Mobility Aware Task Allocation for Mobile Cloud Computing

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Abstract

The Mobile Cloud Computing is a promising technology that has provided a way to overcome the limitations of the mobile devices. The advancement of mobile devices technology has made the applications of these devices more complex and resource famished. Mobile cloud computing has created opportunities to execute these applications on the mobile devices by migrating the compute intensive task to the cloud. This migration of task to the cloud is not an easy task. The connectivity of the devices and the cloud is affected by the network inconsistency of wireless network. The servers on the cloud are heterogeneous in nature. Furthermore, the users are most of the time in mobile state which results in frequent change in association to access points. All of these make the selection of an optimal server to offload the task in cloud into a challenging work. In this paper, a comparative survey is provided for allocating task on the cloud along with their limitation. A mobility aware task allocation system for mobile cloud computing is also proposed. An optimization problem is formulated considering the workload and service rate of servers, network inconsistency, time to execute the task,
mobility of the users etc. The proposed system aims to allocate task to the server where minimum response time is achieved in order to enhance users’ quality of experience.

References


**Index Terms**

Computer Science           Distributed Systems

**Keywords**

Mobile cloud computing, Cloudlet, Task Allocation, Code offloading