

M/M/1 Queue Simulation - Complete Results

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1 Complete Simulation Results

Sample Size	Load (ρ)	E[D]	E[N]	Theoretical E[N]	Time (s)
100	0.1	1.019	0.087	0.111	1172.609
100	0.2	1.162	0.209	0.250	572.795
100	0.3	1.633	0.414	0.429	394.374
100	0.4	1.809	0.788	0.667	229.565
100	0.5	2.258	1.289	1.000	178.831
100	0.6	1.699	1.085	1.500	157.756
100	0.7	4.685	3.925	2.333	121.814
100	0.8	2.911	2.288	4.000	127.722
100	0.9	2.476	2.380	9.000	104.349
1000	0.1	1.070	0.108	0.111	9937.135
1000	0.2	1.279	0.253	0.250	5061.409
1000	0.3	1.383	0.435	0.429	3184.990
1000	0.4	1.723	0.699	0.667	2463.844
1000	0.5	2.008	1.032	1.000	1945.782
1000	0.6	2.323	1.433	1.500	1620.583
1000	0.7	3.076	2.114	2.333	1460.163
1000	0.8	6.820	5.393	4.000	1266.016
1000	0.9	5.129	4.546	9.000	1130.537
5000	0.1	1.065	0.106	0.111	50287.644
5000	0.2	1.198	0.238	0.250	25181.184
5000	0.3	1.355	0.409	0.429	16571.372
5000	0.4	1.512	0.595	0.667	12702.776
5000	0.5	1.940	0.976	1.000	9945.507
5000	0.6	2.471	1.458	1.500	8476.467
5000	0.7	3.446	2.406	2.333	7173.696
5000	0.8	3.976	3.165	4.000	6281.952
5000	0.9	8.858	8.032	9.000	5515.006
10000	0.1	1.122	0.111	0.111	100967.601

Sample Size	Load (ρ)	E[D]	E[N]	Theoretical E[N]	Time (s)
10000	0.2	1.219	0.241	0.250	50567.834
10000	0.3	1.425	0.433	0.429	32922.563
10000	0.4	1.619	0.651	0.667	24891.159
10000	0.5	2.012	1.001	1.000	20100.383
10000	0.6	2.723	1.658	1.500	16423.761
10000	0.7	3.366	2.374	2.333	14179.150
10000	0.8	4.621	3.688	4.000	12535.923
10000	0.9	22.657	20.712	9.000	10939.156
50000	0.1	1.107	0.110	0.111	501667.166
50000	0.2	1.243	0.248	0.250	250516.311
50000	0.3	1.444	0.431	0.429	167354.246
50000	0.4	1.670	0.671	0.667	124492.485
50000	0.5	2.061	1.033	1.000	99766.157
50000	0.6	2.460	1.470	1.500	83637.248
50000	0.7	3.420	2.409	2.333	70993.107
50000	0.8	5.124	4.128	4.000	62076.408
50000	0.9	8.313	7.413	9.000	56068.417

Table 1: Complete M/M/1 Queue Simulation Results