Abstract

Mobile Cloud Computing is a new paradigm that transfers the data storage and the data processing from a mobile device to a powerful full cloud server which has a big storage. Mobile cloud applications use offloading schemes to move the computing power and data storage away from mobile phones into this cloud server. However, for a code compilation, offloading might consume more energy than the local processing of data when the size of code is small. So, new offloading schemes are needed to be adaptive with the code size of an application or a service. This paper introduces a new method-based offloading scheme for mobile application. The proposed scheme divides each mobile application into presentation layer, logical layer and data access layer. Also, it considers each service or process in each layer as a set of methods. The methods of presentation layer resides on the mobile device, the methods of data layer is fully deployed on the cloud to minimize the data access, and the methods of logic layer is distributed between the cloud and mobile device by using formulated cost model which takes into account energy, memory, time, and data transfer delay costs. The conducted simulation
results show that the offloading performance of the proposed scheme is much better than local processing scheme.

References


Index Terms

Computer Science

Distributed Systems

Keywords

Application partitioning, Battery Consumption, Mobile cloud computing, Offloading