Practical and automated hardening: the PASC library

Hardening processes with PASC
Automatic hardening with the PASC library
Protocol: Java classes implementing 3 interfaces
1. Protocol state
2. Event handlers (processing messages)
3. Messages
Message passing is external (e.g. Netty)

- No additional replicas required
- Support for weak system-specific consistency models

Paxos example
STATE MACHINE
Message dispatcher
NETTY
Encode / decode messages
Networking
PASC runtime
Paxos

Hardening Paxos is cheaper than PBFT
(0/0 microbenchmarks)

PASC supports scalable weak-consistency

Low overhead when hardening Zookeeper

This work has been partially supported by the SRT-15 project (ICT-257843), funded by the European Community.