PM Constraints micro Conference

Introduction and goals

markgross@thegnar.org
(mark.gross@intel.com)

WELCOME!

A lot of SoC vendors are doing similar things and solving similar issues WRT power and performance.

Lets work together to define some portable interfaces / frameworks that help us do more interesting things!

uConference outline

- Day 1 Intro and uConf goals, then Intel related pm-constraint activities

- Day 2: OMAP pm-constraint related activities

- Day 3: Tegra pm-constraint related activities

-

- I didn't mean to snub other SOC vendors or non-affiliated community members. Its just that the folks that stepped up to present fell into these buckets.

- I invite participation from all.

Logistics

- We have 45 min of contact time in the room per day.

- We are encouraged to work together in hallway's and evenings.

- We are encouraged to build relationships such that collaboration will continue after the conference.

- I hope to have discussions on use cases and requirements and not just presentations.

Goals

- Educate fellow travelers on each others architectures and problems.

- Capture use cases and requirements related to power and performance constraint based implementations or extensions to existing pm_qos.

- Collaborate on new implementations, interfaces and frameworks.

- To do something cool together.

linux-pm mailing list PM_QoS activity over the last year

- Attempt to add upper bound QoS for CPU freq.

- Attempt to add constraint class for cpu freq.

- Attempt to add constraint classes for "fabric" SoC buses

- Attempt to add constraint class for software sampling rates

Core problem with new constraints

- The constraint values need to be portable between ISA's, uArch's, and even versions of the same chip with different core freq settings.

  - Need common code using these constraints to be portable across different chips.

  - It is my hope that we make progress on this portability problem by working together and sharing use cases / requirements from each of our experiences

Evolution of PM_QoS?

- Power and Performance (PnP) constraints
  - Notifications of when constraint requests get violated. (non-blocking post state change?)
  - Support upper limits in addition to lower (i.e. thermal constraint use cases)
  - Time out constraints
- New Constraints
  - Derived from uConf and works already in flight!

Transition to next slide deck