Contribution ID: **185** Type: **not specified**

Wattson: trace based power/energy estimation

Thursday, 19 September 2024 11:40 (20 minutes)

As a community, we pay a lot of attention to the performance impact of the changes we land. Especially when it comes to areas like scheduler/cpufreq that are expected to have a significant impact on performance. This is possible because we have good benchmarks to quickly iterate over and check the impact of our patches.

However when it comes to checking the power/energy impact of our changes, the tooling is sorely lacking.

You either have to remove the battery and attach the device to some external power supply that measures the power/energy it's providing OR hope for internal coulomb counters in the board OR just go with the very granular battery % reported by the device. All of these options are either cumbersome or not easy to iterate with or easy to acquire.

To address this gap, we've developed Wattson.

A tool that can use tracing info to fairly accurately estimate the % change in energy consumption caused by a patch and even allow the developer to sort the threads by the energy consumption/impact. This will allow us to quickly iterate and sanity test the impact of patches without having to depend on specialized hardware setup and avoid environmental noise (more on this in the talk).

In this talk, we'll show what we've achieved so far, how the tool could be used and the advantages and caveats of the Wattson. We'll also take any feedback on how the tool could be made more friendly for the community.

Primary author: KANNAN, Saravana

Co-author: WU, Samuel

Presenters: WU, Samuel; KANNAN, Saravana

Session Classification: Power Management and Thermal Control MC

Track Classification: Power Management and Thermal Control MC