# PAXOS Made Transparent

Summary of Review & Questions

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Performance

- Figure 14: how below 100%?

- *In paper: "An important data structure in CRANE's wrapper is the PAXOS sequence which contains clients' socket calls and inserted time bubbles. This sequence sits between the proxy and the server's processes, and it is implemented with Boost [1] shared memory. CRANE uses lockf() to ensure mutual exclusion on this sequence because the two processes may concurrently manipulate this sequence."*

  Does this sequence become a performance bottleneck?

- Does enforcing round-robin scheduling affect performance? Is there a reason why round-robin is used, instead of having a more flexible scheduling policy?

Figure 14
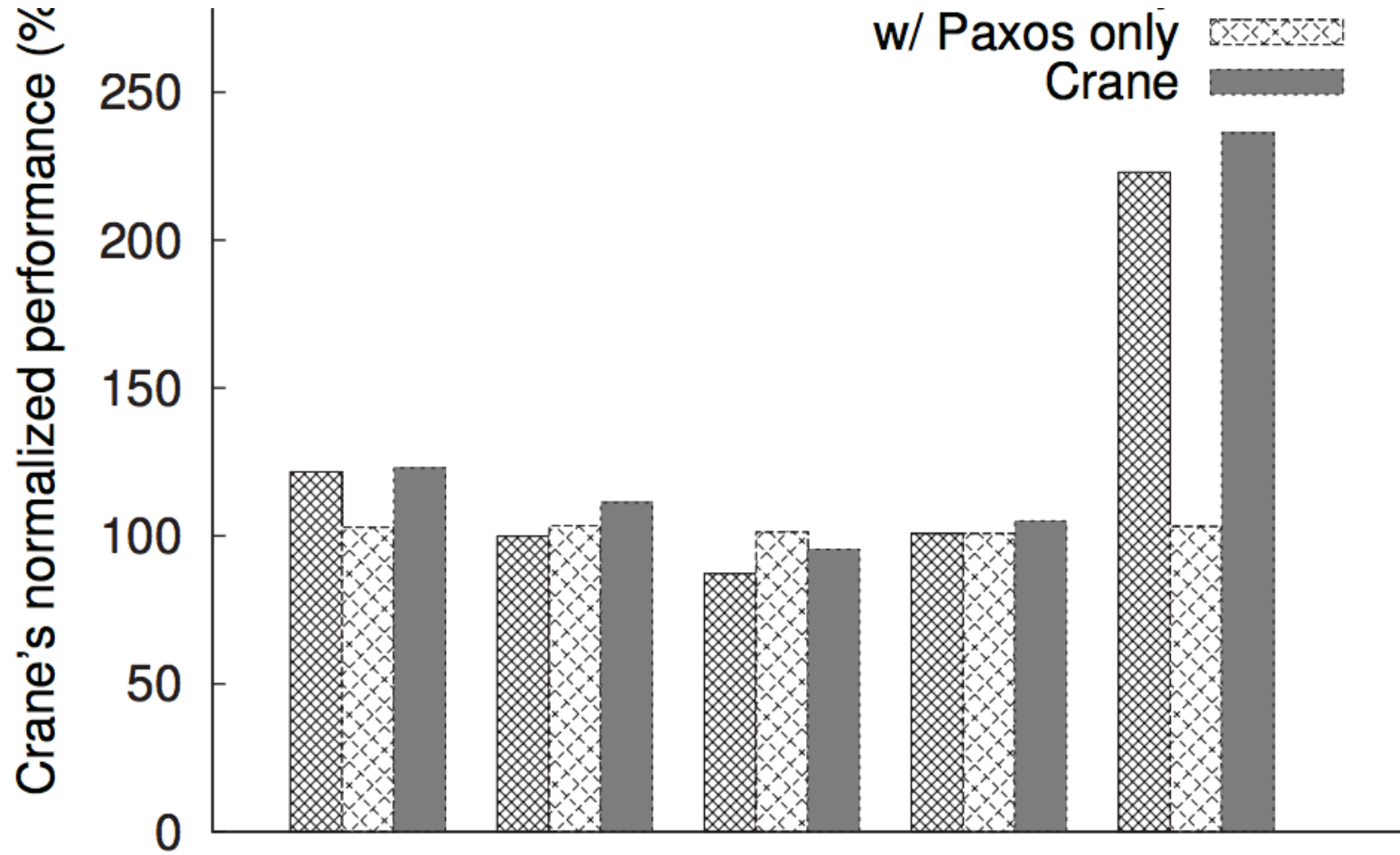
Application

- *"Redundancy. Instead of just keep a log or some data structure, each replica not only has to run crane but also has to run the same computation the primary has already done."*
- *"Targeting at a very narrow range of applications."*
- *"the paper can be further developed towards its applications".*
- Further work can be done to determine what specific types of server (and even other) programs benefit the most from CRANE.

Number of replicas needed in a usual case?

Fault tolerance perspective: server replicas vs. load balancer?

Other applications of SMR?

Time Bubble

- How exactly does it enforce the "same sequence of logical times for socket request"?

- Some further applications of the time bubbling technique?