The eBPF Foundation and steering committee provide technical direction and optimize collaboration on the technology’s roadmap.

Innovation is at the heart of eBPF, creating an iteration cycle that is faster, safer, and allows greater flexibility.

eBPF enables observability of the Linux system, rewriting or bypassing parts of the networking stack, and faster vulnerability fixes.

Big tech companies, including Google, Meta, and Netflix, have leveraged eBPF in their data centers for years.

A verifier and JIT compiler provide safety and performance benefits in eBPF deployments.

Standardization is in the future of the eBPF ecosystem, around instruction sets for all operating environments because it is becoming a critical layer in the cloud native infrastructure stack.

With eBPF, engineers can quickly build custom programs in the kernel without the whole community having to accept the change.

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The 30 million lines of code in the Linux kernel enables significant functionality, but adding new functionality can take years.

In tandem with the needs of cloud native workloads, eBPF supports capabilities, increases performance, and encourages simplicity.

Many applications already use eBPF enabling continuous profiling, monitoring servers, observability platforms, and performance monitoring tools.

Other challenges to eBPF include the performance-features tradeoff, co-existence and interoperability of tools, and the kernel expertise needed to write programs.

Innovation is at the heart of eBPF, creating an iteration cycle that is faster, safer, and allows greater flexibility.

eBPF has evolved far beyond packet filtering to become a general purpose computing machine inside the kernel.

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