

# 迁移 MySQL 数据到 OceanBase 集群

## 文档控制：

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## 1. 引言

### 1.1. 关于此文档

#### 练习目的

本次练习目的掌握从 MySQL 向 OceanBase 迁移数据的基本方法：mysqldump、datax、canal 等。

#### 练习条件

有 服务器，内存资源至少 12G\*1 台，部署有 OceanBase 集群。  
有 mysql 数据库，有少量业务表和数据（数据量不要求很多）。没有业务表和数据的就推荐使用 sysbench、tpcc 或者 tpch 的业务数据。

## 练习内容

请记录并分享下列内容：

（必选）使用 mysqldump 将 mysql 的表结构和数据同步到 OceanBase 的 MySQL 租户中。

（必选）使用 datax 配置至少一个表的 MySQL 到 OceanBase 的 MySQL 租户的离线同步。

（可选）使用 datax 配置至少一个表的 OceanBase 到 CSV 以及 CSV 到 OceanBase 的离线同步。

（可选）使用 canal 配置 MySQL 的增量同步到 OceanBase 的 MySQL 租户。

## 1.2. 参考资料

社区版官网-文档-学习中心-入门教程：[4.2 如何使用 mysqldump 迁移 MySQL 表 OceanBase](#)。

社区版官网-博客-入门实战：[4.2：如何使用 mysqldump 迁移 MySQL 表 OceanBase](#)

# 2. 测试数据准备

## 2.1. 下载 MySQL 测试工具-tpcc

下载地址：

<https://github.com/Percona-Lab/tpcc-mysql>

## 2.2. 开始安装 tpcc

```
[root@localhost data]# unzip tpcc-mysql-master.zip
```

```
[root@localhost data]# cd tpcc-mysql-master
```

```
[root@localhost tpcc-mysql-master]# ls
```

```
add_fkey_idx.sql count.sql create_table.sql Dockerfile drop_cons.sql load_multi_schema.sh load.sh README.md schema2 scripts src
```

```
[root@localhost tpcc-mysql-master]# cd src/
```

```
[root@localhost src]# make
```

```
[root@localhost src]# make
cc -w -O3 -g -I. 'mysql_config --include' -c load.c
cc -w -O3 -g -I. 'mysql_config --include' -c support.c
cc load.o support.o 'mysql_config --libs_r' -lrt -o ../tpcc_load
cc -w -O3 -g -I. 'mysql_config --include' -c main.c
cc -w -O3 -g -I. 'mysql_config --include' -c spt_proc.c
cc -w -O3 -g -I. 'mysql_config --include' -c driver.c
cc -w -O3 -g -I. 'mysql_config --include' -c sequence.c
cc -w -O3 -g -I. 'mysql_config --include' -c rthist.c
cc -w -O3 -g -I. 'mysql_config --include' -c sb_percentile.c
cc -w -O3 -g -I. 'mysql_config --include' -c neword.c
cc -w -O3 -g -I. 'mysql_config --include' -c payment.c
cc -w -O3 -g -I. 'mysql_config --include' -c ordstat.c
cc -w -O3 -g -I. 'mysql_config --include' -c delivery.c
cc -w -O3 -g -I. 'mysql_config --include' -c slev.c
cc main.o spt_proc.o driver.o support.o sequence.o rthist.o sb_percentile.o neword.o payment.o ordstat.o delivery.o slev.o 'mysql_config --libs_r' -lrt -o ../tpcc_start
[root@localhost src]# ls
delivery.c driver.c load.c main.c Makefile neword.o ordstat.o payment.c rthist.c rthist.o sb_percentile.h sequence.c sequence.o slev.o spt_proc.h support.c tpc.h
delivery.o driver.o load.o main.o neword.c ordstat.c parse_port.h payment.o rthist.h sb_percentile.c sb_percentile.o sequence.h slev.c spt_proc.c spt_proc.o support.o trans_if.h
[root@localhost src]# cd ..
[root@localhost tpcc-mysql-master]# ls
add_fkey_idx.sql count.sql create_table.sql Dockerfile drop_cons.sql load_multi_schema.sh load.sh README.md schema2 scripts src tpcc_load tpcc_start
[root@localhost tpcc-mysql-master]#
```

注：tpcc 安装只需要 make 即可，这里不需要 make install,编译完成后会生成 tpcc\_load 和 tpcc\_start 命令，以供之后生成测试数据。

## 2.3. 创建数据库，执行建表脚本

```
[root@localhost data]# mysql -uroot -p
Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 3
Server version: 5.6.36-log MySQL Community Server (GPL)

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affiliates. Other names may be trademarks of their respective
owners.

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

root@localhost:mysql3306.sock [(none)]>show databases;
+-----+
| Database |
+-----+
| information_schema |
| mysql |
| performance_schema |
| test |
+-----+
4 rows in set (0.00 sec)

root@localhost:mysql3306.sock [(none)]>create database tpcc_test;
Query OK, 1 row affected (0.00 sec)

root@localhost:mysql3306.sock [(none)]>show databases;
+-----+
| Database |
+-----+
| information_schema |
| mysql |
| performance_schema |
| test |
| tpcc_test |
+-----+
5 rows in set (0.00 sec)

root@localhost:mysql3306.sock [(none)]>use tpcc_test;
Database changed
root@localhost:mysql3306.sock [tpcc_test]>source /data/tpcc-mysql-master/create_table.sql
```

```

root@localhost:mysql3306.sock [tpcc_test]>source /data/tpcc-mysql-master/create_table.sql
Query OK, 0 rows affected (0.00 sec)

Query OK, 0 rows affected (0.00 sec)

Query OK, 0 rows affected, 1 warning (0.00 sec)

Query OK, 0 rows affected (0.18 sec)

Query OK, 0 rows affected, 1 warning (0.00 sec)

Query OK, 0 rows affected (0.00 sec)

Query OK, 0 rows affected, 1 warning (0.00 sec)

Query OK, 0 rows affected (0.01 sec)

Query OK, 0 rows affected, 1 warning (0.00 sec)

Query OK, 0 rows affected (0.01 sec)

Query OK, 0 rows affected, 1 warning (0.00 sec)

Query OK, 0 rows affected (0.00 sec)

Query OK, 0 rows affected, 1 warning (0.00 sec)

Query OK, 0 rows affected (0.01 sec)

Query OK, 0 rows affected, 1 warning (0.00 sec)

Query OK, 0 rows affected (0.00 sec)

Query OK, 0 rows affected, 1 warning (0.00 sec)

Query OK, 0 rows affected (0.03 sec)

Query OK, 0 rows affected, 1 warning (0.00 sec)

Query OK, 0 rows affected (0.00 sec)

Query OK, 0 rows affected (0.00 sec)

Query OK, 0 rows affected (0.00 sec)

root@localhost:mysql3306.sock [tpcc_test]>

```

```

root@localhost:mysql3306.sock [tpcc_test]>show tables;
+-----+
| Tables_in_tpcc_test |
+-----+
| customer             |
| district             |
| history              |
| item                 |
| new_orders           |
| order_line           |
| orders               |
| stock                |
| warehouse            |
+-----+
9 rows in set (0.00 sec)

```

从图中可以看出，tpcc 共创建了九张表：

customer:客户表；

district:地区表；

history: 历史数据表；

item: 商品表；

new\_orders:新订单表；

order\_line:发货表；

orders:订单表；

stock:库存表；

warehouse:仓库表；

## 2.4. 加载测试数据

```

[root@localhost tpcc-mysql-master]# ./tpcc_load -h192.168.101.86 -P3306 -uroot -d
tpcc_test -w 10 -pmysql

```

-w 表示仓库 warehouse，此处一个仓库对应 10 个地区，每个地区对应 3000 用户，数据生成略微有些慢；

```
root@localhost:mysql3306.sock [(none)]>use tpcc_test
Database changed
root@localhost:mysql3306.sock [tpcc_test]>select count(*) from warehouse;
+-----+
| count(*) |
+-----+
|      10 |
+-----+
1 row in set (0.00 sec)

root@localhost:mysql3306.sock [tpcc_test]>select count(*) from district;
+-----+
| count(*) |
+-----+
|      100 |
+-----+
1 row in set (0.00 sec)

root@localhost:mysql3306.sock [tpcc_test]>select count(*) from customer;
+-----+
| count(*) |
+-----+
|    300000 |
+-----+
1 row in set (0.12 sec)

root@localhost:mysql3306.sock [tpcc_test]>
```

出现报错： ./tpcc\_load: error while loading shared libraries: libmysqlclient.so.18: cannot open shared object file: No such file or directory

```
[root@localhost tpcc-mysql-master]# ./tpcc_load -h192.168.101.86 -P3306 -uroot -d tpcc test -w 10 -pmysql
./tpcc_load: error while loading shared libraries: libmysqlclient.so.18: cannot open shared object file: No such file or directory
[root@localhost tpcc-mysql-master]#
```

解决方式：

1. 先确认/usr/local/mysql/lib/下是否有 libmysqlclient.so.18 这个文件。

```
[root@localhost tpcc-mysql-master]# ll /usr/local/mysql/lib/
total 362012
-rw-r--r--. 1 7161 31415 17351370 Mar 18 2017 libmysqlclient.a
lrwxrwxrwx. 1 7161 31415 16 Jan 7 14:13 libmysqlclient_r.a -> libmysqlclient.a
lrwxrwxrwx. 1 7161 31415 17 Jan 7 14:13 libmysqlclient_r.so -> libmysqlclient.so
lrwxrwxrwx. 1 7161 31415 20 Jan 7 14:13 libmysqlclient_r.so.18 -> libmysqlclient.so.18
lrwxrwxrwx. 1 7161 31415 24 Jan 7 14:13 libmysqlclient_r.so.18.1.0 -> libmysqlclient.so.18.1.0
lrwxrwxrwx. 1 7161 31415 20 Jan 7 14:13 libmysqlclient.so -> libmysqlclient.so.18
lrwxrwxrwx. 1 7161 31415 24 Jan 7 14:13 libmysqlclient.so.18 -> libmysqlclient.so.18.1.0
lrwxrwxrwx. 1 7161 31415 24 Jan 7 14:13 libmysqlclient.so.18.1.0 -> libmysqlclient.so.18.1.0
-rwxr-xr-x. 1 7161 31415 8171637 Mar 18 2017 libmysqld.a
-rw-r--r--. 1 7161 31415 196279334 Mar 18 2017 libmysqld.a
-rw-r--r--. 1 7161 31415 148866172 Mar 18 2017 libmysqld-debug.a
-rw-r--r--. 1 7161 31415 14702 Mar 18 2017 libmysqlservices.a
drwxr-xr-x. 3 root root 4096 Jan 7 14:13 plugin
[root@localhost tpcc-mysql-master]#
```

2. 修改 ld.so.conf 文件

```
echo "/usr/local/mysql/lib">> /etc/ld.so.conf
```

执行 ldconfig 使变更生效即可。

```
[root@localhost tpcc-mysql-master]# echo "/usr/local/mysql/lib">>/etc/ld.so.conf
[root@localhost tpcc-mysql-master]# ldconfig
```

数据生成完成后，再创建索引。

注：一定要先生成数据再添加索引，如果先创建索引，数据生成速度会更缓慢！

```
root@localhost:mysql3306.sock [tpcc_test]>source /data/tpcc-mysql-master/add_fkey_idx.sql
```

```
root@localhost:mysql3306.sock [tpcc_test]>source /data/tpcc-mysql-master/add_fkey_idx.sql
Query OK, 0 rows affected (0.00 sec)

Query OK, 0 rows affected (0.00 sec)

Query OK, 0 rows affected (1.25 sec)
Records: 0 Duplicates: 0 Warnings: 0

Query OK, 0 rows affected (0.70 sec)
Records: 0 Duplicates: 0 Warnings: 0

Query OK, 0 rows affected (1.89 sec)
Records: 0 Duplicates: 0 Warnings: 0

Query OK, 0 rows affected (8.76 sec)
Records: 0 Duplicates: 0 Warnings: 0

Query OK, 0 rows affected (0.02 sec)
Records: 0 Duplicates: 0 Warnings: 0

Query OK, 0 rows affected (0.01 sec)
Records: 0 Duplicates: 0 Warnings: 0

Query OK, 0 rows affected (0.67 sec)
Records: 0 Duplicates: 0 Warnings: 0

Query OK, 0 rows affected (0.54 sec)
Records: 0 Duplicates: 0 Warnings: 0

Query OK, 0 rows affected (0.00 sec)
Records: 0 Duplicates: 0 Warnings: 0

Query OK, 0 rows affected (0.00 sec)
Records: 0 Duplicates: 0 Warnings: 0

Query OK, 0 rows affected (0.00 sec)
Records: 0 Duplicates: 0 Warnings: 0

Query OK, 0 rows affected (0.01 sec)
Records: 0 Duplicates: 0 Warnings: 0

Query OK, 0 rows affected (0.00 sec)
Records: 0 Duplicates: 0 Warnings: 0

Query OK, 0 rows affected (0.00 sec)

Query OK, 0 rows affected (0.00 sec)
```

### 3. 使用 mysqldump 迁移数据

#### 3.1. 使用 mysqldump 导出业务表结构

```
[root@localhost data]# mysqldump -h192.168.101.86 -uroot -P3306 -pmysql -d tpcc_test --compact > tpcc_ddl.sql
```

#### 3.2. 使用 mysqldump 导出业务表数据

```
[root@localhost data]# mysqldump -h192.168.101.86 -uroot -P3306 -pmysql -t tpcc_test --compact > tpcc_data.sql
```

#### 3.3. 导入业务表结构

```
[tpcc_test]> source /data/tpcc_ddl.sql
```

```

root@mysql> use tpcc_test;
Database changed
root@mysql> source /data/tpcc_ddl.sql
Query OK, 0 rows affected (0.001 sec)

Query OK, 0 rows affected (0.000 sec)

Query OK, 0 rows affected, 1 warning (30.191 sec)

Query OK, 0 rows affected (0.000 sec)

Query OK, 0 rows affected (0.000 sec)

Query OK, 0 rows affected (0.000 sec)

Query OK, 0 rows affected, 1 warning (29.973 sec)

Query OK, 0 rows affected (0.000 sec)

Query OK, 0 rows affected (0.000 sec)

Query OK, 0 rows affected (0.000 sec)

Query OK, 0 rows affected, 1 warning (30.015 sec)

Query OK, 0 rows affected (0.001 sec)

Query OK, 0 rows affected (0.000 sec)

Query OK, 0 rows affected (0.000 sec)

Query OK, 0 rows affected, 1 warning (29.973 sec)

Query OK, 0 rows affected (0.001 sec)

Query OK, 0 rows affected (0.000 sec)

Query OK, 0 rows affected (0.000 sec)

Query OK, 0 rows affected, 1 warning (30.052 sec)

Query OK, 0 rows affected (0.000 sec)

Query OK, 0 rows affected (0.000 sec)

Query OK, 0 rows affected (0.000 sec)

Query OK, 0 rows affected, 1 warning (29.971 sec)

Query OK, 0 rows affected (0.001 sec)

Query OK, 0 rows affected (0.000 sec)

Query OK, 0 rows affected (0.000 sec)

Query OK, 0 rows affected, 1 warning (30.241 sec)

Query OK, 0 rows affected (0.000 sec)

Query OK, 0 rows affected (0.000 sec)

```

### 3.4. 导入业务表数据

```
[tpcc_test]> source /data/tpcc_data.sql
```

```

root@mysql> [tpcc_test]> source /data/tpcc_data.sql
Query OK, 1761 rows affected (0.849 sec)
Records: 1761 Duplicates: 0 Warnings: 0

Query OK, 1762 rows affected (0.341 sec)
Records: 1762 Duplicates: 0 Warnings: 0

Query OK, 1760 rows affected (0.348 sec)
Records: 1760 Duplicates: 0 Warnings: 0

Query OK, 1764 rows affected (0.386 sec)
Records: 1764 Duplicates: 0 Warnings: 0

Query OK, 1755 rows affected (0.355 sec)
Records: 1755 Duplicates: 0 Warnings: 0

Query OK, 1756 rows affected (0.353 sec)
Records: 1756 Duplicates: 0 Warnings: 0

Query OK, 1754 rows affected (0.443 sec)
Records: 1754 Duplicates: 0 Warnings: 0

Query OK, 1756 rows affected (0.329 sec)
Records: 1756 Duplicates: 0 Warnings: 0

Query OK, 1756 rows affected (0.327 sec)
Records: 1756 Duplicates: 0 Warnings: 0

Query OK, 1754 rows affected (0.378 sec)
Records: 1754 Duplicates: 0 Warnings: 0

Query OK, 1760 rows affected (0.387 sec)
Records: 1760 Duplicates: 0 Warnings: 0

Query OK, 1765 rows affected (0.361 sec)
Records: 1765 Duplicates: 0 Warnings: 0

Query OK, 1760 rows affected (0.061 sec)
Records: 1760 Duplicates: 0 Warnings: 0

Query OK, 1760 rows affected (0.066 sec)
Records: 1760 Duplicates: 0 Warnings: 0

Query OK, 1764 rows affected (0.374 sec)
Records: 1764 Duplicates: 0 Warnings: 0

Query OK, 1766 rows affected (0.379 sec)
Records: 1766 Duplicates: 0 Warnings: 0

Query OK, 1754 rows affected (0.381 sec)
Records: 1754 Duplicates: 0 Warnings: 0

Query OK, 1763 rows affected (0.378 sec)
Records: 1763 Duplicates: 0 Warnings: 0

```

### 3.5. 两端数据量核对

```

root@mysql> [tpcc_test]> show tables;
+-----+
| Tables_in_tpcc_test |
+-----+
| customer             |
| district             |
| history              |
| item                 |
| new_orders           |
| order_line           |
| orders               |
| stock                |
| warehouse            |
+-----+
9 rows in set (0.003 sec)

root@mysql> [tpcc_test]> select count(*) from customer;
+-----+
| count(*) |
+-----+
| 300000   |
+-----+
1 row in set (0.382 sec)

root@mysql> [tpcc_test]> select count(*) from district;
+-----+
| count(*) |
+-----+
| 100      |
+-----+
1 row in set (0.065 sec)

root@mysql> [tpcc_test]> select count(*) from history;
+-----+
| count(*) |
+-----+
| 283798   |
+-----+
1 row in set (0.363 sec)

root@mysql> [tpcc_test]> select count(*) from item;
+-----+
| count(*) |
+-----+
| 100000   |
+-----+
1 row in set (0.189 sec)

```

```

root@mysql> [tpcc_test]> show tables;
+-----+
| Tables_in_tpcc_test |
+-----+
| customer             |
| district             |
| history              |
| item                 |
| new_orders           |
| order_line           |
| orders               |
| stock                |
| warehouse            |
+-----+
9 rows in set (0.00 sec)

root@mysql> [tpcc_test]> select count(*) from customer;
+-----+
| count(*) |
+-----+
| 300000   |
+-----+
1 row in set (0.12 sec)

root@mysql> [tpcc_test]> select count(*) from district;
+-----+
| count(*) |
+-----+
| 100      |
+-----+
1 row in set (0.00 sec)

root@mysql> [tpcc_test]> select count(*) from history;
+-----+
| count(*) |
+-----+
| 300000   |
+-----+
1 row in set (0.15 sec)

root@mysql> [tpcc_test]> select count(*) from item;
+-----+
| count(*) |
+-----+
| 100000   |
+-----+
1 row in set (0.02 sec)

```

## 4. 使用 datax 迁移数据

### 4.1. 安装部署 datax

下载链接: <http://datax-opensource.oss-cn-hangzhou.aliyuncs.com/datax.tar.gz>

```
[root@master datax]# wget http://datax-opensource.oss-cn-hangzhou.aliyuncs.com/datax.tar.gz
```

解压安装包:

```
[root@master datax]# tar xvfz datax.tar.gz
```

删除 datax 中的隐藏文件:

```
[root@master plugin]# find /data/datax/datax/plugin -name ".*" |xargs rm -rf
```

运行 datax 自带的测试 job 出现报错: File '/usr/local/datax/job/job.json' does not exist



```
[root@master datax]# bin/datax.py /usr/local/datax/job/job.json
DataX (DATAX-OPENSOURCE-3.0), From Alibaba !
Copyright (C) 2010-2017, Alibaba Group. All Rights Reserved.

2022-02-14 14:13:57.582 [main] ERROR Engine -
经DataX智能分析,该任务最可能的错误原因是:
com.alibaba.datax.common.exception.DataXException: Code:[Framework-03], Description:[DataX引擎配置错误,该问题通常是由于DataX安装错误引起,请联系您的运维解决.]. - 获取作业配置信息失败:/usr/local/datax/job/job.json - java.io.FileNotFoundException: File '/usr/local/datax/job/job.json' does not exist
    at org.apache.commons.io.FileUtils.openInputStream(FileUtils.java:299)
    at org.apache.commons.io.FileUtils.readFileToString(FileUtils.java:1711)
    at org.apache.commons.io.FileUtils.readFileToString(FileUtils.java:1748)
    at com.alibaba.datax.core.util.ConfigParser.getJobContent(ConfigParser.java:106)
    at com.alibaba.datax.core.util.ConfigParser.parseJobConfig(ConfigParser.java:74)
    at com.alibaba.datax.core.util.ConfigParser.parse(ConfigParser.java:26)
    at com.alibaba.datax.core.Engine.entry(Engine.java:137)
    at com.alibaba.datax.core.Engine.main(Engine.java:204)

    at com.alibaba.datax.common.exception.DataXException.asDataXException(DataXException.java:33)
    at com.alibaba.datax.core.util.ConfigParser.getJobContent(ConfigParser.java:108)
    at com.alibaba.datax.core.util.ConfigParser.parseJobConfig(ConfigParser.java:74)
    at com.alibaba.datax.core.util.ConfigParser.parse(ConfigParser.java:26)
    at com.alibaba.datax.core.Engine.entry(Engine.java:137)
    at com.alibaba.datax.core.Engine.main(Engine.java:204)
Caused by: java.io.FileNotFoundException: File '/usr/local/datax/job/job.json' does not exist
    at org.apache.commons.io.FileUtils.openInputStream(FileUtils.java:299)
    at org.apache.commons.io.FileUtils.readFileToString(FileUtils.java:1711)
    at org.apache.commons.io.FileUtils.readFileToString(FileUtils.java:1748)
    at com.alibaba.datax.core.util.ConfigParser.getJobContent(ConfigParser.java:106)
    ... 4 more
```

解决方式：出现报错的原因是解压路径的问题，可以做个软链接：

```
[root@master datax]# ln -s /data/datax/datax /usr/local/datax
```

再次运行测试 job

```
[root@master datax]# cd /usr/local/datax/
```

```
[root@master datax]# bin/datax.py /usr/local/datax/job/job.json
```

测试通过：

```
[root@master datax]# bin/datax.py /usr/local/datax/job/job.json
DataX (DATAX-OPENSOURCE-3.0), From Alibaba !
Copyright (C) 2010-2017, Alibaba Group. All Rights Reserved.

2022-02-14 14:18:36.397 [main] INFO VMInfo - VMInfo# operatingSystem class => sun.management.OperatingSystemImpl
2022-02-14 14:18:36.406 [main] INFO Engine - the machine info =>

    osInfo: Oracle Corporation 1.8 25.161-b14
    jvmInfo: Linux amd64 3.10.0-862.el7.x86_64
    cpu num: 16

    totalPhysicalMemory: -0.00G
    freePhysicalMemory: -0.00G
    maxFileDescriptorCount: -1
    currentOpenFileDescriptorCount: -1

    GC Names      [PS MarkSweep, PS Scavenge]

    MEMORY_NAME | allocation_size | init_size
    PS Eden Space | 256.00MB         | 256.00MB
    Code Cache    | 240.00MB         | 2.44MB
    Compressed Class Space | 1,024.00MB       | 0.00MB
    PS Survivor Space | 42.50MB          | 42.50MB
    PS Old Gen     | 683.00MB         | 683.00MB
    Metaspace     | -0.00MB          | 0.00MB

2022-02-14 14:18:36.422 [main] INFO Engine -
{
  "content":{
    {
      "reader":{
        "name":"streamreader",
        "parameter":{
          "column":{
            {
              "type":"string",
              "value":"DataX"
            },
            {
              "type":"long",
              "value":19890604
            },
            {
              "type":"date",
              "value":"1989-06-04 00:00:00"
            },
            {
              "type":"bool",
              "value":true
            },
            {

```

```
{
  "type": "bytes",
  "value": "test"
},
{
  "sliceRecordCount": 100000
}
},
"writer": {
  "name": "streamwriter",
  "parameter": {
    "encoding": "UTF-8",
    "print": false
  }
}
},
"setting": {
  "errorLimit": {
    "percentage": 0.02,
    "record": 0
  },
  "speed": {
    "byte": 10485760
  }
}
}

2022-02-14 14:18:36.440 [main] WARN Engine - priority set to 0, because NumberFormatException, the value is: null
2022-02-14 14:18:36.442 [main] INFO PerfTrace - PerfTrace traceId=job-1, isEnabled=false, priority=0
2022-02-14 14:18:36.444 [main] INFO JobContainer - DataX jobContainer starts job.
2022-02-14 14:18:36.459 [job-0] INFO JobContainer - Set jobId = 0
2022-02-14 14:18:36.459 [job-0] INFO JobContainer - jobContainer starts to do prepare ...
2022-02-14 14:18:36.459 [job-0] INFO JobContainer - DataX Reader.Job [streamreader] do prepare work .
2022-02-14 14:18:36.460 [job-0] INFO JobContainer - DataX Writer.Job [streamwriter] do prepare work .
2022-02-14 14:18:36.460 [job-0] INFO JobContainer - jobContainer starts to do split ...
2022-02-14 14:18:36.461 [job-0] INFO JobContainer - Job set Max-Byte-Speed to 10485760 bytes.
2022-02-14 14:18:36.462 [job-0] INFO JobContainer - DataX Reader.Job [streamreader] splits to [1] tasks.
2022-02-14 14:18:36.462 [job-0] INFO JobContainer - DataX Writer.Job [streamwriter] splits to [1] tasks.
2022-02-14 14:18:36.480 [job-0] INFO JobContainer - jobContainer starts to do schedule ...
2022-02-14 14:18:36.485 [job-0] INFO JobContainer - Scheduler starts [1] taskGroups.
2022-02-14 14:18:36.487 [job-0] INFO JobContainer - Running by standalone Mode.
2022-02-14 14:18:36.495 [taskGroup-0] INFO TaskGroupContainer - taskGroupId=0 start [1] channels for [1] tasks.
2022-02-14 14:18:36.499 [taskGroup-0] INFO Channel - Channel set byte_speed_limit to -1, No hps activated.
2022-02-14 14:18:36.499 [taskGroup-0] INFO Channel - Channel set record_speed_limit to -1, No tps activated.
2022-02-14 14:18:36.509 [taskGroup-0] INFO TaskGroupContainer - taskGroup[0] taskId[0] attemptCount[1] is started
2022-02-14 14:18:36.810 [taskGroup-0] INFO TaskGroupContainer - taskGroup[0] taskId[0] is succeeded, used[302]ms
2022-02-14 14:18:36.810 [taskGroup-0] INFO TaskGroupContainer - taskGroup[0] completed it's tasks.
2022-02-14 14:18:46.516 [job-0] INFO StandaloneJobContainerCommunicator - Total 100000 records, 2600000 bytes | Speed 253.91KB/s, 10000 records/s | Error 0 records, 0 bytes | All Task WaitWriterTime 0.015
s | All Task WaitReaderTime 0.027s | Percentage 100.00%
2022-02-14 14:18:46.516 [job-0] INFO AbstractScheduler - Scheduler accomplished all tasks.
2022-02-14 14:18:46.517 [job-0] INFO JobContainer - DataX Writer.Job [streamwriter] do post work.
2022-02-14 14:18:46.518 [job-0] INFO JobContainer - DataX Reader.Job [streamreader] do post work.
2022-02-14 14:18:46.518 [job-0] INFO JobContainer - DataX jobId[0] completed successfully.
2022-02-14 14:18:46.519 [job-0] INFO HookInvoker - No hook invoked, because base dir not exists or is a file: /data/datax/datax/hook

2022-02-14 14:18:46.519 [job-0] INFO HookInvoker - No hook invoked, because base dir not exists or is a file: /data/datax/datax/hook
2022-02-14 14:18:46.520 [job-0] INFO JobContainer -

[total cpu info] =>
averageCpu | maxDeltaCpu | minDeltaCpu
1.00% | ~1.00% | ~1.00%

[total gc info] =>
NAME | totalGCCount | maxDeltaGCCount | minDeltaGCCount | totalGCTime | maxDeltaGCTime | minDeltaGCTime
PS MarkSweep | 0 | 0 | 0 | 0.000s | 0.000s | 0.000s
PS Scavenge | 0 | 0 | 0 | 0.000s | 0.000s | 0.000s

2022-02-14 14:18:46.520 [job-0] INFO JobContainer - PerfTrace not enable!
2022-02-14 14:18:46.521 [job-0] INFO StandaloneJobContainerCommunicator - Total 100000 records, 2600000 bytes | Speed 253.91KB/s, 10000 records/s | Error 0 records, 0 bytes | All Task WaitWriterTime 0.015
s | All Task WaitReaderTime 0.027s | Percentage 100.00%
2022-02-14 14:18:46.521 [job-0] INFO JobContainer -
任务启动时间 : 2022-02-14 14:18:36
任务结束时间 : 2022-02-14 14:18:46
任务总耗时 : 10s
任务平均流量 : 253.91KB/s
记录写入速度 : 10000rec/s
读出记录总数 : 100000
读写失败总数 : 0

[root@master datax]#
```

## 4.2. 生成模板文件

[root@master datax]# python /usr/local/datax/bin/datax.py -r mysqlreader -w oceanbasev10writer > /usr/local/datax/job/my2job.json

## 4.3. 修改模板文件

[root@master datax]# vim job/my2job.json

```
{
  "job": {
    "setting": {
      "speed": {
        "channel": 4
      },
      "errorLimit": {
        "record": 0,
        "percentage": 0.1
      }
    },
    "content": [
      {

```

```

"reader": {
  "name": "mysqlreader",
  "parameter": {
    "username": "root",
    "password": "mysql",
    "column": [
      "*"
    ],
    "connection": [
      {
        "table": [
          "new_orders"
        ],
        "jdbcUrl":
["jdbc:mysql://192.168.101.85:3306/tpcc_test?useUnicode=true&characterEncoding=utf8"]
      }
    ]
  }
},

"writer": {
  "name": "oceanbasev10writer",
  "parameter": {
    "obWriteMode": "insert",
    "column": [
      "*"
    ],
    "connection": [
      {
        "jdbcUrl":
"jdbc:oceanbase://192.168.101.66:2883/tpcc_test?useLocalSessionState=true&allowBatch=true&allowMultiQueries=true&rewriteBatchedStatements=true",
        "table": [
          "new_orders"
        ]
      }
    ],
    "username": "root@sys#obdemo",
    "password": "root",
    "writerThreadCount": 10,
    "batchSize": 1000,
    "memstoreThreshold": "0.9"
  }
}
}

```

```

    },
    "writer": {
      "name": "oceanbaseJdbcWriter",
      "parameter": {
        "batchSize": 1000,
        "column": [
          ""
        ],
        "connection": [
          ""
        ],
        "jdbcUrl": ["jdbc:oceanbase://192.168.101.66:2883?tcp_testUseLocalSessionState=trueallowBatch=trueallowMultiQueries=truerewriteBatchedStatements=true"],
        "table": [
          "new_orders"
        ]
      },
      "memstoreThreshold": "0.9",
      "obWriteType": "insert",
      "password": "****",
      "username": "root@sysdemo",
      "writeThreadCount": 10
    }
  },
  "setting": {
    "errorLimit": {
      "percentage": 0.1,
      "record": 0
    },
    "speed": {
      "channel": "id"
    }
  }
}

```

2022-03-02 15:10:37.668 [main] WARN Engine - priority set to 0, because NumberFormatException, the value is: null  
2022-03-02 15:10:37.670 [main] INFO PerfTrace - PerfTrace traceId=job\_1, isEnabled=false, priority=0  
2022-03-02 15:10:37.670 [main] INFO JobContainer - Datax jobContainer starts job.  
2022-03-02 15:10:37.672 [main] INFO JobContainer - Set jobId = 0  
2022-03-02 15:10:37.980 [job-0] INFO OriginalConfPreTreatmentUtil - Available jdbcUrl[jdbc:mysql://192.168.101.65:3306/?tcp\_testUseLocalSessionCharacterEncoding=utf8&yearIsDateType=false&zeroDateInMysql=convertTz('Asia/Shanghai','UTC')&rewriteBatchedStatements=true].  
2022-03-02 15:10:37.981 [job-0] WARN OriginalConfPreTreatmentUtil - 您的配置文件中的列配置存在一定的风险，因为您未配置该数据库库表的列，当您的表字段个数、类型有变动时，可能影响任务正确性甚至会导致运行出错。请检查您的配置并作出修改。  
2022-03-02 15:10:38.258 [job-0] INFO DBUtils - value for query [SHOW VARIABLES LIKE `ob\_compatibility\_mode`] is [MYSQL]  
2022-03-02 15:10:38.277 [job-0] INFO DBUtils - value for query [SHOW VARIABLES LIKE `ob\_compatibility\_mode`] is [MYSQL]  
no\_o\_id,no\_d\_id,no\_w\_id  
2022-03-02 15:10:38.277 [job-0] WARN OriginalConfPreTreatmentUtil - 您的配置文件中的列配置信息存在风险，因为您配置的写入数据库表的列为a，当您的表字段个数、类型有变动时，可能影响任务正确性甚至会导致运行出错。请检查您的配置并作出修改。  
2022-03-02 15:10:38.278 [job-0] INFO OriginalConfPreTreatmentUtil - Write data [INSERT INTO no (no\_d\_id,no\_w\_id) VALUES(?,?)]  
which jdbcUrl like[jdbc:oceanbase://192.168.101.66:2883?tcp\_testUseLocalSessionState=trueallowBatch=trueallowMultiQueries=truerewriteBatchedStatements=true&yearIsDateType=false&zeroDateInMysql=convertTz('Asia/Shanghai','UTC')&rewriteBatchedStatements=true]  
2022-03-02 15:10:38.279 [job-0] INFO JobContainer - jobContainer starts to do prepare work ...  
2022-03-02 15:10:38.279 [job-0] INFO JobContainer - Datax Reader Job [mysqlReader] do prepare work ...  
2022-03-02 15:10:38.279 [job-0] INFO JobContainer - Datax Writer Job [oceanbaseJdbcWriter] do prepare work ...  
2022-03-02 15:10:38.289 [job-0] INFO DBUtils - value for Query [show variables like 'version'] is [3.1.1]  
2022-03-02 15:10:38.290 [job-0] INFO JobContainer - jobContainer starts to do split ...  
2022-03-02 15:10:38.290 [job-0] INFO JobContainer - job set Channel Number = 4 channels.





