

.dat File:

p	M/M/1/K(SIM)	M/D/1/K(SIM)	M/M/1/K(THE)
0.1	0.104418	0.1005	1.11111
0.2	0.0994883	0.1012	1.25
0.3	0.104666	0.1008	1.42857
0.4	0.101596	0.101	1.66667
0.5	0.101823	0.1007	2
0.6	0.102241	0.1007	2.5
0.7	0.0994303	0.101	3.33333
0.8	0.102313	0.1008	5
0.9	0.0994813	0.1007	10
1	0.0963413	0.1008	9.0072e+15
1.1	0.106073	0.1009	-10
1.2	0.104831	0.1008	-5

The values that should be shown in the .dat file for the simulations should resemble the theoretical values where as load factor is increased, the waiting time becomes worse and worse until the load factor reaches one or greater and the system becomes unstable. I would expect the deterministic simulation to have slightly lower waiting times on average since the constant packet length distribution would mean the service time of the router is also constant making its average queue length lower.

Plot:

