

Family Name: Astudent Given Name: Iman
Paper Title: Some paper we've read

1) The problem: Operating systems don't know that a user-level thread is holding a lock and so it can deschedule that thread. This causes bad performance for parallel applications.

2) New Idea(s) : To have the user-level thread (locks) inform the operating system that is holding a lock and to do so efficiently. The operating system tries to avoid descheduling threads that hold locks.

3) Positive points

- It is a real problem with a good solution.
- Some of the example applications are convincing.
- The performance improvements are impressive and unexpected.

4) Negative points

- The results from the micro benchmarks seem contrived because they were designed to make their system look good.
- I think that this approach will actually hurt the performance of some applications, so while the paper is interesting I don't believe the problem is solved.
- I think that making system calls into the kernel to inform it that a thread is holding a lock is too expensive for some applications

5) Follow on work:

- Show that this approach actually hurts the performance of some applications.
- Implement a mechanism for sharing memory between the kernel and application so the thread can inform the kernel with very low cost.
- Show that sharing memory improves over system calls and improves the performance of the applications in the first point above.