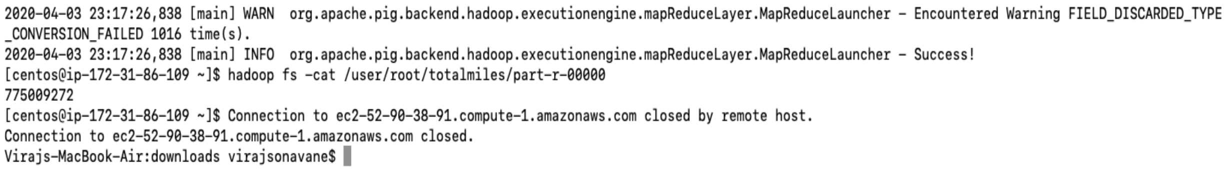
# Homework#6

Viraj Sonavane



```
2020-04-03 23:17:26,838 [main] WARN  org.apache.pig.backend.hadoop.executionengine.mapReduceLayer.MapReduceLauncher - Encountered Warning FIELD_DISCARDED_TYPE
_CONVERSION_FAILED 1016 time(s).
2020-04-03 23:17:26,838 [main] INFO  org.apache.pig.backend.hadoop.executionengine.mapReduceLayer.MapReduceLauncher - Success!
[centos@ip-172-31-86-109 ~]$ hadoop fs -cat /user/root/totalmiles/part-r-00000
775009272
[centos@ip-172-31-86-109 ~]$ Connection to ec2-52-90-38-91.compute-1.amazonaws.com closed by remote host.
Connection to ec2-52-90-38-91.compute-1.amazonaws.com closed.
Virajs-MacBook-Air:downloads virajsonavane$ 
```

**In above Screenshot we are calculating total distance travelled by the flight.**

## Overall step followed while Installing Hadoop using AWS:

```
Last login: Fri Apr  3 19:43:39 on ttys000
Virajs-MacBook-Air:~ virajsonavane$ ls
Applications      DownloadsMovies             Public
Desktop           Eclipse           Music             VirtualBox VMs
DocumentsLibrary            Pictures __c2j_java__
Virajs-MacBook-Air:~ virajsonavane$ cd downloads
Virajs-MacBook-Air:downloads virajsonavane$ sudo ssh -i "Vikey.pem" centos@ec2-52-90-38-91.compute-1.amazonaws.com
Password:
The authenticity of host 'ec2-52-90-38-91.compute-1.amazonaws.com (52.90.38.91)' can't be established.
ECDSA key fingerprint is SHA256:doOGiUAJpEIrMC9jCBqikuLoiEnPAvw4QPcPZHwjHGA.
Are you sure you want to continue connecting (yes/no)? yes
Warning: Permanently added 'ec2-52-90-38-91.compute-1.amazonaws.com,52.90.38.91' (ECDSA) to the list of known hosts.
Last login: Fri Apr  3 22:24:01 2020 from 132.241.160.76
[centos@ip-172-31-86-109 ~]$ sudo -u hdfs hadoop namenode -format
20/04/03 22:45:52 INFO namenode.NameNode: STARTUP_MSG:
/************************************************************
STARTUP_MSG: Starting NameNode
STARTUP_MSG:   host = ip-172-31-86-109.ec2.internal/172.31.86.109
STARTUP_MSG:   args = [-format]
STARTUP_MSG:   version = 1.0.1
STARTUP_MSG:   build =  -r ; compiled by 'jenkins' on Tue Mar 20 12:08:58 EDT 2012
************************************************************/
20/04/03 22:45:52 INFO util.GSet: VM type       = 64-bit
20/04/03 22:45:52 INFO util.GSet: 2% max memory = 19.33375 MB
20/04/03 22:45:52 INFO util.GSet: capacity      = 2^21 = 2097152 entries
20/04/03 22:45:52 INFO util.GSet: recommended=2097152, actual=2097152
20/04/03 22:45:53 INFO namenode.FSNamesystem: fsOwner=hdfs
20/04/03 22:45:53 INFO namenode.FSNamesystem: supergroup=supergroup
20/04/03 22:45:53 INFO namenode.FSNamesystem: isPermissionEnabled=false
20/04/03 22:45:53 INFO namenode.FSNamesystem: dfs.block.invalidate.limit=100
20/04/03 22:45:53 INFO namenode.FSNamesystem: isAccessTokenEnabled=false accessKeyUpdateInterval=0 min(s), accessTokenLifetime=0 min(s)
20/04/03 22:45:53 INFO namenode.NameNode: Caching file names occuring more than 10 times
20/04/03 22:45:53 INFO common.Storage: Image file of size 110 saved in 0 seconds.
20/04/03 22:45:53 INFO common.Storage: Storage directory /var/lib/hadoop/cache/hadoop/dfs/name has been successfully formatted.
20/04/03 22:45:53 INFO namenode.NameNode: SHUTDOWN_MSG:
/************************************************************
SHUTDOWN_MSG: Shutting down NameNode at ip-172-31-86-109.ec2.internal/172.31.86.109
************************************************************/
[centos@ip-172-31-86-109 ~]$ for i in hadoop-namenode hadoop-datanode ; do sudo service $i start ; done
Starting hadoop-namenode (via systemctl):                  [  OK  ]
Starting hadoop-datanode (via systemctl):                  [  OK  ]
[centos@ip-172-31-86-109 ~]$ sudo -u hdfs hadoop fs -ls /
Found 1 items
drwxr-xr-x   - mapred supergroup          0 2020-04-03 22:46 /var
[centos@ip-172-31-86-109 ~]$ sudo -u hdfs hadoop fs -mkdir /user/$USER
[centos@ip-172-31-86-109 ~]$ sudo -u hdfs hadoop fs -chown $USER /user/$USER
[centos@ip-172-31-86-109 ~]$ pig
2020-04-03 22:47:09,189 [main] INFO  org.apache.pig.Main - Logging error messages to: /home/centos/pig_1585968429186.log
2020-04-03 22:47:09,444 [main] INFO  org.apache.pig.backend.hadoop.executionengine.HExecutionEngine - Connecting to hadoop file system at:
hdfs://localhost:8020
2020-04-03 22:47:09,989 [main] INFO  org.apache.pig.backend.hadoop.executionengine.HExecutionEngine - Connecting to map-reduce job tracker at:
localhost:8021
grunt> fs -mkdir tmp
grunt> quit
[centos@ip-172-31-86-109 ~]$ cd
[centos@ip-172-31-86-109 ~]$ $scp -i ~/Downloads/Vikey.pem ~/Downloads/1987.csv centos@ec2-52-90-38-91.compute-1.amazonaws.com:~/data/
-bash: -i: command not found
[centos@ip-172-31-86-109 ~]$ scp -i ~/Downloads/Vikey.pem ~/Downloads/1987.csv centos@ec2-52-90-38-91.compute-1.amazonaws.com:~/data/
Warning: Identity file /home/centos/Downloads/Vikey.pem not accessible: No such file or directory.
The authenticity of host 'ec2-52-90-38-91.compute-1.amazonaws.com (172.31.86.109)' can't be established.
ECDSA key fingerprint is SHA256:doOGiUAJpEIrMC9jCBqikuLoiEnPAvw4QPcPZHwjHGA.
ECDSA key fingerprint is MD5:d5:8f:38:5f:e4:c4:a3:40:a8:f6:7f:9a:15:43:98:69.
Are you sure you want to continue connecting (yes/no)? yes
Warning: Permanently added 'ec2-52-90-38-91.compute-1.amazonaws.com,172.31.86.109' (ECDSA) to the list of known hosts.
Permission denied (publickey,gssapi-keyex,gssapi-with-mic).
lost connection
[centos@ip-172-31-86-109 ~]$ sudo scp -i ~/Downloads/Vikey.pem ~/Downloads/1987.csv centos@ec2-52-90-38-91.compute-1.amazonaws.com:~/data/
Warning: Identity file /home/centos/Downloads/Vikey.pem not accessible: No such file or directory.
The authenticity of host 'ec2-52-90-38-91.compute-1.amazonaws.com (172.31.86.109)' can't be established.
ECDSA key fingerprint is SHA256:doOGiUAJpEIrMC9jCBqikuLoiEnPAvw4QPcPZHwjHGA.
ECDSA key fingerprint is MD5:d5:8f:38:5f:e4:c4:a3:40:a8:f6:7f:9a:15:43:98:69.
Are you sure you want to continue connecting (yes/no)? yes
Warning: Permanently added 'ec2-52-90-38-91.compute-1.amazonaws.com,172.31.86.109' (ECDSA) to the list of known hosts.
Permission denied (publickey,gssapi-keyex,gssapi-with-mic).
lost connection
[centos@ip-172-31-86-109 ~]$ quit
-bash: quit: command not found
[centos@ip-172-31-86-109 ~]$ exit
```

```
logout
Connection to ec2-52-90-38-91.compute-1.amazonaws.com closed.
Virajs-MacBook-Air:downloads virajsonavane$ sudo ssh -i "Vikey.pem" centos@ec2-52-90-38-91.compute-1.amazonaws.com
Password:
Sorry, try again.
Password:
Sorry, try again.
Password:

sudo: 3 incorrect password attempts
Virajs-MacBook-Air:downloads virajsonavane$
Virajs-MacBook-Air:downloads virajsonavane$
Virajs-MacBook-Air:downloads virajsonavane$ scp -i ~/Downloads/Vikey.pem ~/Downloads/1987.csv centos@ec2-52-90-38-91.compute-1.amazonaws.com:~/data/
The authenticity of host 'ec2-52-90-38-91.compute-1.amazonaws.com (52.90.38.91)' can't be established.
ECDSA key fingerprint is SHA256:doOGiUAJpEIrMC9jCBqikuLoiEnPAvw4QPcPZHwjHGA.
Are you sure you want to continue connecting (yes/no)? yes
Warning: Permanently added 'ec2-52-90-38-91.compute-1.amazonaws.com,52.90.38.91' (ECDSA) to the list of known hosts.
@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@
@         WARNING: UNPROTECTED PRIVATE KEY FILE!          @
@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@
Permissions 0644 for '/Users/virajsonavane/Downloads/Vikey.pem' are too open.
It is required that your private key files are NOT accessible by others.
This private key will be ignored.
Load key "/Users/virajsonavane/Downloads/Vikey.pem": bad permissions
centos@ec2-52-90-38-91.compute-1.amazonaws.com: Permission denied (publickey,gssapi-keyex,gssapi-with-mic).
lost connection
Virajs-MacBook-Air:downloads virajsonavane$ sudo scp -i ~/Downloads/Vikey.pem ~/Downloads/1987.csv centos@ec2-52-90-38-91.compute-1.amazonaws.com:~/data/
Password:
scp: /home/centos/data/: Is a directory
Virajs-MacBook-Air:downloads virajsonavane$ sudo scp -i ~/Downloads/Vikey.pem ~/Downloads/1987.csv centos@ec2-52-90-38-91.compute-1.amazonaws.com:~/
1987.csv
100%  121MB   1.1MB/s   01:54
Virajs-MacBook-Air:downloads virajsonavane$ hadoop fs -copyFromLocal 1987.csv /user/centos
-bash: hadoop: command not found
Virajs-MacBook-Air:downloads virajsonavane$ sudo ssh -i "Vikey.pem" centos@ec2-3-89-133-111.compute-1.amazonaws.com
Password:
^Z
[1]+  Stopped                 sudo ssh -i "Vikey.pem" centos@ec2-3-89-133-111.compute-1.amazonaws.com
Virajs-MacBook-Air:downloads virajsonavane$ sudo ssh -i "Vikey.pem" centos@ec2-52-90-38-91.compute-1.amazonaws.com
Last login: Fri Apr  3 22:45:29 2020 from 132.241.160.76
[centos@ip-172-31-86-109 ~]$ hadoop fs -copyFromLocal 1987.csv /user/centos
[centos@ip-172-31-86-109 ~]$ vi totalmiles.pig
[centos@ip-172-31-86-109 ~]$ pig totalmiles.pig
2020-04-03 23:16:21,669 [main] INFO  org.apache.pig.Main - Logging error messages to: /home/centos/pig_1585970181666.log
2020-04-03 23:16:21,971 [main] INFO  org.apache.pig.backend.hadoop.executionengine.HExecutionEngine - Connecting to hadoop file system at:
hdfs://localhost:8020
2020-04-03 23:16:22,501 [main] INFO  org.apache.pig.backend.hadoop.executionengine.HExecutionEngine - Connecting to map-reduce job tracker at:
localhost:8021
2020-04-03 23:16:22,995 [main] INFO  org.apache.pig.tools.pigstats.ScriptState - Pig features used in the script: GROUP_BY
2020-04-03 23:16:23,150 [main] INFO  org.apache.pig.backend.hadoop.executionengine.mapReduceLayer.MRCompiler - File concatenation threshold: 100
optimistic? false
2020-04-03 23:16:23,158 [main] INFO  org.apache.pig.backend.hadoop.executionengine.mapReduceLayer.CombinerOptimizer - Choosing to move algebraic foreach to
combiner
2020-04-03 23:16:23,183 [main] INFO  org.apache.pig.backend.hadoop.executionengine.mapReduceLayer.MultiQueryOptimizer - MR plan size before optimization: 1
2020-04-03 23:16:23,183 [main] INFO  org.apache.pig.backend.hadoop.executionengine.mapReduceLayer.MultiQueryOptimizer - MR plan size after optimization: 1
2020-04-03 23:16:23,270 [main] INFO  org.apache.pig.tools.pigstats.ScriptState - Pig script settings are added to the job
2020-04-03 23:16:23,297 [main] INFO  org.apache.pig.backend.hadoop.executionengine.mapReduceLayer.JobControlCompiler -
mapred.job.reduce.markreset.buffer.percent is not set, set to default 0.3
2020-04-03 23:16:23,301 [main] INFO  org.apache.pig.backend.hadoop.executionengine.mapReduceLayer.JobControlCompiler - creating jar file
Job8464260311784796783.jar
2020-04-03 23:16:25,348 [main] INFO  org.apache.pig.backend.hadoop.executionengine.mapReduceLayer.JobControlCompiler - jar file Job8464260311784796783.jar
created
2020-04-03 23:16:25,365 [main] INFO  org.apache.pig.backend.hadoop.executionengine.mapReduceLayer.JobControlCompiler - Setting up single store job
2020-04-03 23:16:25,458 [main] INFO  org.apache.pig.backend.hadoop.executionengine.mapReduceLayer.MapReduceLauncher - 1 map-reduce job(s) waiting for
submission.
****hdfs://localhost:8020/user/centos/1987.csv
2020-04-03 23:16:25,774 [Thread-4] INFO  org.apache.hadoop.mapreduce.lib.input.FileInputFormat - Total input paths to process : 1
2020-04-03 23:16:25,774 [Thread-4] INFO  org.apache.pig.backend.hadoop.executionengine.util.MapRedUtil - Total input paths to process : 1
2020-04-03 23:16:25,784 [Thread-4] INFO  org.apache.pig.backend.hadoop.executionengine.util.MapRedUtil - Total input paths (combined) to process : 2
2020-04-03 23:16:25,964 [main] INFO  org.apache.pig.backend.hadoop.executionengine.mapReduceLayer.MapReduceLauncher - 0% complete
2020-04-03 23:16:26,716 [main] INFO  org.apache.pig.backend.hadoop.executionengine.mapReduceLayer.MapReduceLauncher - HadoopJobId: job_202004032243_0001
2020-04-03 23:16:26,716 [main] INFO  org.apache.pig.backend.hadoop.executionengine.mapReduceLayer.MapReduceLauncher - More information at:
http://localhost:50030/jobdetails.jsp?jobid=job_202004032243_0001
2020-04-03 23:16:48,129 [main] INFO  org.apache.pig.backend.hadoop.executionengine.mapReduceLayer.MapReduceLauncher - 10% complete
2020-04-03 23:16:51,167 [main] INFO  org.apache.pig.backend.hadoop.executionengine.mapReduceLayer.MapReduceLauncher - 20% complete
2020-04-03 23:16:54,217 [main] INFO  org.apache.pig.backend.hadoop.executionengine.mapReduceLayer.MapReduceLauncher - 26% complete
2020-04-03 23:16:57,272 [main] INFO  org.apache.pig.backend.hadoop.executionengine.mapReduceLayer.MapReduceLauncher - 40% complete
2020-04-03 23:17:00,295 [main] INFO  org.apache.pig.backend.hadoop.executionengine.mapReduceLayer.MapReduceLauncher - 50% complete
2020-04-03 23:17:26,816 [main] INFO  org.apache.pig.backend.hadoop.executionengine.mapReduceLayer.MapReduceLauncher - 100% complete
2020-04-03 23:17:26,821 [main] INFO  org.apache.pig.tools.pigstats.SimplePigStats - Script Statistics:

HadoopVersion      PigVersion         UserId    StartedAt FinishedAt         Features
1.0.1    0.9.2    centos    2020-04-03 23:16:23         2020-04-03 23:17:26         GROUP_BY

Success!

Job Stats (time in seconds):
JobId    Maps     Reduces  MaxMapTime         MinMapTIme         AvgMapTime         MaxReduceTime      MinReduceTime    AvgReduceTime           Alias
         Feature  Outputs
job_202004032243_0001       2        1        24       24       24       18       18       18       milage_recs,records,tot_miles GROUP_BY,COMBINER
         /user/root/totalmiles,

Input(s):
Successfully read 1311827 records (127167761 bytes) from: "/user/centos/1987.csv"

Output(s):
Successfully stored 1 records (10 bytes) in: "/user/root/totalmiles"

Counters:
Total records written : 1
Total bytes written : 10
Spillable Memory Manager spill count : 0
Total bags proactively spilled: 0
Total records proactively spilled: 0

Job DAG:
job_202004032243_0001


2020-04-03 23:17:26,838 [main] WARN  org.apache.pig.backend.hadoop.executionengine.mapReduceLayer.MapReduceLauncher - Encountered Warning
FIELD_DISCARDED_TYPE_CONVERSION_FAILED 1016 time(s).
```

```
2020-04-03 23:17:26,838 [main] INFO  org.apache.pig.backend.hadoop.executionengine.mapReduceLayer.MapReduceLauncher - Success!
[centos@ip-172-31-86-109 ~]$ hadoop fs -cat /user/root/totalmiles/part-r-00000
775009272
[centos@ip-172-31-86-109 ~]$ Connection to ec2-52-90-38-91.compute-1.amazonaws.com closed by remote host.
Connection to ec2-52-90-38-91.compute-1.amazonaws.com closed.
Virajs-MacBook-Air:downloads virajsonavane$
```