

Forschungspraxis

Concept for Hardware-supported Scheduling in Linux

A major factor for the performance of an application is the ability to efficiently use the available resources a system provides. Here the operating system also plays a vital role. It is responsible for scheduling the numerous threads and processes to the different cores. These decisions are performed in software in the kernel, at the cost of application runtime. Approaches have been proposed where the scheduling is offloaded to a dedicated hardware unit.

The goal of this research internship is to develop a concept for introducing a hardware scheduler into the Linux environment. This includes a detailed analysis of the changes required inside the Linux kernel itself and exploring a potential integration into a simulation environment like Gem5. If the concept looks promising the realization can be done in a subsequent master thesis.

Prerequisites

Proficient in:

- C/C++
- Python

Experience with Linux is helpful

Advisors

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