



TokuDB for MySQL®

Introduction

This performance brief describes benchmarks and tests that Tokutek® and its customers have run, comparing the performance and scalability of the **TokuDB** Storage engine with that of InnoDB and MyISAM. Each result below includes a test description.

iiBench

iiBench is a popular open-source benchmark developed by Tokutek. It stresses storage engine performance for inserting data while maintaining secondary indexes. Use of indexes provides significantly higher query performance. The schema consists of short rows that model a retail point-of-sale transaction system. More details and source code can be obtained from <http://tokutek.com/iibench>

Indexed insertions

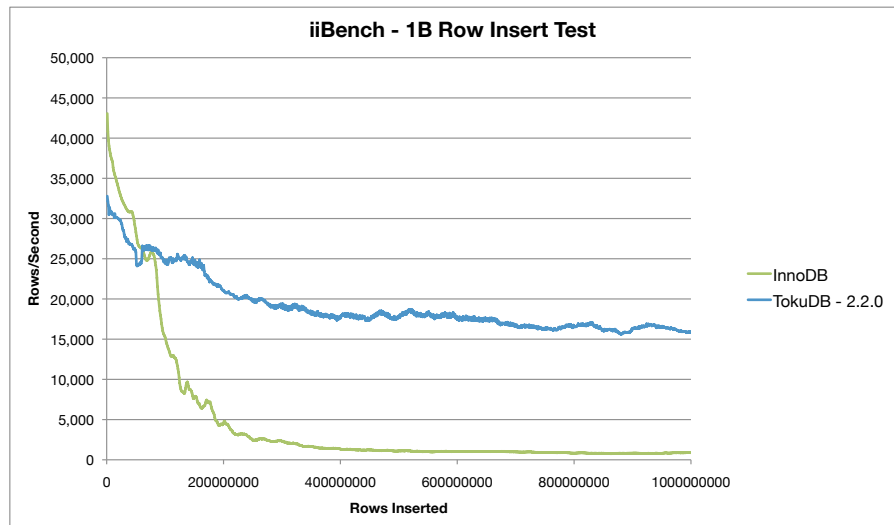
Description: Insert 1 billion rows into a table while maintaining three multi-column secondary indexes.

Platform: Linux CentOS 5.1, 2 Socket, Quad Core, Xeon X5460, 3.16 GHz; 16GB Main Memory; 6x 146GB, 10,000 RPM SAS Drives, RAID0

Terminal rate (last 10MM rows):

InnoDB®: 876 inserts/sec

TokuDB: 15,853 inserts/sec (18x faster)



Insertions and deletions

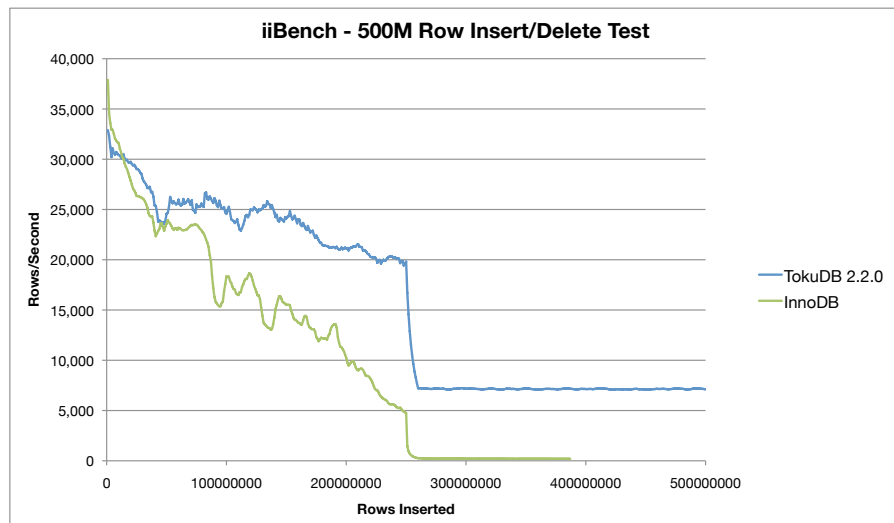
Description: Insert 250MM rows, then for every 1000 rows inserted, delete 1000 rows. At this point, the table acts like a FIFO buffer.

Platform: Same as for Indexed insertions

Terminal rate:

InnoDB: 204 inserts/sec

TokuDB: 7,109 inserts/sec (35x faster)



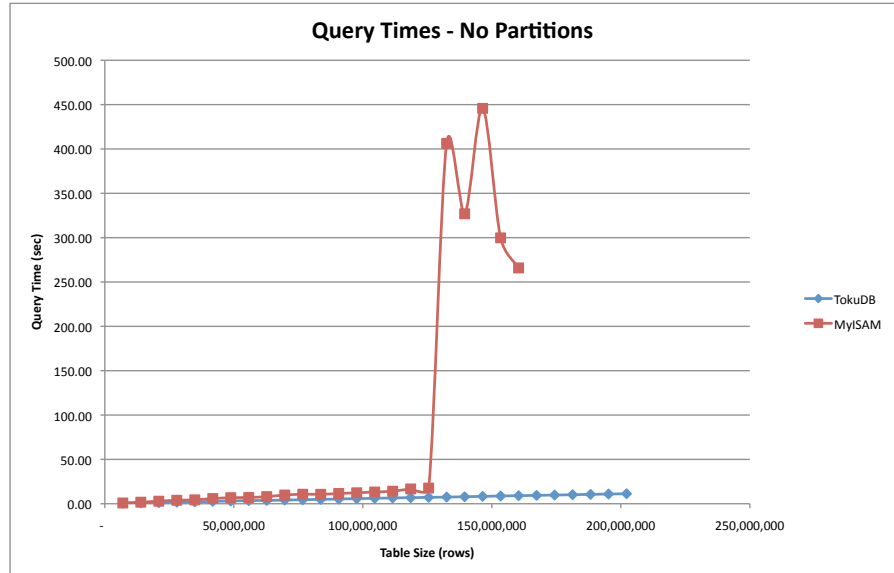
Query scalability

Description: Customer lab test that measures query times as table size grows. Around 125MM rows of data, MyISAM's query time hits a cliff and increases dramatically.

Platform: 32-bit MySQL®, Windows XP x64 SP2, Intel Dual Core Q6600 2.4GHz, 8GB RAM, 2 SAS Disk RAID 10

Performance: At 125M rows, **TokuDB** runs the query in 7.2s and MyISAM runs it in 17.7s. At 132M rows, MyISAM suddenly jumps to 406s.

TokuDB performs predictably, running the query in 11.3s at 202M rows.



Insertions on SSD

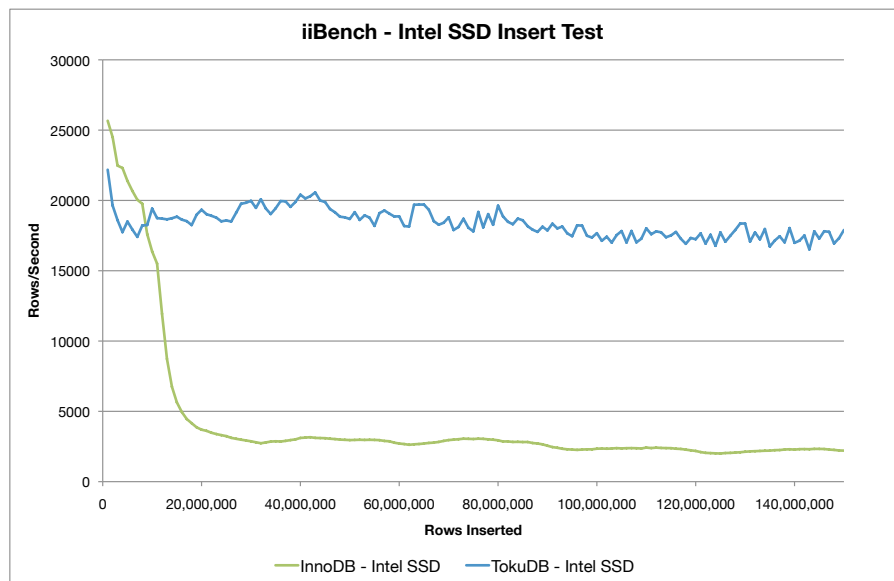
Description: Customer lab test using iiBench to insert 150M rows into a table while maintaining three multi-column secondary indexes.

Platform: Linux, Dell PowerEdge R900, 2GB memory, Intel 32GB X25-E SSD Drive.

Terminal rate:

InnoDB: 2,287 inserts/sec

TokuDB: 17,382 inserts/sec (7.6x faster)



About Tokutek

Tokutek's founders developed Fractal Tree™ technology at MIT, Rutgers, and Stony Brook and started the company in 2006. As early members of the teams at Google and Akamai, they bring significant industry and academic experience in developing innovative algorithms for large scale, high performance systems.

Tokutek maintains offices in Boston and New York.

For more information on how TokuDB can help you to cost effectively meet your data scalability and performance challenges, please contact us at info@tokutek.com or +1-212-244-7600.