writes

* client communicates with primary for writes
* primary contacts all replicas for the write

reads

* lease
  + need synchronized clocks
  + clock server gives bound for time
  + config service gives 1 second leases to replicas (no reconfigs going to happen for lease amount of time)
* on a read, check lease
* could be stale state
  + so wait until all puts committed

Reconfigure (via config service)

* makes a configuration to new servers
* steps
  + seal up one of old servers
  + copy its state
  + send new state to all of new servers

formal verification

* want to prove put/get are linearizable
* grove proof library
  + leases, crashes, reconfiguration, rpcs
  + ownership of resources
  + x |-> v
    - other threads cannot use v
  + lock invariant
    - when no one else owns resource, lock owns it
    - when hold lock, get lock's resources