

Energy- and Security-aware Operating Systems

Benedict Herzog

Bochum Operating Systems and System Software (BOSS)

Call for Participation

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Energy and power efficiency are key design criteria in modern operating systems due to performance, thermal, and environmental considerations. A more energy-efficient system is not only more environmentally friendly but often also 1) clocks faster, 2) reduces the amount of Dark Silicon, and 3) utilises the installed cooling potential in HPC systems more optimally. This talk explores the impact of software mitigations for hardware vulnerabilities on the energy efficiency in the Linux kernel. Additionally, it presents an approach to dynamically reconfigure software mitigations in Linux tailored to the application requirements to improve the energy efficiency.

Benedict Herzog is currently a Ph.D. candidate at Ruhr-University Bochum (RUB) and a research fellow at the Bochum Operating Systems and System Software Group at RUB. He previously was a research fellow at the System Software Group at Friedrich-Alexander-University Erlangen-Nürnberg (FAU). His main research topics are energy-aware system software (configuration) and the application of machine learning for energy-efficient operating systems.

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