Week 4

Paper Critique

Power Provisioning for a Warehouse-sized Computer (ISCA 2007)

This paper mentions a power consumption issue in a data center. They suggest effective power provisioning strategies are needed to detect how much computing equipment can be hosted within a given power budget. Therefore, it suggests the aggregate power usage characteristic in a warehouse-sized computing environment. This paper exhibits that even in well-tuned applications, there is a gap between the achieved and theoretical aggregate peak power usage. This gap gets bigger in a big data center. They suggest a few strategy to mitigate the gap.

The advantage of suggested strategies in this paper is that these strategies can reduce the measured peak power usage thereby saving the power.

The improvement that can be done here is actually implementing the strategies into real-world. Since power consumption is quite an issue recently, due to the embedded system. However, in a datacenter level, the vast consumption decrease can mean a lot.

Where is the energy spent inside my app? Fine Grained Energy Accounting on Smartphones with Eprof **(EuroSys '12)**

This paper proposes Eprof, a profiling tool that detect the energy in specific power consumption of the mobile application in smartphone. It is a deep case study of various smartphone application issuing I/O that invokes wakelock bugs, energy bugs.

The advantage of using Eprof is that it helps the application designer to develop power efficient energy-saving application or even the user to detect the malicious application that consumes the battery energy heavily. The disadvantage is that this Eprof profiles the application steadily. Therefore, it can issue some latency problem for a game application, which is a latency-sensitive application.

What I thought about Eprof is that since current mobile application has two types of CPU for low performance and that require high performance, smartphone can use Erpof to use the battery efficiently switching CPU by CPU. Moreover, the result for running Eprof is not shown in this paper, it might be better if the paper has shown the overhead that comes out from running Eprof.