

Outreach Program For Women

xHCI Trace Events

Xenia Ragiadakou

Mentor: Sarah Sharp

Linux Kernel
USB3.0 Host Controller Driver

Speed up bug reporting

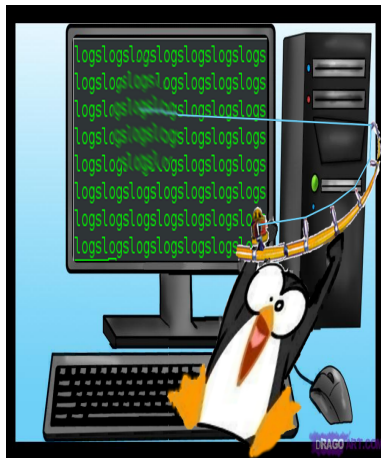
To enable xHCI debugging statements, bug reporters had to recompile with `USB_XHCI_HCD_DEBUGGING` on.

- ▶ Rely on Dynamic Debugging
- ▶ Reboot with `xhci_hcd.dyndbg=+p`
- ▶ Or just echo `'module xhci_hcd +p'` in `dynamic_debug/control`



Event Traces

- ▶ Deflate logs
- ▶ Enhance control over debugging
- ▶ Available xhci trace events under `tracing/events/xhci-hcd`
- ▶ Trace debug statements on specific code paths
- ▶ Trace xhci data structures



xHCI Event Trace Classes

- ▶ for debugging statements
- ▶ for input/output contexts
- ▶ for events



Parse xHCI traces in userspace

- ▶ Trace-cmd tool with xHCI plugin

<https://github.com/elbeasto/xhci-trace-plugin>

- ▶ Human readable traces

- ▶ Parsing in userspace



During early application process

- ▶ First contact with FOSS community
- ▶ Use git, create patches
- ▶ Guidance from experienced developers
- ▶ Get in touch with other wanna-be haxxees

During internship

- ▶ Kernel built-in tracing mechanism
- ▶ xHCI design
- ▶ USB linux subsystem



DON'T be scared of the penguin

