Abstract

Mobile cloud computing allows the execution of computation-intensive applications of mobile devices in computational clouds, and this process of executing in cloud by sending the application VM/Components is called application/code/component offloading. Offloading is an effective method to save the execution time and energy consumption of mobile devices. Thus it extends the battery life of mobile devices. Applications are first partitioned into offloadable and non-offloadable components, which are then transferred to remote server for execution. The objective of this paper is to explore the different techniques of offloading and application partitioning methods. These techniques are thoroughly reviewed in this paper. This paper also highlights the comparison of different techniques on the basis of their contribution, merits, demerits and also on the basis of improvement in execution time, energy consumption, communication time.

References
1. Pranav Balakrishnan and Chen-Khong Tham. Energy-efficient mapping and scheduling of 
task interaction graphs for code offloading in mobile cloud computing. In Proceedings of the 
2. Meng-Hsi Chen, Ben Liang, and Min Dong. A semidefinite relaxation approach to mobile 
cloud offloading with computing access point. In Signal Processing Advances in Wireless 
Communications (SPAWC), 2015 IEEE 16th International Workshop on, pages 186 – 190. IEEE, 
2015a.
3. Xu Chen. Decentralized computation offloading game for mobile cloud computing. 
Clonecloud: elastic execution between mobile device and cloud. In Proceedings of the sixth 
5. Byung-Gon Chun and Petros Maniatis. Augmented smartphone applications through 
clone cloud execution. In HotOS, volume 9, pages 8 – 11, 2009.
7. Eduardo Cuervo, Aruna Balasubramanian, Dae-ki Cho, Alec Wolman, Stefan Saroiu, 
In Proceedings of the 8th international conference on Mobile systems, applications, and 
8. Niroshinie Fernando, Seng W Loke, and Wenny Rahayu. Mobile cloud computing: A 
9. Debessay Fesehaye, Yunlong Gao, Klara Nahrstedt, and Guijun Wang. Impact of 
cloudlets on interactive mobile cloud applications. In Enterprise Distributed Object Computing 
10. Keke Gai, Meikang Qiu, Hui Zhao, Lixin Tao, and Ziliang Zong. Dynamic energy-aware 
cloudlet-based mobile cloud computing model for green computing. Journal of Network and 
11. Ioana Giurgiu, Oriana Riva, and Gustavo Alonso. Dynamic software deployment from 
12. Ioana Giurgiu, Oriana Riva, Dejan Juric, Ivan Krivulev, and Gustavo Alonso. Calling the 
cloud: enabling mobile phones as interfaces to cloud applications. In Middleware 2009, pages 
Comet: Code offload by migrating execution transparently. In Presented as part of the 10th 
USENIX Symposium on Operating Systems Design and Implementation (OSDI 12), pages 
14. Dijiang Huang, Xinwen Zhang, Myong Kang, and Jim Luo. Mobicloud: building secure 
cloud framework for mobile computing and communication. In Service Oriented System 
15. Shih-Hao Hung, Chi-Sheng Shih, Jing-Peng Shieh, Chen-Pang Lee, and Yi-Hsiang 


31. Patrick Stuedi, Iqbal Mohomed, and Doug Terry. Wherestore: Location-based data


Index Terms

Computer Science

Information Sciences

Keywords

Application Partitioning, Code Offloading, Mobile cloud computing, Energy Consumption, Execution Time