Ping Pong Test

- k (time to compute the area of one rectangle) = 0.000000020180568
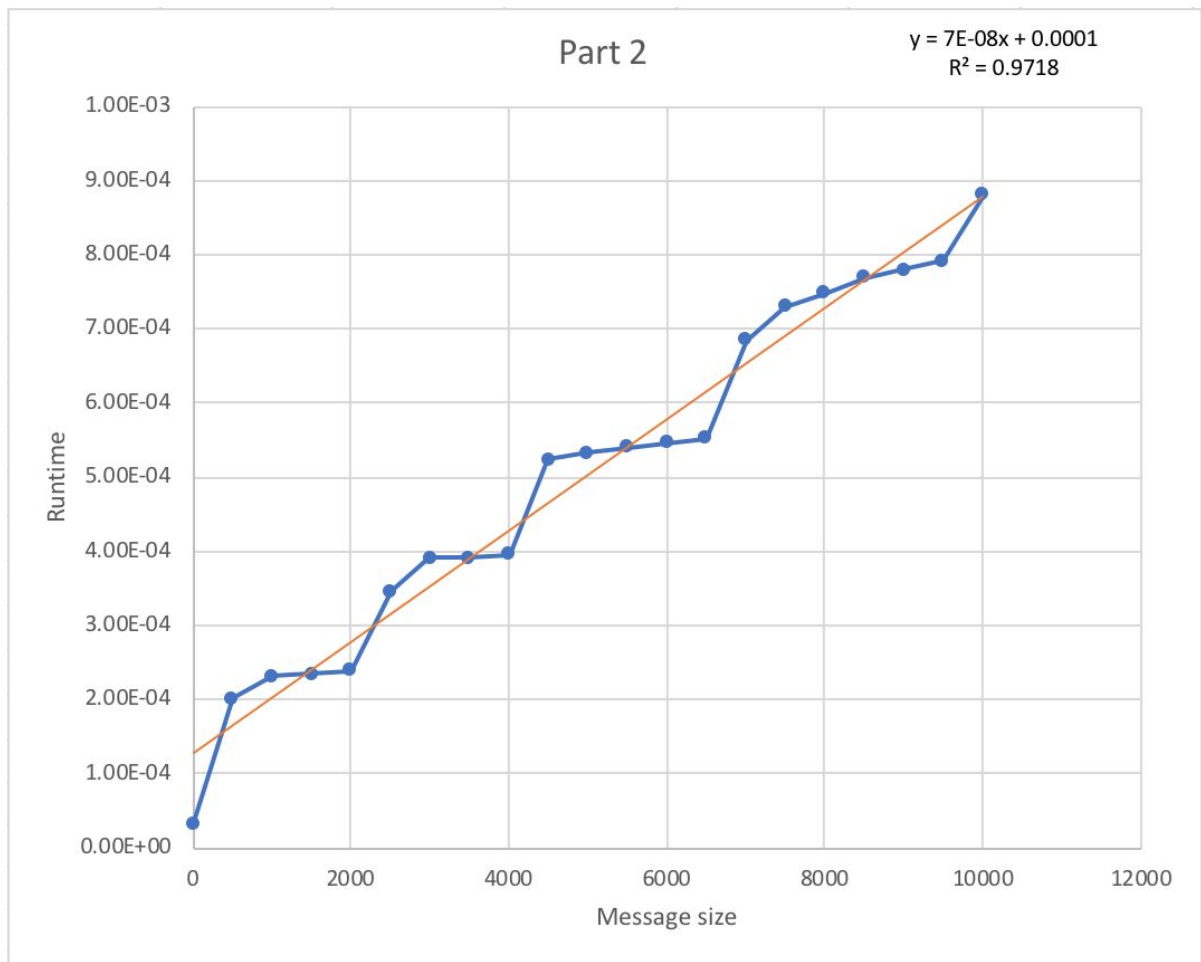   K = T1/N
    Where T1 is the serial runtime
    And N is the problem size (600,000,000)

- 2 tasks on separate nodes
  Data:
  Message size: 1 ----- Runtime is=0.0063979625701904
  Message size: 501 ----- Runtime is=0.0403659343719482
  Message size: 1001 ----- Runtime is=0.0462560653686523
  Message size: 1501 ----- Runtime is=0.0469610691070557
  Message size: 2001 ----- Runtime is=0.0479450225830078
  Message size: 2501 ----- Runtime is=0.0692818164825439
  Message size: 3001 ----- Runtime is=0.0781180858612061
  Message size: 3501 ----- Runtime is=0.0782999992370605
  Message size: 4001 ----- Runtime is=0.0790910720825195
  Message size: 4501 ----- Runtime is=0.1047229766845703
  Message size: 5001 ----- Runtime is=0.1066730022430420
  Message size: 5501 ----- Runtime is=0.1080889701843262
  Message size: 6001 ----- Runtime is=0.1091790199279785
  Message size: 6501 ----- Runtime is=0.1104919910430908
  Message size: 7001 ----- Runtime is=0.1368811130523682
  Message size: 7501 ----- Runtime is=0.1461608409881592
  Message size: 8001 ----- Runtime is=0.1495950222015381
  Message size: 8501 ----- Runtime is=0.1538698673248291
  Message size: 9001 ----- Runtime is=0.1560788154602051
  Message size: 9501 ----- Runtime is=0.1583859920501709
  Message size: 10001 ----- Runtime is=0.1759920120239258
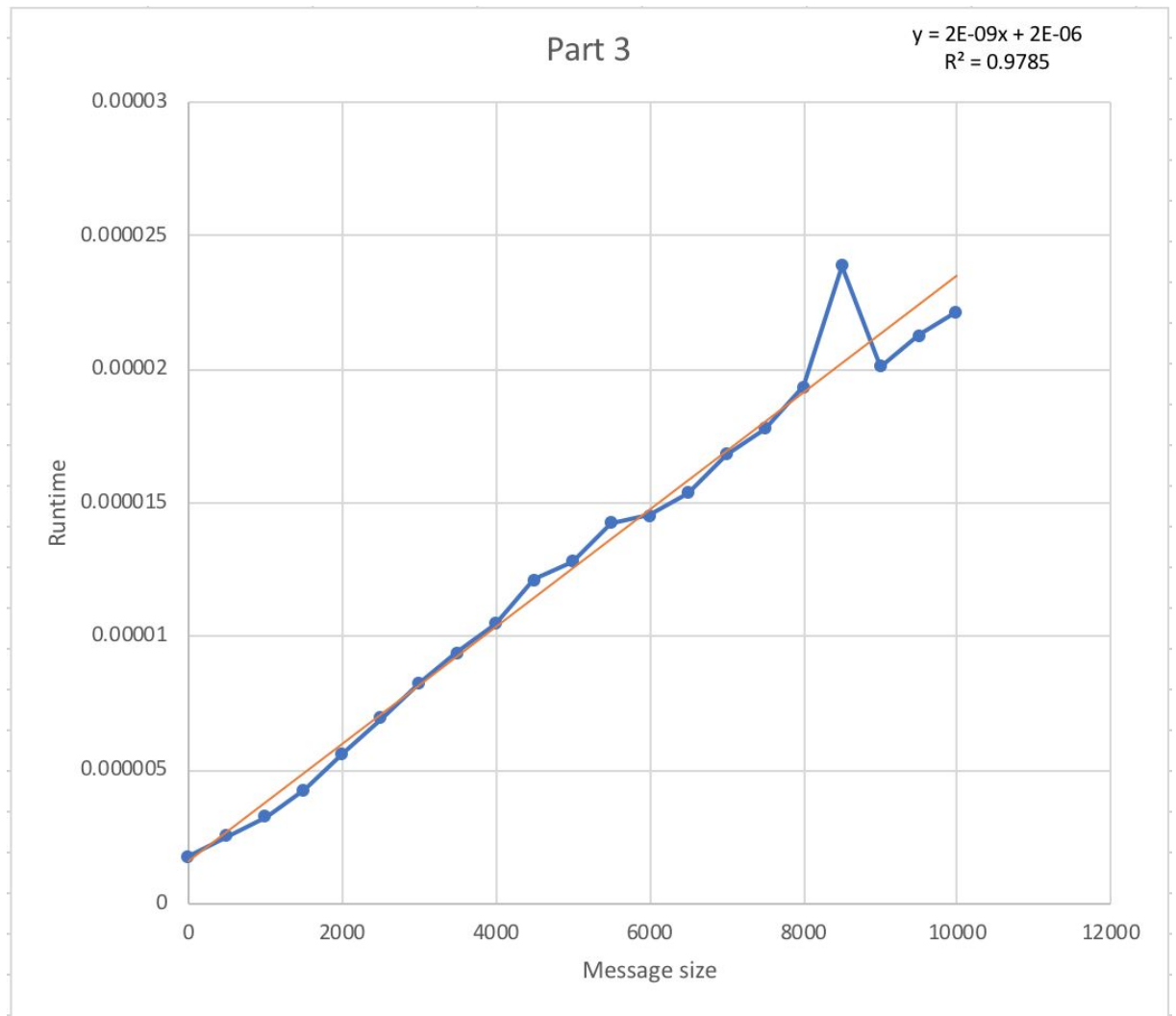
Best fit linear equation:

$y = 7E\text{-}08x + 0.0001$

$\mathbf{a} = 0.0001$ $\mathbf{b} = 7E\text{-}08$

- 2 tasks on same node:

Data:

Message size: 1 ----- Runtime is=0.0003569126129150
Message size: 501 ----- Runtime is=0.0005109310150146
Message size: 1001 ----- Runtime is=0.0006539821624756
Message size: 1501 ----- Runtime is=0.0008499622344971
Message size: 2001 ----- Runtime is=0.0011239051818848
Message size: 2501 ----- Runtime is=0.0013928413391113
Message size: 3001 ----- Runtime is=0.0016570091247559
Message size: 3501 ----- Runtime is=0.0018789768218994
Message size: 4001 ----- Runtime is=0.0020980834960938
Message size: 4501 ----- Runtime is=0.0024280548095703
Message size: 5001 ----- Runtime is=0.0025649070739746
Message size: 5501 ----- Runtime is=0.0028479099273682
Message size: 6001 ----- Runtime is=0.0029079914093018
Message size: 6501 ----- Runtime is=0.0030741691589355
Message size: 7001 ----- Runtime is=0.0033640861511230
Message size: 7501 ----- Runtime is=0.0035541057586670
Message size: 8001 ----- Runtime is=0.0038721561431885
Message size: 8501 ----- Runtime is=0.0047788619995117
Message size: 9001 ----- Runtime is=0.0040230751037598
Message size: 9501 ----- Runtime is=0.0042541027069092
Message size: 10001 ----- Runtime is=0.0044310092926025

Part 3

$y = 2E\text{-}09x + 2E\text{-}06$
$R^2 = 0.9785$

Best fit linear equation:
$y = 2E\text{-}09x + 2E\text{-}06$
a = 2E-06 **b** = 2E-09