Distributed Database System—Failure and recovery

Abstract

In this ongoing research project, investigating the problem of data consistency in the context of distributed database systems. My current research effort concentrates on theoretical study of data failure mechanisms such as hardware, software and network failure. In addition, I am trying to research in data recovery techniques. Replication is the key factor in improving the availability of distributed database systems. The replication and concurrency control mechanisms are correct and maintain the consistency of the database, the failures of hardware and/or software at the processing site and communication network may destroy the consistency of the database. In order to cope with failures, distributed database systems must provide recovery mechanisms. The goal of check pointing is to save database states on a separate secure device so that the database can be recovered when errors and failures occur. A check pointing mechanism which does not interfere with the transaction processing in distributed environment is highly desirable for many applications, where restricting transaction activity during check pointing is not feasible.