

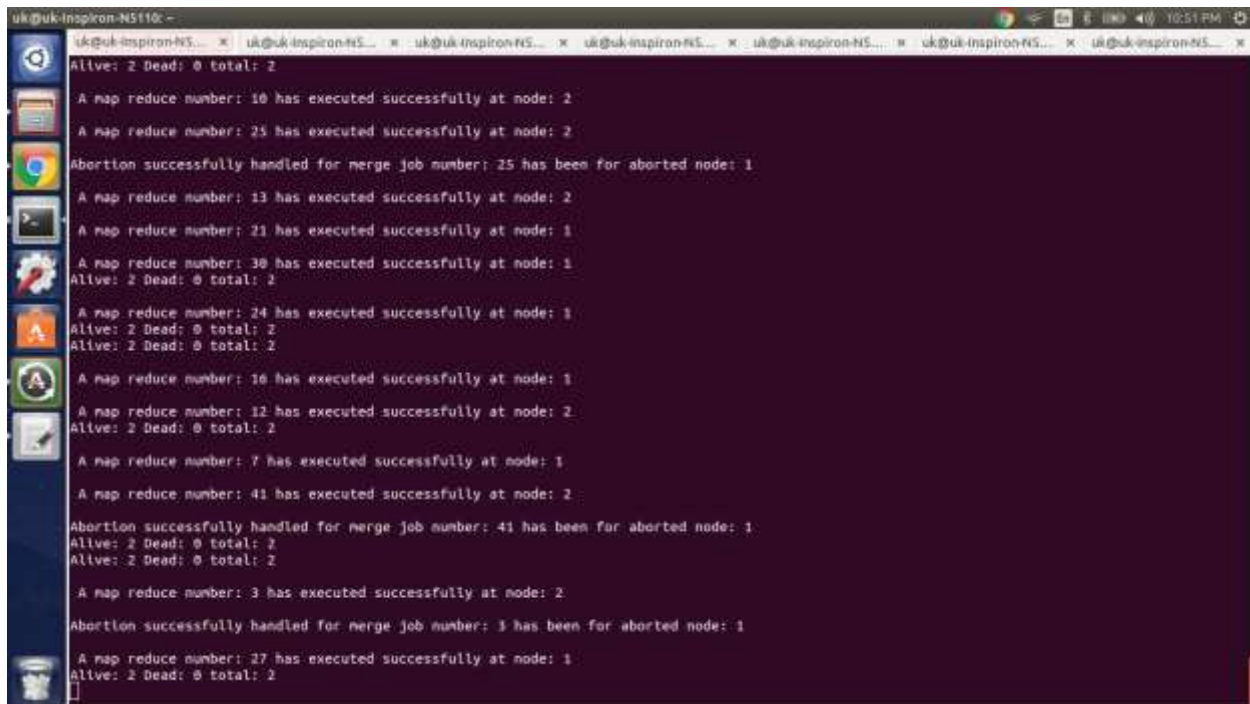
- 
- ```

uk@uk-inspiron-N5110: ~
A map reduce number: 49 has executed successfully at node: 2
A map reduce number: 46 has executed successfully at node: 1
Alive: 2 Dead: 0 total: 2
A map reduce number: 28 has executed successfully at node: 1
Alive: 2 Dead: 0 total: 2
A map reduce number: 47 has executed successfully at node: 2
A map reduce number: 23 has executed successfully at node: 2
A map reduce number: 58 has executed successfully at node: 2
A map reduce number: 29 has executed successfully at node: 1
A map reduce number: 19 has executed successfully at node: 1
Alive: 2 Dead: 0 total: 2
A map reduce number: 60 has executed successfully at node: 2
Alive: 2 Dead: 0 total: 2
A map reduce number: 25 has executed successfully at node: 2
A map reduce number: 16 has executed successfully at node: 1
Abortion successfully handled for merge job number: 16 has been for aborted node: 2
Alive: 2 Dead: 0 total: 2
Alive: 2 Dead: 0 total: 2
A map reduce number: 3 has executed successfully at node: 2
A map reduce number: 4 has executed successfully at node: 1
Alive: 2 Dead: 0 total: 2
Alive: 2 Dead: 0 total: 2
Alive: 2 Dead: 0 total: 2
A map reduce number: 7 has executed successfully at node: 2

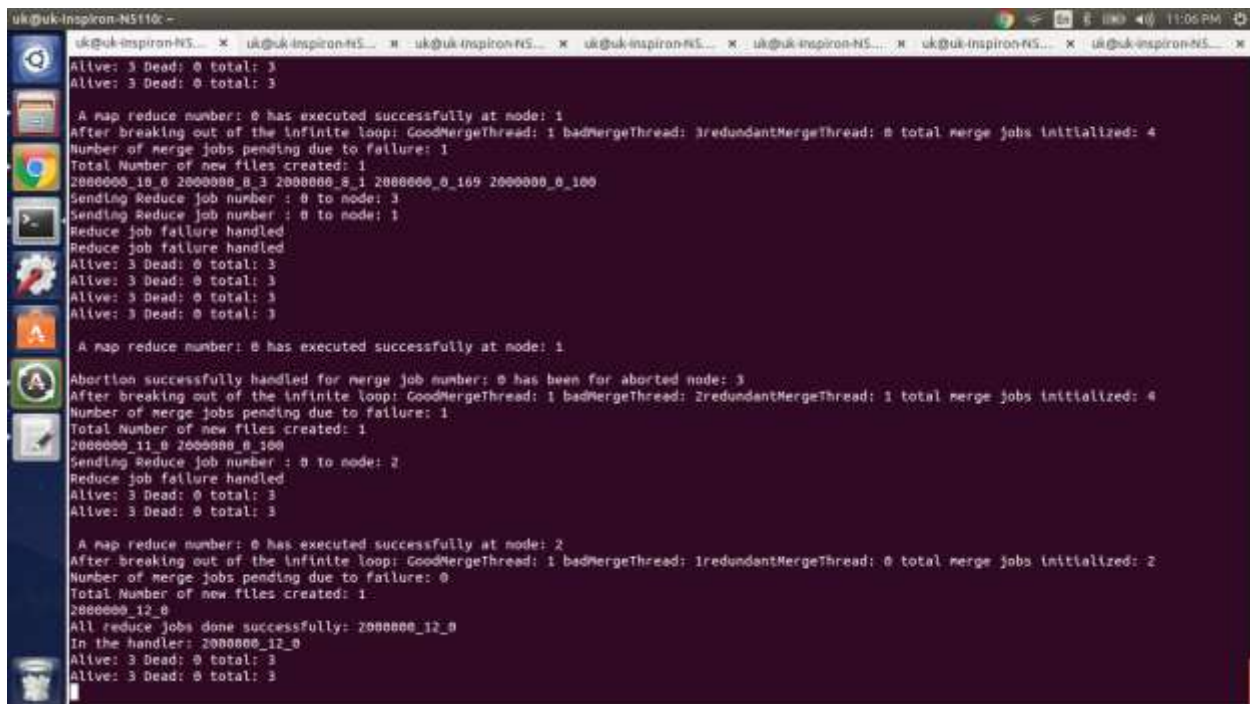
```

- 
- uk@uk-inspiron-N511Q: ~  
 Reduce job failure handled  
 Reduce job failure handled  
 Reduce job failure handled  
 Alive: 3 Dead: 0 total: 3  
 A map reduce number: 19 has executed successfully at node: 3  
 A map reduce number: 16 has executed successfully at node: 3  
 A map reduce number: 20 has executed successfully at node: 3  
 A map reduce number: 39 has executed successfully at node: 3  
 A map reduce number: 27 has executed successfully at node: 3  
 Alive: 3 Dead: 0 total: 3  
 A map reduce number: 2 has executed successfully at node: 3  
 Abortion successfully handled for merge job number: 2 has been for aborted node: 1  
 A map reduce number: 22 has executed successfully at node: 1  
 A map reduce number: 0 has executed successfully at node: 3  
 Abortion successfully handled for merge job number: 0 has been for aborted node: 1  
 A map reduce number: 13 has executed successfully at node: 1  
 A map reduce number: 24 has executed successfully at node: 1  
 A map reduce number: 35 has executed successfully at node: 1  
 A map reduce number: 38 has executed successfully at node: 1  
 Alive: 3 Dead: 0 total: 3  
 A map reduce number: 14 has executed successfully at node: 2  
 A map reduce number: 3 has executed successfully at node: 2

### 3. Redundant jobs are aborted in mapper



#### 4. Task executed successfully



[illegible]

The screenshot shows a terminal window with the following output:

```

kajar001@cse1-x32-01:~/PA3P5 $ java -cp ./libthrift-0.9.3.jar:./libslf4j-api-1.7.14.jar:gen-java Server 4 20 2
SLF4J: Failed to load class "org.slf4j.impl.StaticLoggerBinder".
SLF4J: Defaulting to no-operation (NOP) logger implementation
SLF4J: See http://www.slf4j.org/codes.html#StaticLoggerBinder for further details.
Alive: 0 Dead: 0 total: 0
Starting the main server...
Alive: 1 Dead: 0 total: 1
Alive: 4 Dead: 0 total: 4
Alive: 4 Dead: 0 total: 4

```



## 7. Statistics showing completed jobs, redundant jobs, pending job

```

uk@uk-inspire-N5110: ~
Reduce job failure handled
A map reduce number: 4 has executed successfully at node: 2
Alive: 3 Dead: 0 total: 3

A map reduce number: 5 has executed successfully at node: 3

A map reduce number: 3 has executed successfully at node: 1
Alive: 3 Dead: 0 total: 3

A map reduce number: 1 has executed successfully at node: 1
After breaking out of the infinite loop: GoodMergeThread: 4 badMergeThread: 10 redundantMergeThread: 0 total merge jobs initialized: 14
Number of merge jobs pending due to failure: 3
Total Number of new files created: 4
2000000_0_4 2000000_0_5 2000000_0_3 2000000_0_1 2000000_7_5 2000000_7_6 2000000_7_8 2000000_7_4 2000000_0_13 2000000_0_2 2000000_0_57 2000000_0_29 2000000_0_169 2000000_0_100
Reduce job failure handled
Reduce job failure handled
Reduce job failure handled
Sending Reduce job number : 1 to node: 1
Sending Reduce job number : 2 to node: 3
Reduce job failure handled
Reduce job failure handled
Reduce job failure handled
Alive: 3 Dead: 0 total: 3

A map reduce number: 1 has executed successfully at node: 1

A map reduce number: 2 has executed successfully at node: 3
After breaking out of the infinite loop: GoodMergeThread: 2 badMergeThread: 6 redundantMergeThread: 0 total merge jobs initialized: 8
Number of merge jobs pending due to failure: 2
Total Number of new files created: 2
2000000_9_1 2000000_9_2 2000000_0_4 2000000_0_5 2000000_0_3 2000000_0_1 2000000_0_169 2000000_0_100
Reduce job failure handled
Sending Reduce job number : 0 to node: 1
Reduce job failure handled
Reduce job failure handled
Alive: 3 Dead: 0 total: 3

```

## 8. Map Phase

```

uk@uk-inspiren-N511Q: ~
The nap job: 1120 is successfully written
The nap job: 1015 is successfully written
The nap job: 1180 is successfully written
The nap job: 1193 is successfully written
The nap job: 1171 is successfully written
The nap job: 1179 is successfully written
The nap job: 1797 is successfully written
The nap job: 1229 is successfully written
The nap job: 1148 is successfully written
The nap job: 1785 is successfully written
The nap job: 1025 is successfully written
The nap job: 1197 is successfully written
The nap job: 1172 is successfully written
The nap job: 1016 is successfully written
The nap job: 1070 is successfully written
The nap job: 1033 is successfully written
The nap job: 1869 is successfully written
The nap job: 1885 is successfully written
The nap job: 1937 is successfully written
The nap job: 1899 is successfully written
The nap job: 1879 is successfully written
The nap job: 1892 is successfully written
The nap job: 1875 is successfully written
The nap job: 1876 is successfully written
The nap job: 1931 is successfully written
The nap job: 1811 is successfully written
The nap job: 1936 is successfully written
The nap job: 1924 is successfully written
The nap job: 1944 is successfully written
The nap job: 1941 is successfully written
The nap job: 1219 is successfully written
The nap job: 1050 is successfully written
The nap job: 1324 is successfully written
The nap job: 1329 is successfully written
The nap job: 1316 is successfully written
The nap job: 952 is successfully written
The nap job: 1279 is successfully written
The nap job: 1389 is successfully written
rckajar001@csel-x32-02: ~/PAPPS$

```

The screenshot shows a Linux desktop with a dark purple background. On the left is a vertical dock containing icons for a web browser, file manager, terminal, and other applications. The terminal window is open, displaying the following text:

```

kajjar001@cse1-x32-001:~/PA3P5 $ java -cp ./lib/thrift-0.9.3.jar:./jars/slf4j-api-1.7.14.jar:gen-java Client 50000 4 2000000
SLF4J: Failed to load class "org.slf4j.impl.StaticLoggerBinder".
SLF4J: Defaulting to no-operation (NOP) logger implementation
SLF4J: See http://www.slf4j.org/codes.html#StaticLoggerBinder for further details.
Processed File: No Nodes In The System
kajjar001@cse1-x32-001:~/PA3P5 $

```

The terminal window title bar shows multiple instances of the terminal application, each labeled "uk@uk-inspiron-N5110: -". The system clock in the top right corner indicates the time is 11:09 PM.

## 11. Number of redundant Node is greater than number of Nodes

```
uk@uk-inspiron-N5110: ~$ java -cp ./jars/libthrift-0.9.3.jar:./jars/slf4j-api-1.7.14.jar:gen-java Server 4 20 5
Number of redundant nodes should be less than or equal to total nodes
kajar001@cse1-x32-01:~/PA3P5 $
```

## 12. Statistics of all Nodes on system as well as the server:

```
uk@uk-inspiron-N5110: ~$ java -cp ./jars/libthrift-0.9.3.jar:./jars/slf4j-api-1.7.14.jar:gen-java Server 4 20 5
A map reduce number: 0 has executed successfully at node: 1
After breaking out of the infinite loop: GoodMergeThread: 1 badMergeThread: 3 redundantMergeThread: 0 total merge jobs initialized: 4
Number of merge jobs pending due to failure: 1
Total Number of new files created: 1
200000_6_0 200000_3_2
Problem in merge thread creation itself java.lang.Exception: A Merge operation at Node: 128.101.37.94:2 failed because of probabilistic fault 1
Injection
Sending Reduce job number : 0 to node: 1
A map reduce number: 0 has executed successfully at node: 1
After breaking out of the infinite loop: GoodMergeThread: 1 badMergeThread: 1 redundantMergeThread: 0 total merge jobs initialized: 2
Number of merge jobs pending due to failure: 0
Total Number of new files created: 1
200000_7_0
All reduce jobs done successfully: 200000_7_0
Reducer returned the file: 200000_7_0
Sorted File: 200000_7_0
Time elapsed to do the job: 9448
Total faults occurred are: 131
Total Sort Jobs: 5
Total Merge Jobs: 2
Total Sort Jobs: 203.8
Total Sort Jobs: 2697.0
Total Sort Jobs: 4
Total Merge Jobs: 1
Total Sort Jobs: 178.25
Total Sort Jobs: 1619.0
Total Sort Jobs: 7
Total Merge Jobs: 2
Total Sort Jobs: 338.7142857142857
Total Sort Jobs: 1813.0
Total Sort Jobs: 8
Total Merge Jobs: 2
Total Sort Jobs: 124.75
Total Sort Jobs: 1083.0
Alive: 4 Dead: 0 total: 4
Alive: 4 Dead: 0 total: 4
Alive: 4 Dead: 0 total: 4
```