

## FAILED QUERIES

### Baseline

benchmark	query	mean_duration	std_dev
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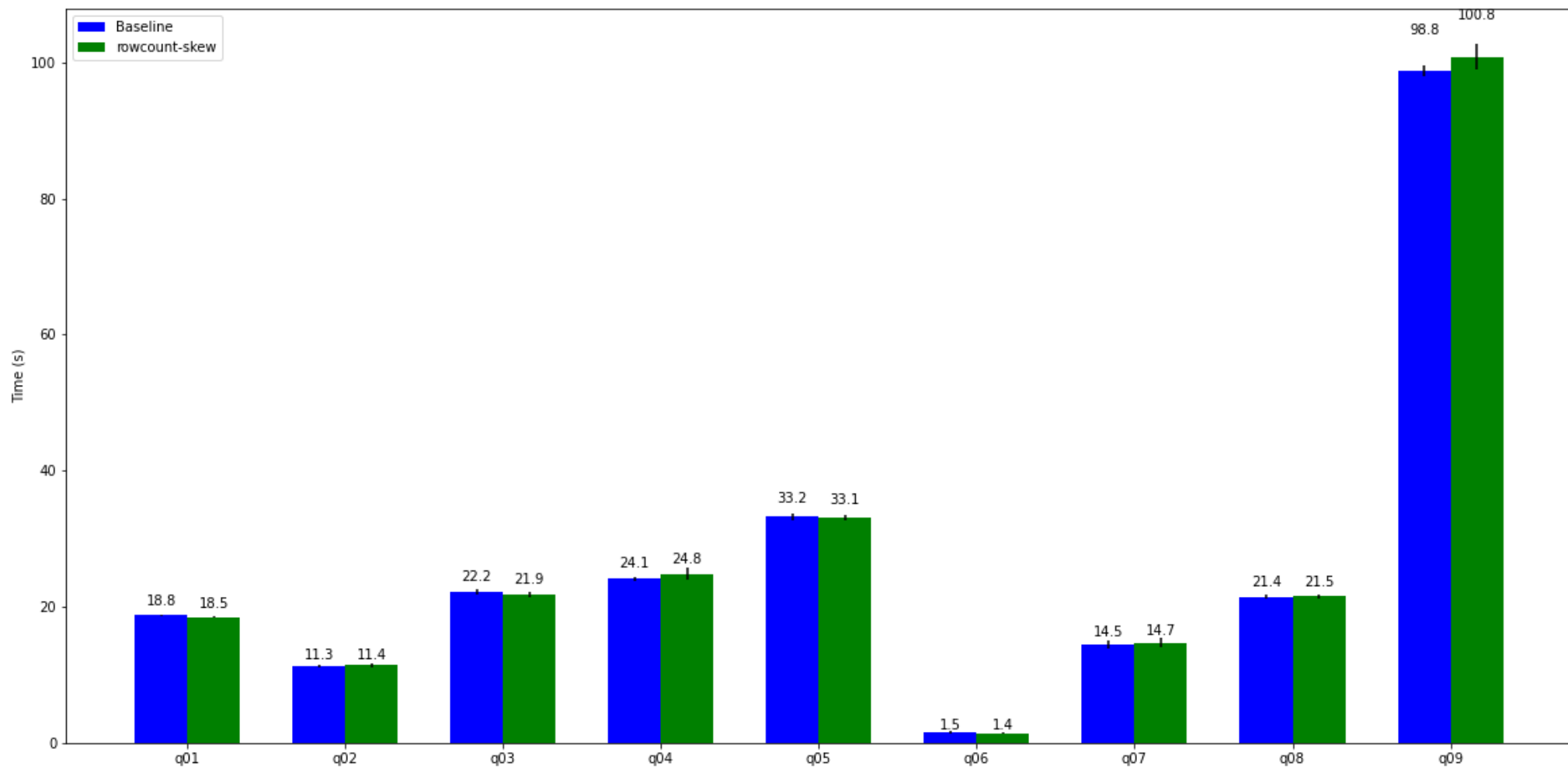
### rowcount-skew

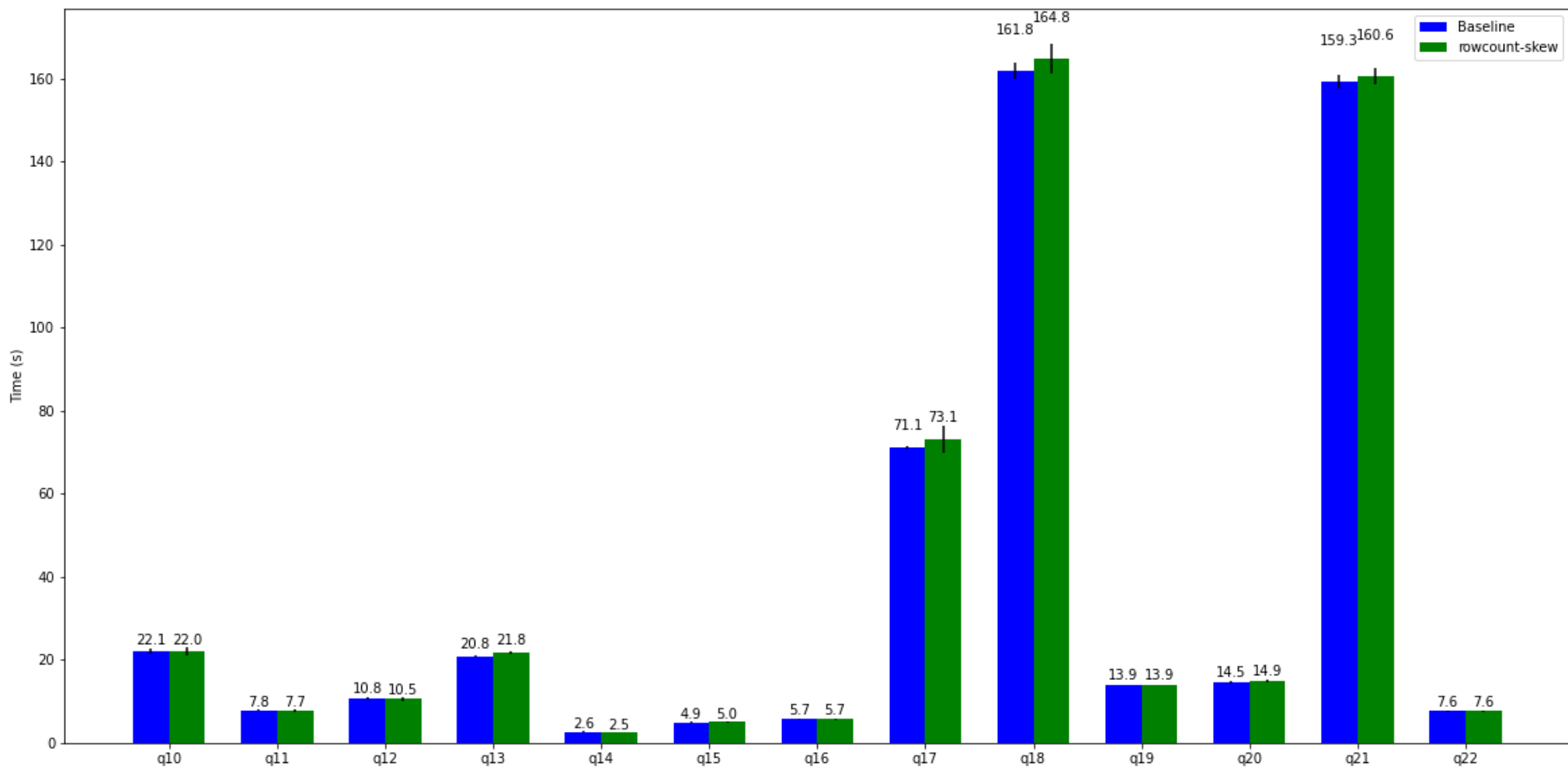
benchmark	query	mean_duration	std_dev
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## SUMMARY

	label	TPCH wall time	TPC-DS wall time	TPCH CPU time	TPC-DS CPU time	TPCH physicalInputDataSize	TPC-DS physicalInputDataSize
0	Baseline	748.935667	1058.686167	98673.400000	122324.400000	833.237 GiB	1.008 TiB
1	rowcount-skew	758.272500	1060.359167	99132.400000	120771.315000	833.207 GiB	1.009 TiB

## TPC-H Comparison (DURATION)

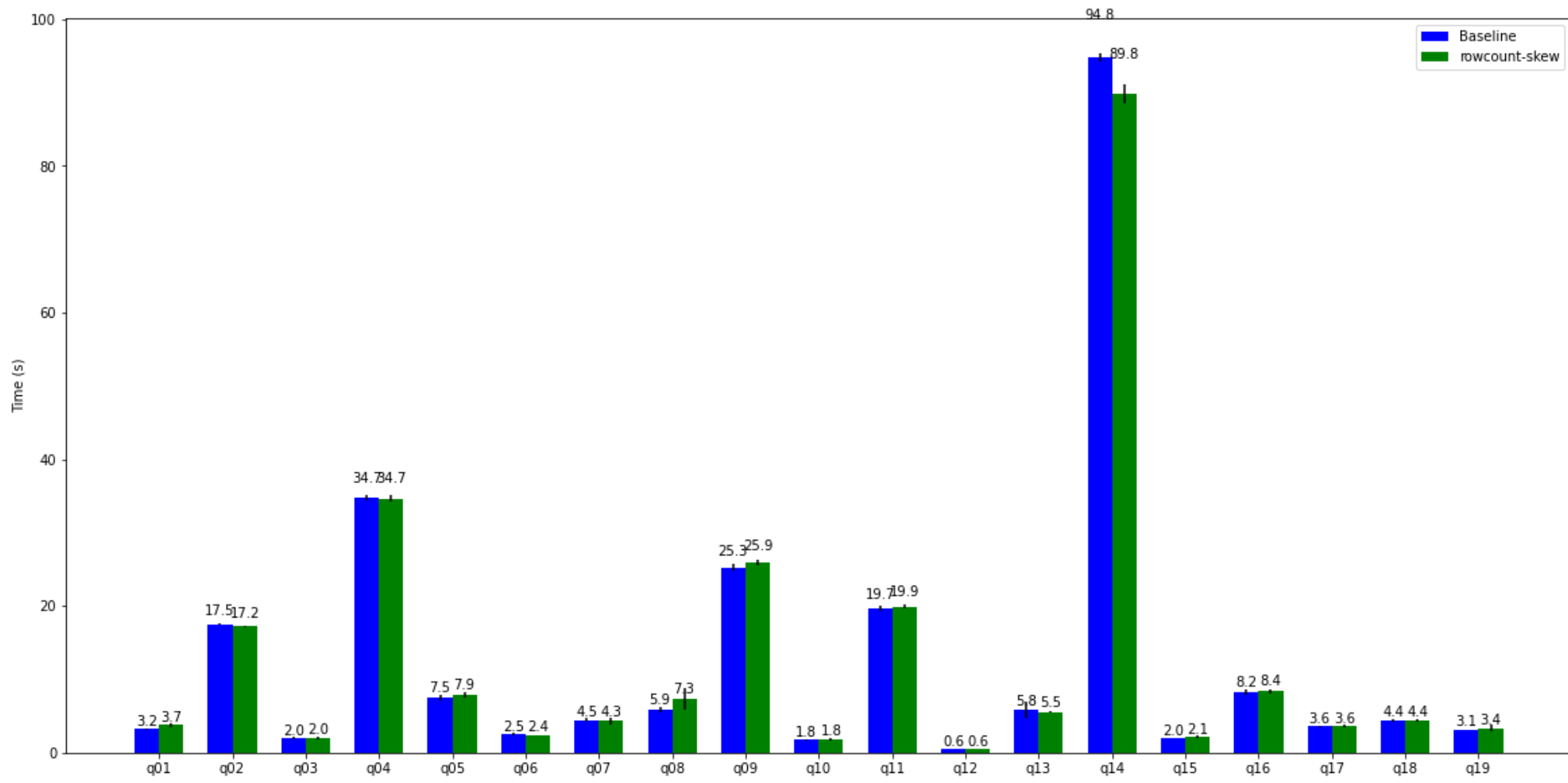


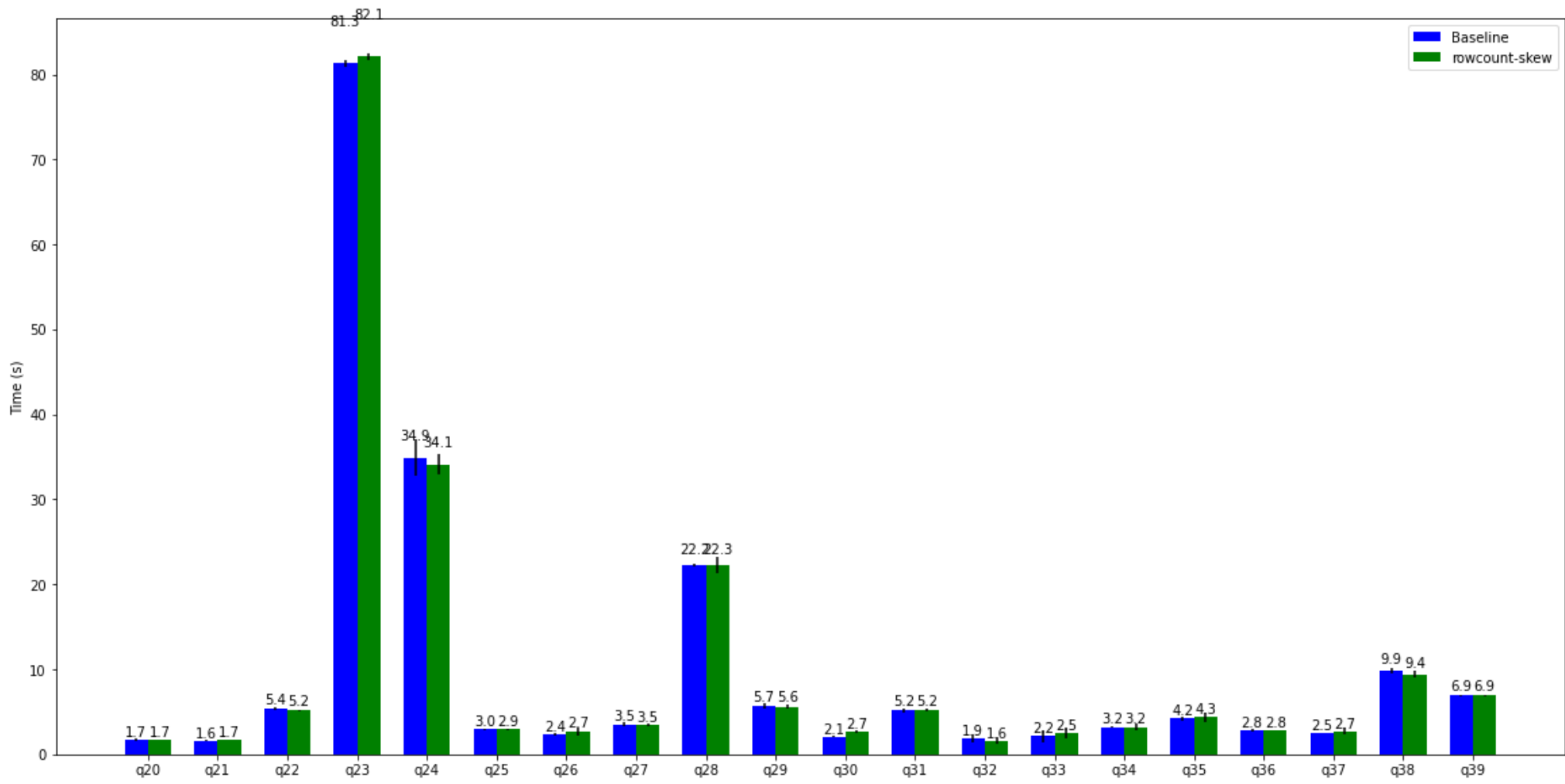


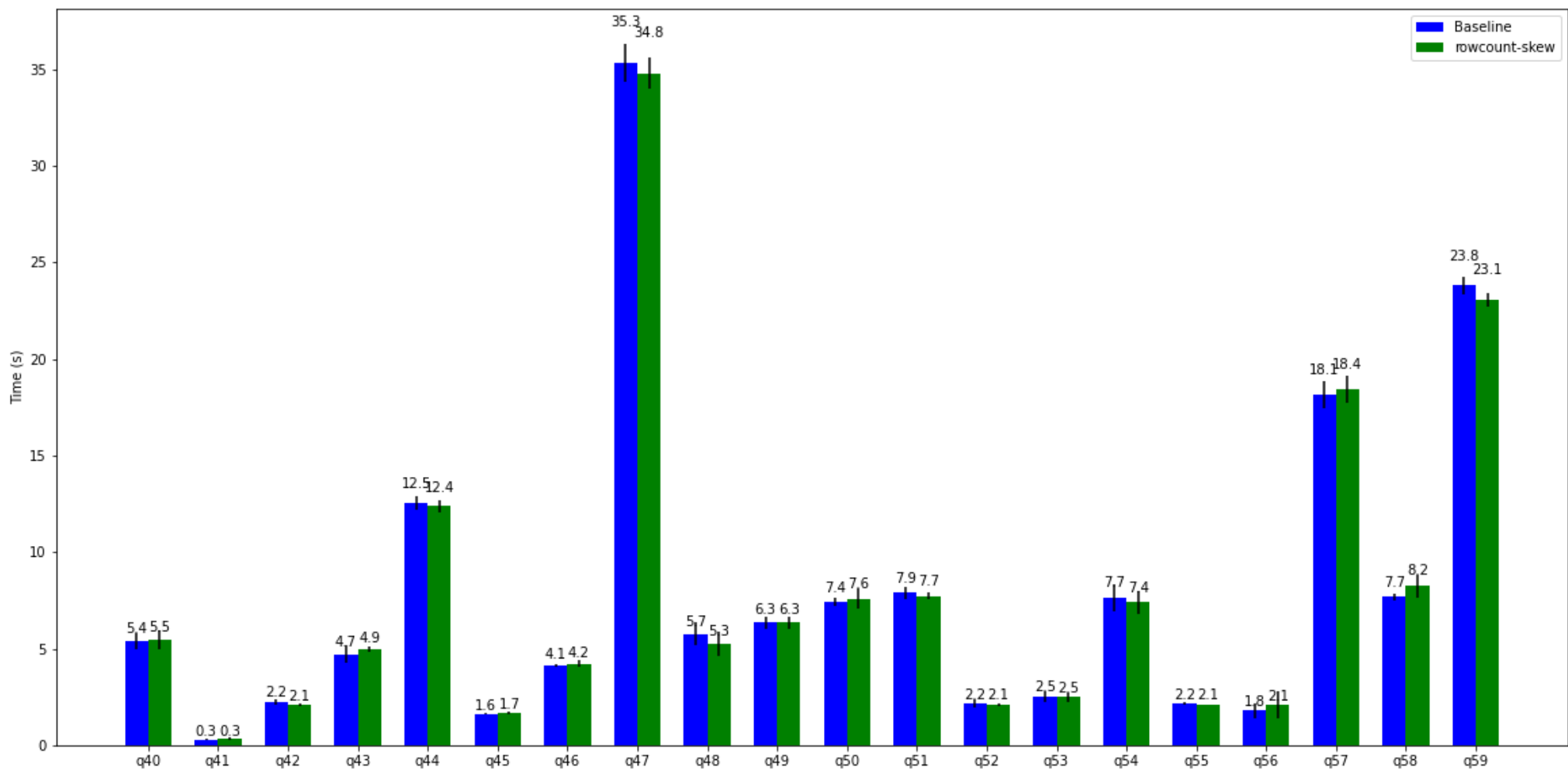
	query	Baseline mean	Baseline std.dev	rowcount-skew mean	rowcount-skew std.dev
0	presto/tpch: q01	18.769000	0.059005	18.489167	0.142144
1	presto/tpch: q02	11.314667	0.163817	11.392833	0.269941
2	presto/tpch: q03	22.174500	0.469106	21.858500	0.400373
3	presto/tpch: q04	24.115667	0.294908	24.771000	0.886326
4	presto/tpch: q05	33.241833	0.469018	33.109500	0.317896
5	presto/tpch: q06	1.515333	0.203781	1.436000	0.144133
6	presto/tpch: q07	14.505167	0.612112	14.687167	0.697652
7	presto/tpch: q08	21.436667	0.267673	21.530167	0.297504
8	presto/tpch: q09	98.847833	0.798060	100.835333	1.890219

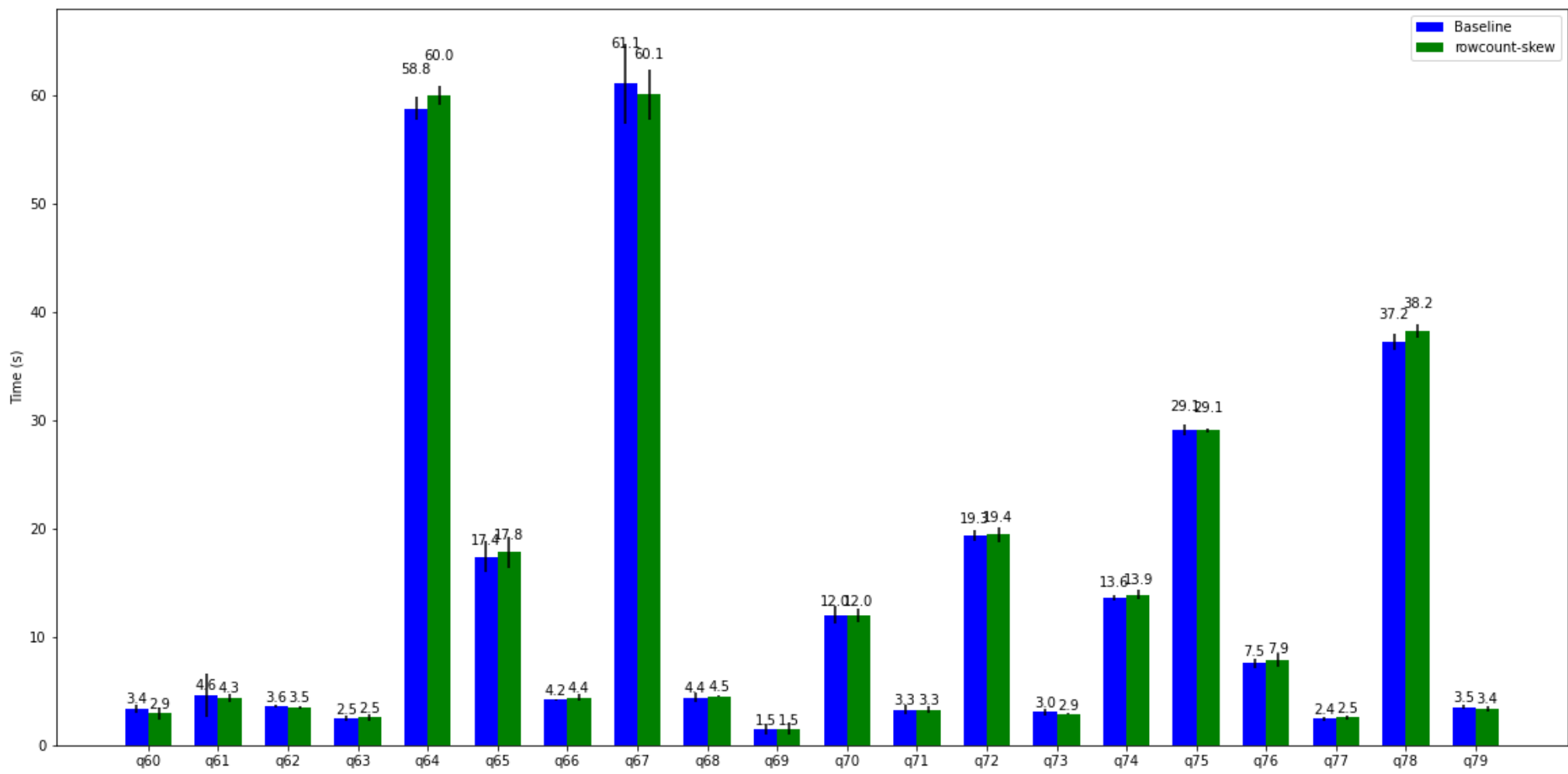
	query	Baseline mean	Baseline std.dev	rowcount-skew mean	rowcount-skew std.dev
<b>9</b>	presto/tpch: q10	22.070667	0.701115	22.046167	0.848066
<b>10</b>	presto/tpch: q11	7.789333	0.159145	7.732667	0.175204
<b>11</b>	presto/tpch: q12	10.766500	0.293851	10.501833	0.605851
<b>12</b>	presto/tpch: q13	20.837833	0.223730	21.805167	0.292715
<b>13</b>	presto/tpch: q14	2.640500	0.082150	2.466333	0.089688
<b>14</b>	presto/tpch: q15	4.925000	0.100554	5.004167	0.130570
<b>15</b>	presto/tpch: q16	5.715667	0.222183	5.717000	0.147074
<b>16</b>	presto/tpch: q17	71.102167	0.329567	73.085000	3.132862
<b>17</b>	presto/tpch: q18	161.796667	2.044693	164.775833	3.536814
<b>18</b>	presto/tpch: q19	13.947333	0.059308	13.902833	0.141010
<b>19</b>	presto/tpch: q20	14.514333	0.304505	14.894333	0.225352
<b>20</b>	presto/tpch: q21	159.271333	1.750148	160.643167	1.976118
<b>21</b>	presto/tpch: q22	7.637667	0.250176	7.588333	0.205140

## TPC-DS Comparison (DURATION)

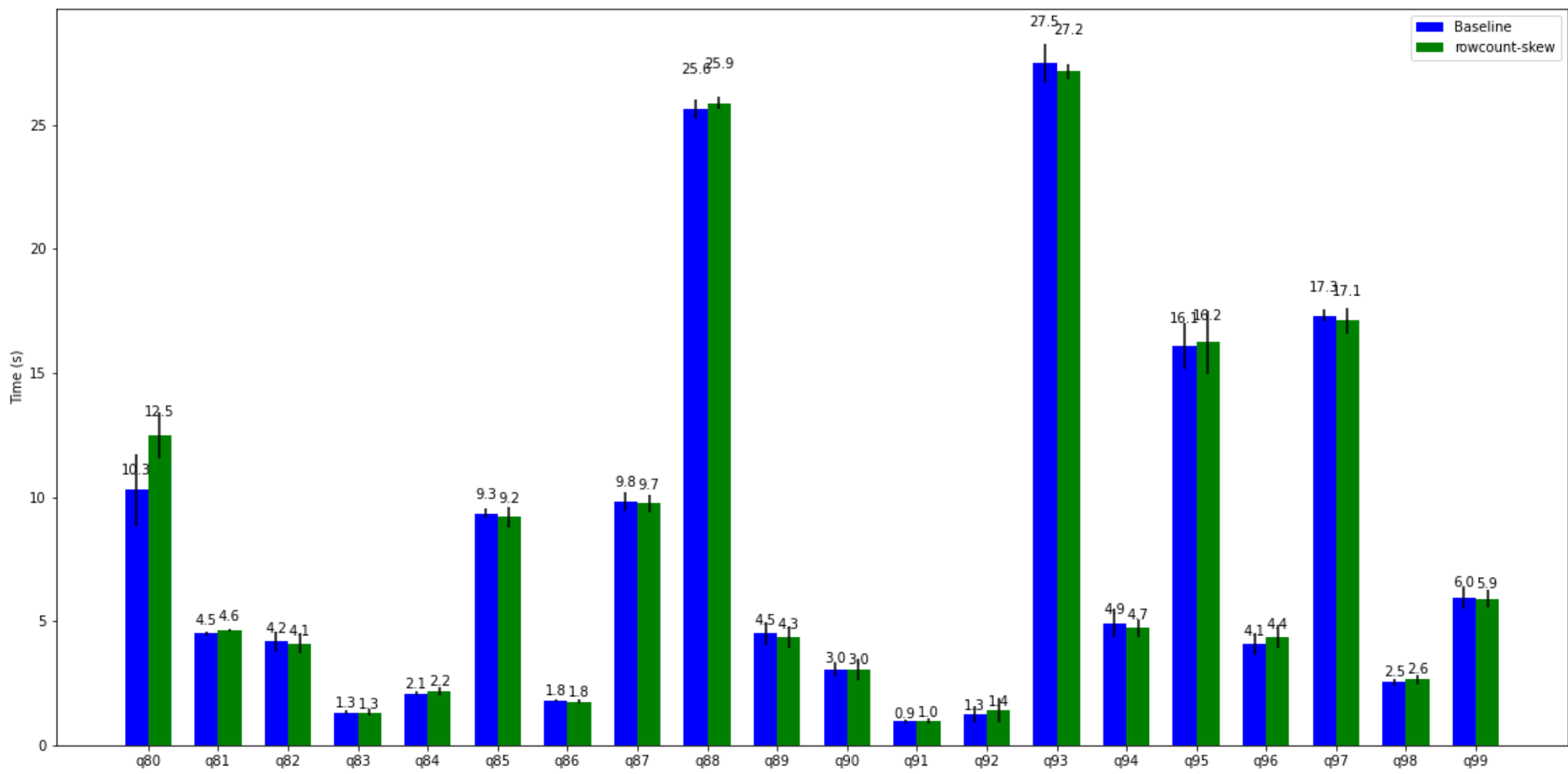


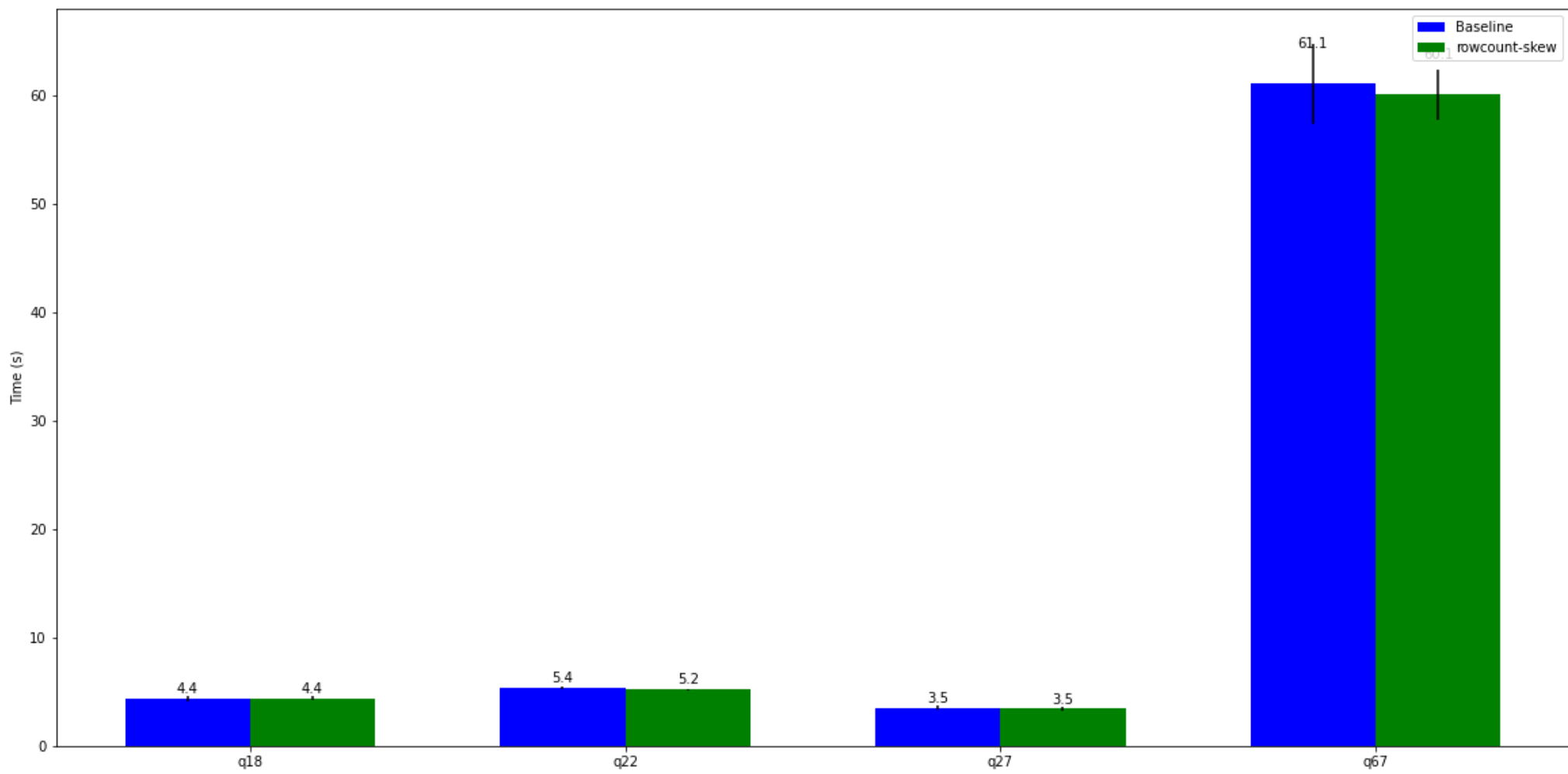












	query	Baseline mean	Baseline std.dev	rowcount-skew mean	rowcount-skew std.dev
0	presto/tpcds: q01	3.221500	0.123401	3.740500	0.251616
1	presto/tpcds: q02	17.549000	0.159110	17.234500	0.114420
2	presto/tpcds: q03	1.973667	0.169944	2.031000	0.186685
3	presto/tpcds: q04	34.736000	0.343608	34.673833	0.485794
4	presto/tpcds: q05	7.488333	0.367107	7.879000	0.339456
5	presto/tpcds: q06	2.463167	0.170382	2.362833	0.049644
6	presto/tpcds: q07	4.456333	0.318292	4.316333	0.438595
7	presto/tpcds: q08	5.912667	0.362074	7.287833	1.492823
8	presto/tpcds: q09	25.283167	0.539827	25.909833	0.302982

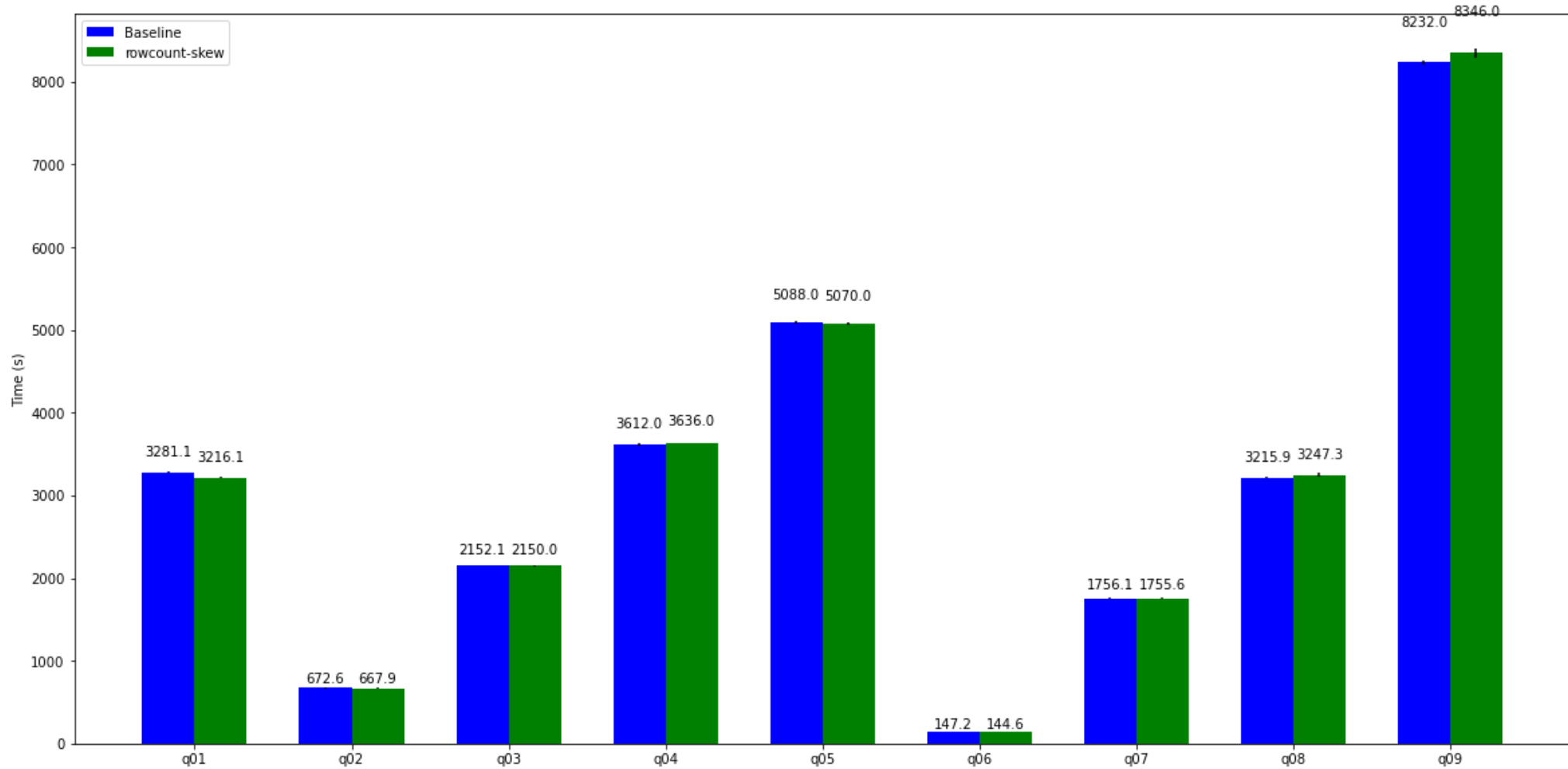
	query	Baseline mean	Baseline std.dev	rowcount-skew mean	rowcount-skew std.dev
9	presto/tpcds: q10	1.756500	0.132591	1.845000	0.206155
10	presto/tpcds: q11	19.704833	0.390092	19.929833	0.351537
11	presto/tpcds: q12	0.554167	0.041806	0.586000	0.019728
12	presto/tpcds: q13	5.832000	1.122889	5.535333	0.135544
13	presto/tpcds: q14	94.837833	0.504628	89.801167	1.234886
14	presto/tpcds: q15	1.972500	0.051613	2.107500	0.181253
15	presto/tpcds: q16	8.194667	0.380434	8.415667	0.288560
16	presto/tpcds: q17	3.564333	0.037612	3.578333	0.163327
17	presto/tpcds: q18	4.372167	0.219015	4.384833	0.202980
18	presto/tpcds: q19	3.138167	0.047419	3.358000	0.493609
19	presto/tpcds: q20	1.712500	0.115498	1.674333	0.015591
20	presto/tpcds: q21	1.621500	0.019285	1.687167	0.012189
21	presto/tpcds: q22	5.381333	0.095225	5.183500	0.043344
22	presto/tpcds: q23	81.302000	0.419836	82.090667	0.369723
23	presto/tpcds: q24	34.871667	2.152440	34.116333	1.202990
24	presto/tpcds: q25	2.953167	0.074233	2.947667	0.119756
25	presto/tpcds: q26	2.390333	0.185091	2.736000	0.469692
26	presto/tpcds: q27	3.521667	0.216202	3.463333	0.188569
27	presto/tpcds: q28	22.228667	0.158713	22.272500	0.960913
28	presto/tpcds: q29	5.739000	0.283294	5.610667	0.222210
29	presto/tpcds: q30	2.068667	0.071935	2.678500	0.086401
30	presto/tpcds: q31	5.160667	0.218838	5.161333	0.161252
31	presto/tpcds: q32	1.906500	0.481105	1.624333	0.429891
32	presto/tpcds: q33	2.173333	0.693383	2.460333	0.635611
33	presto/tpcds: q34	3.181500	0.064634	3.232000	0.391716
34	presto/tpcds: q35	4.220333	0.256923	4.349000	0.528669
35	presto/tpcds: q36	2.815167	0.180543	2.820000	0.029017
36	presto/tpcds: q37	2.513500	0.040426	2.700667	0.389191

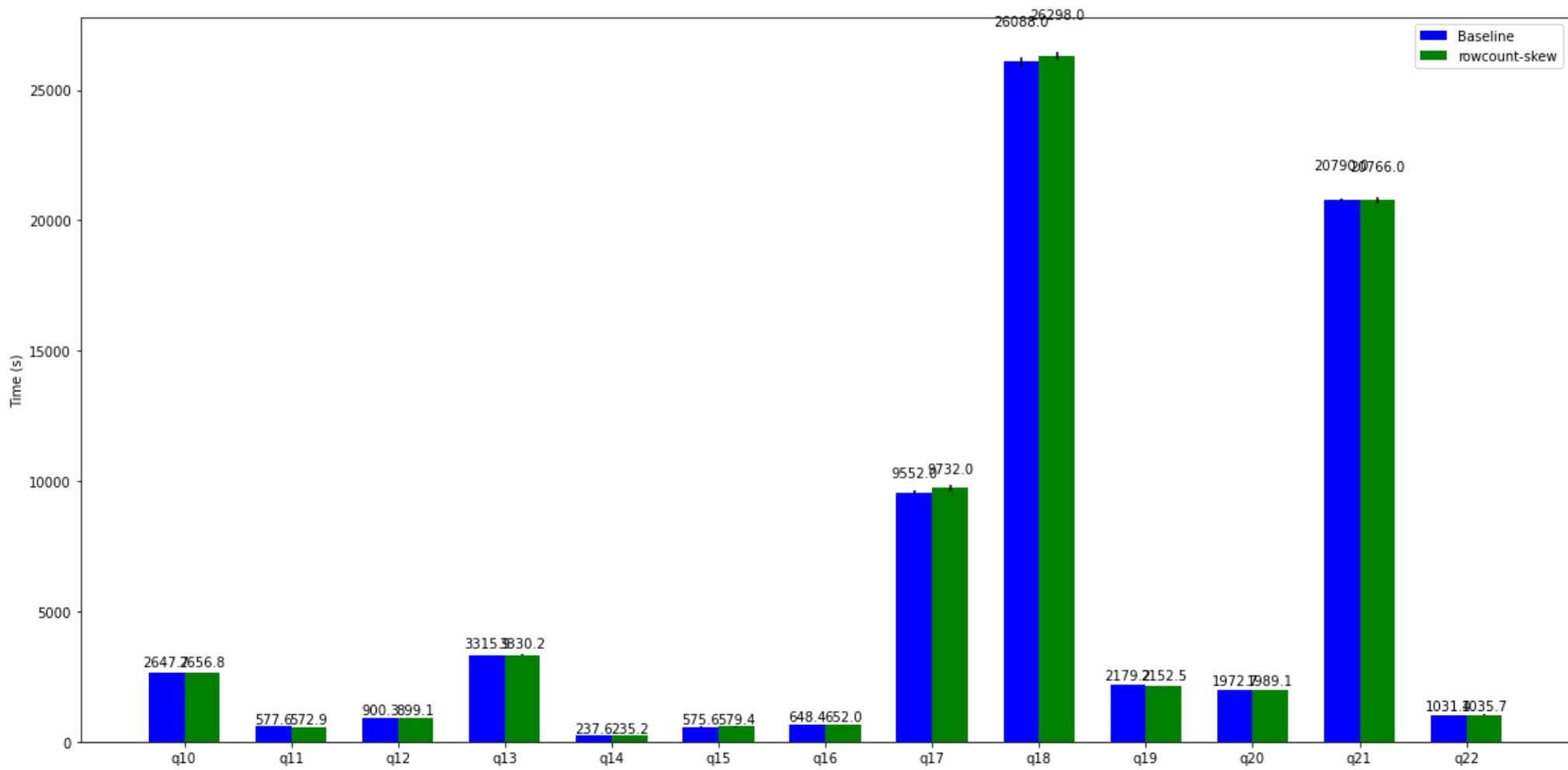
	query	Baseline mean	Baseline std.dev	rowcount-skew mean	rowcount-skew std.dev
37	presto/tpcds: q38	9.851833	0.315345	9.437500	0.336066
38	presto/tpcds: q39	6.922000	0.028657	6.944500	0.094291
39	presto/tpcds: q40	5.386167	0.394216	5.462333	0.467258
40	presto/tpcds: q41	0.290500	0.013487	0.335333	0.045920
41	presto/tpcds: q42	2.232000	0.169786	2.085167	0.049994
42	presto/tpcds: q43	4.707833	0.457451	4.934833	0.141627
43	presto/tpcds: q44	12.536833	0.327620	12.377833	0.307595
44	presto/tpcds: q45	1.618167	0.047225	1.662500	0.047652
45	presto/tpcds: q46	4.134833	0.050133	4.219333	0.160033
46	presto/tpcds: q47	35.334000	0.988297	34.796833	0.800521
47	presto/tpcds: q48	5.742500	0.595490	5.280000	0.631426
48	presto/tpcds: q49	6.342333	0.288701	6.348500	0.321827
49	presto/tpcds: q50	7.433000	0.191256	7.589000	0.545355
50	presto/tpcds: q51	7.881500	0.299810	7.725000	0.178355
51	presto/tpcds: q52	2.156167	0.222582	2.101167	0.048791
52	presto/tpcds: q53	2.510833	0.256285	2.479833	0.228103
53	presto/tpcds: q54	7.653167	0.696163	7.389000	0.599809
54	presto/tpcds: q55	2.155833	0.098607	2.097667	0.026568
55	presto/tpcds: q56	1.779167	0.391406	2.090833	0.691044
56	presto/tpcds: q57	18.135667	0.708705	18.436000	0.698180
57	presto/tpcds: q58	7.676500	0.159600	8.248833	0.589411
58	presto/tpcds: q59	23.805000	0.473808	23.076167	0.358786
59	presto/tpcds: q60	3.400667	0.382861	2.934333	0.567047
60	presto/tpcds: q61	4.602667	1.982554	4.325000	0.370178
61	presto/tpcds: q62	3.593333	0.108068	3.499667	0.136122
62	presto/tpcds: q63	2.522833	0.249534	2.543000	0.285897
63	presto/tpcds: q64	58.785000	1.104807	59.970000	0.877960
64	presto/tpcds: q65	17.383167	1.410362	17.808000	1.435074

	query	Baseline mean	Baseline std.dev	rowcount-skew mean	rowcount-skew std.dev
65	presto/tpcds: q66	4.178167	0.109806	4.406333	0.307130
66	presto/tpcds: q67	61.061500	3.668890	60.095500	2.328820
67	presto/tpcds: q68	4.389167	0.403692	4.535667	0.119631
68	presto/tpcds: q69	1.480833	0.477438	1.517167	0.602602
69	presto/tpcds: q70	12.014000	0.786319	11.981333	0.628521
70	presto/tpcds: q71	3.255833	0.458969	3.257000	0.281911
71	presto/tpcds: q72	19.311333	0.507419	19.440667	0.685857
72	presto/tpcds: q73	3.044500	0.311532	2.883833	0.051234
73	presto/tpcds: q74	13.627333	0.217857	13.900167	0.458843
74	presto/tpcds: q75	29.107333	0.476249	29.074500	0.190804
75	presto/tpcds: q76	7.541667	0.405932	7.852333	0.649338
76	presto/tpcds: q77	2.425500	0.148952	2.546167	0.140835
77	presto/tpcds: q78	37.236667	0.781143	38.240167	0.573533
78	presto/tpcds: q79	3.524000	0.186823	3.384667	0.259023
79	presto/tpcds: q80	10.291667	1.445344	12.508167	0.919855
80	presto/tpcds: q81	4.500333	0.100412	4.646333	0.050796
81	presto/tpcds: q82	4.179667	0.414318	4.106167	0.411668
82	presto/tpcds: q83	1.324000	0.099645	1.310500	0.125430
83	presto/tpcds: q84	2.076833	0.071017	2.172667	0.136936
84	presto/tpcds: q85	9.340167	0.182140	9.197000	0.398632
85	presto/tpcds: q86	1.784833	0.064750	1.762167	0.075494
86	presto/tpcds: q87	9.822833	0.362632	9.734167	0.357717
87	presto/tpcds: q88	25.649500	0.366195	25.891333	0.238688
88	presto/tpcds: q89	4.507333	0.467912	4.348167	0.453794
89	presto/tpcds: q90	3.048500	0.253499	3.028833	0.436421
90	presto/tpcds: q91	0.945167	0.099692	0.975000	0.099205
91	presto/tpcds: q92	1.262000	0.319549	1.405833	0.468035
92	presto/tpcds: q93	27.486667	0.775619	27.167167	0.302270

	query	Baseline mean	Baseline std.dev	rowcount-skew mean	rowcount-skew std.dev
93	presto/tpcds: q94	4.925167	0.582195	4.712333	0.351877
94	presto/tpcds: q95	16.107000	0.929798	16.236500	1.287804
95	presto/tpcds: q96	4.086000	0.427350	4.374500	0.463846
96	presto/tpcds: q97	17.304833	0.248618	17.125333	0.513769
97	presto/tpcds: q98	2.537667	0.130872	2.646833	0.196306
98	presto/tpcds: q99	5.962167	0.437622	5.910833	0.335786

## TPC-H Comparison (CPU)



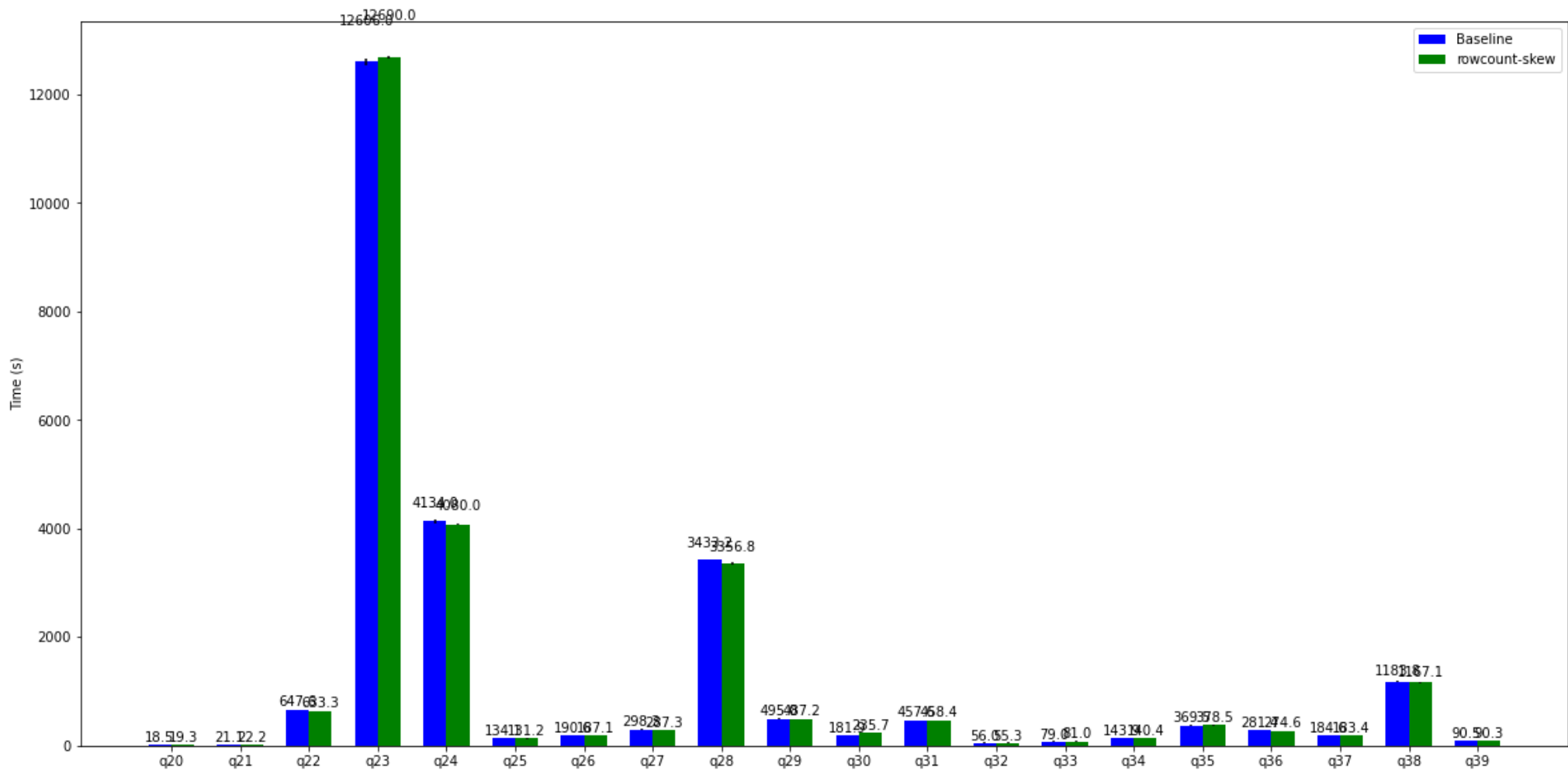


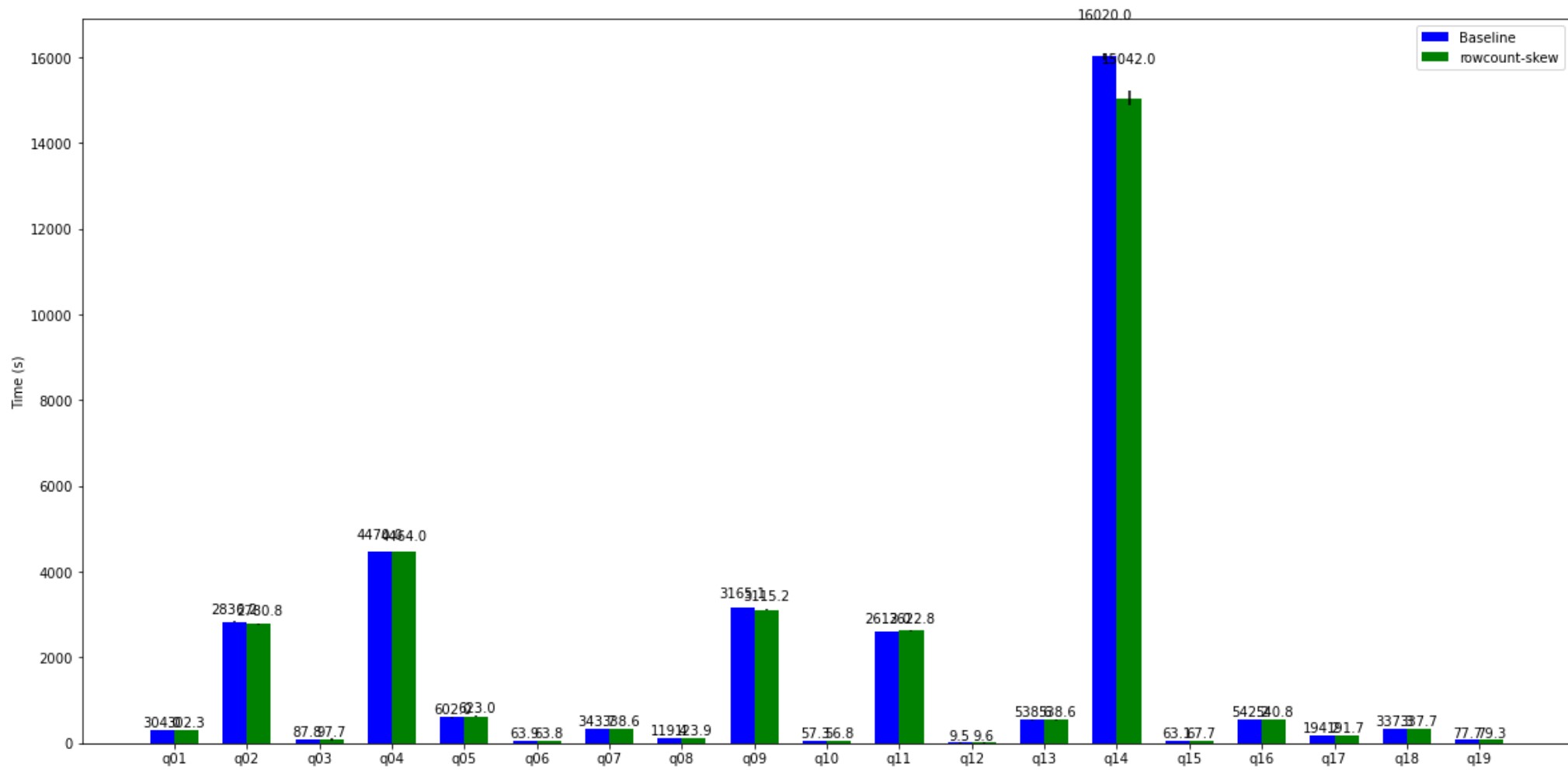
	query	Baseline mean	Baseline std.dev	rowcount-skew mean	rowcount-skew std.dev
0	presto/tpch: q01	3281.1	3.493422	3216.1	3.568193
1	presto/tpch: q02	672.6	4.874423	667.9	3.667697
2	presto/tpch: q03	2152.1	4.111934	2150.0	9.687105
3	presto/tpch: q04	3612.0	18.590320	3636.0	0.000000
4	presto/tpch: q05	5088.0	18.590320	5070.0	14.696938
5	presto/tpch: q06	147.2	0.489898	144.6	0.379473
6	presto/tpch: q07	1756.1	4.684869	1755.6	8.076633
7	presto/tpch: q08	3215.9	8.212917	3247.3	20.844855
8	presto/tpch: q09	8232.0	18.590320	8346.0	52.990565

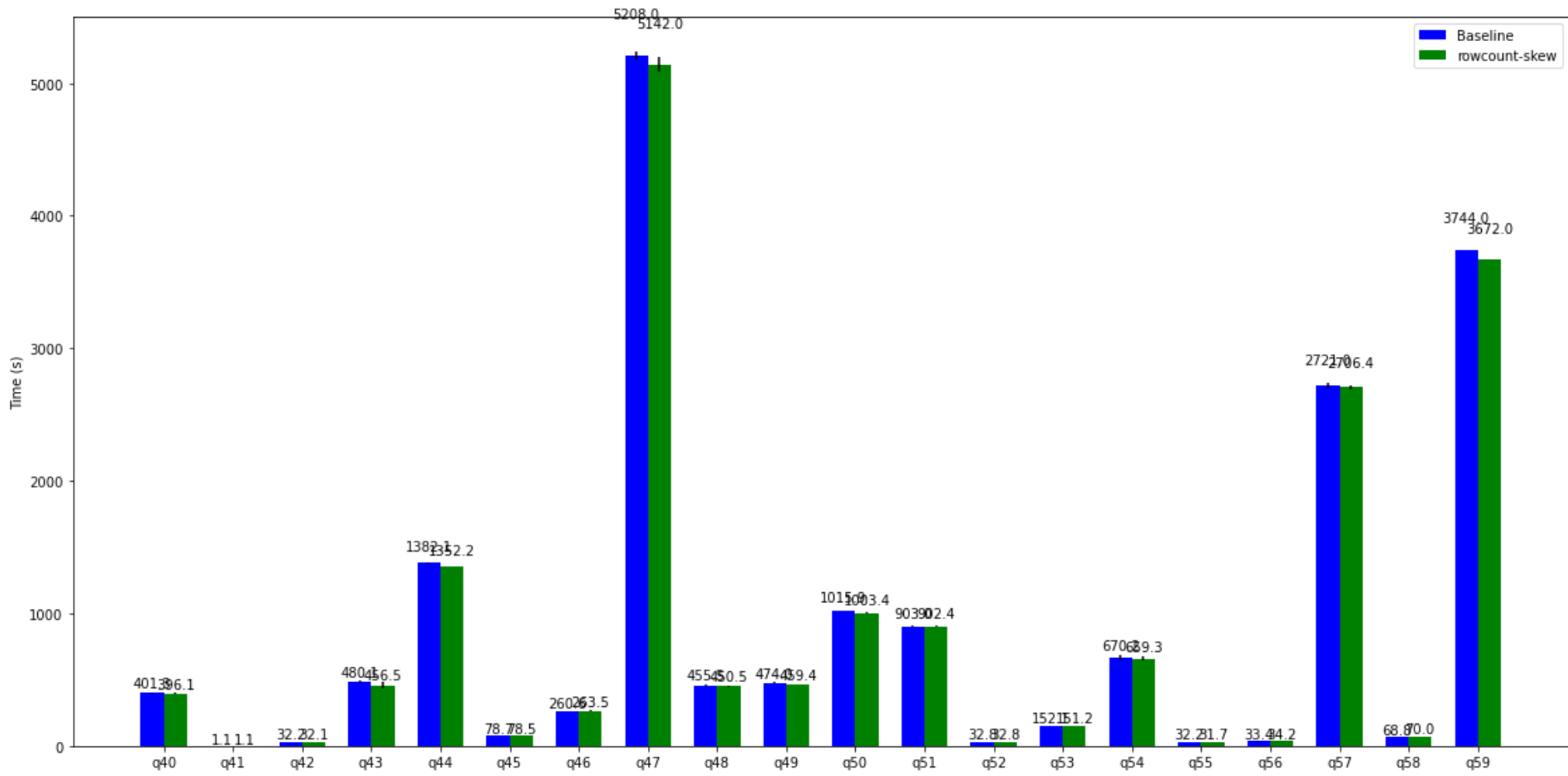
	query	Baseline mean	Baseline std.dev	rowcount-skew mean	rowcount-skew std.dev
9	presto/tpch: q10	2647.7	8.959241	2656.8	13.739869
10	presto/tpch: q11	577.6	1.296148	572.9	2.850263
11	presto/tpch: q12	900.3	2.138224	899.1	4.811237
12	presto/tpch: q13	3315.9	8.002750	3330.2	7.736666
13	presto/tpch: q14	237.6	2.488373	235.2	1.517893
14	presto/tpch: q15	575.6	4.898979	579.4	4.253939
15	presto/tpch: q16	648.4	1.296148	652.0	3.189984
16	presto/tpch: q17	9552.0	81.033326	9732.0	139.736896
17	presto/tpch: q18	26088.0	175.872681	26298.0	158.971696
18	presto/tpch: q19	2179.2	7.702467	2152.5	4.929503
19	presto/tpch: q20	1972.7	3.069202	1989.1	5.358731
20	presto/tpch: q21	20790.0	30.119761	20766.0	127.618181
21	presto/tpch: q22	1031.4	2.517141	1035.7	3.628223

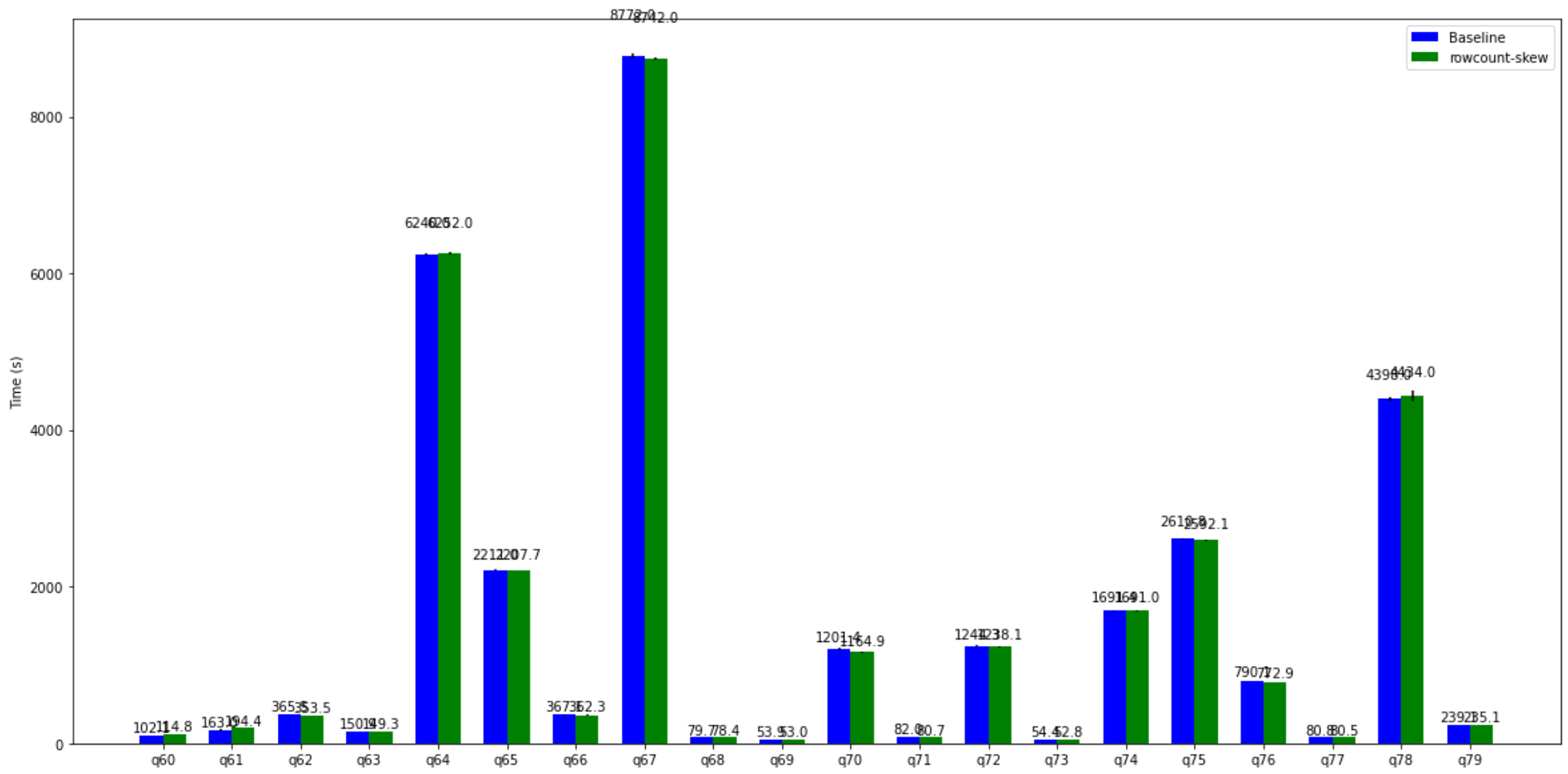
## TPC-DS Comparison (CPU)

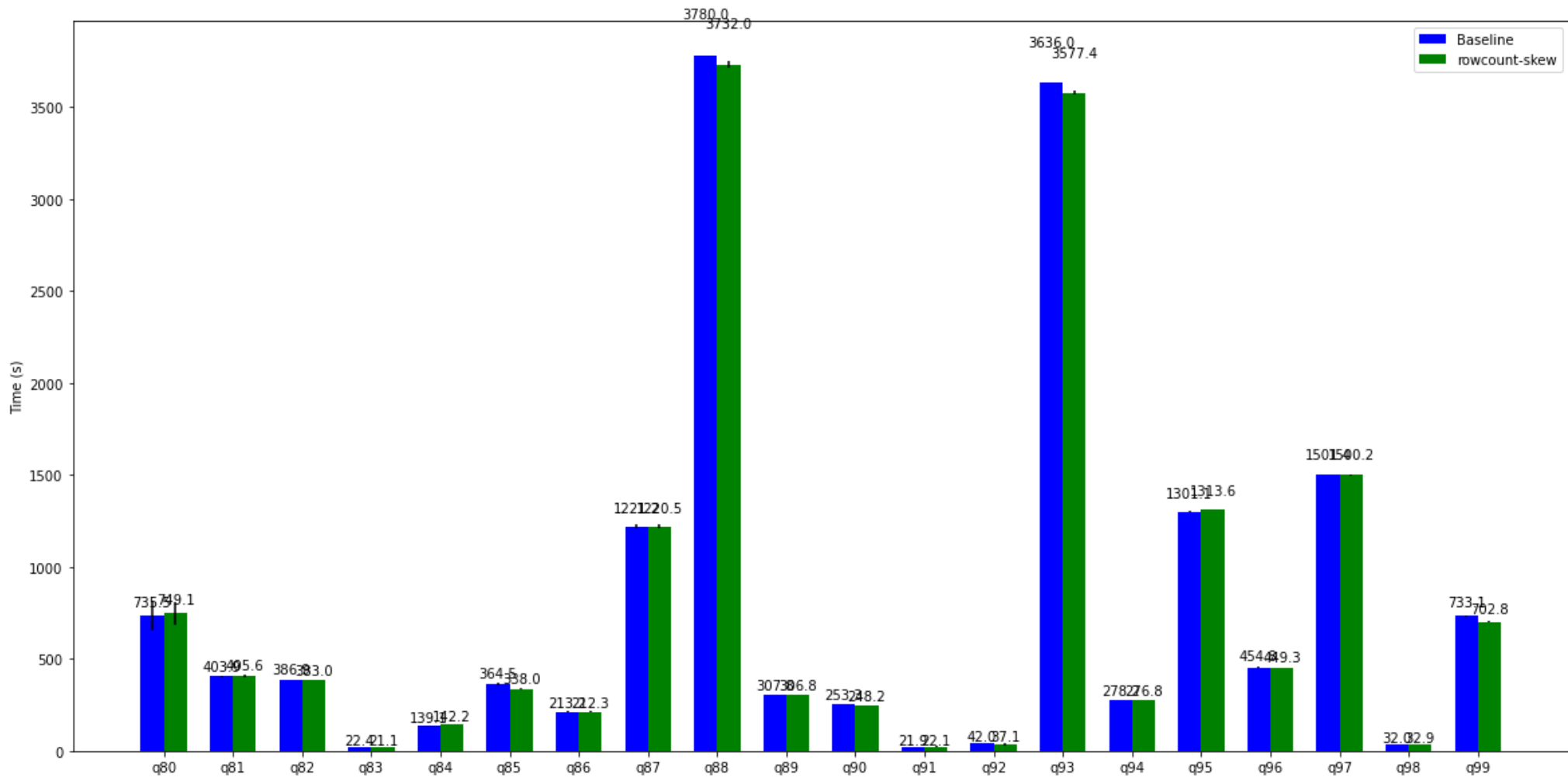


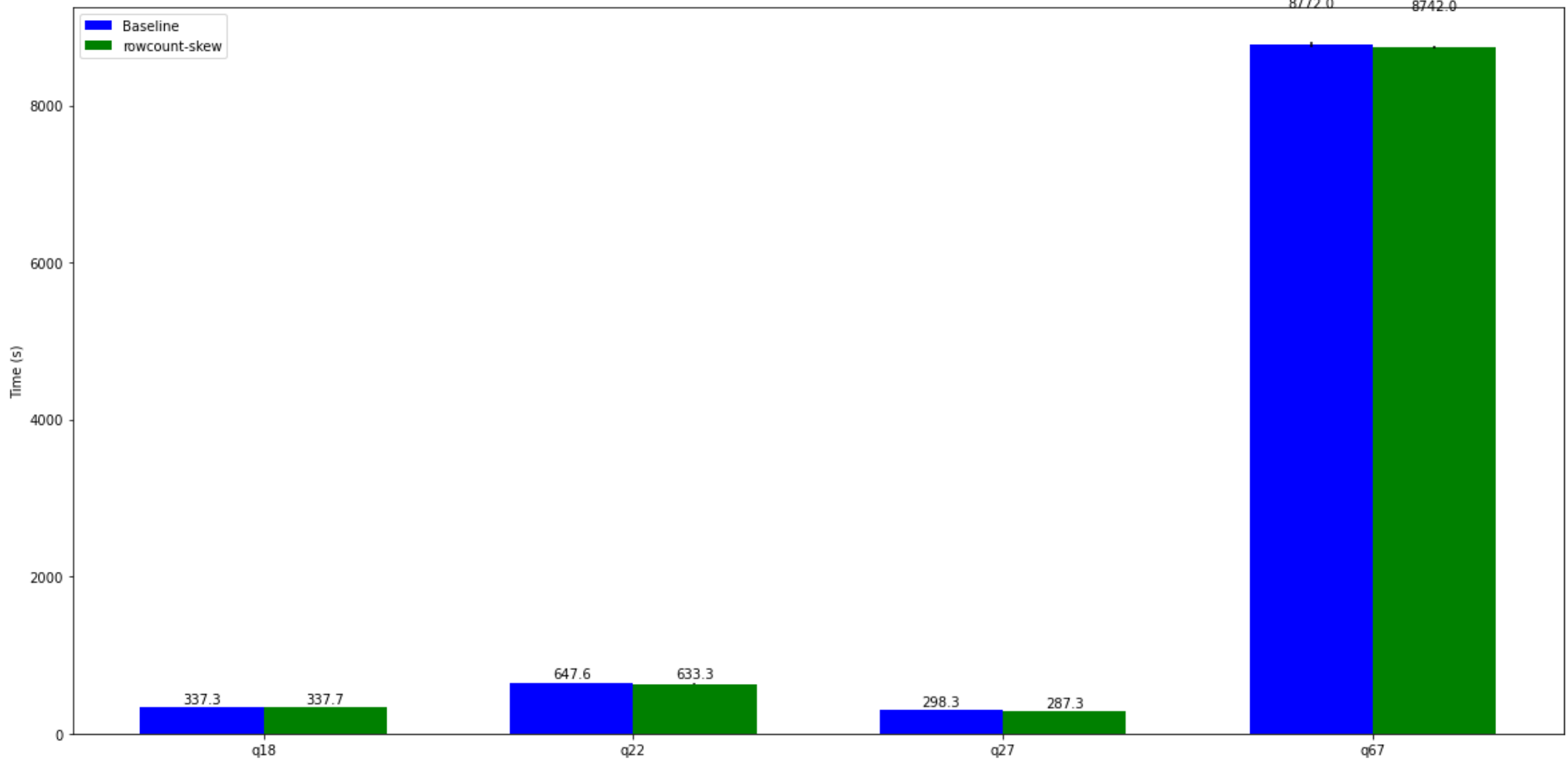












	query	Baseline mean	Baseline std.dev	rowcount-skew mean	rowcount-skew std.dev
0	presto/tpcds: q01	304.000000	14.448252	302.300000	4.865799
1	presto/tpcds: q02	2836.200000	8.834478	2780.800000	17.577713
2	presto/tpcds: q03	87.800000	0.489898	97.700000	26.504566
3	presto/tpcds: q04	4470.000000	14.696938	4464.000000	0.000000
4	presto/tpcds: q05	602.000000	20.914684	623.000000	16.066860
5	presto/tpcds: q06	63.900000	0.501996	63.800000	0.309839
6	presto/tpcds: q07	343.700000	0.961249	338.600000	3.955755
7	presto/tpcds: q08	119.400000	2.369810	123.900000	3.146427
8	presto/tpcds: q09	3165.100000	13.552122	3115.200000	12.924396

	query	Baseline mean	Baseline std.dev	rowcount-skew mean	rowcount-skew std.dev
9	presto/tpcds: q10	57.343333	0.458636	56.836667	0.464528
10	presto/tpcds: q11	2613.000000	2.400000	2622.800000	6.993711
11	presto/tpcds: q12	9.538333	0.313012	9.636667	0.355903
12	presto/tpcds: q13	538.600000	0.979796	538.600000	1.117139
13	presto/tpcds: q14	16020.000000	72.000000	15042.000000	167.957137
14	presto/tpcds: q15	63.100000	0.244949	67.700000	0.451664
15	presto/tpcds: q16	542.200000	0.726636	540.800000	1.639512
16	presto/tpcds: q17	194.200000	0.489898	191.700000	0.629285
17	presto/tpcds: q18	337.300000	7.678281	337.700000	7.103520
18	presto/tpcds: q19	77.700000	2.807846	79.300000	5.194998
19	presto/tpcds: q20	18.503333	0.365221	19.346667	0.423068
20	presto/tpcds: q21	21.138333	0.483629	22.243333	0.309300
21	presto/tpcds: q22	647.600000	1.350555	633.300000	1.962651
22	presto/tpcds: q23	12606.000000	66.054523	12690.000000	19.718012
23	presto/tpcds: q24	4134.000000	27.099815	4080.000000	18.590320
24	presto/tpcds: q25	134.100000	1.643168	131.200000	2.478709
25	presto/tpcds: q26	190.600000	1.884675	187.100000	2.557342
26	presto/tpcds: q27	298.300000	3.821518	287.300000	2.529031
27	presto/tpcds: q28	3433.200000	9.170387	3356.800000	15.005599
28	presto/tpcds: q29	495.000000	3.979950	487.200000	2.963781
29	presto/tpcds: q30	181.900000	2.500400	235.700000	2.412468
30	presto/tpcds: q31	457.600000	3.279024	458.400000	4.174207
31	presto/tpcds: q32	55.973333	5.116677	55.323333	5.481820
32	presto/tpcds: q33	79.000000	6.019967	81.000000	2.308246
33	presto/tpcds: q34	143.900000	0.451664	140.400000	0.536656
34	presto/tpcds: q35	369.500000	11.342486	378.500000	11.506346
35	presto/tpcds: q36	281.400000	0.379473	274.600000	0.309839
36	presto/tpcds: q37	184.600000	0.619677	183.400000	0.489898

	query	Baseline mean	Baseline std.dev	rowcount-skew mean	rowcount-skew std.dev
37	presto/tpcds: q38	1183.800000	8.939799	1167.100000	6.803235
38	presto/tpcds: q39	90.500000	1.489966	90.300000	1.925617
39	presto/tpcds: q40	401.300000	4.111934	396.100000	5.318270
40	presto/tpcds: q41	1.053333	0.010328	1.050000	0.014142
41	presto/tpcds: q42	32.153333	0.077889	32.125000	0.111490
42	presto/tpcds: q43	480.100000	9.759303	456.500000	25.166883
43	presto/tpcds: q44	1382.100000	5.157907	1352.200000	2.779928
44	presto/tpcds: q45	78.700000	0.244949	78.500000	0.451664
45	presto/tpcds: q46	260.600000	0.903327	263.500000	5.595355
46	presto/tpcds: q47	5208.000000	29.393877	5142.000000	57.674951
47	presto/tpcds: q48	455.500000	2.900345	450.500000	3.206868
48	presto/tpcds: q49	474.000000	4.600869	459.400000	0.819756
49	presto/tpcds: q50	1015.900000	1.224745	1003.400000	1.402854
50	presto/tpcds: q51	903.000000	3.035787	902.400000	1.971801
51	presto/tpcds: q52	32.808333	0.101472	32.791667	0.126399
52	presto/tpcds: q53	152.100000	0.328634	151.200000	0.379473
53	presto/tpcds: q54	670.200000	19.761781	659.300000	17.638027
54	presto/tpcds: q55	32.205000	0.064730	31.725000	0.071764
55	presto/tpcds: q56	33.438333	0.626655	34.153333	0.530610
56	presto/tpcds: q57	2721.000000	17.558588	2706.400000	14.552526
57	presto/tpcds: q58	68.800000	1.594992	70.000000	1.402854
58	presto/tpcds: q59	3744.000000	0.000000	3672.000000	0.000000
59	presto/tpcds: q60	102.100000	1.164474	114.800000	0.619677
60	presto/tpcds: q61	163.000000	14.033674	194.400000	1.003992
61	presto/tpcds: q62	365.500000	3.021920	353.500000	4.776191
62	presto/tpcds: q63	150.900000	1.354991	149.300000	0.244949
63	presto/tpcds: q64	6240.000000	18.590320	6252.000000	18.590320
64	presto/tpcds: q65	2211.000000	6.788225	2207.700000	4.565523



	query	Baseline mean	Baseline std.dev	rowcount-skew mean	rowcount-skew std.dev
65	presto/tpcds: q66	367.100000	8.026705	362.300000	3.667697
66	presto/tpcds: q67	8772.000000	37.180640	8742.000000	14.696938
67	presto/tpcds: q68	79.700000	1.337161	78.400000	1.350555
68	presto/tpcds: q69	53.885000	0.180970	52.953333	0.363575
69	presto/tpcds: q70	1201.400000	14.527767	1164.900000	9.813256
70	presto/tpcds: q71	82.000000	1.179830	80.700000	0.909945
71	presto/tpcds: q72	1244.300000	7.981729	1238.100000	8.542365
72	presto/tpcds: q73	54.356667	0.138660	52.825000	0.146935
73	presto/tpcds: q74	1691.400000	4.844791	1691.000000	3.344249
74	presto/tpcds: q75	2610.800000	5.813089	2592.100000	7.771486
75	presto/tpcds: q76	790.100000	1.714643	772.900000	1.033441
76	presto/tpcds: q77	80.800000	4.824935	80.500000	2.500400
77	presto/tpcds: q78	4398.000000	27.099815	4434.000000	69.868448
78	presto/tpcds: q79	239.100000	0.827043	235.100000	4.924632
79	presto/tpcds: q80	735.500000	82.399393	749.100000	60.660861
80	presto/tpcds: q81	403.900000	4.094386	405.600000	5.975952
81	presto/tpcds: q82	386.900000	1.033441	383.000000	0.903327
82	presto/tpcds: q83	22.410000	1.276119	21.118333	0.939562
83	presto/tpcds: q84	139.100000	1.164474	142.200000	1.003992
84	presto/tpcds: q85	364.500000	4.841074	338.000000	4.185690
85	presto/tpcds: q86	213.200000	1.501999	212.300000	2.721029
86	presto/tpcds: q87	1221.200000	10.527678	1220.500000	9.251811
87	presto/tpcds: q88	3780.000000	0.000000	3732.000000	18.590320
88	presto/tpcds: q89	307.800000	0.657267	306.800000	0.726636
89	presto/tpcds: q90	253.300000	0.244949	248.200000	0.309839
90	presto/tpcds: q91	21.945000	1.804215	22.128333	2.776598
91	presto/tpcds: q92	41.966667	3.102809	37.108333	5.889844
92	presto/tpcds: q93	3636.000000	0.000000	3577.400000	11.626177

	<b>query</b>	<b>Baseline mean</b>	<b>Baseline std.dev</b>	<b>rowcount-skew mean</b>	<b>rowcount-skew std.dev</b>
<b>93</b>	presto/tpcds: q94	278.200000	0.489898	276.800000	0.489898
<b>94</b>	presto/tpcds: q95	1301.100000	3.324455	1313.600000	1.639512
<b>95</b>	presto/tpcds: q96	454.800000	0.758947	449.300000	0.589915
<b>96</b>	presto/tpcds: q97	1501.400000	2.328948	1500.200000	1.884675
<b>97</b>	presto/tpcds: q98	31.981667	0.493697	32.850000	0.495823
<b>98</b>	presto/tpcds: q99	733.100000	1.282186	702.800000	4.387254