Abstract

To study the latest cellular mobile communication standard and protocols, there should be a publicly available simulation environment to support researchers of the world to do testing, reformulation of the existing technologies and optimization on a common well known platform [1],[2],[3]. A possible solution is offered by open source simulation environment from TUWIEN that supports link and system level simulations of the Universal Mobile Telecommunication System (UMTS) Long-Term Evolution (LTE) and which is specifically designed to accentuate reproducibility [1]. In this paper, we pipelined execution of the LTE algorithms on blade servers to achieve minimum latency caused during communication [4]. And then the pipeline model is compared in different context including a single (multi-core) processor, multiple processors on a single board, multiple processors on different boards on a single server and multiple processors on two different servers and etc. Moreover, we obtained the ratio of the communication and the computation time in the execution of LTE algorithms in the TUWIEN simulator by profiling which provides the best preferable configuration for the LTE algorithms. Finally, LTE processes are distributed to desirable processors by using OpenMPI to decrease latency.
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**Index Terms**

Computer Science

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**Keywords**

Pipeline model, TUWIEN LTE simulator