Abstract:
The volume of mobile web browsing traffic has significantly increased as well as the complexity of the mobile websites mandating high-performance JavaScript engines such as Google’s V8 to be used on mobile devices. Although there has been a significant improvement in performance of JavaScript engine on mobile phones in recent years, the power consumption reduction has not been addressed much. This paper presents a case study for power management of JavaScript engine V8 from Google in web browsers on a heterogeneous multi-processing (HMP) platform. We analyze the detailed traces of the thread workload generated by the web browser and JavaScript engine, and discuss the power saving potentials in relation to power management policies on Android. We believe that this work will lead to development of practical power management techniques considering thread allocation, dynamic voltage and frequency scaling (DVFS) and power-gating.
ja

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