Exercise 9

1 Non-Blocking Atomic Commit

Consider the Non-Blocking Atomic Commit (NBAC) abstraction of Section 6.6 [CGR11] in a model where processes crash. Can one implement NBAC in the fail-noisy model, that is, from an eventually perfect failure detector $\Diamond\mathcal{P}$? What if we consider a weaker specification of NBAC, in which the (regular or uniform) *agreement* property is not required?

2 Secure Distributed DNS

Some Byzantine-fault tolerant replicated services have been demonstrated in the research literature. The following paper describes a prototype of a dependable distributed domain-name service realized using the SINTRA BFT replication system; today there exist more efficient and more widely available systems, such as the open-source library BFT-SMaRt available online (`http://code.google.com/p/bft-smart/`).

> C. Cachin and A. Samar, "Secure distributed DNS," in *Proc. Intl. Conference on Dependable Systems and Networks (DSN)*, pp. 423–432, June 2004.
>
> `http://www.zurich.ibm.com/~cca/papers/dnsrepl.pdf`