

综合实验：实现推荐系统

班级：2018211310

学号：2018211527

姓名：陈泊任

时间：2021年6月25日

(单人完成，无分工)

综合实验：实现推荐系统

一、实验目的

二、实验平台

三、实验环境

四、实验内容

五、实验步骤

5.0 了解整个模型的流程

5.1 开启HBase thrift

5.2 启动 load_train_ratings_hbase.py

5.3 启动 load_movie_redis.py

5.4 开启 Flume

5.5 启动 Kafka 并创建 Kafka Topic

5.6 启动 Redis

5.7 启动 generatorRecord.py

5.8 启动 hbase2spark.scala、kafkaStreaming.scala、recommend.scala

5.8.1 hbase2spark.scala

5.8.2 kafkaStreaming.scala

5.8.3 recommend.scala

5.9 启动 recommend_server.py

5.10 启动 recommend_client.py

六、遇到的问题

6.1 HMaster无法正常打开

6.2 运行代码导致虚拟机死机

一、实验目的

掌握 Lambda 架构

二、实验平台

操作系统: Ubuntu 18.04 LTS

三、实验环境

Java: java-1.8.0

Python: python-3.8.5

Scala: scala-2.11.8

Flume: apach-flume-1.9.0

Kafka: kafka_2.11-2.4.1

Hadoop: hadoop-2.10.1

HBase: hbase-2.3.5

Spark: spark-2.4.7

Redis: redis-6.0.6

其他环境都是之前的四次实验配置好的

安装redis

从官网下载，编译 src 即可。

遇到的问题：

如果编译src报错，则需按照下面的步骤

```
make distclean && make
```

Redis的测试在实验步骤 5.5

四、实验内容

3.1 基于 Lambda 架构的大数据推荐系统架构概述

3.2 使用 Flume、kafka 实现数据的手机

3.3 使用 HBase 实现数据的存储

3.4 使用 Redis 作为缓存数据实现特征/模型参数的存储

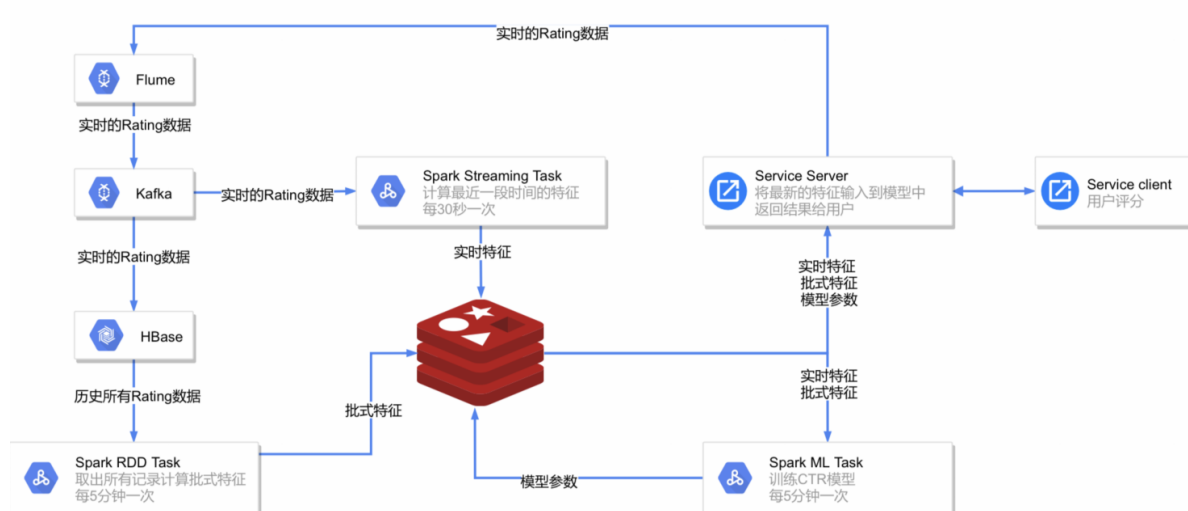
3.5 使用 MapReduce 或 Spark 实现定时启动的批式计算任务

3.6 使用 Spark Streaming 或 Strom 实现流式计算任务

五、实验步骤

5.0 了解整个模型的流程

根据学长的实验指导，了解整个模型的流动。画出一个简易的流程图



5.1 开启HBase thrift

```
r52125@bd:~/hbase/hbase-2.3.5$ ./bin/hbase-daemon.sh start thrift
running thrift, logging to /home/r52125/hbase/hbase-2.3.5
/bin/../../logs/hbase-r52125-thrift-bd.out
```

5.2 启动 load_train_ratings_hbase.py

```
python3 load_train_ratings_hbase.py bd 9090 movie_records
~/data/json_train_ratings.json
```

```
userId 200
movieId 54190
rating 1.0
timestamp 1230623027
{'rowkey': '1230623027rating', 'cells': {'details:userId': '200', 'details:movieId': '54190', 'details:rating': '1.0', 'details:timestamp': '1230623027'}}
userId 220
movieId 356
rating 1.0
timestamp 1230659993
{'rowkey': '1230659993rating', 'cells': {'details:userId': '220', 'details:movieId': '356', 'details:rating': '1.0', 'details:timestamp': '1230659993'}}
```

查看'movie_records'表的内容

```
scan 'movie_records'
```

```

999978543rating column=details:timestamp, timestamp=2021-06-15T22:19:03.257, value=999978543
999978543rating column=details:userId, timestamp=2021-06-15T22:19:03.257, value=452
999995350rating column=details:movieId, timestamp=2021-06-15T22:19:03.258, value=4617
999995350rating column=details:rating, timestamp=2021-06-15T22:19:03.258, value=1.0
999995350rating column=details:timestamp, timestamp=2021-06-15T22:19:03.258, value=999995350
999995350rating column=details:userId, timestamp=2021-06-15T22:19:03.258, value=414
10000 row(s)
Took 14.5294 seconds

```

5.3 启动 load_movie_redis.py

```
python3 load_movie_redis.py bd 6379 ~/data/movies.csv
```

```

193579 Jon Stewart Has Left the Building (2015)
193581 Black Butler: Book of the Atlantic (2017)
193583 No Game No Life: Zero (2017)
193585 Flint (2017)
193587 Bungo Stray Dogs: Dead Apple (2018)
193609 Andrew Dice Clay: Dice Rules (1991)
Load /home/r52125/data/movies.csv success!

```

5.4 开启 Flume

与实验二相同

5.5 启动 Kafka 并创建 Kafka Topic

Kafka Topic: "movie_rating_records"

与实验二相同

5.6 启动 Redis

测试

```
src/redis-server
```

```

15847:M 15 Jun 2021 16:30:54.179 # Server initialized
15847:M 15 Jun 2021 16:30:54.180 # WARNING overcommit_memory is
set to 0! Background save may fail under low memory conditio
n. To fix this issue add 'vm.overcommit_memory = 1' to /etc/sy
ctl.conf and then reboot or run the command 'sysctl vm.overco
mmit_memory=1' for this to take effect.
15847:M 15 Jun 2021 16:30:54.180 # WARNING you have Transparen
t Huge Pages (THP) support enabled in your kernel. This will c
reate latency and memory usage issues with Redis. To fix this
issue run the command 'echo never > /sys/kernel/mm/transparent
hugepage/enabled' as root, and add it to your /etc/rc.local i
n order to retain the setting after a reboot. Redis must be re
started after THP is disabled.
15847:M 15 Jun 2021 16:30:54.180 * Ready to accept connections

```

src/redis-cli

```

r52125@bd:~/redis/redis-6.0.6$ src/redis-cli
127.0.0.1:6379> set foo bar
OK
127.0.0.1:6379> get foo
"bar"
127.0.0.1:6379>

```

后台启动

更改 redis.conf 的 daemonize

```

221 # Note that Redis will write a pid file in /var/run/redis.pid when daemonized.
222 daemonize yes

```

启动

```

r52125@bd:~/redis/redis-6.0.6$ src/redis-server ./redis.conf
16052:C 15 Jun 2021 16:43:52.178 # oO00oO00oO00o Redis is star
ting oO00oO00oO00o
16052:C 15 Jun 2021 16:43:52.178 # Redis version=6.0.6, bits=6
4, commit=00000000, modified=0, pid=16052, just started
16052:C 15 Jun 2021 16:43:52.178 # Configuration loaded

```

再次测试

```

127.0.0.1:6379> set foo abc
Could not connect to Redis at 127.0.0.1:6379: Connection refused
not connected> set foo abc
OK
127.0.0.1:6379> get foo
"abc"
127.0.0.1:6379>

```

成功。

5.7 启动 generatorRecord.py

```
python3 generatorRecord.py -h bd -p 44444 -f ~/data/json_test_ratings.json
```

5.8 启动 hbase2spark.scala、kafkaStreaming.scala、recommend.scala

5.8.1 hbase2spark.scala

```
./bin/spark-submit ./hbase2spark9_jar/hbase2spark.jar
```

```
52125@bd:~/spark/spark-2.4.7-bin-without-hadoop$ ./bin/spark-submit ./hbase2spark9_jar/hbase2spark.jar
52125@bd:~/spark/spark-2.4.7-bin-without-hadoop$ ./bin/spark-submit ./hbase2spark9_jar/hbase2spark.jar
21/06/17 17:48:09 WARN util.Utils: Your hostname, bd resolves to a loopback address: 127.0.1.1; using 192.168.223.161 instead (on interface ens33)
21/06/17 17:48:09 WARN util.Utils: Set SPARK_LOCAL_IP if you need to bind to another address
21/06/17 17:48:14 WARN util.NativeCodeLoader: Unable to load native-hadoop library for your platform... using builtin-java classes where applicable
2021-06-17 17:48:14 [INFO] Begin to calculate batch features
21/06/17 17:48:23 INFO util.log: Logging initialized @26560ms
21/06/17 17:48:23 INFO server.Server: jetty-9.3.z-SNAPSHOT, build timestamp: unknown, git hash: unknown
21/06/17 17:48:23 INFO server.Server: Started @26787ms
21/06/17 17:48:23 INFO server.AbstractConnector: Started ServerConnector@2d140a7{HTTP/1.1,[http/1.1]}{0.0.0.0:4040}
21/06/17 17:48:23 INFO handler.ContextHandler: Started o.s.j.s.ServletContextHandler@2fa3be26{/jobs,null,AVAILABLE,@Spark}
21/06/17 17:48:23 INFO handler.ContextHandler: Started o.s.j.s.ServletContextHandler@3956b302{/jobs/json,null,AVAILABLE,@Spark}
21/06/17 17:48:23 INFO handler.ContextHandler: Started o.s.j.s.ServletContextHandler@1500e009{/jobs/job,null,AVAILABLE,@Spark}
```

五分钟计算一次批示特征

空行是区分两次计算，由时间可以看出，每隔五分钟计算一次，成功

```
21/06/17 17:48:34 INFO mapreduce.TableInputFormatBase: Input split length: 2 M bytes.
21/06/17 17:48:45 INFO zookeeper.ZooKeeper: Session: 0x1000002997a0073 closed
21/06/17 17:48:45 INFO zookeeper.ClientCnxn: EventThread shut down for session: 0x1000002997a0073
21/06/17 17:48:55 INFO server.AbstractConnector: Stopped Spark@2d140a7{HTTP/1.1,[http/1.1]}{0.0.0.0:4040}
2021-06-17 17:48:56 [INFO] Success!

2021-06-17 17:53:56 [INFO] Begin to calculate batch features
21/06/17 17:53:56 INFO server.Server: jetty-9.3.z-SNAPSHOT, build timestamp: unknown, git hash: unknown
21/06/17 17:53:56 INFO server.Server: Started @359914ms
21/06/17 17:53:56 INFO server.AbstractConnector: Started ServerConnector@4130a648{HTTP/1.1,[http/1.1]}{0.0.0.0:4040}
21/06/17 17:53:56 INFO handler.ContextHandler: Started o.s.j.s.ServletContextHandler@61ff6a49{/jobs,null,AVAILABLE,@Spark}
21/06/17 17:53:56 INFO handler.ContextHandler: Started o.s.j.s.ServletContextHandler@18dd5ed3{/jobs/json,null,AVAILABLE,@Spark}
```


5.8.2 kafkaStreaming.scala

```
./bin/spark-submit ./kafkaStreaming10_jar/kafkaStreaming.jar
```

```
r52125@bd:~/spark/spark-2.4.7-bin-without-hadoop$ ./bin/spark-submit ./kafkaStreaming10_jar/kafkaStreaming.jar
```

```
r52125@bd:~/spark/spark-2.4.7-bin-without-hadoop$ ./bin/spark-submit ./kafkaStreaming10_jar/kafkaStreaming.jar
21/06/17 16:09:12 WARN util.Utils: Your hostname, bd resolves to a loopback address: 127.0.1.1; using 192.168.223.161 instead (on interface ens33)
21/06/17 16:09:12 WARN util.Utils: Set SPARK_LOCAL_IP if you need to bind to another address
21/06/17 16:09:14 WARN util.NativeCodeLoader: Unable to load native-hadoop library for your platform... using builtin-java classes where applicable
21/06/17 16:09:34 INFO util.log: Logging initialized @30573ms
21/06/17 16:09:34 INFO server.Server: jetty-9.3.z-SNAPSHOT, build timestamp: unknown, git hash: unknown
21/06/17 16:09:34 INFO server.Server: Started @30841ms
21/06/17 16:09:34 INFO server.AbstractConnector: Started ServerConnector@3d4d1ec1{HTTP/1.1,[http/1.1]}{0.0.0.0:4040}
21/06/17 16:09:35 INFO handler.ContextHandler: Started o.s.j.s.ServletContextHandler@40620d8e{/jobs,null,AVAILABLE,@Spark}
21/06/17 16:09:35 INFO handler.ContextHandler: Started o.s.j.s.ServletContextHandler@712ca57b{/jobs/json,null,AVAILABLE,@Spark}
21/06/17 16:09:35 INFO handler.ContextHandler: Started o.s.j.s.ServletContextHandler@4564e94b{/jobs/job,null,AVAILABLE,@Spark}
21/06/17 16:09:35 INFO handler.ContextHandler: Started o.s.j.s.ServletContextHandler@45673f68{/jobs/job/json,null,AVAILABLE,@Spark}
21/06/17 16:09:35 INFO handler.ContextHandler: Started o.s.j.s.ServletContextHandler@50275bb8{/stages,null,AVAILABLE,@Spark}
```

每过30秒计算一次，并将结果写入redis，中间的空行是我测试时间是否正确时输入回车隔开的，可以看出来，下面部分和上面部分除了时间相差30秒以外，其余都相同，说明确实实现了间隔30s将数据写入redis

```
21/06/17 23:05:37 INFO consumer.KafkaConsumer: [Consumer clientId=consumer-spark-executor-kafkaStreaming-2, groupId=spark-executor-kafkaStreaming] Seeking to offset 717 for partition movie_rating_records-0
21/06/17 23:05:38 INFO consumer.KafkaConsumer: [Consumer clientId=consumer-spark-executor-kafkaStreaming-2, groupId=spark-executor-kafkaStreaming] Seeking to offset 717 for partition movie_rating_records-0

21/06/17 23:06:00 INFO internals.SubscriptionState: [Consumer clientId=consumer-kafkaStreaming-1, groupId=kafkaStreaming] Seeking to LATEST offset of partition movie_rating_records-0
21/06/17 23:06:00 INFO internals.SubscriptionState: [Consumer clientId=consumer-kafkaStreaming-1, groupId=kafkaStreaming] Resetting offset for partition movie_rating_records-0 to offset 754.
21/06/17 23:06:00 INFO zookeeper.ZooKeeper: Initiating client connection, connectString=bd:2181 sessionTimeout=90000 watcher=org.apache.hadoop.hbase.zookeeper.ReadOnlyZKClient$$Lambda$201/907412982@57dbb36a
21/06/17 23:06:00 INFO zookeeper.ClientCnxn: Opening socket connection to server bd/127.0.1.1:2181. Will not attempt to authenticate using SASL (unknown error)
```



```

21/06/17 17:26:30 INFO internals.SubscriptionState: [Consumer clientId=consumer-kafkaStreaming-1, groupId=kafkaStreaming] Seeking to LATEST offset of partition test-flume-pykafka-0
21/06/17 17:26:30 INFO internals.SubscriptionState: [Consumer clientId=consumer-kafkaStreaming-1, groupId=kafkaStreaming] Resetting offset for partition test-flume-pykafka-0 to offset 0.
21/06/17 17:26:30 INFO zookeeper.ZooKeeper: Initiating client connection, connectString=bd:2181 sessionTimeout=90000 watcher=org.apache.hadoop.hbase.zookeeper.ReadOnlyZKClient$$Lambda$202/175387264@53fa52f5
21/06/17 17:26:30 INFO zookeeper.ClientCnxn: Opening socket connection to server bd/127.0.1.1:2181. Will not attempt to authenticate using SASL (unknown error)
21/06/17 17:26:30 INFO zookeeper.ClientCnxn: Socket connection established to bd/127.0.1.1:2181, initiating session
21/06/17 17:26:30 INFO zookeeper.ClientCnxn: Session establishment complete on server bd/127.0.1.1:2181, sessionId = 0x1000002997a0058, negotiated timeout = 90000
21/06/17 17:26:34 INFO zookeeper.ZooKeeper: Session: 0x1000002997a0058 closed
21/06/17 17:26:34 INFO zookeeper.ClientCnxn: EventThread shut down for session: 0x1000002997a0058
21/06/17 17:26:34 INFO zookeeper.ZooKeeper: Session: 0x1000002997a0057 closed
21/06/17 17:26:34 INFO zookeeper.ClientCnxn: EventThread shut down for session: 0x1000002997a0057

21/06/17 17:27:00 INFO internals.SubscriptionState: [Consumer clientId=consumer-kafkaStreaming-1, groupId=kafkaStreaming] Seeking to LATEST offset of partition test-flume-pykafka-0
21/06/17 17:27:00 INFO internals.SubscriptionState: [Consumer clientId=consumer-kafkaStreaming-1, groupId=kafkaStreaming] Resetting offset for partition test-flume-pykafka-0 to offset 0.
21/06/17 17:27:00 INFO zookeeper.ZooKeeper: Initiating client connection, connectString=bd:2181 sessionTimeout=90000 watcher=org.apache.hadoop.hbase.zookeeper.ReadOnlyZKClient$$Lambda$202/175387264@53fa52f5
21/06/17 17:27:00 INFO zookeeper.ClientCnxn: Opening socket connection to server bd/127.0.1.1:2181. Will not attempt to authenticate using SASL (unknown error)
21/06/17 17:27:00 INFO zookeeper.ClientCnxn: Socket connection established to bd/127.0.1.1:2181, initiating session
21/06/17 17:27:00 INFO zookeeper.ClientCnxn: Session establishment complete on server bd/127.0.1.1:2181, sessionId = 0x1000002997a0059, negotiated timeout = 90000
21/06/17 17:27:30 INFO internals.SubscriptionState: [Consumer clientId=consumer-kafkaStreaming-1, groupId=kafkaStreaming] Seeking to LATEST offset of partition test-flume-pykafka-0

```

5.8.3 recommend.scala

```
./bin/spark-submit ./recommend1_jar/recommend.jar
```

```

rs2125@bd:~/spark/spark-2.4.7-bin-without-hadoop$ ./bin/spark-submit ./recommend1_jar/recommend.jar
21/06/17 23:15:07 WARN util.Utils: Your hostname, bd resolves to a loopback address: 127.0.1.1; using 192.168.223.161 instead (on interface ens33)
21/06/17 23:15:07 WARN util.Utils: Set SPARK_LOCAL_IP if you need to bind to another address
21/06/17 23:15:10 WARN util.NativeCodeLoader: Unable to load native-hadoop library for your platform... using builtin-java classes where applicable
2021-06-17 23:15:11 [INFO] Begin to train lr model
21/06/17 23:15:13 INFO util.log: Logging initialized @11604ms
21/06/17 23:15:14 INFO server.Server: jetty-9.3.z-SNAPSHOT, build timestamp: unknown, git hash: unknown
21/06/17 23:15:14 INFO server.Server: Started @12075ms
21/06/17 23:15:14 INFO server.AbstractConnector: Started ServerConnector@4604b900{HTTP/1.1,[http/1.1]}{0.0.0.0:4040}

```

五分钟一次

```

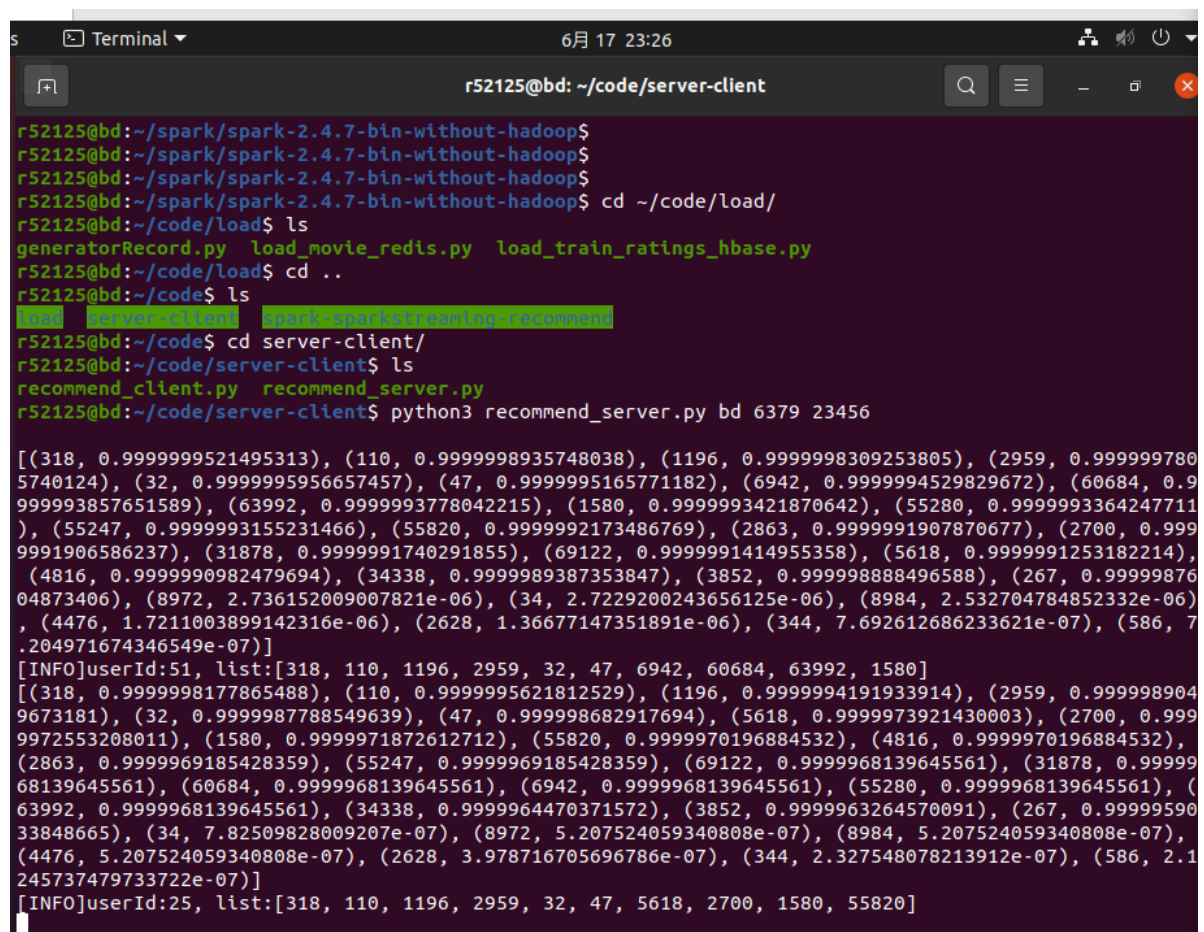
21/06/17 23:16:05 INFO optimize.LBFGS: Val and Grad Norm: 3.53372e-07 (rel: 0.471) 6.94381e-07
21/06/17 23:16:05 INFO optimize.LBFGS: Converged because max iterations reached
Array(0.009709879938833745, 0.01744755078064542, 0.03337485056393552, -0.14237974017074986, -0.0973645967389315, 0.31061732555098326, -0.19062967831155253, 10.680847626806608, -16.44387302471306, 0.8571366890927801)
21/06/17 23:16:44 INFO server.AbstractConnector: Stopped Spark@4604b900{HTTP/1.1,[http/1.1]}{0.0.0.0:4040}
2021-06-17 23:16:46 [INFO] Success!

2021-06-17 23:21:46 [INFO] Begin to train lr model
21/06/17 23:21:47 INFO server.Server: jetty-9.3.z-SNAPSHOT, build timestamp: unknown, git hash: unknown
21/06/17 23:21:47 INFO server.Server: Started @404956ms
21/06/17 23:21:47 INFO server.AbstractConnector: Started ServerConnector@23cb8fcb{HTTP/1.1,[http/1.1]}{0.0.0.0:4040}
21/06/17 23:21:47 INFO handler.ContextHandler: Started o.s.j.s.ServletContextHandler@25a2f432{/jobs,null,AVAILABLE,@Spark}
21/06/17 23:21:47 INFO handler.ContextHandler: Started o.s.j.s.ServletContextHandler@7efba9b9{/jobs/json,null,AVAILABLE,@Spark}

```

5.9 启动 recommend_server.py

```
python3 recommend_server.py bd 6379 23456
```



```

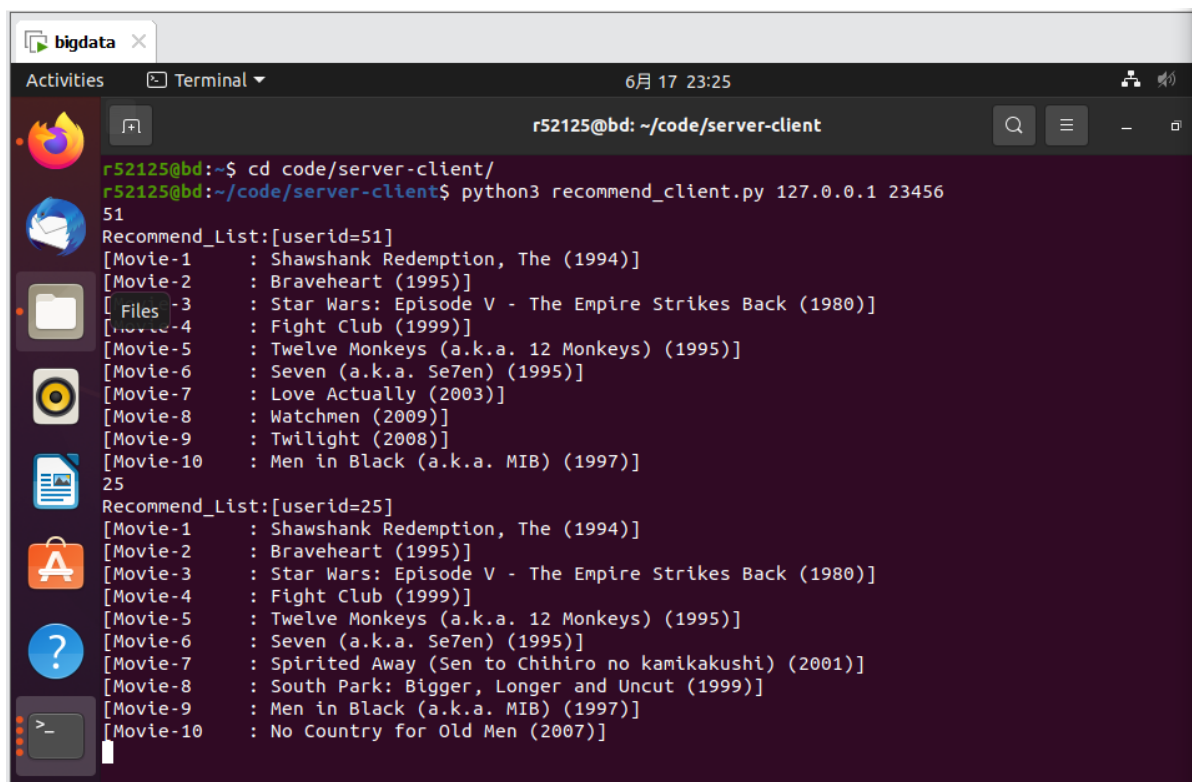
r52125@bd: ~/code/server-client
r52125@bd:~/spark/spark-2.4.7-bin-without-hadoop$
r52125@bd:~/spark/spark-2.4.7-bin-without-hadoop$
r52125@bd:~/spark/spark-2.4.7-bin-without-hadoop$ cd ~/code/load/
r52125@bd:~/code/load$ ls
generatorRecord.py load_movie_redis.py load_train_ratings_hbase.py
r52125@bd:~/code/load$ cd ..
r52125@bd:~/code$ ls
load server-client spark-sparkstreaming-recommend
r52125@bd:~/code$ cd server-client/
r52125@bd:~/code/server-client$ ls
recommend_client.py recommend_server.py
r52125@bd:~/code/server-client$ python3 recommend_server.py bd 6379 23456

[(318, 0.9999999521495313), (110, 0.9999998935748038), (1196, 0.9999998309253805), (2959, 0.99999997805740124), (32, 0.99999995956657457), (47, 0.9999995165771182), (6942, 0.9999994529829672), (60684, 0.9999993857651589), (63992, 0.9999993778042215), (1580, 0.9999993421870642), (55280, 0.9999993364247711), (55247, 0.9999993155231466), (55820, 0.9999992173486769), (2863, 0.9999991907870677), (2700, 0.9999991906586237), (31878, 0.9999991740291855), (69122, 0.9999991414955358), (5618, 0.9999991253182214), (4816, 0.9999990982479694), (34338, 0.9999989387353847), (3852, 0.999998888496588), (267, 0.9999987604873406), (8972, 2.736152009007821e-06), (34, 2.7229200243656125e-06), (8984, 2.532704784852332e-06), (4476, 1.7211003899142316e-06), (2628, 1.36677147351891e-06), (344, 7.692612686233621e-07), (586, 7.204971674346549e-07)]
[INFO]userId:51, list:[318, 110, 1196, 2959, 32, 47, 6942, 60684, 63992, 1580]
[(318, 0.9999998177865488), (110, 0.9999995621812529), (1196, 0.9999994191933914), (2959, 0.9999989049673181), (32, 0.9999987788549639), (47, 0.999998682917694), (5618, 0.9999973921430003), (2700, 0.9999972553208011), (1580, 0.9999971872612712), (55820, 0.9999970196884532), (4816, 0.9999970196884532), (2863, 0.9999969185428359), (55247, 0.9999969185428359), (69122, 0.9999968139645561), (31878, 0.9999968139645561), (60684, 0.9999968139645561), (6942, 0.9999968139645561), (55280, 0.9999968139645561), (63992, 0.9999968139645561), (34338, 0.9999964470371572), (3852, 0.9999963264570091), (267, 0.9999959033848665), (34, 7.82509828009207e-07), (8972, 5.207524059340808e-07), (8984, 5.207524059340808e-07), (4476, 5.207524059340808e-07), (2628, 3.978716705696786e-07), (344, 2.327548078213912e-07), (586, 2.1245737479733722e-07)]
[INFO]userId:25, list:[318, 110, 1196, 2959, 32, 47, 5618, 2700, 1580, 55820]

```

5.10 启动 recommend_client.py

```
python3 recommend_client.py 127.0.0.1 23456
```



```
r52125@bd: ~$ cd code/server-client/
r52125@bd:~/code/server-client$ python3 recommend_client.py 127.0.0.1 23456
51
Recommend_List:[userid=51]
[Movie-1 : Shawshank Redemption, The (1994)]
[Movie-2 : Braveheart (1995)]
[Movie-3 : Star Wars: Episode V - The Empire Strikes Back (1980)]
[Movie-4 : Fight Club (1999)]
[Movie-5 : Twelve Monkeys (a.k.a. 12 Monkeys) (1995)]
[Movie-6 : Seven (a.k.a. Se7en) (1995)]
[Movie-7 : Love Actually (2003)]
[Movie-8 : Watchmen (2009)]
[Movie-9 : Twilight (2008)]
[Movie-10 : Men in Black (a.k.a. MIB) (1997)]
25
Recommend_List:[userid=25]
[Movie-1 : Shawshank Redemption, The (1994)]
[Movie-2 : Braveheart (1995)]
[Movie-3 : Star Wars: Episode V - The Empire Strikes Back (1980)]
[Movie-4 : Fight Club (1999)]
[Movie-5 : Twelve Monkeys (a.k.a. 12 Monkeys) (1995)]
[Movie-6 : Seven (a.k.a. Se7en) (1995)]
[Movie-7 : Spirited Away (Sen to Chihiro no kamikakushi) (2001)]
[Movie-8 : South Park: Bigger, Longer and Uncut (1999)]
[Movie-9 : Men in Black (a.k.a. MIB) (1997)]
[Movie-10 : No Country for Old Men (2007)]
```

六、遇到的问题

6.1 HMaster无法正常打开

解决方法：不知道什么原因，重新配置hbase

6.2 运行代码导致虚拟机死机

产生的问题：hbase的 zookeeper 的时间和 HMaster 的时间不同，导致 HMaster 异常退出

解决方法：回退到配置没有问题的地方（使用快照）