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Profiling data structures

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The Linux perf tools shows where, in terms of code, a myriad of events take place (cache misses, CPU cycles, etc), resolving instruction pointer addresses to functions in the kernel, BPF or user space.

There are tools such as 'perf mem' and 'perf c2c' that help translating data addresses where events take place to variables, and those will be described, both where the data comes from, such as AMD IBS, Intel PEBS and similar facilities in ARM that are recently being enabled in perf as well as how these perf tools use that data to provide 'perf report' output.

The open space is to do data structure profiling and annotating, that is to print a data structure and show how data accesses cause cache activity and in what order, mapping back not just for a variable, but to its type, to help in reorganizing data structures in an optimal fashion to avoid false sharing and maximize cache utilization.

The talk will try to show recent efforts into bringing together the Linux perf tools and pahole and the problems that remain in mapping back from things like cache misses to variables and types.

I agree to abide by the anti-harassment policy

Yes

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