. Surbhi Kapoor and Dr. Chetna Dabas, “Cluster Based Load Balancing in Cloud Computing”, 2015 Eighth International Conference on Contemporary Computing (IC3)

**Index Terms**

- Computer Science
- Distributed Computing

**Keywords**
Cloud Computing, Load Balancing, Heuristic Algorithms, GA, SA, PSO