

Azure with username (I have used azure with my pitt email before, there is no free credits, so I use my own email address for this):

The screenshot shows the Azure portal interface for a storage container. The container name is 'diw26-hw3-2020-04-13t14-49-17-533z'. The authentication method is 'Access key'. The location is 'diw26-hw3-2020-04-13t14-49-17-533z / example / data'. The container contains several blobs, including folders like 'gutenberg', 'people.parquet', 'people.seq', and files like 'enwik9', 'fruits.txt', 'gutenberg', 'people.json', and 'people.parquet'. The interface includes a search bar, navigation pane, and a list of blobs with columns for Name, Modified, Access tier, and Blob type.

Word count implementation on azure (wiki_wordcount_output is the output folder)

```
sshuser@hn0-diw26:~$ pwd
/home/sshuser
sshuser@hn0-diw26:~$ ls
wordcount:java-1.0-SNAPSHOT.jar
sshuser@hn0-diw26:~$
```

The screenshot shows a terminal window with the following commands and output:

```
sshuser@hn0-diw26:~$ pwd
/home/sshuser
sshuser@hn0-diw26:~$ ls
wordcount:java-1.0-SNAPSHOT.jar
sshuser@hn0-diw26:~$
```

The output of the word count program is saved to a folder named 'wiki_wordcount_output' in the Azure storage container.

Output:

```
sshuser@hn0-diw26: ~  
└─ master + *  
sshuser@hn0-diw26:~$ yarn jar wordcountjava-1.0-SNAPSHOT.jar org.apache.hadoop.examples.WordCount /example/data/enwik9 /example/data/wiki_wordcount_output  
20/04/13 15:16:30 INFO client.AHSProxy: Connecting to Application History server at headnodehost/10.0.0.13:10200  
20/04/13 15:16:31 INFO client.RequestHedgingRMFailoverProxyProvider: Looking for the active RM in [rm1, rm2]...  
20/04/13 15:16:31 INFO client.RequestHedgingRMFailoverProxyProvider: Found active RM [rm1]  
20/04/13 15:16:31 INFO input.FileInputFormat: Total input paths to process : 1  
20/04/13 15:16:31 INFO lzo.GPLNativeCodeLoader: Loaded native gpl library  
20/04/13 15:16:31 INFO lzo.LzoCodec: Successfully loaded & initialized native-lzo library [hadoop-lzo rev b5efb3e531bc1558201462b8ab15bb412f6a6b89]  
20/04/13 15:16:32 INFO mapreduce.JobSubmitter: number of splits:2  
20/04/13 15:16:32 INFO mapreduce.JobSubmitter: Submitting tokens for job: job_1586789840530_0003  
20/04/13 15:16:33 INFO impl.YarnClientImpl: Submitted application application_1586789840530_0003  
20/04/13 15:16:33 INFO mapreduce.Job: The url to track the job: http://hn0-diw26.51t3fldvjkhxdrbbqglgfzkaa.bx.internal.cloudapp.net:8088/proxy/application_1586789840530_0003  
20/04/13 15:16:33 INFO mapreduce.Job: Running job: job_1586789840530_0003  
20/04/13 15:16:52 INFO mapreduce.Job: Job job_1586789840530_0003 running in uber mode : false  
20/04/13 15:16:52 INFO mapreduce.Job: map 0% reduce 0%  
20/04/13 15:17:03 INFO mapreduce.Job: map 8% reduce 0%  
20/04/13 15:17:06 INFO mapreduce.Job: map 13% reduce 0%  
20/04/13 15:17:09 INFO mapreduce.Job: map 17% reduce 0%  
20/04/13 15:17:12 INFO mapreduce.Job: map 21% reduce 0%  
20/04/13 15:17:15 INFO mapreduce.Job: map 23% reduce 0%  
20/04/13 15:17:36 INFO mapreduce.Job: map 26% reduce 0%  
20/04/13 15:17:40 INFO mapreduce.Job: map 30% reduce 0%  
20/04/13 15:17:43 INFO mapreduce.Job: map 34% reduce 0%  
20/04/13 15:17:46 INFO mapreduce.Job: map 37% reduce 0%  
20/04/13 15:17:49 INFO mapreduce.Job: map 40% reduce 0%  
20/04/13 15:18:10 INFO mapreduce.Job: map 41% reduce 0%  
20/04/13 15:18:13 INFO mapreduce.Job: map 44% reduce 0%  
20/04/13 15:18:16 INFO mapreduce.Job: map 48% reduce 0%  
20/04/13 15:18:19 INFO mapreduce.Job: map 52% reduce 0%  
20/04/13 15:18:22 INFO mapreduce.Job: map 56% reduce 0%  
20/04/13 15:18:25 INFO mapreduce.Job: map 57% reduce 0%  
20/04/13 15:18:43 INFO mapreduce.Job: map 58% reduce 0%  
20/04/13 15:18:46 INFO mapreduce.Job: map 60% reduce 0%  
20/04/13 15:18:49 INFO mapreduce.Job: map 62% reduce 0%  
20/04/13 15:18:52 INFO mapreduce.Job: map 64% reduce 0%  
20/04/13 15:18:55 INFO mapreduce.Job: map 66% reduce 0%  
20/04/13 15:18:58 INFO mapreduce.Job: map 67% reduce 0%  
20/04/13 15:19:01 INFO mapreduce.Job: map 73% reduce 0%  
20/04/13 15:19:04 INFO mapreduce.Job: map 83% reduce 0%  
20/04/13 15:19:15 INFO mapreduce.Job: map 83% reduce 17%  
20/04/13 15:19:22 INFO mapreduce.Job: map 84% reduce 17%  
20/04/13 15:19:25 INFO mapreduce.Job: map 93% reduce 17%  
20/04/13 15:19:27 INFO mapreduce.Job: map 100% reduce 17%  
20/04/13 15:19:30 INFO mapreduce.Job: map 100% reduce 49%  
20/04/13 15:19:33 INFO mapreduce.Job: map 100% reduce 69%  
20/04/13 15:19:36 INFO mapreduce.Job: map 100% reduce 81%  
20/04/13 15:19:39 INFO mapreduce.Job: map 100% reduce 91%
```

```
sshuser@hn0-diw26: ~  
master + • ~/.run/1660/wordcount_on_azure/wordcountjava ssh • zsh  
20/04/13 15:19:42 INFO mapreduce.Job: map 100% reduce 100%  
20/04/13 15:19:44 INFO mapreduce.Job: Job job_1586789840530_0003 completed successfully  
20/04/13 15:19:44 INFO mapreduce.Job: Counters: 49  
format File System Counters All changes saved in Drive  
Normal text FILE: Number of bytes read=532273895  
FILE: Number of bytes written=770170232  
FILE: Number of read operations=0  
FILE: Number of write operations=0  
FILE: Number of large read operations=0  
WASB: Number of bytes read=1000131585  
WASB: Number of bytes written=178363506  
WASB: Number of read operations=0  
WASB: Number of large read operations=0  
WASB: Number of write operations=0  
Job Counters  
Launched map tasks=2  
Launched reduce tasks=1  
Rack-local map tasks=2  
Total time spent by all maps in occupied slots (ms)=281385  
Total time spent by all reduces in occupied slots (ms)=35595  
Total time spent by all map tasks (ms)=281385  
Total time spent by all reduce tasks (ms)=35595  
Total vcore-milliseconds taken by all map tasks=281385  
Total vcore-milliseconds taken by all reduce tasks=35595  
Total megabyte-milliseconds taken by all map tasks=432207360  
Total megabyte-milliseconds taken by all reduce tasks=54673920  
Map-Reduce Framework  
Map input records=13147026  
Map output records=129347859  
Map output bytes=1494433000  
Map output materialized bytes=237403654  
Input split bytes=342  
Combine input records=142908710  
Combine output records=23767447  
Reduce input groups=8859143  
Reduce shuffle bytes=237403654  
Reduce input records=10206596  
Reduce output records=8859143  
Spilled Records=33974043  
Shuffled Maps =2  
Failed Shuffles=0  
Merged Map outputs=2  
GC time elapsed (ms)=2862  
CPU time spent (ms)=329500  
Physical memory (bytes) snapshot=2712424448  
Virtual memory (bytes) snapshot=8538267648  
Total committed heap usage (bytes)=3193438208
```

```
Merged Map outputs=2  
GC time elapsed (ms)=2862  
CPU time spent (ms)=329500  
Physical memory (bytes) snapshot=2712424448  
Virtual memory (bytes) snapshot=8538267648  
Total committed heap usage (bytes)=3193438208  
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=1000131072  
File Output Format Counters  
Bytes Written=178363506  
sshuser@hn0-diw26:~$ pwd  
/home/sshuser  
sshuser@hn0-diw26:~$ ls  
wordcountjava-1.0-SNAPSHOT.jar  
sshuser@hn0-diw26:~$
```

hw3-output		
Luleå	15	
Luleå''	1	
Luleå''.		1
Luleå's	1	
Luleå,	1	
Luleå]	1	
Luleå]]	2	
Luleå]]]	1	
Luli	7	
Luli's	1	
Luli]]	1	
Luling	12	
Luling's		1
Luling,	3	
Luling.	2	
Luling's		2
Lull	9	
Lull",		1
Lull'd	1	
Lull),	1	
Lull,	1	
Lull</title>	3	
Lull]]	1	
Lull]]<small><sup>1</sup></small>		1
Lull]]'s	1	
Lull]],	2	
Lulla	5	
Lullabelle	1	
Lullabies	4	
Lullabies''	1	

The link of input and output file (input is 1G, output is 178M)

Input:

https://pitt-my.sharepoint.com/:u:/g/personal/diw26_pitt_edu/EU5-Gp_gDyxFgS4mEqcb1NcBDsyzMM_RqaAho_PQc5fmsA?e=Y8vNqz

Output:

https://pitt-my.sharepoint.com/:u:/g/personal/diw26_pitt_edu/EScmtNz4ydpKgZClnWFw5REB3iNTti-udSesctcJRx1I_g?e=P8wXLl