Abstract

Due to cloud computing, many of the traditional issues such as scale have been eliminated to some extent, but the stability, availability and reliability of cloud computing has received relatively limited attention. As cloud computing envisages "computing as a service" it presumes 99.99% reliability as Electricity Grid has achieved. Reliability of a cloud computing system depends on the probability of the failure occurring in different layers of the architecture. Virtualization technique is common in cloud computing, i.e., many virtual machines even with different operating systems may be running in a single physical machine. In order to achieve optimum fault tolerance to these virtual machines, in this paper, a middle layer is proposed and
it can be placed between application layer and virtualization layer in cloud system architecture.

Purpose of this middle layer is to tolerate node failure. This layer can be seen as an assemblage of various components, each with a specific functionality and it makes use of combinations of various fault tolerant strategies to achieve optimum result. Performance of this middle layer is automatic and it is user transparent too, i.e., considering economic factors, dependability factors and user's interest, it makes use of different permutations.

References

- http://aws.amazon.com/ec2/
- H. Chen, G. Jiang, and K. Yoshihira. &quot;Failure detection in large-scale internet services by principal subspace mapping.&quot; IEEE Trans. on Knowledge and Data Engineering, (2007).

Index Terms

Computer Science  Cloud Application

Keywords