

Tabla N_q en cola M/M/s según utilización (ρ) y cantidad de servidores (s)

p \ s	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.08	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.10	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.12	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.14	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.16	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.18	0.04	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.20	0.05	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.22	0.06	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.24	0.08	0.03	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.26	0.09	0.04	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.28	0.11	0.05	0.02	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.30	0.13	0.06	0.03	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.32	0.15	0.07	0.04	0.02	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.34	0.18	0.09	0.05	0.03	0.02	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.36	0.20	0.11	0.06	0.04	0.02	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.38	0.23	0.13	0.08	0.05	0.03	0.02	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00
0.40	0.27	0.15	0.09	0.06	0.04	0.03	0.02	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00
0.42	0.30	0.18	0.11	0.08	0.05	0.04	0.02	0.02	0.01	0.01	0.01	0.00	0.00	0.00	0.00
0.44	0.35	0.21	0.14	0.09	0.07	0.05	0.03	0.02	0.02	0.01	0.01	0.01	0.01	0.00	0.00
0.46	0.39	0.25	0.17	0.12	0.08	0.06	0.04	0.03	0.02	0.02	0.01	0.01	0.01	0.01	0.00
0.48	0.44	0.29	0.20	0.14	0.10	0.08	0.06	0.04	0.03	0.03	0.02	0.02	0.01	0.01	0.01
0.50	0.50	0.33	0.24	0.17	0.13	0.10	0.08	0.06	0.05	0.04	0.03	0.02	0.02	0.01	0.01
0.52	0.56	0.39	0.28	0.21	0.16	0.13	0.10	0.08	0.06	0.05	0.04	0.03	0.03	0.02	0.02
0.54	0.63	0.44	0.33	0.25	0.20	0.16	0.12	0.10	0.08	0.07	0.05	0.04	0.04	0.03	0.03
0.56	0.71	0.51	0.39	0.30	0.24	0.19	0.16	0.13	0.11	0.09	0.07	0.06	0.05	0.04	0.04
0.58	0.80	0.59	0.46	0.36	0.29	0.24	0.20	0.17	0.14	0.12	0.10	0.08	0.07	0.06	0.05
0.60	0.90	0.68	0.53	0.43	0.35	0.29	0.25	0.21	0.18	0.15	0.13	0.11	0.10	0.08	0.07
0.62	1.01	0.77	0.62	0.51	0.43	0.36	0.31	0.26	0.23	0.20	0.17	0.15	0.13	0.11	0.10
0.64	1.14	0.89	0.72	0.61	0.51	0.44	0.38	0.33	0.29	0.25	0.22	0.20	0.17	0.15	0.14
0.66	1.28	1.02	0.84	0.72	0.62	0.53	0.47	0.41	0.36	0.32	0.29	0.26	0.23	0.21	0.18
0.68	1.45	1.17	0.98	0.85	0.74	0.65	0.57	0.51	0.46	0.41	0.37	0.33	0.30	0.27	0.25
0.70	1.63	1.35	1.15	1.00	0.88	0.78	0.70	0.63	0.57	0.52	0.47	0.43	0.39	0.36	0.33
0.72	1.85	1.55	1.34	1.18	1.06	0.95	0.86	0.78	0.71	0.65	0.60	0.55	0.51	0.47	0.43
0.74	2.11	1.79	1.57	1.40	1.26	1.15	1.05	0.96	0.89	0.82	0.76	0.71	0.66	0.61	0.57
0.76	2.41	2.08	1.85	1.67	1.52	1.39	1.29	1.19	1.11	1.03	0.96	0.90	0.85	0.80	0.75
0.78	2.77	2.42	2.18	1.99	1.83	1.70	1.58	1.47	1.38	1.30	1.22	1.15	1.09	1.03	0.98
0.80	3.20	2.84	2.59	2.39	2.22	2.07	1.94	1.83	1.73	1.64	1.55	1.48	1.40	1.34	1.28
0.82	3.74	3.37	3.10	2.88	2.70	2.55	2.41	2.29	2.18	2.07	1.98	1.90	1.82	1.74	1.67
0.84	4.41	4.03	3.75	3.52	3.33	3.16	3.01	2.88	2.76	2.65	2.55	2.45	2.36	2.28	2.20
0.86	5.28	4.89	4.59	4.35	4.15	3.97	3.81	3.67	3.54	3.42	3.30	3.20	3.10	3.01	2.92
0.88	6.45	6.04	5.73	5.48	5.27	5.08	4.91	4.75	4.61	4.48	4.36	4.24	4.14	4.03	3.94
0.90	8.10	7.67	7.35	7.09	6.86	6.66	6.48	6.31	6.16	6.02	5.89	5.76	5.64	5.53	5.42
0.92	10.58	10.14	9.81	9.53	9.29	9.08	8.88	8.71	8.54	8.39	8.24	8.11	7.98	7.86	7.74
0.94	14.73	14.27	13.92	13.63	13.38	13.16	12.95	12.76	12.59	12.42	12.26	12.12	11.98	11.84	11.72
0.96	23.04	22.57	22.21	21.91	21.64	21.40	21.18	20.98	20.79	20.62	20.45	20.29	20.14	19.99	19.85
0.98	48.02	47.53	47.16	46.84	46.57	46.31	46.08	45.87	45.67	45.48	45.30	45.13	44.97	44.81	44.66

Tabla Probabilidad de Demora (P(delay)) en cola M/M/s según utilización (ρ) y cantidad de servidores (s)

$\rho \backslash s$	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
0.02	.0200	.0008	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
0.04	.0400	.0031	.0003	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
0.06	.0600	.0068	.0009	.0001	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
0.08	.0800	.0119	.0020	.0003	.0001	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
0.10	.1000	.0182	.0037	.0008	.0002	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
0.12	.1200	.0257	.0062	.0016	.0004	.0001	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
0.14	.1400	.0344	.0094	.0027	.0008	.0002	.0001	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
0.16	.1600	.0441	.0136	.0044	.0015	.0005	.0002	.0001	.0000	.0000	.0000	.0000	.0000	.0000	.0000
0.18	.1800	.0549	.0186	.0066	.0024	.0009	.0003	.0001	.0001	.0000	.0000	.0000	.0000	.0000	.0000
0.20	.2000	.0667	.0247	.0096	.0038	.0016	.0006	.0003	.0001	.0000	.0000	.0000	.0000	.0000	.0000
0.22	.2200	.0793	.0317	.0133	.0057	.0025	.0011	.0005	.0002	.0001	.0000	.0000	.0000	.0000	.0000
0.24	.2400	.0929	.0397	.0178	.0082	.0039	.0018	.0009	.0004	.0002	.0001	.0001	.0000	.0000	.0000
0.26	.2600	.1073	.0488	.0232	.0114	.0057	.0029	.0015	.0008	.0004	.0002	.0001	.0001	.0000	.0000
0.28	.2800	.1225	.0589	.0296	.0153	.0081	.0043	.0023	.0013	.0007	.0004	.0002	.0001	.0001	.0000
0.30	.3000	.1385	.0700	.0370	.0201	.0111	.0062	.0035	.0020	.0012	.0007	.0004	.0002	.0001	.0001
0.32	.3200	.1552	.0822	.0455	.0259	.0150	.0088	.0052	.0031	.0019	.0011	.0007	.0004	.0003	.0002
0.34	.3400	.1725	.0954	.0551	.0326	.0197	.0120	.0074	.0046	.0029	.0018	.0011	.0007	.0005	.0003
0.36	.3600	.1906	.1097	.0658	.0405	.0254	.0161	.0103	.0066	.0043	.0028	.0018	.0012	.0008	.0005
0.38	.3800	.2093	.1249	.0777	.0495	.0321	.0211	.0139	.0093	.0062	.0042	.0028	.0019	.0013	.0009
0.40	.4000	.2286	.1412	.0907	.0597	.0400	.0271	.0185	.0127	.0088	.0061	.0043	.0030	.0021	.0015
0.42	.4200	.2485	.1584	.1049	.0712	.0490	.0342	.0241	.0171	.0122	.0087	.0063	.0045	.0033	.0024
0.44	.4400	.2689	.1766	.1204	.0839	.0595	.0426	.0308	.0224	.0164	.0121	.0089	.0066	.0049	.0036
0.46	.4600	.2899	.1958	.1370	.0980	.0712	.0523	.0388	.0289	.0217	.0164	.0124	.0094	.0072	.0055
0.48	.4800	.3114	.2159	.1549	.1135	.0844	.0635	.0482	.0368	.0282	.0218	.0168	.0131	.0102	.0079
0.50	.5000	.3333	.2368	.1739	.1304	.0991	.0762	.0590	.0460	.0361	.0284	.0225	.0178	.0142	.0113
0.52	.5200	.3558	.2587	.1942	.1487	.1154	.0905	.0715	.0569	.0455	.0365	.0295	.0238	.0193	.0157
0.54	.5400	.3787	.2815	.2156	.1684	.1332	.1065	.0857	.0695	.0566	.0463	.0380	.0313	.0258	.0213
0.56	.5600	.4021	.3051	.2383	.1895	.1527	.1242	.1018	.0839	.0695	.0578	.0482	.0404	.0339	.0285
0.58	.5800	.4258	.3295	.2621	.2121	.1738	.1437	.1197	.1002	.0843	.0712	.0604	.0513	.0438	.0374
0.60	.6000	.4500	.3547	.2870	.2362	.1966	.1651	.1395	.1186	.1013	.0868	.0747	.0644	.0557	.0482
0.62	.6200	.4746	.3808	.3132	.2616	.2210	.1883	.1615	.1392	.1205	.1047	.0913	.0798	.0699	.0613
0.64	.6400	.4995	.4076	.3404	.2886	.2472	.2135	.1855	.1620	.1420	.1250	.1103	.0976	.0866	.0769
0.66	.6600	.5248	.4351	.3687	.3169	.2751	.2406	.2116	.1871	.1660	.1478	.1320	.1182	.1060	.0953
0.68	.6800	.5505	.4634	.3982	.3467	.3047	.2697	.2400	.2146	.1926	.1733	.1565	.1416	.1284	.1166
0.70	.7000	.5765	.4923	.4287	.3778	.3360	.3007	.2706	.2445	.2217	.2017	.1839	.1681	.1539	.1412
0.72	.7200	.6028	.5220	.4602	.4104	.3690	.3338	.3034	.2770	.2536	.2329	.2144	.1977	.1827	.1691
0.74	.7400	.6294	.5523	.4928	.4443	.4037	.3689	.3386	.3119	.2882	.2671	.2480	.2307	.2151	.2008
0.76	.7600	.6564	.5833	.5263	.4796	.4400	.4059	.3760	.3494	.3257	.3043	.2849	.2672	.2511	.2362
0.78	.7800	.6836	.6150	.5609	.5162	.4781	.4449	.4157	.3895	.3660	.3446	.3252	.3073	.2908	.2756
0.80	.8000	.7111	.6472	.5964	.5541	.5178	.4859	.4576	.4322	.4092	.3881	.3688	.3510	.3345	.3192
0.82	.8200	.7389	.6800	.6329	.5933	.5591	.5289	.5019	.4775	.4553	.4348	.4160	.3985	.3822	.3670
0.84	.8400	.7670	.7135	.6703	.6338	.6020	.5738	.5485	.5254	.5043	.4848	.4667	.4498	.4340	.4192
0.86	.8600	.7953	.7474	.7086	.6755	.6465	.6206	.5972	.5759	.5562	.5379	.5209	.5049	.4900	.4758
0.88	.8800	.8238	.7820	.7477	.7184	.6925	.6694	.6483	.6289	.6110	.5943	.5787	.5640	.5501	.5369
0.90	.9000	.8526	.8171	.7878	.7625	.7401	.7200	.7015	.6845	.6687	.6539	.6400	.6269	.6145	.6026
0.92	.9200	.8817	.8527	.8286	.8078	.7892	.7724	.7570	.7427	.7293	.7168	.7050	.6938	.6831	.6729
0.94	.9400	.9109	.8888	.8703	.8542	.8398	.8267	.8146	.8033	.7928	.7829	.7735	.7645	.7560	.7478
0.96	.9600	.9404	.9254	.9128	.9017	.8918	.8827	.8743	.8665	.8591	.8521	.8455	.8391	.8331	.8273
0.98	.9800	.9701	.9625	.9560	.9503	.9452	.9405	.9361	.9320	.9282	.9245	.9210	.9177	.9144	.9114