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

1987.

Index Terms

Computer Science

Information Sciences

Keywords

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