

Linux Plumbers Conference 2024



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BOLT - Binary Optimizer for Linux Kernel

Wednesday, 18 September 2024 10:00 (45 minutes)

BOLT (Binary Optimization and Layout Tool) is an open-source post-link optimizer with a proven record of improving CPU performance in data-center applications. Even on top of traditional compiler PGO and LTO techniques, applying BOLT results in double-digit CPU load reduction.

Recently, we added Linux kernel support to BOLT and tested the optimized kernel on large-scale production workloads with positive performance impact.

After a brief introduction to post-link time optimizations, this talk will cover the challenges BOLT had to overcome to become a practical tool for optimizing the kernel. We'll also present BOLT "deep-scan" disassembly, a tool that can reveal information about the Linux kernel otherwise unavailable to classic disassemblers like objdump, such as static calls/keys.

The talk will conclude with a demo of BOLT and deep-scan disassembly on a typical vmlinux binary.

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