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BPF Based Telemetry, Metrics, and Accounting on Android

Android currently collects telemetry data from devices in the field. While these metrics are important and can indicate overall system health issues, they are often lacking enough low-level system information that is necessary for finding root causes.

Android has been striving to improve BPF support to enable developers to extend the Linux kernel by creating BPF programs. This development is particularly beneficial in the kernel diagnostics and telemetry domains.

This talk focuses on how BPF programs can be used as lightweight tools to collect more detailed telemetry about the kernel on Android. It also covers the use of BPF as a cheaper replacement for existing dma-buf accounting (CONFIG_DMABUF_SYSFS_STATS) and wakeup source statistics (/sys/kernel/debug/wakeup_sources).

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