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Do nothing fast: How to scale idle cpus ?

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Following surprising benchmark results showing that adding a global raw spinlock in the idle loop significantly improves performance of the scheduler-heavy hackbench benchmark on a 192 core AMD EPYC, a month-long investigation followed to understand the root cause of this behavior.

This presentation is meant to walk the audience through the findings and the resulting solution, opening discussion on some of the still unexplained behaviors with respect to wakeup-queueing, going-to-idle frequency, task runqueue selection and migration frequency.

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