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**What is working** :

1. Full – Gossip + push [ 7000 nodes both ]
2. Line – gossip + push [100000 nodes both ]
3. 3d – gossip + push [30000 nodes both]
4. Imp 3D - gossip + push [ 40000 nodes both]

Memory used by JVM ( sbt ) – Max ( 3536M)

Observation:

1. The mutable library used can not be relied upon and the various variable names if used multiple times in one concurrency model’s topography can lead to lot of confusion for the actors to resolve the value.
2. We need to increase the JVM memory size(for sbt) to run large number of nodes on a computer.

Graph showing gossip + full network

Graph showing gossip + line

Graph showing line + push

Full network + push

Gossip + 3d network

Push + 3d

Imp 3d + gossip

Imp 3d push sum:

References:

1. <http://www.scala-lang.org/api/current/index.html#scala.math.package>
2. <http://booksites.artima.com/actors_in_scala/examples/html/ch10.html>
3. <http://stackoverflow.com/questions/22951549/how-do-you-replace-actorfor>
4. <http://www.scala-lang.org/api/current/index.html#scala.util.Random>
5. [http://alvinalexander.com/](http://alvinalexander.com/scala/get-random-element-from-list-of-elements-scala)
6. <http://stackoverflow.com/questions/3868863/how-to-specify-jvm-maximum-heap-size-xmx-for-running-an-application-with-run>