

Thesis
B.Sc.

Thesis
M.Sc.

GE
Practical
Course

IDP, HiWi,
Guided
Research

Interrupts in User Space Drivers

Motivation

Drivers use interrupts to reduce the system's power consumption during time of low loads. Interrupts are known to be slow on modern systems, so drivers focusing on performance either do not use interrupts at all or disable them dynamically when a high load is applied.

Many modern user space drivers do not implement support for interrupts at all as they are interested in the highest possible performance. Our own network driver *ixy*^a is no exception here.

Main goal of this thesis is to implement interrupt support in *ixy* via the Linux *vfi* subsystem and to compare the performance with the existing polling implementation.

^a<https://github.com/emmericp/ixy>

Your Task

- Implement support for interrupts in the *ixy* driver (C or Rust^a)
- Quantify the performance characteristics of interrupts

^a<https://github.com/ixy-languages/ixy.rs>

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