Computation offloading for smart internet devices

Muhammad Wasif Nabeel, Abdullah Embong, Mushtaq Ali
Faculty of Computer System and Software Engineering University Malaysia Pahang, Malaysia

ABSTRACT
With the incessant advancement of smart internet devices and their ubiquitous usage, users prospect the same performance as if they used to run application on resources rich desktop devices. Smart internet devices are poor in resources such as storage, capacity, processing performance and battery life. Such mobile devices deliver lower performance as they are constrained by weight, size and mobility despite all the developments. These limitations can be ameliorated by utilizing the technique known as computation offloading. Computation offloading is the process of transferring compute-intensive data to resources rich servers called surrogates to run the entire or parts of application on behalf of mobile devices. In this paper, we present a survey on steps, criterion, types, flow and necessity of computation offloading with the reviewed computation offloading schemes. The Paper also proposes suggestions and opinions for future work in related field.

KEYWORDS
Smart internet devices; Mobile cloud computing; Computation offloading

REFERENCES

1. T. Khalifa, K. Naik and A. Nayak,
   "A survey of communication protocols for automatic meter reading applications",
   Communications Surveys & Tutorials IEEE, vol. 13, pp. 168-182, 2011.

2. R. Buyya, C. Vecchiola and S. T. Selvi,
   "Mastering cloud computing",
   Foundations and applications programming: Newnes, 2013.

3. N. Fernando, S. W. Loke and W. Rahayu,
   "Mobile cloud computing: A survey",
   Future Generation Computer Systems, vol. 29, pp. 84-106, 2013.

4. M. Ali, J.M. Zain, M. F. Zolkipli and G. Badshah,
   "Mobile cloud computing & mobile battery augmentation techniques: A survey",
   Research and Development (SCOReD) 2014 IEEE Student Conference on, pp. 1-6, 2014.

5. M. Satyanarayanan,
   "Pervasive computing: Vision and challenges",
   Personal Communications IEEE, vol. 8, pp. 10-17, 2001.