

The End of an Architectural Era (It's Time for a Complete Rewrite)

- Discussion of a paper by M. Stonebraker, S. Madden, D. Abadi, S. Harizopoulos of MIT in conjunction with N. Hachem of AvantGarde Consulting, LLC and P. Helland of Microsoft
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Overview of the Paper

1. OLTP Design Considerations

- Main Memory
- Multi-threading
- High Availability
- No Knobs

2. Transaction and Schema Information

3. Results

4. What about the future?

OLTP Considerations – Main Memory

- “Imagine... 20 nodes, each with 32 Gibytes of main memory now... and costing less than \$50,000.”
- This would make OLTP databases inexpensive indeed, until you realize you need multiple different databases following the one-size fits all model.

OLTP Considerations – Multi-threading

- Why use multiple threads when you can use only one and remove the overhead of locking and latching?

OLTP Considerations – High Availability

- Peer-to-Peer is great! But only one site can be updated at a time.
- What if there is a failure?

OLTP Considerations – No Knobs

- What an interesting concept! Tell me more...

Transaction and Schema Information

- No ad hoc queries and no changes to transactions after implementation?
- What happens as my small business grows?

Results -What more can be done?

- What about removing undo and redo logging?
- And latches and locks?

Results – Can they be compared?

- Wait...the TPC-C implementation was only partial!
- Can we confidently extrapolate these results and come to the correct conclusion?

What about the future?

- Is there really no one database for everything?
Seems so.
- Can we really get rid of SQL? Maybe not.