Abstract

Rapid growth of the demand for computational power by scientific, business and web-applications has led to the creation of large-scale data centers consuming enormous amounts of electrical power. Generally it has been proposed that energy efficient resource management system for virtualized Cloud data centers that reduces operational costs and provides required Quality of Service (QoS). Energy savings are achieved by continuous consolidation of VMs according to current utilization of resources, virtual network topologies established between VMs and thermal state of computing nodes. From so long improving performance has been the primary motive of computing systems industry whose growth is
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steadily fuelled by resource hungry applications. A typical data centre with 1000 racks needs 10 MW of power to operate, which is sufficient enough to power a small city. With increasing shift in migrating services to cloud the power demands of the backend data centers will continue to grow. Apart from consuming enormous power, Cloud's also increase global carbon foot print. It is mentioned in the popular reports that industry generates about 2% of the total global CO2 emissions, which is equivalent to the aviation industry. The primary objectives of this research are to create Simplified Energy models for physical systems and virtual machines by monitoring their resource usage.

References

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