

Name	Signature	Student Id Nr	Points

Operating Systems, miniexam 2, 2.2.2015 (6p)

Write your answer on this exam paper in the space given. Please notice, that the exam paper is 2-sided.

a) [1 p] How do kernel level threads (KLT) differ from user level threads (ULT)?

b) [1 p] What advantage is there in KLTs as compared to ULTs? What disadvantage?

c) [1 p] For a 10-threaded application, 4% of executed code is such that it must be run serially. Rest 96% of the executed code can be perfectly parallelized for 10 threads. The execution time for the process in 1-core system is 100 sec.

What is the execution time in 4-core system?

What is the execution time in 16-core system?

- d) [2 p] Give an example on a situation where ULT T state can be "executing", but the instructions for given thread T are not currently executed by the processor.

When will T get really executed? How is the decision made?

- e) [1 p] What problem is related to ULT blocking I/O and the overall processing speed of multithreaded applications?

Why does the same problem not exist with KLTs?