```
Last login: Sun Nov 15 09:01:22 on ttys000
(base) lejiahu@a-10-27-12-70 \sim \% ssh -Y lh2514@dumbo.es.its.nyu.edu
Password:
Last login: Sun Nov 15 08:34:25 2020 from a-10-27-12-70.dynapool.vpn.nyu.edu
Rocks 6.2 (SideWinder)
Profile built 16:54 24-Aug-2015
Kickstarted 16:58 24-Aug-2015
THIS NYU-OPERATED FACILITY MAY BE ACCESSED ONLY BY AUTHORIZED USERS.
             UNAUTHORIZED PERSONS ... TYPE 'exit' NOW
 See https://wikis.nyu.edu/display/NYUHPC/NYU+HPC+Access+Policy for details
of the access policy. Questions regarding the access policy should be
directed (by e-mail) to security@nyu.edu or (by phone) to 212-998-3333
WELCOME TO
/::\
                                            /::\
    /:/\:\
                   \:\
                             | |::\
                                        / /:/\:\
                                                      / /::\
                                       / /:/~/::\
  / /:/ \:\
                             | |:|:\
                  \ \:\
                                                     / /:/\:\
 /__/:/ \__\:|
                   \ \:\
                           __|_|:|\:\ /__/:/ /:/\:|
                                                    / /:/ \:\
                _/\ \__\:\ /__/:::| \:\ \ \:\/:/~/:/ /__/:/ \__\:\
   \:\ / /:/
              \ \:\ /:/
                                        \ \::/ /:/
                                                     \:\ / /:/
   \ \:\/:/
                                         \ \:\/:/
                                                     \ \:\ /:/
                  \:\/:/
                                                     \ \:\/:/
      \::/
                              \:\
                                           \::/
     \__\/
                  \::/
                              \:\
                                                        \::/
                              \__\/
                 \__\/
                                                       \__\/
*************************************
          https://wikis.nyu.edu/display/NYUHPC/Clusters+-+Dumbo
***************************
[1h2514@login-2-1 ~]$ ls
                    NYC_Mapper.py
Airbnb.class
Airbnb.jar
                     NYC_output1
Airbnb.java
                     NYC_Reducer.py
                     NYPD_Complaint_Data_Historic.csv
AirbnbMapper.class
AirbnbMapper.java
                     output_11
                     output_hw3.txt
AirbnbReducer.class
AirbnbReducer.java
                     part-r-00000
Cleaned.csv
                     project
CleanMapper.py
                     SelectFields.jar
CleanReducer.py
                     SelectFieldsMapper.class
                     SelectFieldsMapper.java
com
data.csv
                     SelectFieldsReducer.class
                     SelectFieldsReducer.java
hw1
                     SelectFieldsRunner.class
input.csv
input_hw3.txt
                     SelectFieldsRunner.java
IntSumReducer.class
                     smallWeather1.txt
IntSumReducer.java
                     WordCount.class
LineCountMapper.class
                     WordCount.jar
                     WordCount.java
LineCountMapper.java
                     {\tt WordCountMapper.class}
LinesCount.jar
LinesCountRunner.class WordCountMapper.class.save
LinesCountRunner.java WordCountMapper.java
Main.class
                     WordCountReducer.class
Main.java
                     WordCountReducer.java
mvDir
                     Word_output
mvNewDir
[lh2514@login-2-1 ~]$ hdfs dfs -put Cleaned.csv /user/lh2514/class1
[lh2514@login-2-1 ~]$ hdfs dfs -ls /user/lh2514/class1
Found 20 items
drwxr-xr-x+ - lh2514 users
                                 0 2020-10-12 01:27 /user/lh2514/class1/Airbnb_output
drwxr-xr-x+ - lh2514 users
                                 0 2020-10-12 01:35 /user/lh2514/class1/Airbnb output1
-rw-r--r-+ 3 lh2514 users
                           52955815 2020-11-15 09:16 /user/lh2514/class1/Cleaned.csv
-rw-r--r-+ 3 lh2514 users
                              1324 2020-11-12 00:53 /user/lh2514/class1/NYC_Mapper.py
-rw-r--r-+ 3 lh2514 users
                              1037 2020-11-12 00:52 /user/lh2514/class1/NYC_Reducer.py
drwxr-xr-x+ - lh2514 users
                                 0 2020-11-15 08:43 /user/lh2514/class1/NYC_output1
-rw-r--r-+ 3 lh2514 users
                          265727269 2020-11-12 00:47 /user/lh2514/class1/NYPD_Complaint_Data_Historic.csv
-rw-r--r-+ 3 lh2514 users
                               165 2020-11-14 14:29 /user/lh2514/class1/SelectFieldsMapper.java
-rw-r--r-+ 3 lh2514 users
                               168 2020-11-14 14:28 /user/lh2514/class1/SelectFieldsReducer.java
-rw-r--r-+ 3 lh2514 users
                              1851 2020-11-14 14:28 /user/lh2514/class1/SelectFieldsRunner.java
drwxr-xr-x+ - 1h2514 users
                                 0 2020-09-22 01:03 /user/lh2514/class1/Word_output
drwxr-xr-x+ - 1h2514 users
                                 0 2020-09-23 14:21 /user/lh2514/class1/Word_output1
```

7077974 2020-10-12 01:26 /user/lh2514/class1/data.csv

-rw-r--r-+ 3 lh2514 users

```
-rw-r--r-+ 3 lh2514 users 264678694 2020-11-05 01:14 /user/lh2514/class1/input.csv
-rw-rwxr--+ 3 lh2514 users 314 2020-09-12 16:15 /user/lh2514/class1/input_hw2.txt
                                  289 2020-09-19 18:44 /user/lh2514/class1/input_hw3.txt
-rw-r--r-+ 3 lh2514 users
drwxr-xr-x+ - lh2514 users
                                   0 2020-11-14 14:51 /user/lh2514/class1/output_NYC
drwxr-xr-x+ - lh2514 users
                                    0 2020-09-14 13:58 /user/lh2514/class1/output_hw2
drwxr-xr-x+ - lh2514 users
drwxr-xr-x+ - lh2514 users
                                     0 2020-11-12 01:45 /user/lh2514/class1/output_nyc
                                    0 2020-11-12 01:08 /user/lh2514/class1/python_code
[lh2514@login-2-1 ~]$ hadoop jar LineCount.jar LineCountRunner /user/lh2514/class1/Cleaned.csv /user/lh2514/class1/NYC_
Not a valid JAR: /home/lh2514/LineCount.jar
[lh2514@login-2-1 ~]$ javac -classpath "$(yarn classpath)" -d . LineCountMapper.java
[lh2514@login-2-1 ~]$ javac -classpath "$(yarn classpath)" -d . IntSumReducer.java
[lh2514@login-2-1 ~]$ avac -classpath "$(yarn classpath)":. -d . LineCountRunner.java
-bash: avac: command not found
[lh2514@login-2-1 ~]$ javac -classpath "$(yarn classpath)":. -d . LineCountRunner.java
javac: file not found: LineCountRunner.java
Usage: javac <options> <source files>
use -help for a list of possible options
[lh2514@login-2-1 ~]$ javac -classpath "$(yarn classpath)":. -d . LinesCountRunner.java
[lh2514@login-2-1 ~]$ hadoop jar LinesCount.jar LinesCountRunner /user/lh2514/class1/Cleaned.csv /user/lh2514/class1/NY
20/11/15 09:20:37 WARN mapreduce.JobResourceUploader: Hadoop command-line option parsing not performed. Implement the T
ool interface and execute your application with ToolRunner to remedy this.
20/11/15 09:20:38 INFO input.FileInputFormat: Total input paths to process: 1
20/11/15 09:20:38 INFO mapreduce.JobSubmitter: number of splits:1
20/11/15 09:20:38 INFO mapreduce. JobSubmitter: Submitting tokens for job: job_1604346392376_2183
20/11/15 09:20:39 INFO impl.YarnClientImpl: Submitted application application_1604346392376_2183
20/11/15 09:20:39 INFO mapreduce.Job: The url to track the job: http://babar.es.its.nyu.edu:8088/proxy/application_1604
346392376_2183/
20/11/15 09:20:39 INFO mapreduce.Job: Running job: job_1604346392376_2183
20/11/15 09:20:43 INFO mapreduce.Job: Job job_1604346392376_2183 running in uber mode : false
20/11/15 09:20:43 INFO mapreduce.Job: map 0% reduce 0% 20/11/15 09:20:48 INFO mapreduce.Job: map 100% reduce 0%
20/11/15 09:20:54 INFO mapreduce.Job: map 100% reduce 97%
20/11/15 09:20:55 INFO mapreduce.Job: map 100% reduce 100%
20/11/15 09:21:00 INFO mapreduce.Job: Job job_1604346392376_2183 completed successfully
20/11/15 09:21:00 INFO mapreduce.Job: Counters: 49
        File System Counters
                FILE: Number of bytes read=897900
                FILE: Number of bytes written=6883146
                FILE: Number of read operations=0
                FILE: Number of large read operations=0
                FILE: Number of write operations=0
                HDFS: Number of bytes read=52955923
                HDFS: Number of bytes written=20
                HDFS: Number of read operations=99
                HDFS: Number of large read operations=0
                HDFS: Number of write operations=64
        Job Counters
                Launched map tasks=1
                Launched reduce tasks=32
                Data-local map tasks=1
                Total time spent by all maps in occupied slots (ms)=11944
                Total time spent by all reduces in occupied slots (ms)=425928
                Total time spent by all map tasks (ms)=2986
                Total time spent by all reduce tasks (ms)=70988
                Total vcore-milliseconds taken by all map tasks=2986
                Total vcore-milliseconds taken by all reduce tasks=70988
                Total megabyte-milliseconds taken by all map tasks=12230656
                Total megabyte-milliseconds taken by all reduce tasks=436150272
        Map-Reduce Framework
                Map input records=1048576
                Map output records=1048576
                Map output bytes=16777216
                Map output materialized bytes=897772
                Input split bytes=108
                Combine input records=0
                Combine output records=0
                Reduce input groups=1
                Reduce shuffle bytes=897772
                Reduce input records=1048576
                Reduce output records=1
                Spilled Records=2097152
                Shuffled Maps =32
                Failed Shuffles=0
                Merged Map outputs=32
                GC time elapsed (ms)=1682
                CPU time spent (ms)=36150
```

```
Physical memory (bytes) snapshot=12624015360
                              Virtual memory (bytes) snapshot=123441782784
                              Total committed heap usage (bytes)=39564345344
               Shuffle Errors
                              BAD ID=0
                              CONNECTION=0
                              IO ERROR=0
                              WRONG_LENGTH=0
                              WRONG_MAP=0
                              WRONG_REDUCE=0
               File Input Format Counters
                              Bytes Read=52955815
               File Output Format Counters
                              Bytes Written=20
[1h2514@login-2-1 ~] hdfs dfs -ls /user/lh2514/class1/NYC_output2
Found 33 items
                                                                     0 2020-11-15 09:20 /user/lh2514/class1/NYC_output2/_SUCCESS
-rw-r--r-+ 3 lh2514 users
-rw-r--r-+ 3 lh2514 users
                                                                     0 2020-11-15 09:20 /user/lh2514/class1/NYC_output2/part-r-00000
-rw-r--r-+ 3 lh2514 users
                                                                     0 2020-11-15 09:20 /user/lh2514/class1/NYC_output2/part-r-00001
-rw-r--r-+ 3 lh2514 users
                                                                   20 2020-11-15 09:20 /user/lh2514/class1/NYC_output2/part-r-00002
-rw-r--r-+ 3 lh2514 users
                                                                  0 2020-11-15 09:20 /user/lh2514/class1/NYC_output2/part-r-00003
                                                                   0 2020-11-15 09:20 /user/lh2514/class1/NYC_output2/part-r-00004 0 2020-11-15 09:20 /user/lh2514/class1/NYC_output2/part-r-00005
-rw-r--r-+ 3 lh2514 users
-rw-r--r-+ 3 lh2514 users
                                                           0 2020-11-15 09:20 /user/lh2514/class1/NYC_output2/part-r-00006
0 2020-11-15 09:20 /user/lh2514/class1/NYC_output2/part-r-00006
0 2020-11-15 09:20 /user/lh2514/class1/NYC_output2/part-r-00007
0 2020-11-15 09:20 /user/lh2514/class1/NYC_output2/part-r-00008
0 2020-11-15 09:20 /user/lh2514/class1/NYC_output2/part-r-00009
0 2020-11-15 09:20 /user/lh2514/class1/NYC_output2/part-r-00010
0 2020-11-15 09:20 /user/lh2514/class1/NYC_output2/part-r-00011
0 2020-11-15 09:20 /user/lh2514/class1/NYC_output2/part-r-00011
0 2020-11-15 09:20 /user/lh2514/class1/NYC_output2/part-r-00012
0 2020-11-15 09:20 /user/lh2514/class1/NYC_output2/part-r-00013
0 2020-11-15 09:20 /user/lh2514/class1/NYC_output2/part-r-00014
0 2020-11-15 09:20 /user/lh2514/class1/NYC_output2/part-r-00015
0 2020-11-15 09:20 /user/lh2514/class1/NYC_output2/part-r-00016
0 2020-11-15 09:20 /user/lh2514/class1/NYC_output2/part-r-00017
0 2020-11-15 09:20 /user/lh2514/class1/NYC_output2/part-r-00017
0 2020-11-15 09:20 /user/lh2514/class1/NYC_output2/part-r-00019
0 2020-11-15 09:20 /user/lh2514/class1/NYC_output2/part-r-00019
0 2020-11-15 09:20 /user/lh2514/class1/NYC_output2/part-r-00020
0 2020-11-15 09:20 /user/lh2514/class1/NYC_output2/part-r-00021
0 2020-11-15 09:20 /user/lh2514/class1/NYC_output2/part-r-00021
0 2020-11-15 09:20 /user/lh2514/class1/NYC_output2/part-r-00022
0 2020-11-15 09:20 /user/lh2514/class1/NYC_output2/part-r-00023
0 2020-11-15 09:20 /user/lh2514/class1/NYC_output2/part-r-00025
0 2020-11-15 09:20 /user/lh2514/class1/NYC_output2/part-r-00026
0 2020-11-15 09:20 /user/lh2514/class1/NYC_output2/part-r-00027
0 2020-11-15 09:20 /user/lh2514/class1/NYC_output2/part-r-00027
0 2020-11-15 09:20 /user/lh2514/class1/NYC_output2/part-r-00028
0 2020-11-15 09:20 /user/lh2514/class1/NYC_output2/part-r-00029
0 2020-11-15 09:20 /user/lh2514/class1/NYC_output2/part-r-00029
0 2020-11-15 09:20 /user/lh2514/class1/NYC_output2/part-r-00029
0 2020-11-15 09:20 /user/lh2514/class1/NYC_output2/part-r-00029
-rw-r--r-+ 3 lh2514 users
                                                                   0 2020-11-15 09:20 /user/lh2514/class1/NYC_output2/part-r-00006
-rw-r--r-+ 3 lh2514 users
-rw-r--r-+ 3 1h2514 users
-rw-r--r-+ 3 lh2514 users
-rw-r--r--+ 3 lh2514 users
-rw-r--r-+ 3 lh2514 users
                                                                  0 2020-11-15 09:20 /user/lh2514/class1/NYC_output2/part-r-00030
-rw-r--r-+ 3 lh2514 users
-rw-r--r-+ 3 lh2514 users
                                                                     0 2020-11-15 09:20 /user/lh2514/class1/NYC output2/part-r-00031
[lh2514@login-2-1 \sim] \$ hdfs dfs -cat /user/lh2514/class1/NYC_output2/part-r-00002
                             1048576
Total Lines
[lh2514@login-2-1 ~]$
```