Abstract

Several cloud computing systems used voting techniques to deal with sabotage issues. However, these techniques become inefficient, and present some new security vulnerabilities when malicious resources collude and return the same wrong result. Usually, this kind of security threats are handled using several techniques and approaches such as voting techniques. In this paper, a very efficient approach to overcome sabotage issues is proposed, especially in the case of very complex attacks. The performances of this approach are evaluated in a cloud system model and it is compared against other voting techniques, like reputation-based voting, using simulations which allowed to investigate the effect of collusive cloud resources on the correctness of the results. The obtained results show that the proposed approach achieves lower error rates and enhanced performances in terms of overhead and slowdown.


Index Terms

Computer Science Distributed Systems

Keywords
Cloud computing; Cloud model; Voting; Collusion Attacks