

W13

김우진
2017314712

1. INTRODUCTION

This week you will learn how to evaluate performance between two journal mode (RBJ and WAL) on SQLite database engine using TPC-C benchmark (pytpcc).

2. METHODS

1. Run TPC-C benchmark for two journal modes
 - Change journal mode to **delete** and **wal**
2. Observe how TPS (txn/s) changes
 - Record and analyze the TPS for each transaction (DELIVERY, NEW_ORDER, ORDER_STATUS, PAYMENT, STOCK_LEVEL)

3. Performance Evaluation

3.1 Experimental Setup

Type	Specification
OS	Ubuntu 18.04.65 LTS
CPU	Intel(R) Core(TM) i5-10400F CPU @ 2.90GHz
Memory	3994720 kB
Kernel	Linux ubuntu 5.4.0-144-genericcat /proc

3.2 Experimental Results

```
05-28-2023 06:13:21 [module:240] INFO : Initializing TPC-C benchmark using SqliteDriver
05-28-2023 06:13:21 [execute:056] INFO : Executing benchmark for 1800 seconds
=====
Execution Results after 1800 seconds
=====
```

	Executed	Time (μs)	Rate
DELIVERY	76725	197822792.292	387.85 txn/s
NEW_ORDER	857157	1179192135.33	726.90 txn/s
ORDER_STATUS	76120	5216033.45871	14593.46 txn/s
PAYMENT	818489	273785641.909	2989.52 txn/s
STOCK_LEVEL	76384	49811044.3157	1533.46 txn/s
TOTAL	1904875	1705828247.31	1116.69 txn/s

```
nicholasbear@ubuntu:~/Desktop/SWE3033-F2021/week-13/pytpcc$ python tpcc.py --warehouse=10 --conf
fig=/sqlite.config --no-load --duration=1800 --journal=del sqlite
3:36:0
journal mode del
cache size 1024
05-28-2023 06:45:43 [module:240] INFO : Initializing TPC-C benchmark using SqliteDriver
05-28-2023 06:45:43 [execute:056] INFO : Executing benchmark for 1800 seconds
=====
Execution Results after 1800 seconds
=====
```

	Executed	Time (μs)	Rate
DELIVERY	40112	166366005.659	241.11 txn/s
NEW_ORDER	453321	1134023627.47	399.46 txn/s
ORDER_STATUS	40301	5239041.09001	7692.44 txn/s
PAYMENT	433561	402578916.073	1076.96 txn/s
STOCK_LEVEL	40441	29721714.4966	1360.66 txn/s
TOTAL	1007736	1738729304.79	579.58 txn/s

4. Conclusion

Total Rate 이 2 배 정도차이가 난다. 그차이는 ORDER STATUS 에서 특히 크게 차이났음을 알 수 있다.