

分布式事务实验

1. 两个实验结果的截屏

截屏1.

```
obtest@10-24-14-215:~/stu_7/run
[obtest@10-24-14-215 run]$ ./runBenchmark.sh prop.oceanbase
18:27:47,430 [main] INFO jTPCC : Term-00,
18:27:47,432 [main] INFO jTPCC : Term-00,
18:27:47,432 [main] INFO jTPCC : Term-00, BenchmarkSQL v5.0
18:27:47,432 [main] INFO jTPCC : Term-00,
18:27:47,433 [main] INFO jTPCC : Term-00, (c) 2003, Raul Barbosa
18:27:47,433 [main] INFO jTPCC : Term-00, (c) 2004-2016, Denis Lussier
18:27:47,434 [main] INFO jTPCC : Term-00, (c) 2016, Jan Wieck
18:27:47,434 [main] INFO jTPCC : Term-00,
18:27:47,434 [main] INFO jTPCC : Term-00,
18:27:47,435 [main] INFO jTPCC : Term-00, db=oceanbase
18:27:47,435 [main] INFO jTPCC : Term-00, driver=com.mysql.jdbc.Driver
18:27:47,435 [main] INFO jTPCC : Term-00, conn=jdbc:mysql://10.24.14.215:2883/tpcc_5?useSSL=false&rewriteBatche
ocalSessionState=true&useUnicode=true&characterEncoding=utf-8&socketTimeout=300000018:27:47,435 [main] INFO jTPC
18:27:47,435 [main] INFO jTPCC : Term-00,
18:27:47,435 [main] INFO jTPCC : Term-00, warehouses=5
18:27:47,435 [main] INFO jTPCC : Term-00, terminals=5
18:27:47,436 [main] INFO jTPCC : Term-00, runMins=1
18:27:47,436 [main] INFO jTPCC : Term-00, limitTxnsPerMin=0
18:27:47,436 [main] INFO jTPCC : Term-00, terminalWarehouseFixed=true
18:27:47,437 [main] INFO jTPCC : Term-00,
18:27:47,437 [main] INFO jTPCC : Term-00, newOrderWeight=100
18:27:47,437 [main] INFO jTPCC : Term-00, paymentWeight=0
18:27:47,437 [main] INFO jTPCC : Term-00, orderStatusWeight=0
18:27:47,437 [main] INFO jTPCC : Term-00, deliveryWeight=0
18:27:47,437 [main] INFO jTPCC : Term-00, stockLevelWeight=0
18:27:47,437 [main] INFO jTPCC : Term-00,
18:27:47,437 [main] INFO jTPCC : Term-00, resultDirectory=null
18:27:47,437 [main] INFO jTPCC : Term-00, osCollectorScript=null
18:27:47,437 [main] INFO jTPCC : Term-00,
18:27:47,689 [main] INFO jTPCC : Term-00, C value for C_LAST during load: 143
18:27:47,689 [main] INFO jTPCC : Term-00, C value for C_LAST this run: 213
18:27:47,689 [main] INFO jTPCC : Term-00,
Term-00, Running Average tpmTOTAL: 13963.76 Current tpmTOTAL: 2640 Memory Usage: 32MB / 210MB
18:28:47,830 [Thread-4] INFO jTPCC : Term-00,
18:28:47,830 [Thread-4] INFO jTPCC : Term-00,
18:28:47,830 [Thread-4] INFO jTPCC : Term-00, Measured tpmC (NewOrders) = 13961.18
18:28:47,830 [Thread-4] INFO jTPCC : Term-00, Measured tpmTOTAL = 13962.18
18:28:47,831 [Thread-4] INFO jTPCC : Term-00, Session Start = 2021-12-22 18:27:47
18:28:47,831 [Thread-4] INFO jTPCC : Term-00, Session End = 2021-12-22 18:28:47
18:28:47,831 [Thread-4] INFO jTPCC : Term-00, Transaction Count = 13967
```

截屏2.

obtest@10-24-14-215:~/stu_7/run

```
18:40:05,358 [main] INFO jTPCC : Term-00, +-----+
18:40:05,358 [main] INFO jTPCC : Term-00, BenchmarkSQL v5.0
18:40:05,358 [main] INFO jTPCC : Term-00, +-----+
18:40:05,358 [main] INFO jTPCC : Term-00, (c) 2003, Raul Barbosa
18:40:05,359 [main] INFO jTPCC : Term-00, (c) 2004-2016, Denis Lussier
18:40:05,360 [main] INFO jTPCC : Term-00, (c) 2016, Jan Wieck
18:40:05,360 [main] INFO jTPCC : Term-00, +-----+
18:40:05,360 [main] INFO jTPCC : Term-00, db=oceanbase
18:40:05,361 [main] INFO jTPCC : Term-00, driver=com.mysql.jdbc.Driver
18:40:05,361 [main] INFO jTPCC : Term-00, conn=jdbc:mysql://10.24.14.215:2883/tpcc_5_1?useSSL=false
18:40:05,361 [main] INFO jTPCC : Term-00, eLocalSessionState=true&useUnicode=true&characterEncoding=utf-8&socketTimeout=3000000
18:40:05,361 [main] INFO jTPCC : Term-00, user=root@stu_7
18:40:05,361 [main] INFO jTPCC : Term-00, warehouses=5
18:40:05,361 [main] INFO jTPCC : Term-00, terminals=5
18:40:05,362 [main] INFO jTPCC : Term-00, runMins=1
18:40:05,362 [main] INFO jTPCC : Term-00, limitTxnsPerMin=0
18:40:05,362 [main] INFO jTPCC : Term-00, terminalWarehouseFixed=true
18:40:05,363 [main] INFO jTPCC : Term-00, newOrderWeight=100
18:40:05,363 [main] INFO jTPCC : Term-00, paymentWeight=0
18:40:05,363 [main] INFO jTPCC : Term-00, orderStatusWeight=0
18:40:05,363 [main] INFO jTPCC : Term-00, deliveryWeight=0
18:40:05,363 [main] INFO jTPCC : Term-00, stockLevelWeight=0
18:40:05,363 [main] INFO jTPCC : Term-00, resultDirectory=null
18:40:05,363 [main] INFO jTPCC : Term-00, osCollectorScript=null
18:40:05,363 [main] INFO jTPCC : Term-00,
18:40:05,642 [main] INFO jTPCC : Term-00, C value for C_LAST during load: 143
18:40:05,642 [main] INFO jTPCC : Term-00, C value for C_LAST this run: 49
18:40:05,883 [main] INFO jTPCC : Term-00,
Term-00, Running Average tpmTOTAL: 1643.67 Current tpmTOTAL: 348 Memory Usage: 9MB / 222MB
18:41:05,882 [Thread-0] INFO jTPCC : Term-00,
18:41:05,882 [Thread-0] INFO jTPCC : Term-00,
18:41:05,882 [Thread-0] INFO jTPCC : Term-00, Measured tpmC (NewOrders) = 1643.98
18:41:05,882 [Thread-0] INFO jTPCC : Term-00, Measured tpmTOTAL = 1644.98
18:41:05,882 [Thread-0] INFO jTPCC : Term-00, Session Start = 2021-12-22 18:40:05
18:41:05,882 [Thread-0] INFO jTPCC : Term-00, Session End = 2021-12-22 18:41:05
18:41:05,883 [Thread-0] INFO jTPCC : Term-00, Transaction Count = 1647
[obtest@10-24-14-215 run]$
```

2.

进入oceanbase，执行以下命令，并截图（保证每个同学的必须完成导数据的过程）

tpcc_5表结果：

obtest@10-24-14-215:~/stu_7/run

```
-- Extra commands to run after the tables are created, loaded,
-- indexes built and extra's created.

[obtest@10-24-14-215 run]$ obclient -h10.24.14.215 -P2883 -uroot@stu_7
Welcome to the OceanBase. Commands end with ; or \g.
Your MySQL connection id is 178
Server version: 5.6.25 OceanBase 3.1.1 (r4-8c615943cbd25a6f7b8bdfd8677a13a21709a05e) (Built Oct 21 2021 10:33:14)

Copyright (c) 2000, 2018, Oracle, MariaDB Corporation Ab and others.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

MySQL [(none)]> use tpcc_5;
Reading table information for completion of table and column names
You can turn off this feature to get a quicker startup with -A

Database changed
MySQL [tpcc_5]> select * from bmsql_warehouse;
```

w_id	w_ytd	w_tax	w_name	w_street_1	w_street_2	w_city	w_state	w_zip
3	300000.00	0.0759	XCMUIxw	xBUxeXtir9X	O3R6eXILPnLQ	bKQzXU3HEQ9SF36a	LA	171011111
2	300000.00	0.1980	IABn01	rIsRZx5Zt3vz	IL2P2txHklR1Y	eAAnpmZxxP8g	LA	033811111
5	300000.00	0.1188	ywYeB9oX	bGyUo77NmPbb4a	ThSXlk38ZNipMEP97	VZOLboAKg2GwP9	EH	993511111
1	300000.00	0.0229	icxo7TVYdR	c11lnvSti0PT	Y05wN8zoW9yJ5FkSMz	ZU78UWJ4f6m1g9	EG	915911111
4	300000.00	0.1658	VZpes6	D32AThLxhWKgD6SaMhHN	SxISntaRQQbjgDFnY	Hiig8ZT9mBi9UpL	ST	249311111

```
5 rows in set (0.011 sec)

MySQL [tpcc_5]>
```

tpcc_5_1表结果

```

obtest@10-24-14-215:~/stu 7/run
type 'help;' or '\h' for help. Type '\c' to clear the current input statement.
MySQL [(none)]> use tpcc_5;
Database changed
MySQL [tpcc_5]> select * from bmsql_warehouse;
ERROR 1146 (42S02): Table 'tpcc_5.bmsql_warehouse' doesn't exist
MySQL [tpcc_5]> ls
->
-> exit;
ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your OceanBase version for the right syntax
exit' at line 1
MySQL [tpcc_5]> use tpcc_5;
Database changed
MySQL [tpcc_5]> select * from bmsql_warehouse;
ERROR 1146 (42S02): Table 'tpcc_5.bmsql_warehouse' doesn't exist
MySQL [tpcc_5]> use tpcc_5_1
Reading table information for completion of table and column names
You can turn off this feature to get a quicker startup with -A

Database changed
MySQL [tpcc_5_1]> select * from bmsql_warehouse;

```

w_id	w_ytd	w_tax	w_name	w_street_1	w_street_2	w_city	w_state	w_zip
1	300000.00	0.0229	icxo7TVYdR	c11InvSti0PT	Y05wNSzoW9yj5FkSMz	ZU78UWJ4f6mIg9	EG	915911111
2	300000.00	0.1980	IABn01	rIsRZx5Zt3vz	IL2P2txHkLR1Y	eAAnpmZxxP8g	LA	033811111
3	300000.00	0.0759	XCMUIxw	xBUxeXtir9X	03R6eXILPnLQ	bKQzXU3HEQ9SF36a	LA	171011111
4	300000.00	0.1658	VZpes6	D32AThLxhWKgD6SaMhHN	SxISntaRQqbJgDFnY	Hiig8ZT9mBi9UpL	ST	249311111
5	300000.00	0.1188	ywYeB9oX	bGyUo77NmPbb4a	ThSX1k38ZNipMEP97	VZOLboAKg2GWpX	EH	993511111

```

5 rows in set (0.005 sec)

MySQL [tpcc_5_1]>

```

3.对于实验结果的分析（对于两个实验的tpmTOTAL结果的分析）

实验一单点事务的tpmTOTAL结果是13962.18，实验二分布式事务的tpmTOTAL结果是1643.67

产生这样的结果是因为分布式事务是采用两阶段提交，存在网络开销，分为准备阶段和提交阶段，只有在提交阶段接收到协调者发来的通知后，才进行提交或者回滚。所以单点事务的结果优于分布式事务的结果。