



Aufgabenstellung für die Diplomarbeit

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Studiengang: Informationssystemtechnik
Thema: An Analysis of Energy Efficiency Features in Intel Sapphire Rapids Processors

In addition to the performance of computer systems, energy efficiency is another relevant metric for their evaluation. In this thesis, the student analyzes the energy efficiency methods of the Intel Sapphire Rapids architecture and evaluates their effects on performance and power consumption. This includes an assessment of the power-saving mechanisms defined in the ACPI standard, as well as the integrated monitoring methods for power consumption.

Im Rahmen der Arbeit sollen folgende Aufgaben bearbeitet werden:

1. Background research (processor manuals and source code of low-level applications)
2. Architecture analysis and comparison with other architectures
3. Description of existing power saving methods and benchmarks thereof
4. Analysis of internal measurement interfaces for power-related metrics
5. Definition and execution of the appropriate benchmarks for an evaluation of the impact on performance and power consumption
6. Evaluation and presentation of the results

Betreuer: Dr.-Ing. Robert Schöne
1. Prüfer: Dr.-Ing. Robert Schöne
2. Prüfer: Prof. Dr. Diana Goehringer

Die Arbeit wird in englischer Sprache verfasst.

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