Paper summary

A comparison between single address space and multiple address space is made in-depth with the help of the OPAL prototype on Mach 3.0 microkernel, explicitly concentrating on integrated software environments such as CAD(share information efficiently). It works on the assumption that 64-bit architecture does not require the translation level, and does not compromise the security (using protection domain), and also reduces design complexity.

Strengths

-The previous works have been referencing appropriately. (Section 7) -Paper acknowledges various trade-offs and implementation design choices (Section 3). -The placement of the diagram and tables at an appropriate place makes reading easier for new readers (like me). -The problem of Multiple address space has been the highlight, and Single address space is suggested as the solution. Even then, the drawbacks of a single address space have been explored thoroughly (section 6). -Performance measure of the Opal prototype on 64-bit DEC Alpha-based is shown in Section 5.3.

Weaknesses

-It is mention that Opal was implemented on DECstation 5000(32-bit architecture), but its performance measure is not elaborated anywhere. Also, the performance measure of Opal on only DECstation 5000 is explored. It would have been better if more benchmarks were provided. -The scenario, if the deadlock can occur in such a system, is not defined anywhere. Also, if deadlock happens, how is it handled.

Comments for author

The author could have justified the performance difference between single address space and multiple address space more detailed. The author also claims that this system is robust in a distributed environment but lacks statistical data.