

Strange kernel performance changes - analysis and mitigation

Tuesday 21 September 2021 10:00 (45 minutes)

oday bot has reported many strange kernel performance changes that the bisected culprit commits have nothing to do with the benchmark, which make patch authors confused or even annoyed. Debug shows these mostly are related to the random code/text alignments changes, false sharing, or adjacent cacheline prefetch, which is caused by the commit, as all components of kernel are flatly linked together.

There have been around 20 reported cases checked (all discussed on LKML, like[1][2][3][4]), and this talk will try to:

- * analyze and categorize these cases
- * discuss the debug methods to identify and root cause
- * discuss ideas about how to mitigate them and make kernel performance more stable.

Some patches has been merged, some are to be posted, and some are under development and test. Will discuss them and get advice/feedback.

[1].<https://lore.kernel.org/lkml/20200205123216.GO12867@shao2-debian/>

[2].<https://lore.kernel.org/lkml/20201102091543.GM31092@shao2-debian/>

[3].<https://lore.kernel.org/lkml/20200305062138.GI5972@shao2-debian/>

[4].<https://lore.kernel.org/lkml/20210420030837.GB31773@xsang-OptiPlex-9020/>

I agree to abide by the anti-harassment policy

I agree

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