

Benchmark details

```
[('dec-serde-baseline-oss-393-S-efa9946f32-hive_sf1000_orc_part-s1220',  
 'baseline'),  
 ('dec-serde-4c-oss-393-S-29a2fae23f-hive_sf1000_orc_part-s1219',  
 'dec serde optimization')]
```

Overall Times

	label	TPCH wall time	TPC- DS wall time	TPCH CPU time	TPC- DS CPU time	TPCH Network	TPC-DS Network	TPCH peak mem	TPC- DS peak mem	TPCH physical input	TPC-DS physical input	TPCH wall time % change	TPC- DS wall time % change	TPCH CPU time % change	TPC- DS CPU time % change	TPCH Network % change	TPC-DS Network % change	TPCH peak mem % change	TPC- DS peak mem % change	TPCH physical input % change	TPC-DS physical input % change
0	baseline	586	1,014	63,929	109,986	2.074 PiB	1.712 PiB	1.172 TiB	0.937 TiB	833.214 GiB	1.010 TiB	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1	dec serde optimization	538	982	58,295	106,900	1.834 PiB	1.649 PiB	1.164 TiB	0.937 TiB	833.192 GiB	1.012 TiB	-8.21	-3.15	-8.81	-2.81	-11.59	-3.70	-0.66	0.01	-0.00	0.19

FAILED QUERIES

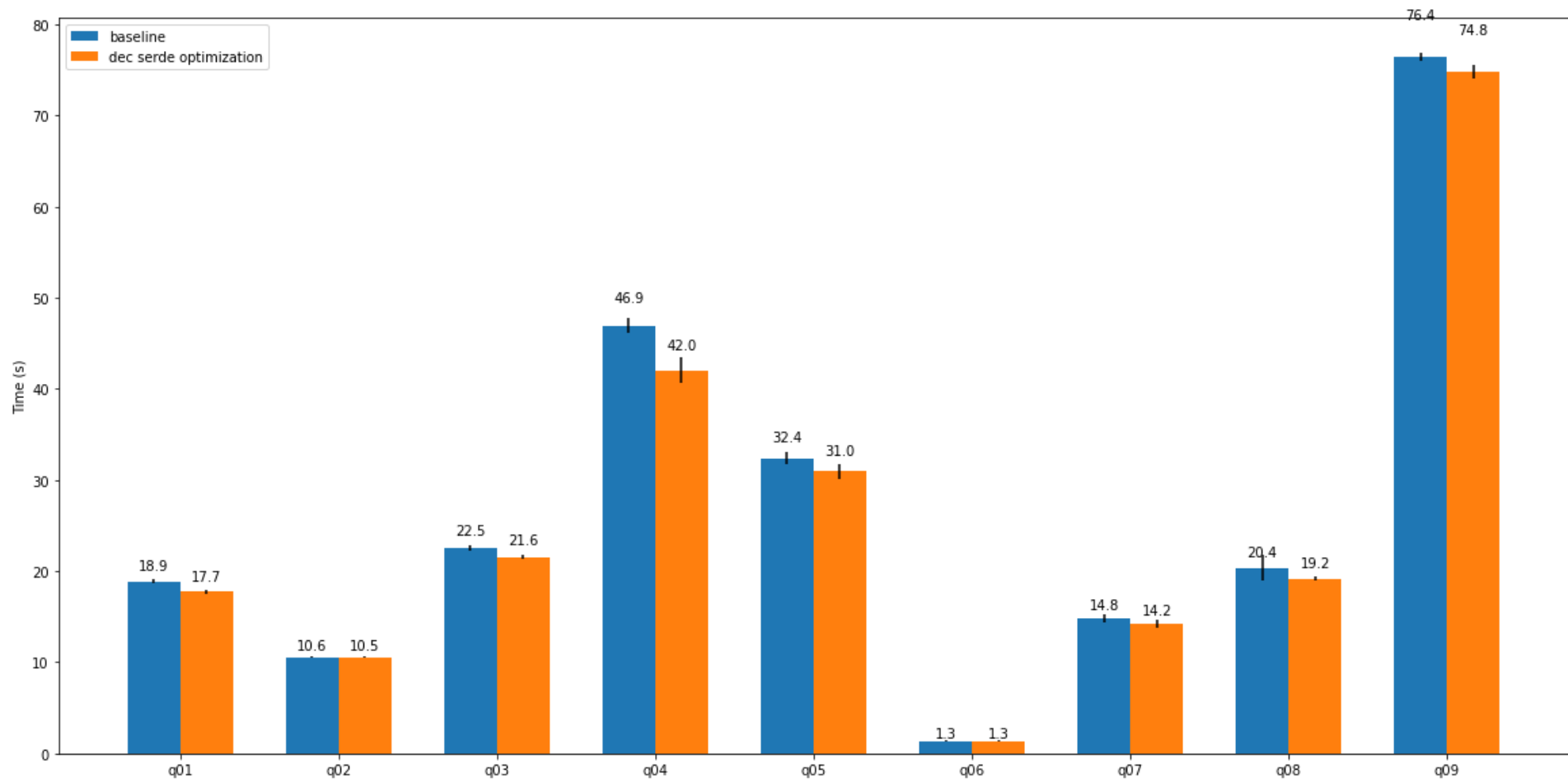
baseline

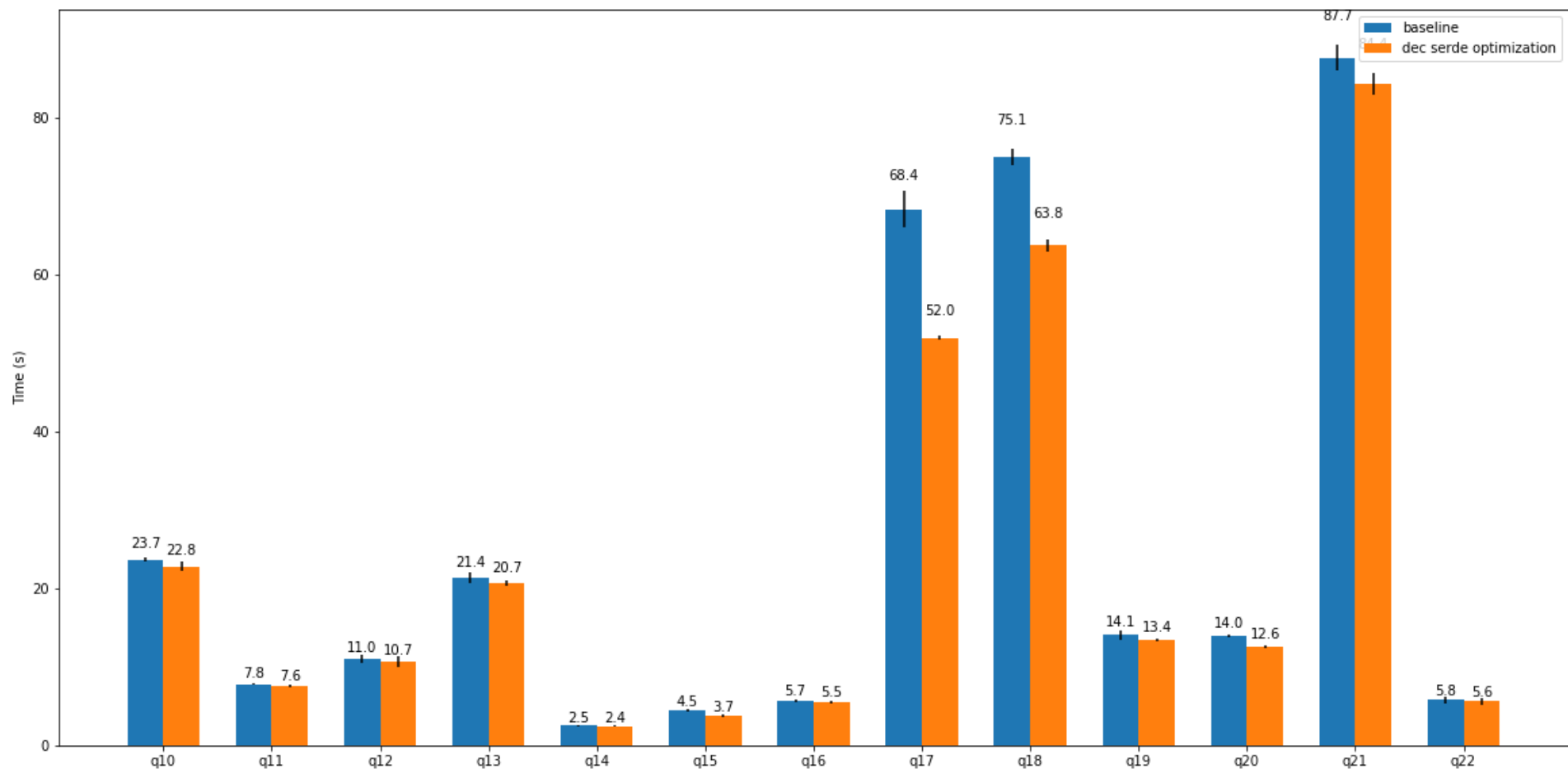
benchmark	query	mean_duration	std_dev
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dec serde optimization

benchmark	query	mean_duration	std_dev
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TPC-H Comparison (DURATION)





	query	baseline mean	baseline std.dev	dec serde optimization mean	dec serde optimization std.dev	% change	absolute change	baseline std.dev %	dec serde optimization std.dev %	p-value
16	presto/tpch: q17	68.37	2.33	51.99	0.23	-23.95	-16.37	3.40	0.44	0.00000
17	presto/tpch: q18	75.08	1.06	63.77	0.83	-15.07	-11.32	1.41	1.30	0.00000
3	presto/tpch: q04	46.89	0.79	41.99	1.42	-10.46	-4.90	1.70	3.38	0.00002
20	presto/tpch: q21	87.72	1.66	84.39	1.34	-3.79	-3.33	1.90	1.58	0.00336
8	presto/tpch: q09	76.41	0.43	74.82	0.76	-2.08	-1.59	0.56	1.02	0.00122
19	presto/tpch: q20	13.97	0.14	12.57	0.11	-10.04	-1.40	0.99	0.91	0.00000
4	presto/tpch: q05	32.35	0.67	30.98	0.82	-4.24	-1.37	2.07	2.64	0.00986

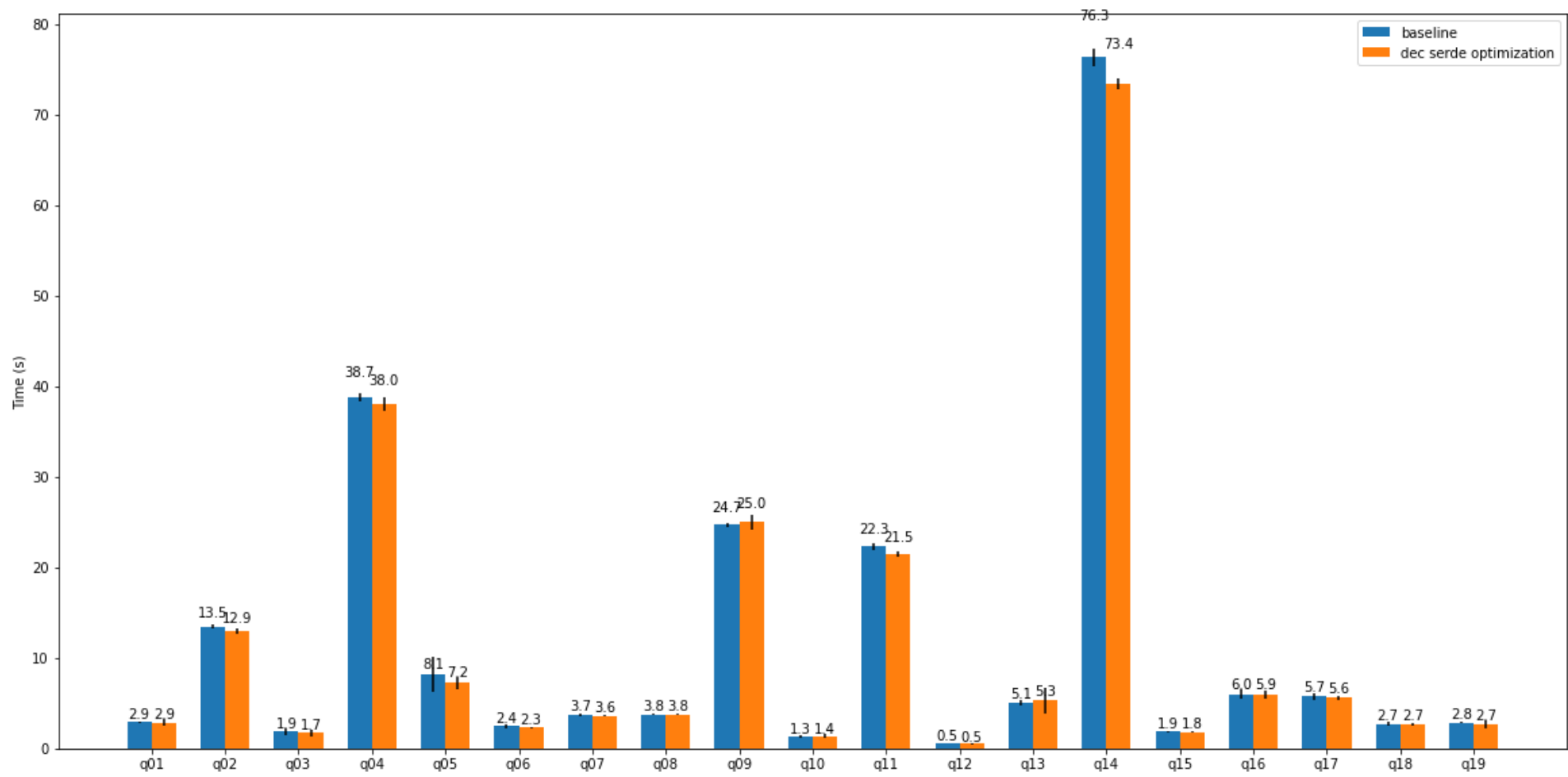
	query	baseline mean	baseline std.dev	dec serde optimization mean	dec serde optimization std.dev	% change	absolute change	baseline std.dev %	dec serde optimization std.dev %	p-value
7	presto/tpch:q08	20.35	1.37	19.17	0.18	-5.81	-1.18	6.74	0.96	0.06283
0	presto/tpch:q01	18.88	0.18	17.74	0.21	-6.04	-1.14	0.94	1.16	0.00000
2	presto/tpch:q03	22.52	0.30	21.56	0.27	-4.24	-0.95	1.35	1.23	0.00017
9	presto/tpch:q10	23.70	0.33	22.80	0.64	-3.80	-0.90	1.39	2.80	0.01193
14	presto/tpch:q15	4.48	0.15	3.74	0.13	-16.55	-0.74	3.27	3.41	0.00000
12	presto/tpch:q13	21.38	0.72	20.70	0.28	-3.17	-0.68	3.37	1.35	0.05723
18	presto/tpch:q19	14.05	0.61	13.41	0.21	-4.60	-0.65	4.38	1.59	0.03513
6	presto/tpch:q07	14.85	0.42	14.22	0.49	-4.21	-0.62	2.86	3.41	0.03896
11	presto/tpch:q12	10.98	0.50	10.72	0.68	-2.34	-0.26	4.53	6.38	0.47396
10	presto/tpch:q11	7.80	0.10	7.57	0.13	-2.84	-0.22	1.30	1.77	0.00906
15	presto/tpch:q16	5.67	0.18	5.51	0.11	-2.84	-0.16	3.21	1.95	0.09133
21	presto/tpch:q22	5.79	0.40	5.63	0.42	-2.77	-0.16	6.87	7.51	0.51365
13	presto/tpch:q14	2.48	0.08	2.39	0.08	-3.97	-0.10	3.11	3.54	0.06083
5	presto/tpch:q06	1.35	0.05	1.33	0.07	-1.50	-0.02	3.71	5.62	0.59368
1	presto/tpch:q02	10.56	0.11	10.55	0.11	-0.15	-0.02	1.06	1.07	0.81634

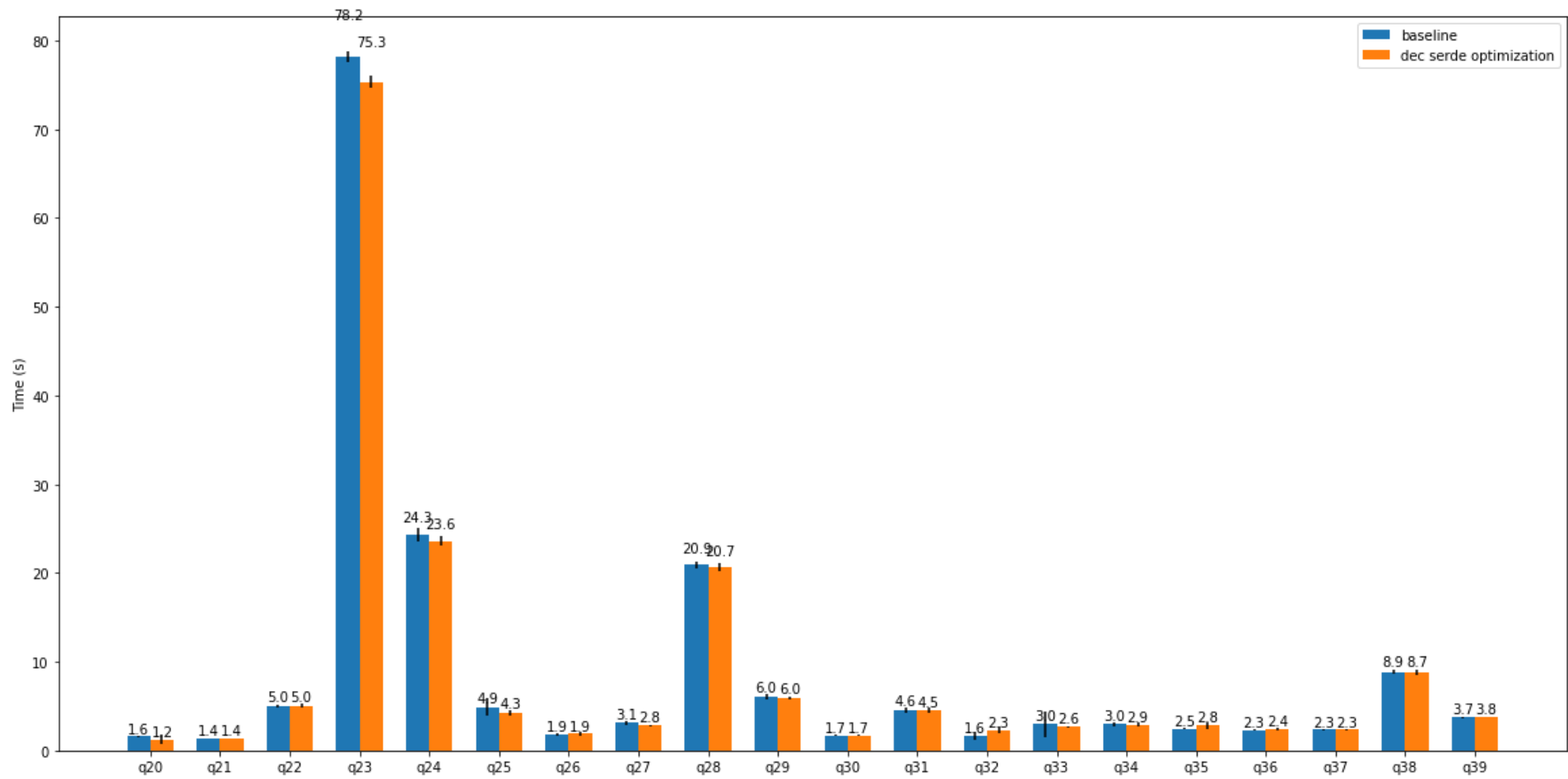
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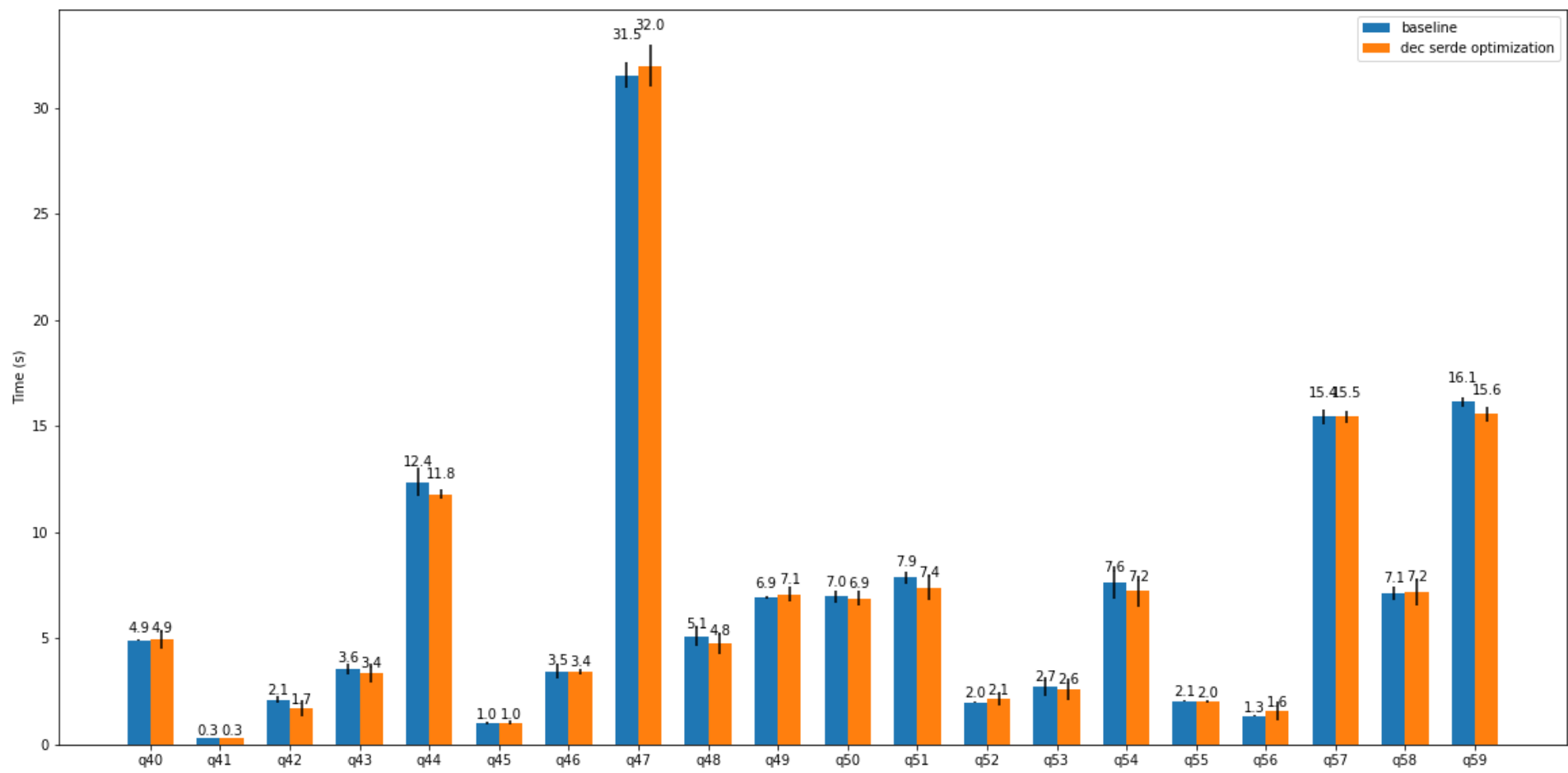
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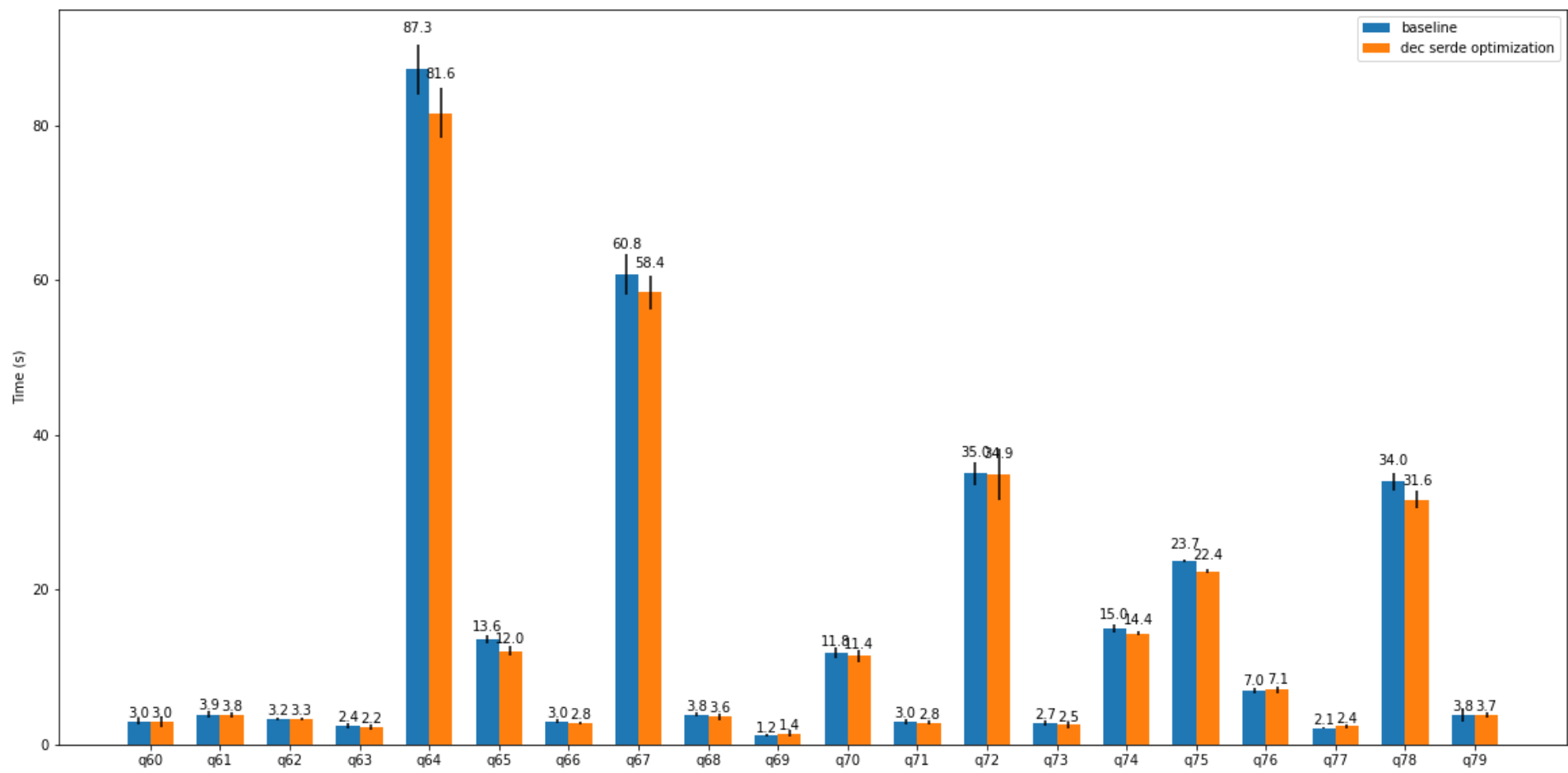
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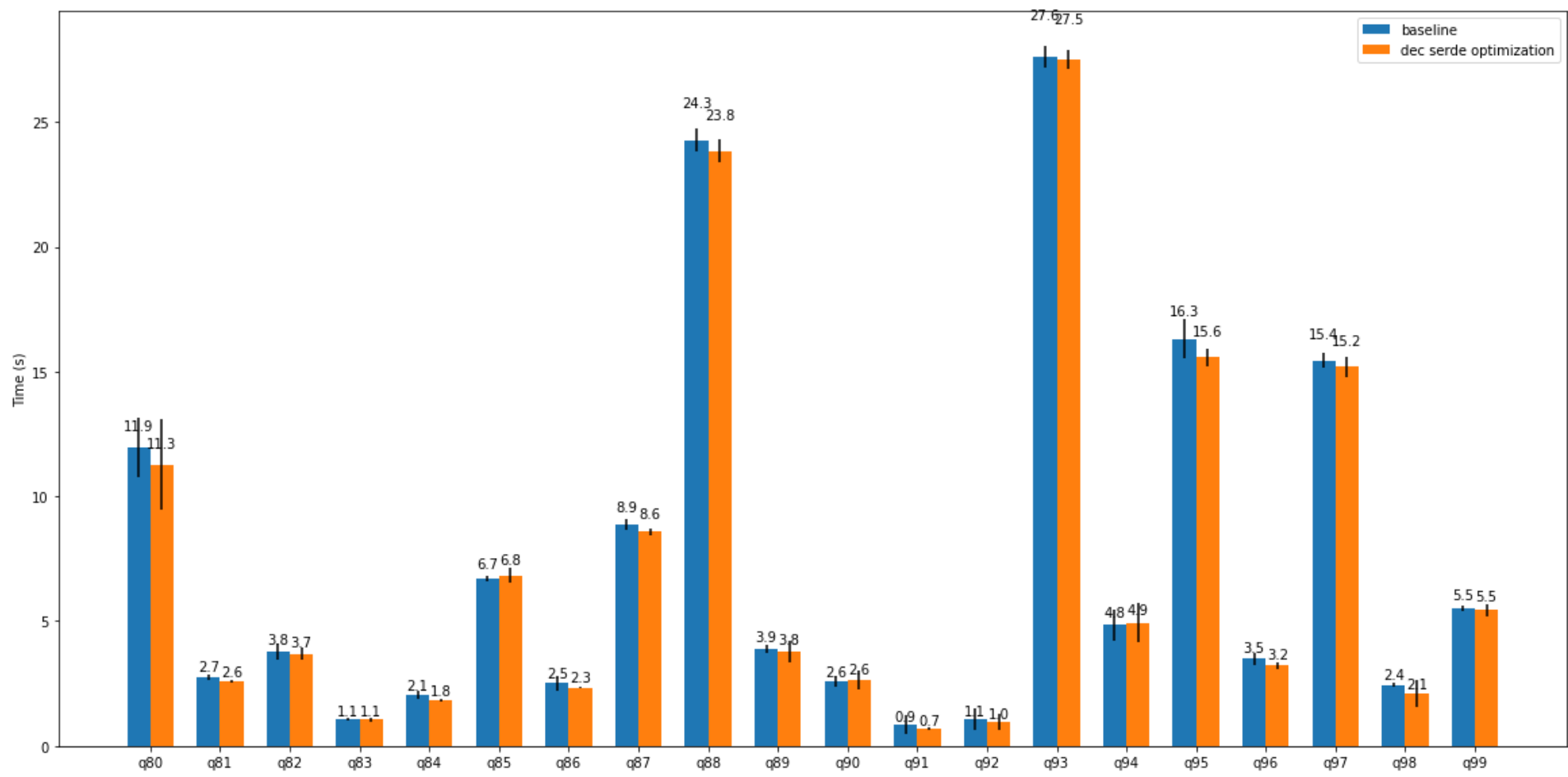
TPC-DS Comparison (DURATION)

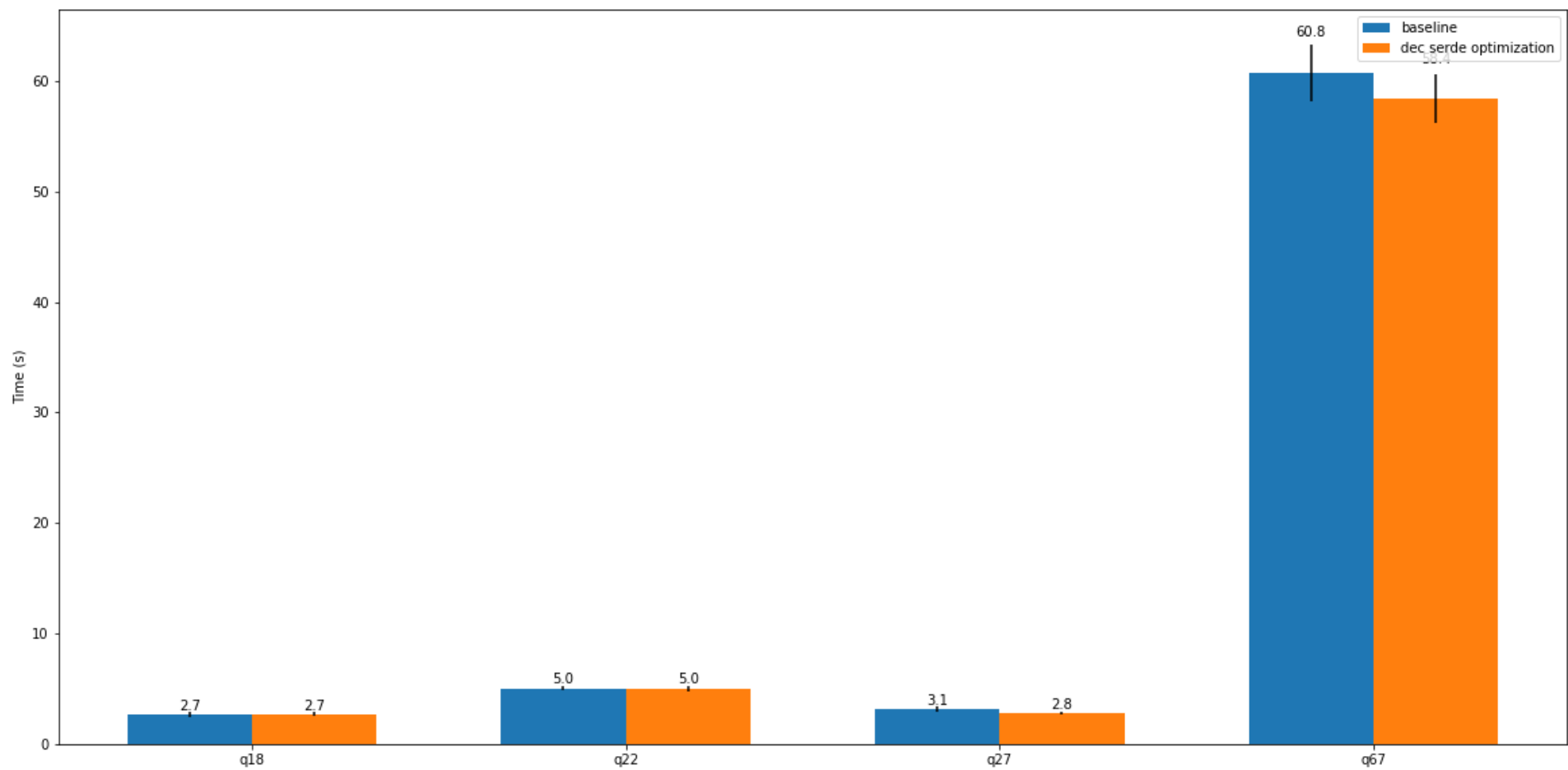












	query	baseline mean	baseline std.dev	dec serde optimization mean	dec serde optimization std.dev	% change	absolute change	baseline std.dev %	dec serde optimization std.dev %	p-value
63	presto/tpcds: q64	87.28	3.19	81.62	3.22	-6.49	-5.66	3.65	3.94	0.01198
13	presto/tpcds: q14	76.28	0.95	73.36	0.66	-3.83	-2.92	1.24	0.89	0.00010
22	presto/tpcds: q23	78.18	0.58	75.34	0.71	-3.63	-2.84	0.75	0.94	0.00002
77	presto/tpcds: q78	34.01	1.14	31.61	1.14	-7.07	-2.40	3.36	3.60	0.00446
66	presto/tpcds: q67	60.75	2.56	58.44	2.17	-3.80	-2.31	4.21	3.72	0.12293
64	presto/tpcds: q65	13.65	0.54	12.05	0.59	-11.73	-1.60	3.98	4.87	0.00062
74	presto/tpcds: q75	23.72	0.23	22.36	0.26	-5.70	-1.35	0.98	1.18	0.00000

	query	baseline mean	baseline std.dev	dec serde optimization mean	dec serde optimization std.dev	% change	absolute change	baseline std.dev %	dec serde optimization std.dev %	p-value
4	presto/tpcds:q05	8.13	1.97	7.24	0.65	-10.95	-0.89	24.19	8.96	0.31702
10	presto/tpcds:q11	22.29	0.35	21.47	0.35	-3.66	-0.81	1.58	1.61	0.00236
3	presto/tpcds:q04	38.73	0.48	37.98	0.72	-1.94	-0.75	1.25	1.90	0.05984
94	presto/tpcds:q95	16.31	0.77	15.56	0.35	-4.61	-0.75	4.70	2.28	0.05428
23	presto/tpcds:q24	24.29	0.71	23.62	0.50	-2.76	-0.67	2.94	2.13	0.08963
79	presto/tpcds:q80	11.95	1.20	11.28	1.80	-5.60	-0.67	10.00	15.97	0.46619
73	presto/tpcds:q74	15.03	0.50	14.37	0.29	-4.39	-0.66	3.34	1.99	0.01885
24	presto/tpcds:q25	4.90	0.99	4.29	0.30	-12.50	-0.61	20.20	6.90	0.17694
43	presto/tpcds:q44	12.37	0.68	11.79	0.20	-4.64	-0.57	5.47	1.73	0.07477
58	presto/tpcds:q59	16.14	0.20	15.57	0.34	-3.52	-0.57	1.22	2.17	0.00520
1	presto/tpcds:q02	13.46	0.25	12.91	0.30	-4.12	-0.55	1.84	2.31	0.00570
50	presto/tpcds:q51	7.86	0.31	7.40	0.61	-5.86	-0.46	3.88	8.30	0.13094
87	presto/tpcds:q88	24.27	0.46	23.83	0.47	-1.79	-0.43	1.90	1.97	0.13782
41	presto/tpcds:q42	2.12	0.18	1.69	0.39	-20.15	-0.43	8.50	22.88	0.03424
69	presto/tpcds:q70	11.84	0.64	11.43	0.82	-3.43	-0.41	5.43	7.20	0.36322
53	presto/tpcds:q54	7.61	0.76	7.23	0.72	-4.95	-0.38	10.02	10.02	0.40066
47	presto/tpcds:q48	5.11	0.46	4.75	0.49	-6.98	-0.36	9.04	10.41	0.22615
97	presto/tpcds:q98	2.44	0.10	2.09	0.53	-14.36	-0.35	3.97	25.54	0.14446
19	presto/tpcds:q20	1.58	0.02	1.22	0.51	-22.26	-0.35	1.02	41.87	0.12494
26	presto/tpcds:q27	3.12	0.25	2.80	0.12	-10.15	-0.32	8.10	4.29	0.01970
32	presto/tpcds:q33	2.96	1.40	2.65	0.12	-10.55	-0.31	47.18	4.69	0.59730
67	presto/tpcds:q68	3.85	0.28	3.55	0.39	-7.55	-0.29	7.28	10.94	0.16863

	query	baseline mean	baseline std.dev	dec serde optimization mean	dec serde optimization std.dev	% change	absolute change	baseline std.dev %	dec serde optimization std.dev %	p-value
95	presto/tpcds:q96	3.49	0.26	3.21	0.13	-7.90	-0.28	7.33	4.04	0.04042
86	presto/tpcds:q87	8.86	0.23	8.59	0.12	-3.11	-0.28	2.65	1.44	0.02921
96	presto/tpcds:q97	15.44	0.31	15.18	0.39	-1.64	-0.25	2.01	2.55	0.23835
27	presto/tpcds:q28	20.93	0.39	20.68	0.42	-1.19	-0.25	1.87	2.01	0.31119
83	presto/tpcds:q84	2.06	0.16	1.83	0.05	-11.53	-0.24	7.57	2.81	0.00530
42	presto/tpcds:q43	3.56	0.28	3.35	0.44	-5.88	-0.21	7.77	13.22	0.34891
65	presto/tpcds:q66	2.99	0.25	2.79	0.19	-6.68	-0.20	8.45	6.65	0.14965
72	presto/tpcds:q73	2.73	0.30	2.54	0.45	-6.95	-0.19	11.02	17.84	0.41318
2	presto/tpcds:q03	1.87	0.35	1.69	0.35	-9.74	-0.18	18.63	20.44	0.38412
80	presto/tpcds:q81	2.74	0.11	2.56	0.05	-6.54	-0.18	3.86	2.13	0.00420
85	presto/tpcds:q86	2.51	0.31	2.34	0.03	-6.80	-0.17	12.23	1.25	0.20497
18	presto/tpcds:q19	2.83	0.09	2.66	0.46	-6.02	-0.17	3.12	17.22	0.39184
16	presto/tpcds:q17	5.75	0.40	5.58	0.17	-2.85	-0.16	6.92	3.11	0.37699
70	presto/tpcds:q71	2.96	0.36	2.80	0.29	-5.40	-0.16	12.17	10.52	0.41959
52	presto/tpcds:q53	2.74	0.44	2.58	0.50	-5.83	-0.16	15.92	19.41	0.56879
62	presto/tpcds:q63	2.40	0.33	2.24	0.35	-6.61	-0.16	13.69	15.52	0.43558
90	presto/tpcds:q91	0.86	0.38	0.70	0.04	-18.25	-0.16	44.09	6.30	0.33762
5	presto/tpcds:q06	2.44	0.21	2.30	0.08	-5.72	-0.14	8.55	3.52	0.15766
71	presto/tpcds:q72	35.02	1.52	34.88	3.29	-0.39	-0.14	4.34	9.43	0.92813
92	presto/tpcds:q93	27.62	0.42	27.48	0.38	-0.49	-0.13	1.52	1.37	0.57324
37	presto/tpcds:q38	8.87	0.21	8.74	0.33	-1.38	-0.12	2.32	3.72	0.45435
81	presto/tpcds:q82	3.80	0.33	3.70	0.27	-2.79	-0.11	8.57	7.21	0.55098

	query	baseline mean	baseline std.dev	dec serde optimization mean	dec serde optimization std.dev	% change	absolute change	baseline std.dev %	dec serde optimization std.dev %	p-value
60	presto/tpcds:q61	3.88	0.45	3.77	0.38	-2.70	-0.10	11.58	10.09	0.67257
91	presto/tpcds:q92	1.06	0.43	0.96	0.34	-9.67	-0.10	40.48	34.95	0.65423
30	presto/tpcds:q31	4.59	0.29	4.50	0.28	-2.06	-0.09	6.36	6.19	0.57766
33	presto/tpcds:q34	2.98	0.23	2.89	0.21	-3.06	-0.09	7.82	7.28	0.49266
88	presto/tpcds:q89	3.88	0.17	3.79	0.42	-2.33	-0.09	4.37	11.15	0.63725
49	presto/tpcds:q50	6.96	0.29	6.88	0.34	-1.22	-0.08	4.16	4.99	0.65367
28	presto/tpcds:q29	6.04	0.28	5.97	0.15	-1.21	-0.07	4.61	2.53	0.58360
6	presto/tpcds:q07	3.69	0.15	3.62	0.14	-1.92	-0.07	4.02	3.76	0.40837
98	presto/tpcds:q99	5.50	0.10	5.45	0.25	-0.88	-0.05	1.76	4.53	0.66374
14	presto/tpcds:q15	1.86	0.07	1.82	0.04	-2.55	-0.05	3.95	2.25	0.19769
45	presto/tpcds:q46	3.45	0.33	3.41	0.12	-1.27	-0.04	9.59	3.60	0.76656
0	presto/tpcds:q01	2.91	0.09	2.86	0.32	-1.42	-0.04	3.03	11.14	0.76689
11	presto/tpcds:q12	0.54	0.04	0.49	0.03	-7.63	-0.04	7.20	5.37	0.05840
54	presto/tpcds:q55	2.05	0.04	2.01	0.05	-1.97	-0.04	2.16	2.57	0.17785
78	presto/tpcds:q79	3.78	0.82	3.74	0.34	-1.03	-0.04	21.79	9.16	0.91678
15	presto/tpcds:q16	5.97	0.54	5.93	0.49	-0.63	-0.04	8.98	8.32	0.90220
82	presto/tpcds:q83	1.07	0.05	1.05	0.07	-1.53	-0.02	4.69	6.31	0.64136
20	presto/tpcds:q21	1.36	0.04	1.35	0.04	-0.55	-0.01	2.83	3.10	0.75339
40	presto/tpcds:q41	0.31	0.01	0.30	0.01	-1.73	-0.01	2.68	3.47	0.35299
7	presto/tpcds:q08	3.76	0.13	3.76	0.04	-0.12	-0.00	3.57	0.95	0.93600
17	presto/tpcds:q18	2.68	0.22	2.68	0.19	-0.16	-0.00	8.28	6.96	0.97262
59	presto/tpcds:q60	2.99	0.48	2.99	0.70	-0.08	-0.00	15.92	23.29	0.99436

	query	baseline mean	baseline std.dev	dec serde optimization mean	dec serde optimization std.dev	% change	absolute change	baseline std.dev %	dec serde optimization std.dev %	p-value
21	presto/tpcds:q22	5.04	0.14	5.04	0.24	-0.01	-0.00	2.74	4.76	0.99770
39	presto/tpcds:q40	4.92	0.06	4.93	0.45	0.11	0.01	1.24	9.05	0.97673
36	presto/tpcds:q37	2.33	0.07	2.35	0.05	0.53	0.01	3.07	1.95	0.72981
44	presto/tpcds:q45	1.02	0.06	1.04	0.08	1.35	0.01	5.69	7.53	0.73485
29	presto/tpcds:q30	1.70	0.09	1.71	0.13	0.83	0.01	5.08	7.42	0.82578
56	presto/tpcds:q57	15.45	0.33	15.46	0.29	0.10	0.02	2.14	1.86	0.93406
25	presto/tpcds:q26	1.85	0.16	1.87	0.28	0.99	0.02	8.57	15.08	0.89250
9	presto/tpcds:q10	1.34	0.19	1.36	0.19	1.75	0.02	14.33	13.95	0.83556
61	presto/tpcds:q62	3.25	0.14	3.29	0.13	1.22	0.04	4.32	3.97	0.62465
89	presto/tpcds:q90	2.58	0.23	2.64	0.38	2.36	0.06	9.04	14.56	0.74718
57	presto/tpcds:q58	7.12	0.34	7.19	0.66	0.95	0.07	4.77	9.12	0.82653
38	presto/tpcds:q39	3.71	0.04	3.78	0.03	2.00	0.07	1.04	0.85	0.00461
35	presto/tpcds:q36	2.32	0.14	2.41	0.16	4.06	0.09	6.07	6.43	0.29684
93	presto/tpcds:q94	4.84	0.64	4.94	0.78	1.99	0.10	13.26	15.73	0.81927
84	presto/tpcds:q85	6.71	0.12	6.84	0.29	1.87	0.13	1.81	4.19	0.34529
75	presto/tpcds:q76	6.97	0.28	7.10	0.44	1.95	0.14	3.97	6.19	0.53531
48	presto/tpcds:q49	6.93	0.09	7.09	0.37	2.25	0.16	1.30	5.28	0.34378
51	presto/tpcds:q52	1.96	0.03	2.14	0.30	8.97	0.18	1.62	14.13	0.18611
55	presto/tpcds:q56	1.35	0.03	1.57	0.45	16.54	0.22	2.53	28.93	0.25831
12	presto/tpcds:q13	5.05	0.32	5.28	1.39	4.58	0.23	6.30	26.21	0.69826
68	presto/tpcds:q69	1.17	0.16	1.40	0.41	19.85	0.23	13.50	29.57	0.22865
76	presto/tpcds:q77	2.12	0.14	2.36	0.29	11.38	0.24	6.43	12.41	0.09742

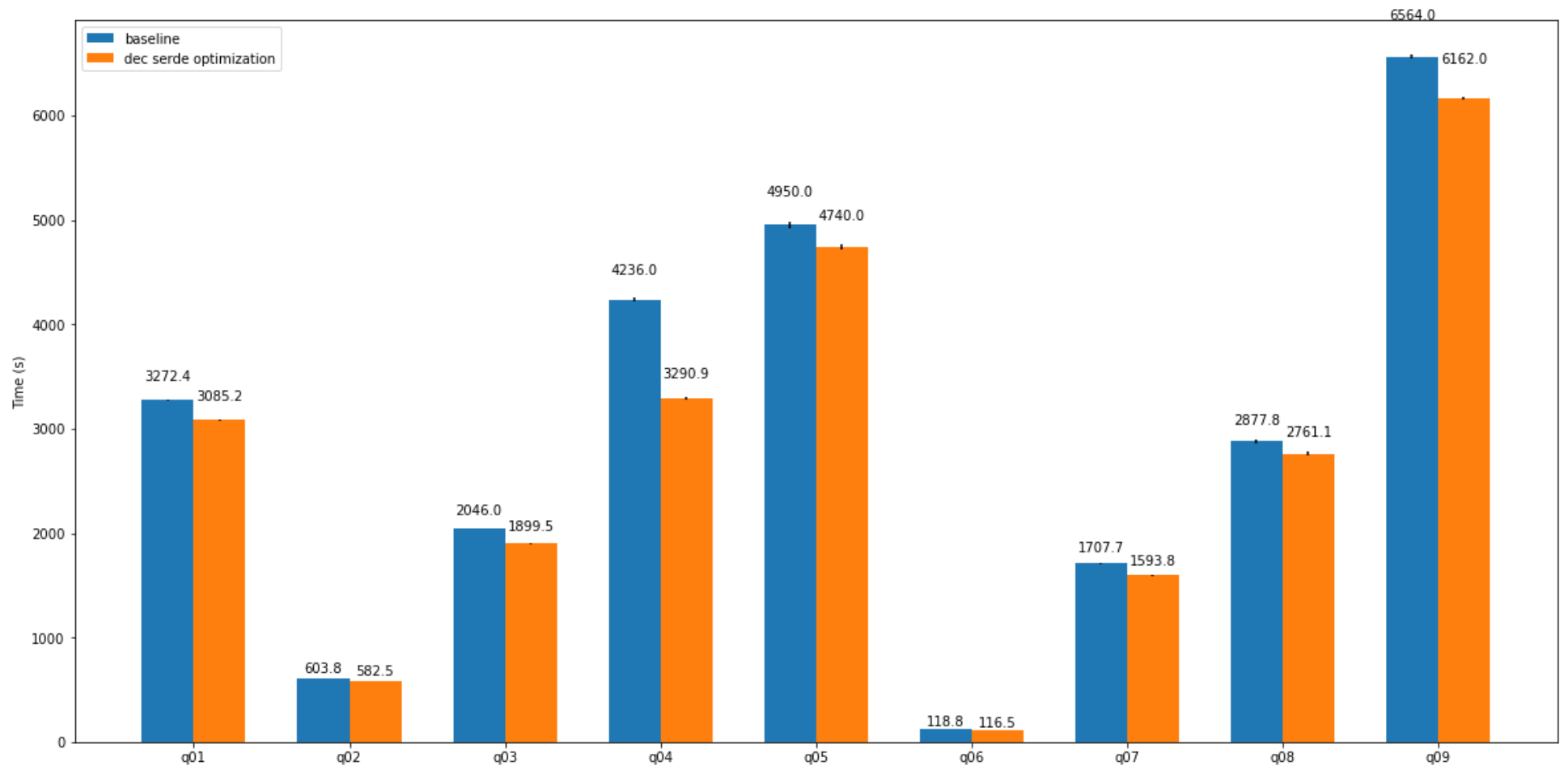
	query	baseline mean	baseline std.dev	dec serde optimization mean	dec serde optimization std.dev	% change	absolute change	baseline std.dev %	dec serde optimization std.dev %	p-value
8	presto/tpcds: q09	24.66	0.23	24.99	0.81	1.31	0.32	0.91	3.26	0.37116
34	presto/tpcds: q35	2.48	0.12	2.83	0.40	14.39	0.36	5.03	14.04	0.06267
46	presto/tpcds: q47	31.54	0.58	31.99	0.99	1.42	0.45	1.85	3.10	0.36466
31	presto/tpcds: q32	1.65	0.50	2.32	0.35	41.27	0.68	30.26	14.95	0.02085

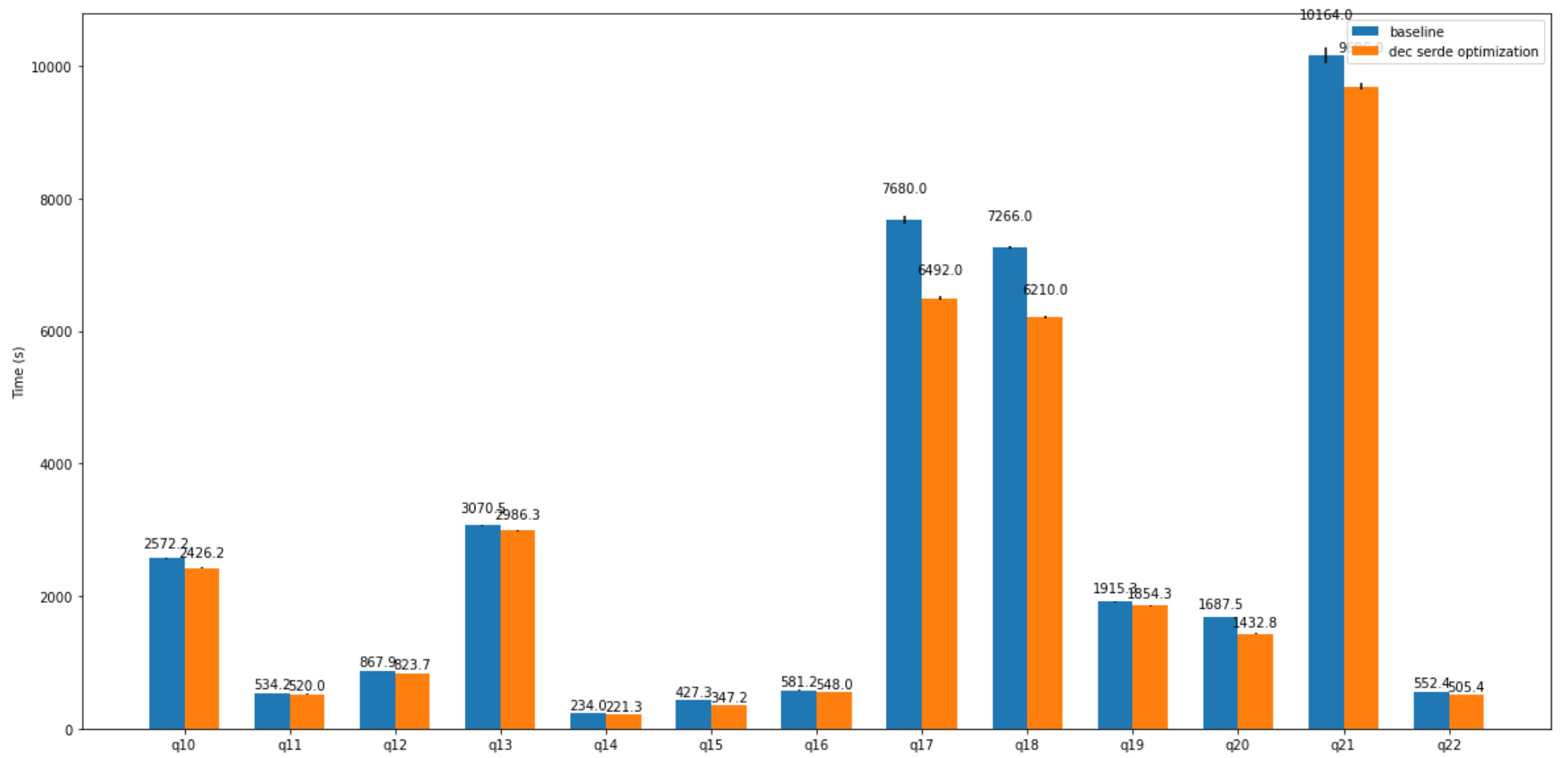
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min      -22
25%      -6
50%      -2
75%       0
max       41
Name: % change, dtype: float64

```

TPC-H Comparison (CPU)





	query	baseline mean	baseline std.dev	dec serde optimization mean	dec serde optimization std.dev	% change	absolute change	baseline std.dev %	dec serde optimization std.dev %	p-value
3	presto/tpch: q04	4236.00	18.59	3290.90	13.58	-22.31	-945.10	0.44	0.41	0.00000
14	presto/tpch: q15	427.30	2.47	347.20	1.35	-18.75	-80.10	0.58	0.39	0.00000
16	presto/tpch: q17	7680.00	58.79	6492.00	29.39	-15.47	-1188.00	0.77	0.45	0.00000
19	presto/tpch: q20	1687.50	1.93	1432.80	3.54	-15.09	-254.70	0.11	0.25	0.00000
17	presto/tpch: q18	7266.00	27.10	6210.00	19.72	-14.53	-1056.00	0.37	0.32	0.00000
21	presto/tpch: q22	552.40	3.88	505.40	2.20	-8.51	-47.00	0.70	0.44	0.00000
2	presto/tpch: q03	2046.00	4.77	1899.50	2.67	-7.16	-146.50	0.23	0.14	0.00000

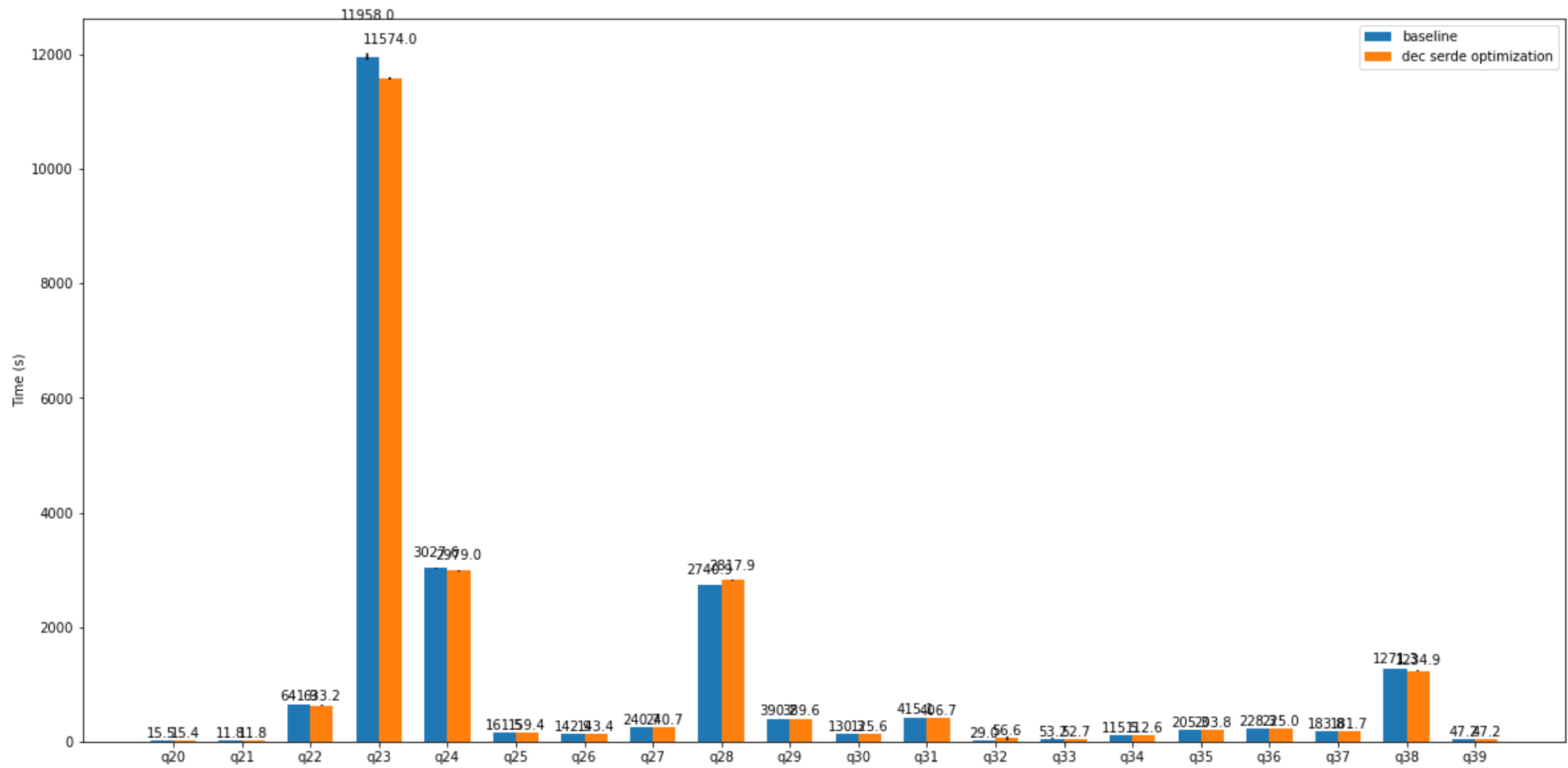
	query	baseline mean	baseline std.dev	dec serde optimization mean	dec serde optimization std.dev	% change	absolute change	baseline std.dev %	dec serde optimization std.dev %	p-value
6	presto/tpch: q07	1707.70	8.33	1593.80	8.60	-6.67	-113.90	0.49	0.54	0.00000
8	presto/tpch: q09	6564.00	18.59	6162.00	14.70	-6.12	-402.00	0.28	0.24	0.00000
0	presto/tpch: q01	3272.40	7.11	3085.20	6.97	-5.72	-187.20	0.22	0.23	0.00000
15	presto/tpch: q16	581.20	1.92	548.00	0.49	-5.71	-33.20	0.33	0.09	0.00000
9	presto/tpch: q10	2572.20	12.11	2426.20	15.13	-5.68	-146.00	0.47	0.62	0.00000
13	presto/tpch: q14	234.00	1.20	221.30	1.03	-5.43	-12.70	0.51	0.47	0.00000
11	presto/tpch: q12	867.90	4.75	823.70	1.76	-5.09	-44.20	0.55	0.21	0.00000
20	presto/tpch: q21	10164.00	117.58	9696.00	49.19	-4.60	-468.00	1.16	0.51	0.00000
4	presto/tpch: q05	4950.00	37.76	4740.00	29.39	-4.24	-210.00	0.76	0.62	0.00000
7	presto/tpch: q08	2877.80	14.80	2761.10	17.51	-4.06	-116.70	0.51	0.63	0.00000
1	presto/tpch: q02	603.80	1.35	582.50	2.02	-3.53	-21.30	0.22	0.35	0.00000
18	presto/tpch: q19	1915.30	6.66	1854.30	17.87	-3.18	-61.00	0.35	0.96	0.00001
12	presto/tpch: q13	3070.50	8.73	2986.30	4.76	-2.74	-84.20	0.28	0.16	0.00000
10	presto/tpch: q11	534.20	1.18	520.00	2.96	-2.66	-14.20	0.22	0.57	0.00000
5	presto/tpch: q06	118.80	0.38	116.50	0.24	-1.94	-2.30	0.32	0.21	0.00000

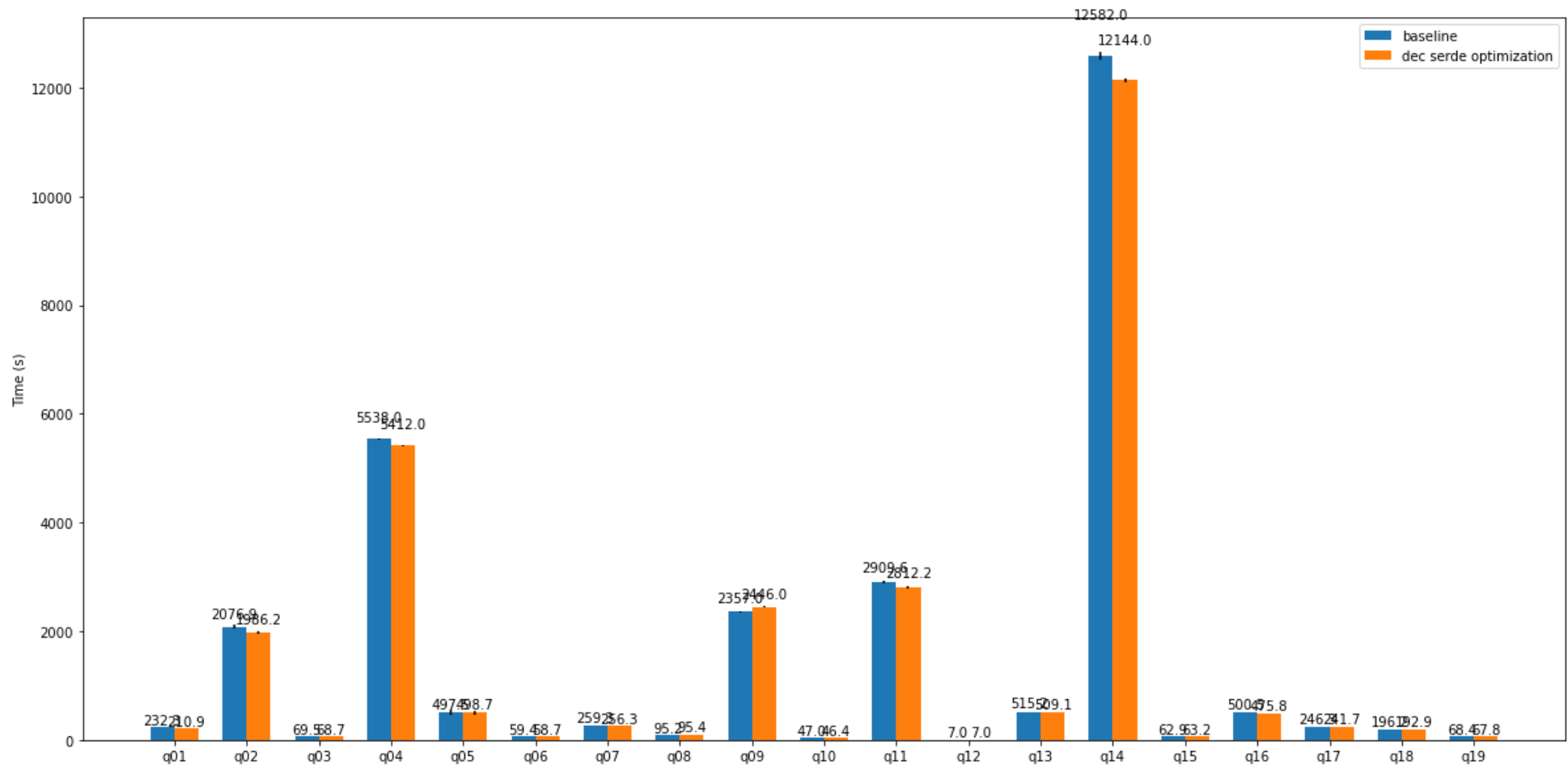
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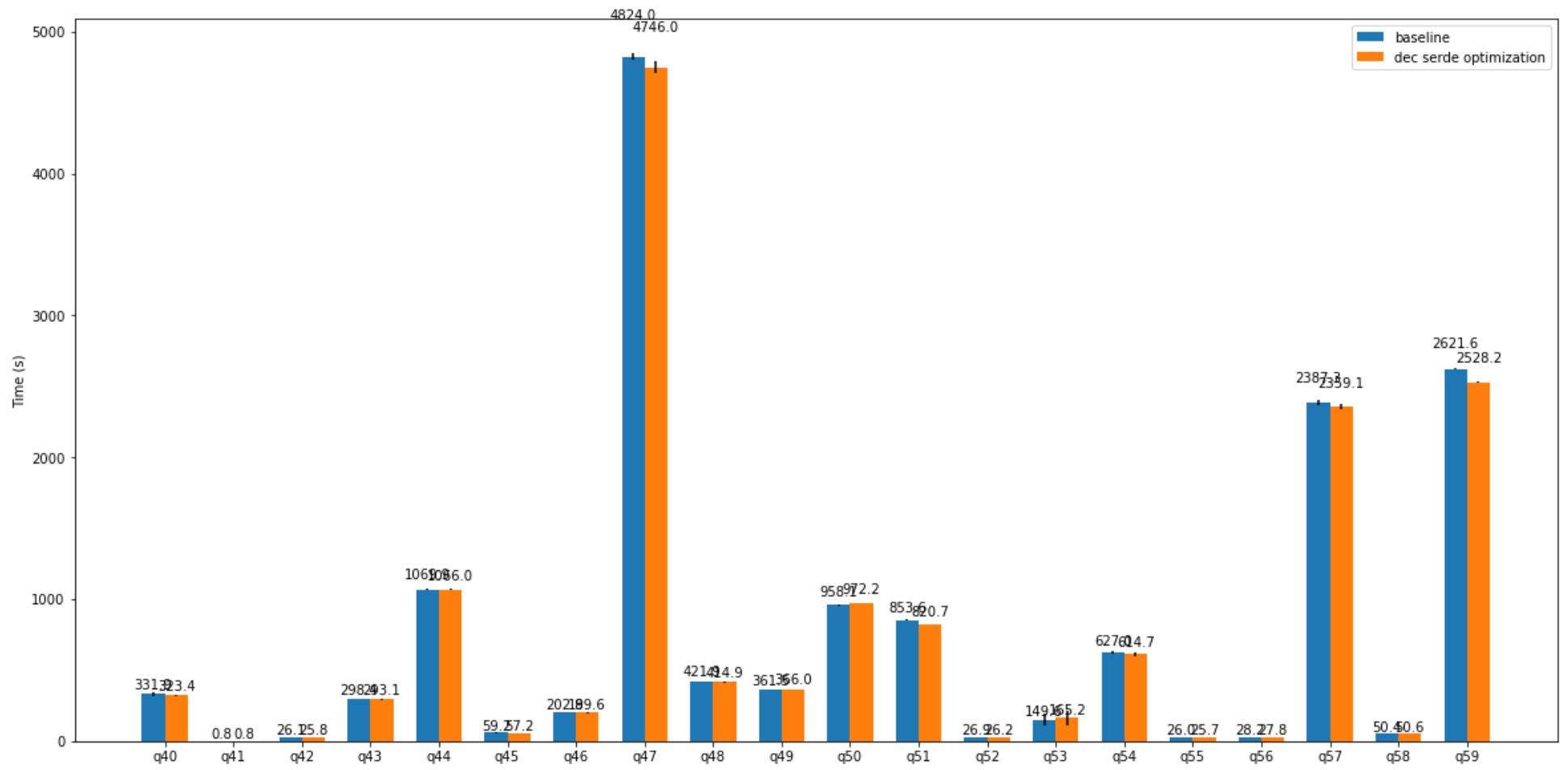
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std       6
min     -22
25%     -8
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max     -2
Name: % change, dtype: float64

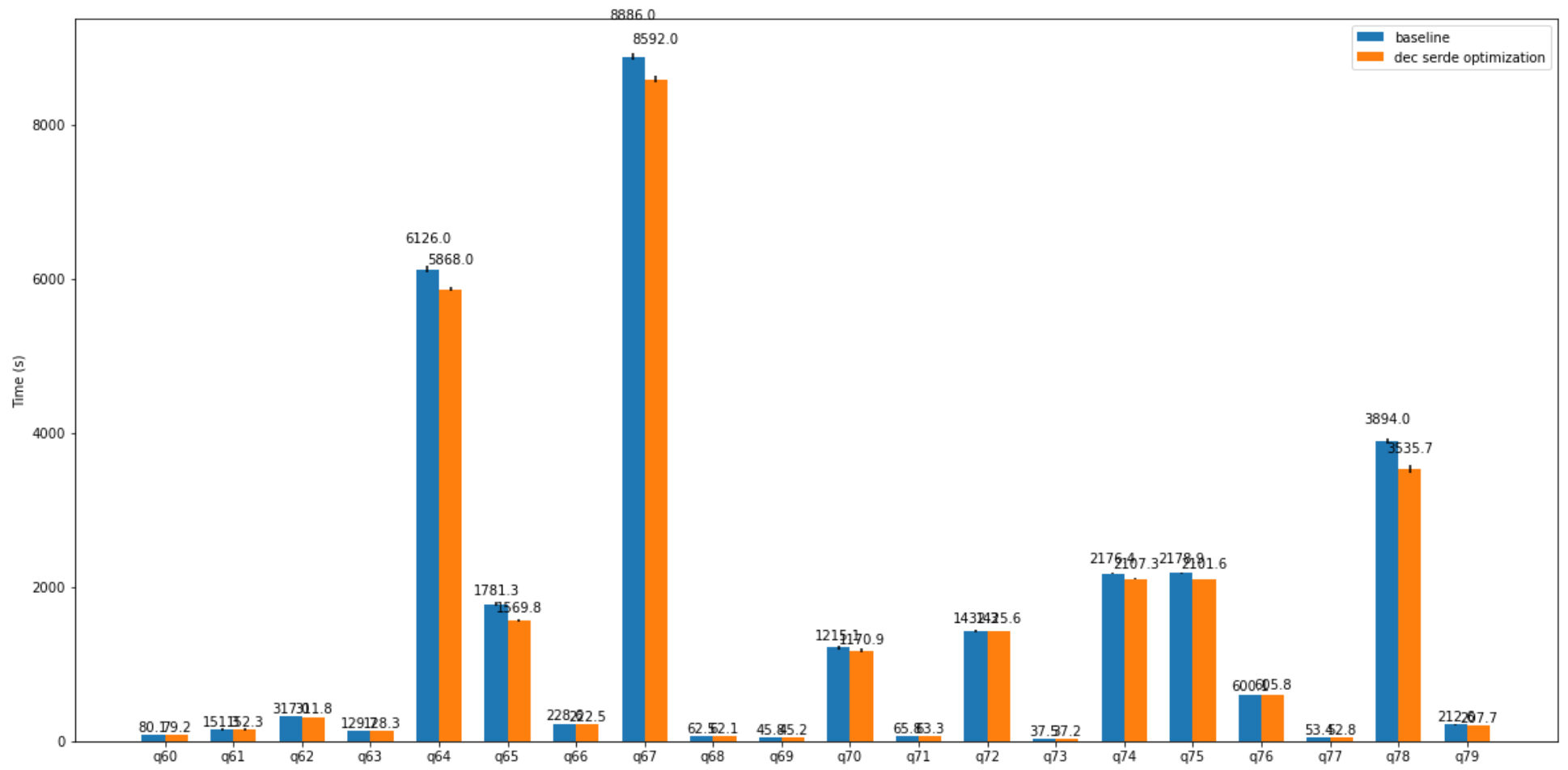
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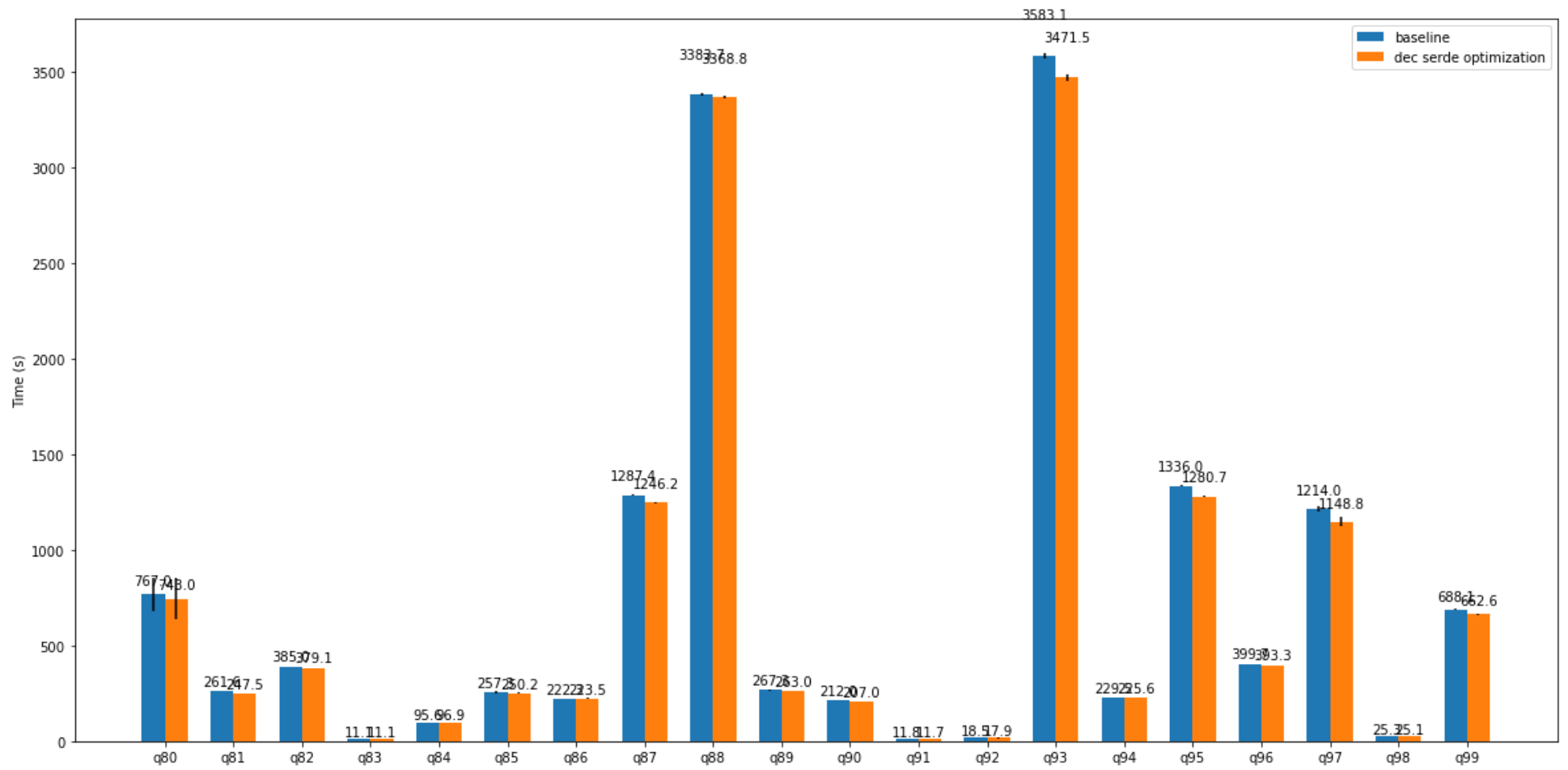
TPC-DS Comparison (CPU)

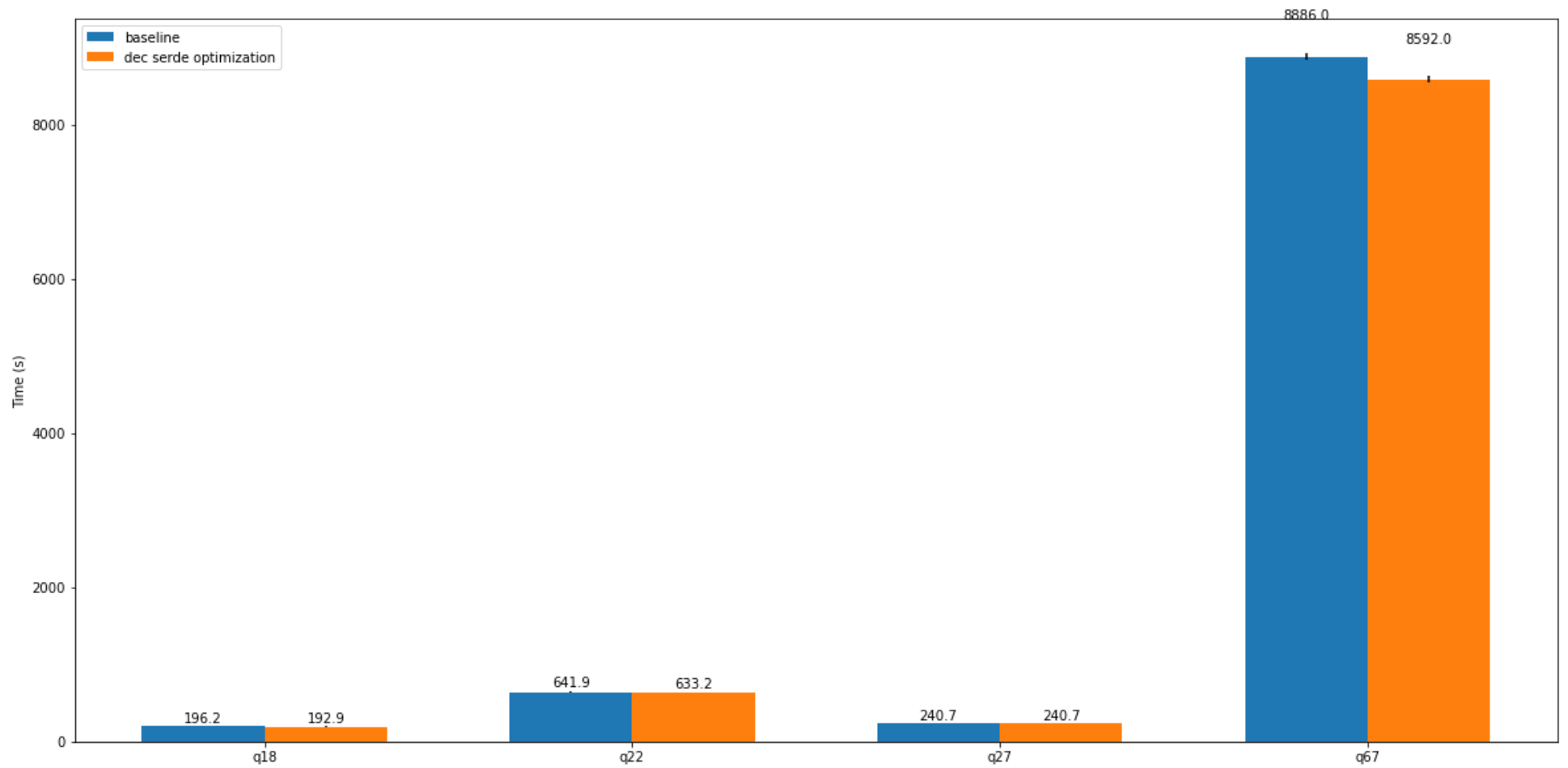












	query	baseline mean	baseline std.dev	dec serde optimization mean	dec serde optimization std.dev	% change	absolute change	baseline std.dev %	dec serde optimization std.dev %	p-value
64	presto/tpcds: q65	1781.30	26.06	1569.80	17.68	-11.87	-211.50	1.46	1.13	0.00000
0	presto/tpcds: q01	232.30	1.91	210.90	0.83	-9.21	-21.40	0.82	0.39	0.00000
77	presto/tpcds: q78	3894.00	42.09	3535.70	48.63	-9.20	-358.30	1.08	1.38	0.00000
80	presto/tpcds: q81	261.60	1.31	247.50	0.99	-5.39	-14.10	0.50	0.40	0.00000
96	presto/tpcds: q97	1214.00	12.32	1148.80	24.15	-5.37	-65.20	1.01	2.10	0.00015
15	presto/tpcds: q16	500.50	3.16	475.80	3.93	-4.94	-24.70	0.63	0.82	0.00000
1	presto/tpcds: q02	2076.90	35.56	1986.20	25.02	-4.37	-90.70	1.71	1.26	0.00046

	query	baseline mean	baseline std.dev	dec serde optimization mean	dec serde optimization std.dev	% change	absolute change	baseline std.dev %	dec serde optimization std.dev %	p-value
63	presto/tpcds:q64	6126.00	42.09	5868.00	22.77	-4.21	-258.00	0.69	0.39	0.00000
94	presto/tpcds:q95	1336.00	5.27	1280.70	1.89	-4.14	-55.30	0.39	0.15	0.00000
50	presto/tpcds:q51	853.60	2.93	820.70	3.07	-3.85	-32.90	0.34	0.37	0.00000
70	presto/tpcds:q71	65.80	1.45	63.30	1.41	-3.80	-2.50	2.21	2.22	0.01274
98	presto/tpcds:q99	688.10	2.53	662.60	1.18	-3.71	-25.50	0.37	0.18	0.00000
69	presto/tpcds:q70	1215.10	26.92	1170.90	26.46	-3.64	-44.20	2.22	2.26	0.01673
29	presto/tpcds:q30	130.30	1.63	125.60	2.54	-3.61	-4.70	1.25	2.02	0.00337
58	presto/tpcds:q59	2621.60	5.06	2528.20	4.05	-3.56	-93.40	0.19	0.16	0.00000
74	presto/tpcds:q75	2178.90	10.82	2101.60	7.34	-3.55	-77.30	0.50	0.35	0.00000
13	presto/tpcds:q14	12582.00	74.65	12144.00	37.18	-3.48	-438.00	0.59	0.31	0.00000
10	presto/tpcds:q11	2909.60	17.94	2812.20	17.96	-3.35	-97.40	0.62	0.64	0.00000
66	presto/tpcds:q67	8886.00	42.09	8592.00	37.18	-3.31	-294.00	0.47	0.43	0.00000
44	presto/tpcds:q45	59.20	0.24	57.25	0.28	-3.29	-1.95	0.41	0.50	0.00000
91	presto/tpcds:q92	18.52	1.84	17.92	2.55	-3.21	-0.59	9.94	14.23	0.65302
22	presto/tpcds:q23	11958.00	62.01	11574.00	19.72	-3.21	-384.00	0.52	0.17	0.00000
86	presto/tpcds:q87	1287.40	3.43	1246.20	4.43	-3.20	-41.20	0.27	0.36	0.00000
73	presto/tpcds:q74	2176.40	10.33	2107.30	6.58	-3.17	-69.10	0.47	0.31	0.00000
79	presto/tpcds:q80	767.00	88.14	743.00	107.35	-3.13	-24.00	11.49	14.45	0.68107
92	presto/tpcds:q93	3583.10	15.09	3471.50	15.75	-3.11	-111.60	0.42	0.45	0.00000
37	presto/tpcds:q38	1271.30	5.75	1234.90	3.30	-2.86	-36.40	0.45	0.27	0.00000
84	presto/tpcds:q85	257.30	5.17	250.20	4.12	-2.76	-7.10	2.01	1.65	0.02512
65	presto/tpcds:q66	228.60	0.66	222.50	0.70	-2.67	-6.10	0.29	0.32	0.00000

	query	baseline mean	baseline std.dev	dec serde optimization mean	dec serde optimization std.dev	% change	absolute change	baseline std.dev %	dec serde optimization std.dev %	p-value
39	presto/tpcds:q40	331.90	12.85	323.40	3.22	-2.56	-8.50	3.87	1.00	0.14706
33	presto/tpcds:q34	115.50	0.63	112.60	0.90	-2.51	-2.90	0.54	0.80	0.00007
51	presto/tpcds:q52	26.88	0.08	26.24	0.10	-2.40	-0.64	0.30	0.37	0.00000
89	presto/tpcds:q90	212.00	0.31	207.00	0.38	-2.36	-5.00	0.15	0.18	0.00000
78	presto/tpcds:q79	212.60	0.73	207.70	1.16	-2.30	-4.90	0.34	0.56	0.00001
3	presto/tpcds:q04	5538.00	14.70	5412.00	18.59	-2.28	-126.00	0.27	0.34	0.00000
30	presto/tpcds:q31	415.10	4.42	406.70	4.54	-2.02	-8.40	1.06	1.12	0.00876
53	presto/tpcds:q54	627.00	10.95	614.70	14.48	-1.96	-12.30	1.75	2.36	0.12799
16	presto/tpcds:q17	246.30	5.24	241.70	4.98	-1.87	-4.60	2.13	2.06	0.15026
42	presto/tpcds:q43	298.40	3.65	293.10	1.77	-1.78	-5.30	1.22	0.60	0.00952
93	presto/tpcds:q94	229.50	1.06	225.60	0.66	-1.70	-3.90	0.46	0.29	0.00002
17	presto/tpcds:q18	196.20	0.93	192.90	2.17	-1.68	-3.30	0.47	1.13	0.00653
47	presto/tpcds:q48	421.90	1.76	414.90	1.77	-1.66	-7.00	0.42	0.43	0.00004
61	presto/tpcds:q62	317.00	1.18	311.80	1.64	-1.64	-5.20	0.37	0.53	0.00009
46	presto/tpcds:q47	4824.00	22.77	4746.00	42.09	-1.62	-78.00	0.47	0.89	0.00255
88	presto/tpcds:q89	267.30	1.46	263.00	1.24	-1.61	-4.30	0.55	0.47	0.00026
23	presto/tpcds:q24	3027.60	11.87	2979.00	15.42	-1.61	-48.60	0.39	0.52	0.00011
95	presto/tpcds:q96	399.70	0.45	393.30	0.63	-1.60	-6.40	0.11	0.16	0.00000
45	presto/tpcds:q46	202.80	1.00	199.60	2.23	-1.58	-3.20	0.50	1.12	0.00949
81	presto/tpcds:q82	385.00	0.49	379.10	0.70	-1.53	-5.90	0.13	0.19	0.00000
35	presto/tpcds:q36	228.30	0.63	225.00	0.66	-1.45	-3.30	0.28	0.29	0.00000
55	presto/tpcds:q56	28.24	0.26	27.84	0.19	-1.44	-0.41	0.91	0.67	0.01040

	query	baseline mean	baseline std.dev	dec serde optimization mean	dec serde optimization std.dev	% change	absolute change	baseline std.dev %	dec serde optimization std.dev %	p-value
21	presto/tpcds:q22	641.90	2.09	633.20	1.73	-1.36	-8.70	0.33	0.27	0.00001
24	presto/tpcds:q25	161.50	7.42	159.40	3.65	-1.30	-2.10	4.59	2.29	0.54792
9	presto/tpcds:q10	46.99	0.50	46.41	0.51	-1.24	-0.58	1.07	1.11	0.07485
68	presto/tpcds:q69	45.80	0.60	45.23	0.38	-1.24	-0.57	1.30	0.84	0.07758
12	presto/tpcds:q13	515.20	2.86	509.10	2.76	-1.18	-6.10	0.55	0.54	0.00370
56	presto/tpcds:q57	2387.30	20.06	2359.10	17.58	-1.18	-28.20	0.84	0.75	0.02698
6	presto/tpcds:q07	259.30	1.22	256.30	0.59	-1.16	-3.00	0.47	0.23	0.00030
2	presto/tpcds:q03	69.50	0.45	68.70	0.73	-1.15	-0.80	0.65	1.07	0.04642
36	presto/tpcds:q37	183.80	0.31	181.70	0.45	-1.14	-2.10	0.17	0.25	0.00000
5	presto/tpcds:q06	59.37	0.31	58.70	0.36	-1.13	-0.67	0.52	0.61	0.00578
59	presto/tpcds:q60	80.10	1.30	79.20	0.66	-1.12	-0.90	1.62	0.83	0.16131
62	presto/tpcds:q63	129.70	0.70	128.30	0.70	-1.08	-1.40	0.54	0.55	0.00615
41	presto/tpcds:q42	26.06	0.09	25.79	0.08	-1.02	-0.27	0.36	0.32	0.00039
76	presto/tpcds:q77	53.36	0.29	52.84	0.32	-0.97	-0.52	0.55	0.60	0.01430
54	presto/tpcds:q55	25.98	0.11	25.73	0.14	-0.95	-0.25	0.43	0.54	0.00687
32	presto/tpcds:q33	53.22	0.58	52.72	0.27	-0.92	-0.49	1.09	0.52	0.09054
97	presto/tpcds:q98	25.35	0.06	25.12	0.37	-0.88	-0.22	0.24	1.48	0.17712
18	presto/tpcds:q19	68.40	0.38	67.80	1.00	-0.88	-0.60	0.55	1.48	0.20087
72	presto/tpcds:q73	37.47	0.08	37.16	0.17	-0.81	-0.30	0.22	0.45	0.00275
19	presto/tpcds:q20	15.49	0.11	15.37	0.22	-0.76	-0.12	0.72	1.40	0.25924
90	presto/tpcds:q91	11.80	0.74	11.71	0.73	-0.73	-0.09	6.28	6.20	0.84191
34	presto/tpcds:q35	205.30	2.41	203.80	1.24	-0.73	-1.50	1.18	0.61	0.20532

	query	baseline mean	baseline std.dev	dec serde optimization mean	dec serde optimization std.dev	% change	absolute change	baseline std.dev %	dec serde optimization std.dev %	p-value
40	presto/tpcds:q41	0.77	0.00	0.77	0.01	-0.69	-0.01	0.59	1.61	0.34278
67	presto/tpcds:q68	62.50	0.45	62.10	0.50	-0.64	-0.40	0.72	0.81	0.17743
20	presto/tpcds:q21	11.84	0.15	11.78	0.19	-0.53	-0.06	1.26	1.59	0.53169
11	presto/tpcds:q12	7.00	0.06	6.96	0.05	-0.52	-0.04	0.88	0.78	0.29870
71	presto/tpcds:q72	1432.30	13.77	1425.60	6.11	-0.47	-6.70	0.96	0.43	0.30144
87	presto/tpcds:q88	3383.70	5.07	3368.80	6.14	-0.44	-14.90	0.15	0.18	0.00101
43	presto/tpcds:q44	1069.90	8.12	1066.00	4.97	-0.36	-3.90	0.76	0.47	0.33919
28	presto/tpcds:q29	390.20	1.81	389.60	1.05	-0.15	-0.60	0.46	0.27	0.49797
38	presto/tpcds:q39	47.22	0.44	47.17	0.50	-0.10	-0.04	0.94	1.07	0.87268
26	presto/tpcds:q27	240.70	0.45	240.70	0.24	0.00	0.00	0.19	0.10	1.00000
82	presto/tpcds:q83	11.10	0.23	11.12	0.40	0.14	0.01	2.07	3.62	0.93843
7	presto/tpcds:q08	95.20	0.49	95.40	0.38	0.21	0.20	0.51	0.40	0.44754
4	presto/tpcds:q05	497.50	49.56	498.70	36.59	0.24	1.20	9.96	7.34	0.96288
25	presto/tpcds:q26	142.90	0.59	143.40	0.54	0.35	0.50	0.41	0.37	0.15561
57	presto/tpcds:q58	50.35	0.59	50.59	0.57	0.47	0.24	1.16	1.12	0.49350
14	presto/tpcds:q15	62.90	0.45	63.20	0.73	0.48	0.30	0.72	1.15	0.41051
85	presto/tpcds:q86	222.30	0.63	223.50	1.69	0.54	1.20	0.28	0.75	0.13352
60	presto/tpcds:q61	151.30	17.05	152.30	9.20	0.66	1.00	11.27	6.04	0.90190
75	presto/tpcds:q76	600.10	1.16	605.80	2.36	0.95	5.70	0.19	0.39	0.00034
48	presto/tpcds:q49	361.50	2.78	366.00	1.47	1.24	4.50	0.77	0.40	0.00570
83	presto/tpcds:q84	95.60	0.49	96.90	0.63	1.36	1.30	0.51	0.65	0.00255
49	presto/tpcds:q50	958.10	1.10	972.20	1.64	1.47	14.10	0.11	0.17	0.00000

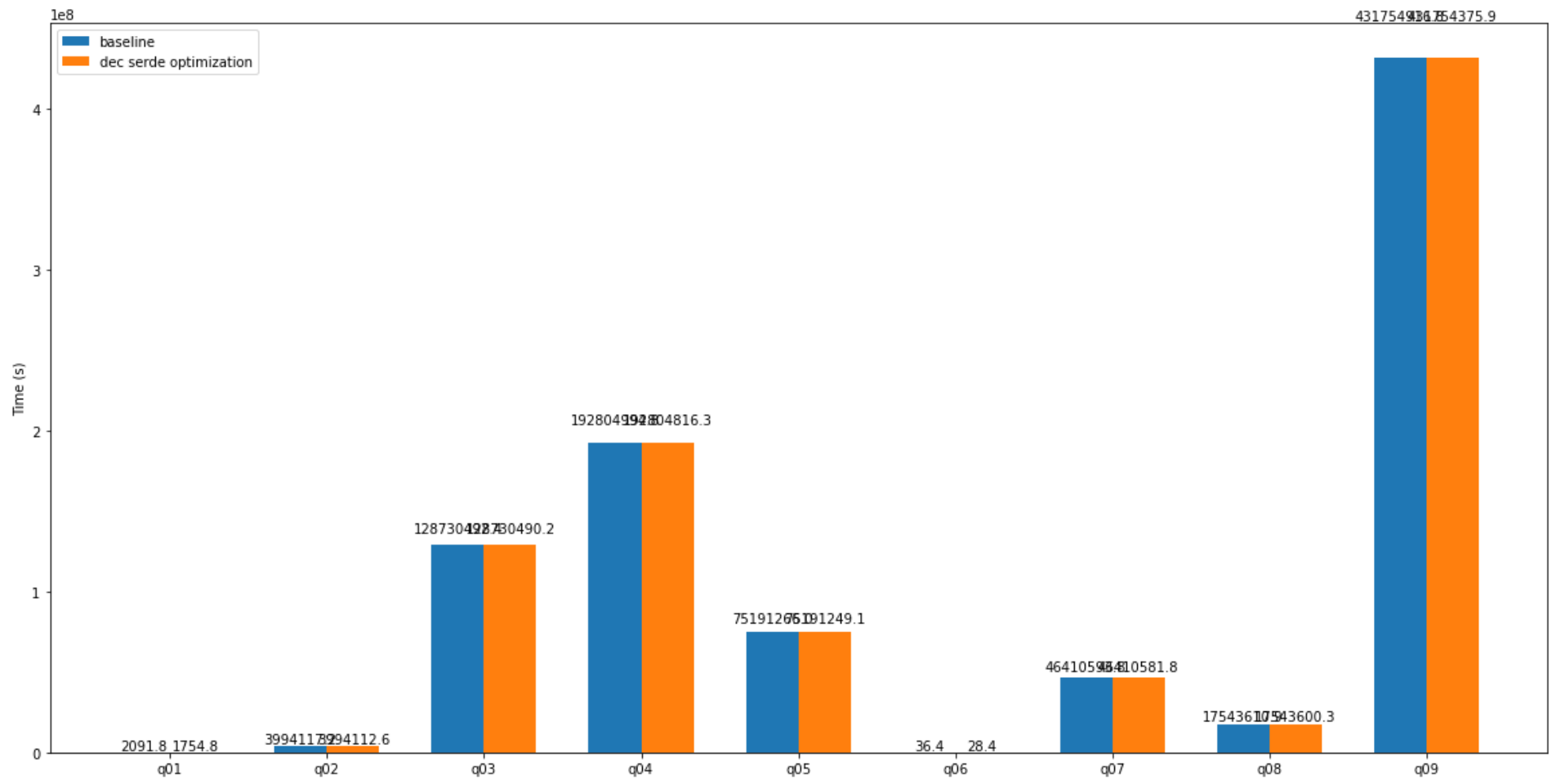
	query	baseline mean	baseline std.dev	dec serde optimization mean	dec serde optimization std.dev	% change	absolute change	baseline std.dev %	dec serde optimization std.dev %	p-value
27	presto/tpcds: q28	2740.90	5.44	2817.90	8.51	2.81	77.00	0.20	0.30	0.00000
8	presto/tpcds: q09	2357.00	8.68	2446.00	11.88	3.78	89.00	0.37	0.49	0.00000
52	presto/tpcds: q53	149.60	40.47	165.20	52.13	10.43	15.60	27.05	31.56	0.57541
31	presto/tpcds: q32	29.03	0.57	56.56	30.94	94.82	27.53	1.97	54.70	0.05433

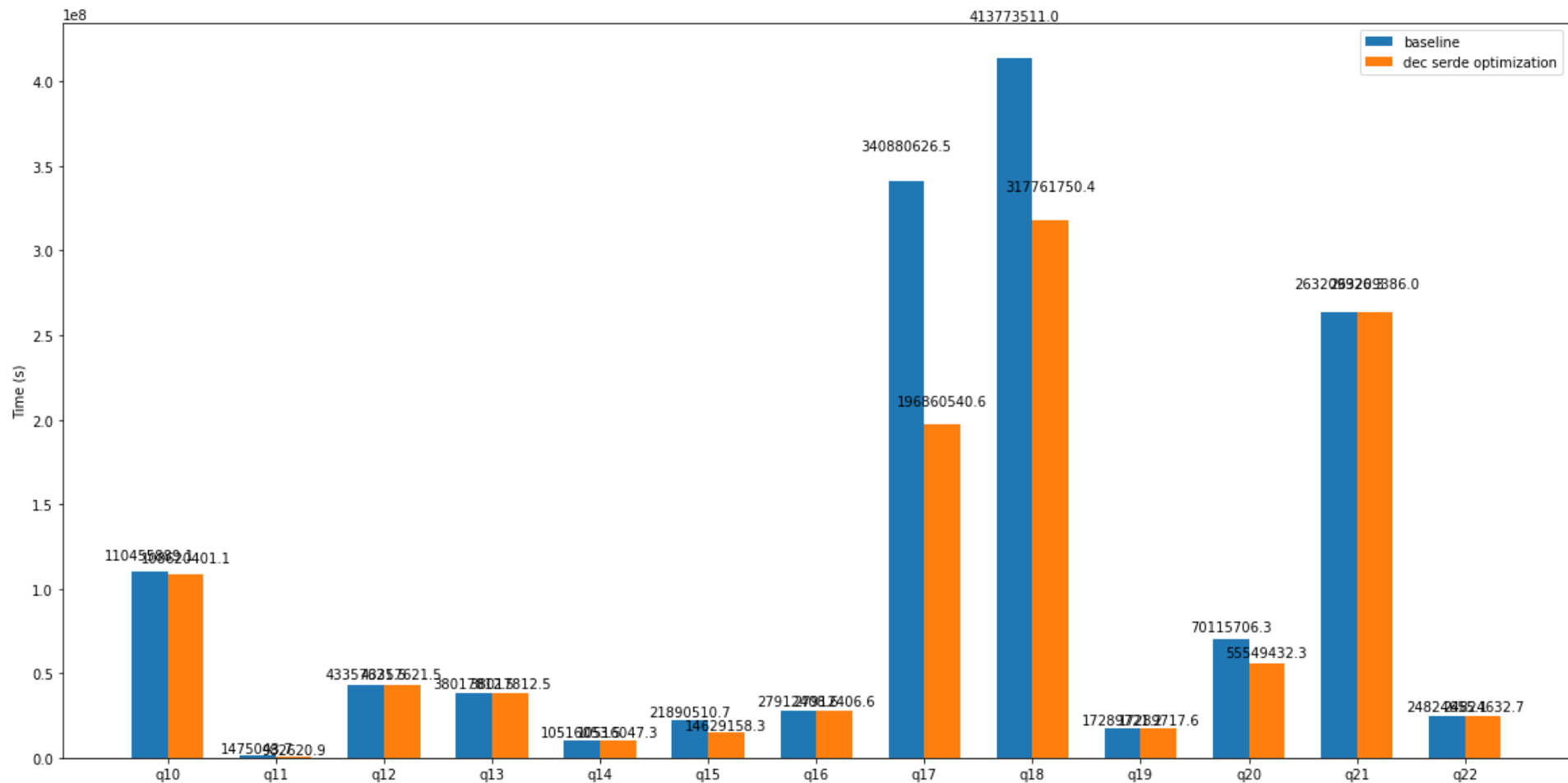
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std      10
min      -12
25%      -3
50%      -1
75%      -1
max       95
Name: % change, dtype: float64

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TPC-H Comparison (Network)

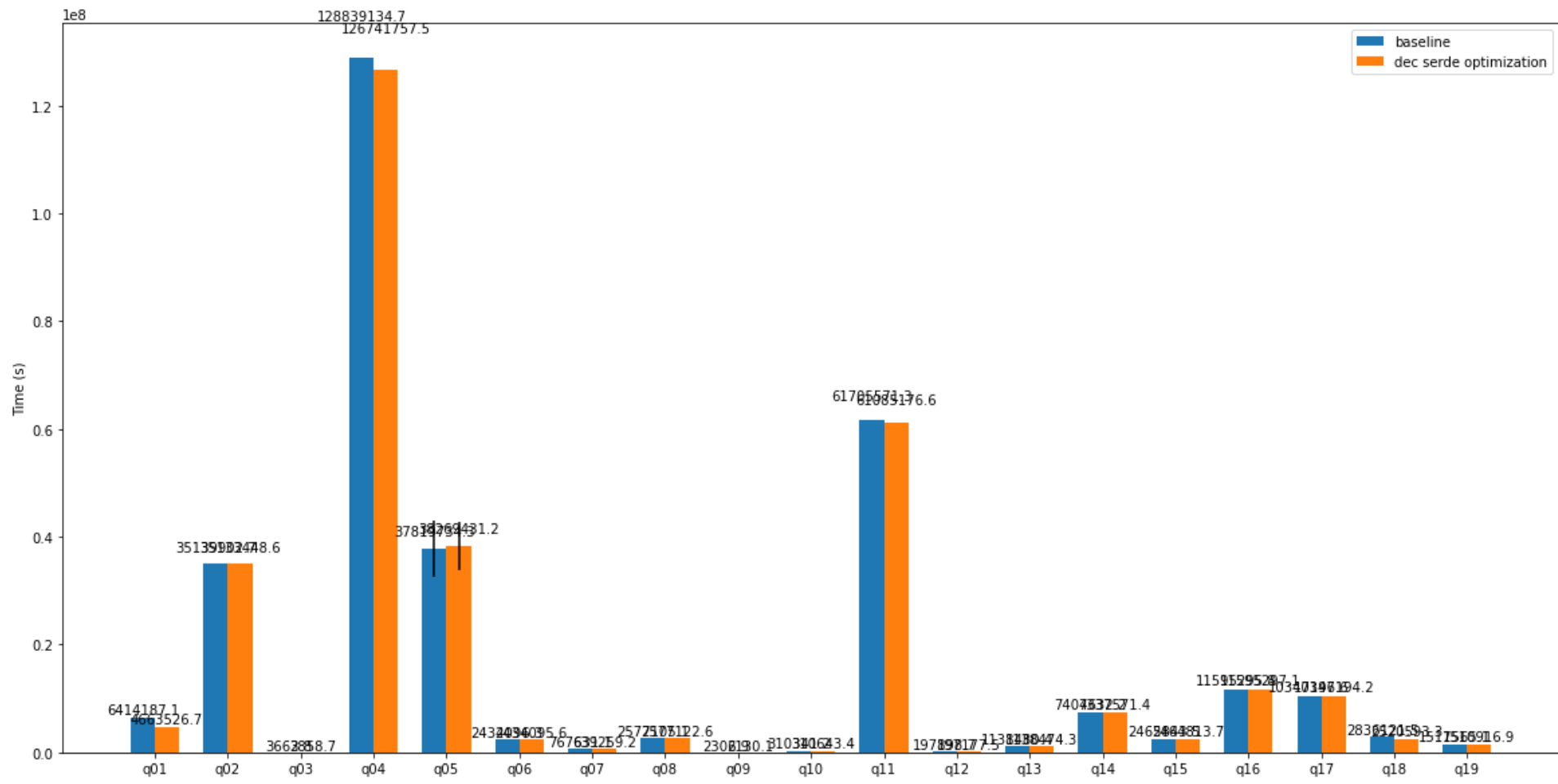


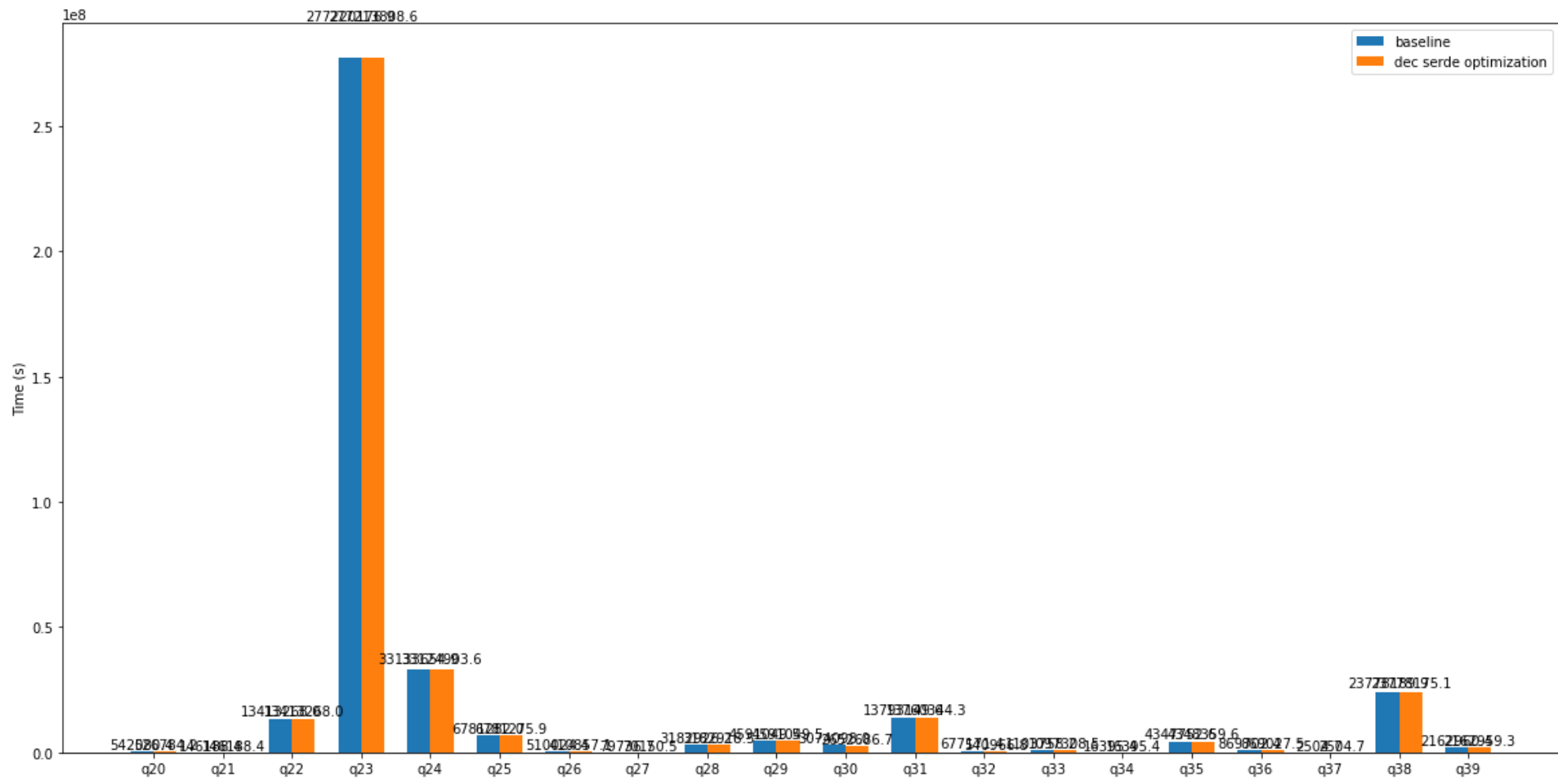


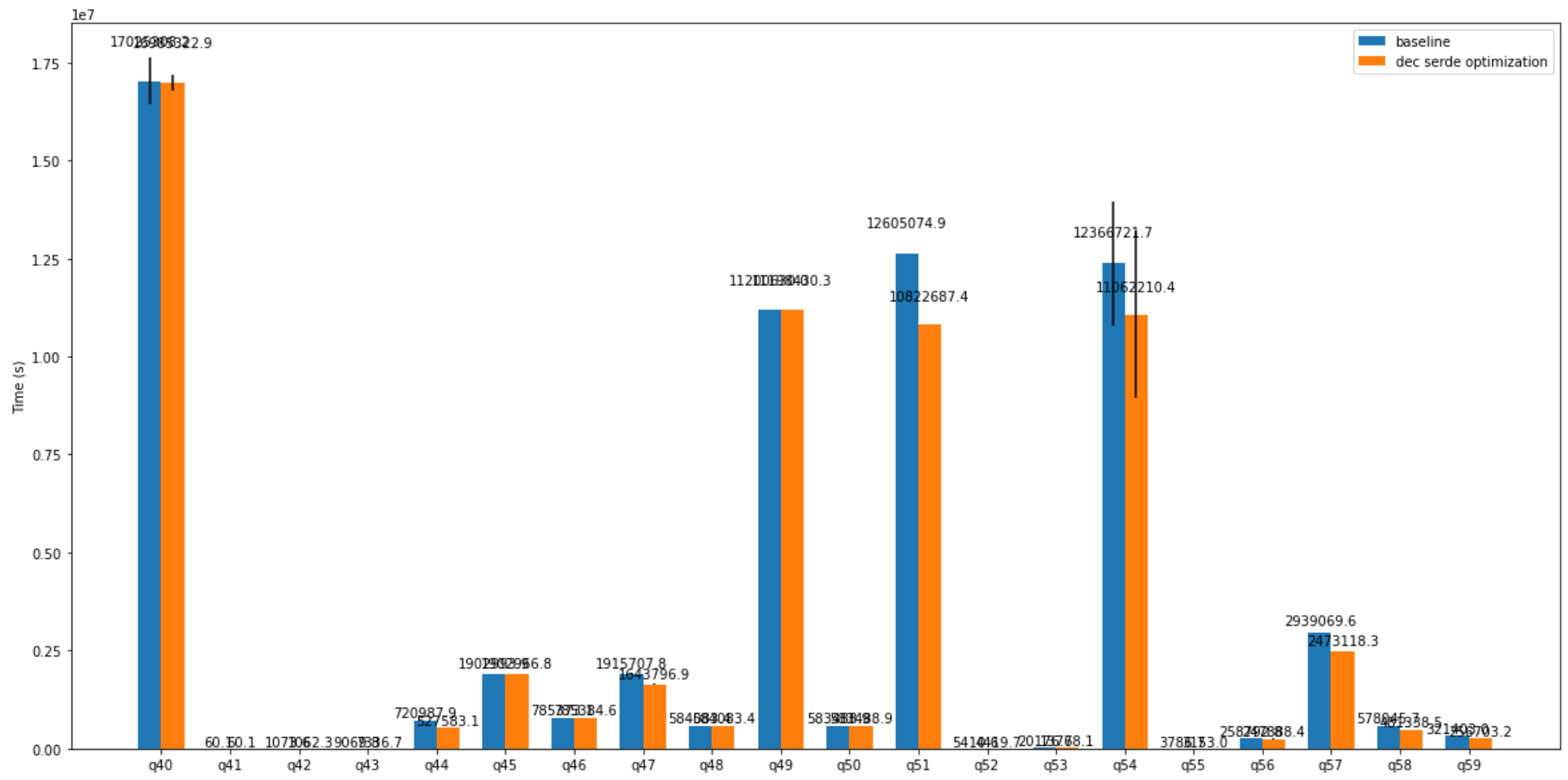
	query	baseline mean	baseline std.dev	dec serde optimization mean	dec serde optimization std.dev	% change	absolute change	baseline std.dev %	dec serde optimization std.dev %	p-value
16	presto/tpch: q17	340880626.47	600.47	196860540.65	39.15	-42.25	-144020085.82	0.00	0.00	0.00000
10	presto/tpch: q11	1475043.68	12717.90	982620.92	7849.56	-33.38	-492422.76	0.86	0.80	0.00000
14	presto/tpch: q15	21890510.71	154.83	14629158.26	105.97	-33.17	-7261352.45	0.00	0.00	0.00000
17	presto/tpch: q18	413773511.01	3072.67	317761750.36	3648.53	-23.20	-96011760.65	0.00	0.00	0.00000
5	presto/tpch: q06	36.43	0.68	28.36	0.70	-22.16	-8.07	1.88	2.47	0.00000
19	presto/tpch: q20	70115706.25	115.77	55549432.29	45.34	-20.77	-14566273.97	0.00	0.00	0.00000
0	presto/tpch: q01	2091.83	2.02	1754.79	1.03	-16.11	-337.03	0.10	0.06	0.00000

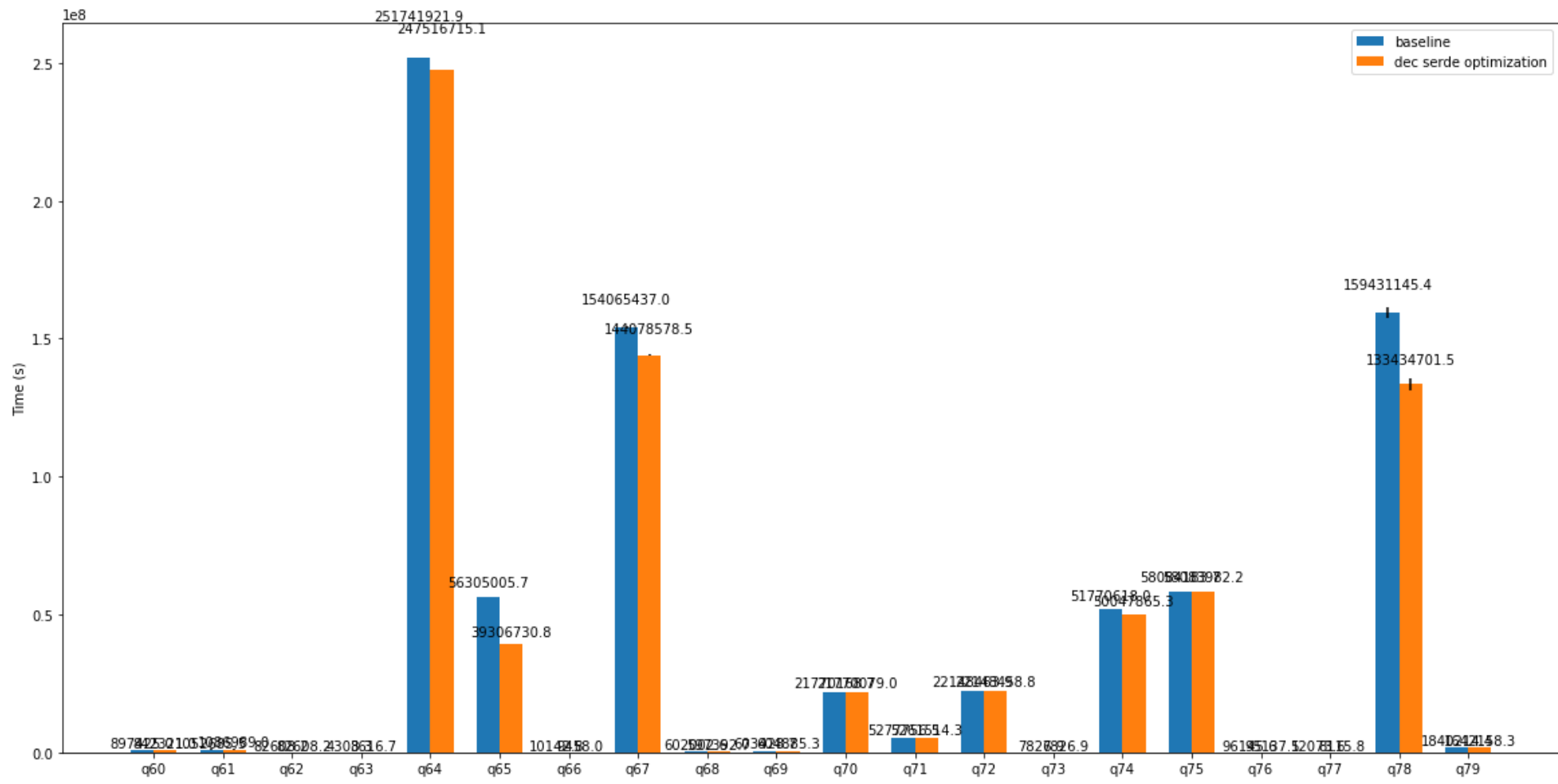
	query	baseline mean	baseline std.dev	dec serde optimization mean	dec serde optimization std.dev	% change	absolute change	baseline std.dev %	dec serde optimization std.dev %	p-value
9	presto/tpch: q10	110455889.11	2090.73	108620401.06	1156.41	-1.66	-1835488.06	0.00	0.00	0.00000
20	presto/tpch: q21	263209926.27	259.41	263209385.96	421.41	-0.00	-540.31	0.00	0.00	0.02331
8	presto/tpch: q09	431754916.81	6.66	431754375.88	7.55	-0.00	-540.92	0.00	0.00	0.00000
1	presto/tpch: q02	3994117.18	1.30	3994112.60	14.24	-0.00	-4.58	0.00	0.00	0.45098
3	presto/tpch: q04	192804994.77	220.64	192804816.32	283.12	-0.00	-178.44	0.00	0.00	0.25128
21	presto/tpch: q22	24824655.12	0.00	24824632.66	0.00	-0.00	-22.46	0.00	0.00	0.00000
7	presto/tpch: q08	17543610.91	20.01	17543600.35	13.24	-0.00	-10.56	0.00	0.00	0.30633
13	presto/tpch: q14	10516053.48	0.00	10516047.33	0.00	-0.00	-6.14	0.00	0.00	0.00000
6	presto/tpch: q07	46410593.76	3.84	46410581.84	2.66	-0.00	-11.92	0.00	0.00	0.00010
4	presto/tpch: q05	75191266.01	12.56	75191249.09	5.31	-0.00	-16.92	0.00	0.00	0.01245
18	presto/tpch: q19	17289721.22	1.37	17289717.58	0.00	-0.00	-3.63	0.00	0.00	0.00007
15	presto/tpch: q16	27912408.61	7.08	27912406.62	5.99	-0.00	-1.99	0.00	0.00	0.61058
2	presto/tpch: q03	128730492.44	13.23	128730490.16	8.47	-0.00	-2.28	0.00	0.00	0.73001
11	presto/tpch: q12	43357621.51	0.00	43357621.51	0.00	0.00	0.00	0.00	0.00	nan
12	presto/tpch: q13	38017812.50	0.00	38017812.50	0.00	0.00	0.00	0.00	0.00	nan
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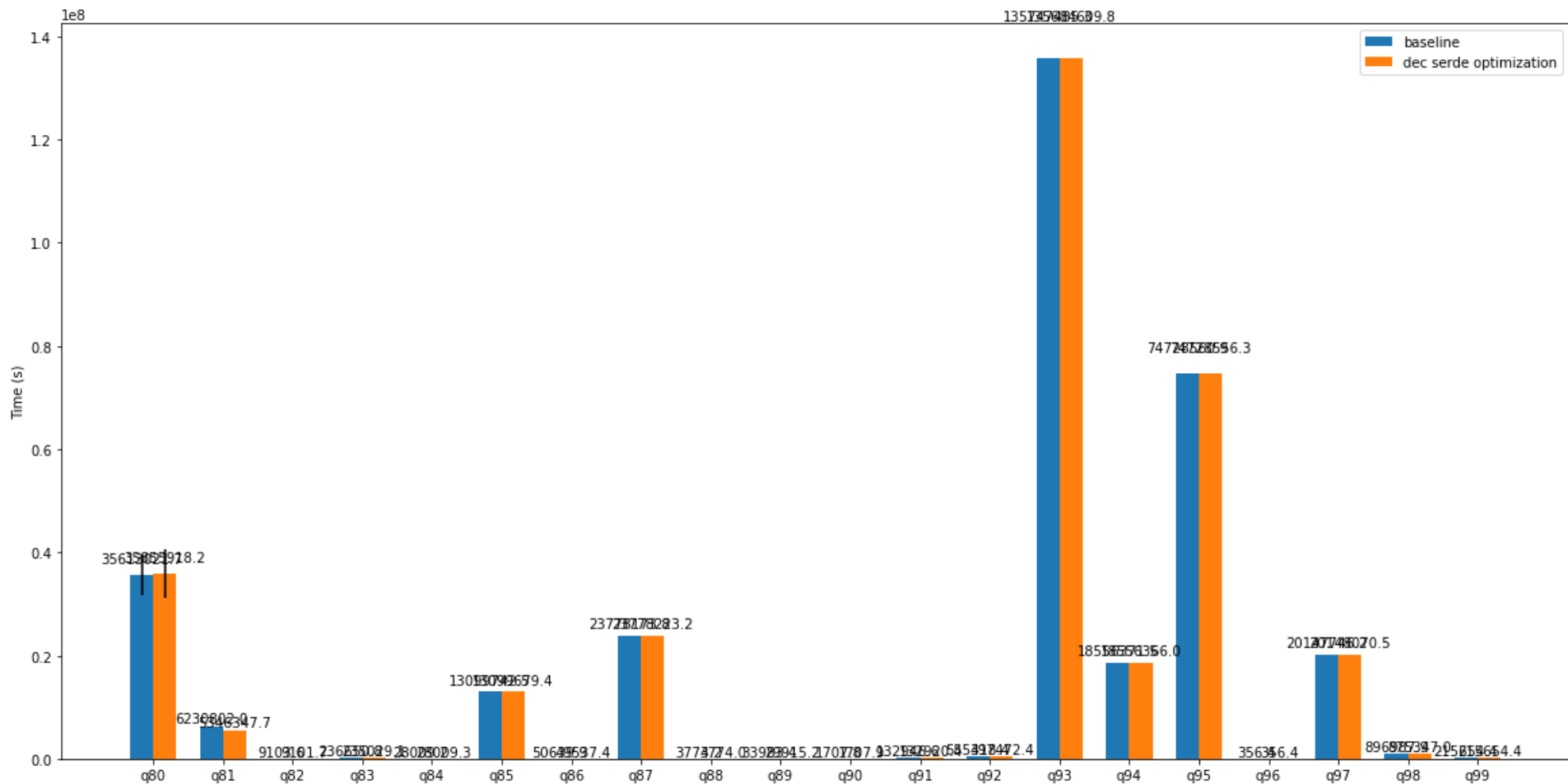
TPC-DS Comparison (Network)











	query	baseline mean	baseline std.dev	dec serde optimization mean	dec serde optimization std.dev	% change	absolute change	baseline std.dev %	dec serde optimization std.dev %	p-value
76	presto/tpcds: q77	12073.56	614.43	8115.80	396.36	-32.78	-3957.76	5.09	4.88	0.00000
52	presto/tpcds: q53	20176.63	0.00	13778.12	0.00	-31.71	-6398.51	0.00	0.00	0.00000
64	presto/tpcds: q65	56305005.66	4235.92	39306730.81	2498.58	-30.19	-16998274.85	0.01	0.01	0.00000
91	presto/tpcds: q92	555418.35	0.00	397472.42	0.00	-28.44	-157945.93	0.00	0.00	0.00000
0	presto/tpcds: q01	6414187.08	1767.93	4663526.67	819.54	-27.29	-1750660.41	0.03	0.02	0.00000
43	presto/tpcds: q44	720987.95	32.02	527583.08	2.93	-26.82	-193404.86	0.00	0.00	0.00000
2	presto/tpcds: q03	3663.83	0.00	2858.71	0.00	-21.97	-805.12	0.00	0.00	0.00000

	query	baseline mean	baseline std.dev	dec serde optimization mean	dec serde optimization std.dev	% change	absolute change	baseline std.dev %	dec serde optimization std.dev %	p-value
58	presto/tpcds:q59	321402.95	220.75	256703.19	347.44	-20.13	-64699.76	0.07	0.14	0.00000
31	presto/tpcds:q32	677171.43	0.00	540966.84	0.00	-20.11	-136204.59	0.00	0.00	0.00000
25	presto/tpcds:q26	510024.41	8722.83	410857.11	5774.67	-19.44	-99167.30	1.71	1.41	0.00000
42	presto/tpcds:q43	9069.77	0.00	7336.73	0.00	-19.11	-1733.04	0.00	0.00	0.00000
51	presto/tpcds:q52	5410.64	0.00	4419.75	0.00	-18.31	-990.90	0.00	0.00	0.00000
54	presto/tpcds:q55	3786.73	0.00	3152.98	0.00	-16.74	-633.74	0.00	0.00	0.00000
57	presto/tpcds:q58	578045.75	1005.73	481338.50	893.53	-16.73	-96707.24	0.17	0.19	0.00000
6	presto/tpcds:q07	767631.10	22538.83	639259.15	12898.32	-16.72	-128371.95	2.94	2.02	0.00000
77	presto/tpcds:q78	159431145.38	1921942.25	133434701.55	2263098.34	-16.31	-25996443.83	1.21	1.70	0.00000
62	presto/tpcds:q63	4308.33	0.00	3616.72	0.00	-16.05	-691.62	0.00	0.00	0.00000
56	presto/tpcds:q57	2939069.58	0.00	2473118.31	0.00	-15.85	-465951.26	0.00	0.00	0.00000
80	presto/tpcds:q81	6230802.03	55.49	5346347.66	47.90	-14.19	-884454.37	0.00	0.00	0.00000
46	presto/tpcds:q47	1915707.84	23420.96	1643796.87	32989.04	-14.19	-271910.97	1.22	2.01	0.00000
50	presto/tpcds:q51	12605074.92	116.54	10822687.44	104.82	-14.14	-1782387.49	0.00	0.00	0.00000
29	presto/tpcds:q30	3074098.02	75.32	2652686.67	85.23	-13.71	-421411.35	0.00	0.00	0.00000
26	presto/tpcds:q27	79736.69	3.01	70150.53	3.36	-12.02	-9586.16	0.00	0.00	0.00000
88	presto/tpcds:q89	33983.45	0.00	29915.19	0.00	-11.97	-4068.26	0.00	0.00	0.00000
17	presto/tpcds:q18	2836121.52	26.60	2520593.32	19.51	-11.13	-315528.20	0.00	0.00	0.00000
78	presto/tpcds:q79	1840214.42	0.22	1642158.32	0.29	-10.76	-198056.09	0.00	0.00	0.00000
53	presto/tpcds:q54	12366721.68	1576513.09	11062210.41	2127520.66	-10.55	-1304511.27	12.75	19.23	0.25531
8	presto/tpcds:q09	2306.90	2.50	2130.13	4.40	-7.66	-176.77	0.11	0.21	0.00000
65	presto/tpcds:q66	10142.77	0.00	9457.97	0.00	-6.75	-684.80	0.00	0.00	0.00000

	query	baseline mean	baseline std.dev	dec serde optimization mean	dec serde optimization std.dev	% change	absolute change	baseline std.dev %	dec serde optimization std.dev %	p-value
66	presto/tpcds:q67	154065437.01	296921.59	144078578.54	278376.73	-6.48	-9986858.46	0.19	0.19	0.00000
59	presto/tpcds:q60	897424.97	4711.02	842321.04	2997.41	-6.14	-55103.93	0.52	0.36	0.00000
55	presto/tpcds:q56	258792.78	282.77	247888.42	814.27	-4.21	-10904.36	0.11	0.33	0.00000
73	presto/tpcds:q74	51770617.95	3554.23	50047865.29	1056.58	-3.33	-1722752.67	0.01	0.00	0.00000
19	presto/tpcds:q20	542080.38	5426.04	526784.23	5120.39	-2.82	-15296.15	1.00	0.97	0.00052
97	presto/tpcds:q98	896987.92	4889.71	875347.00	7543.62	-2.41	-21640.92	0.55	0.86	0.00015
85	presto/tpcds:q86	50639.93	44.66	49537.36	6.49	-2.18	-1102.58	0.09	0.01	0.00000
63	presto/tpcds:q64	251741921.86	71432.07	247516715.13	67941.60	-1.68	-4225206.73	0.03	0.03	0.00000
3	presto/tpcds:q04	128839134.74	600.71	126741757.46	315.36	-1.63	-2097377.28	0.00	0.00	0.00000
41	presto/tpcds:q42	1073.62	0.00	1062.29	0.00	-1.06	-11.33	0.00	0.00	0.00000
75	presto/tpcds:q76	96145.64	157.59	95137.53	73.98	-1.05	-1008.11	0.16	0.08	0.00000
10	presto/tpcds:q11	61705571.27	104.65	61085176.64	48.37	-1.01	-620394.63	0.00	0.00	0.00000
13	presto/tpcds:q14	7404632.18	6247.01	7337571.42	22405.98	-0.91	-67060.76	0.08	0.31	0.00003
67	presto/tpcds:q68	602002.60	69.86	597392.68	50.06	-0.77	-4609.92	0.01	0.01	0.00000
82	presto/tpcds:q83	236650.78	2576.24	235029.14	1603.14	-0.69	-1621.63	1.09	0.68	0.21979
32	presto/tpcds:q33	1103758.16	903.77	1097308.46	364.24	-0.58	-6449.69	0.08	0.03	0.00000
18	presto/tpcds:q19	1517565.14	0.00	1510916.90	0.00	-0.44	-6648.24	0.00	0.00	0.00000
11	presto/tpcds:q12	197898.67	0.00	197177.47	0.00	-0.36	-721.20	0.00	0.00	0.00000
70	presto/tpcds:q71	5277756.53	485.90	5261514.34	499.30	-0.31	-16242.20	0.01	0.01	0.00000
30	presto/tpcds:q31	13793149.65	477.73	13760344.30	573.99	-0.24	-32805.34	0.00	0.00	0.00000
39	presto/tpcds:q40	17025308.16	594666.07	16985322.87	205393.91	-0.23	-39985.28	3.49	1.21	0.87938
35	presto/tpcds:q36	869702.45	43.32	869027.48	30.02	-0.08	-674.97	0.00	0.00	0.00000

	query	baseline mean	baseline std.dev	dec serde optimization mean	dec serde optimization std.dev	% change	absolute change	baseline std.dev %	dec serde optimization std.dev %	p-value
92	presto/tpcds: q93	135747485.25	179.56	135684609.82	85.07	-0.05	-62875.43	0.00	0.00	0.00000
14	presto/tpcds: q15	2465843.47	8.61	2464813.69	5.11	-0.04	-1029.78	0.00	0.00	0.00000
23	presto/tpcds: q24	33133654.86	41.17	33124903.65	26.08	-0.03	-8751.21	0.00	0.00	0.00000
81	presto/tpcds: q82	9103.56	7.64	9101.70	8.52	-0.02	-1.86	0.08	0.09	0.69873
90	presto/tpcds: q91	132946.56	13.14	132920.40	5.00	-0.02	-26.16	0.01	0.00	0.00104
48	presto/tpcds: q49	11200629.98	0.70	11198430.34	0.70	-0.02	-2199.65	0.00	0.00	0.00000
1	presto/tpcds: q02	35139902.73	355.55	35133448.56	40.52	-0.02	-6454.17	0.00	0.00	0.00000
95	presto/tpcds: q96	356.37	0.02	356.35	0.07	-0.01	-0.02	0.01	0.02	0.48354
87	presto/tpcds: q88	3774.15	0.71	3774.05	0.35	-0.00	-0.10	0.02	0.01	0.75704
22	presto/tpcds: q23	277220176.92	50088.40	277213808.61	18492.01	-0.00	-6368.30	0.02	0.01	0.77614
44	presto/tpcds: q45	1902993.87	16.31	1902966.77	18.58	-0.00	-27.10	0.00	0.00	0.02293
12	presto/tpcds: q13	1138480.42	0.07	1138474.31	0.02	-0.00	-6.11	0.00	0.00	0.00000
84	presto/tpcds: q85	13099742.47	129.11	13099679.36	84.06	-0.00	-63.12	0.00	0.00	0.33928
69	presto/tpcds: q70	21770168.67	3.62	21770079.01	4.04	-0.00	-89.66	0.00	0.00	0.00000
74	presto/tpcds: q75	58084183.73	124.27	58083982.25	152.02	-0.00	-201.48	0.00	0.00	0.03073
27	presto/tpcds: q28	3182926.16	4.62	3182918.49	4.61	-0.00	-7.66	0.00	0.00	0.01652
24	presto/tpcds: q25	6781282.01	0.00	6781275.94	0.00	-0.00	-6.07	0.00	0.00	0.00000
37	presto/tpcds: q38	23778189.87	103.45	23778175.07	155.79	-0.00	-14.79	0.00	0.00	0.85024
38	presto/tpcds: q39	2162960.39	3.66	2162959.28	3.37	-0.00	-1.11	0.00	0.00	0.59512
93	presto/tpcds: q94	18556371.50	3.87	18556365.96	5.37	-0.00	-5.53	0.00	0.00	0.06790
5	presto/tpcds: q06	2434096.29	1.63	2434095.57	2.02	-0.00	-0.72	0.00	0.00	0.51374
16	presto/tpcds: q17	10347196.57	27.65	10347194.18	27.00	-0.00	-2.39	0.00	0.00	0.88280

	query	baseline mean	baseline std.dev	dec serde optimization mean	dec serde optimization std.dev	% change	absolute change	baseline std.dev %	dec serde optimization std.dev %	p-value
71	presto/tpcds:q72	22148463.87	7.34	22148458.77	6.00	-0.00	-5.10	0.00	0.00	0.21683
33	presto/tpcds:q34	16395.37	0.00	16395.37	0.00	-0.00	-0.00	0.00	0.00	0.48479
94	presto/tpcds:q95	74728560.92	0.00	74728556.28	0.00	-0.00	-4.64	0.00	0.00	0.00000
49	presto/tpcds:q50	583488.94	0.00	583488.94	0.00	0.00	0.00	0.00	0.00	nan
98	presto/tpcds:q99	215654.43	0.00	215654.43	0.00	0.00	0.00	0.00	0.00	nan
61	presto/tpcds:q62	82608.21	0.00	82608.21	0.00	0.00	0.00	0.00	0.00	nan
47	presto/tpcds:q48	584083.40	0.00	584083.40	0.00	0.00	0.00	0.00	0.00	nan
40	presto/tpcds:q41	60.07	0.00	60.07	0.00	0.00	0.00	0.00	0.00	nan
36	presto/tpcds:q37	2504.65	0.00	2504.65	0.00	0.00	0.00	0.00	0.00	nan
72	presto/tpcds:q73	7826.93	0.01	7826.93	0.01	0.00	0.00	0.00	0.00	1.00000
28	presto/tpcds:q29	4591049.47	0.00	4591049.47	0.00	0.00	0.00	0.00	0.00	nan
21	presto/tpcds:q22	13413268.05	0.00	13413268.05	0.00	0.00	0.00	0.00	0.00	nan
20	presto/tpcds:q21	146188.43	0.00	146188.43	0.00	0.00	0.00	0.00	0.00	nan
15	presto/tpcds:q16	11595295.84	7.06	11595297.08	4.13	0.00	1.25	0.00	0.00	0.71669
83	presto/tpcds:q84	28009.23	0.05	28009.25	0.00	0.00	0.02	0.00	0.00	0.34089
86	presto/tpcds:q87	23778173.77	101.17	23778223.22	150.48	0.00	49.45	0.00	0.00	0.51923
7	presto/tpcds:q08	2577105.13	51.53	2577122.64	61.87	0.00	17.50	0.00	0.00	0.60606
45	presto/tpcds:q46	785373.10	38.86	785384.62	24.72	0.00	11.52	0.00	0.00	0.55361
96	presto/tpcds:q97	20147746.23	192.96	20148070.53	221.53	0.00	324.30	0.00	0.00	0.02217
89	presto/tpcds:q90	1707.77	0.35	1707.88	0.17	0.01	0.12	0.02	0.01	0.47452
34	presto/tpcds:q35	4347752.58	275.12	4348359.59	302.50	0.01	607.01	0.01	0.01	0.00456
9	presto/tpcds:q10	310341.19	749.76	310643.45	20.47	0.10	302.26	0.24	0.01	0.34686

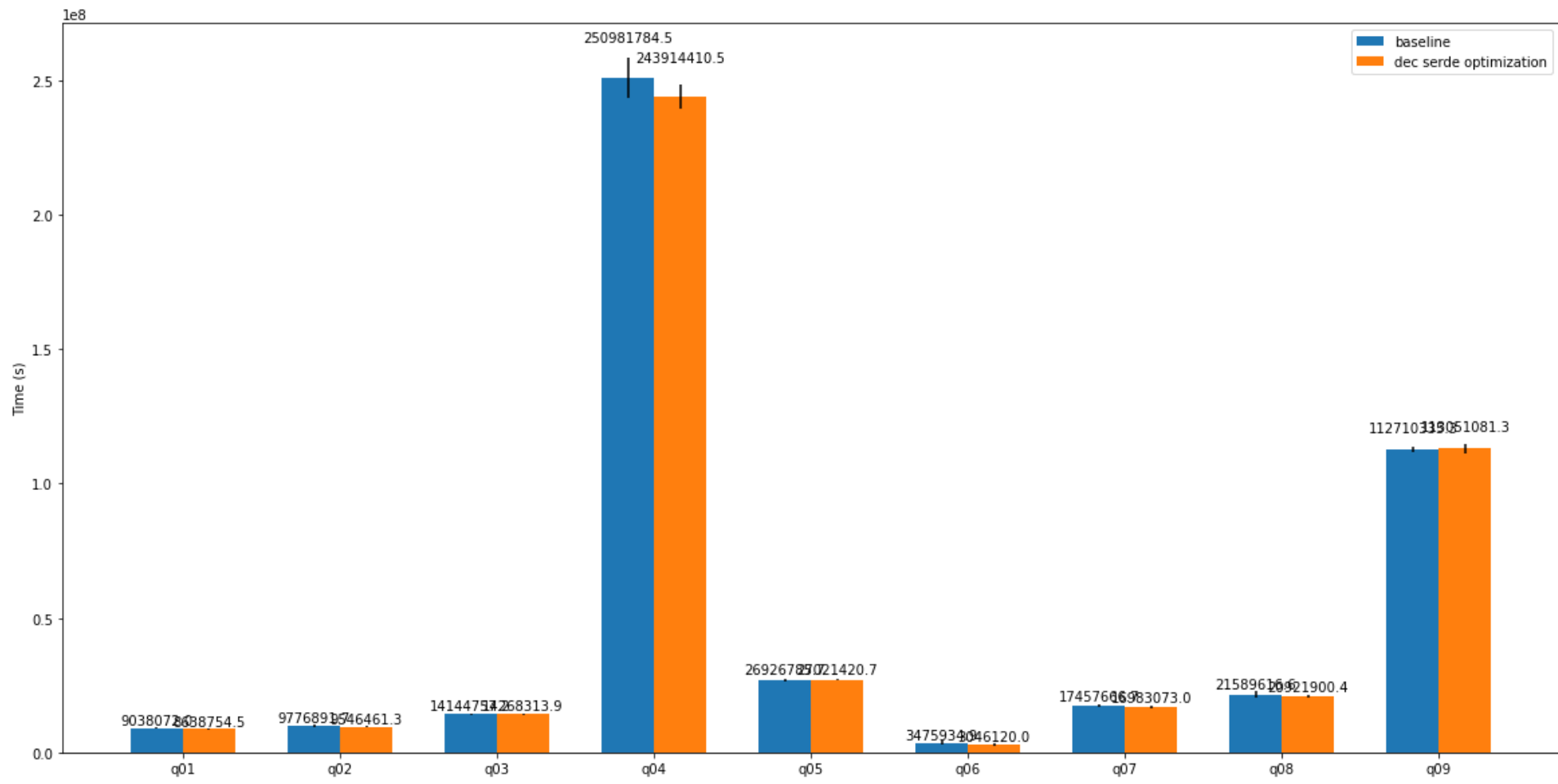
	query	baseline mean	baseline std.dev	dec serde optimization mean	dec serde optimization std.dev	% change	absolute change	baseline std.dev %	dec serde optimization std.dev %	p-value
68	presto/tpcds: q69	603428.65	7667.05	604885.34	4110.81	0.24	1456.68	1.27	0.68	0.69034
79	presto/tpcds: q80	35613021.70	4021996.99	35855918.19	4679840.22	0.68	242896.49	11.29	13.05	0.92509
4	presto/tpcds: q05	37819734.30	5302129.99	38269431.21	4521008.04	1.19	449696.91	14.02	11.81	0.87754
60	presto/tpcds: q61	1052685.53	159457.60	1086989.04	84041.69	3.26	34303.52	15.15	7.73	0.65109

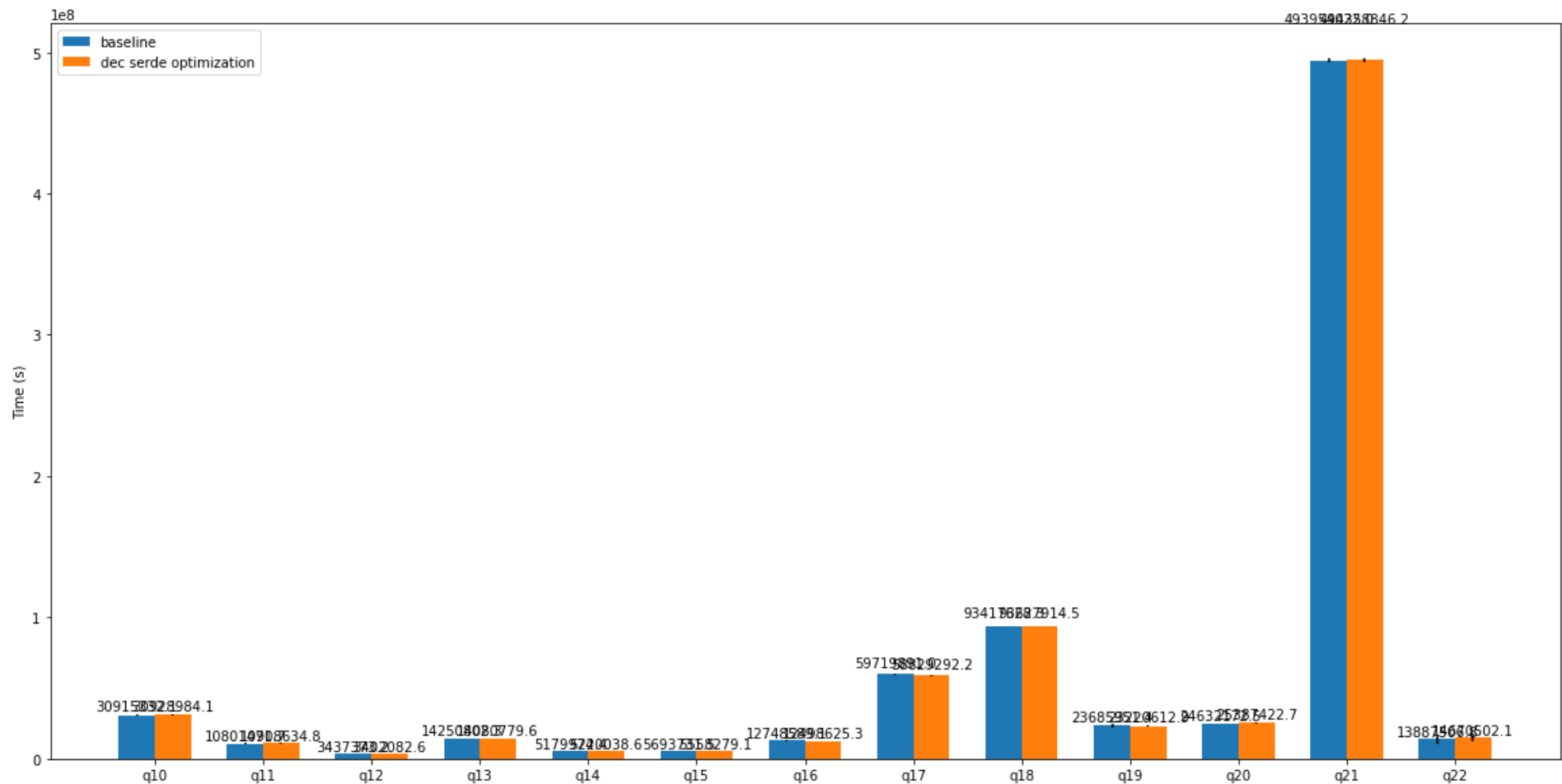
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TPC-H Comparison (Peak memory)

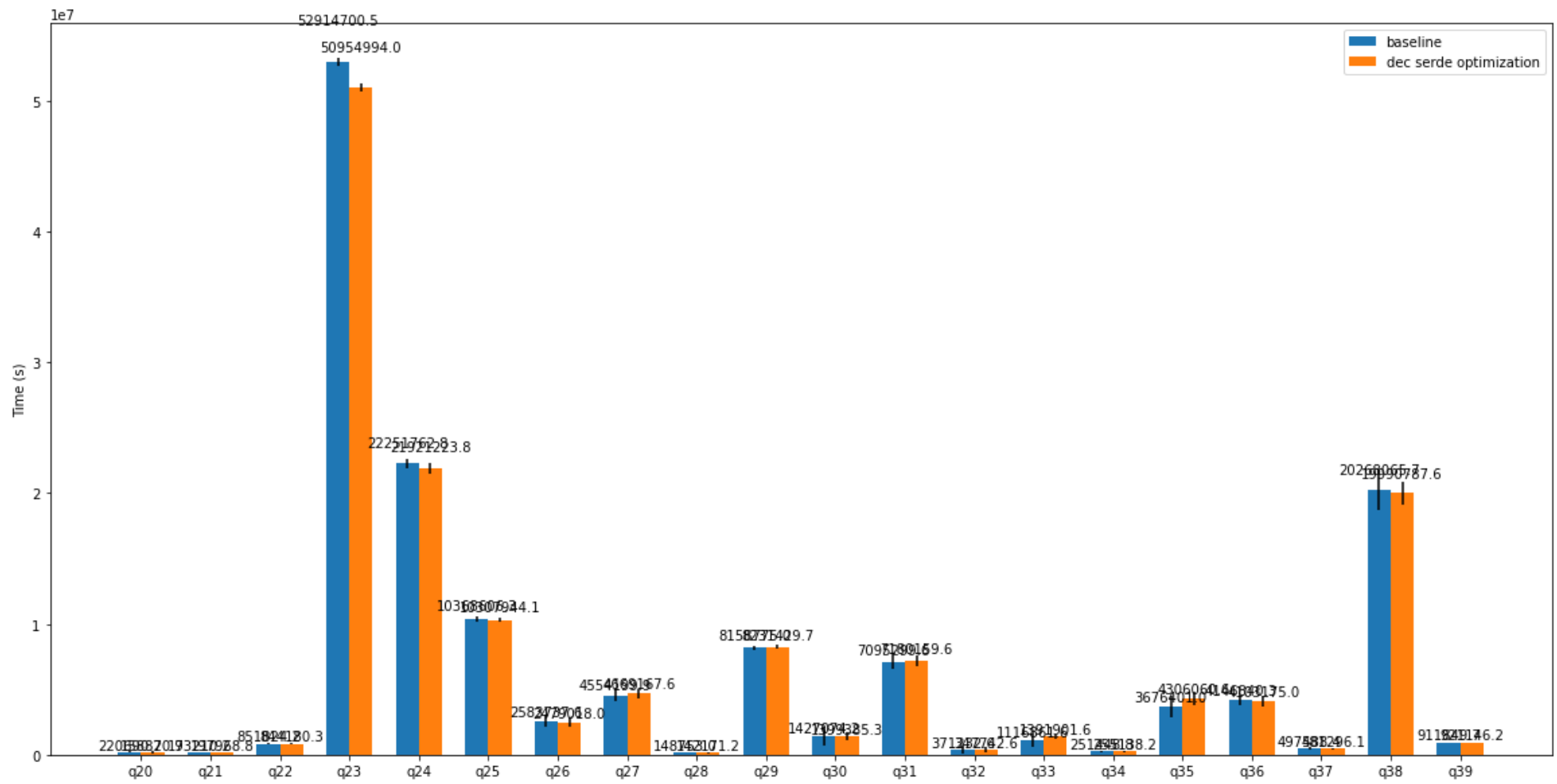


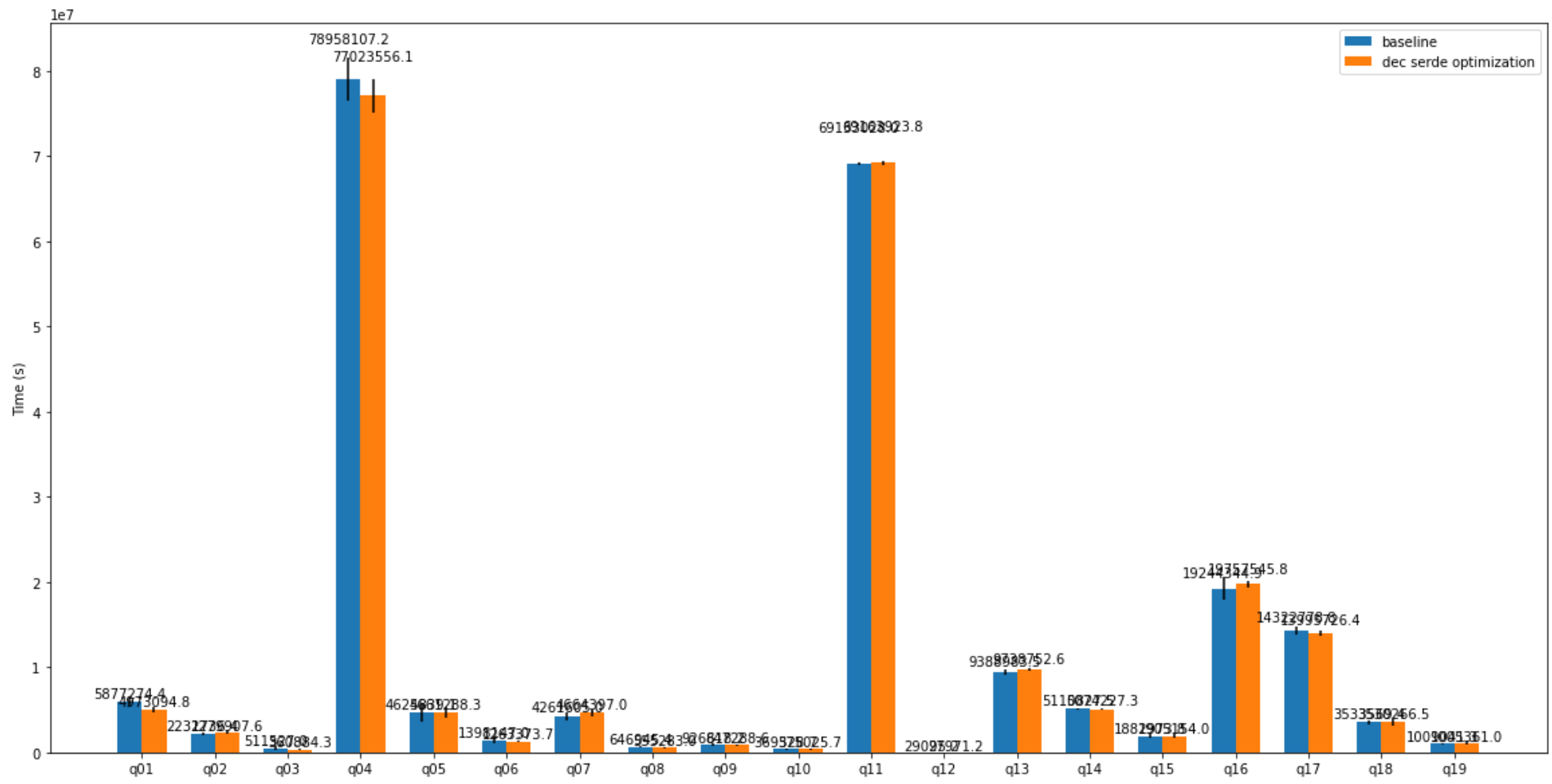


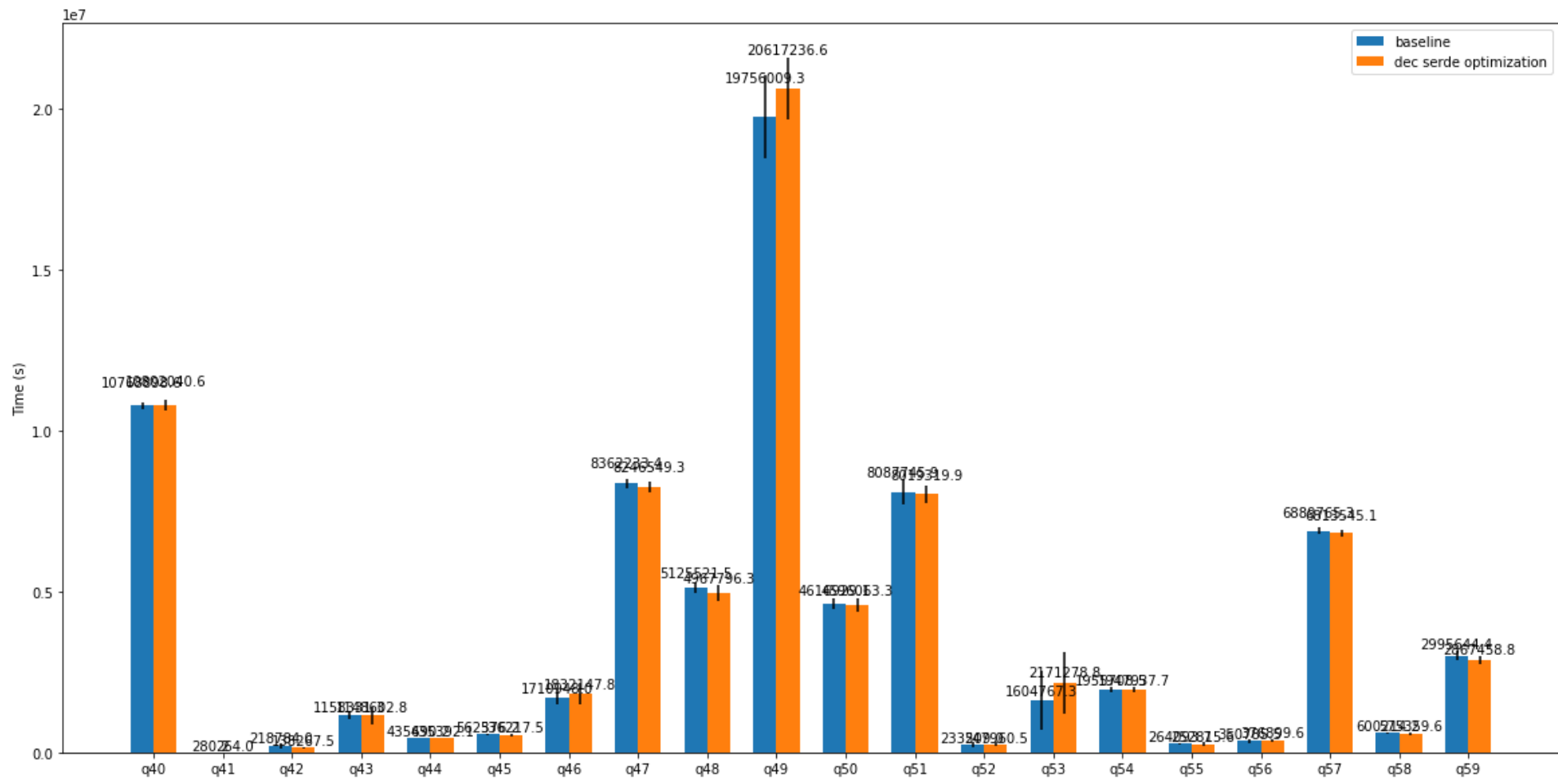
	query	baseline mean	baseline std.dev	dec serde optimization mean	dec serde optimization std.dev	% change	absolute change	baseline std.dev %	dec serde optimization std.dev %	p-value
5	presto/tpch: q06	3475934.93	750396.30	3046119.96	415655.14	-12.37	-429814.98	21.59	13.65	0.24781
0	presto/tpch: q01	9038071.99	143396.80	8638754.51	166725.21	-4.42	-399317.48	1.59	1.93	0.00124
7	presto/tpch: q08	21589616.61	1464656.72	20921900.36	528174.53	-3.09	-667716.24	6.78	2.52	0.31822
3	presto/tpch: q04	250981784.51	7361661.27	243914410.46	4694853.55	-2.82	-7067374.04	2.93	1.92	0.07553
6	presto/tpch: q07	17457666.70	497786.44	16983073.01	458870.79	-2.72	-474593.69	2.85	2.70	0.11671
14	presto/tpch: q15	5693731.52	39079.81	5558279.10	38128.29	-2.38	-135452.42	0.69	0.69	0.00012
1	presto/tpch: q02	9776891.73	444319.67	9546461.25	317095.35	-2.36	-230430.47	4.54	3.32	0.32548

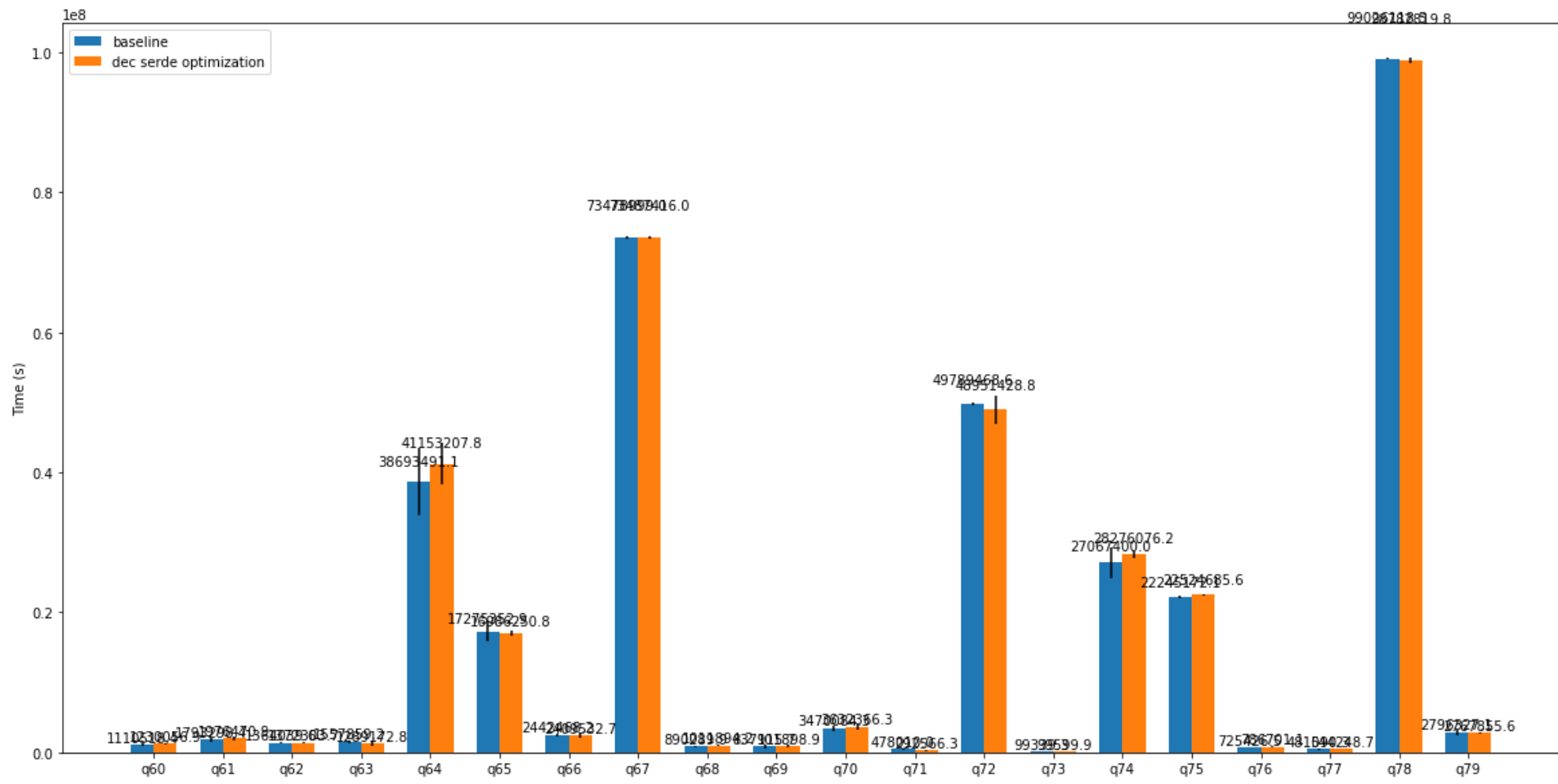
	query	baseline mean	baseline std.dev	dec serde optimization mean	dec serde optimization std.dev	% change	absolute change	baseline std.dev %	dec serde optimization std.dev %	p-value
18	presto/tpch: q19	23685951.38	1442482.79	23220612.95	544256.09	-1.96	-465338.43	6.09	2.34	0.47671
15	presto/tpch: q16	12748589.06	202753.38	12498625.30	185631.90	-1.96	-249963.77	1.59	1.49	0.05007
16	presto/tpch: q17	59719890.96	393845.26	58829292.25	680654.43	-1.49	-890598.71	0.66	1.16	0.01965
12	presto/tpch: q13	14250802.29	102120.39	14080779.60	181725.99	-1.19	-170022.69	0.72	1.29	0.07365
11	presto/tpch: q12	3437373.23	153894.73	3402082.63	118989.54	-1.03	-35290.60	4.48	3.50	0.66624
9	presto/tpch: q10	30915332.12	836628.06	30928984.10	726662.87	0.04	13651.98	2.71	2.35	0.97652
20	presto/tpch: q21	493954022.02	1459648.73	494358846.19	1284949.09	0.08	404824.18	0.30	0.26	0.62117
17	presto/tpch: q18	93417628.31	204978.76	93627914.49	249684.81	0.23	210286.18	0.22	0.27	0.14191
8	presto/tpch: q09	112710335.32	1038330.33	113051081.31	1791731.93	0.30	340745.99	0.92	1.58	0.69539
4	presto/tpch: q05	26926785.71	543415.32	27021420.68	93325.52	0.35	94634.97	2.02	0.35	0.68307
13	presto/tpch: q14	5179974.38	94766.99	5220038.65	144557.31	0.77	40064.27	1.83	2.77	0.58272
2	presto/tpch: q03	14144757.24	203884.49	14268313.87	208994.39	0.87	123556.62	1.44	1.46	0.32435
10	presto/tpch: q11	10801471.66	529336.35	10908634.85	466661.64	0.99	107163.19	4.90	4.28	0.71767
19	presto/tpch: q20	24632172.52	169086.81	25387422.66	238879.54	3.07	755250.14	0.69	0.94	0.00009
21	presto/tpch: q22	13887506.77	3105455.36	14670502.09	2861972.35	5.64	782995.32	22.36	19.51	0.65942
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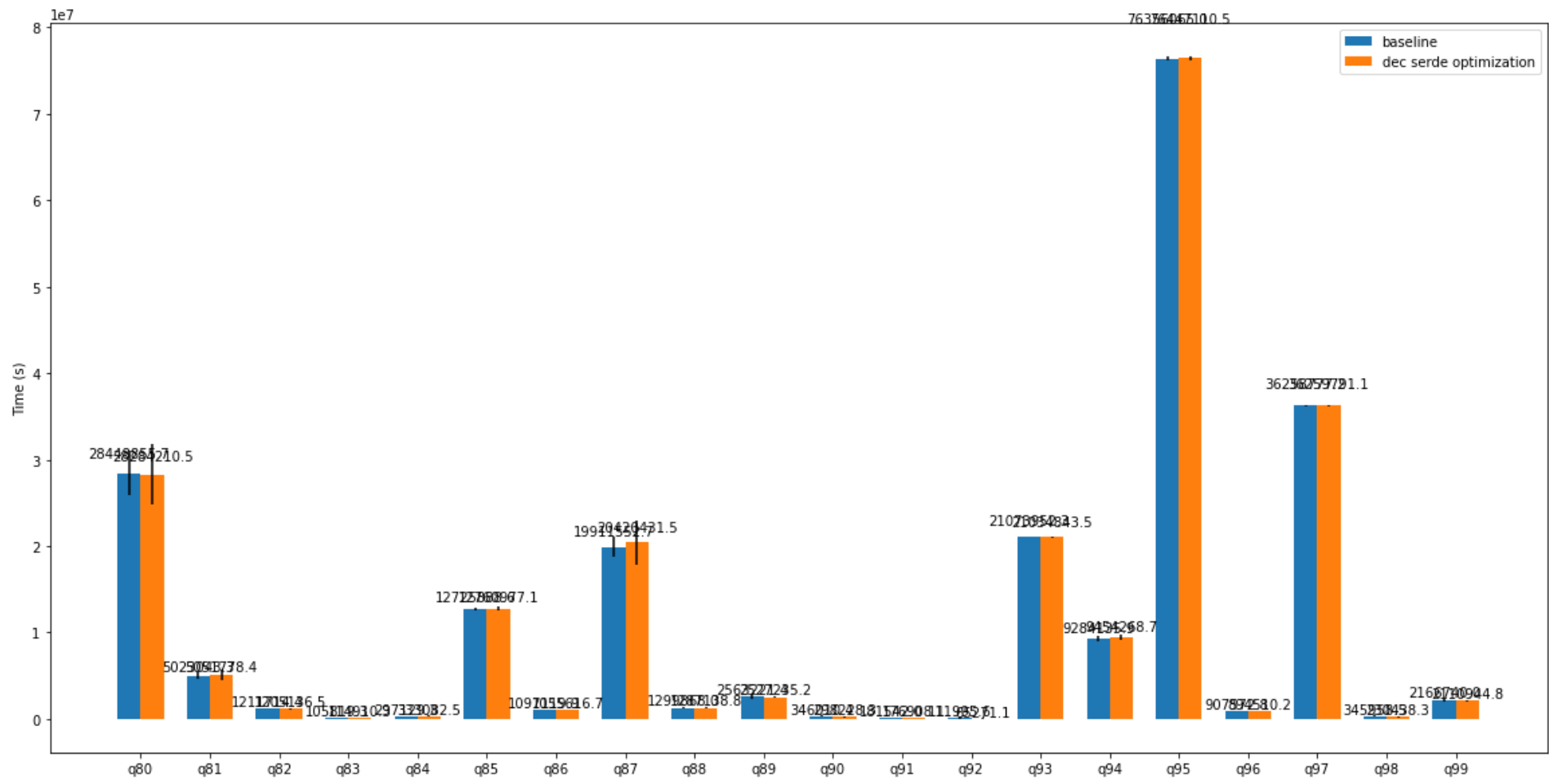
TPC-DS Comparison (Peak memory)

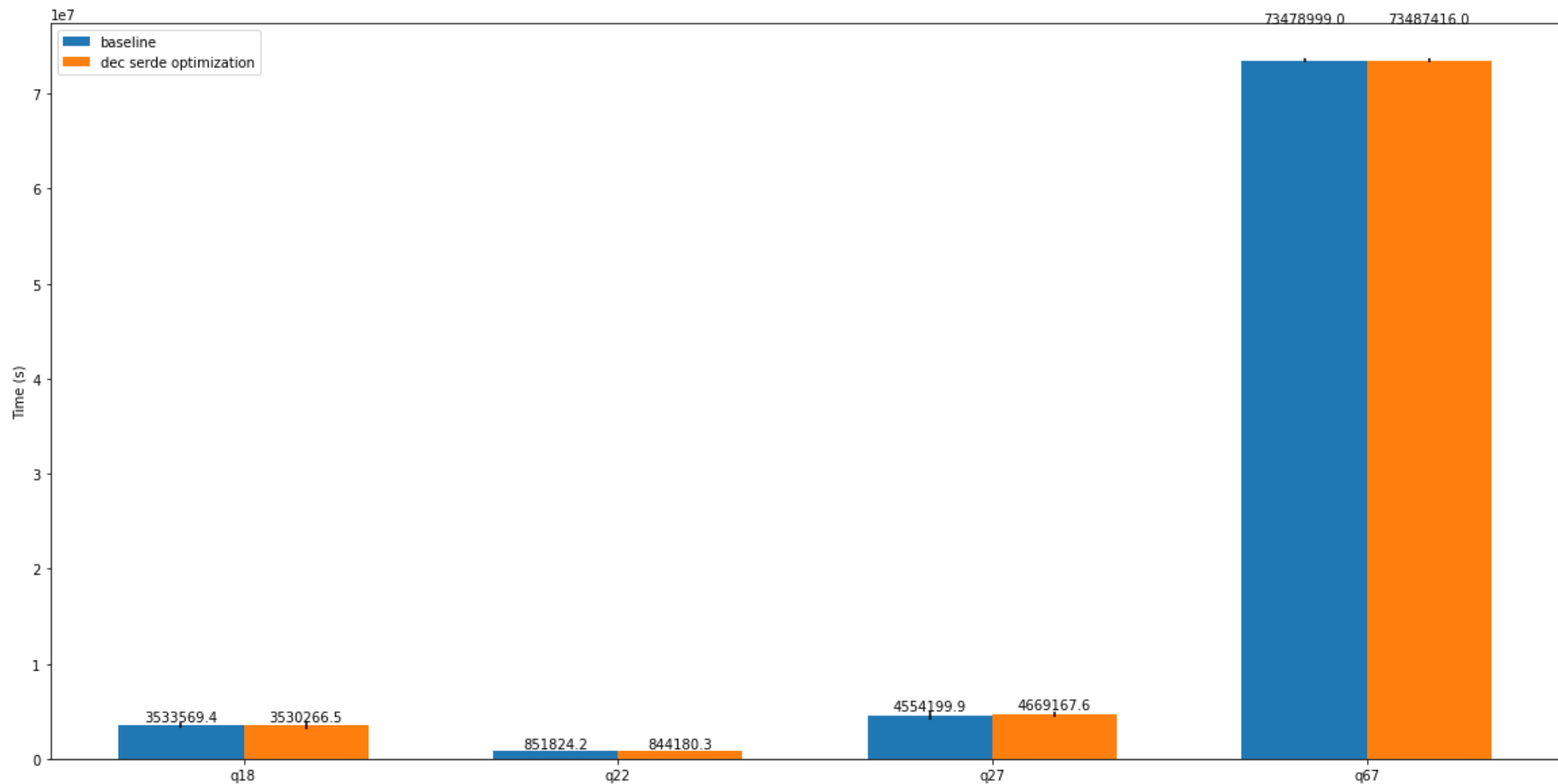












	query	baseline mean	baseline std.dev	dec serde optimization mean	dec serde optimization std.dev	% change	absolute change	baseline std.dev %	dec serde optimization std.dev %	p-value
91	presto/tpcds: q92	111995.59	134451.86	65271.08	41556.83	-41.72	-46724.51	120.05	63.67	0.43499
70	presto/tpcds: q71	478010.04	125580.98	292566.33	112588.73	-38.79	-185443.72	26.27	38.48	0.02257
41	presto/tpcds: q42	218783.97	84845.64	138267.49	37172.62	-36.80	-80516.48	38.78	26.88	0.05911
97	presto/tpcds: q98	345958.51	107919.05	230438.27	143681.32	-33.39	-115520.25	31.19	62.35	0.14641
2	presto/tpcds: q03	511527.03	236905.84	360884.32	110143.45	-29.45	-150642.71	46.31	30.52	0.18819
19	presto/tpcds: q20	220690.69	33220.61	158820.67	101336.20	-28.03	-61870.03	15.05	63.81	0.18571
62	presto/tpcds: q63	1557859.20	170664.94	1289172.77	409620.68	-17.25	-268686.43	10.96	31.77	0.16885

	query	baseline mean	baseline std.dev	dec serde optimization mean	dec serde optimization std.dev	% change	absolute change	baseline std.dev %	dec serde optimization std.dev %	p-value
0	presto/tpcds: q01	5877274.36	368732.08	4973094.84	334266.31	-15.38	-904179.52	6.27	6.72	0.00123
7	presto/tpcds: q08	646945.44	88936.25	555283.05	107005.48	-14.17	-91662.39	13.75	19.27	0.13767
89	presto/tpcds: q90	346010.37	58922.40	298228.34	75231.49	-13.81	-47782.03	17.03	25.23	0.24872
5	presto/tpcds: q06	1398146.96	373113.35	1263373.69	94670.71	-9.64	-134773.26	26.69	7.49	0.41119
8	presto/tpcds: q09	926618.23	144647.54	847288.59	54254.90	-8.56	-79329.64	15.61	6.40	0.23704
31	presto/tpcds: q32	371232.62	309467.70	347742.62	201199.68	-6.33	-23489.99	83.36	57.86	0.87923
40	presto/tpcds: q41	280.20	92.96	263.99	67.70	-5.79	-16.21	33.18	25.64	0.73705
44	presto/tpcds: q45	562376.23	22742.47	536217.47	32020.47	-4.65	-26158.76	4.04	5.97	0.13385
27	presto/tpcds: q28	148752.95	12963.54	142171.15	10527.05	-4.42	-6581.80	8.71	7.40	0.35710
58	presto/tpcds: q59	2995644.39	145249.94	2867458.84	140902.64	-4.28	-128185.56	4.85	4.91	0.15180
54	presto/tpcds: q55	264093.74	39060.91	252815.62	61662.88	-4.27	-11278.12	14.79	24.39	0.71299
57	presto/tpcds: q58	600214.21	27316.28	575359.55	46350.00	-4.14	-24854.66	4.55	8.06	0.28421
25	presto/tpcds: q26	2583737.57	455323.45	2479017.96	344694.22	-4.05	-104719.61	17.62	13.90	0.66289
11	presto/tpcds: q12	29095.23	7885.86	27971.21	6515.45	-3.86	-1124.02	27.10	23.29	0.79328
85	presto/tpcds: q86	1097119.85	55742.65	1055616.66	49691.72	-3.78	-41503.20	5.08	4.71	0.20328
22	presto/tpcds: q23	52914700.53	318311.40	50954994.03	306641.63	-3.70	-1959706.50	0.60	0.60	0.00000
36	presto/tpcds: q37	497588.35	56089.80	481296.10	39177.03	-3.27	-16292.26	11.27	8.14	0.57261
47	presto/tpcds: q48	5125521.54	169880.25	4967796.30	255609.31	-3.08	-157725.24	3.31	5.15	0.23669
98	presto/tpcds: q99	2166739.97	94230.17	2110944.78	104384.13	-2.58	-55795.19	4.35	4.94	0.35403
90	presto/tpcds: q91	181541.99	22333.26	176908.12	28240.29	-2.55	-4633.87	12.30	15.96	0.75904
3	presto/tpcds: q04	78958107.17	2531388.82	77023556.08	1907010.34	-2.45	-1934551.09	3.21	2.48	0.16574
16	presto/tpcds: q17	14322778.84	440604.80	13995726.43	331484.40	-2.28	-327052.41	3.08	2.37	0.17689

	query	baseline mean	baseline std.dev	dec serde optimization mean	dec serde optimization std.dev	% change	absolute change	baseline std.dev %	dec serde optimization std.dev %	p-value
29	presto/tpcds: q30	1427074.19	689345.35	1399385.26	334917.82	-1.94	-27688.94	48.30	23.93	0.93123
71	presto/tpcds: q72	49789468.59	155355.06	48951428.77	2026065.10	-1.68	-838039.83	0.31	4.14	0.33621
64	presto/tpcds: q65	17275352.88	1471243.36	16986250.80	405533.45	-1.67	-289102.08	8.52	2.39	0.65257
23	presto/tpcds: q24	22251762.78	342896.40	21921223.81	416683.89	-1.49	-330538.97	1.54	1.90	0.16441
95	presto/tpcds: q96	907572.81	56867.37	894510.16	8345.21	-1.44	-13062.65	6.27	0.93	0.58998
88	presto/tpcds: q89	2563221.37	195446.28	2527235.22	128906.19	-1.40	-35986.15	7.63	5.10	0.71442
46	presto/tpcds: q47	8362233.38	154333.92	8246549.25	172233.17	-1.38	-115684.12	1.85	2.09	0.24854
37	presto/tpcds: q38	20268065.74	1540278.74	19990787.61	897458.07	-1.37	-277278.13	7.60	4.49	0.71117
65	presto/tpcds: q66	2442468.25	145989.70	2409532.67	396908.58	-1.35	-32935.58	5.98	16.47	0.85253
56	presto/tpcds: q57	6889765.33	89124.33	6813545.10	102817.86	-1.11	-76220.23	1.29	1.51	0.20002
35	presto/tpcds: q36	4146840.29	359824.41	4103175.00	373056.59	-1.05	-43665.29	8.68	9.09	0.84065
78	presto/tpcds: q79	2796327.05	381043.20	2767855.56	116310.45	-1.02	-28471.49	13.63	4.20	0.86453
87	presto/tpcds: q88	1299867.98	57329.97	1287138.77	126552.80	-0.98	-12729.22	4.41	9.83	0.82695
21	presto/tpcds: q22	851824.17	21032.60	844180.35	13483.80	-0.90	-7643.82	2.47	1.60	0.47086
50	presto/tpcds: q51	8087745.88	402979.13	8019319.88	282301.53	-0.85	-68426.00	4.98	3.52	0.74041
42	presto/tpcds: q43	1158331.29	118824.10	1148602.77	263087.01	-0.84	-9728.52	10.26	22.90	0.93584
13	presto/tpcds: q14	5110827.54	38527.47	5074227.27	109074.28	-0.72	-36600.27	0.75	2.15	0.45627
24	presto/tpcds: q25	10368606.33	235764.82	10307944.09	183773.36	-0.59	-60662.24	2.27	1.78	0.62988
79	presto/tpcds: q80	28448855.73	2600641.40	28284210.46	3444658.10	-0.58	-164645.27	9.14	12.18	0.92740
81	presto/tpcds: q82	1211714.36	31869.36	1205136.49	76500.42	-0.54	-6577.87	2.63	6.35	0.84974
49	presto/tpcds: q50	4616929.06	150142.04	4596063.29	209418.50	-0.45	-20865.77	3.25	4.56	0.84675
53	presto/tpcds: q54	1955708.46	75540.24	1947937.69	72293.79	-0.40	-7770.76	3.86	3.71	0.85919

	query	baseline mean	baseline std.dev	dec serde optimization mean	dec serde optimization std.dev	% change	absolute change	baseline std.dev %	dec serde optimization std.dev %	p-value
18	presto/tpcds:q19	1009041.35	71521.55	1005361.01	148686.54	-0.36	-3680.33	7.09	14.79	0.95750
77	presto/tpcds:q78	99026118.47	123846.56	98782819.80	313268.81	-0.25	-243298.67	0.13	0.32	0.10730
92	presto/tpcds:q93	21073952.28	56658.10	21034843.51	112787.66	-0.19	-39108.77	0.27	0.54	0.46538
17	presto/tpcds:q18	3533569.37	272300.18	3530266.47	359848.31	-0.09	-3302.90	7.71	10.19	0.98605
43	presto/tpcds:q44	435690.16	729.63	435392.13	1018.67	-0.07	-298.03	0.17	0.23	0.57306
96	presto/tpcds:q97	36258777.21	62572.15	36259791.14	86527.09	0.00	1013.93	0.17	0.24	0.98190
66	presto/tpcds:q67	73478999.04	211652.28	73487415.99	239918.86	0.01	8416.96	0.29	0.33	0.94989
10	presto/tpcds:q11	69133028.05	155978.83	69163923.76	212398.92	0.04	30895.71	0.23	0.31	0.77983
94	presto/tpcds:q95	76356065.01	216397.29	76447110.48	205010.06	0.12	91045.46	0.28	0.27	0.47160
72	presto/tpcds:q73	99339.31	27150.45	99599.85	23705.28	0.26	260.55	27.33	23.80	0.98622
84	presto/tpcds:q85	12725888.56	122523.97	12760977.11	214759.80	0.28	35088.55	0.96	1.68	0.73533
39	presto/tpcds:q40	10768898.58	104125.55	10802040.58	161919.84	0.31	33142.00	0.97	1.50	0.68217
80	presto/tpcds:q81	5023043.33	411756.04	5051778.39	625859.50	0.57	28735.06	8.20	12.39	0.92700
61	presto/tpcds:q62	1364039.57	34906.72	1372303.65	33792.34	0.61	8264.08	2.56	2.46	0.68573
4	presto/tpcds:q05	4625839.09	1070700.46	4661288.34	643914.94	0.77	35449.24	23.15	13.81	0.94596
28	presto/tpcds:q29	8158774.98	154491.96	8231429.73	146380.62	0.89	72654.76	1.89	1.78	0.42257
38	presto/tpcds:q39	911849.74	15806.26	921146.16	16955.19	1.02	9296.42	1.73	1.84	0.34909
14	presto/tpcds:q15	1882973.84	243677.60	1905154.03	198904.97	1.18	22180.19	12.94	10.44	0.86631
30	presto/tpcds:q31	7095299.63	523970.97	7180159.61	456922.57	1.20	84859.98	7.38	6.36	0.77107
74	presto/tpcds:q75	22245172.14	202107.02	22524685.59	123805.20	1.26	279513.46	0.91	0.55	0.01614
33	presto/tpcds:q34	251448.75	65562.63	255138.20	61567.18	1.47	3689.45	26.07	24.13	0.92195
9	presto/tpcds:q10	369528.73	119433.05	375025.74	131479.44	1.49	5497.01	32.32	35.06	0.94107

	query	baseline mean	baseline std.dev	dec serde optimization mean	dec serde optimization std.dev	% change	absolute change	baseline std.dev %	dec serde optimization std.dev %	p-value
93	presto/tpcds:q94	9284135.88	291062.37	9454268.68	283719.97	1.83	170132.80	3.14	3.00	0.32940
1	presto/tpcds:q02	2231736.38	141340.21	2279907.61	136490.15	2.16	48171.23	6.33	5.99	0.56152
20	presto/tpcds:q21	193210.16	13960.03	197968.76	30937.40	2.46	4758.60	7.23	15.63	0.73839
26	presto/tpcds:q27	4554199.94	423489.28	4669167.64	344936.72	2.52	114967.69	9.30	7.39	0.61734
86	presto/tpcds:q87	19911552.71	1134790.04	20420431.47	2518130.95	2.56	508878.76	5.70	12.33	0.66140
15	presto/tpcds:q16	19244344.85	1309997.70	19757545.81	413340.47	2.67	513200.96	6.81	2.09	0.38166
12	presto/tpcds:q13	9388983.48	296541.96	9738752.63	181491.12	3.73	349769.16	3.16	1.86	0.03343
48	presto/tpcds:q49	19756009.26	1295160.29	20617236.59	964967.66	4.36	861227.32	6.56	4.68	0.22075
73	presto/tpcds:q74	27067399.98	2197813.71	28276076.20	506453.92	4.47	1208676.22	8.12	1.79	0.21862
69	presto/tpcds:q70	3470084.32	365004.11	3632366.27	324144.29	4.68	162281.95	10.52	8.92	0.43443
51	presto/tpcds:q52	233508.97	92125.55	247960.53	58140.71	6.19	14451.56	39.45	23.45	0.75192
63	presto/tpcds:q64	38693491.14	4837473.31	41153207.76	2962397.53	6.36	2459716.62	12.50	7.20	0.31314
45	presto/tpcds:q46	1710948.03	234615.68	1832147.76	330029.58	7.08	121199.73	13.71	18.01	0.48029
55	presto/tpcds:q56	350785.51	49522.96	376899.56	42608.60	7.44	26114.05	14.12	11.31	0.35061
68	presto/tpcds:q69	837115.74	240285.92	901898.95	123887.40	7.74	64783.21	28.70	13.74	0.57023
75	presto/tpcds:q76	725426.49	64377.16	786701.09	117733.50	8.45	61274.60	8.87	14.97	0.28948
82	presto/tpcds:q83	105819.27	12377.60	114910.29	9614.33	8.59	9091.02	11.70	8.37	0.18579
6	presto/tpcds:q07	4261604.99	453309.96	4664397.02	408700.30	9.45	402792.03	10.64	8.76	0.13706
60	presto/tpcds:q61	1793298.38	309829.04	1976470.89	222899.16	10.21	183172.51	17.28	11.28	0.26701
59	presto/tpcds:q60	1110518.40	97614.24	1230056.92	129017.43	10.76	119538.52	8.79	10.49	0.10042
83	presto/tpcds:q84	297129.30	46502.11	333082.49	50323.44	12.10	35953.18	15.65	15.11	0.22766
76	presto/tpcds:q77	481090.33	51477.10	544248.68	53151.74	13.13	63158.35	10.70	9.77	0.06304

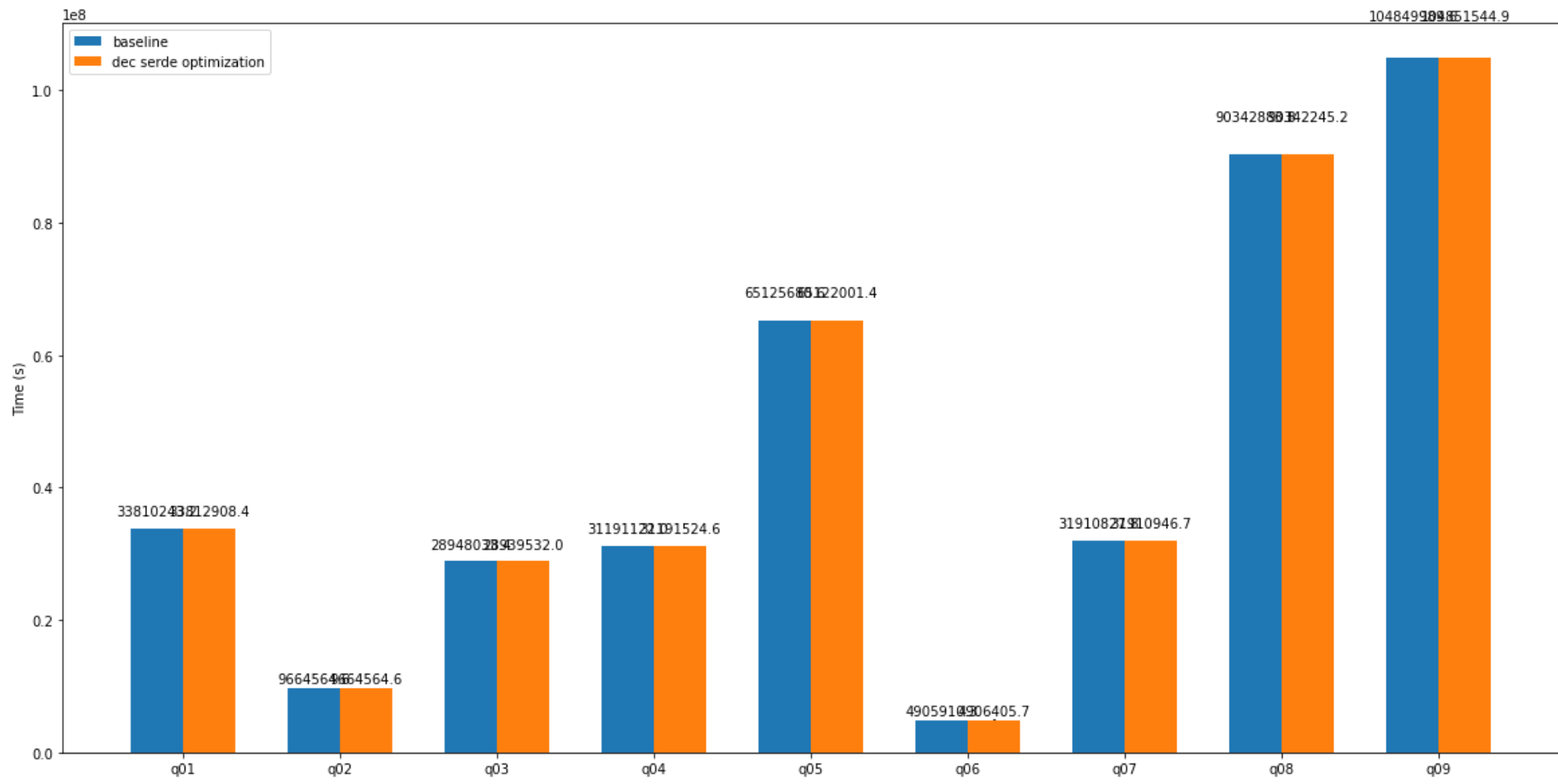
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67	presto/tpcds: q68	890289.95	67119.87	1011894.23	150061.14	13.66	121604.28	7.54	14.83	0.10008
34	presto/tpcds: q35	3676400.97	854771.65	4306060.57	511012.05	17.13	629659.61	23.25	11.87	0.15249
32	presto/tpcds: q33	1116861.57	507824.48	1391901.57	170740.79	24.63	275040.00	45.47	12.27	0.23715
52	presto/tpcds: q53	1604767.32	924818.80	2171278.81	954521.77	35.30	566511.49	57.63	43.96	0.32102

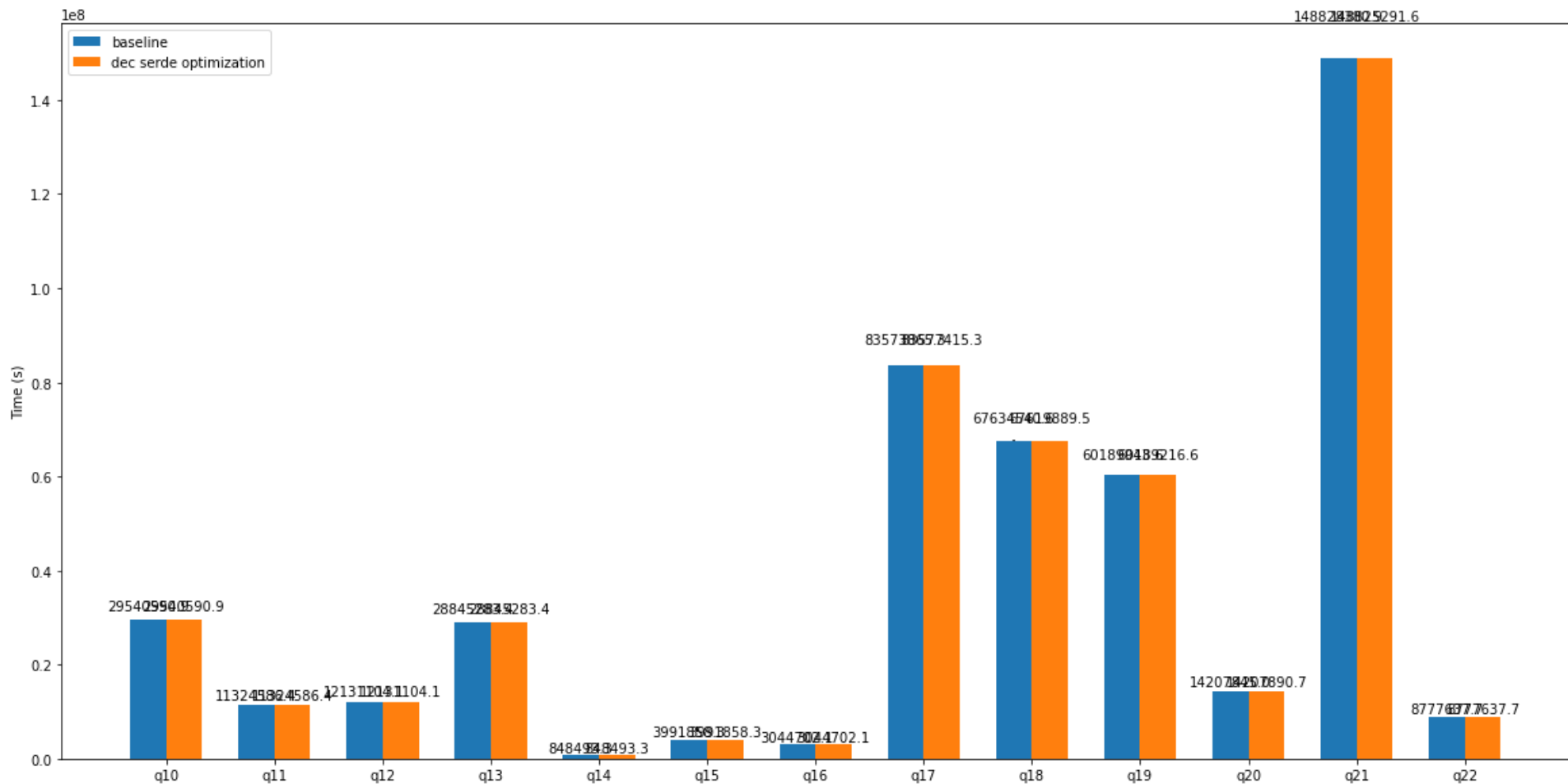
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TPC-H Comparison (physicalInputDataSize)





	query	baseline mean	baseline std.dev	dec serde optimization mean	dec serde optimization std.dev	% change	absolute change	baseline std.dev %	dec serde optimization std.dev %	p-value
2	presto/tpch: q03	28948033.35	7192.35	28939531.96	5717.04	-0.03	-8501.40	0.02	0.02	0.04685
17	presto/tpch: q18	67634540.64	18824.22	67619889.51	11035.30	-0.02	-14651.13	0.03	0.02	0.13106
4	presto/tpch: q05	65125680.59	7705.84	65122001.43	3123.95	-0.01	-3679.16	0.01	0.00	0.30388
20	presto/tpch: q21	148828380.91	6945.96	148825291.63	9946.42	-0.00	-3089.29	0.00	0.01	0.54675
18	presto/tpch: q19	60189943.55	1367.48	60189216.61	97.52	-0.00	-726.94	0.00	0.00	0.22315
7	presto/tpch: q08	90342883.78	3826.72	90342245.25	6616.78	-0.00	-638.53	0.00	0.01	0.84197
10	presto/tpch: q11	11324586.44	0.00	11324586.44	0.00	0.00	0.00	0.00	0.00	nan

	query	baseline mean	baseline std.dev	dec serde optimization mean	dec serde optimization std.dev	% change	absolute change	baseline std.dev %	dec serde optimization std.dev %	p-value	
15	presto/tpch: q16	3044702.08	0.00	3044702.08	0.00	0.00	0.00	0.00	0.00	nan	
14	presto/tpch: q15	3991858.28	0.00	3991858.28	0.00	0.00	0.00	0.00	0.00	nan	
13	presto/tpch: q14	848493.32	0.00	848493.32	0.00	0.00	0.00	0.00	0.00	nan	
12	presto/tpch: q13	28845283.36	0.00	28845283.36	0.00	0.00	0.00	0.00	0.00	nan	
21	presto/tpch: q22	8777637.66	0.00	8777637.66	0.00	0.00	0.00	0.00	0.00	nan	
9	presto/tpch: q10	29540590.93	0.00	29540590.93	0.00	0.00	0.00	0.00	0.00	nan	
1	presto/tpch: q02	9664564.58	0.00	9664564.58	0.00	0.00	0.00	0.00	0.00	nan	
11	presto/tpch: q12	12131104.14	0.00	12131104.14	0.00	0.00	0.00	0.00	0.00	nan	
19	presto/tpch: q20	14207845.01	93.40	14207890.68	169.08	0.00	45.67	0.00	0.00	0.57531	
6	presto/tpch: q07	31910827.78	392.86	31910946.66	235.31	0.00	118.89	0.00	0.00	0.53911	
3	presto/tpch: q04	31191121.98	20405.21	31191524.59	24169.66	0.00	402.61	0.07	0.08	0.97574	
8	presto/tpch: q09	104849989.65	1808.12	104851544.95	1984.83	0.00	1555.30	0.00	0.00	0.18633	
16	presto/tpch: q17	83573865.29	3424.25	83577415.28	12682.73	0.00	3549.99	0.00	0.02	0.52298	
0	presto/tpch: q01	33810243.25	4707.06	33812908.38	2798.51	0.01	2665.14	0.01	0.01	0.26073	
5	presto/tpch: q06	4905910.25	13583.78	4906405.71	17170.67	0.01	495.45	0.28	0.35	0.95689	
count	22										
mean	-0										
std	0										
min	-0										
25%	-0										
50%	0										
75%	0										
max	0										
Name:	% change, dtype: float64										