Abstract

Mobile Cloud Computing is an inheritance and emergence of cloud computing and mobile computing. The ever increasing usage of mobile devices and the need for users to handle applications that require high computation power has lead to the emergence of mobile cloud computing. The full potential of a mobile cloud can be realized only if its inherent hurdles such as resource scarcity, mobility and node failures can be overcome. Even then, in the case of dynamic networks, the challenges of reliability and energy efficiency remain largely unaddressed. These two challenges are addressed in a combined manner by using $k$-out of $n$ computing. In the proposed scheme the mobile devices retrieve or process data in the most energy efficient and fail safe method by using effective data partitioning in the cloud and $k$-out of $n$ servers. The $n$ servers are chosen based on their topology and fault tolerance of the nodes. The $k$-out of $n$ computing ensures that a system of $n$ components operate correctly as long as $k$ or more components work.

Index Terms

Computer Science Distributed Computing

Keywords

Energy-Efficient Computing, Fault-Tolerant Computing