Project Report

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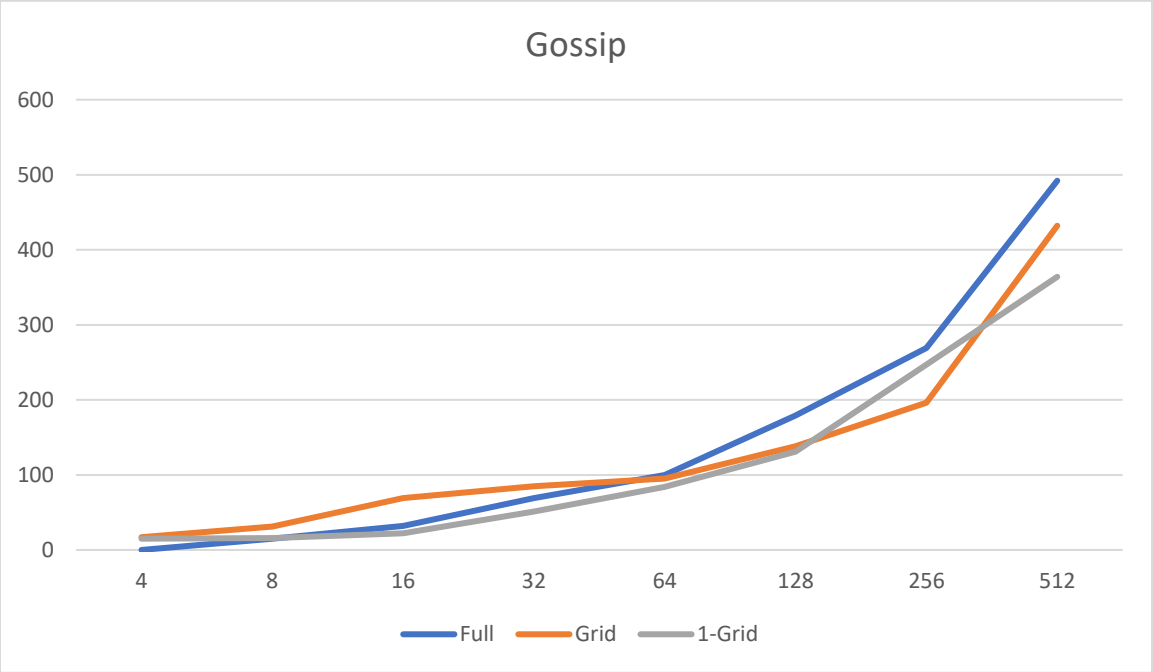
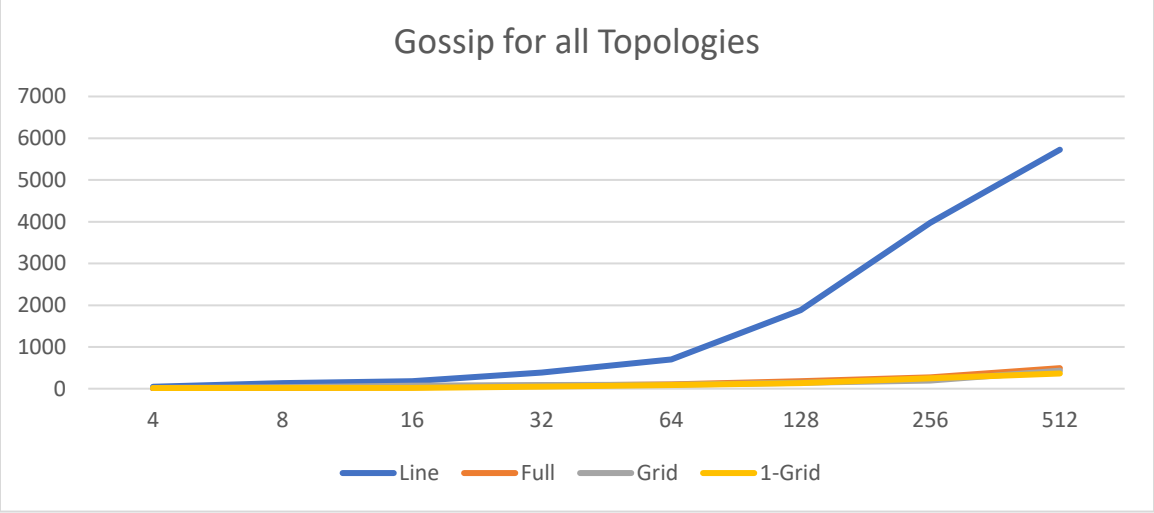
This Document details the findings and observations for the project. Below are the graphs for gossip algorithm in all the four topologies. Since Line topology was taking longer time we have included an additional graph without line topology for the three algorithms



Without line

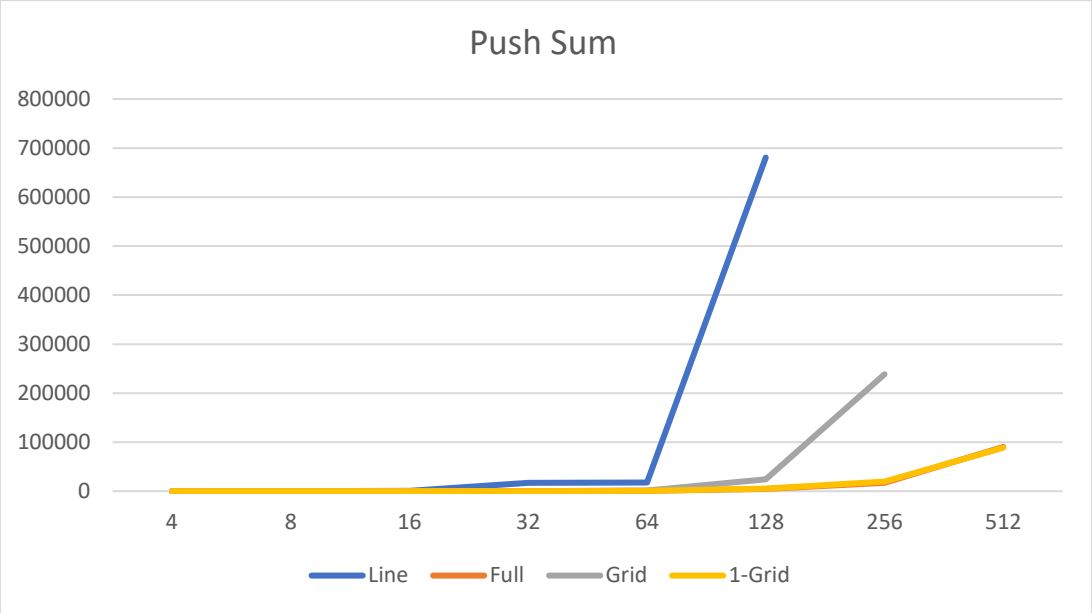
The y-axis denotes time taken(in milliseconds) for algorithm to converge and the x axis denotes the number of nodes the algorithm was executed for. Below is with line.



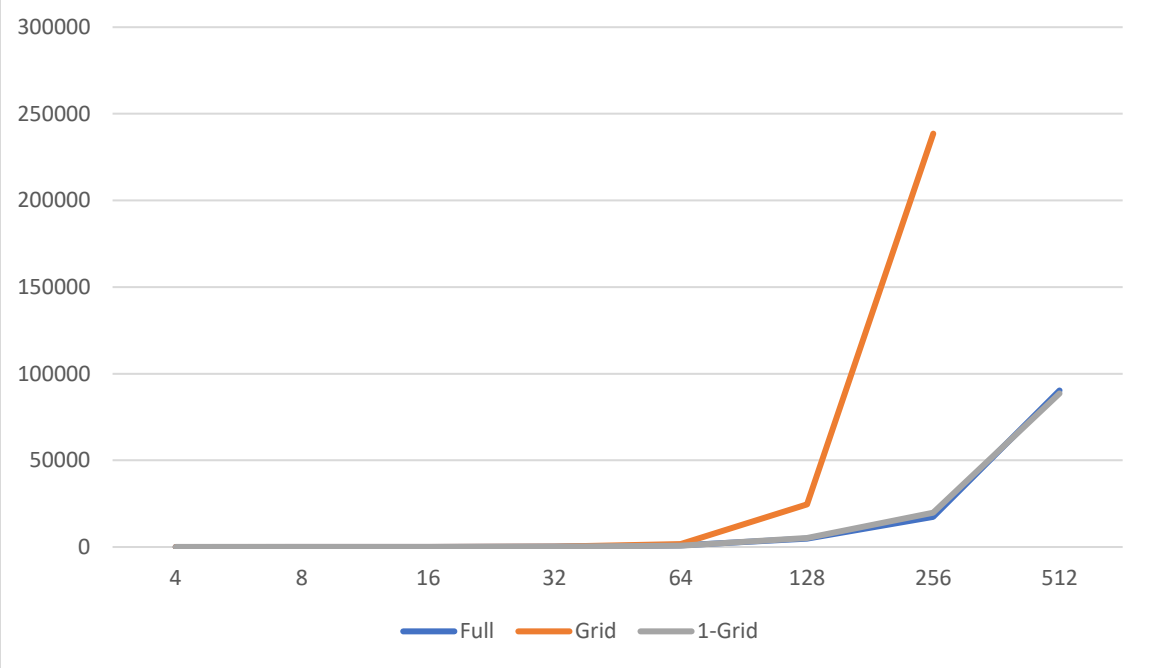
The above graph includes the line topology as well. As we can see, there is marked difference in the convergence time for line as compared to the other three topologies.

Push Sum

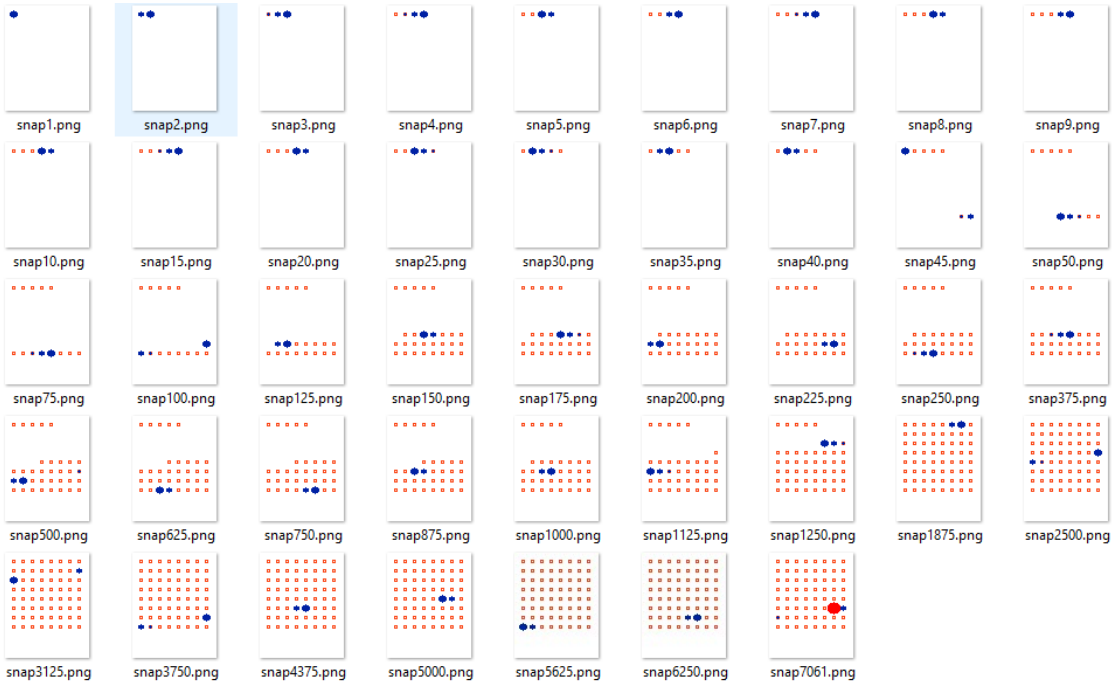
Below is a graph for all topologies for push sum algorithm.



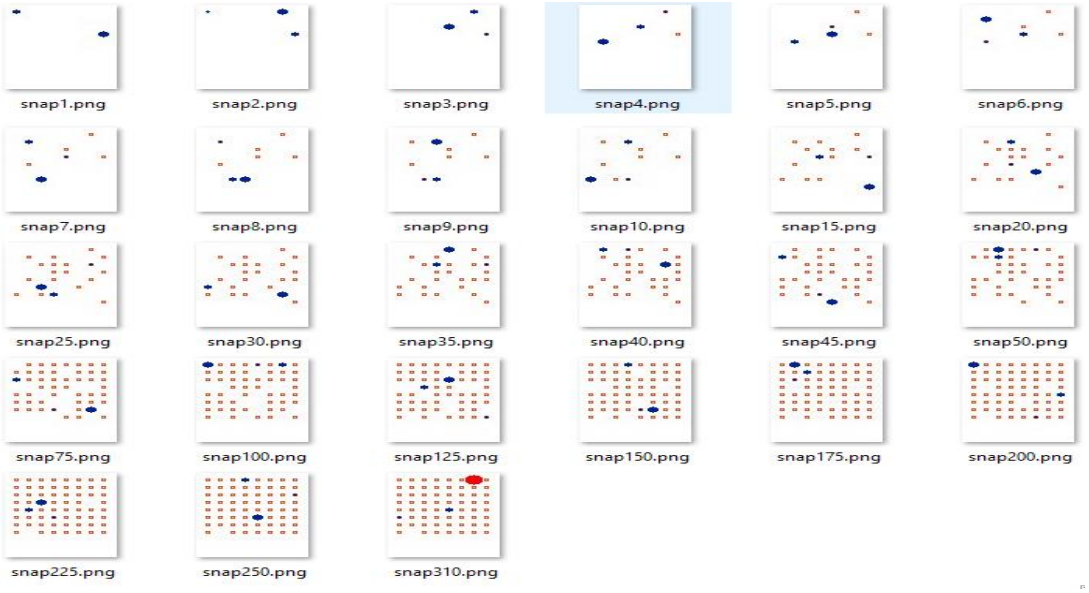
Here we see a really stark rise in the convergence time for line topology in push-sum algorithm. Thus we have included another graph for the other three topologies.



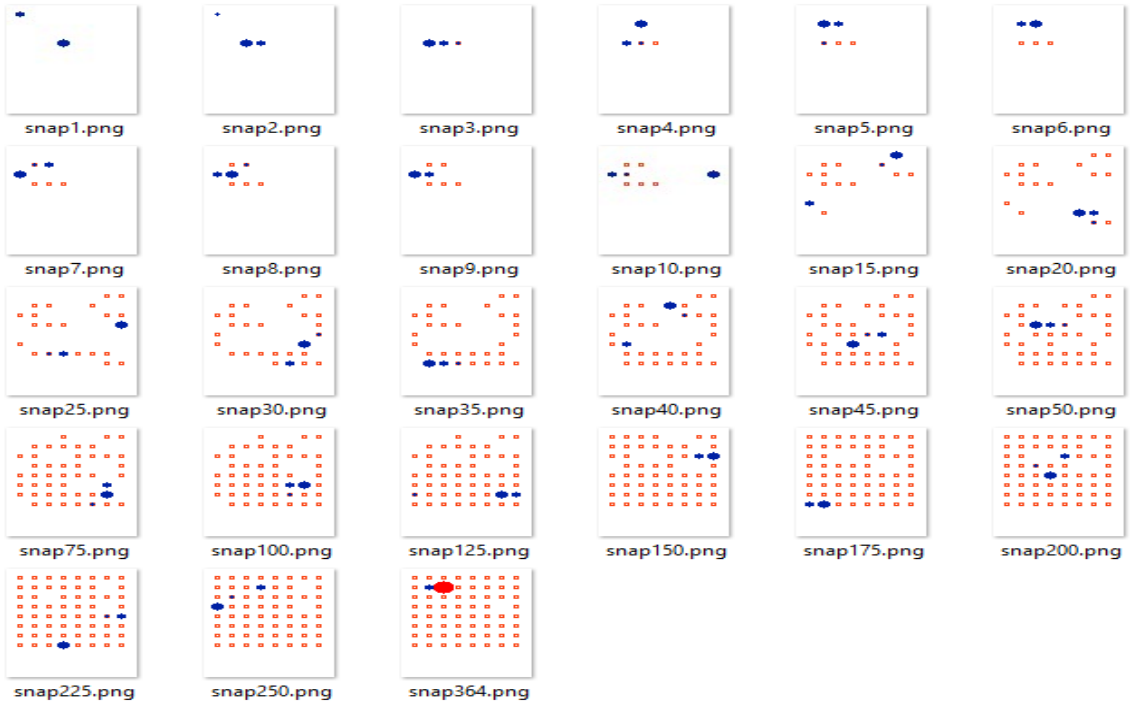
As expected full topology and Incomplete grid topologies have almost similar convergence time for push sum algorithm. More the neighbours better is the convergence time. We have also implemented erlangs EGD library to visualize how the algorithm is progressing and ultimately converging. The red dot indicates the converging point in the algorithm.



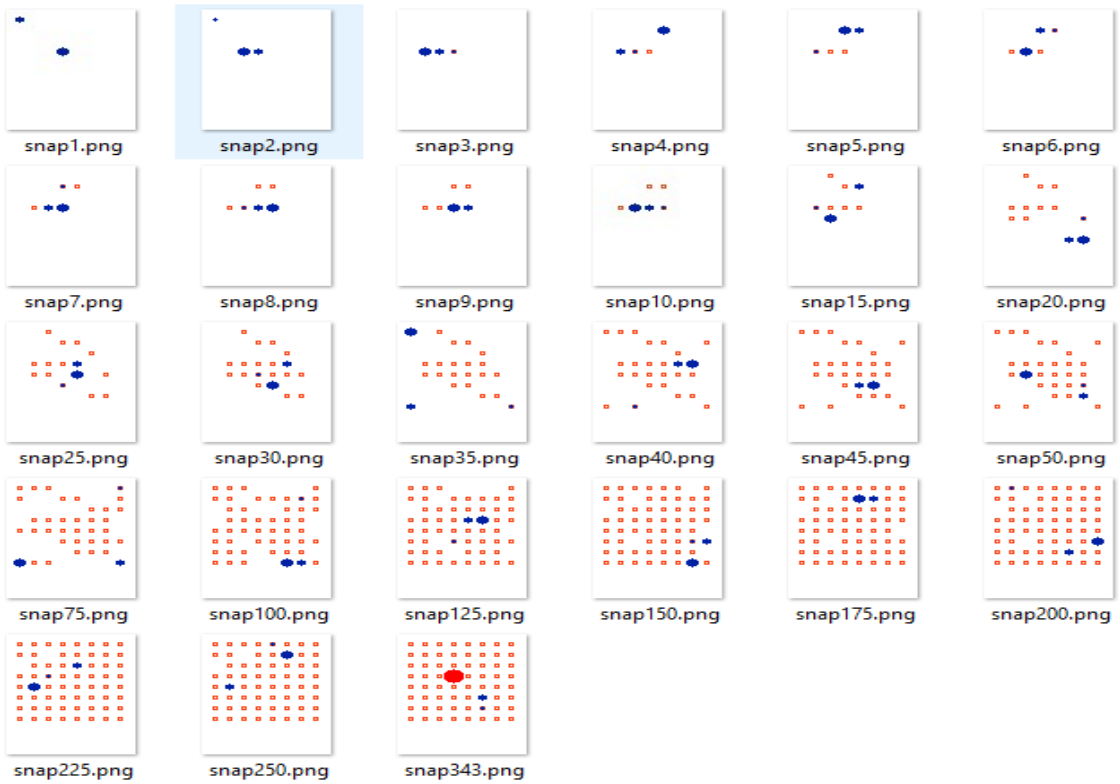
Line Topology for Gossip algorithm



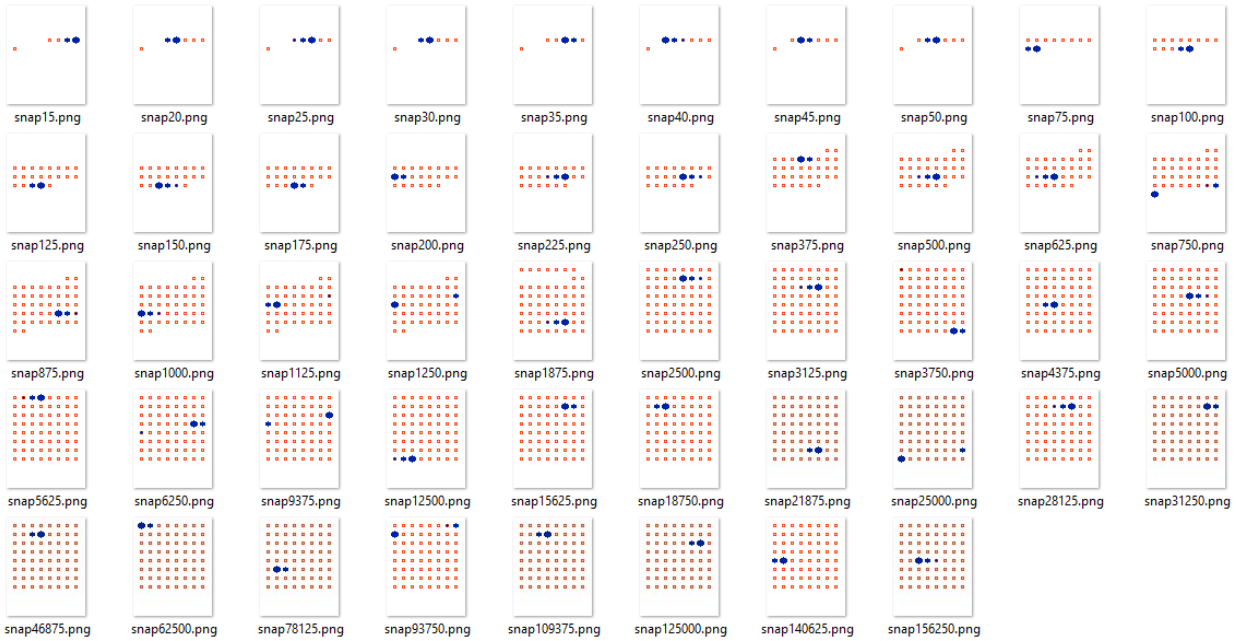
Full network for Gossip Algorithm



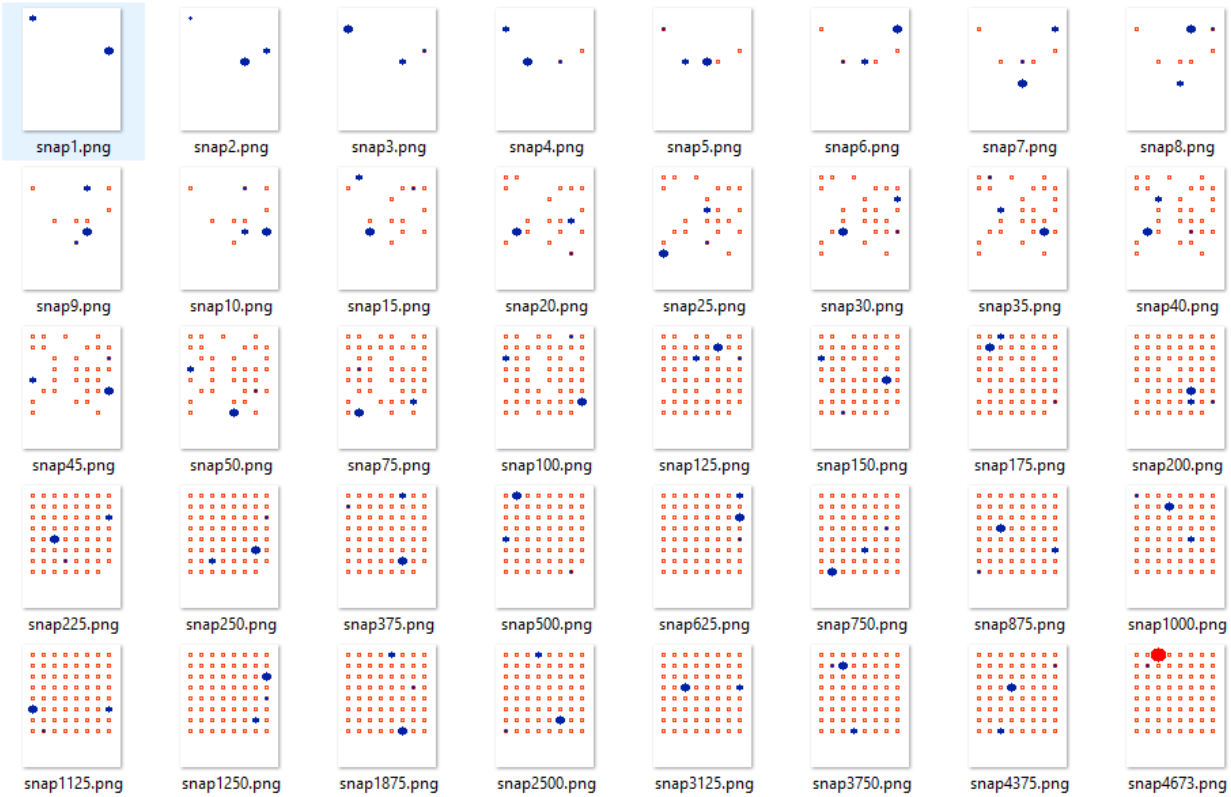
Grid Topology for Gossip



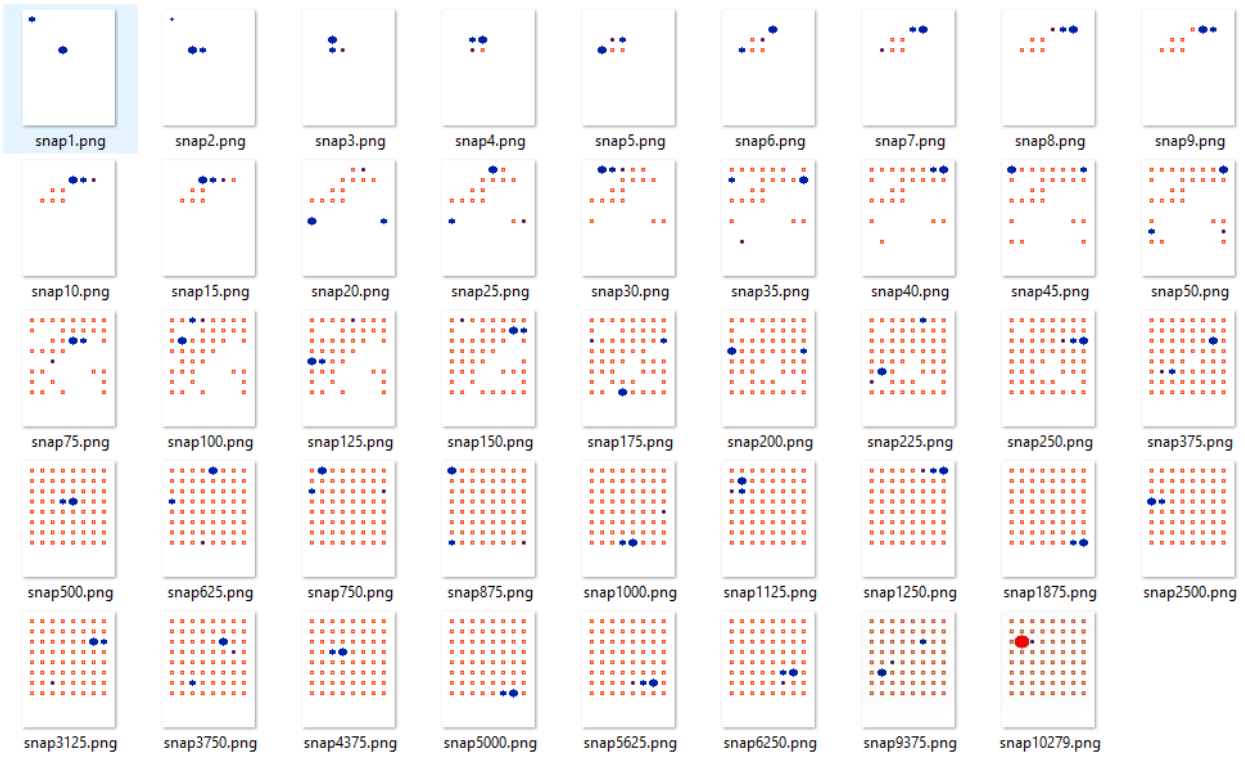
Imperfect Grid Topology for Gossip algorithm



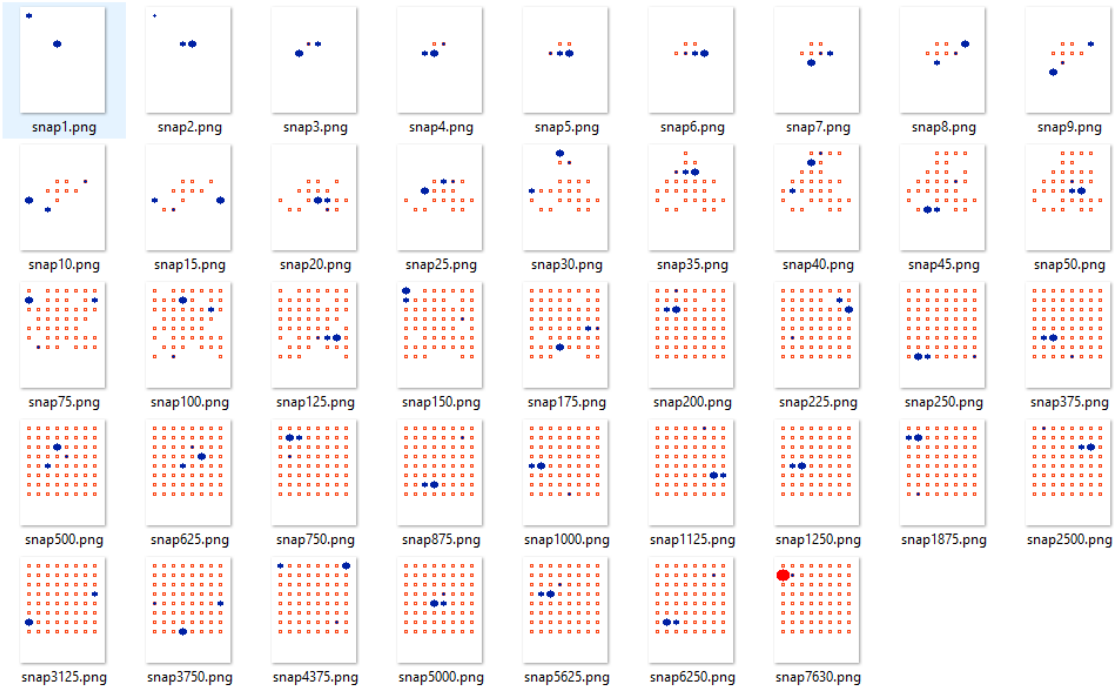
Line Topology for Pushsum



Full Network Topology for Push Sum



Grid Topology for Push Sum



Imperfect Grid Topology for Push Sum algorithm