- Zidian outperforms Myrocks (Facebook) and CockroachDB (Baidu) on *each and every* of the TPC-H bechmark query on 10GB data;

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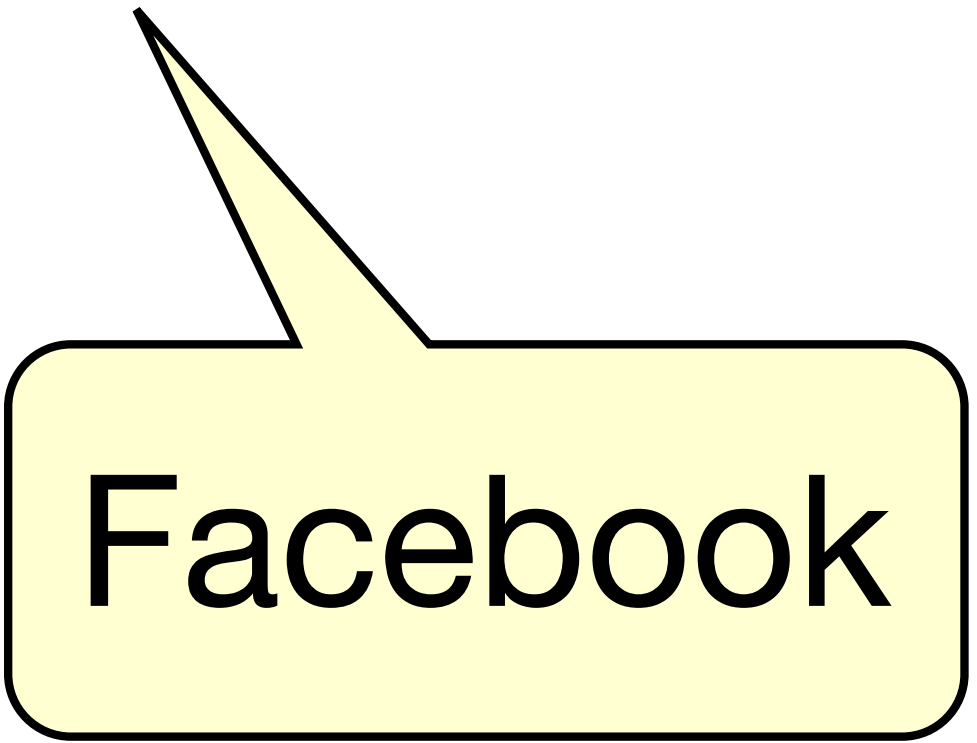
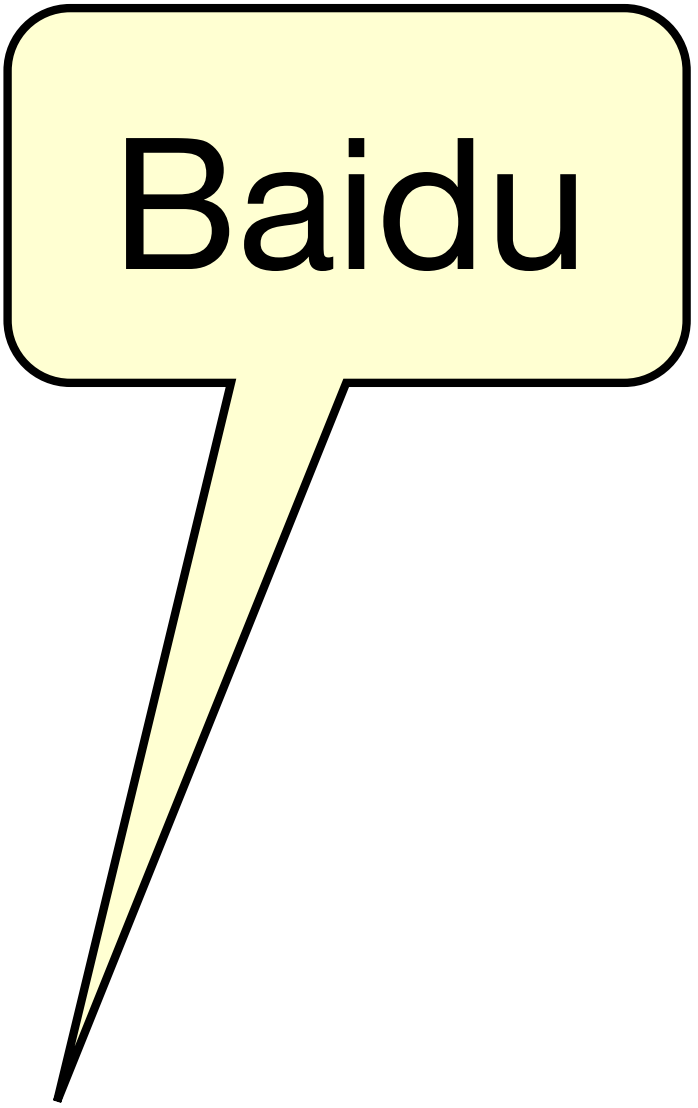
Effectiveness

Query	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20	Q21	Q22
Zidian	3.5×10^{1}	2.8	2.1×10^{1}	4.9	1.4×10^{1}	0.13	1.3×10^{2}	5.8×10^{1}	8.6×10^{1}	1.4×10^{1}	0.12	2.6	3.9×10^{1}	4.0	0.24	6.3	0.046	1.1×10^{1}	0.061	1.3×10^{1}	2.6×10^{1}	1.8
Cockr.	4.2×10^{2}	N/A	1.6×10^{2}	N/A	8.8×10^{2}	1.3×10^{2}	7.3×10^{2}	MAX	MAX	8.3×10^{2}	4.1×10^{1}	1.6×10^{2}	1.3×10^{3}	2.0×10^{2}	3.0×10^{2}	2.3×10^{1}	ERR	6.1×10^{2}	N/A	N/A	N/A	N/A
MyRo.	1.9×10^{2}	3.6	1.2×10^{2}	3.1×10^{1}	7.2×10^{1}	6.7×10^{1}	2.5×10^{2}	1.9×10^{2}	1.3×10^{3}	4.6×10^{1}	2.2×10^{2}	1.3×10^{2}	N/A	7.3×10^{1}	1.2×10^{2}	9.3	7.1×10^{2}	7.4×10^{1}	8.5×10^{1}	1.2×10^{2}	7.0×10^{2}	MAX

Table 5: Evaluation time (s: seconds**) of** TPCH **queries (N/A:** *syntax not supported;* **ERR**: *run-time error;* **MAX**: *> 1 hour*)


Facebook


Baidu

(10GB TPC-H benchmark testing)

more importantly

SaaV enables efficient support of bounded query processing on KV-stores

Effectiveness

Baidu

Facebook

Query	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20	Q21	Q22
Zidian	3.5×10^1	2.8	2.1×10^1	4.9	1.4×10^1	0.13	1.3×10^2	5.8×10^1	8.6×10^1	1.4×10^1	0.12	2.6	3.9×10^1	4.0	0.24	6.3	0.046	1.1×10^1	0.061	1.3×10^1	2.6×10^1	1.8
Cockr.	4.2×10^2	N/A	1.6×10^2	N/A	8.8×10^2	1.3×10^2	7.3×10^2	MAX	MAX	8.3×10^2	4.1×10^1	1.6×10^2	1.3×10^3	2.0×10^2	3.0×10^2	2.3×10^1	ERR	6.1×10^2	N/A	N/A	N/A	N/A
MyRo.	1.9×10^2	3.6	1.2×10^2	3.1×10^1	7.2×10^1	6.7×10^1	2.5×10^2	1.9×10^2	1.3×10^3	4.6×10^1	2.2×10^2	1.3×10^2	N/A	7.3×10^1	1.2×10^2	9.3	7.1×10^2	7.4×10^1	8.5×10^1	1.2×10^2	7.0×10^2	MAX

Evaluation time (s: seconds**) of** TPCH **queries (N/A:** *syntax not supported;* **ERR**: *run-time error;* **MAX**: > *1 hour*)

(10GB TPC-H benchmark testing)

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more importantly

SaaV enables efficient support of bounded query processing on KV-stores

Summary

Theory: conventional query paradigm no longer suffices

- a new paradigm: query big data with constrained resources
- a data-driven approximation scheme
- fundamental issues: model and complexity bounds

System: provide small companies with big data services

- BEAS: querying big data with constrained resources

Applications:

- Wherever SQL is used
- On top of any commercial RDBMS (MySQL, Postgres) and key-value systems (RocksDB, Cassandra)