Paper summary

Traditional RPC calls for cross domains are expensive overhead. It fails to exploit the typical scenarios. Lightweight RPC optimizes them by using simple control transfer, simple data transfer, access validation, redundant copying, etc. (almost by a factor of 3) while retaining the qualities of safety and transparency. Most RPC calls are cross-domain and not cross-machine, and optimizing them will account for significant performance boosts. LRPC is implemented on Firefly, and the performance comparison with traditional RPC is made using null call as the base case. Hence LRPC proves to be a viable alternative for cross-domain communication.

Strengths

1. The apparent motivation of the problem is clear.
2. The most common case is given importance. (Amdahl's law).
3. Performance of uncommon cases is covered as well.

Weaknesses

1. Only microbenchmarks are given.
2. Even though the ratio of Cross machine to Cross-domain is measured on different OS, the kind of workload on them is not mentioned.

Comments for author

Since Mr. Henry Levy is the joint author of Opal and Lightweight RPC, how would he differentiate portals in Opal from lightweight RPC?