Abstract

In this paper, we propose a concurrency control protocol, called the Prudent-Precedence Concurrency Control (PPCC) protocol, for high data contention main memory databases. PPCC is prudently more aggressive in permitting more serializable schedules than two-phase locking. It maintains a restricted precedence among conflicting transactions and commits the transactions according to the serialization order established in the executions. A detailed simulation model has been constructed and extensive experiments have been conducted to evaluate the performance of the proposed approach. The results demonstrate that the proposed algorithm outperforms the two-phase locking in all ranges of system workload.

References

An Aggressive Concurrency Control Protocol for Main Memory Databases

1987.


Index Terms

Computer Science  Information Sciences

Keywords

Concurrency Control, Main Memory Database, Serializability, Serialization Graph, 2PL