

Fault Tolerance

(Distributed Commit and Checkpoints)

ECE 454: Distributed Computing

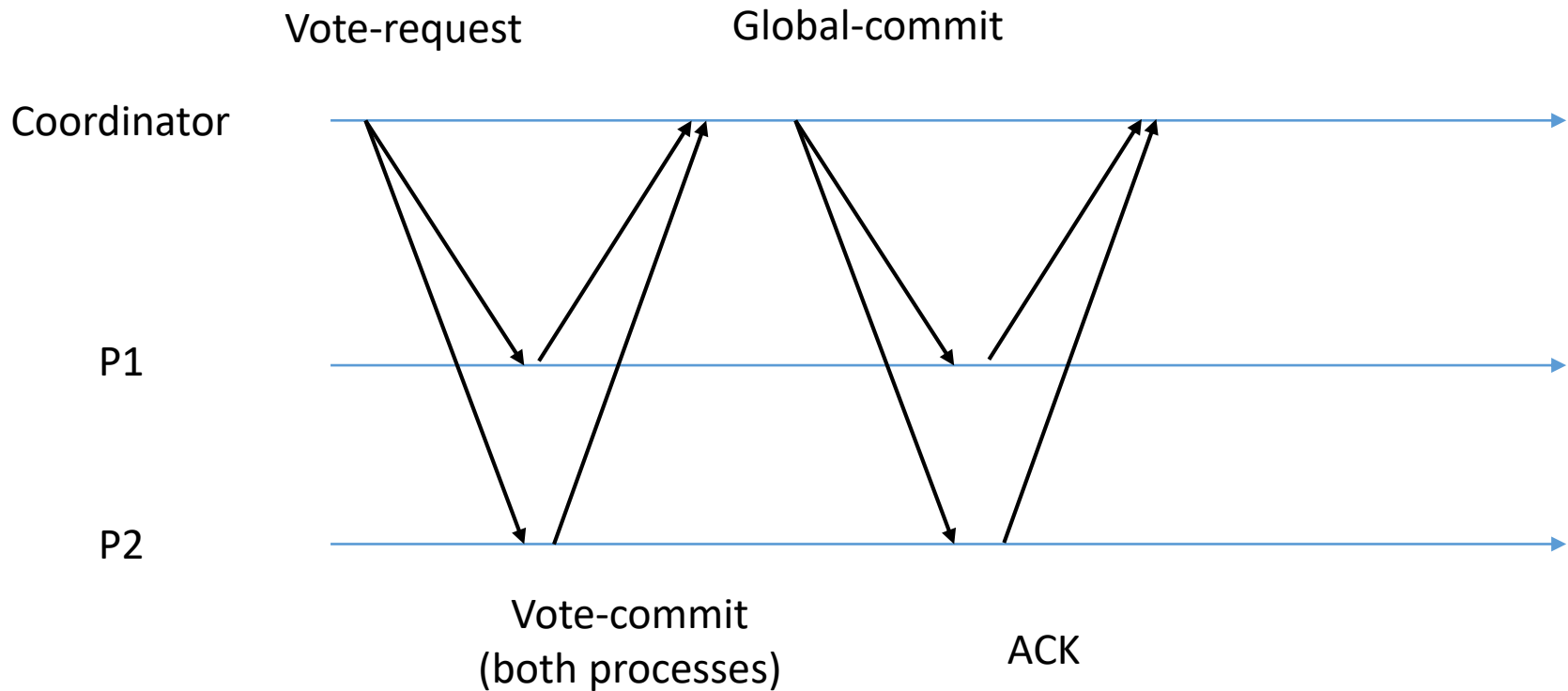
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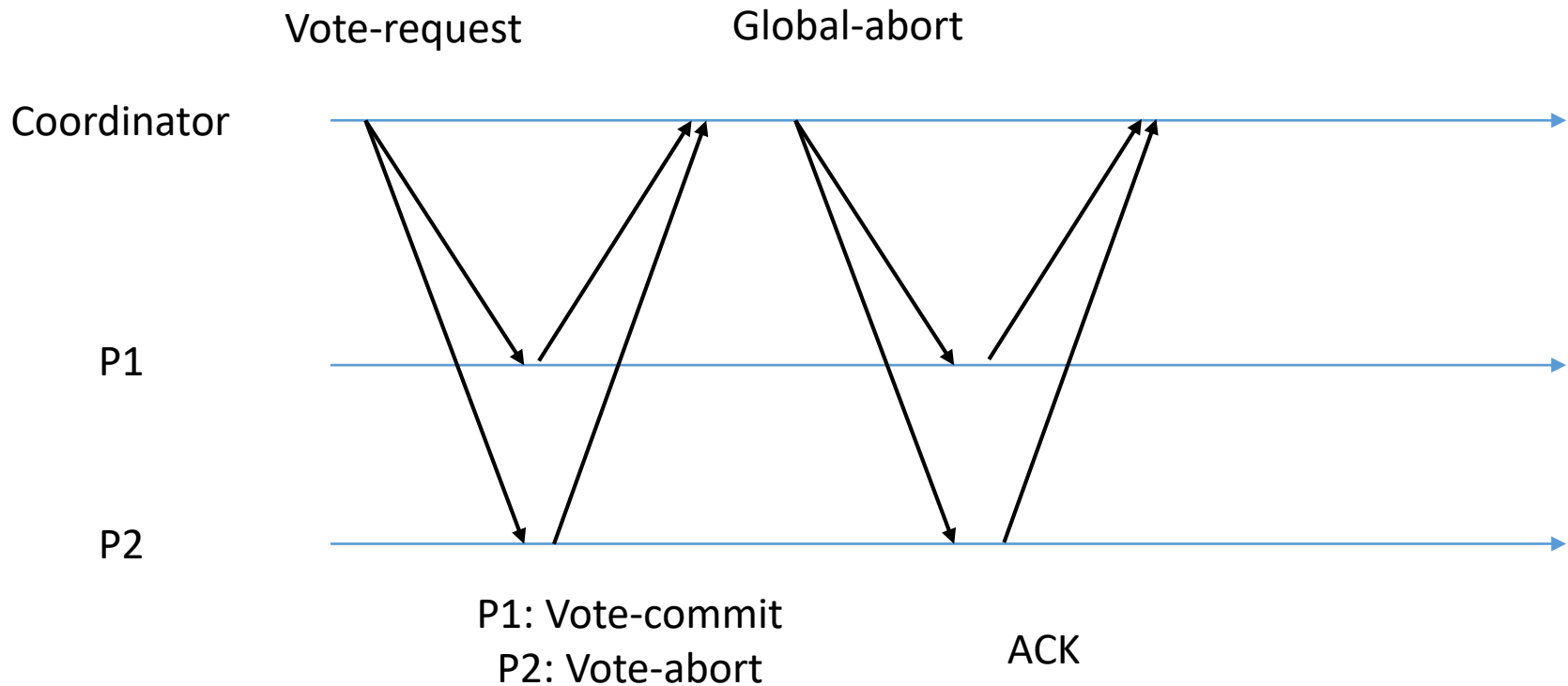
Slides are derived from A. S. Tanenbaum and M. Van Steen,
Distributed Systems: Principles and Paradigms, 2nd Edition, Pearson-Prentice Hall, 2006.

Two-Phase Commit (2PC)

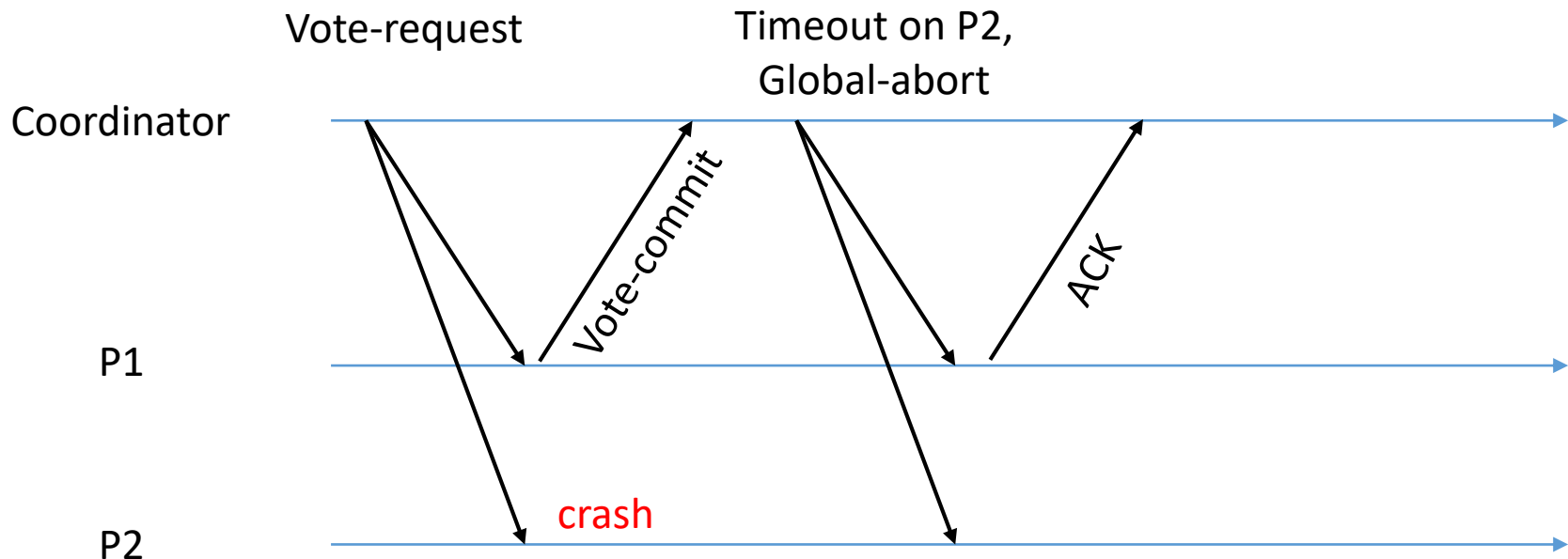
2PC failure-free, commit decision



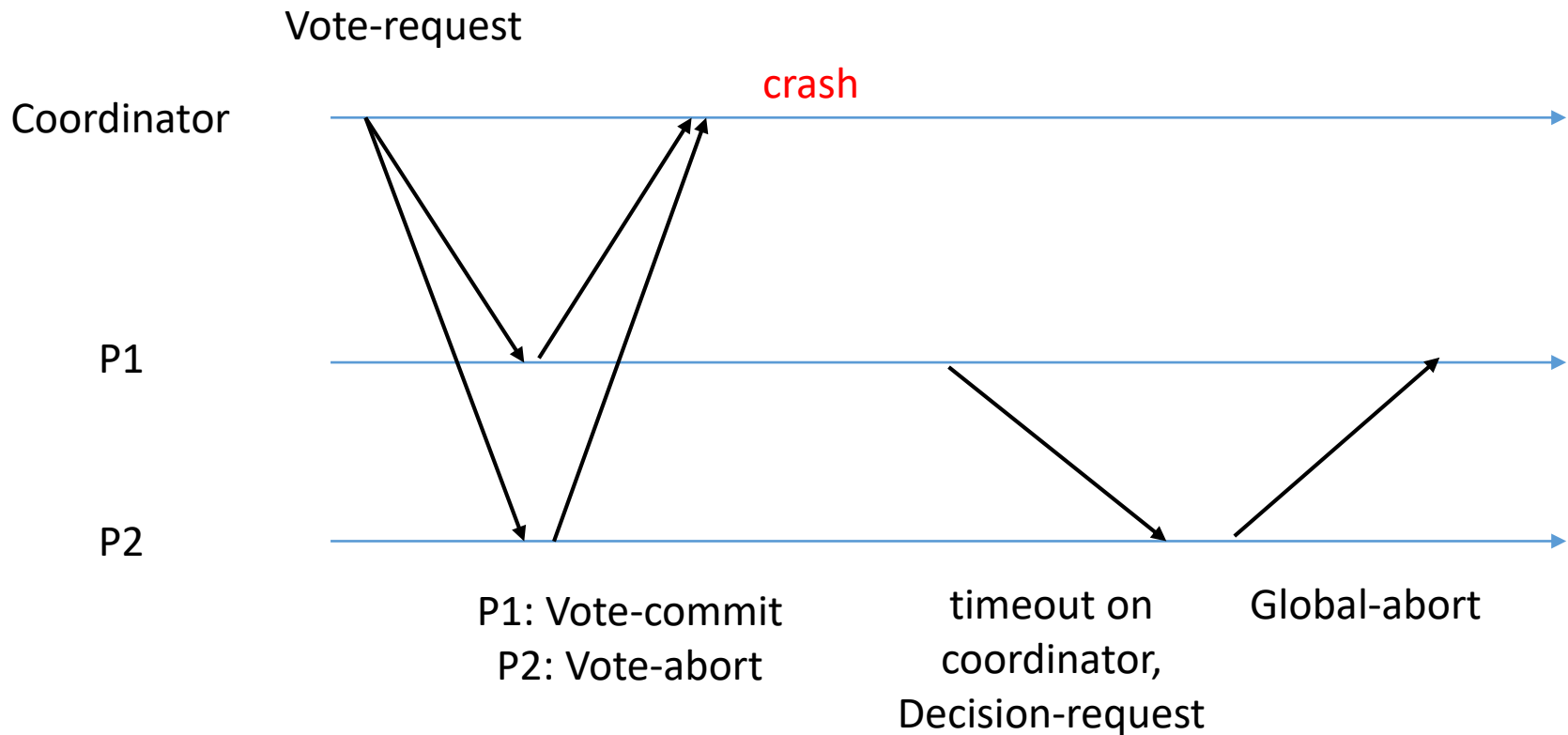
2PC failure-free, abort decision



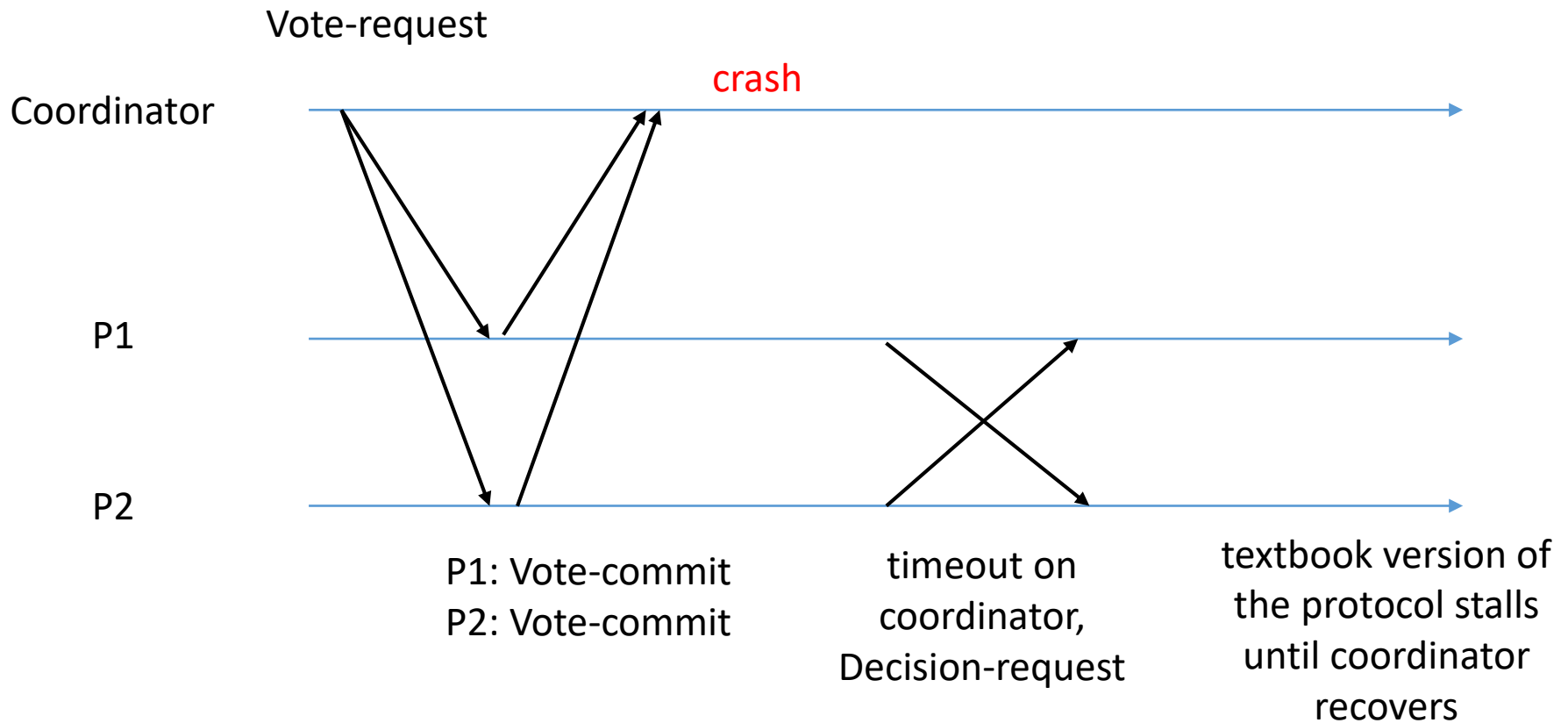
2PC participant failure



2PC coordinator failure, abort

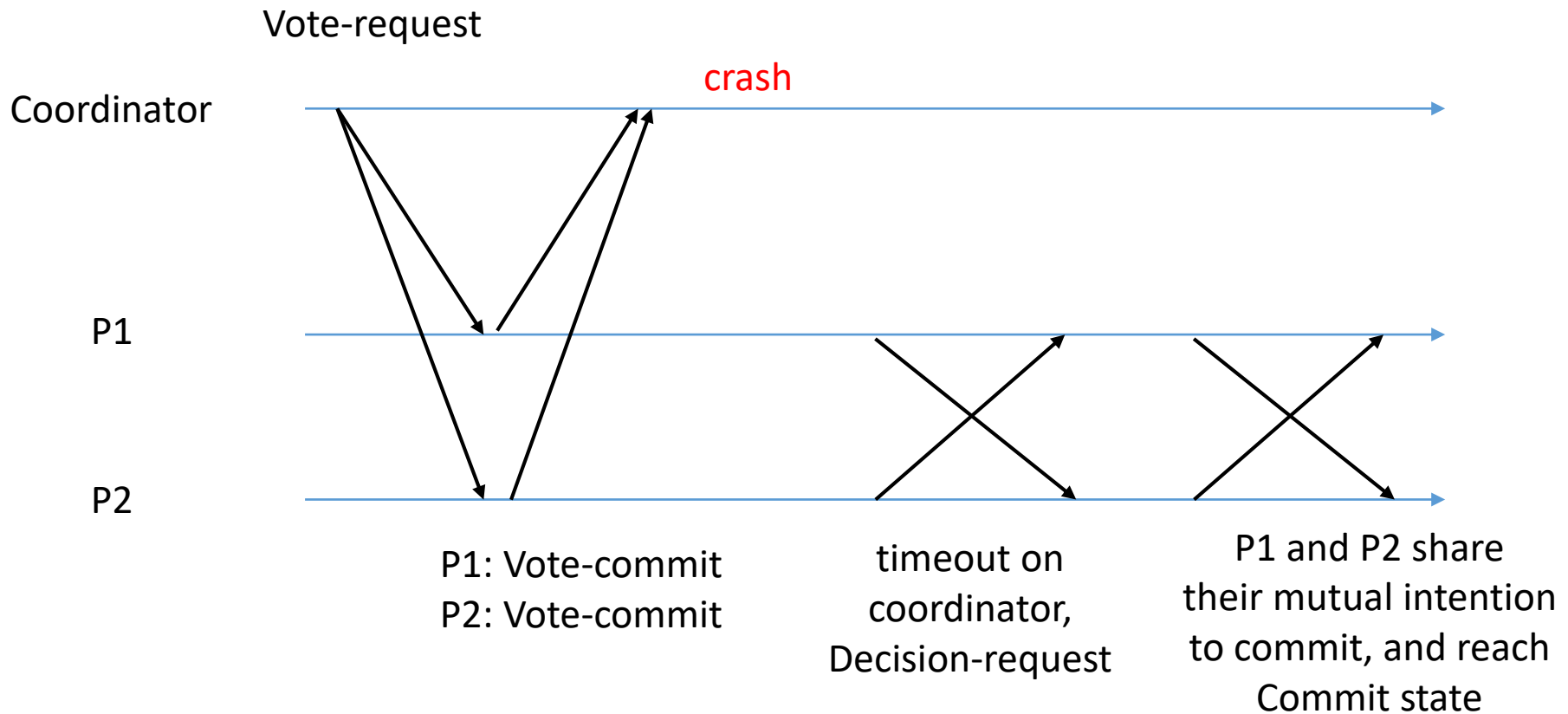


2PC coordinator failure, stall



2PC coordinator failure, commit

(Optimization, not in textbook.)



Coordinated Checkpointing Algorithm

Failure-free case

