

# Scalable Load Balancing Approach for Cloud Environment

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## Abstract

Cloud computing is a combination of parallel and distributed system which aims at effective resource utilization, providing uninterrupted services all the time which adapts itself with varying number of users without much capital investment. Ubiquitous, scalability and elasticity are some of the important features of cloud computing. To maintain essential characteristics, there is a need of mechanism which distributes the load efficiently among the available resources. Load balancing means the distribution of tasks among different available resources so that no one is over or under-utilized. Scalable, adaptable, efficient and reliable are some of the desirable features of a load balancing approach.

In this paper, authors have proposed a new load balancing approach named “Weighted Biased Random Walk” for the cloud environment using the concept of biased random walk. Weighted biased random walk approach has been analytically & experimentally analyzed. It has been compared with other load balancing approaches based on biased random walk found in literature. It has been found that weighted biased random walk approach is self-adjustable, distributed, dynamic, scalable and efficient in nature. It outperforms the other load balancing approaches based upon biased random walk. Collective presence of all the desirable features makes the weighted biased random walk approach perfect load balancing approach for the cloud environment.

**Keywords:** cloud computing, load balancing, biased random walk, scalable

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