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# More CO-RE? Taming the effects of compiler optimizations on BPF tracing

*Wednesday 14 September 2022 12:00 (30 minutes)*

BPF Compile Once - Run Everywhere (CO-RE) is a massive help when writing BPF programs that work across kernel versions, especially in the observability space, where we are often at the mercy of internal kernel changes in data structures and the like. However when writing BPF tracing programs, a major pain point is compiler optimizations which often mean the function - though not inlined - is not present in BPF Type Format (BTF), and thus cannot be traced easily via BPF. Worse, simply adding such functions to pahole would often result in them having the wrong arguments, as some of the arguments DWARF describes (and which we would translate into BTF) are optimized out. All of this creates particular problems when trying to maintain BPF tracing programs across kernel versions, because a simple compiler update can make a function have a different name (a suffix is added) and it also effectively disappears from BTF, so we lose the ability to trace via high-performance fentry/fexit programs. Here we examine this problem and propose a potential solution that may resolve it.

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Yes

**Primary author:** MAGUIRE, Alan (Oracle)

**Presenter:** MAGUIRE, Alan (Oracle)

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