

Load Balancing Technique for Energy - Efficiency in Cloud Computing

Authors : Rani Danavath, V. B. Narsimha

Abstract : Cloud computing is emerging as a new paradigm of large scale distributed computing. Cloud computing is a model for enabling ubiquitous, convenient, on-demand network access to a shared pool of configurable computing resources (e.g., three service models, and four deployment networks, servers, storage, applications, and services) that can be rapidly provisioned and released with minimal management effort or service provider interaction. This cloud model is composed of five essential characteristics models. Load balancing is one of the main challenges in cloud computing, which is required to distribute the dynamic workload across multiple nodes, to ensure that no single node is overloaded. It helps in optimal utilization of resources, enhancing the performance of the system. The goal of the load balancing is to minimize the resource consumption and carbon emission rate, that is the direct need of cloud computing. This determined the need of new metrics energy consumption and carbon emission for energy-efficiency load balancing techniques in cloud computing. Existing load balancing techniques mainly focuses on reducing overhead, services, response time and improving performance etc. In this paper we introduced a Technique for energy-efficiency, but none of the techniques have considered the energy consumption and carbon emission. Therefore, our proposed work will go towards energy - efficiency. So this energy-efficiency load balancing technique can be used to improve the performance of cloud computing by balancing the workload across all the nodes in the cloud with the minimum resource utilization, in turn, reducing energy consumption, and carbon emission to an extent, which will help to achieve green computing.

Keywords : cloud computing, distributed computing, energy efficiency, green computing, load balancing, energy consumption, carbon emission

Conference Title : ICPPCC 2016 : International Conference on Parallel Processing and Cloud Computing

Conference Location : San Diego, United States

Conference Dates : January 21-22, 2016