

Project 2 Bonus

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October 1, 2015

1 BONUS RESULTS

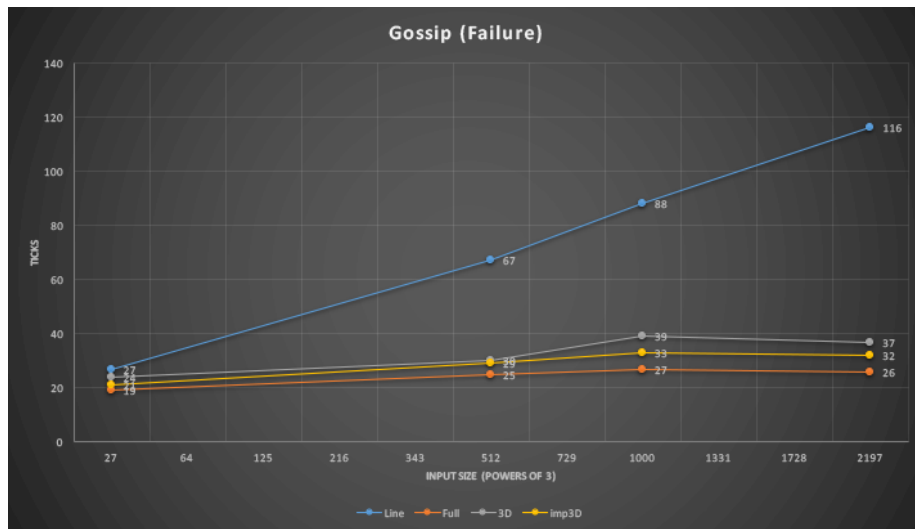


Figure 1: **Gossip - Failure.**

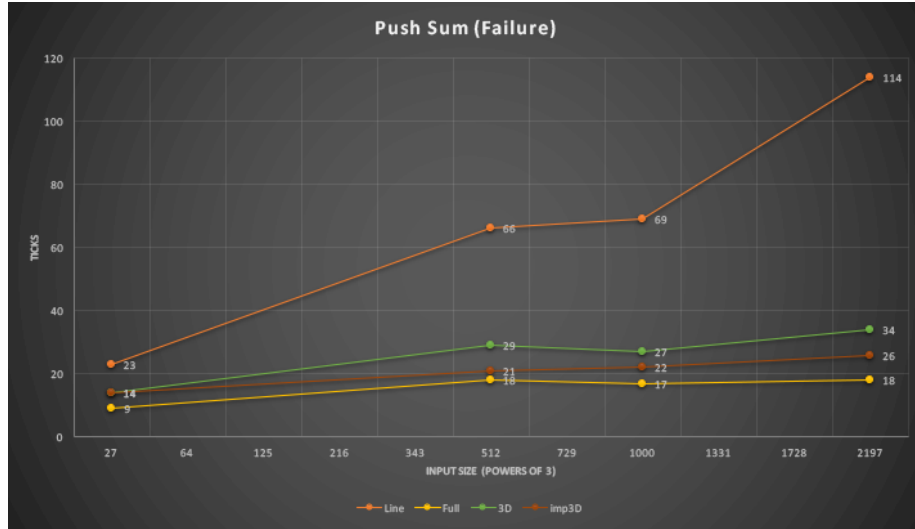


Figure 2: **Push Sum - Failure.**

2 OBSERVATIONS

I implemented a failure simulation by creating a variable called `failureIndex`, which is an adjustable parameter. For my graphs, I set the failure index to 3, so there would be a 33 percent chance of failure. I generated a random number from the failure index, and if the random number is equal to 0, then the message does not send or go through. I tested the same input values as the no failure simulation. The difference was it took more ticks for each topology to converge. Also, sometimes there would be a greater amount of ticks for a lower input size. This was especially seen in Push Sum.

I also tried putting the failure index to 2 so that there would be a 50 percent chance of failure, and I saw an increase in the amount of ticks. When I put the failure index to 5 (20 percent chance of failure), I saw a decrease in the amount of ticks as compared to a failure index of 2, but an increase in the amount of ticks as compared to no failure.