DE LA SALLE UNIVERSITY

MAINTAINING CONSISTENCY IN A NETWORK PARTITIONED DISTRIBUTED DATABASE SYSTEM

Presented to the
Faculty of the Graduate Program
of the College of Computer Studies
De La Salle University

In Partial Fulfillment
of the Requirements for the Degree of
Master of Science in Computer Science

by

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May 1991

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ABSTRACT

A number of sites are interconnected in a distributed database system (DDBS) to provide a convenient access todata via some kind of communication network. In adistributed system it is highly desirable to keep the system functioning even in the situation of one or more nodefailure or in network partitioning. Supporting some redundant copies of files and maintaining consistency in those copies in such a situation is one of the serious problem of DDB system. Network partition in a distributed database system may leads to inconsistency among redundant copies of database files residing in two or more partitions, accessed separately. Detecting network partition and merge, detecting inconsistency, and mechanisms for recovering from these inconsistencies are discussed in this study. Network information is maintained to detect the network partition and merge. Flags are used in the log of transaction to record the updates made in each sites. Those flags from each logs (associated with each files) are checked to detect the mutual inconsistency of the data tuples in the database files, and the log information are used to recover the unupdated tuples of newly merged sites. All these mechanism are kept transparent to the user.