

15 – Rethinking SIMD Vectorization for In-Memory Databases

1. Overview of Idea

DBs are trying to use SIMD instruction to improve performance. But CPUs are not using SIMD for performance primarily. Implementing some generic operation of DBMS with SIMD can improve DBMS's performance way better

2. Main Finding

Vectorized algorithm with SIMD is way better than scalar algorithm

3. Systems used and its Specifications

Xeon-Phi, Haswell, Sandy Bridge CPUs are used.

with vectorized scan, hash, sort, join, partition algorithm

4. Workloads evaluated

the evaluation is done by unit test of algorithm, varied on selectivity, table size, match rate, fanout, etc.