ABSTRACT

Both cloud computing and mobile computing domains have advanced rapidly and are the promising technologies for the near future. On the other hand, improvements in mobile devices, on hardware (embedded sensors, memory, power consumption, touchscreen, better ergonomic design, etc.), in software (more numerous and more sophisticated applications due to the release of iPhone and Android platforms) and in transmission (higher data transmission rates achieved with 3G and 4G technologies), have contributed towards having higher mobile penetration and better services provided to the customers. Mobiles enter cloud computing domain by trying to access the shared pool of computing resources provided by the cloud on demand. Clouds are looking forward to the mobile domain, having their expectations focused in the idea of data synchronization services. Mobile sync refers to the synchronization of data in the handset with a server and a portal in the cloud. However, Mobile technologies are drawing the attention to the clouds due to the demand of the applications, for processing power, storage space and energy saving. To counter the problems with the interoperability across multiple clouds, to perform data-intensive processing invocation from the handset and to introduce the platform independence feature for the mobile cloud applications, in the following presentation we will discuss a Mobile Cloud Middleware (MCM). The MCM capabilities for mananing the resource intensive tasks can easily be envisioned in several scenarios. One of them includes the provisioning of context-aware services for processing data collected by the accelerometer with the purpose of creating an intelligent calendar that predicts human activities. Another scenario consist in the formation of a social group by recognizing people in a set of pictures stored in the cloud. Since the completion of a cloud task, most often, is time consuming, it is not logical to make the mobile application waiting for the response and even not tolerable from the user's perspective. To support this, MCM supports asynchronous mobile cloud service invocation to perform concurrent activities at the device.