

TDSQL for MySQL

General References

Product Documentation



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This document provides a performance comparison between a TDSQL shard and open-source MySQL (not optimized) for your reference.

Testing Environment for Comparison

Hardware: 24-core CPU; 128 GB memory; 1.8 TB SSD

Network environment: LAN with an average network latency of 0.80 ms

Operating system: CentOS 7.0

Data volume: 10 tables. Each of them has 2,180,000 data rows of about 5.2 GB. InnoDB buffer: 30 GB

Open-source version: MySQL 5.7.17 community version (not optimized; semi-sync enabled)

TDSQL shard version: MySQL 5.7 (strong sync enabled; thread pool enabled by default) with the following parameters:

- thread_pool_max_threads=2000
- thread_pool_oversubscribe = 10
- thread_pool_stall_limit = 50
- thread_handling = 2

Detailed Comparison Data

1. Data initialization parameters

```
create database caccts ;
./sysbench --num-threads=500 --test=./tests/db/oltp.lua.bak --oltp-table-size=2180000 --oltp-tables-count=10 --oltp-point-selects=1 --oltp-simple-ranges=0 --oltp-sum-ranges=0 --oltp-order-ranges=0 --oltp-index-updates=1 --oltp-non-index-updates=0 --report-interval=1 --mysql-user=xxxxxxx --mysql-password=xxxxxxx --mysql-host=xxxxxxx --mysql-db=caccts --max-time=360000 --max-requests=2000000000 prepare
```

2. Non-index update (UPDATE)

```
./sysbench --num-threads=500 --test=./tests/db/update\_non\_index.lua --oltp-table-size=2180000 --oltp-tables-count=10 --percentile=99 --report-interval=1 --mysql-host=xxxx --mysql-user=xxx --mysql-password=xxx --mysql-db=caccts --max-time=360000 --max-requests=2000000000 --mysql-port=3306 run
```

3. Read-only (SELECT)

```
./sysbench --num-threads=500 --test=./tests/db/select.lua --oltp-table-size=2180000 --oltp-tables-count=10 --percentile=99 --report-interval=1 --mysql-host=xxxx --mysql-user=xxx --mysql-password=xxx --mysql-db=caccts --max-time=360000 --max-requests=2000000000 --mysql-port=3306 run
```

4. Hybrid test

```
./sysbench\_orig --num-threads=500 --test=./tests/db/oltp\_new.lua --oltp-read-only=off --oltp-table-size=2180000 --oltp-tables-count=10 --oltp-point-selects=1 --oltp-simple-ranges=0 --oltp-sum-ranges=0 --oltp-order-ranges=0 --oltp-distinct-ranges=0 --oltp-index-updates=1 --oltp-non-index-updates=0 --percentile=99 --report-interval=1 --mysql-host=xxxx --mysql-user=xxx --mysql-password=xxx --mysql-db=caccts --max-time=360000 --max-requests=2000000000 --mysql-port=3306 run
```

Read request (READ) test results

Concurrency	Version	QPS	Average Response Time (ms)	99% Response Time (ms)
50	Open-source MySQL	304585	0.16	0.26
50	TDSQL	330695	0.15	0.24
100	Open-source MySQL	407443	0.24	0.48
100	TDSQL	484640	0.2	0.72
200	Open-source MySQL	433401	0.57	1
200	TDSQL	498215	0.55	1.22
500	Open-source MySQL	428542	1.16	2.42
500	TDSQL	494874	1.01	2.61

1000	Open-source MySQL	412775	2.4	6.3
1000	TDSQL	478393	2.08	4.21

Write request (write) test results

Concurrency	Version	QPS	Average Response Time (ms)	99% Response Time (ms)
50	Open-source MySQL	14816	3.37	4.82
50	TDSQL	28925	1.73	2.55
100	Open-source MySQL	25046	3.99	6.91
100	TDSQL	43466	2.3	4
200	Open-source MySQL	32690	6.12	10.86
200	TDSQL	54045	3.7	7.27
500	Open-source MySQL	37192	13.44	21.1
500	TDSQL	70370	7.25	15.52
1000	Open-source MySQL	35447	28.2	40.47
1000	TDSQL	69890	14.35	30.73

Hybrid scenario (OLTP) test results

Concurrency	Version	QPS	Average Response Time (ms)	99% Response Time (ms)
50	Open-source MySQL	63806	4.7	7.13
50	TDSQL	162883	1.84	3.45
100	Open-source	102516	5.85	11.4

	MySQL			
100	TDSQL	173974	3.58	6.64
200	Open-source MySQL	124550	9.64	18.92
200	TDSQL	208128	5.76	11.9
500	Open-source MySQL	125386	23.93	39.68
500	TDSQL	232543	13.58	27.81
1000	Open-source MySQL	121765	49.29	80.71
1000	TDSQL	226130	27.76	54.78