Abstract

Cloud computing provides a consumer pay-per-use computing model over the Internet using numerous data centers across the globe. Power consumption by the huge data centers in Cloud environment has attracted the attention of research community. Efficient usage of energy in Cloud can be addressed in many facets. Virtual Machine (VM) consolidation is one of the techniques to save or reduce energy in virtualized data centers. VM Migration in Cloud also provides us an opportunity for reducing energy consumption. In this research, we intend to study various VM placements & selection policies and VM migration algorithms for underloaded and overloaded hosts to reduce energy consumption and SLA violation. We propose a novel method using combination of two methods, Least Increase Power (LIP) consumption with Host Sort and Minimum Correlation Coefficient (MCC) for consolidation of VM placement, placing a migratable VM on a host based on utilization thresholds. The results show performance of each combination of algorithms varies with the changing value of the parameters brings better in terms of energy consumption, VM migration time and SLA violation. The reader may plunge the appropriate method for energy consumption.
References


Index Terms

Computer Science  Distributed Systems
Keywords

Cloud Computing; Energy consumption; Virtual Machine consolidation; Virtualization; VM migration; SLA violation; Virtual machine placement