

COP 5615

Project 2

Bonus Report

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Largest network

1. For gossip - :
 - a. Full: 4000
 - b. 2D: 4000
 - c. Imp2D: 4000
 - d. Line: 1000
2. For push-sum-:
 - a. Full: 3000
 - b. 2D: 200
 - c. Imp2D: 200
 - d. Line: 100

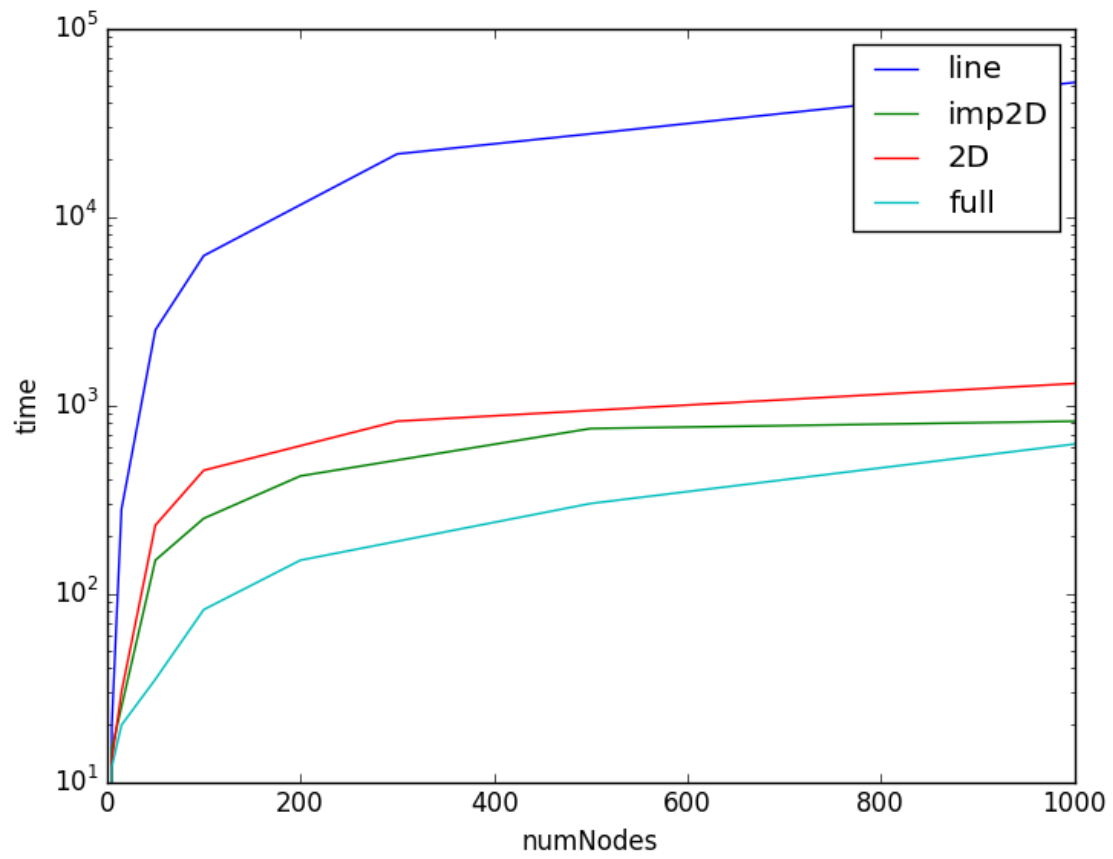
Implementation

Initially I tried permanently shutting down a single node randomly. There was not much difference seen for the different topologies except for the line where if I shut down a node who had not yet received the message, convergence is never achieved since the message is never propagated to the last node.

Next I permanently shut down first half of the nodes after any half of the nodes have achieved convergence. Again for full topology it did not make much of a difference, however for grid and imperfect grid, time taken to converge increased. For line, the problem still remained the same as above.

Finally, I decided to shut down each node temporarily and test the network. I have set each node to receive a Fail message every 250ms. During this interval (specific to each node), a node stops communicating. The trend of the different topologies remain the same as the ones without the failure however, time taken for convergence is increased, though convergence is always achieved.

Gossip with failure -:



Push Sum with fail -:

