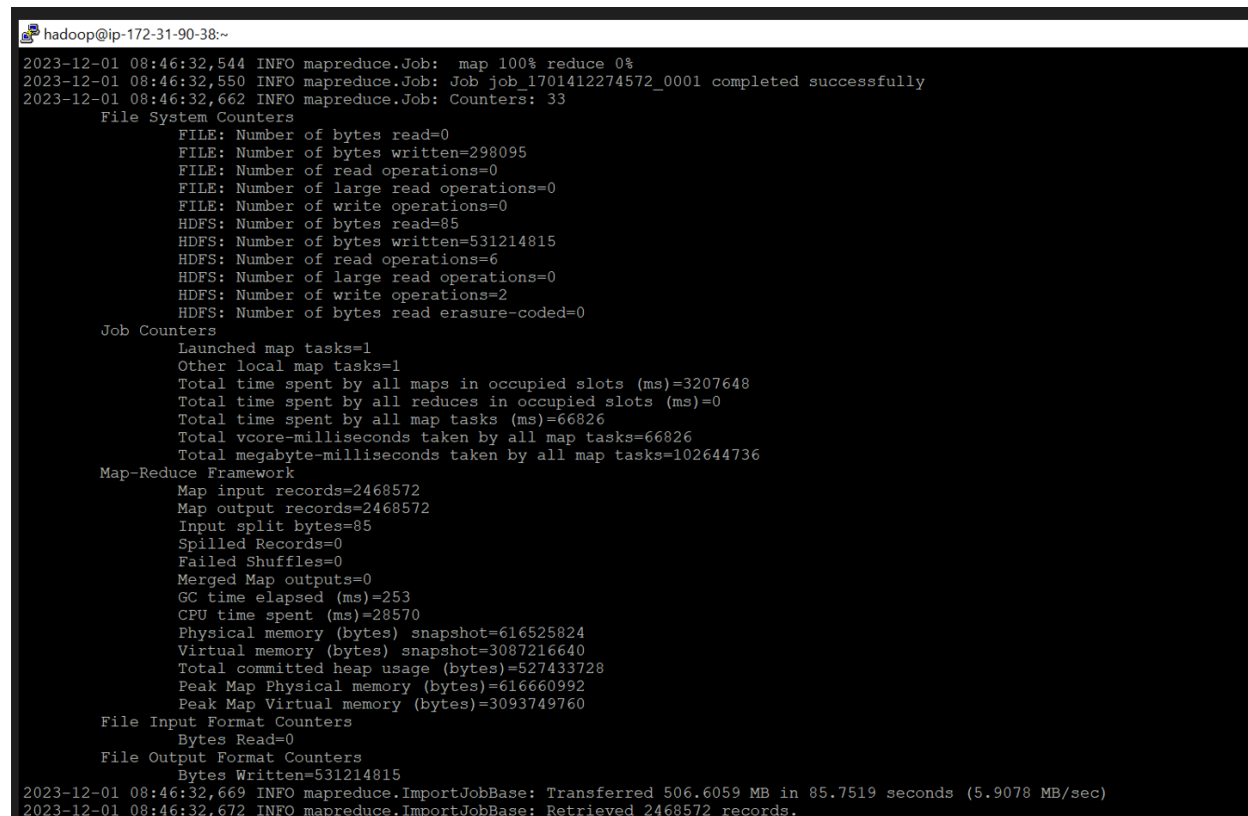


Data Ingestion from the RDS to HDFS using Sqoop

Sqoop Import command used for importing table from RDS to HDFS:

<Sqoop Import Command>

```
sqoop import \  
--connect jdbc:mysql://upgraddetest.cyaieic9bmnf.us-east-1.rds.amazonaws.com/testdatabase \  
--table SRC_ATM_TRANS \  
--username student --password STUDENT123 \  
--target-dir /user/root/spar_nord_bank_atm \  
-m 1
```



```
hadoop@ip-172-31-90-38:~  
2023-12-01 08:46:32,544 INFO mapreduce.Job: map 100% reduce 0%  
2023-12-01 08:46:32,550 INFO mapreduce.Job: Job job_1701412274572_0001 completed successfully  
2023-12-01 08:46:32,662 INFO mapreduce.Job: Counters: 33  
File System Counters  
  FILE: Number of bytes read=0  
  FILE: Number of bytes written=298095  
  FILE: Number of read operations=0  
  FILE: Number of large read operations=0  
  FILE: Number of write operations=0  
  HDFS: Number of bytes read=85  
  HDFS: Number of bytes written=531214815  
  HDFS: Number of read operations=6  
  HDFS: Number of large read operations=0  
  HDFS: Number of write operations=2  
  HDFS: Number of bytes read erasure-coded=0  
Job Counters  
  Launched map tasks=1  
  Other local map tasks=1  
  Total time spent by all maps in occupied slots (ms)=3207648  
  Total time spent by all reduces in occupied slots (ms)=0  
  Total time spent by all map tasks (ms)=66826  
  Total vcore-milliseconds taken by all map tasks=66826  
  Total megabyte-milliseconds taken by all map tasks=102644736  
Map-Reduce Framework  
  Map input records=2468572  
  Map output records=2468572  
  Input split bytes=85  
  Spilled Records=0  
  Failed Shuffles=0  
  Merged Map outputs=0  
  GC time elapsed (ms)=253  
  CPU time spent (ms)=28570  
  Physical memory (bytes) snapshot=616525824  
  Virtual memory (bytes) snapshot=3087216640  
  Total committed heap usage (bytes)=527433728  
  Peak Map Physical memory (bytes)=616660992  
  Peak Map Virtual memory (bytes)=3093749760  
File Input Format Counters  
  Bytes Read=0  
File Output Format Counters  
  Bytes Written=531214815  
2023-12-01 08:46:32,669 INFO mapreduce.ImportJobBase: Transferred 506.6059 MB in 85.7519 seconds (5.9078 MB/sec)  
2023-12-01 08:46:32,672 INFO mapreduce.ImportJobBase: Retrieved 2468572 records.
```

Command used to see the list of imported data in HDFS:

<Command used>

```
hadoop fs -ls /user/root/spar_nord_bank_atm
```

```
[hadoop@ip-172-31-90-38 ~]$ hadoop fs -ls /user/root/spar_nord_bank_atm
Found 2 items
-rw-r--r-- 1 hadoop hdfsadmingroup 0 2023-12-01 08:46 /user/root/spar_nord_bank_atm/_SUCCESS
-rw-r--r-- 1 hadoop hdfsadmingroup 531214815 2023-12-01 08:46 /user/root/spar_nord_bank_atm/part-m-00000
[hadoop@ip-172-31-90-38 ~]$
```

Screenshot of the imported data:

`hadoop fs -cat /user/root/spar_nord_bank_atm/part-m-00000`

<Screenshot of the imported data>

```
hadoop@ip-172-31-91-151:~
5,236,0.000,48,802,Clouds,scattered clouds
2017,January,25,Wednesday,16,Active,65,NCR,Storvorde,VandvÅfÅrksvej,2,9280,57.005,10.101,DKK,Visa Dankort - on-us,7462,Withdrawal,,,57.004,10.101,2612301,St
orvorde,277.019,1040,95,5,236,0.000,48,802,Clouds,scattered clouds
2017,January,25,Wednesday,16,Active,57,NCR,HillerÅfÅd,KÅfÅ,benhavnsvej,31,3400,55.933,12.314,DKK,Visa Dankort,7632,Withdrawal,,,55.767,12.433,2621394,Gladsa
kæ Kommune,273.890,1032,86,3,280,0.000,90,701,Mist,mist
2017,January,25,Wednesday,16,Inactive,29,NCR,Skelagervej,15,Skelagervej,15,9000,57.023,9.891,DKK,Mastercard - on-us,5774,Withdrawal,,,57.048,9.919,2624886,Aa
lborg,277.019,1040,95,5,236,0.000,48,802,Clouds,scattered clouds
2017,January,25,Wednesday,16,Active,61,NCR,Esbjerg,Strandbygade,20,6700,55.468,8.440,DKK,MasterCard,5977,Withdrawal,,,55.467,8.450,2622447,Esbjerg,274.130,10
31,99,4,190,0.000,80,701,Mist,mist
2017,January,25,Wednesday,16,Active,63,NCR,Brugsen i Breum,AakjÅfÅrvej,1,7870,56.688,9.069,DKK,MasterCard,2559,Withdrawal,,,56.586,9.136,2619908,Højslev,27
7.019,1040,95,5,236,0.000,48,802,Clouds,scattered clouds
2017,January,25,Wednesday,16,Inactive,2,NCR,Vejgaard,Hadsundvej,20,9000,57.043,9.950,DKK,Mastercard - on-us,4867,Withdrawal,,,57.048,9.935,2616235,NÅfÅ, rresu
ndby,277.019,1040,95,5,236,0.000,48,802,Clouds,scattered clouds
2017,January,25,Wednesday,16,Active,34,NCR,Skipperen,Vestre Alle,2,9000,57.034,9.908,DKK,Visa Dankort,6655,Withdrawal,,,57.048,9.919,2624886,Aalborg,277.019,
1040,95,5,236,0.000,48,802,Clouds,scattered clouds
2017,January,25,Wednesday,16,Active,11,NCR,Sauersvej,Fridtjof Nansens Vej,2,9210,57.023,9.940,DKK,MasterCard,8677,Withdrawal,,,57.048,9.935,2616235,NÅfÅ, rresu
ndby,277.019,1040,95,5,236,0.000,48,802,Clouds,scattered clouds
2017,January,25,Wednesday,16,Active,71,NCR,AalbÅfÅk,Centralvej,5,9982,57.593,10.412,DKK,Visa Dankort - on-us,3420,Withdrawal,,,57.492,10.496,2612274,Strandb
y,279.169,1039,97,7,244,0.000,88,804,Clouds,overcast clouds
2017,January,25,Wednesday,16,Active,48,Diebold Nixdorf,BrÅfÅ,nderslev,Algade,4,9700,57.269,9.945,DKK,Mastercard - on-us,1070,Withdrawal,,,57.118,9.857,261082
3,Vadum,277.019,1040,95,5,236,0.000,48,802,Clouds,scattered clouds
2017,January,25,Wednesday,16,Inactive,3,NCR,Ikast,RÅfÅVdhusstrÅfÅdet,12,7430,56.139,9.154,DKK,Visa Dankort - on-us,5087,Withdrawal,,,56.139,9.158,2619426,Ik
ast,275.820,1030,86,4,220,0.000,75,701,Mist,mist
2017,January,25,Wednesday,16,Active,10,NCR,NÅfÅ, rresundby,Torvet,6,9400,57.059,9.922,DKK,Mastercard - on-us,2225,Withdrawal,,,57.048,9.919,2624886,Aalborg,27
7.019,1040,95,5,236,0.000,48,802,Clouds,scattered clouds
2017,January,25,Wednesday,16,Active,37,NCR,Silkeborg,Borgergade,36,8600,56.179,9.552,DKK,Visa Dankort - on-us,5866,Withdrawal,,,56.170,9.545,2614030,Silkebor
g,275.460,1030,86,4,230,0.000,75,701,Mist,mist
2017,January,25,Wednesday,16,Inactive,12,NCR,ÅfÅesterÅfÅV Duus,ÅfÅesterÅfÅV,12,9000,57.049,9.922,DKK,Visa Dankort - on-us,2653,Withdrawal,,,57.048,9.919,262
4886,Aalborg,277.019,1040,95,5,236,0.000,48,802,Clouds,scattered clouds
2017,January,25,Wednesday,16,Active,13,NCR,SÅfÅby,Vestergade,3,9300,57.334,10.515,DKK,Visa Dankort - on-us,5666,Withdrawal,,,57.441,10.537,2621927,Frederiks
havn,278.969,1040,99,7,242,0.000,88,804,Clouds,overcast clouds
2017,January,25,Wednesday,16,Active,65,NCR,Storvorde,VandvÅfÅrksvej,2,9280,57.005,10.101,DKK,Visa Dankort,374,Withdrawal,,,57.004,10.101,2612301,Storvorde,2
77.019,1040,95,5,236,0.000,48,802,Clouds,scattered clouds
2017,January,25,Wednesday,16,Active,45,NCR,Abildgaard,HjÅfÅ,rlingvej,144,9900,57.447,10.506,DKK,Mastercard - on-us,4872,Withdrawal,,,57.441,10.537,2621927,Fr
ederikshavn,278.969,1040,99,7,242,0.000,88,804,Clouds,overcast clouds
2017,January,25,Wednesday,16,Active,80,NCR,Menu KÅfÅ,bmand Klarup,Klarupvej,52,9270,57.013,10.046,DKK,Visa Dankort,3236,Withdrawal,,,57.004,10.101,2612301,St
orvorde,277.019,1040,95,5,236,0.000,48,802,Clouds,scattered clouds
2017,January,25,Wednesday,16,Active,27,NCR,Herning,Dalgasgade,30,7400,56.135,8.971,DKK,Visa Dankort - on-us,1566,Withdrawal,,,56.139,8.974,2620425,Herning,27
5.610,1030,86,4,230,0.000,75,701,Mist,mist
2017,January,25,Wednesday,16,Inactive,74,NCR,Jebjerg,Kirkegade,4,7870,56.671,9.013,DKK,MasterCard,8120,Withdrawal,,,56.567,9.033,2613731,Skive,276.150,1030,8
6,4,230,0.000,75,803,Clouds,broken clouds
2017,January,25,Wednesday,16,Inactive,12,NCR,ÅfÅesterÅfÅV Duus,ÅfÅesterÅfÅV,12,9000,57.049,9.922,DKK,Visa Dankort - on-us,5902,Withdrawal,,,57.048,9.919,262
4886,Aalborg,277.019,1040,95,5,236,0.000,48,802,Clouds,scattered clouds
2017,January,25,Wednesday,16,Inactive,16,NCR,Skive,Adelgade,8,7800,56.567,9.027,
```