Abstract

The Cloud Computing (CC) model is also referred to as Pervasive Computing and proved promising by complicated automation, provisioning and virtualization technologies. The shifts to the computational demands results in greater power consumption, increased operational costs and high carbon emissions to environment. The challenge for the Cloud Provider is to deal with necessary requirement of power-performance trade-off by satisfying high Quality of Service (QoS) defined by Service Level Agreements (SLAs) while maximizing their profits. Out of several issues, Optimization of Energy consumption has gain extensive attention for enhancing the profit. Dynamic Virtual Machine (VM) Consolidation is potential approach for reducing energy consumption by dynamically adjusting the number of active machines to match resource demands and it is one of the most important challenges in the ubiquitous computing. The theme of this work is to propose the ‘Pervasive SLA and Energy Aware Dynamic VM Consolidation’ policy and provide the baseline for better performance and environment. By conducting a performance evaluation studies a comparative analysis of proposed and various existing energy efficient VM consolidation techniques are presented. For experimentation purpose, in CloudSim
toolkit, real world workload traces from more than a thousand VMs are taken. The results help in analyzing the effectiveness of existing policies. The experimental results also demonstrates that the proposed policy is scalable and offers substantial cost savings by saving energy while effectively dealing with firm QoS requirements negotiated by SLA.

References

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Index Terms

Computer Science Distributed Systems

Keywords

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