Übungsblatt I

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Walker 2008

In Walker's paper *benchmarking Amazon EC2 for high performance scientific computing, 2008, The UESENIX Magazine, 33(5)* he estimates the performance gap between the HPC-Cluster called Abe and Amazon's cloud computing service EC2. He executed a benchmark on single computing nodes and estimated a relative runtime decrease up to 20% from Abe to EC2, although the nodes had similar hardware specifications. He does not mention a reason for this decrease. A second benchmark which required communication between the nodes showed even higher relative runtime decreases up to 1000%. He blames EC2's probably slower communication hardware (not exactly known) for that. To his mind commercial cloud computing is compelling, but actual systems should improve in performance to become an appropriate choice for scientific calculations.

Flynn and Hung 2005

The paper *Michael J. Flynn and Patrick Hung. 2005. Microprocessor Design Issues: Thoughts on the Road Ahead. IEEE Micro 25, 3 (May 2005), 16-31.* is mainly about parameters which influences microprocessor design. They mentioned that the SIA's (Semiconductor Industry Association) projections on microprocessor development considered not enough influencing factors. Beside the processors's power, area and frequency integrity (security, reliability & testability) and design time have to be considered in the design. Furthermore so called SoCs (System on Chip) are going to usher into our every day life, if some issues they discussed will be fixed in the future. Overall they are convinced that single processors can not increase performance, whereas parallelisation on hardware and software can achieve that. They lead a clear discussion about what microprocessor design is going to be by considering issues that need to be solved in future.