

SIDE: A Unified User-Space Instrumentation Specification

Mathieu Desnoyers, EfficiOS

Tracing & Perf Events Microconference

Linux Plumbers Conference 2024

September 18-20

Vienna, Austria

*Effici***OS**

Goals

- The goal of the SIDE specification is to enable instrumentation of various runtimes and languages.
- The libside library is a reference implementation of the SIDE specification for C/C++ user-space.

Scope

- The SIDE specification covers:
 - an event and field description ABI,
 - a type system,
 - a captured arguments layout ABI,
 - and how to sample internal application state.
- Specifies how applications can be instrumented and how tracers can connect to that instrumentation.

Recent Progress (libside)

- Static type checking between event descriptions and call site arguments based on macros.

Discussion

- Integration of the SIDE specification with User Events:
 - Current status: User Events use strings as ABI to express registered field types, and receives emitted event payload as an array of bytes from userspace,
 - Proposal: extend User Events to accept SIDE ABI as event descriptions and payload.
- Instrumentation of runtimes other than C/C++.
- Links:
 - <https://git.efficios.com/?p=libside.git;a=summary>
 - <https://git.efficios.com/?p=side-spec.git;a=summary>