COP5615- Distributed Operating Systems Project 2 Bonus Report – Gossip Simulator

Arkaprava Praharaj (UFID: 4818 1184)

Mrignayni Chhotwani (UFID: 1959 5411)

FAILURE MODEL

The failure model we have implemented involves failure of one node for every specified period, by default 100 milliseconds.

In case of node failure, the master actor will create another node to take its place. It will have the same information as the dead actor. New actors address is added to the dead actors' neighbors to include it in the network.

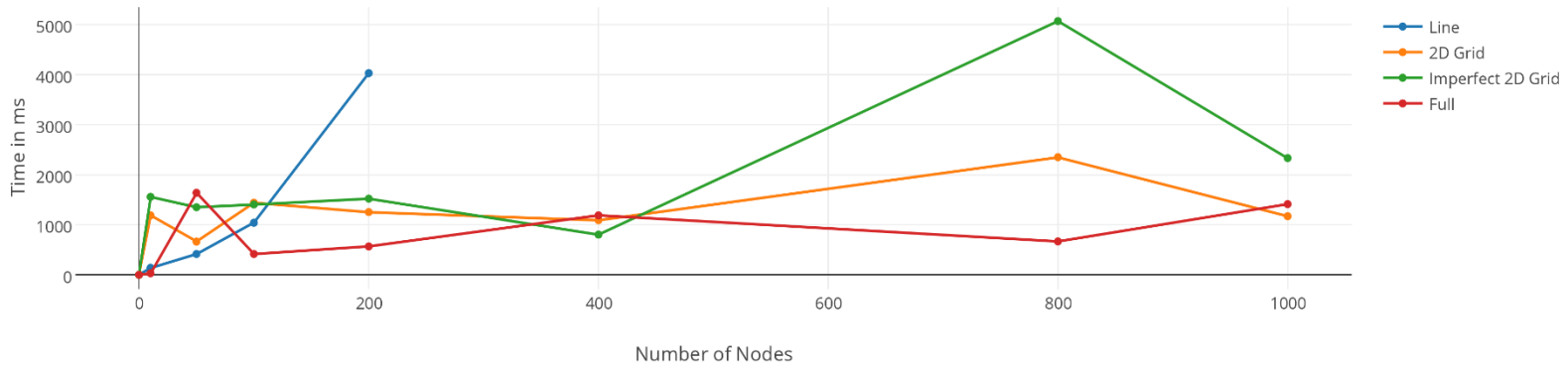## 1   NODE FAILURE IN GOSSIP ALGORITHM

Convergence time v/s Number of Nodes for 100 ms Failure using Gossip Algorithm
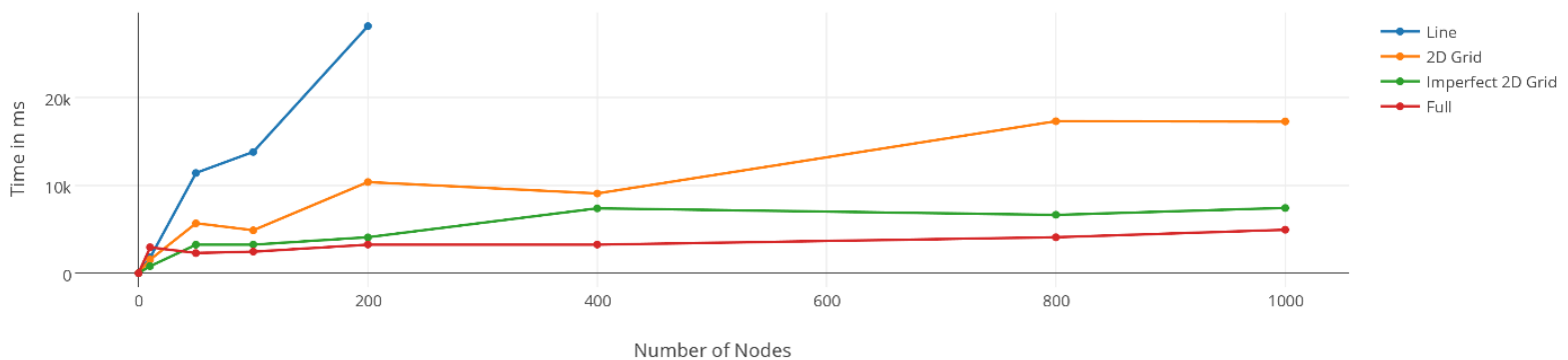
Source: Project 2 Bonus Gossip 100ms Failure

Convergence times of different topologies haven't changed much for gossip algorithm. Line topology continues to be the slowest and full topology the fastest.

Convergence time v/s Number of Nodes for 100 ms failure time using Push-sum Algorithm

2   NODE FAILURE IN PUSH-SUM ALGORITHM

Data distribution changes quite noticeably for push-sum algorithm on implementing the failure model. This is so because the new node created in place of the dead node cannot maintain the old s/w value.

Nothing in particular can be commented on the details of this graph as the distribution has become random to an extent because of the nodes dying.