

04 – Fast Serializable Multi-Version Concurrency Control

for Main-Memory Database Systems

1. Overview of Idea

MVCC could not guarantee full serializability, instead, it has snapshot isolation. But, with predicate logging and some implementation, MVCC can be full serializable, with a little overhead.

2. Main Finding

With predicate logging and in-place version update, MVCC can guarantee serializability.

3. Systems used and its Specifications

HyPer is used and added serialized MVCC implementation

A. In place version update, before image delta storage

B. Keep version position

C. Keep undo buffer to trace txn's operation

D. Predicate logging and predicate validation

4. Workloads evaluated

SIBENCH-like custom benchmark is used. Also, TPC-C, TATP are used