



**Linaro**  
**connect**  
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# CPU Cluster Idling

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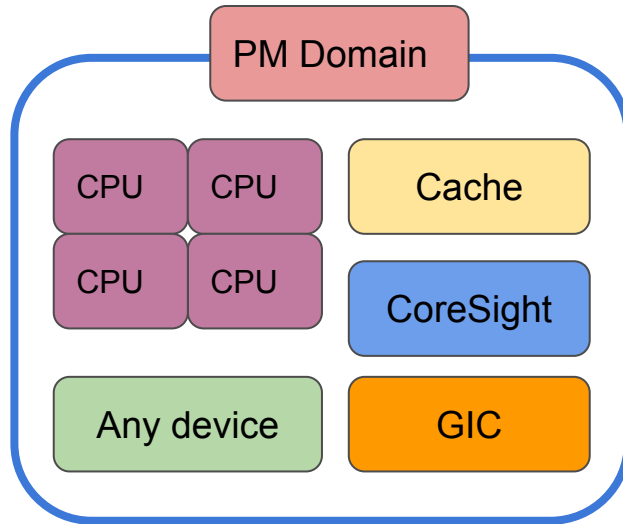


# Agenda

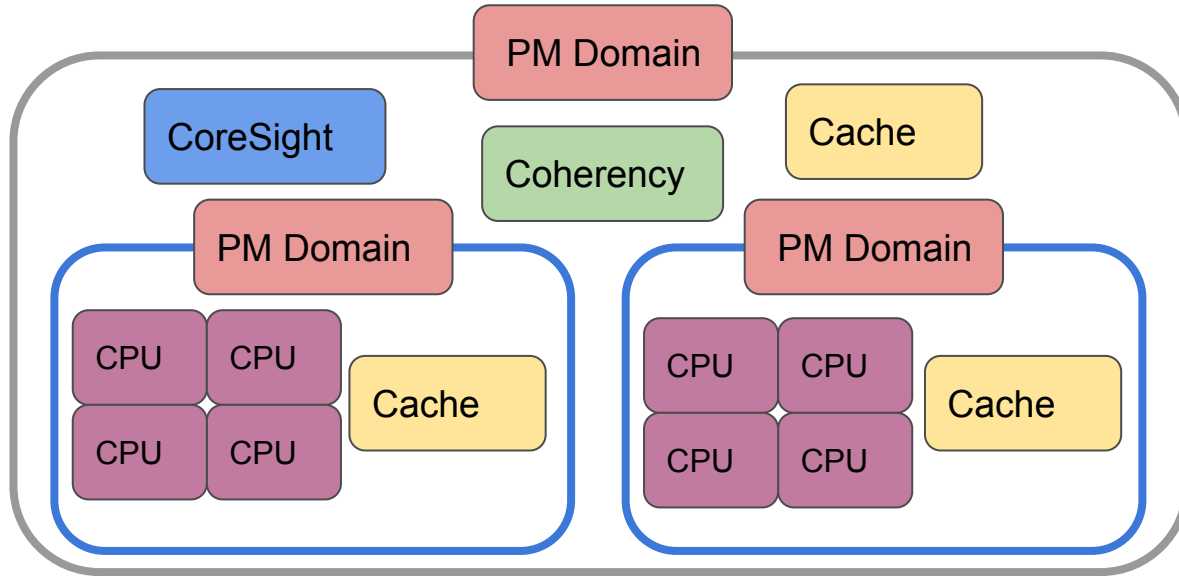
- Why?
- Status
- Details??
- Next steps



# Legacy



# Complexer topologies

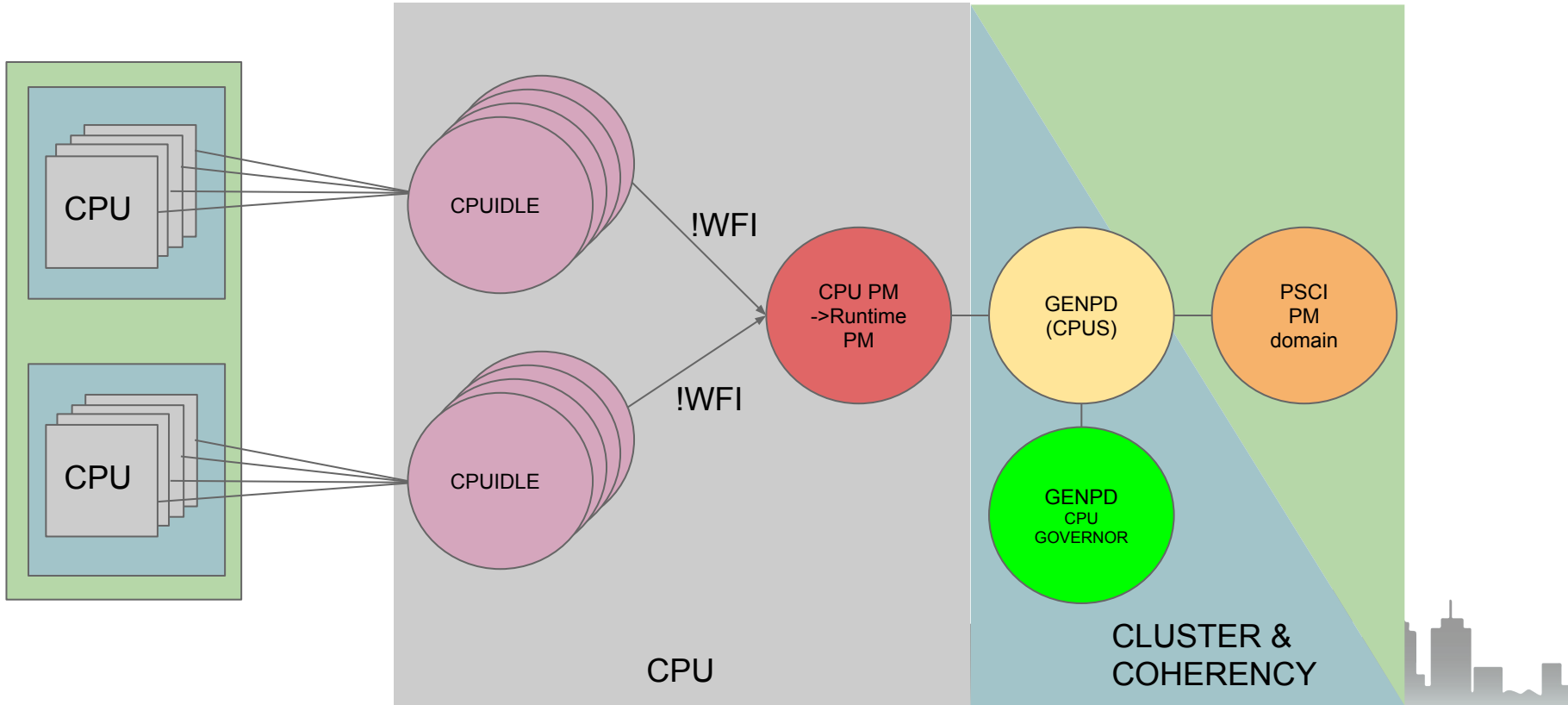


# The problems

- CPUIdle: Manages CPUs well, but..
- Scalability: Multi-cluster SMP systems and heterogeneous systems like big.LITTLE - have clusters etc...
- No account for idle states being shared between a group of CPUs.
- CPU PM notifiers inform clients when CPUs and cluster of CPUs are about to be powered off/on. There is information missing...
- No account for resources that shares the same power rail as the CPU cluster.



# Overview - are you interested?



# Status

- Version 8 posted in June.
  - [PATCH v8 00/26] PM / Domains: Support hierarchical CPU arrangement (PSCI/ARM)
  - <https://lkml.org/lkml/2018/6/20/807>
  - [git.linaro.org/people/ulf.hansson/linux-pm.git](https://git.linaro.org/people/ulf.hansson/linux-pm.git) next (v9-ish)
- Validated on 410c using ftrace and via collecting idle statistics.
- Dragonboard 820c - quad core, two clusters - Amit?



# Next steps

- Try it on more platforms.
- Maybe decouple the enablement of the OSI PSCI mode from the series.
- Talk with Lorenzo!
- We need to start playing with non-PSCI ARM SoCs.
- We may need to support multi PM domains for CPUs.
- Several other improvements and optimizations on top.

