COP 5615

Project 1

Submitted By

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Folder contents

project1 : The main program
project1-client: The client program which will get connected to the main program and start mining
Each of the folders have a build.sbt file and an src/main/resources/application.conf file for listening on an ip
The .scala file is in src/main/scala

How to run

cd into each of the projects and type sbt “run args” (with quotes)
For instance, if the main program has to be run for getting 4 leading zeroes:
>cd project1
>sbt “run 4”

To run the client program
>cd project1_client
>sbt “run 127.0.0.1”

The ip of the server and client is to be changed in the application.conf file (ip at which they listen on). To run the programs across two machines, ip of the hostname should be set to it’s ip in the network it is connected to.
(To run the programs in two different terminals on the same machine, no changes have to be made)

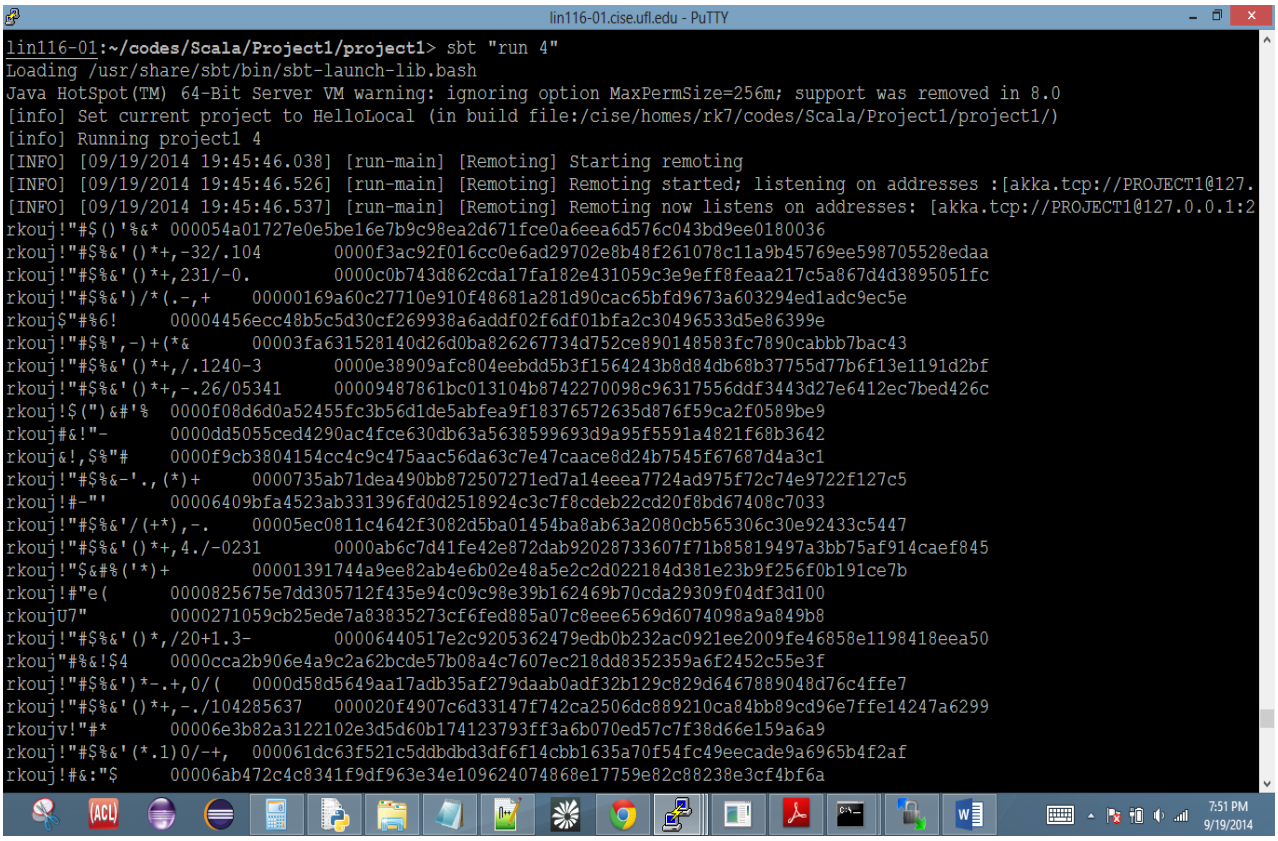
Results

- Size of work unit

  Approach – For the main program, the Boss receives a START message and starts the workers. Note that the server is also started simultaneously and is listening for any client available to connect. I have a defined a variable (current_suffix_length) which stores the length of the suffix to be added to my gatorlink id. Each worker incrementally adds permutations of combinations of characters of length of current_suffix_length and

computes the hash. For instance -: Worker 1 will add one character to “rkouj”,
worker 2 will add 2 and so on.
Server/Client Interaction: When the client program is run, it will get the current suffix length, and send this message to its workers and start the mining process

- Result of scala project1.scala 4



Please note that this only the first page of the results. The program keeps on running and searching for more coins.

- Run time for the program

I ran the main program for 4 hrs and got the following result -:
47521.161u 934.085s 4:09:55.29 323.1% 0+0k 808+18896io 0pf+0w
CPU time = 47521.161s + 934.085s = 48455.246s
Real time = 14995.29s
Number of cores used = 48455.246s/14995.29s ~ 3.24

Thus 3 cores were used in the computation

- Coin with most zeroes - **8 zeroes**
  rkoujc !K)"#
- Largest number of working machines
  I was able to run the client/server program on 4 machines (1 server + 3 clients)