COP5615: Fall 2015

PROJECT - 2

Gossip Algorithm and Push-Sum implementation

Project Members

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READ ME

The project deals with implementation of gossip algorithm and push-sum algorithm with various topologies.

The directory hierarchy is as follows:

Project2

|+ gossipAlgorithm

|+ src

|+ main

|+ scala

|+ com.dos.gossip

|+ GossipImpl.scala

|+ com.dos.gossip.bonus

|+ GossipImplBonus.scala

|+ build.sbt

How to execute:

For Project Question:

sbt "run <number of Nodes> <topology> <algorithm>"

Please find below the values we have used internally for mapping the algorithm and topology values:

Values for algorithm – push-sum, gossip

Values for topology – line, 3d, imp3d and full

What is working?

Both the push-sum and gossip implementations are working for all the four topologies mentioned above. The project question has been answered completely and all the components are working as expected.

What is the largest network you managed to deal with for each type of topology and algorithm?

(A) PUSH-SUM

Line Topology : Implemented upto 50,000 actors and upwards
3D Grid: Implemented upto 100,000 actors and upwards
Imperfect 3D: Implemented upto 100,000 actors and upwards
Full Network: Implemented upto 50,000 actors and upwards

(B) GOSSIP

Line Topology: Implemented upto 10000 actors
3D Grid: Implemented upto 100,000 actors
Imperfect 3D: Implemented upto 50,000 actors
Full Network: Implemented upto 10000 actors

Callout

On executing any of the algorithms, in some instances warnings about dead letter messages are posted but a final solution on the convergence time is also printed along with it. This is not a failure scenario, it occurs in the case when we are resending the messages to the same actor to spread the information, and if this actor goes down and the scheduled message delivery fails. In all the scenarios the result it printed out as Convergence time. (Might be interleaved with these warning messages) ☺