

Benchmark details

```
[('paa-union-baseline-oss-393-S-09ae0b9e41-hive_sf1000_orc_part-r488',
  'baseline',
  'r'),
 ('dec-aggr-serde-oss-393-S-641b0a5dd3-hive_sf1000_orc_part-r493',
  'decimal aggregation state serde opt',
  'c')]
```

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	560	955	61,823	103,888	2.070 PiB	1.717 PiB	1.165 TiB	0.935 TiB	833.238 GiB	1.011 TiB	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1	decimal aggregation state serde opt	544	954	61,000	104,870	1.827 PiB	1.650 PiB	1.169 TiB	0.936 TiB	833.215 GiB	1.010 TiB	-2.85	-0.14	-1.33	0.95	-11.77	-3.88	0.37	0.13	-0.00	-0.11

FAILED QUERIES

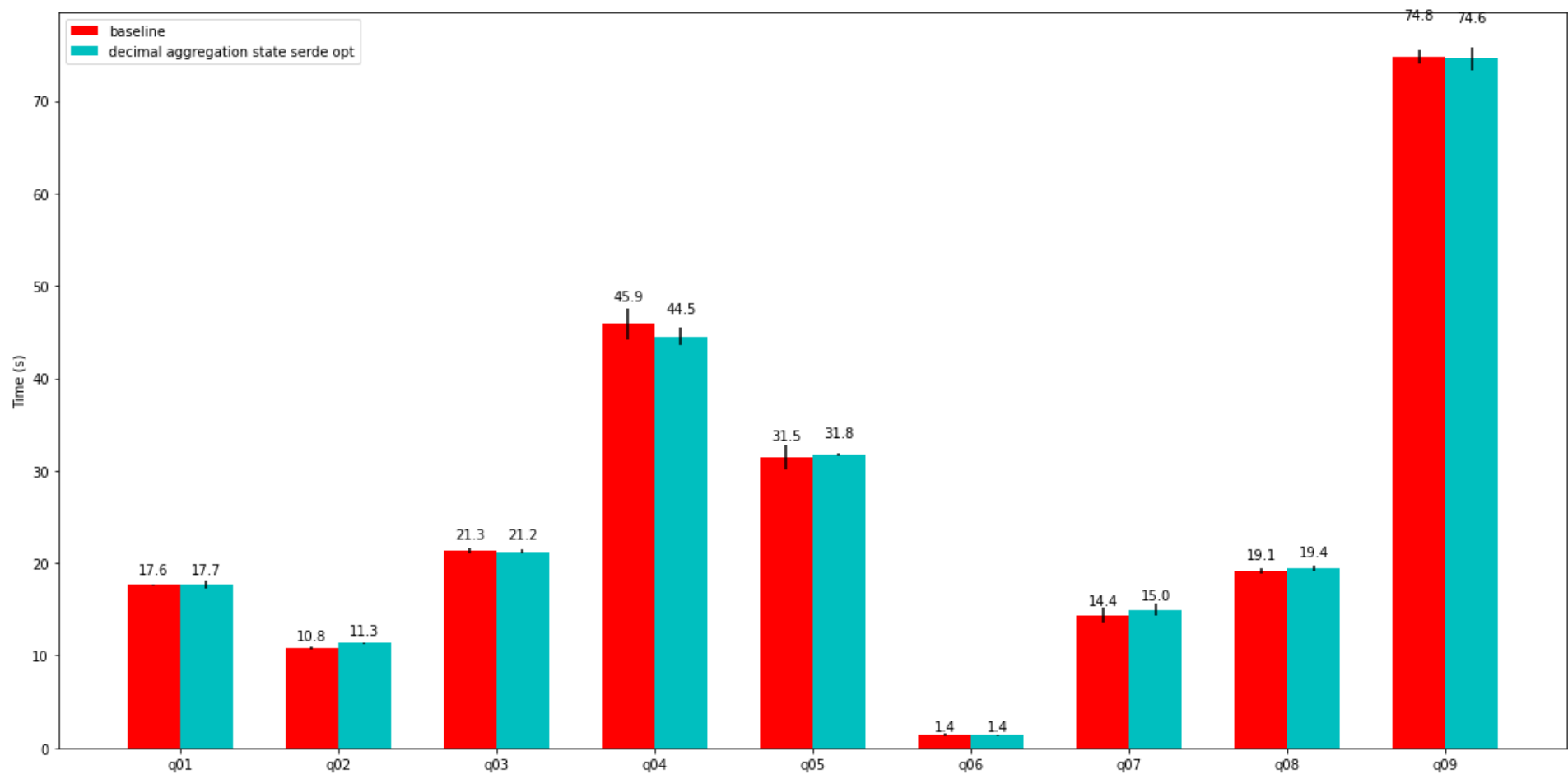
baseline

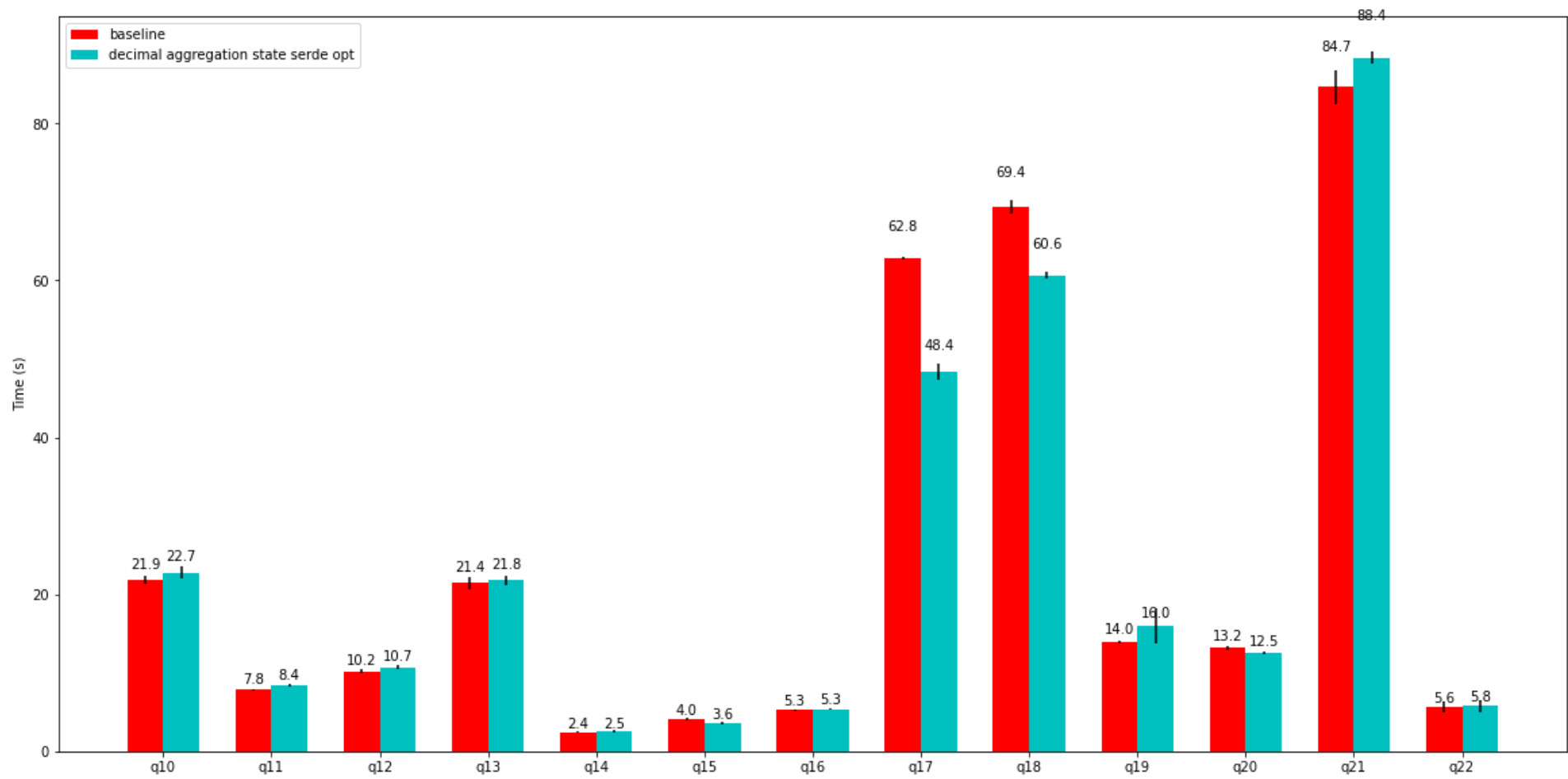
benchmark	query	mean_duration	std_dev
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decimal aggregation state serde opt

benchmark	query	mean_duration	std_dev
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TPC-H Comparison (DURATION)

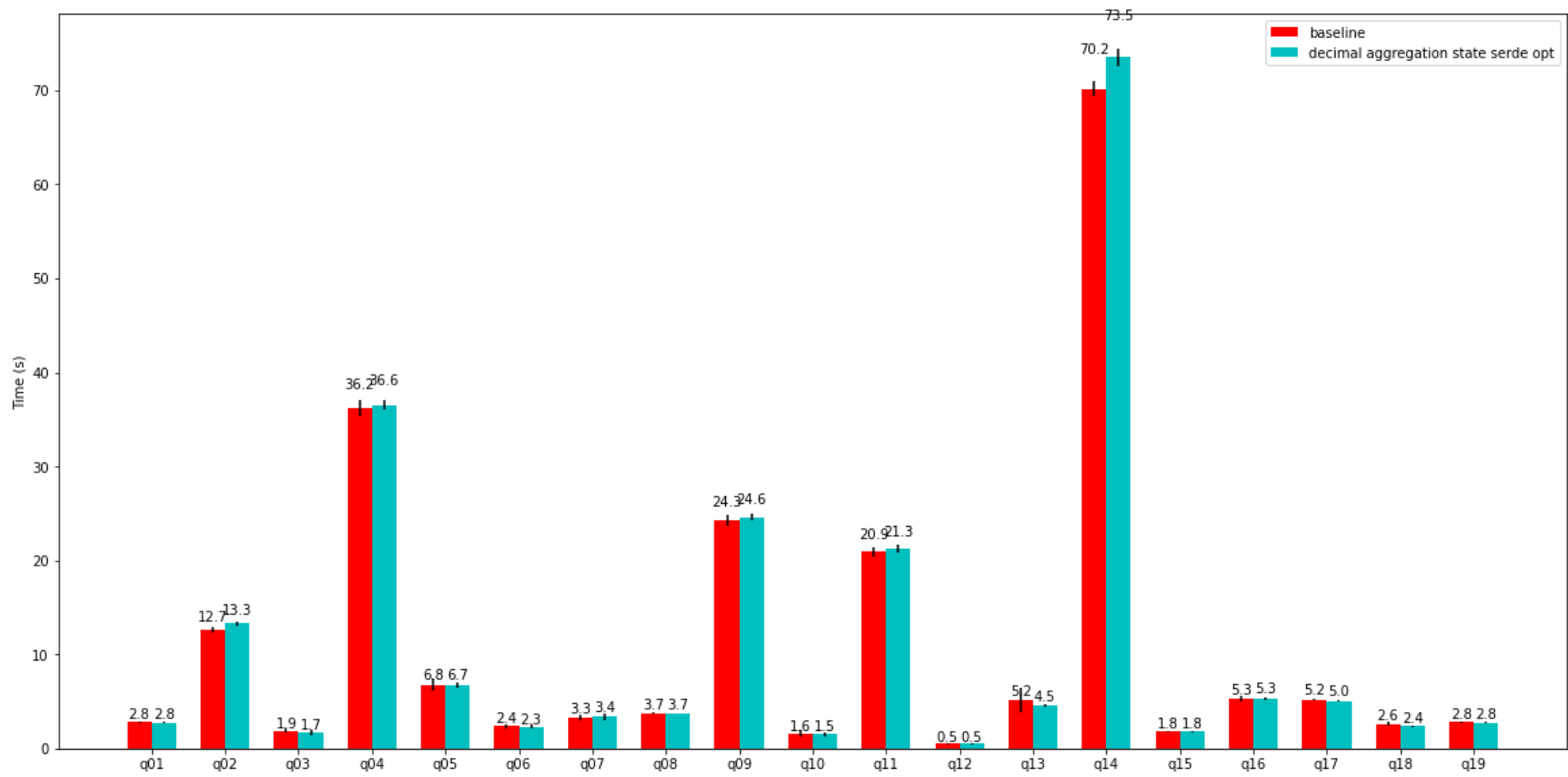


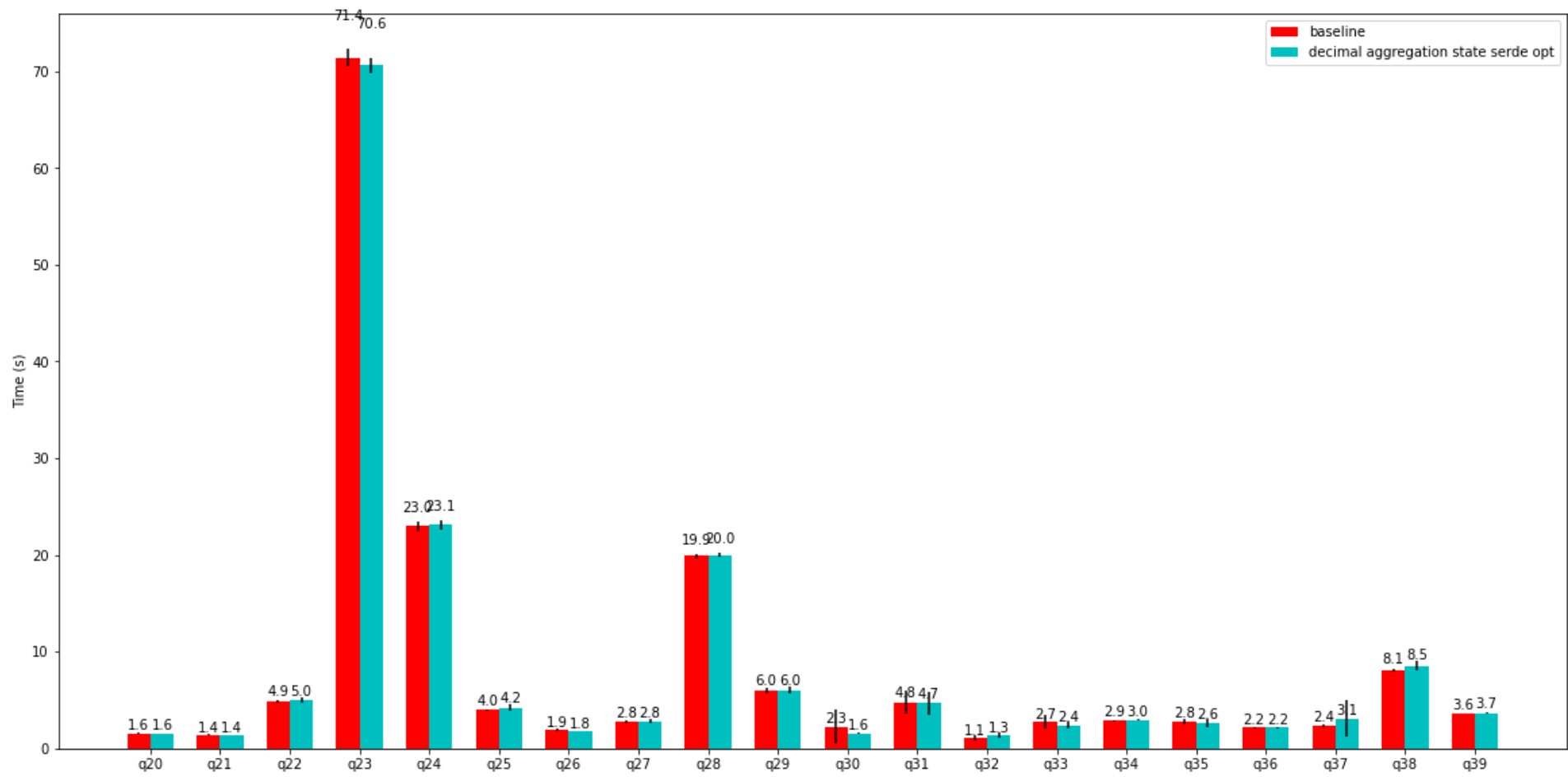


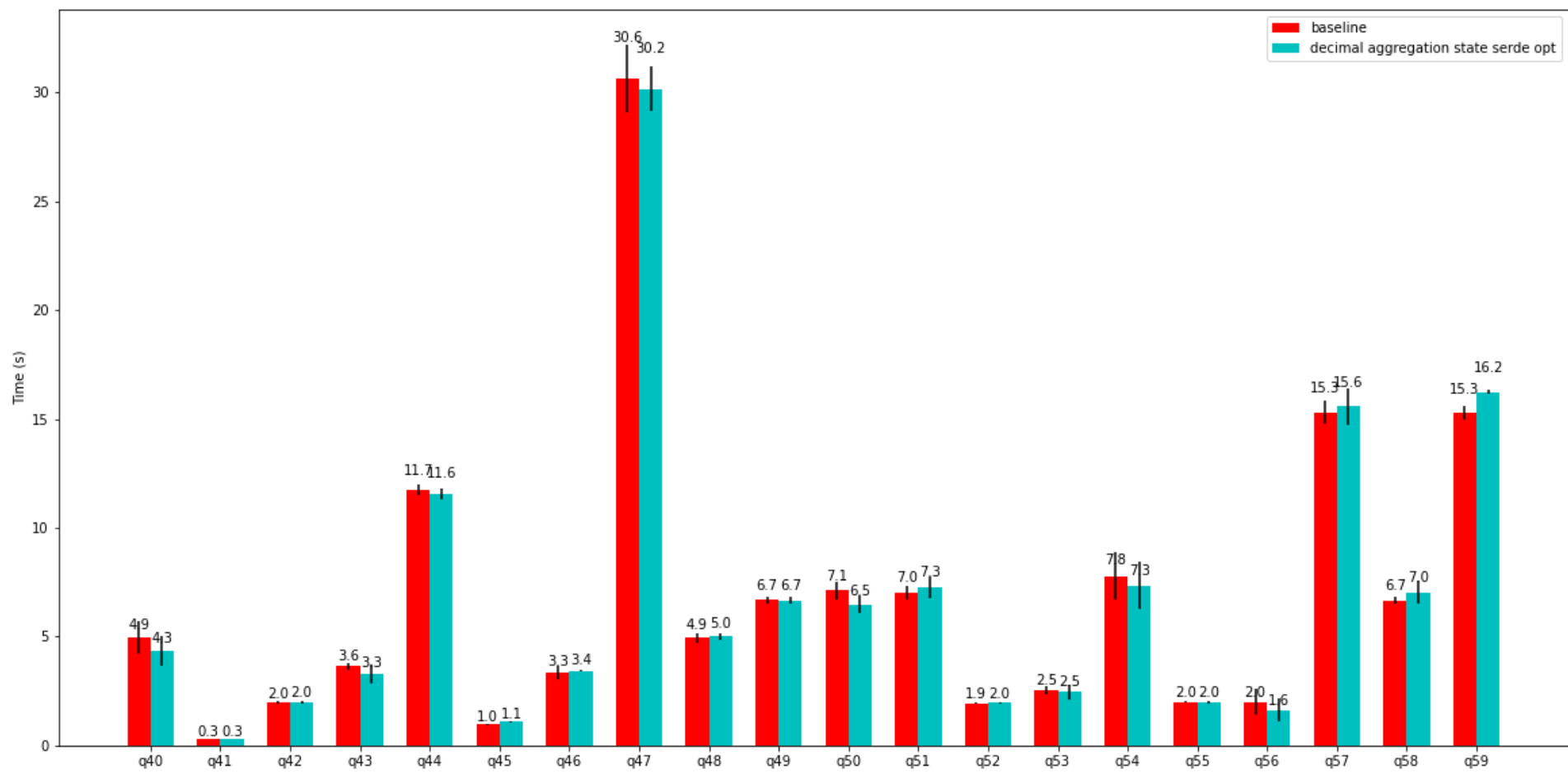
	query	baseline mean	baseline std.dev	decimal aggregation state serde opt mean	decimal aggregation state serde opt std.dev	% change	absolute change	baseline std.dev %	decimal aggregation state serde opt std.dev %	p-value
16	presto/tpch: q17	62.79	0.21	48.41	1.04	-22.90	-14.38	0.33	2.15	0.00000
17	presto/tpch: q18	69.45	0.86	60.61	0.43	-12.72	-8.84	1.24	0.71	0.00000
3	presto/tpch: q04	45.88	1.69	44.55	0.91	-2.90	-1.33	3.69	2.04	0.12096
19	presto/tpch: q20	13.18	0.26	12.49	0.17	-5.24	-0.69	1.94	1.34	0.00025
14	presto/tpch: q15	4.05	0.20	3.61	0.12	-10.83	-0.44	4.89	3.31	0.00092
8	presto/tpch: q09	74.79	0.72	74.59	1.21	-0.27	-0.20	0.96	1.62	0.73300
2	presto/tpch: q03	21.32	0.33	21.22	0.23	-0.47	-0.10	1.57	1.09	0.55633

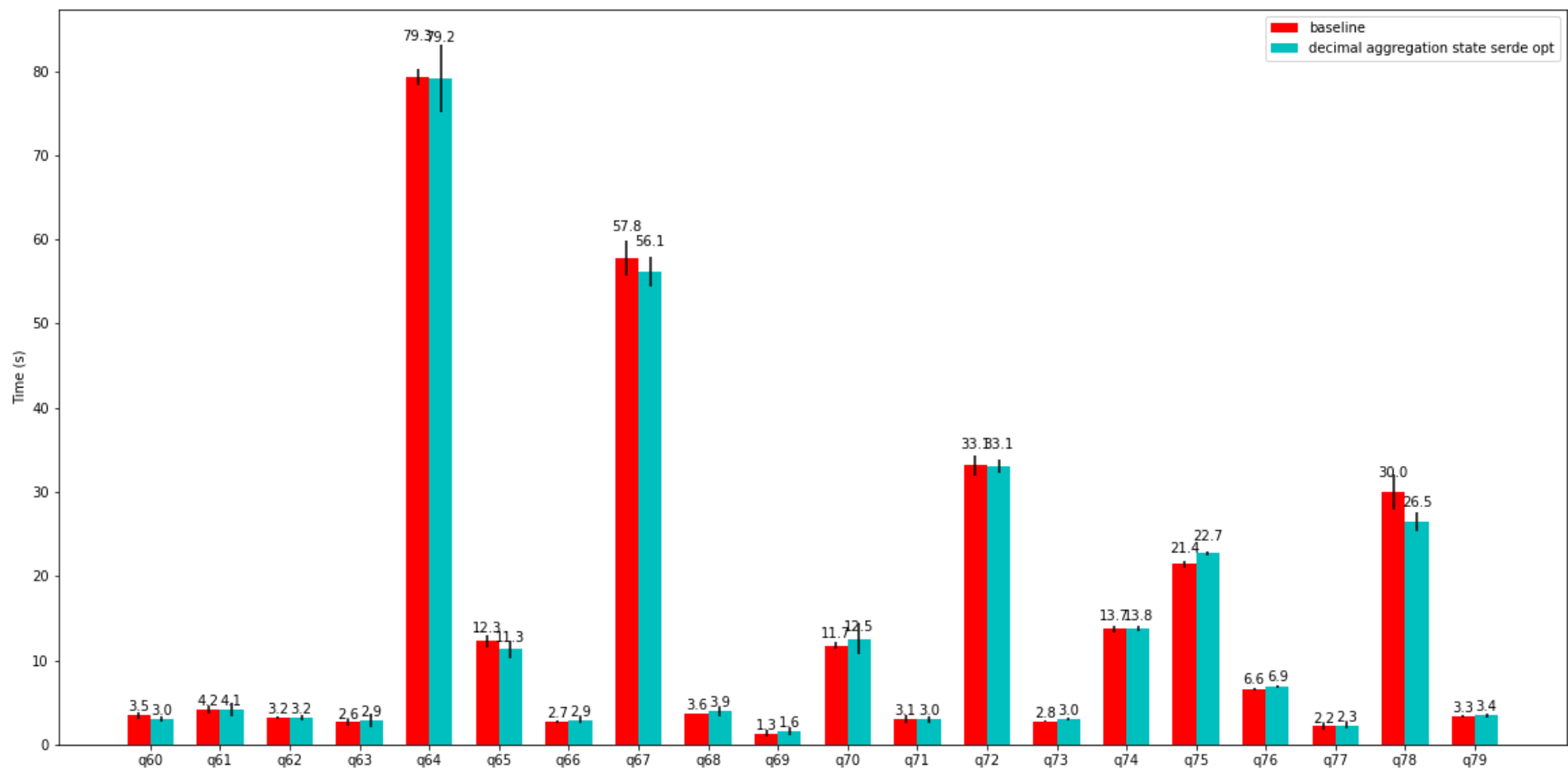
	query	baseline mean	baseline std.dev	decimal aggregation state serde opt mean	decimal aggregation state serde opt std.dev	% change	absolute change	baseline std.dev %	decimal aggregation state serde opt std.dev %	p-value
5	presto/tpch: q06	1.44	0.21	1.42	0.07	-1.41	-0.02	14.41	5.28	0.82573
0	presto/tpch: q01	17.63	0.12	17.71	0.44	0.43	0.08	0.70	2.50	0.69615
15	presto/tpch: q16	5.25	0.11	5.34	0.07	1.61	0.08	2.18	1.38	0.16058
13	presto/tpch: q14	2.43	0.12	2.54	0.15	4.31	0.10	4.86	6.07	0.21606
21	presto/tpch: q22	5.64	0.64	5.80	0.77	2.88	0.16	11.32	13.32	0.69938
7	presto/tpch: q08	19.14	0.29	19.42	0.28	1.47	0.28	1.50	1.42	0.11453
4	presto/tpch: q05	31.46	1.36	31.76	0.17	0.95	0.30	4.32	0.55	0.60559
12	presto/tpch: q13	21.43	0.76	21.76	0.65	1.53	0.33	3.55	3.00	0.44246
1	presto/tpch: q02	10.84	0.15	11.33	0.11	4.52	0.49	1.36	0.98	0.00007
11	presto/tpch: q12	10.20	0.27	10.69	0.25	4.86	0.50	2.63	2.31	0.00759
10	presto/tpch: q11	7.83	0.07	8.37	0.21	6.85	0.54	0.93	2.56	0.00017
6	presto/tpch: q07	14.38	0.76	14.96	0.67	4.00	0.57	5.26	4.49	0.19445
9	presto/tpch: q10	21.88	0.52	22.75	0.81	3.99	0.87	2.37	3.58	0.05088
18	presto/tpch: q19	13.97	0.18	15.99	2.20	14.41	2.01	1.31	13.77	0.04970
20	presto/tpch: q21	84.66	2.11	88.39	0.79	4.40	3.72	2.49	0.90	0.00232
count	22									
mean	-0									
std	8									
min	-23									
25%	-1									
50%	1									
75%	4									
max	14									
Name: % change, dtype: float64										

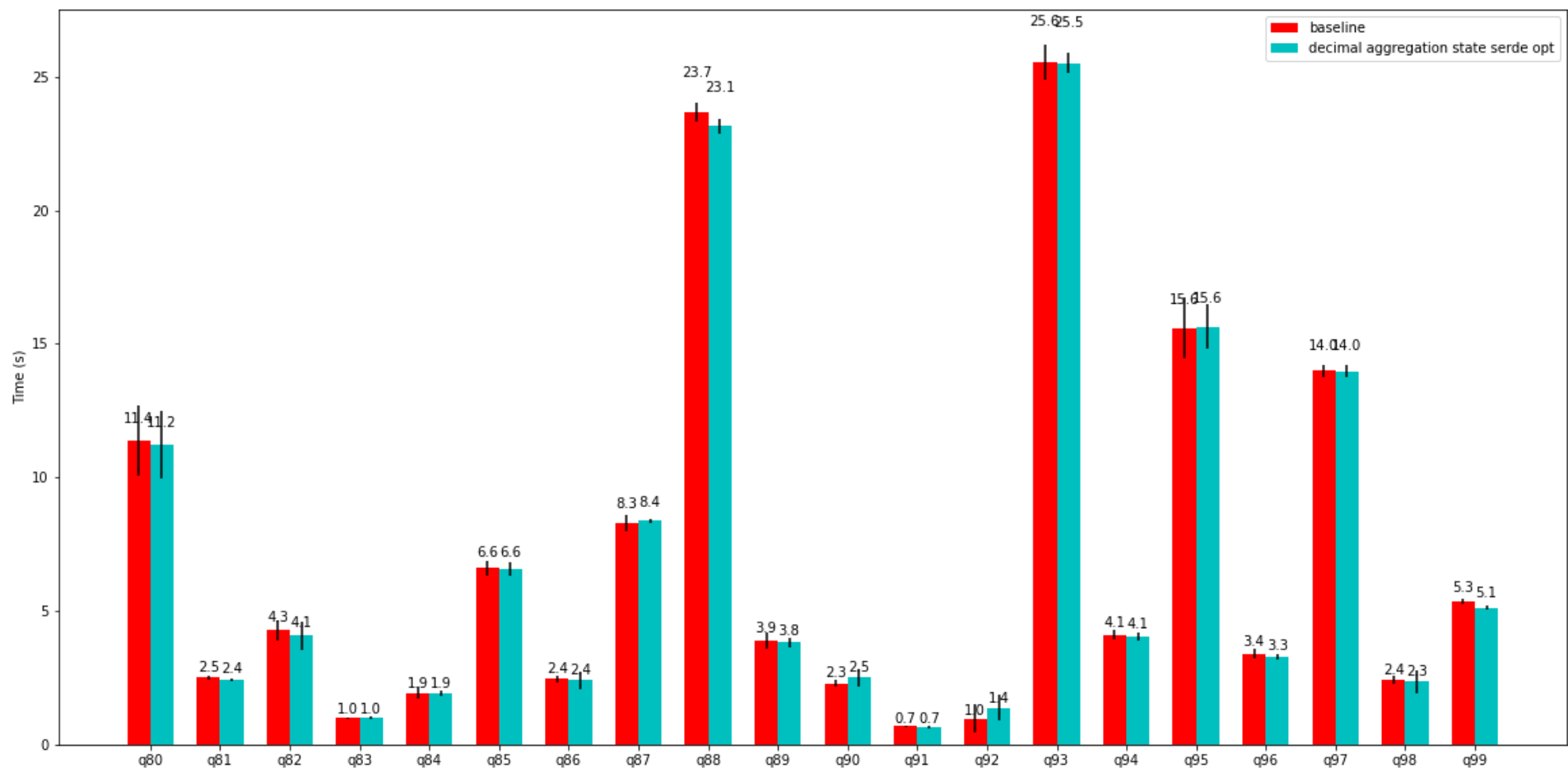
TPC-DS Comparison (DURATION)

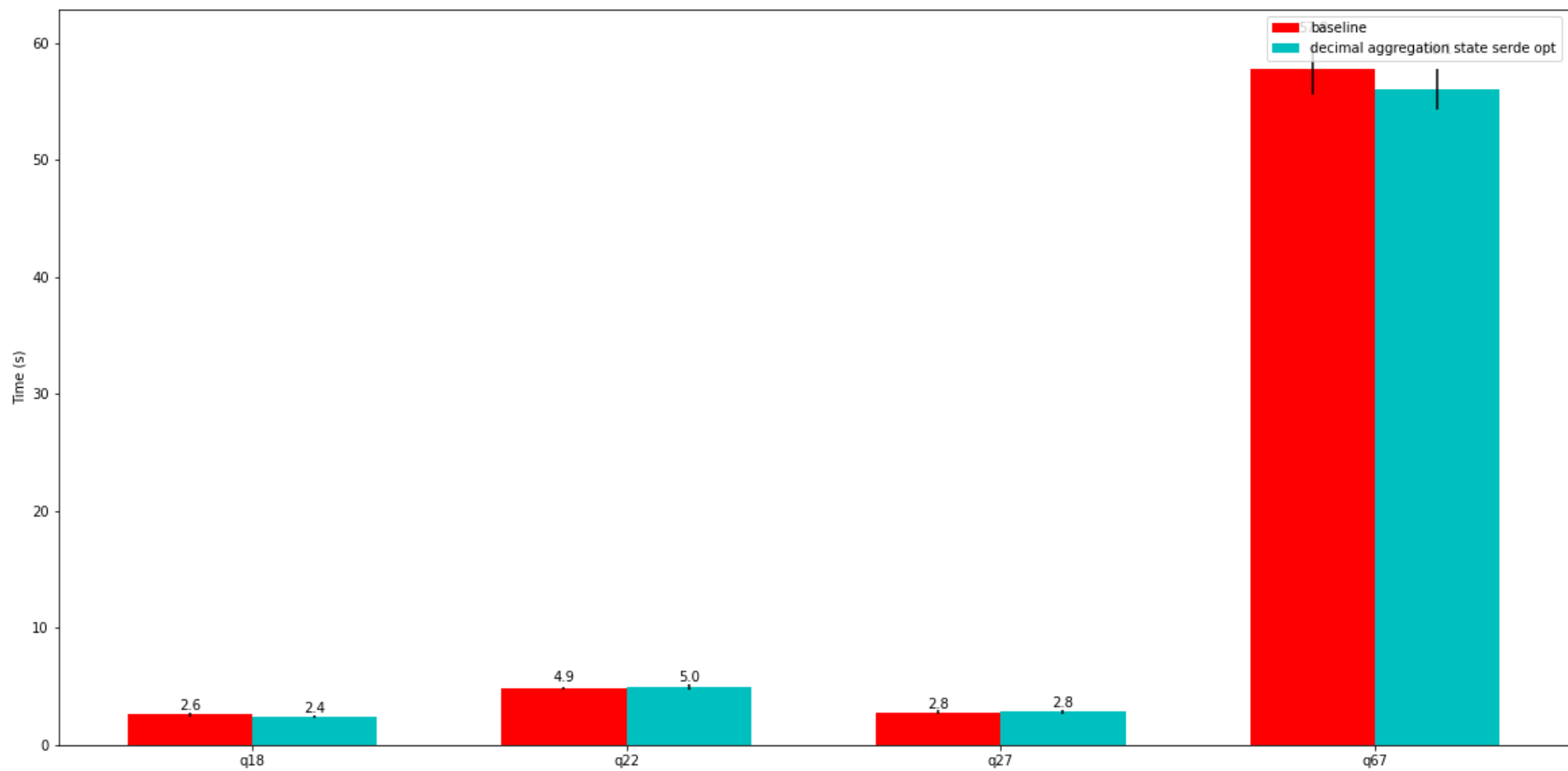












	query	baseline mean	baseline std.dev	decimal aggregation state serde opt mean	decimal aggregation state serde opt std.dev	% change	absolute change	baseline std.dev %	decimal aggregation state serde opt std.dev %	p-value
77	presto/tpcds: q78	29.96	2.07	26.52	1.11	-11.47	-3.44	6.90	4.19	0.00496
66	presto/tpcds: q67	57.76	2.11	56.09	1.76	-2.90	-1.67	3.65	3.14	0.16630
64	presto/tpcds: q65	12.33	0.73	11.30	0.98	-8.34	-1.03	5.90	8.71	0.06653
22	presto/tpcds: q23	71.42	0.91	70.63	0.76	-1.10	-0.79	1.27	1.08	0.13586
29	presto/tpcds: q30	2.26	1.69	1.55	0.03	-31.32	-0.71	74.94	2.15	0.33022
49	presto/tpcds: q50	7.11	0.40	6.47	0.40	-8.99	-0.64	5.69	6.11	0.01991
12	presto/tpcds: q13	5.15	1.35	4.53	0.17	-12.05	-0.62	26.23	3.79	0.29038

	query	baseline mean	baseline std.dev	decimal aggregation state serde opt mean	decimal aggregation state serde opt std.dev	% change	absolute change	baseline std.dev %	decimal aggregation state serde opt std.dev %	p-value
39	presto/tpcds:q40	4.94	0.75	4.35	0.70	-11.99	-0.59	15.16	16.12	0.18751
87	presto/tpcds:q88	23.68	0.36	23.15	0.29	-2.25	-0.53	1.54	1.26	0.01875
46	presto/tpcds:q47	30.63	1.55	30.17	1.01	-1.52	-0.46	5.07	3.36	0.55337
53	presto/tpcds:q54	7.78	1.09	7.35	1.08	-5.57	-0.43	14.00	14.69	0.50461
59	presto/tpcds:q60	3.46	0.38	3.02	0.37	-12.53	-0.43	10.89	12.23	0.07213
55	presto/tpcds:q56	2.00	0.59	1.62	0.54	-18.87	-0.38	29.48	33.24	0.27413
42	presto/tpcds:q43	3.63	0.14	3.28	0.45	-9.66	-0.35	3.75	13.58	0.09468
32	presto/tpcds:q33	2.71	0.70	2.39	0.37	-11.57	-0.31	25.97	15.44	0.35688
17	presto/tpcds:q18	2.61	0.20	2.37	0.10	-9.01	-0.24	7.59	4.39	0.02770
98	presto/tpcds:q99	5.34	0.11	5.12	0.07	-3.96	-0.21	2.03	1.45	0.00273
2	presto/tpcds:q03	1.88	0.22	1.67	0.30	-11.09	-0.21	11.77	17.88	0.19959
81	presto/tpcds:q82	4.28	0.39	4.07	0.53	-4.84	-0.21	9.06	13.03	0.45764
34	presto/tpcds:q35	2.80	0.30	2.61	0.40	-6.92	-0.19	10.83	15.15	0.36254
25	presto/tpcds:q26	1.91	0.14	1.75	0.02	-8.37	-0.16	7.14	0.93	0.01721
43	presto/tpcds:q44	11.72	0.25	11.56	0.24	-1.31	-0.15	2.12	2.07	0.30212
16	presto/tpcds:q17	5.18	0.08	5.03	0.07	-2.81	-0.15	1.50	1.33	0.00592
63	presto/tpcds:q64	79.29	0.93	79.15	3.97	-0.18	-0.14	1.18	5.01	0.93377
79	presto/tpcds:q80	11.36	1.31	11.22	1.28	-1.23	-0.14	11.51	11.41	0.85576
95	presto/tpcds:q96	3.41	0.19	3.27	0.09	-3.95	-0.13	5.45	2.76	0.14135
70	presto/tpcds:q71	3.08	0.47	2.97	0.39	-3.68	-0.11	15.41	13.24	0.66147
9	presto/tpcds:q10	1.60	0.32	1.49	0.17	-7.05	-0.11	20.22	11.51	0.46761
5	presto/tpcds:q06	2.39	0.23	2.28	0.22	-4.55	-0.11	9.46	9.45	0.41394

	query	baseline mean	baseline std.dev	decimal aggregation state serde opt mean	decimal aggregation state serde opt std.dev	% change	absolute change	baseline std.dev %	decimal aggregation state serde opt std.dev %	p-value
88	presto/tpcds:q89	3.90	0.30	3.81	0.17	-2.29	-0.09	7.67	4.33	0.53648
52	presto/tpcds:q53	2.54	0.18	2.45	0.32	-3.24	-0.08	7.29	13.11	0.59935
97	presto/tpcds:q98	2.42	0.15	2.34	0.43	-3.01	-0.07	6.20	18.16	0.70159
80	presto/tpcds:q81	2.50	0.06	2.43	0.05	-2.86	-0.07	2.31	1.87	0.03839
30	presto/tpcds:q31	4.76	1.15	4.70	1.19	-1.28	-0.06	24.23	25.36	0.93034
71	presto/tpcds:q72	33.14	1.16	33.09	0.80	-0.16	-0.05	3.51	2.41	0.92782
92	presto/tpcds:q93	25.55	0.64	25.50	0.38	-0.19	-0.05	2.52	1.51	0.87941
93	presto/tpcds:q94	4.11	0.19	4.06	0.15	-1.12	-0.05	4.66	3.74	0.65537
4	presto/tpcds:q05	6.76	0.65	6.73	0.35	-0.52	-0.03	9.65	5.20	0.91009
85	presto/tpcds:q86	2.44	0.13	2.41	0.33	-1.42	-0.03	5.39	13.67	0.81483
7	presto/tpcds:q08	3.74	0.05	3.70	0.03	-0.87	-0.03	1.30	0.91	0.20461
60	presto/tpcds:q61	4.16	0.47	4.13	0.80	-0.71	-0.03	11.30	19.30	0.93928
35	presto/tpcds:q36	2.19	0.08	2.16	0.09	-1.26	-0.03	3.44	3.94	0.56431
18	presto/tpcds:q19	2.79	0.05	2.77	0.04	-0.92	-0.03	1.85	1.46	0.35688
0	presto/tpcds:q01	2.78	0.09	2.76	0.11	-0.70	-0.02	3.18	4.16	0.75071
83	presto/tpcds:q84	1.93	0.22	1.92	0.10	-0.70	-0.01	11.53	5.25	0.89513
48	presto/tpcds:q49	6.67	0.17	6.66	0.15	-0.20	-0.01	2.53	2.29	0.88880
54	presto/tpcds:q55	1.99	0.03	1.97	0.06	-0.67	-0.01	1.49	3.26	0.65516
19	presto/tpcds:q20	1.57	0.02	1.56	0.01	-0.80	-0.01	1.21	0.42	0.15711
40	presto/tpcds:q41	0.30	0.01	0.29	0.00	-3.67	-0.01	4.74	0.47	0.08879
90	presto/tpcds:q91	0.67	0.04	0.66	0.05	-1.43	-0.01	6.44	7.87	0.73480
96	presto/tpcds:q97	13.99	0.23	13.98	0.22	-0.06	-0.01	1.63	1.55	0.94556

	query	baseline mean	baseline std.dev	decimal aggregation state serde opt mean	decimal aggregation state serde opt std.dev	% change	absolute change	baseline std.dev %	decimal aggregation state serde opt std.dev %	p-value
20	presto/tpcds:q21	1.39	0.05	1.38	0.01	-0.63	-0.01	3.95	0.92	0.71392
84	presto/tpcds:q85	6.60	0.28	6.59	0.25	-0.12	-0.01	4.24	3.82	0.95949
11	presto/tpcds:q12	0.48	0.02	0.48	0.02	1.08	0.01	3.42	3.90	0.62377
41	presto/tpcds:q42	1.97	0.04	1.99	0.07	0.73	0.01	2.14	3.66	0.68479
14	presto/tpcds:q15	1.79	0.05	1.80	0.06	0.80	0.01	3.05	3.41	0.67830
73	presto/tpcds:q74	13.74	0.40	13.76	0.28	0.15	0.02	2.92	2.05	0.91783
82	presto/tpcds:q83	0.98	0.03	1.01	0.04	2.67	0.03	3.38	3.63	0.22306
15	presto/tpcds:q16	5.28	0.24	5.32	0.17	0.72	0.04	4.64	3.22	0.76068
51	presto/tpcds:q52	1.92	0.04	1.96	0.04	2.02	0.04	2.00	2.29	0.13887
26	presto/tpcds:q27	2.78	0.16	2.83	0.19	1.66	0.05	5.74	6.82	0.66025
28	presto/tpcds:q29	5.97	0.31	6.01	0.34	0.79	0.05	5.14	5.68	0.80629
94	presto/tpcds:q95	15.59	1.15	15.63	0.84	0.30	0.05	7.35	5.35	0.93668
61	presto/tpcds:q62	3.17	0.11	3.22	0.32	1.62	0.05	3.31	10.01	0.71852
47	presto/tpcds:q48	4.94	0.23	5.00	0.15	1.11	0.05	4.59	2.92	0.63066
38	presto/tpcds:q39	3.59	0.05	3.67	0.11	2.02	0.07	1.39	3.12	0.18534
6	presto/tpcds:q07	3.32	0.29	3.40	0.35	2.25	0.07	8.70	10.40	0.69732
86	presto/tpcds:q87	8.30	0.31	8.38	0.08	0.97	0.08	3.69	0.95	0.54687
33	presto/tpcds:q34	2.89	0.08	2.97	0.04	2.80	0.08	2.70	1.30	0.04632
21	presto/tpcds:q22	4.89	0.11	4.98	0.24	1.80	0.09	2.31	4.78	0.43180
45	presto/tpcds:q46	3.34	0.31	3.43	0.04	2.77	0.09	9.23	1.25	0.48352
78	presto/tpcds:q79	3.33	0.18	3.43	0.23	2.83	0.09	5.31	6.77	0.44778
27	presto/tpcds:q28	19.88	0.26	19.99	0.23	0.54	0.11	1.31	1.13	0.45808

	query	baseline mean	baseline std.dev	decimal aggregation state serde opt mean	decimal aggregation state serde opt std.dev	% change	absolute change	baseline std.dev %	decimal aggregation state serde opt std.dev %	p-value
44	presto/tpcds:q45	0.96	0.05	1.08	0.06	12.70	0.12	5.73	5.32	0.00378
76	presto/tpcds:q77	2.15	0.46	2.28	0.44	6.08	0.13	21.22	19.20	0.62343
23	presto/tpcds:q24	22.98	0.45	23.11	0.52	0.59	0.13	1.96	2.27	0.64236
65	presto/tpcds:q66	2.72	0.15	2.91	0.38	6.68	0.18	5.61	12.91	0.29692
24	presto/tpcds:q25	3.99	0.06	4.20	0.38	5.10	0.20	1.50	9.05	0.22322
89	presto/tpcds:q90	2.29	0.13	2.50	0.32	9.15	0.21	5.79	12.70	0.16653
31	presto/tpcds:q32	1.09	0.30	1.31	0.27	19.97	0.22	27.47	20.53	0.21439
62	presto/tpcds:q63	2.62	0.41	2.85	0.82	8.84	0.23	15.84	28.75	0.55061
50	presto/tpcds:q51	7.02	0.30	7.26	0.48	3.44	0.24	4.22	6.59	0.31761
56	presto/tpcds:q57	15.30	0.52	15.56	0.86	1.72	0.26	3.41	5.51	0.53484
75	presto/tpcds:q76	6.61	0.16	6.87	0.22	4.04	0.27	2.48	3.15	0.03693
72	presto/tpcds:q73	2.76	0.05	3.03	0.11	9.80	0.27	1.96	3.57	0.00027
8	presto/tpcds:q09	24.31	0.56	24.60	0.39	1.17	0.29	2.32	1.58	0.33189
67	presto/tpcds:q68	3.65	0.06	3.94	0.53	8.15	0.30	1.64	13.34	0.19885
10	presto/tpcds:q11	20.92	0.53	21.26	0.39	1.60	0.34	2.53	1.82	0.23859
68	presto/tpcds:q69	1.27	0.41	1.62	0.51	27.30	0.35	32.69	31.56	0.22568
3	presto/tpcds:q04	36.19	0.85	36.56	0.49	1.00	0.36	2.34	1.33	0.38526
57	presto/tpcds:q58	6.66	0.16	7.04	0.55	5.65	0.38	2.40	7.85	0.13978
91	presto/tpcds:q92	0.98	0.54	1.38	0.49	41.50	0.41	55.68	35.76	0.20651
37	presto/tpcds:q38	8.11	0.16	8.53	0.49	5.12	0.42	2.02	5.71	0.07601
1	presto/tpcds:q02	12.65	0.31	13.27	0.16	4.91	0.62	2.44	1.21	0.00138
36	presto/tpcds:q37	2.37	0.11	3.11	1.89	30.80	0.73	4.69	60.74	0.36542

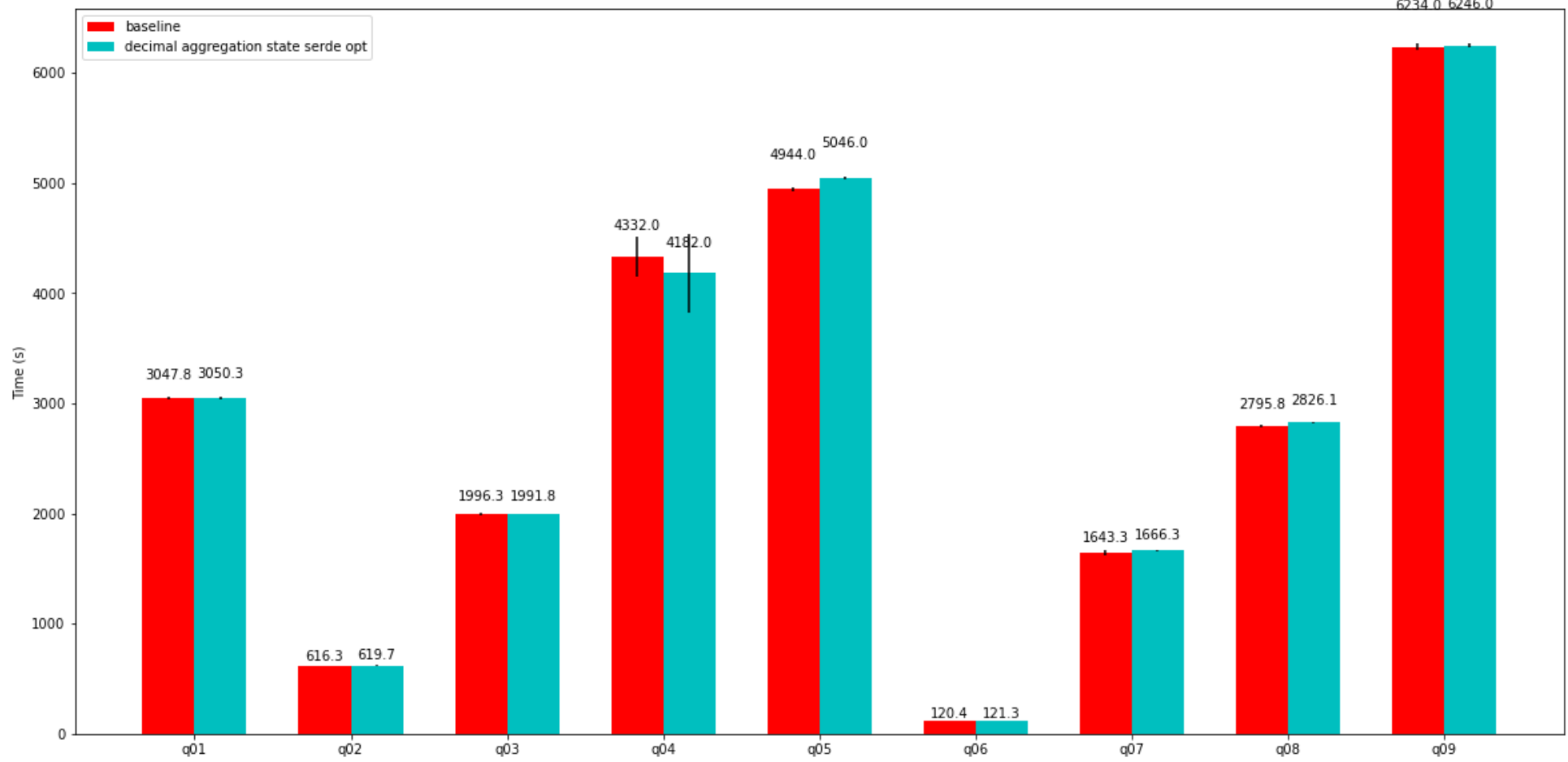
	query	baseline mean	baseline std.dev	decimal aggregation	state serde opt mean	decimal aggregation	state serde opt std.dev	% change	absolute change	baseline std.dev %	decimal aggregation	state serde opt std.dev %	p-value
69	presto/tpcds: q70	11.72	0.38		12.50		1.84	6.62	0.78	3.21		14.75	0.33634
58	presto/tpcds: q59	15.26	0.31		16.23		0.11	6.41	0.98	2.05		0.66	0.00003
74	presto/tpcds: q75	21.43	0.36		22.72		0.28	6.02	1.29	1.67		1.22	0.00004
13	presto/tpcds: q14	70.16	0.80		73.53		0.90	4.79	3.36	1.14		1.22	0.00004

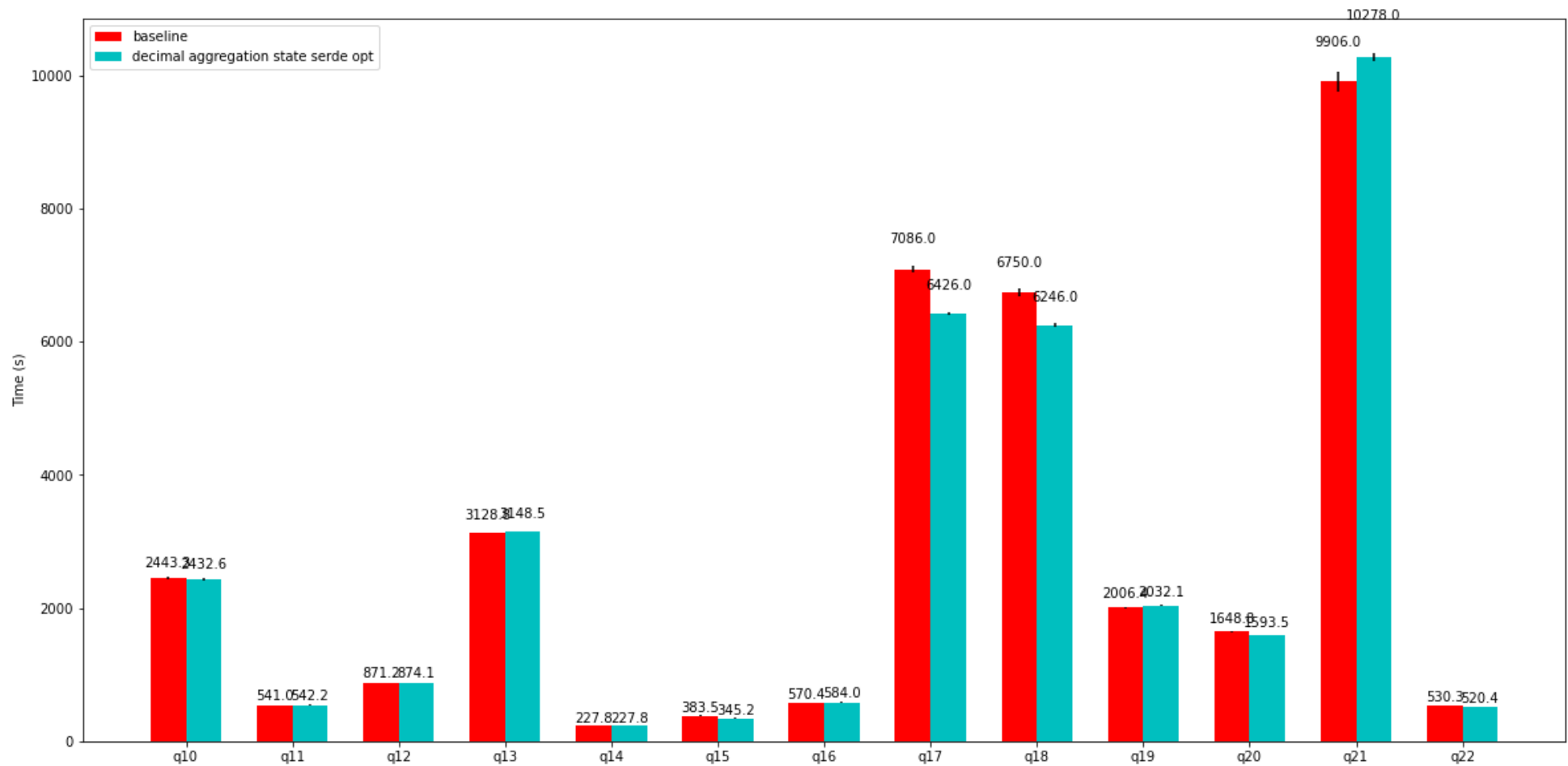
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Name: % change, dtype: float64

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TPC-H Comparison (CPU)

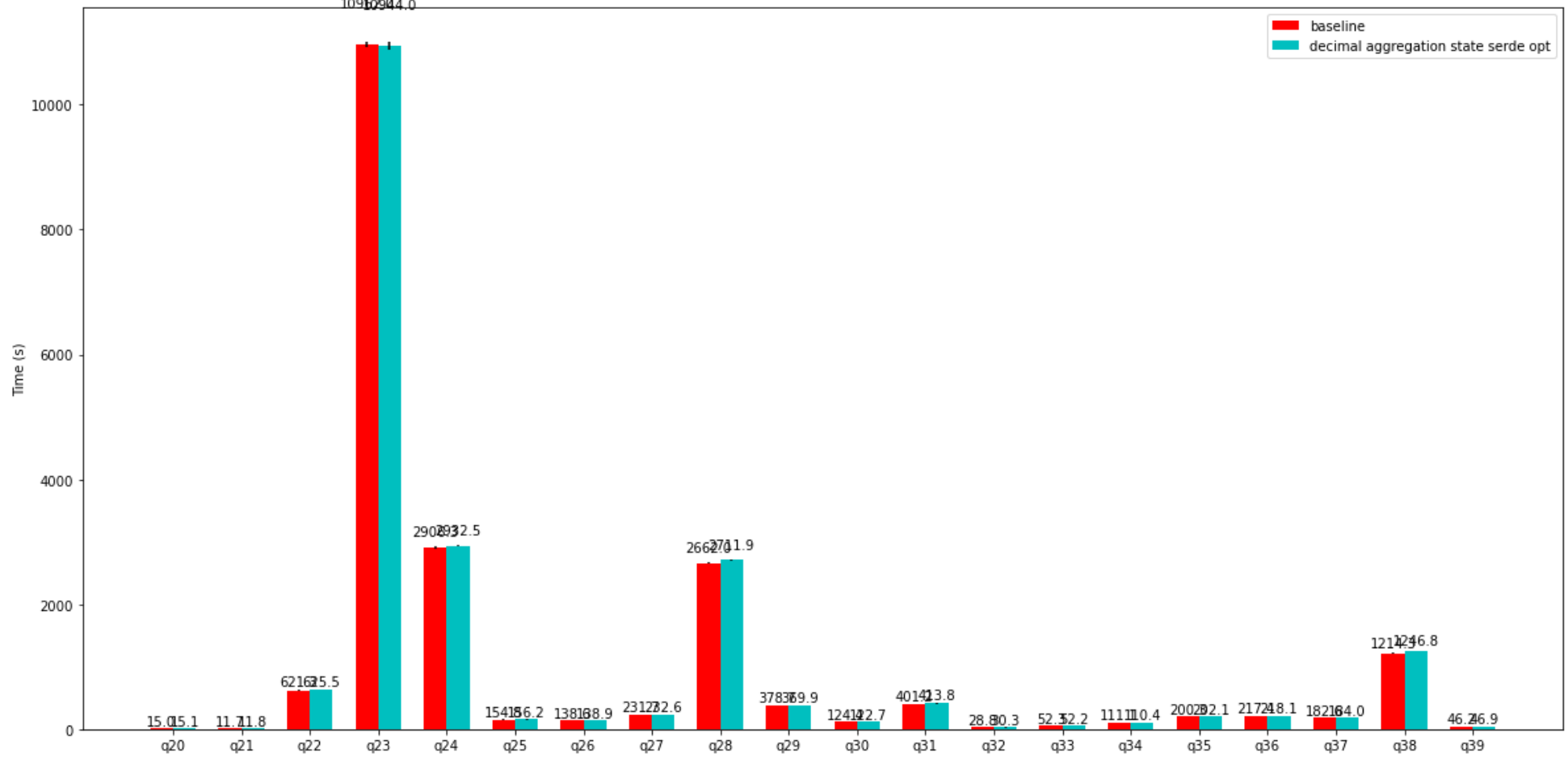


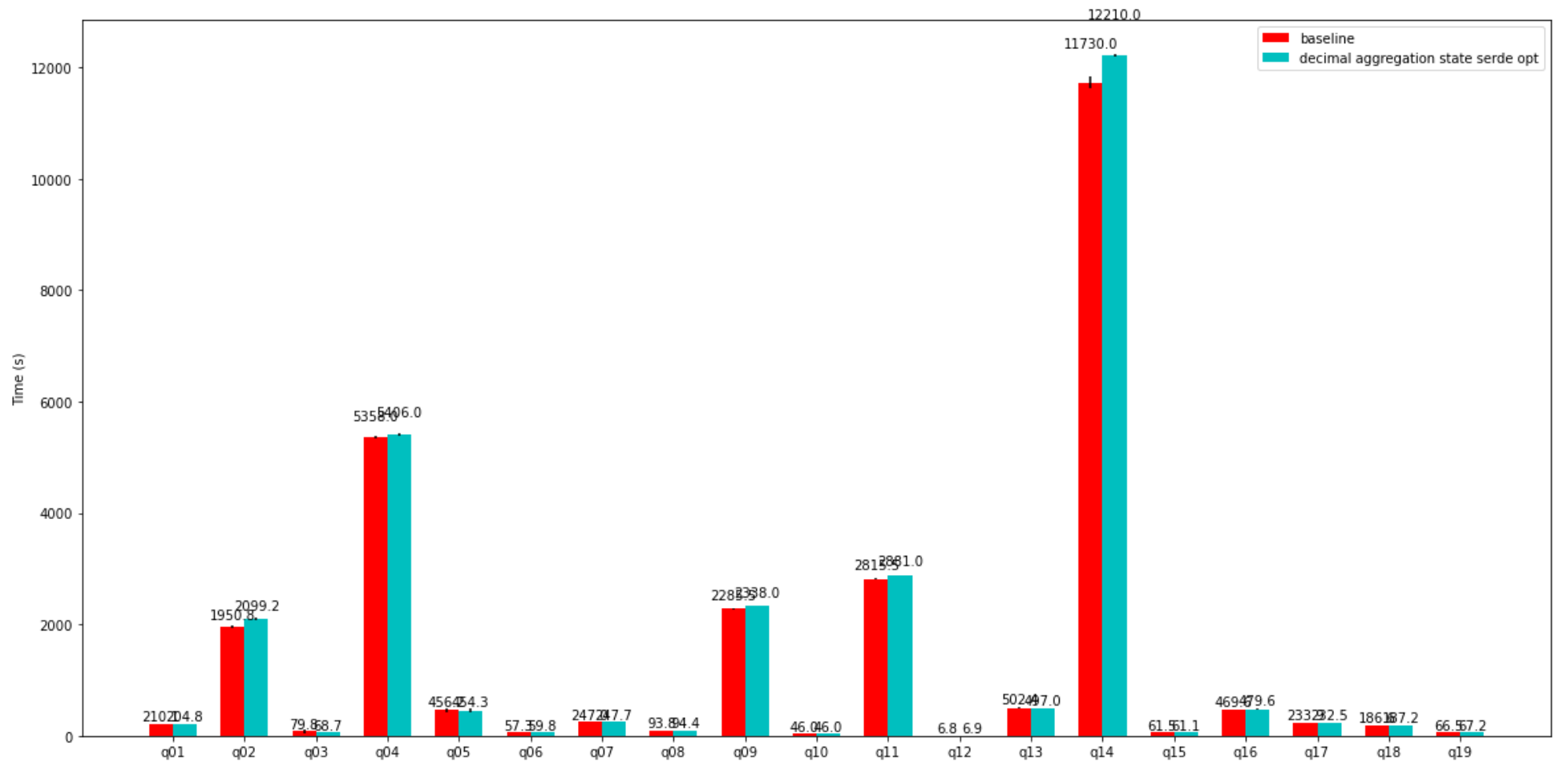


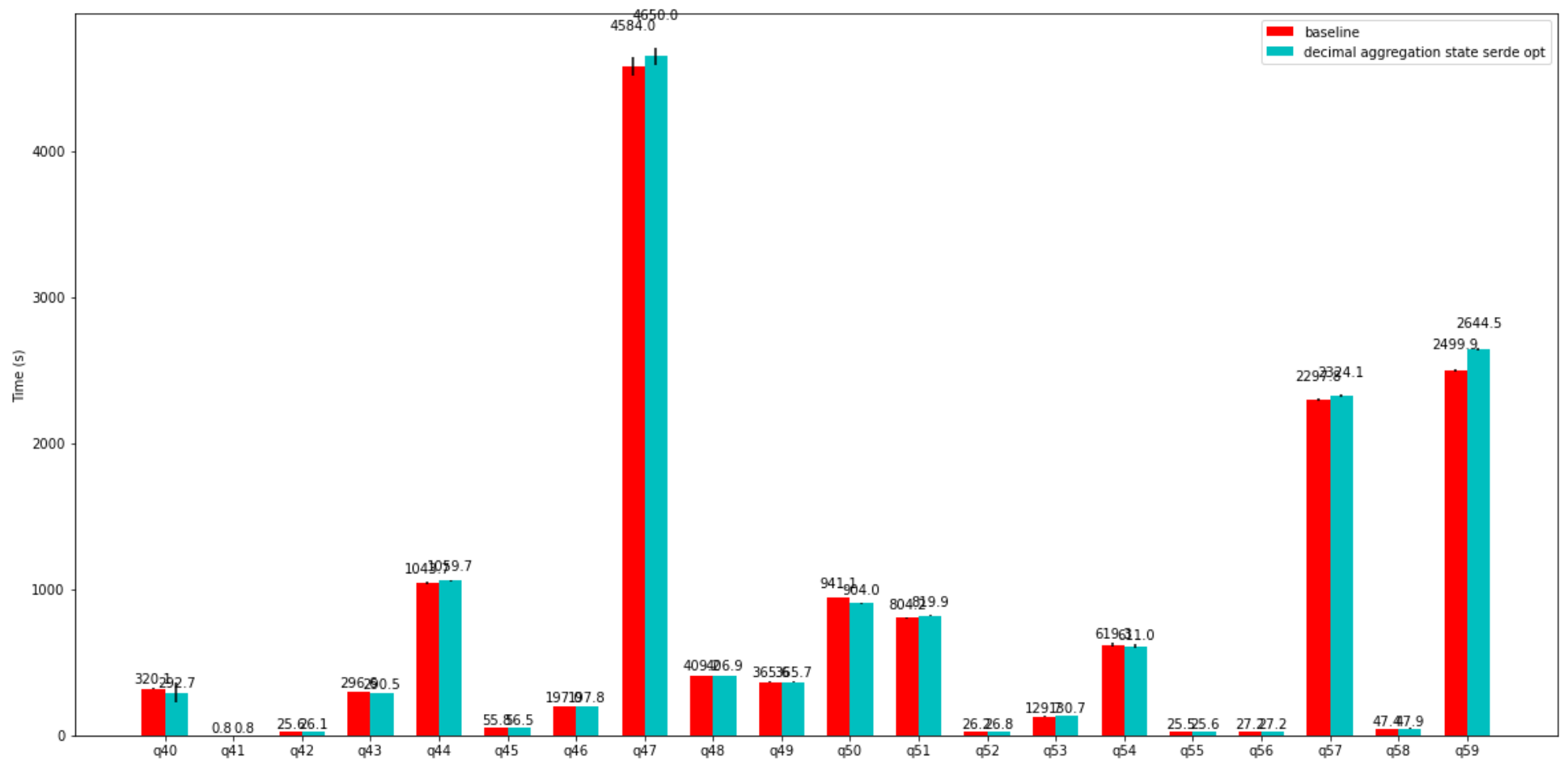
	query	baseline mean	baseline std.dev	decimal aggregation state serde opt mean	decimal aggregation state serde opt std.dev	% change	absolute change	baseline std.dev %	decimal aggregation state serde opt std.dev %	p-value
14	presto/tpch: q15	383.50	2.13	345.20	0.82	-9.99	-38.30	0.55	0.24	0.00000
16	presto/tpch: q17	7086.00	52.99	6426.00	19.72	-9.31	-660.00	0.75	0.31	0.00000
17	presto/tpch: q18	6750.00	59.15	6246.00	30.12	-7.47	-504.00	0.88	0.48	0.00000
3	presto/tpch: q04	4332.00	184.50	4182.00	355.96	-3.46	-150.00	4.26	8.51	0.38102
19	presto/tpch: q20	1648.80	11.56	1593.50	2.97	-3.35	-55.30	0.70	0.19	0.00000
21	presto/tpch: q22	530.30	1.34	520.40	1.59	-1.87	-9.90	0.25	0.31	0.00000
9	presto/tpch: q10	2443.30	21.63	2432.60	21.03	-0.44	-10.70	0.89	0.86	0.40540

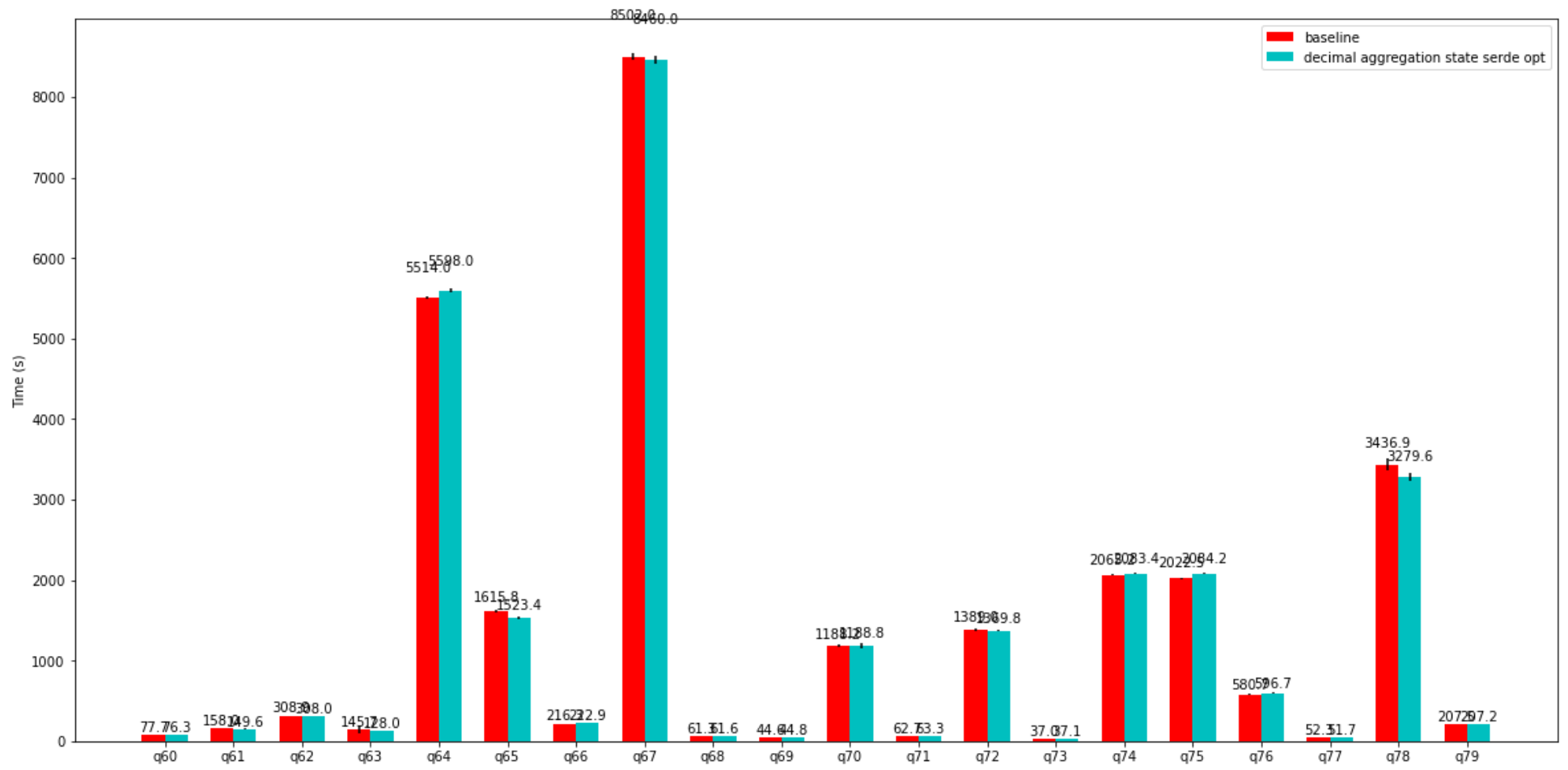
	query	baseline mean	baseline std.dev	decimal aggregation state serde opt mean	decimal aggregation state serde opt std.dev	% change	absolute change	baseline std.dev %	decimal aggregation state serde opt std.dev %	p-value
2	presto/tpch: q03	1996.30	11.80	1991.80	1.45	-0.23	-4.50	0.59	0.07	0.37557
13	presto/tpch: q14	227.80	1.35	227.80	1.18	0.00	0.00	0.59	0.52	1.00000
0	presto/tpch: q01	3047.80	8.07	3050.30	13.43	0.08	2.50	0.26	0.44	0.70422
8	presto/tpch: q09	6234.00	27.10	6246.00	19.72	0.19	12.00	0.43	0.32	0.40103
10	presto/tpch: q11	541.00	2.10	542.20	3.19	0.22	1.20	0.39	0.59	0.45940
11	presto/tpch: q12	871.20	4.00	874.10	1.03	0.33	2.90	0.46	0.12	0.11613
1	presto/tpch: q02	616.30	2.19	619.70	2.38	0.55	3.40	0.36	0.38	0.02781
12	presto/tpch: q13	3128.80	8.75	3148.50	5.61	0.63	19.70	0.28	0.18	0.00092
5	presto/tpch: q06	120.40	0.31	121.30	0.45	0.75	0.90	0.26	0.37	0.00242
7	presto/tpch: q08	2795.80	15.25	2826.10	5.18	1.08	30.30	0.55	0.18	0.00097
18	presto/tpch: q19	2006.40	7.50	2032.10	9.74	1.28	25.70	0.37	0.48	0.00045
6	presto/tpch: q07	1643.30	22.34	1666.30	6.73	1.40	23.00	1.36	0.40	0.03638
4	presto/tpch: q05	4944.00	18.59	5046.00	14.70	2.06	102.00	0.38	0.29	0.00000
15	presto/tpch: q16	570.40	0.31	584.00	1.24	2.38	13.60	0.05	0.21	0.00000
20	presto/tpch: q21	9906.00	151.74	10278.00	54.60	3.76	372.00	1.53	0.53	0.00021
count	22									
mean	-1									
std	4									
min	-10									
25%	-2									
50%	0									
75%	1									
max	4									
Name: % change, dtype: float64										

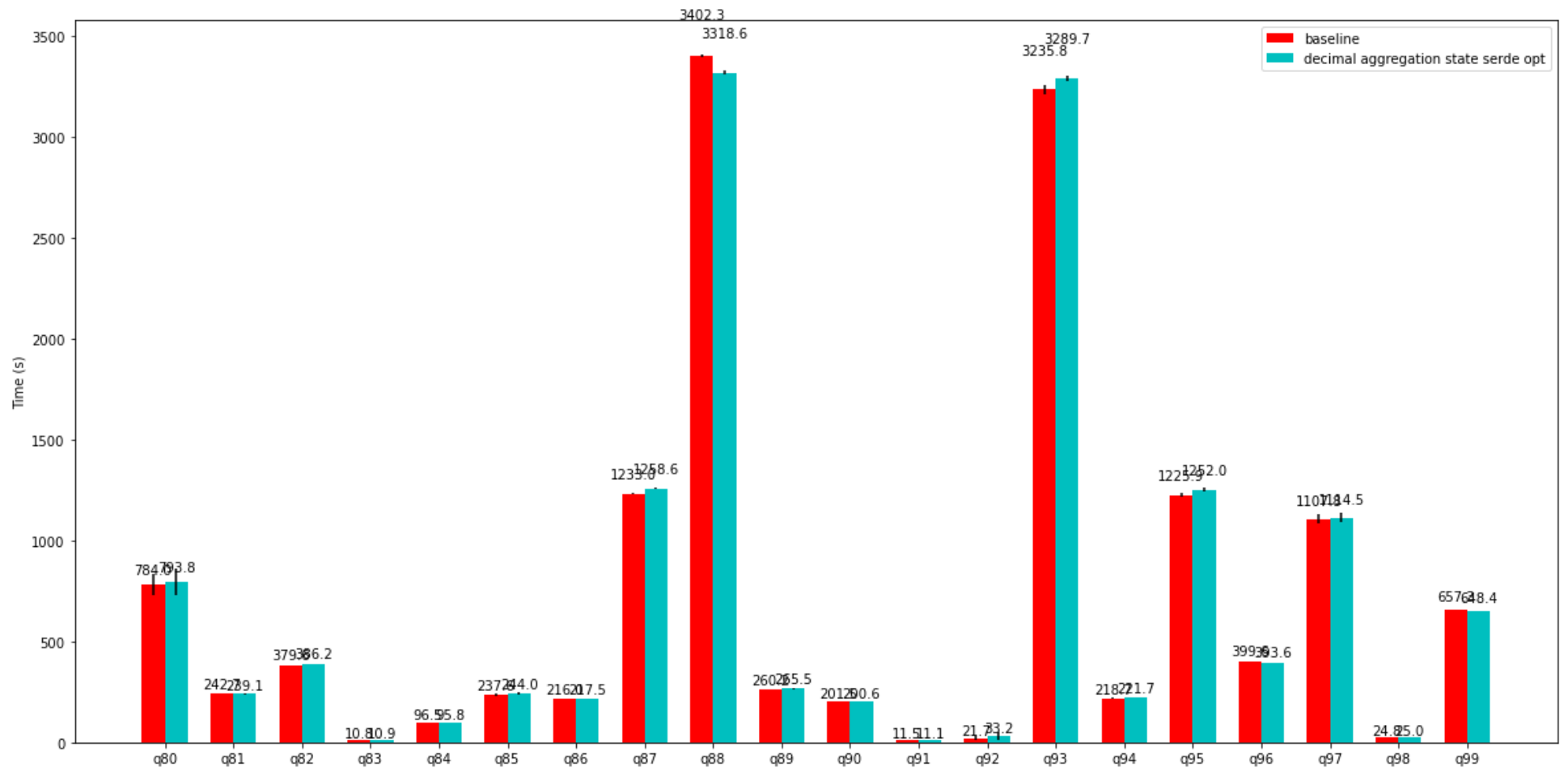
TPC-DS Comparison (CPU)

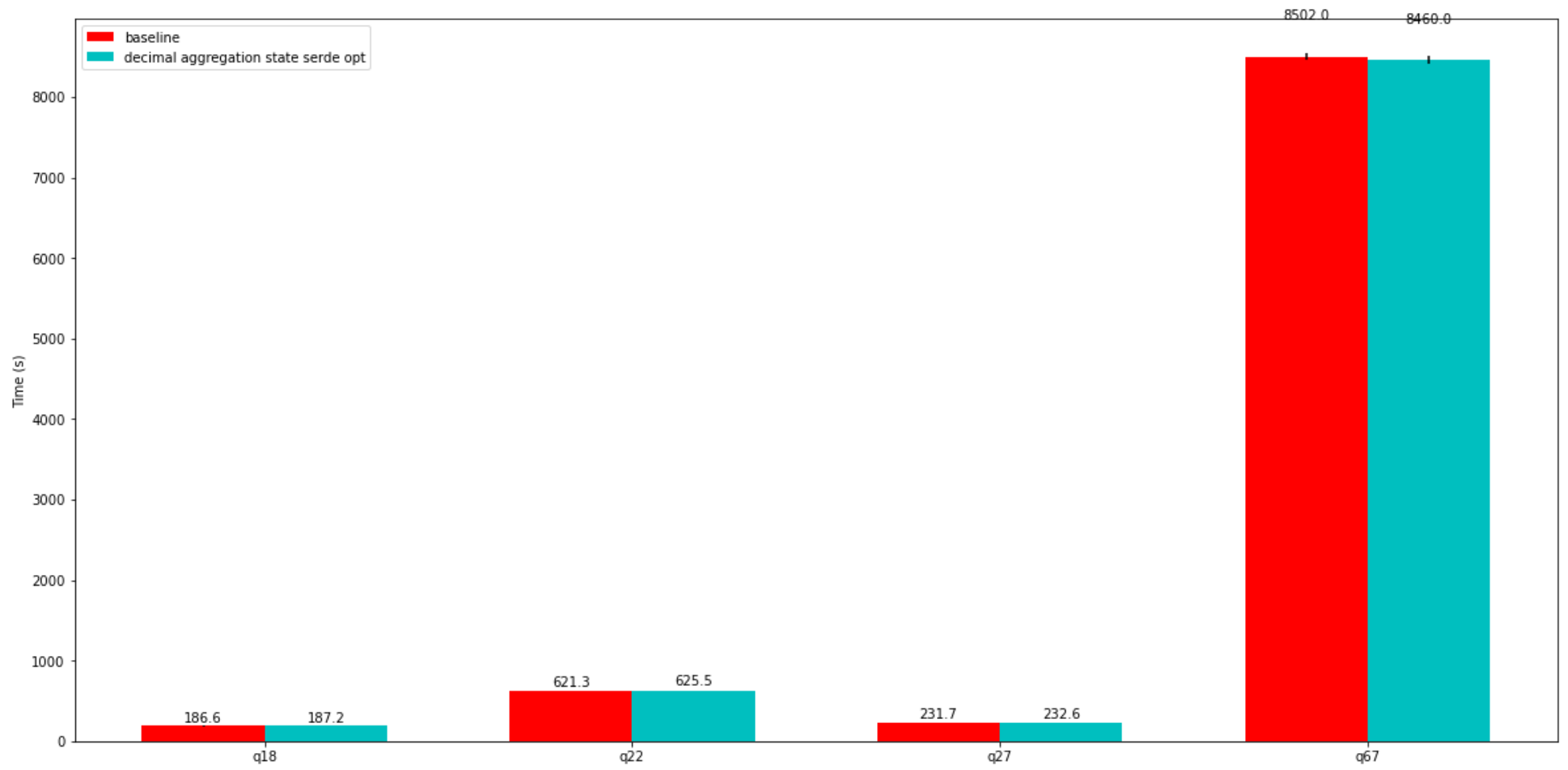












	query	baseline mean	baseline std.dev	decimal aggregation state serde opt mean	decimal aggregation state serde opt std.dev	% change	absolute change	baseline std.dev %	decimal aggregation state serde opt std.dev %	p-value
2	presto/tpcds: q03	79.80	29.39	68.70	0.73	-13.91	-11.10	36.83	1.07	0.37689
62	presto/tpcds: q63	145.70	44.73	128.00	0.49	-12.15	-17.70	30.70	0.38	0.35531
39	presto/tpcds: q40	320.10	4.78	292.70	70.71	-8.56	-27.40	1.49	24.16	0.36599
64	presto/tpcds: q65	1615.80	19.05	1523.40	16.41	-5.72	-92.40	1.18	1.08	0.00000
60	presto/tpcds: q61	158.00	1.73	149.60	11.97	-5.32	-8.40	1.09	8.00	0.11981
77	presto/tpcds: q78	3436.90	71.07	3279.60	51.86	-4.58	-157.30	2.07	1.58	0.00138
49	presto/tpcds: q50	941.10	1.12	904.00	1.96	-3.94	-37.10	0.12	0.22	0.00000

	query	baseline mean	baseline std.dev	decimal aggregation state serde opt mean	decimal aggregation state serde opt std.dev	% change	absolute change	baseline std.dev %	decimal aggregation state serde opt std.dev %	p-value
90	presto/tpcds:q91	11.54	0.42	11.09	0.47	-3.90	-0.45	3.66	4.20	0.11011
0	presto/tpcds:q01	210.10	1.22	204.80	1.55	-2.52	-5.30	0.58	0.76	0.00006
87	presto/tpcds:q88	3402.30	6.48	3318.60	10.67	-2.46	-83.70	0.19	0.32	0.00000
28	presto/tpcds:q29	378.70	0.45	369.90	0.33	-2.32	-8.80	0.12	0.09	0.00000
42	presto/tpcds:q43	296.60	1.50	290.50	0.88	-2.06	-6.10	0.51	0.30	0.00001
59	presto/tpcds:q60	77.70	0.63	76.30	0.24	-1.80	-1.40	0.81	0.32	0.00048
95	presto/tpcds:q96	399.60	0.00	393.60	0.66	-1.50	-6.00	0.00	0.17	0.00000
80	presto/tpcds:q81	242.70	1.24	239.10	0.73	-1.48	-3.60	0.51	0.31	0.00012
71	presto/tpcds:q72	1389.00	17.80	1369.80	6.24	-1.38	-19.20	1.28	0.46	0.03181
29	presto/tpcds:q30	124.40	0.31	122.70	1.35	-1.37	-1.70	0.25	1.10	0.01344
98	presto/tpcds:q99	657.30	1.96	648.40	0.90	-1.35	-8.90	0.30	0.14	0.00000
53	presto/tpcds:q54	619.30	15.03	611.00	16.58	-1.34	-8.30	2.43	2.71	0.38508
12	presto/tpcds:q13	502.40	5.18	497.00	0.98	-1.07	-5.40	1.03	0.20	0.03108
76	presto/tpcds:q77	52.26	0.44	51.75	0.23	-0.98	-0.51	0.85	0.44	0.03100
83	presto/tpcds:q84	96.50	0.45	95.80	0.73	-0.73	-0.70	0.47	0.76	0.07289
14	presto/tpcds:q15	61.50	0.83	61.10	1.10	-0.65	-0.40	1.34	1.80	0.49300
33	presto/tpcds:q34	111.10	0.24	110.40	0.38	-0.63	-0.70	0.22	0.34	0.00351
16	presto/tpcds:q17	233.90	6.09	232.50	4.24	-0.60	-1.40	2.60	1.82	0.65378
47	presto/tpcds:q48	409.20	1.00	406.90	0.88	-0.56	-2.30	0.25	0.22	0.00179
66	presto/tpcds:q67	8502.00	42.09	8460.00	50.91	-0.49	-42.00	0.50	0.60	0.15041
89	presto/tpcds:q90	201.50	0.59	200.60	0.49	-0.45	-0.90	0.29	0.24	0.01653
4	presto/tpcds:q05	456.20	38.93	454.30	35.79	-0.42	-1.90	8.53	7.88	0.93160

	query	baseline mean	baseline std.dev	decimal aggregation state serde opt mean	decimal aggregation state serde opt std.dev	% change	absolute change	baseline std.dev %	decimal aggregation state serde opt std.dev %	p-value
61	presto/tpcds:q62	308.90	1.22	308.00	1.59	-0.29	-0.90	0.40	0.52	0.29866
22	presto/tpcds:q23	10962.00	37.76	10944.00	60.24	-0.16	-18.00	0.34	0.55	0.54901
78	presto/tpcds:q79	207.50	0.59	207.20	0.62	-0.14	-0.30	0.28	0.30	0.41051
9	presto/tpcds:q10	46.05	0.22	46.02	0.47	-0.06	-0.03	0.48	1.02	0.89635
32	presto/tpcds:q33	52.25	0.74	52.24	0.19	-0.02	-0.01	1.42	0.37	0.97926
48	presto/tpcds:q49	365.60	3.75	365.70	3.69	0.03	0.10	1.03	1.01	0.96380
55	presto/tpcds:q56	27.17	0.14	27.18	0.19	0.05	0.01	0.53	0.68	0.89239
69	presto/tpcds:q70	1188.20	19.96	1188.80	35.81	0.05	0.60	1.68	3.01	0.97211
25	presto/tpcds:q26	138.60	0.54	138.90	0.63	0.22	0.30	0.39	0.45	0.39513
6	presto/tpcds:q07	247.00	0.49	247.70	0.70	0.28	0.70	0.20	0.28	0.07289
72	presto/tpcds:q73	37.02	0.11	37.14	0.10	0.31	0.11	0.29	0.26	0.08195
17	presto/tpcds:q18	186.60	0.38	187.20	0.38	0.32	0.60	0.20	0.20	0.02088
35	presto/tpcds:q36	217.40	0.31	218.10	0.33	0.32	0.70	0.14	0.15	0.00351
26	presto/tpcds:q27	231.70	0.88	232.60	0.31	0.39	0.90	0.38	0.13	0.04027
45	presto/tpcds:q46	197.00	0.90	197.80	0.73	0.41	0.80	0.46	0.37	0.12185
68	presto/tpcds:q69	44.59	0.18	44.78	0.15	0.43	0.19	0.41	0.34	0.07707
67	presto/tpcds:q68	61.30	0.45	61.60	0.31	0.49	0.30	0.74	0.50	0.20938
96	presto/tpcds:q97	1107.80	25.42	1114.50	20.05	0.60	6.70	2.29	1.80	0.62322
7	presto/tpcds:q08	93.80	0.31	94.40	0.62	0.64	0.60	0.33	0.66	0.05989
21	presto/tpcds:q22	621.30	2.10	625.50	1.96	0.68	4.20	0.34	0.31	0.00505
85	presto/tpcds:q86	216.00	0.38	217.50	0.83	0.69	1.50	0.18	0.38	0.00237
54	presto/tpcds:q55	25.45	0.11	25.64	0.08	0.74	0.19	0.42	0.29	0.00539

	query	baseline mean	baseline std.dev	decimal aggregation state serde opt mean	decimal aggregation state serde opt std.dev	% change	absolute change	baseline std.dev %	decimal aggregation state serde opt std.dev %	p-value
19	presto/tpcds:q20	15.02	0.08	15.13	0.10	0.77	0.12	0.51	0.69	0.05456
36	presto/tpcds:q37	182.60	0.73	184.00	0.31	0.77	1.40	0.40	0.17	0.00146
52	presto/tpcds:q53	129.70	0.59	130.70	0.24	0.77	1.00	0.45	0.19	0.00329
73	presto/tpcds:q74	2065.20	8.68	2083.40	6.10	0.88	18.20	0.42	0.29	0.00182
3	presto/tpcds:q04	5358.00	27.10	5406.00	27.10	0.90	48.00	0.51	0.50	0.01188
34	presto/tpcds:q35	200.30	1.39	202.10	4.11	0.90	1.80	0.69	2.03	0.33367
23	presto/tpcds:q24	2906.30	21.62	2932.50	8.71	0.90	26.20	0.74	0.30	0.02035
24	presto/tpcds:q25	154.80	4.17	156.20	8.98	0.90	1.40	2.70	5.75	0.73623
97	presto/tpcds:q98	24.77	0.21	25.00	0.23	0.92	0.23	0.85	0.92	0.10571
82	presto/tpcds:q83	10.78	0.12	10.88	0.11	0.94	0.10	1.07	1.05	0.15506
70	presto/tpcds:q71	62.70	1.96	63.35	2.51	1.03	0.65	3.13	3.96	0.62886
18	presto/tpcds:q19	66.50	0.24	67.20	0.38	1.05	0.70	0.37	0.56	0.00351
57	presto/tpcds:q58	47.43	0.50	47.94	1.38	1.08	0.51	1.06	2.89	0.41438
11	presto/tpcds:q12	6.78	0.02	6.86	0.06	1.08	0.07	0.34	0.92	0.02358
20	presto/tpcds:q21	11.70	0.22	11.83	0.07	1.14	0.13	1.90	0.56	0.18923
56	presto/tpcds:q57	2297.80	11.82	2324.10	11.24	1.14	26.30	0.51	0.48	0.00273
79	presto/tpcds:q80	784.00	53.17	793.80	66.09	1.25	9.80	6.78	8.33	0.78294
44	presto/tpcds:q45	55.78	0.34	56.48	0.62	1.27	0.71	0.62	1.09	0.03415
93	presto/tpcds:q94	218.70	1.30	221.70	0.50	1.37	3.00	0.59	0.23	0.00036
46	presto/tpcds:q47	4584.00	63.04	4650.00	57.67	1.44	66.00	1.38	1.24	0.08776
38	presto/tpcds:q39	46.19	0.12	46.89	0.38	1.52	0.70	0.27	0.81	0.00157
63	presto/tpcds:q64	5514.00	14.70	5598.00	19.72	1.52	84.00	0.27	0.35	0.00001

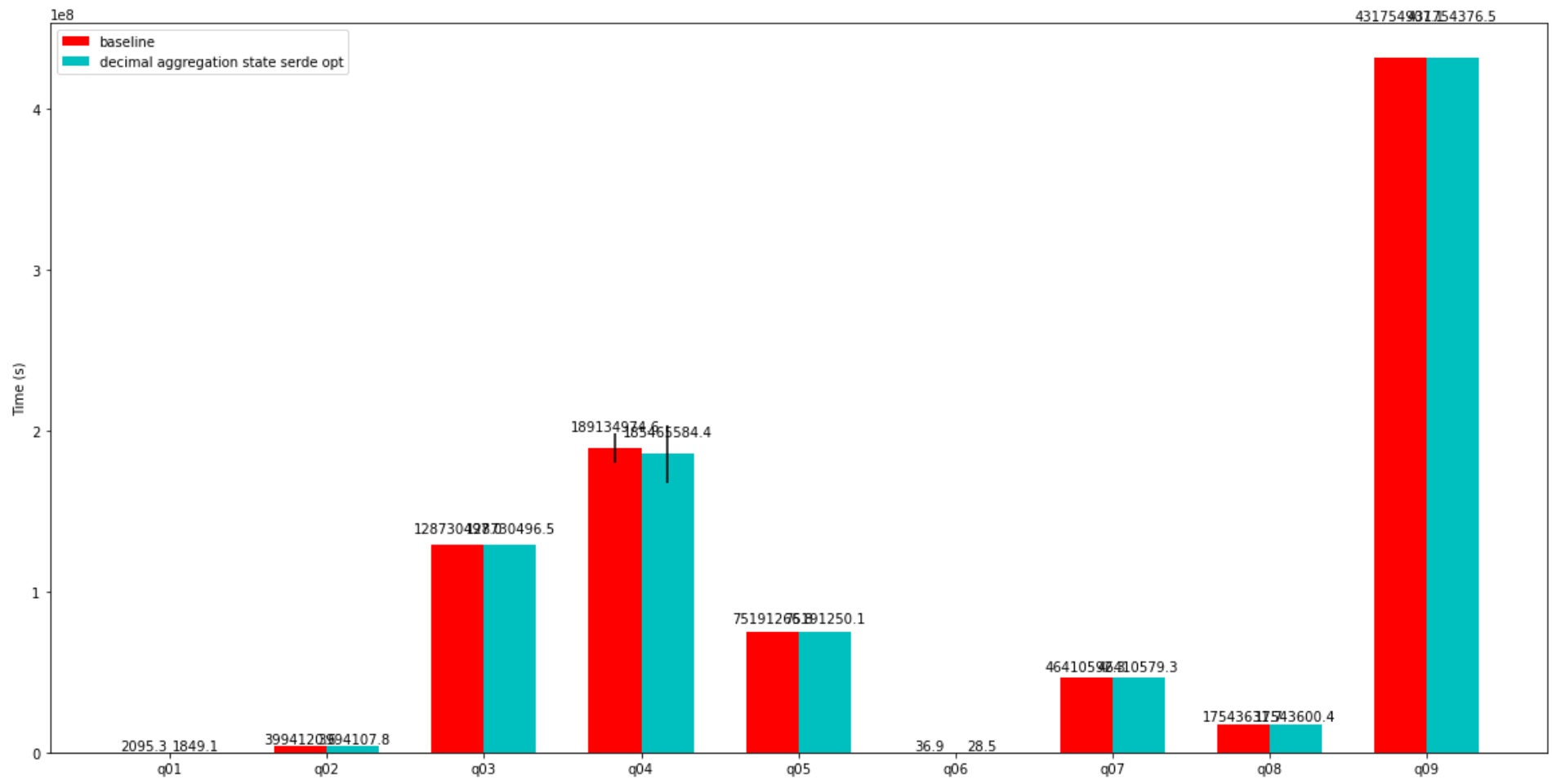
	query	baseline mean	baseline std.dev	decimal aggregation state serde opt mean	decimal aggregation state serde opt std.dev	% change	absolute change	baseline std.dev %	decimal aggregation state serde opt std.dev %	p-value
43	presto/tpcds:q44	1043.70	8.60	1059.70	2.61	1.53	16.00	0.82	0.25	0.00142
92	presto/tpcds:q93	3235.80	22.49	3289.70	15.05	1.67	53.90	0.69	0.46	0.00064
81	presto/tpcds:q82	379.60	0.90	386.20	0.73	1.74	6.60	0.24	0.19	0.00000
27	presto/tpcds:q28	2662.00	16.33	2711.90	6.18	1.87	49.90	0.61	0.23	0.00004
50	presto/tpcds:q51	804.20	5.34	819.90	1.46	1.95	15.70	0.66	0.18	0.00004
41	presto/tpcds:q42	25.58	0.10	26.09	0.10	2.01	0.52	0.39	0.38	0.00000
88	presto/tpcds:q89	260.20	0.90	265.50	0.83	2.04	5.30	0.35	0.31	0.00000
86	presto/tpcds:q87	1233.00	4.00	1258.60	1.12	2.08	25.60	0.32	0.09	0.00000
94	presto/tpcds:q95	1225.90	7.66	1252.00	8.58	2.13	26.10	0.62	0.69	0.00024
15	presto/tpcds:q16	469.60	3.88	479.60	2.36	2.13	10.00	0.83	0.49	0.00031
8	presto/tpcds:q09	2285.50	10.88	2338.00	6.20	2.30	52.50	0.48	0.27	0.00000
10	presto/tpcds:q11	2815.50	16.44	2881.00	8.69	2.33	65.50	0.58	0.30	0.00001
51	presto/tpcds:q52	26.21	0.08	26.83	0.08	2.35	0.62	0.31	0.30	0.00000
37	presto/tpcds:q38	1214.30	7.73	1246.80	6.32	2.68	32.50	0.64	0.51	0.00001
84	presto/tpcds:q85	237.60	5.83	244.00	6.56	2.69	6.40	2.45	2.69	0.10430
75	presto/tpcds:q76	580.70	2.69	596.70	3.05	2.76	16.00	0.46	0.51	0.00000
74	presto/tpcds:q75	2022.50	7.68	2084.20	5.13	3.05	61.70	0.38	0.25	0.00000
65	presto/tpcds:q66	216.30	0.83	222.90	0.63	3.05	6.60	0.38	0.28	0.00000
30	presto/tpcds:q31	401.20	5.40	413.80	4.48	3.14	12.60	1.35	1.08	0.00134
40	presto/tpcds:q41	0.76	0.01	0.79	0.01	3.45	0.03	1.34	1.06	0.00063
13	presto/tpcds:q14	11730.00	102.88	12210.00	27.10	4.09	480.00	0.88	0.22	0.00000
5	presto/tpcds:q06	57.27	0.48	59.77	4.87	4.37	2.50	0.84	8.15	0.23970

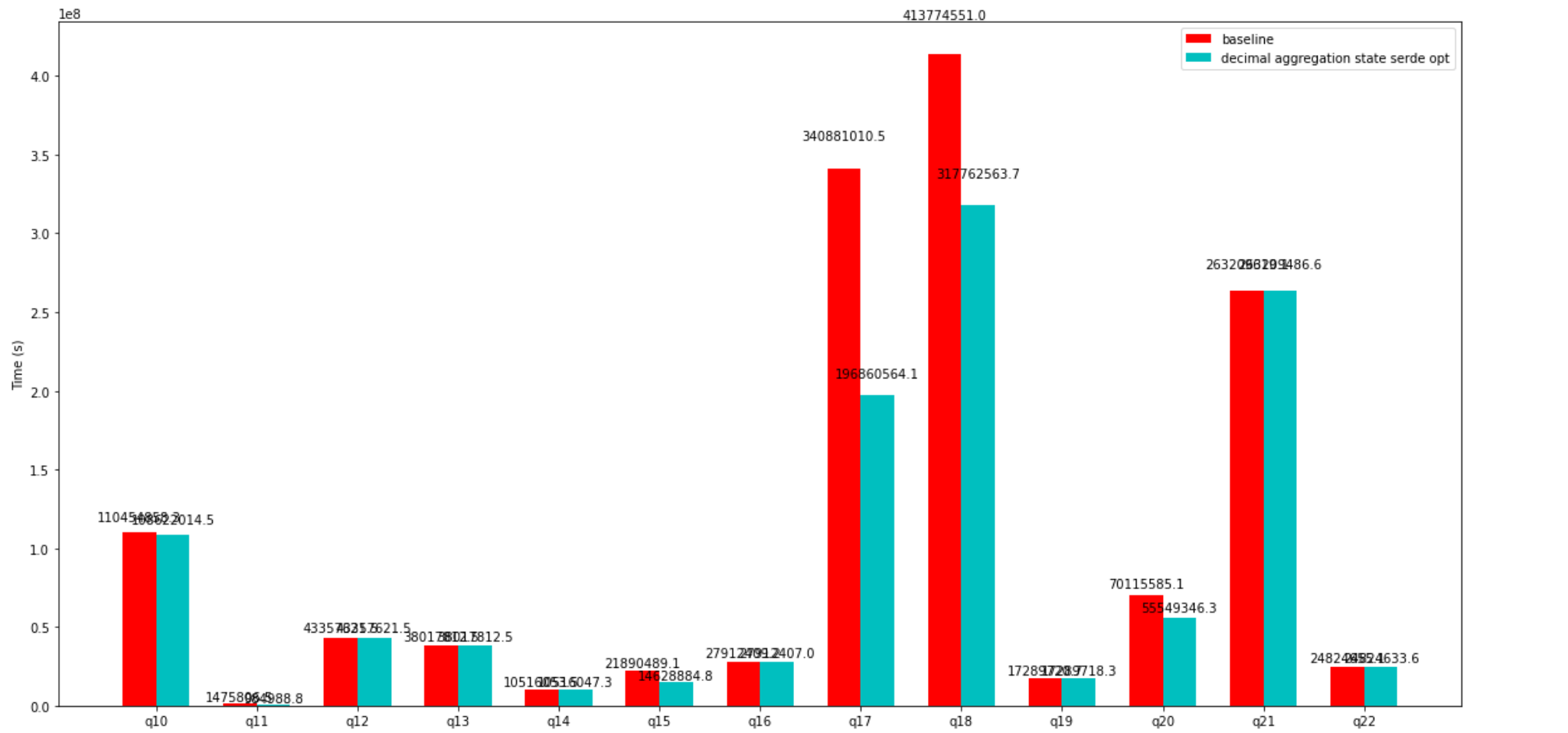
	query	baseline mean	baseline std.dev	decimal aggregation	state serde opt mean	decimal aggregation	state serde opt std.dev	% change	absolute change	baseline std.dev %	decimal aggregation	state serde opt std.dev %	p-value
31	presto/tpcds: q32	28.75	0.38		30.30		3.66	5.36	1.54	1.32		12.07	0.32889
58	presto/tpcds: q59	2499.90	6.04		2644.50		7.15	5.78	144.60	0.24		0.27	0.00000
1	presto/tpcds: q02	1950.80	22.75		2099.20		24.67	7.61	148.40	1.17		1.18	0.00000
91	presto/tpcds: q92	21.68	11.61		33.16		18.13	52.97	11.48	53.56		54.66	0.22058

```
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mean     1
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min     -14
25%     -1
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75%      2
max      53
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Name: % change, dtype: float64

TPC-H Comparison (Network)

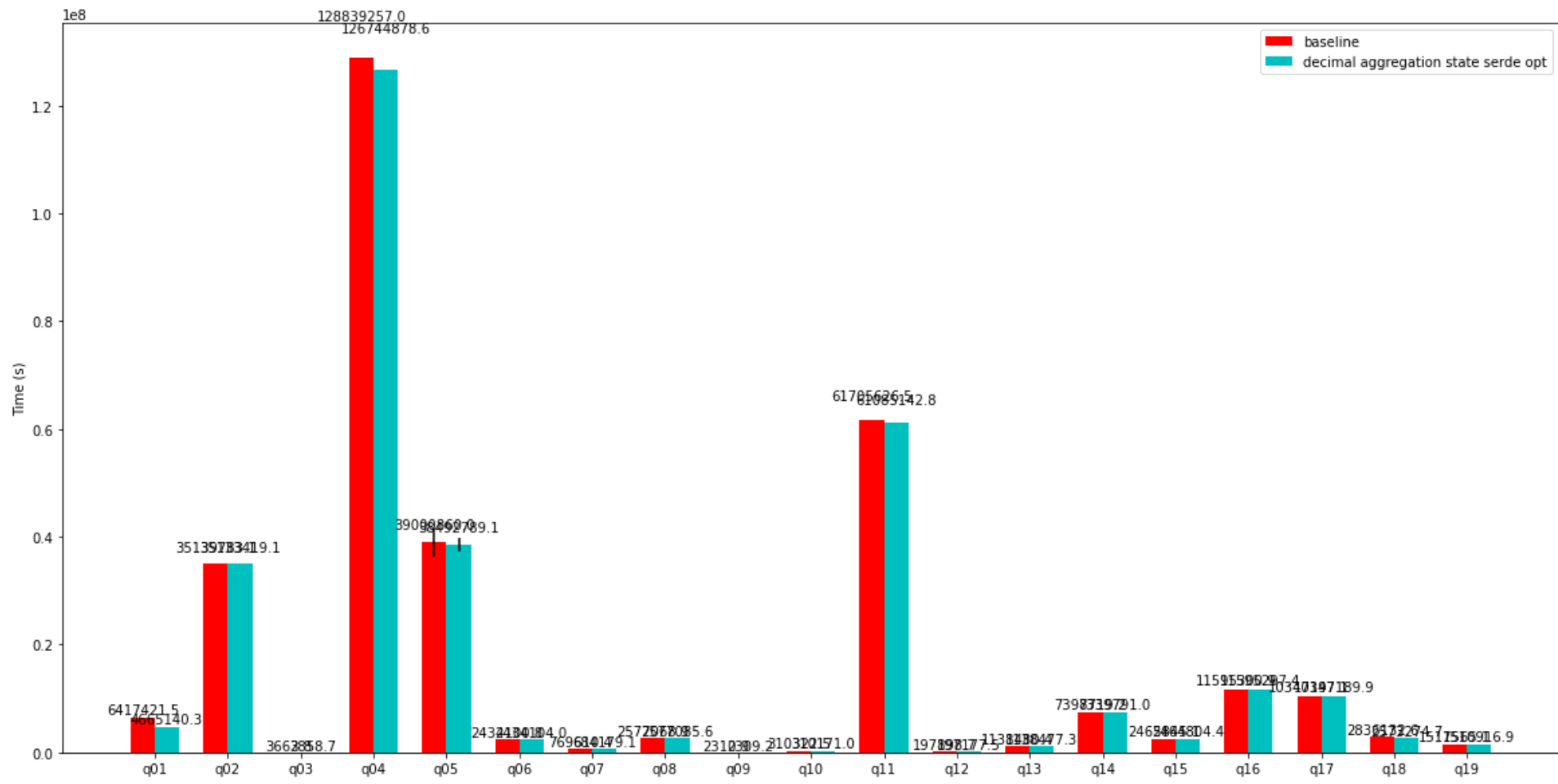


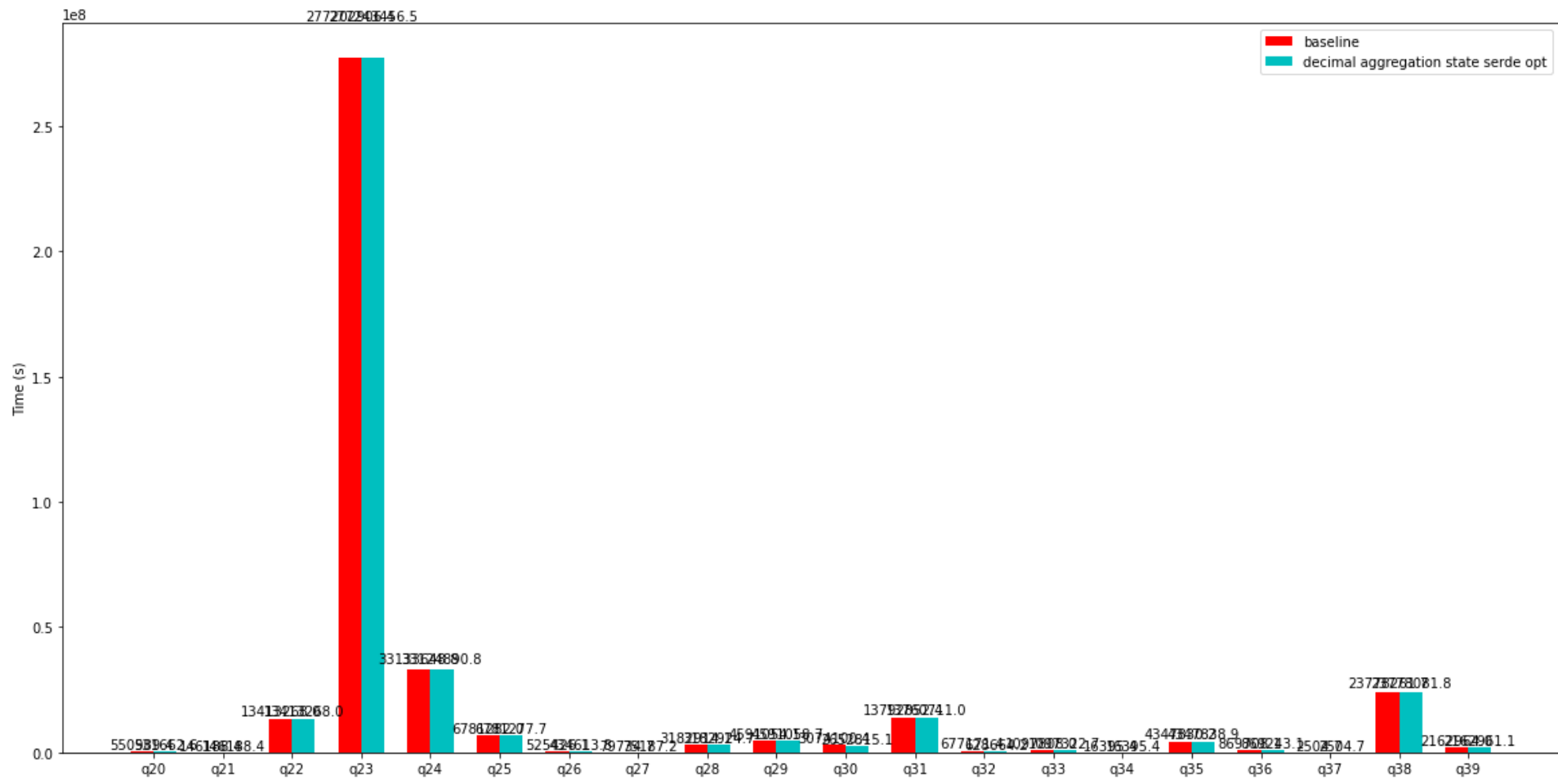


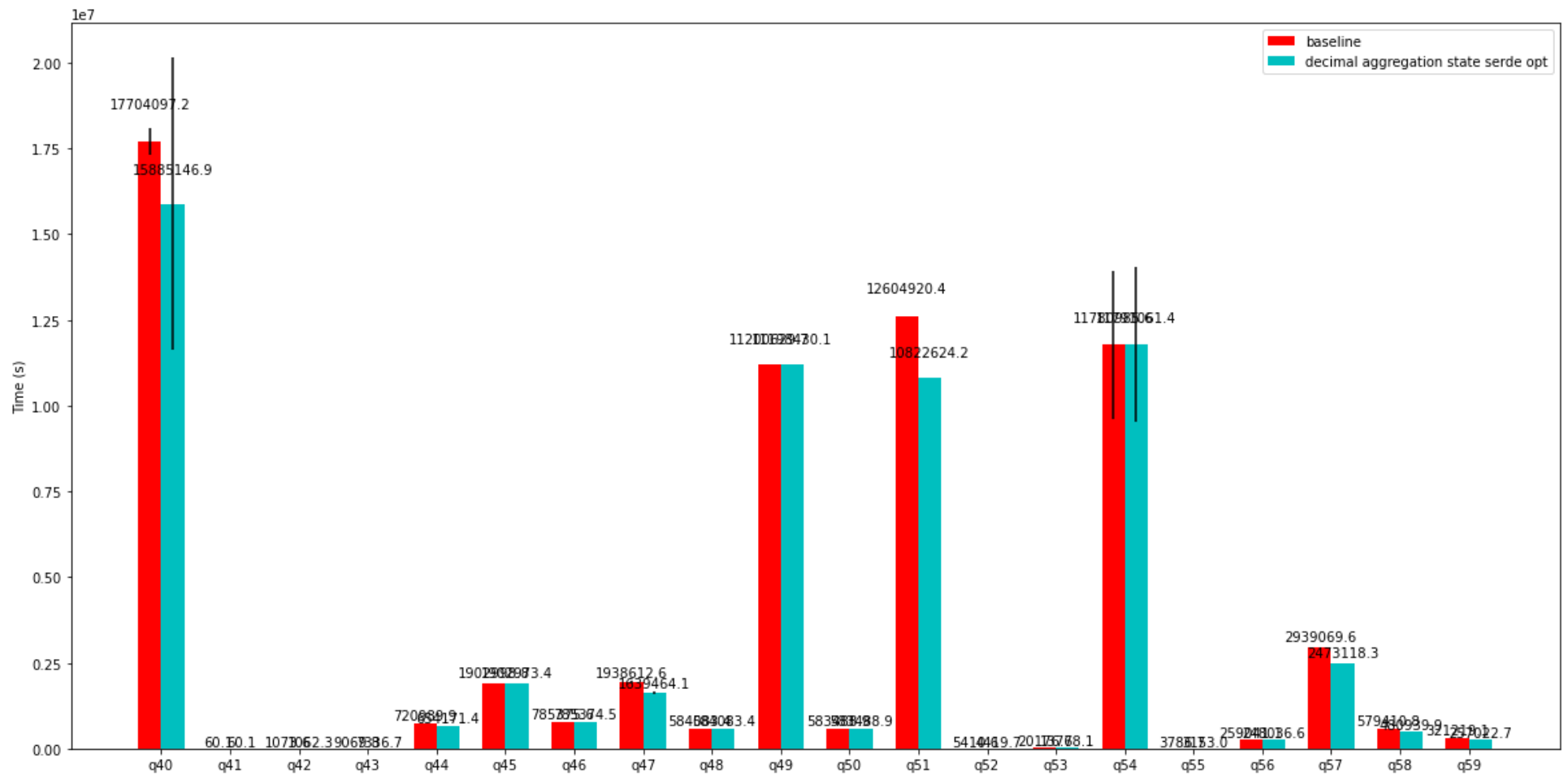
	query	baseline mean	baseline std.dev	decimal aggregation state serde opt mean	decimal aggregation state serde opt std.dev	% change	absolute change	baseline std.dev %	decimal aggregation state serde opt std.dev %	p-value
16	presto/tpch: q17	340881010.54	123.15	196860564.13	21.86	-42.25	-144020446.41	0.00	0.00	0.00000
10	presto/tpch: q11	1475806.52	10272.20	984988.79	8175.83	-33.26	-490817.74	0.70	0.83	0.00000
14	presto/tpch: q15	21890489.13	108.46	14628884.76	68.60	-33.17	-7261604.37	0.00	0.00	0.00000
17	presto/tpch: q18	413774550.98	3879.59	317762563.67	3527.70	-23.20	-96011987.31	0.00	0.00	0.00000
5	presto/tpch: q06	36.91	0.14	28.53	0.45	-22.69	-8.38	0.37	1.59	0.00000
19	presto/tpch: q20	70115585.07	94.88	55549346.32	104.08	-20.77	-14566238.75	0.00	0.00	0.00000
0	presto/tpch: q01	2095.27	0.96	1849.11	1.04	-11.75	-246.16	0.05	0.06	0.00000

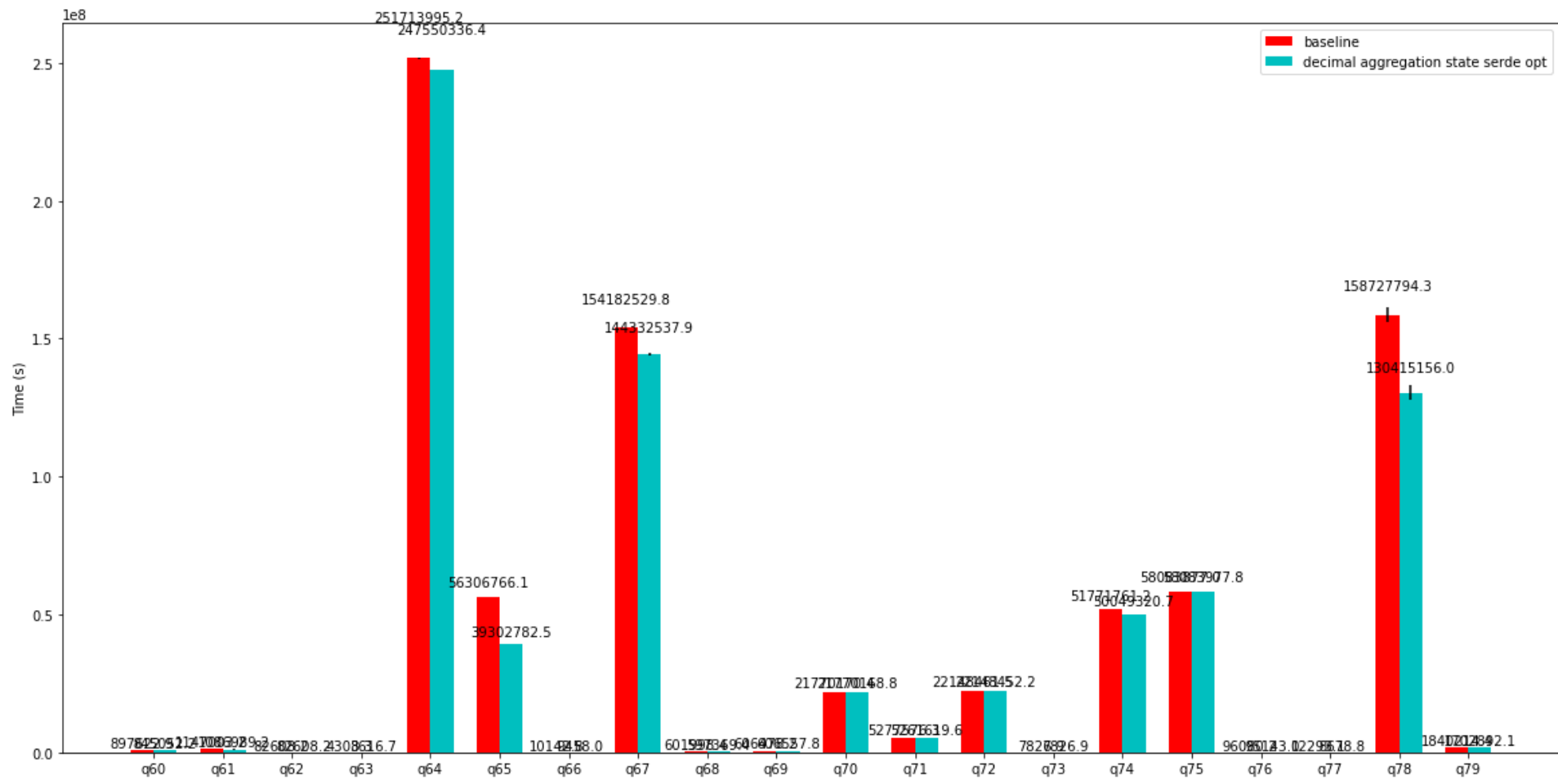
	query	baseline mean	baseline std.dev	decimal aggregation state serde opt mean	decimal aggregation state serde opt std.dev	% change	absolute change	baseline std.dev %	decimal aggregation state serde opt std.dev %	p-value
3	presto/tpch: q04	189134974.63	8988784.63	185465584.39	17977395.81	-1.94	-3669390.24	4.75	9.69	0.66427
9	presto/tpch: q10	110454858.26	1127.00	108622014.53	2400.96	-1.66	-1832843.73	0.00	0.00	0.00000
1	presto/tpch: q02	3994120.57	3.21	3994107.82	20.09	-0.00	-12.75	0.00	0.00	0.15584
7	presto/tpch: q08	17543631.74	18.38	17543600.44	41.89	-0.00	-31.30	0.00	0.00	0.12473
8	presto/tpch: q09	431754907.11	5.75	431754376.51	5.83	-0.00	-530.60	0.00	0.00	0.00000
21	presto/tpch: q22	24824655.12	0.00	24824633.62	0.00	-0.00	-21.50	0.00	0.00	0.00000
13	presto/tpch: q14	10516053.48	0.00	10516047.33	0.00	-0.00	-6.14	0.00	0.00	0.00000
20	presto/tpch: q21	263209619.09	338.32	263209486.61	466.61	-0.00	-132.48	0.00	0.00	0.58580
6	presto/tpch: q07	46410592.34	3.78	46410579.27	3.03	-0.00	-13.07	0.00	0.00	0.00006
4	presto/tpch: q05	75191266.77	13.62	75191250.13	6.11	-0.00	-16.64	0.00	0.00	0.02120
18	presto/tpch: q19	17289720.66	0.00	17289718.26	1.04	-0.00	-2.40	0.00	0.00	0.00021
15	presto/tpch: q16	27912409.24	4.91	27912407.02	2.72	-0.00	-2.22	0.00	0.00	0.35490
2	presto/tpch: q03	128730497.04	16.33	128730496.53	16.17	-0.00	-0.51	0.00	0.00	0.95790
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
count	22									
mean	-9									
std	14									
min	-42									
25%	-19									
50%	-0									
75%	-0									
max	0									
Name: % change, dtype: float64										

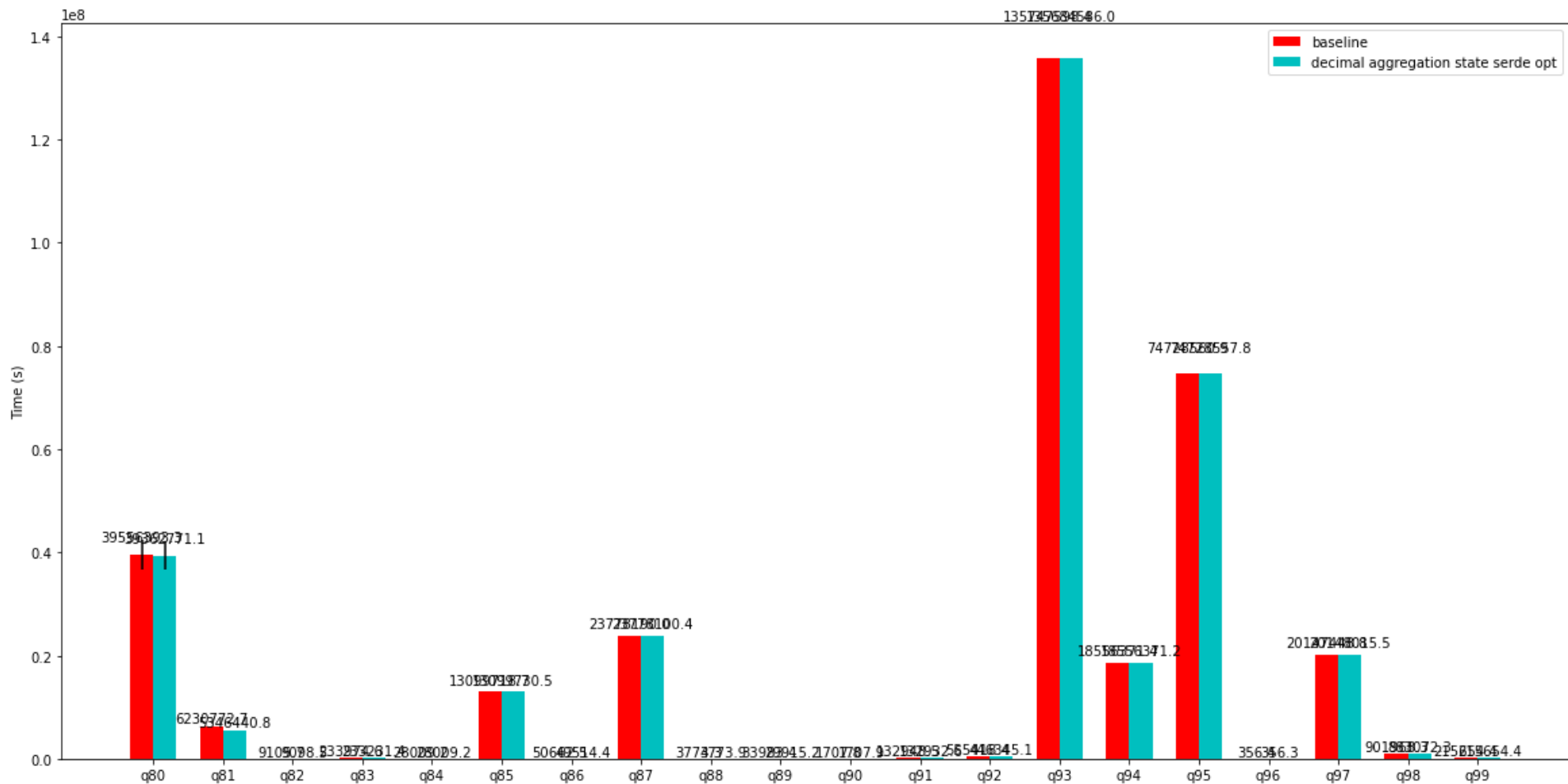
TPC-DS Comparison (Network)











query	baseline mean	baseline std.dev	decimal aggregation state serde opt mean	decimal aggregation state serde opt std.dev	% change	absolute change	baseline std.dev %	decimal aggregation state serde opt std.dev %	p-value
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	56306766.05	4572.64	39302782.55	2634.66	-30.20	-17003983.50	0.01	0.01	0.00000
76 presto/tpcds: q77	12293.08	623.74	8678.85	511.75	-29.40	-3614.23	5.07	5.90	0.00000
0 presto/tpcds: q01	6417421.53	1232.17	4665140.35	914.00	-27.31	-1752281.19	0.02	0.02	0.00000
2 presto/tpcds: q03	3663.83	0.00	2858.71	0.00	-21.97	-805.12	0.00	0.00	0.00000
58 presto/tpcds: q59	321219.09	580.31	257022.68	528.19	-19.99	-64196.40	0.18	0.21	0.00000
91 presto/tpcds: q92	555418.35	0.00	446345.07	0.00	-19.64	-109073.29	0.00	0.00	0.00000

	query	baseline mean	baseline std.dev	decimal aggregation state serde opt mean	decimal aggregation state serde opt std.dev	% change	absolute change	baseline std.dev %	decimal aggregation state serde opt std.dev %	p-value
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
77	presto/tpcds:q78	158727794.28	2628132.15	130415156.03	2744542.94	-17.84	-28312638.25	1.66	2.10	0.00000
25	presto/tpcds:q26	525426.11	9591.44	434613.77	4667.94	-17.28	-90812.34	1.83	1.07	0.00000
57	presto/tpcds:q58	579410.79	2525.38	480939.90	1550.58	-17.00	-98470.89	0.44	0.32	0.00000
54	presto/tpcds:q55	3786.73	0.00	3152.98	0.00	-16.74	-633.74	0.00	0.00	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
46	presto/tpcds:q47	1938612.64	45487.57	1639464.10	38353.63	-15.43	-299148.54	2.35	2.34	0.00000
80	presto/tpcds:q81	6230772.69	51.12	5346440.76	42.45	-14.19	-884331.93	0.00	0.00	0.00000
50	presto/tpcds:q51	12604920.40	134.60	10822624.19	196.25	-14.14	-1782296.22	0.00	0.00	0.00000
29	presto/tpcds:q30	3074100.35	64.50	2652815.07	39.85	-13.70	-421285.28	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
6	presto/tpcds:q07	769610.38	9201.62	684179.08	4211.85	-11.10	-85431.31	1.20	0.62	0.00000
39	presto/tpcds:q40	17704097.21	386089.38	15885146.89	4268083.02	-10.27	-1818950.32	2.18	26.87	0.32298
17	presto/tpcds:q18	2836132.62	12.38	2573274.72	29.23	-9.27	-262857.89	0.00	0.00	0.00000
43	presto/tpcds:q44	720989.89	25.88	654171.37	14.98	-9.27	-66818.52	0.00	0.00	0.00000
78	presto/tpcds:q79	1840214.41	0.25	1702892.13	0.28	-7.46	-137322.28	0.00	0.00	0.00000
31	presto/tpcds:q32	677171.43	0.00	628664.18	0.00	-7.16	-48507.25	0.00	0.00	0.00000
65	presto/tpcds:q66	10142.77	0.00	9457.97	0.00	-6.75	-684.80	0.00	0.00	0.00000
66	presto/tpcds:q67	154182529.82	157944.27	144332537.89	522099.50	-6.39	-9849991.93	0.10	0.36	0.00000
59	presto/tpcds:q60	897622.88	5157.81	845052.21	3378.52	-5.86	-52570.66	0.57	0.40	0.00000

	query	baseline mean	baseline std.dev	decimal aggregation state serde opt mean	decimal aggregation state serde opt std.dev	% change	absolute change	baseline std.dev %	decimal aggregation state serde opt std.dev %	p-value
26	presto/tpcds: q27	79734.71	9.56	75187.24	0.91	-5.70	-4547.47	0.01	0.00	0.00000
60	presto/tpcds: q61	1147003.23	21093.31	1086989.17	124653.75	-5.23	-60014.06	1.84	11.47	0.27192
55	presto/tpcds: q56	259041.06	528.44	248036.64	1268.83	-4.25	-11004.41	0.20	0.51	0.00000
19	presto/tpcds: q20	550989.40	5804.99	531662.55	5688.33	-3.51	-19326.85	1.05	1.07	0.00017
73	presto/tpcds: q74	51771761.20	1326.97	50049320.65	1111.57	-3.33	-1722440.55	0.00	0.00	0.00000
85	presto/tpcds: q86	50662.50	2.63	49514.39	65.07	-2.27	-1148.11	0.01	0.13	0.00000
97	presto/tpcds: q98	901968.32	5039.71	883072.27	7646.61	-2.09	-18896.05	0.56	0.87	0.00050
63	presto/tpcds: q64	251713995.16	148214.29	247550336.43	35148.02	-1.65	-4163658.73	0.06	0.01	0.00000
3	presto/tpcds: q04	128839256.98	815.11	126744878.62	592.58	-1.63	-2094378.36	0.00	0.00	0.00000
4	presto/tpcds: q05	39000860.05	2600742.13	38492789.06	1287421.95	-1.30	-508070.98	6.67	3.34	0.67712
41	presto/tpcds: q42	1073.62	0.00	1062.29	0.00	-1.06	-11.33	0.00	0.00	0.00000
10	presto/tpcds: q11	61705626.46	22.20	61085142.79	41.79	-1.01	-620483.67	0.00	0.00	0.00000
75	presto/tpcds: q76	96080.21	92.69	95143.03	101.08	-0.98	-937.18	0.10	0.11	0.00000
13	presto/tpcds: q14	7398719.21	17700.01	7339790.98	18178.30	-0.80	-58928.22	0.24	0.25	0.00020
67	presto/tpcds: q68	601998.38	59.24	597369.35	56.93	-0.77	-4629.03	0.01	0.01	0.00000
79	presto/tpcds: q80	39556393.29	2810376.62	39362771.15	2683672.97	-0.49	-193622.14	7.10	6.82	0.90528
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
82	presto/tpcds: q83	233974.63	2963.67	233231.44	4043.84	-0.32	-743.18	1.27	1.73	0.72409
70	presto/tpcds: q71	5277576.25	641.54	5261619.56	514.66	-0.30	-15956.69	0.01	0.01	0.00000
30	presto/tpcds: q31	13792852.43	829.29	13760711.03	473.50	-0.23	-32141.40	0.01	0.00	0.00000
81	presto/tpcds: q82	9105.74	6.90	9098.46	7.49	-0.08	-7.27	0.08	0.08	0.11055

	query	baseline mean	baseline std.dev	decimal aggregation state serde opt mean	decimal aggregation state serde opt std.dev	% change	absolute change	baseline std.dev %	decimal aggregation state serde opt std.dev %	p-value
8	presto/tpcds: q09	2310.92	3.14	2309.18	4.55	-0.08	-1.74	0.14	0.20	0.45822
35	presto/tpcds: q36	869708.07	28.62	869243.07	22.94	-0.05	-465.00	0.00	0.00	0.00000
9	presto/tpcds: q10	310322.50	740.39	310171.04	1111.39	-0.05	-151.46	0.24	0.36	0.78681
92	presto/tpcds: q93	135747598.39	132.73	135684586.01	134.55	-0.05	-63012.38	0.00	0.00	0.00000
32	presto/tpcds: q33	1097807.98	14364.35	1097322.71	407.35	-0.04	-485.27	1.31	0.04	0.93571
14	presto/tpcds: q15	2465845.08	10.83	2464804.41	12.17	-0.04	-1040.67	0.00	0.00	0.00000
23	presto/tpcds: q24	33133648.80	20.73	33124890.79	42.77	-0.03	-8758.02	0.00	0.00	0.00000
48	presto/tpcds: q49	11200629.74	0.91	11198430.09	0.91	-0.02	-2199.65	0.00	0.00	0.00000
95	presto/tpcds: q96	356.35	0.05	356.29	0.14	-0.02	-0.07	0.01	0.04	0.31443
1	presto/tpcds: q02	35139783.07	365.01	35133419.09	159.36	-0.02	-6363.98	0.00	0.00	0.00000
90	presto/tpcds: q91	132948.52	12.20	132932.64	11.74	-0.01	-15.89	0.01	0.01	0.04435
87	presto/tpcds: q88	3774.26	0.68	3773.92	0.41	-0.01	-0.34	0.02	0.01	0.32480
44	presto/tpcds: q45	1902998.77	20.18	1902973.39	21.28	-0.00	-25.38	0.00	0.00	0.06005
37	presto/tpcds: q38	23778261.66	55.57	23778081.82	134.89	-0.00	-179.83	0.00	0.00	0.01291
86	presto/tpcds: q87	23778190.04	159.46	23778100.37	101.22	-0.00	-89.67	0.00	0.00	0.27189
12	presto/tpcds: q13	1138480.44	0.04	1138477.34	0.04	-0.00	-3.10	0.00	0.00	0.00000
45	presto/tpcds: q46	785375.65	43.58	785374.50	28.68	-0.00	-1.15	0.01	0.00	0.95819
38	presto/tpcds: q39	2162963.98	3.21	2162961.09	1.83	-0.00	-2.89	0.00	0.00	0.08457
16	presto/tpcds: q17	10347197.09	27.55	10347189.92	53.00	-0.00	-7.17	0.00	0.00	0.77479
24	presto/tpcds: q25	6781282.01	0.00	6781277.74	0.00	-0.00	-4.27	0.00	0.00	0.00000
71	presto/tpcds: q72	22148461.54	10.83	22148452.21	5.58	-0.00	-9.32	0.00	0.00	0.09042
15	presto/tpcds: q16	11595300.90	4.10	11595297.39	4.95	-0.00	-3.51	0.00	0.00	0.21020

	query	baseline mean	baseline std.dev	decimal aggregation state serde opt mean	decimal aggregation state serde opt std.dev	% change	absolute change	baseline std.dev %	decimal aggregation state serde opt std.dev %	p-value
72	presto/tpcds:q73	7826.93	0.01	7826.93	0.01	-0.00	-0.00	0.00	0.00	0.73826
69	presto/tpcds:q70	21770170.44	3.25	21770168.83	2.40	-0.00	-1.61	0.00	0.00	0.35202
94	presto/tpcds:q95	74728560.92	0.00	74728557.79	0.00	-0.00	-3.14	0.00	0.00	0.00000
33	presto/tpcds:q34	16395.37	0.00	16395.37	0.00	-0.00	-0.00	0.00	0.00	0.66425
93	presto/tpcds:q94	18556371.44	4.13	18556371.16	2.37	-0.00	-0.28	0.00	0.00	0.88976
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
20	presto/tpcds:q21	146188.43	0.00	146188.43	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
21	presto/tpcds:q22	13413268.05	0.00	13413268.05	0.00	0.00	0.00	0.00	0.00	nan
83	presto/tpcds:q84	28009.21	0.06	28009.23	0.05	0.00	0.02	0.00	0.00	0.54901
84	presto/tpcds:q85	13099718.73	183.09	13099730.51	61.40	0.00	11.77	0.00	0.00	0.88425
28	presto/tpcds:q29	4591054.11	11.35	4591058.74	14.36	0.00	4.63	0.00	0.00	0.54901
5	presto/tpcds:q06	2434100.78	10.76	2434103.98	14.45	0.00	3.20	0.00	0.00	0.67291
74	presto/tpcds:q75	58083877.03	134.33	58083977.77	131.47	0.00	100.75	0.00	0.00	0.21853
34	presto/tpcds:q35	4347830.21	586.84	4347838.93	362.89	0.00	8.71	0.01	0.01	0.97593
27	presto/tpcds:q28	3182914.06	7.83	3182924.69	3.74	0.00	10.63	0.00	0.00	0.01330
7	presto/tpcds:q08	2577068.88	135.08	2577085.64	78.85	0.00	16.76	0.01	0.00	0.79827
96	presto/tpcds:q97	20147448.85	542.74	20148015.49	452.32	0.00	566.64	0.00	0.00	0.07785

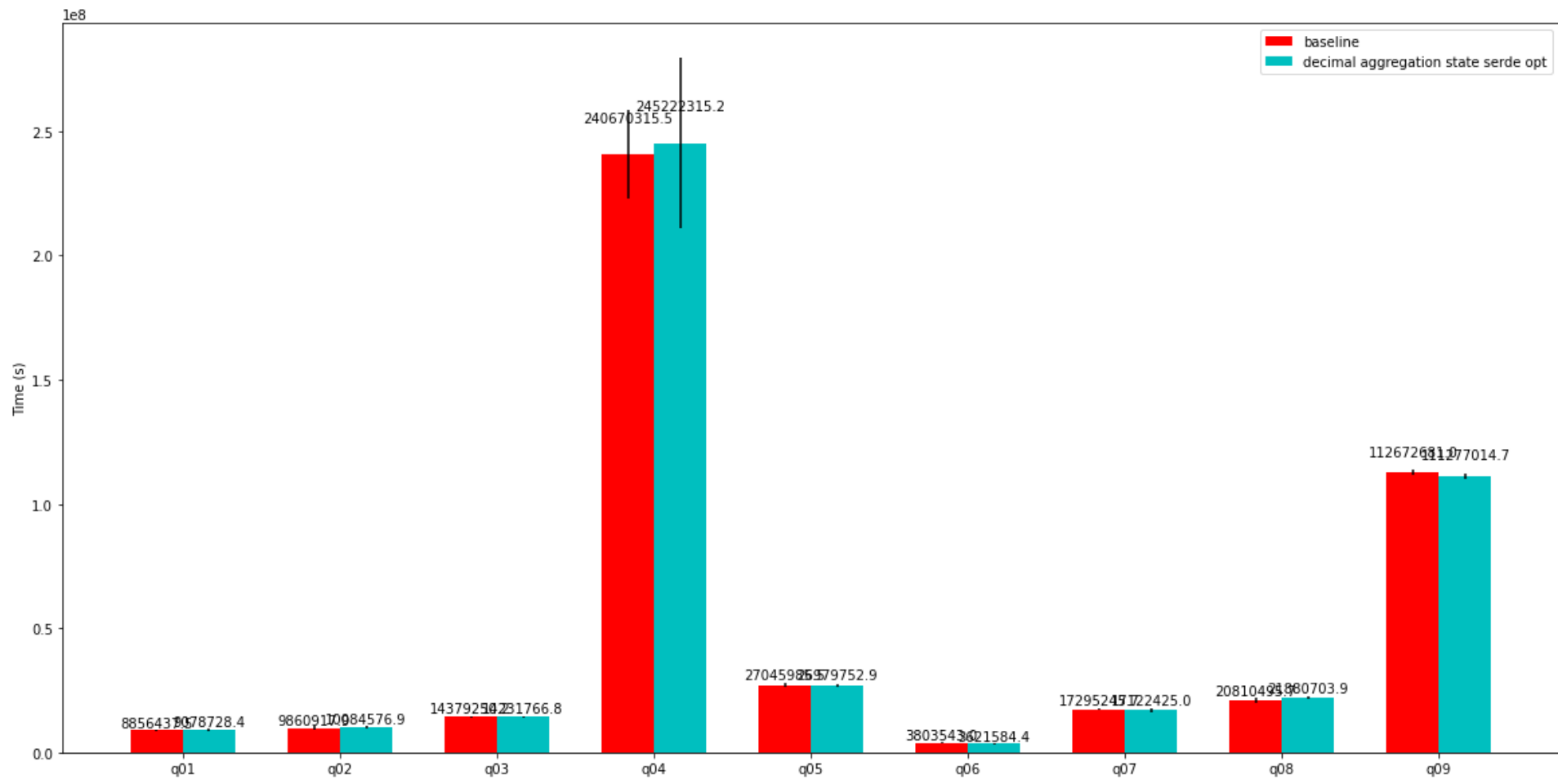
	query	baseline mean	baseline std.dev	decimal aggregation state serde opt mean	decimal aggregation state serde opt std.dev	% change	absolute change	baseline std.dev %	decimal aggregation state serde opt std.dev %	p-value
89	presto/tpcds: q90	1707.84	0.28	1707.94	0.18	0.01	0.10	0.02	0.01	0.47199
68	presto/tpcds: q69	606478.19	253.60	606557.84	375.11	0.01	79.65	0.04	0.06	0.67568
22	presto/tpcds: q23	277202906.39	52544.06	277243456.52	29921.38	0.01	40550.13	0.02	0.01	0.13148
53	presto/tpcds: q54	11780985.59	2155058.89	11791061.43	2250602.06	0.09	10075.84	18.29	19.09	0.99384

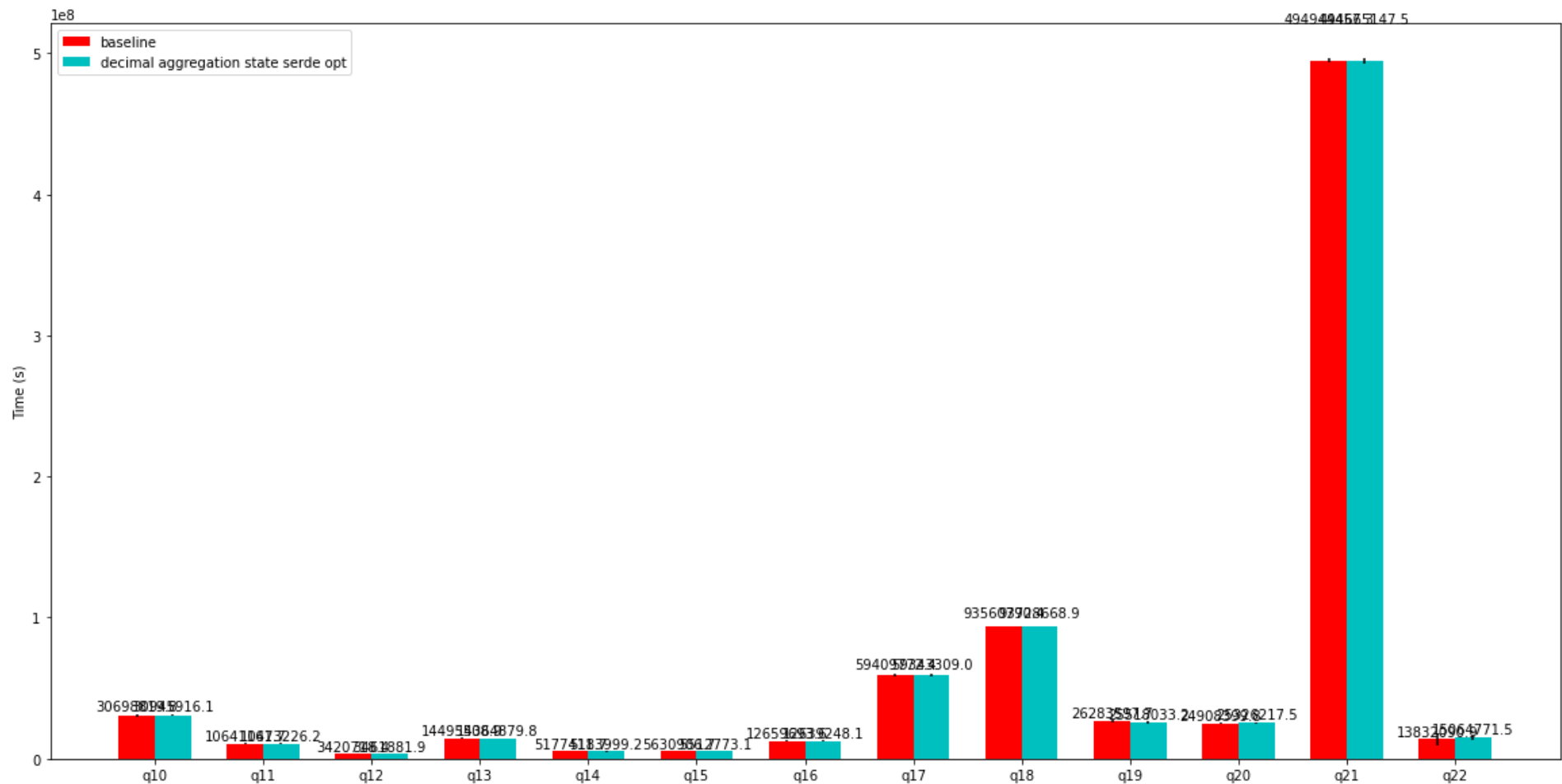
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TPC-H Comparison (Peak memory)

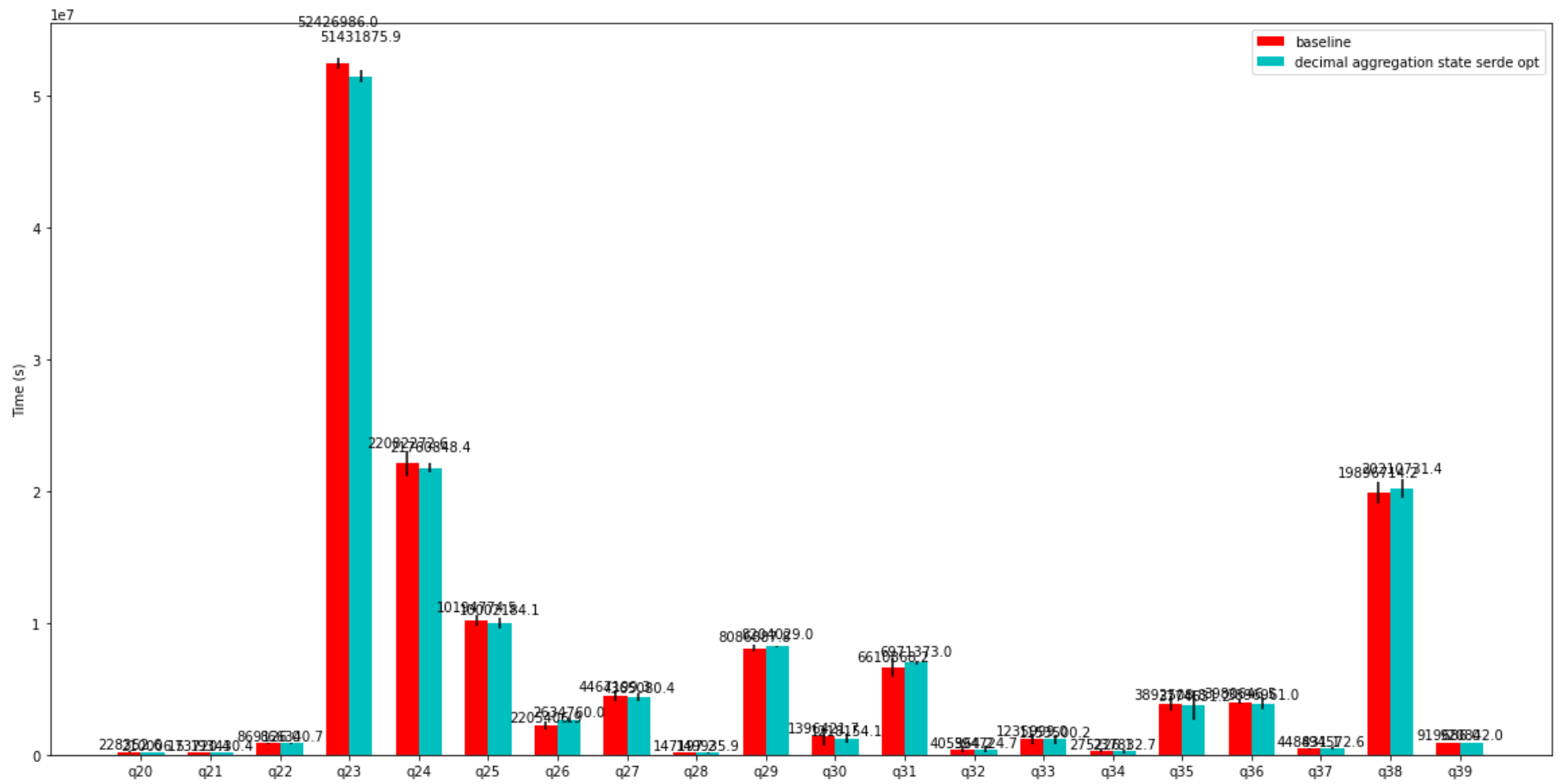


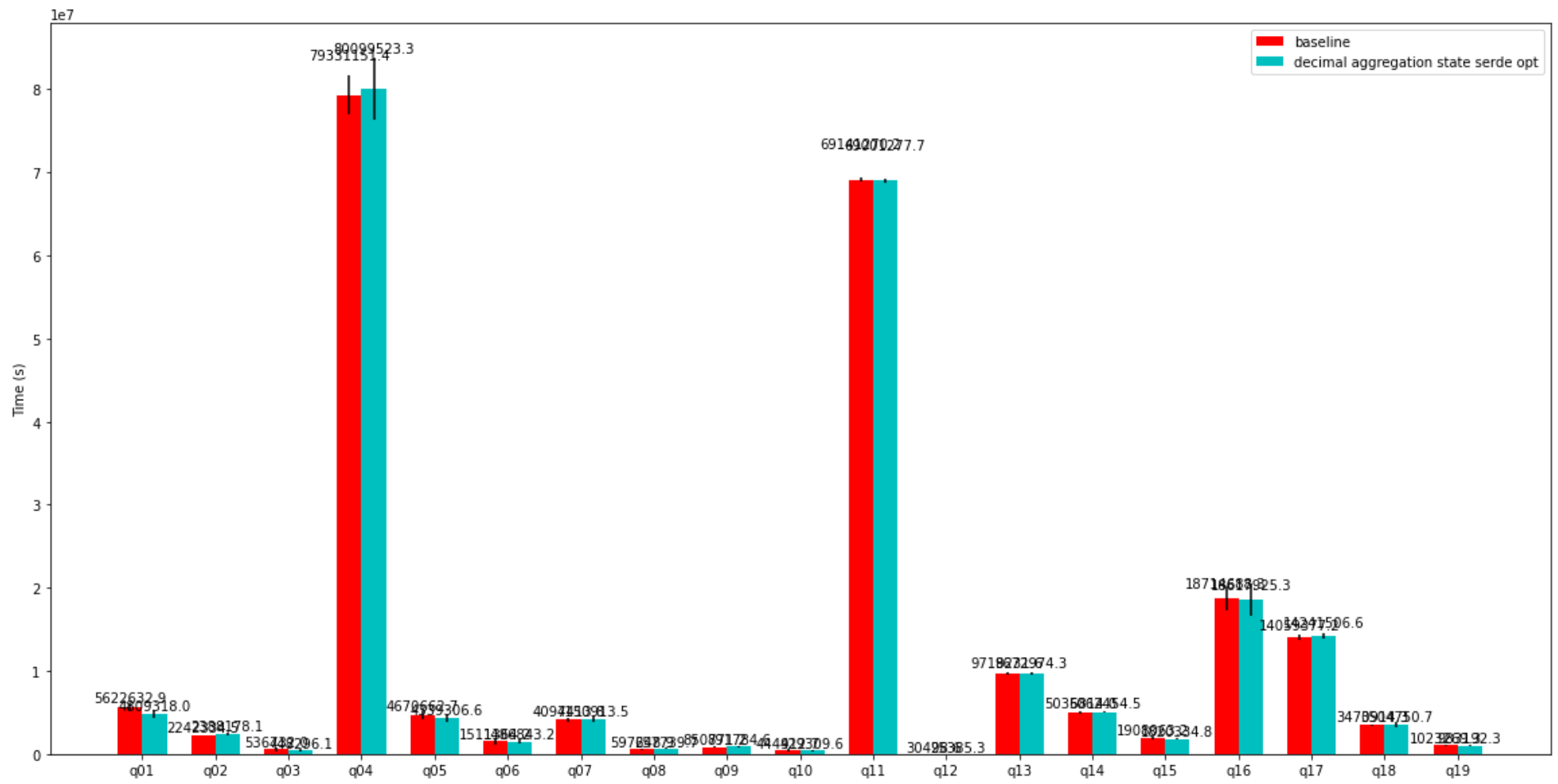


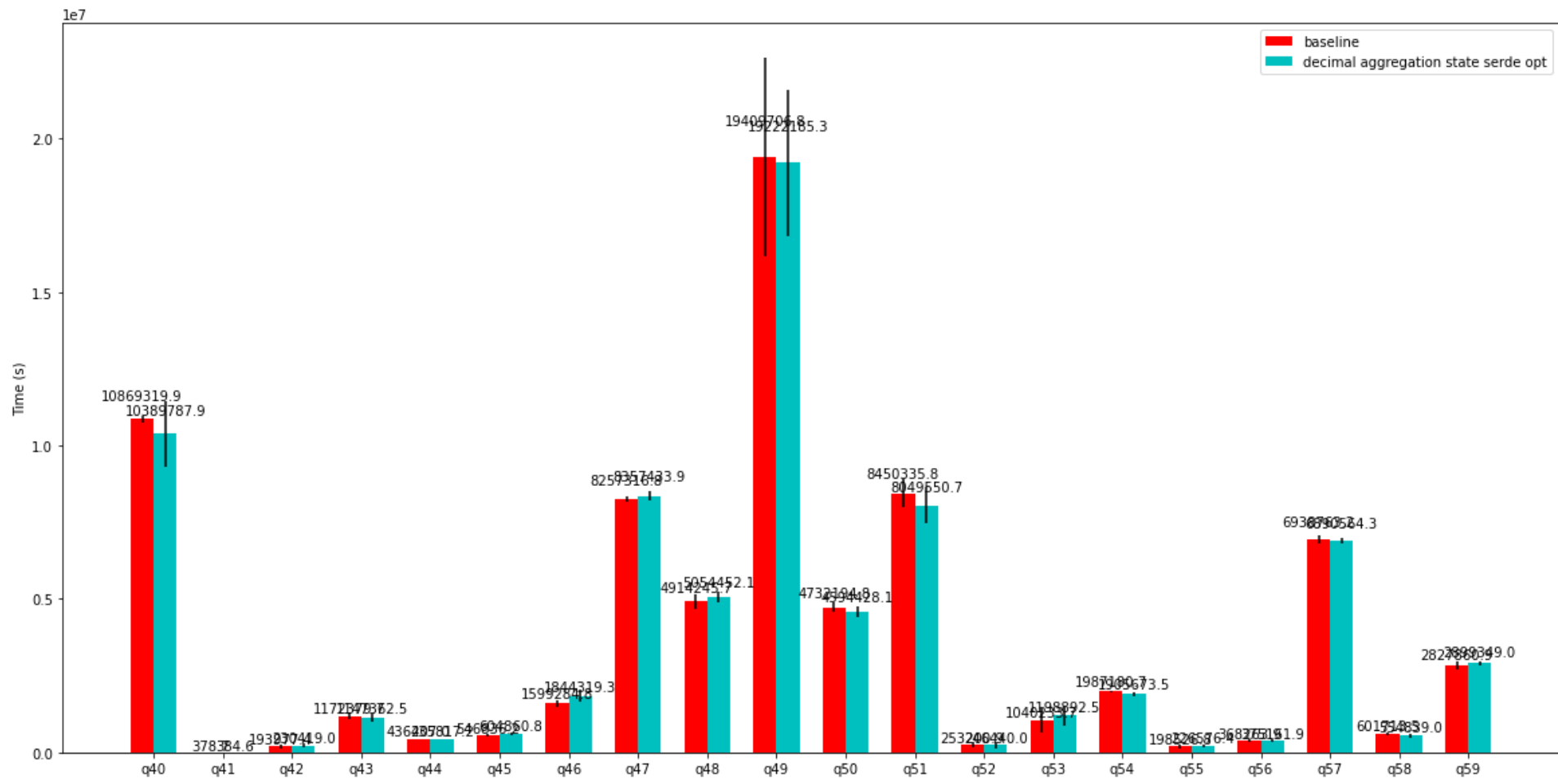
	query	baseline mean	baseline std.dev	decimal aggregation state serde opt mean	decimal aggregation state serde opt std.dev	% change	absolute change	baseline std.dev %	decimal aggregation state serde opt std.dev %	p-value
5	presto/tpch: q06	3803542.98	196331.69	3621584.40	298844.74	-4.78	-181958.58	5.16	8.25	0.24099
18	presto/tpch: q19	26283597.72	942054.28	25518033.20	1119853.52	-2.91	-765564.52	3.58	4.39	0.22896
14	presto/tpch: q15	5630906.70	56847.70	5512773.12	26156.10	-2.10	-118133.57	1.01	0.47	0.00094
10	presto/tpch: q11	10641161.72	336017.72	10473226.24	565476.67	-1.58	-167935.48	3.16	5.40	0.54573
8	presto/tpch: q09	112672680.99	1091997.57	111277014.65	1058945.81	-1.24	-1395666.34	0.97	0.95	0.04839
2	presto/tpch: q03	14379250.18	187227.84	14231766.80	162312.16	-1.03	-147483.38	1.30	1.14	0.17554
6	presto/tpch: q07	17295245.71	385545.12	17122424.96	852034.26	-1.00	-172820.75	2.23	4.98	0.66046

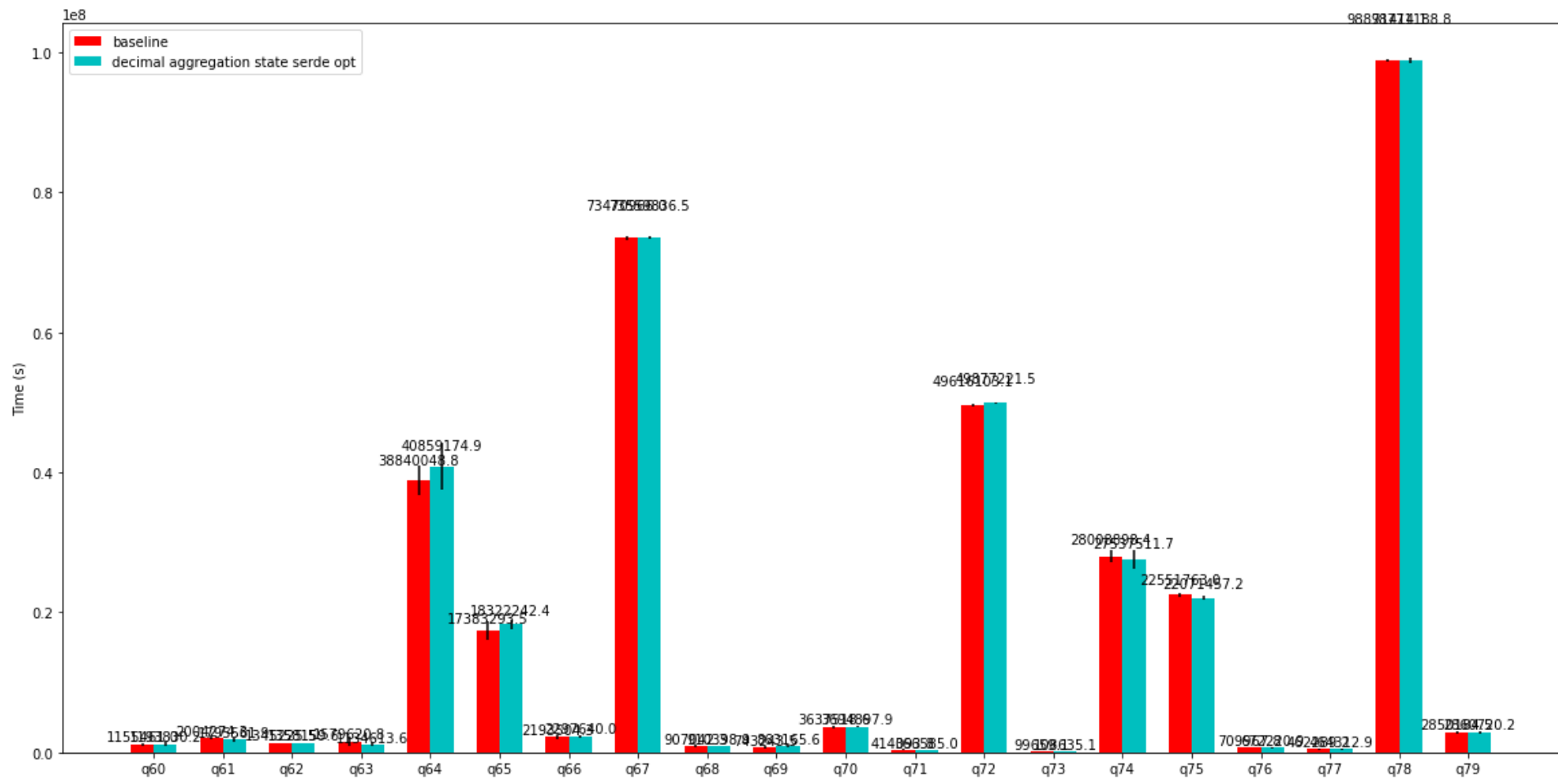
	query	baseline mean	baseline std.dev	decimal aggregation state serde opt mean	decimal aggregation state serde opt std.dev	% change	absolute change	baseline std.dev %	decimal aggregation state serde opt std.dev %	p-value
12	presto/tpch: q13	14495508.85	241856.30	14364879.82	233563.49	-0.90	-130629.03	1.67	1.63	0.36370
4	presto/tpch: q05	27045985.49	852023.12	26979752.93	653812.61	-0.24	-66232.56	3.15	2.42	0.88293
15	presto/tpch: q16	12659693.60	294359.01	12639248.09	251020.13	-0.16	-20445.51	2.33	1.99	0.89956
16	presto/tpch: q17	59409772.36	765245.85	59343308.99	908312.88	-0.11	-66463.36	1.29	1.53	0.89369
20	presto/tpch: q21	494944457.35	1136381.34	494665147.49	1699561.11	-0.06	-279309.85	0.23	0.34	0.74481
13	presto/tpch: q14	5177411.75	71848.80	5183999.19	112056.96	0.13	6587.44	1.39	2.16	0.90592
17	presto/tpch: q18	93560790.36	154856.74	93728668.88	186426.42	0.18	167878.52	0.17	0.20	0.12059
9	presto/tpch: q10	30698819.83	971767.08	30945916.13	406851.30	0.80	247096.30	3.17	1.31	0.57831
11	presto/tpch: q12	3420718.36	219584.40	3461881.93	178285.05	1.20	41163.57	6.42	5.15	0.72889
19	presto/tpch: q20	24908399.82	480224.53	25326217.54	123335.90	1.68	417817.73	1.93	0.49	0.06592
3	presto/tpch: q04	240670315.50	17970924.49	245222315.17	34280116.40	1.89	4551999.67	7.47	13.98	0.77917
1	presto/tpch: q02	9860917.95	608612.03	10084576.87	564093.53	2.27	223658.93	6.17	5.59	0.52404
0	presto/tpch: q01	8856437.53	235624.28	9078728.40	429072.25	2.51	222290.87	2.66	4.73	0.29202
7	presto/tpch: q08	20810495.71	1032852.00	21880703.87	600629.23	5.14	1070208.16	4.96	2.75	0.05297
21	presto/tpch: q22	13832090.94	4160848.41	15064771.51	2264086.49	8.91	1232680.57	30.08	15.03	0.53817
count	22									
mean	0									
std	3									
min	-5									
25%	-1									
50%	-0									
75%	2									
max	9									
Name: % change, dtype: float64										

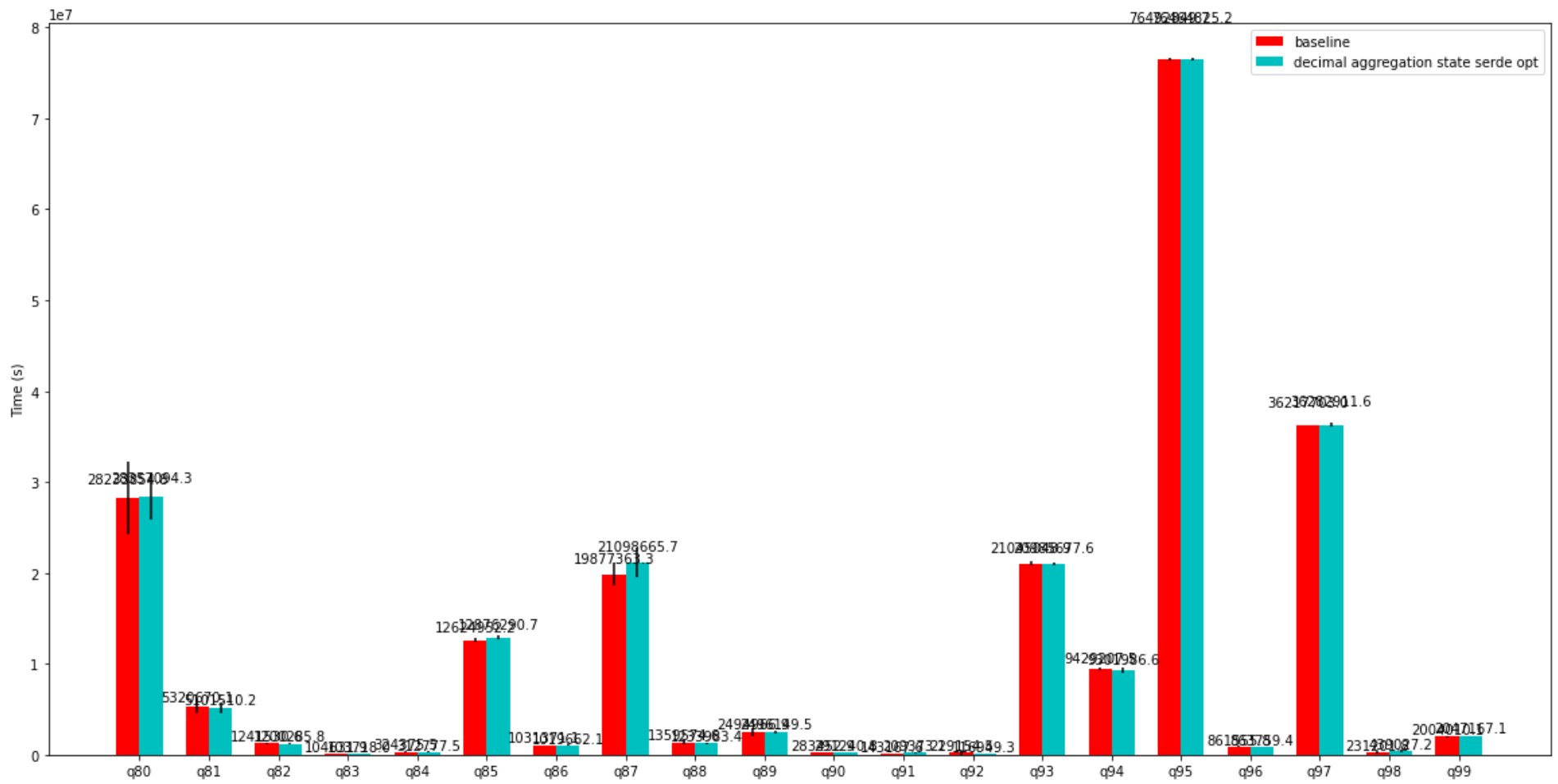
TPC-DS Comparison (Peak memory)

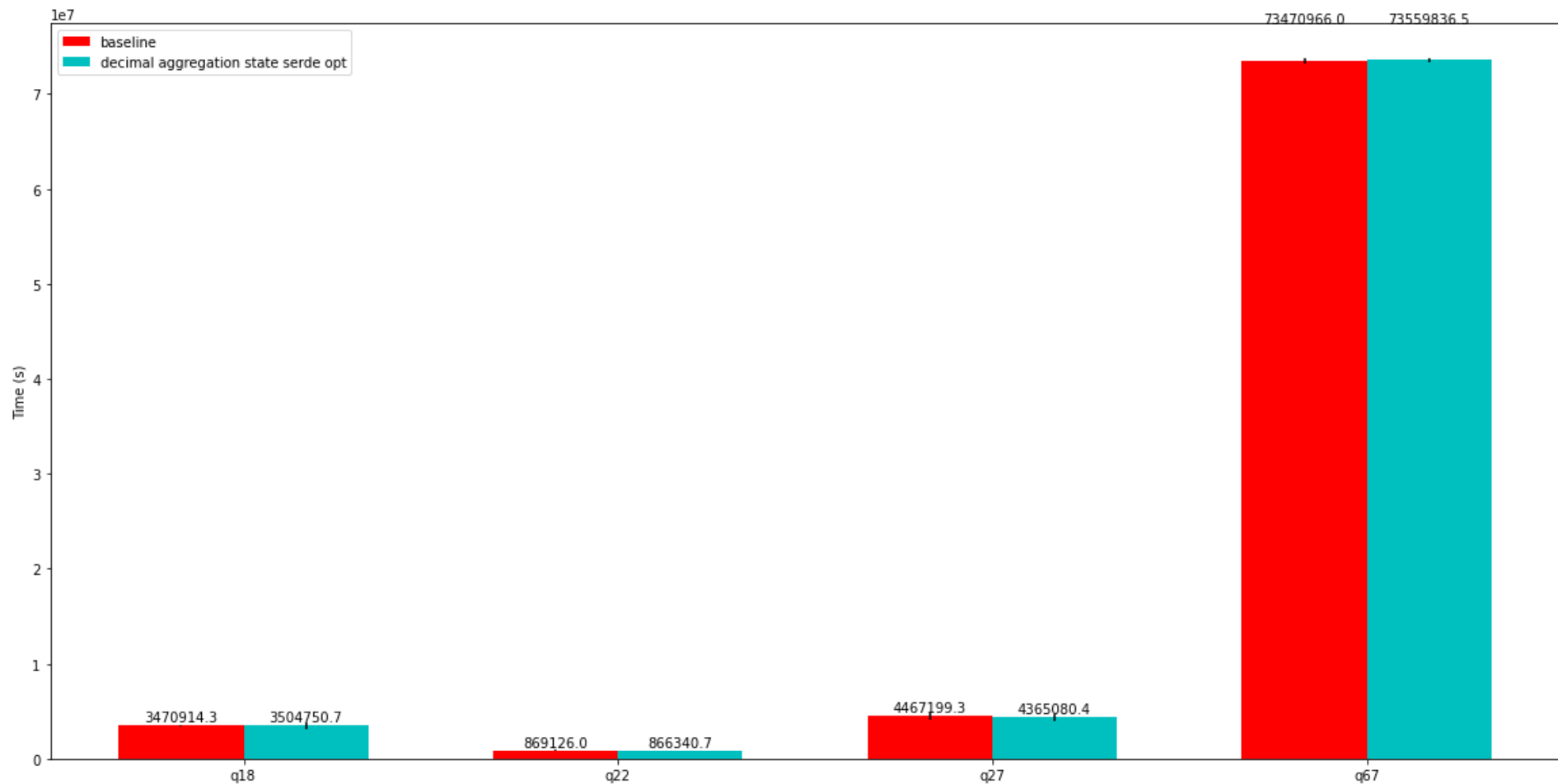












	query	baseline mean	baseline std.dev	decimal aggregation state serde opt mean	decimal aggregation state serde opt std.dev	% change	absolute change	baseline std.dev %	decimal aggregation state serde opt std.dev %	p-value
91	presto/tpcds: q92	219154.47	208215.44	116949.31	62746.43	-46.64	-102205.16	95.01	53.65	0.27642
62	presto/tpcds: q63	1579620.82	728165.81	1134613.64	308918.39	-28.17	-445007.17	46.10	27.23	0.19823
11	presto/tpcds: q12	30498.64	6557.09	25385.34	5636.75	-16.77	-5113.30	21.50	22.20	0.17810
2	presto/tpcds: q03	536732.02	312616.48	448296.05	140129.86	-16.48	-88435.97	58.24	31.26	0.54137
0	presto/tpcds: q01	5622632.95	475496.02	4809318.00	489265.77	-14.47	-813314.94	8.46	10.17	0.01530
33	presto/tpcds: q34	275226.12	95074.07	237832.69	131811.43	-13.59	-37393.43	34.54	55.42	0.58545
29	presto/tpcds: q30	1396421.75	652610.12	1218154.07	355624.00	-12.77	-178267.68	46.73	29.19	0.56987

	query	baseline mean	baseline std.dev	decimal aggregation state serde opt mean	decimal aggregation state serde opt std.dev	% change	absolute change	baseline std.dev %	decimal aggregation state serde opt std.dev %	p-value
70	presto/tpcds:q71	414093.85	136272.66	366584.96	59770.49	-11.47	-47508.88	32.91	16.30	0.45230
60	presto/tpcds:q61	2004274.30	204038.91	1795561.87	303813.77	-10.41	-208712.42	10.18	16.92	0.19266
87	presto/tpcds:q88	1359574.55	253128.18	1233983.42	51086.16	-9.24	-125591.13	18.62	4.14	0.26104
19	presto/tpcds:q20	228352.59	28362.40	210006.52	24390.78	-8.03	-18346.07	12.42	11.61	0.25731
57	presto/tpcds:q58	601713.49	32604.42	554838.99	69453.92	-7.79	-46874.50	5.42	12.52	0.16541
4	presto/tpcds:q05	4670662.71	481370.11	4339306.56	449799.54	-7.09	-331356.15	10.31	10.37	0.24614
32	presto/tpcds:q33	1235999.05	410432.81	1153500.17	363168.78	-6.67	-82498.88	33.21	31.48	0.72001
75	presto/tpcds:q76	709967.78	40487.11	672220.90	115287.02	-5.32	-37746.88	5.70	17.15	0.46668
50	presto/tpcds:q51	8450335.79	473481.61	8049550.68	587923.33	-4.74	-400785.11	5.60	7.30	0.22260
14	presto/tpcds:q15	1908063.25	156672.31	1820334.78	117590.33	-4.60	-87728.46	8.21	6.46	0.29836
39	presto/tpcds:q40	10869319.95	106563.97	10389787.88	1065057.21	-4.41	-479532.07	0.98	10.25	0.29820
80	presto/tpcds:q81	5320670.09	833104.02	5101510.25	592211.48	-4.12	-219159.84	15.66	11.61	0.61089
53	presto/tpcds:q54	1987180.71	31700.60	1905673.49	73503.74	-4.10	-81507.21	1.60	3.86	0.03176
18	presto/tpcds:q19	1023269.26	76157.67	983192.26	107959.81	-3.92	-40077.00	7.44	10.98	0.47456
83	presto/tpcds:q84	324375.47	49955.15	312777.54	47513.72	-3.58	-11597.92	15.40	15.19	0.68898
9	presto/tpcds:q10	444912.70	95014.44	429309.60	85925.35	-3.51	-15603.11	21.36	20.01	0.77155
81	presto/tpcds:q82	1241530.64	89345.64	1200285.76	49936.79	-3.32	-41244.88	7.20	4.16	0.34690
34	presto/tpcds:q35	3892508.76	589625.68	3774631.20	1124279.76	-3.03	-117877.56	15.15	29.79	0.82466
49	presto/tpcds:q50	4732194.76	150511.97	4594428.10	175579.18	-2.91	-137766.65	3.18	3.82	0.17519
31	presto/tpcds:q32	405964.20	269836.29	394724.73	257587.73	-2.77	-11239.47	66.47	65.26	0.94262
51	presto/tpcds:q52	253200.93	81201.44	246439.97	102644.58	-2.67	-6760.96	32.07	41.65	0.90182
26	presto/tpcds:q27	4467199.33	391325.81	4365080.36	349691.72	-2.29	-102118.97	8.76	8.01	0.64387

	query	baseline mean	baseline std.dev	decimal aggregation state serde opt mean	decimal aggregation state serde opt std.dev	% change	absolute change	baseline std.dev %	decimal aggregation state serde opt std.dev %	p-value
42	presto/tpcds:q43	1172379.70	109563.98	1147362.46	133612.19	-2.13	-25017.24	9.35	11.65	0.73022
74	presto/tpcds:q75	22551763.05	288393.43	22071457.24	306036.48	-2.13	-480305.81	1.28	1.39	0.01887
35	presto/tpcds:q36	3980646.45	155409.47	3896960.97	420656.12	-2.10	-83685.48	3.90	10.79	0.65736
22	presto/tpcds:q23	52426986.03	401655.24	51431875.89	448349.30	-1.90	-995110.15	0.77	0.87	0.00233
24	presto/tpcds:q25	10194774.51	372611.39	10002184.11	409964.33	-1.89	-192590.40	3.65	4.10	0.41440
73	presto/tpcds:q74	28008898.38	833490.59	27537511.65	1394215.80	-1.68	-471386.72	2.98	5.06	0.49343
5	presto/tpcds:q06	1511364.19	475989.55	1486843.19	281703.42	-1.62	-24521.00	31.49	18.95	0.91567
23	presto/tpcds:q24	22082272.59	1005650.27	21760848.37	378838.21	-1.46	-321424.22	4.55	1.74	0.48060
93	presto/tpcds:q94	9429207.49	157333.86	9301986.56	280743.08	-1.35	-127220.93	1.67	3.02	0.35572
85	presto/tpcds:q86	1031371.14	35669.97	1019662.13	69960.72	-1.14	-11709.01	3.46	6.86	0.72255
48	presto/tpcds:q49	19409706.79	3230252.64	19222185.25	2380225.01	-0.97	-187521.54	16.64	12.38	0.91113
82	presto/tpcds:q83	104631.94	8966.59	103717.96	12765.79	-0.87	-913.98	8.57	12.31	0.88874
56	presto/tpcds:q57	6938763.19	136401.17	6890564.33	78573.46	-0.69	-48198.86	1.97	1.14	0.47052
15	presto/tpcds:q16	18714688.26	1446042.32	18617925.27	1960751.01	-0.52	-96762.99	7.73	10.53	0.92442
12	presto/tpcds:q13	9718231.56	152061.27	9672974.34	209659.30	-0.47	-45257.22	1.56	2.17	0.67771
21	presto/tpcds:q22	869126.02	46858.75	866340.67	20817.42	-0.32	-2785.34	5.39	2.40	0.89678
92	presto/tpcds:q93	21045048.91	198774.18	20985677.63	93129.40	-0.28	-59371.28	0.94	0.44	0.52261
10	presto/tpcds:q11	69141270.22	314565.50	69001277.69	205987.08	-0.20	-139992.53	0.45	0.30	0.38324
77	presto/tpcds:q78	98871414.10	178140.95	98771188.82	410359.88	-0.10	-100225.28	0.18	0.42	0.59520
43	presto/tpcds:q44	436207.02	865.67	435817.19	680.51	-0.09	-389.83	0.20	0.16	0.40616
94	presto/tpcds:q95	76492849.69	134572.07	76464825.18	157080.18	-0.04	-28024.50	0.18	0.21	0.74684
88	presto/tpcds:q89	2494966.94	416918.02	2496149.46	121475.09	0.05	1182.52	16.71	4.87	0.99481

	query	baseline mean	baseline std.dev	decimal aggregation state serde opt mean	decimal aggregation state serde opt std.dev	% change	absolute change	baseline std.dev %	decimal aggregation state serde opt std.dev %	p-value
66	presto/tpcds:q67	73470966.03	237768.26	73559836.55	200901.29	0.12	88870.51	0.32	0.27	0.50029
38	presto/tpcds:q39	919685.96	6642.58	920842.02	16352.29	0.13	1156.06	0.72	1.78	0.87573
96	presto/tpcds:q97	36217702.98	5839.47	36282911.59	173464.18	0.18	65208.60	0.02	0.48	0.37909
95	presto/tpcds:q96	861555.83	74083.64	863759.35	49850.75	0.26	2203.53	8.60	5.77	0.95299
78	presto/tpcds:q79	2850184.51	119079.52	2860720.16	184738.05	0.37	10535.65	4.18	6.46	0.90886
67	presto/tpcds:q68	907042.25	195104.27	910398.90	46216.37	0.37	3356.65	21.51	5.08	0.96810
79	presto/tpcds:q80	28233854.76	3953562.59	28357094.32	2501723.54	0.44	123239.56	14.00	8.82	0.94983
76	presto/tpcds:q77	462289.25	68181.44	464312.85	85007.50	0.44	2023.60	14.75	18.31	0.96461
13	presto/tpcds:q14	5036814.02	136344.69	5062454.49	91939.92	0.51	25640.47	2.71	1.82	0.71051
71	presto/tpcds:q72	49616103.08	236393.91	49877221.51	105075.15	0.53	261118.43	0.48	0.21	0.03297
61	presto/tpcds:q62	1345225.46	39013.03	1358159.64	28842.87	0.96	12934.18	2.90	2.12	0.52848
3	presto/tpcds:q04	79331151.44	2295044.42	80099523.29	3681653.55	0.97	768371.84	2.89	4.60	0.67362
17	presto/tpcds:q18	3470914.35	121333.14	3504750.70	356305.92	0.97	33836.35	3.50	10.17	0.83015
46	presto/tpcds:q47	8257316.77	67421.19	8357433.89	150188.33	1.21	100117.12	0.82	1.80	0.16717
16	presto/tpcds:q17	14059377.18	339284.55	14241506.63	294693.73	1.30	182129.46	2.41	2.07	0.34426
6	presto/tpcds:q07	4097413.76	279157.00	4150913.51	321239.11	1.31	53499.75	6.81	7.74	0.76446
28	presto/tpcds:q29	8086887.80	261624.86	8204028.97	68913.42	1.45	117141.17	3.24	0.84	0.31383
40	presto/tpcds:q41	378.66	120.77	384.55	120.31	1.56	5.89	31.89	31.29	0.93417
69	presto/tpcds:q70	3637518.61	219137.42	3694897.87	124179.77	1.58	57379.26	6.02	3.36	0.58911
37	presto/tpcds:q38	19896714.17	837336.43	20210731.37	691023.87	1.58	314017.21	4.21	3.42	0.49482
27	presto/tpcds:q28	147197.15	11172.17	149935.85	18471.86	1.86	2738.70	7.59	12.32	0.76237
55	presto/tpcds:q56	368263.91	41645.65	375161.90	41856.21	1.87	6897.99	11.31	11.16	0.78059

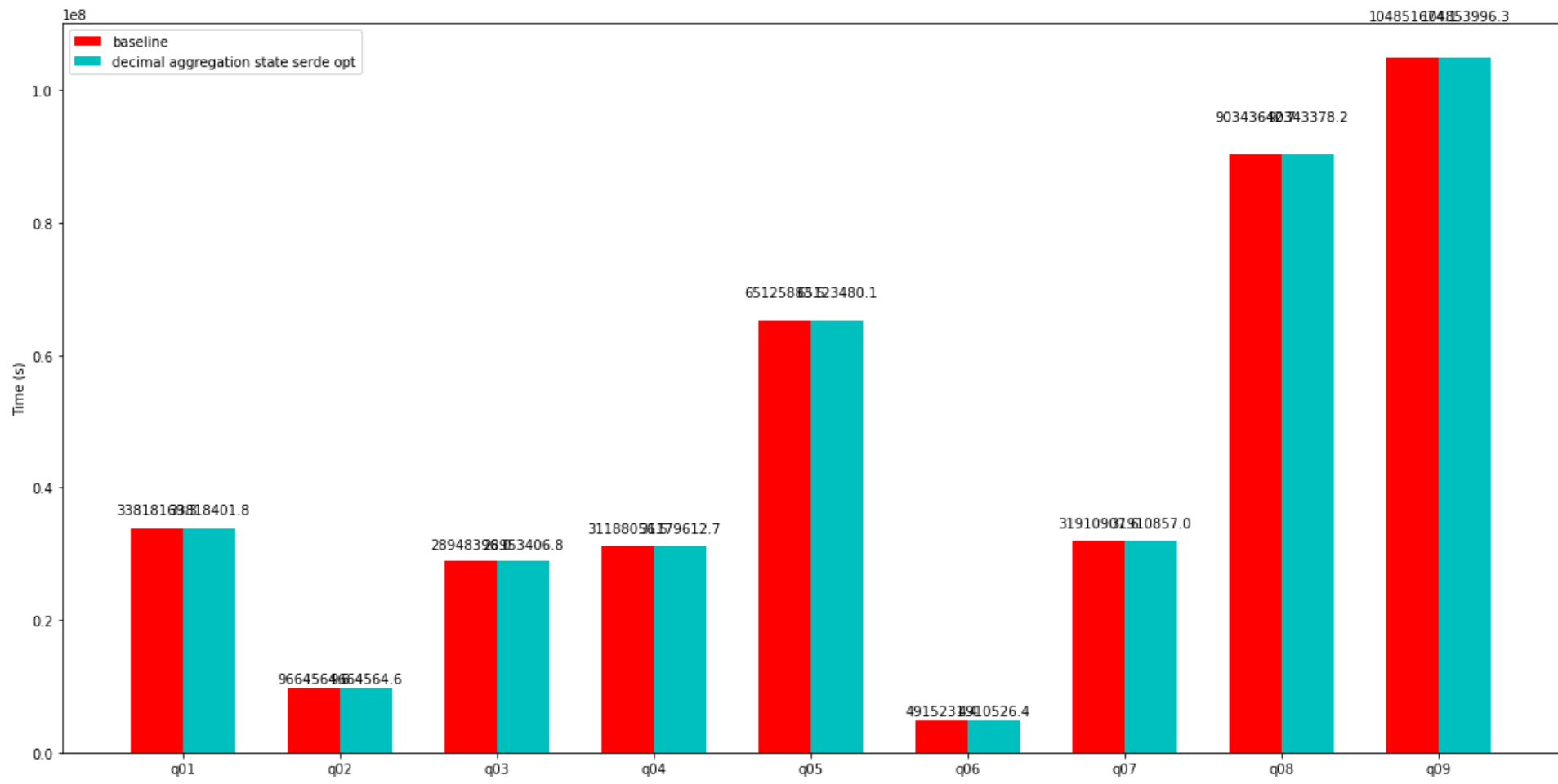
	query	baseline mean	baseline std.dev	decimal aggregation state serde opt mean	decimal aggregation state serde opt std.dev	% change	absolute change	baseline std.dev %	decimal aggregation state serde opt std.dev %	p-value
84	presto/tpcds:q85	12624952.22	225248.47	12876290.72	224891.56	1.99	251338.50	1.78	1.75	0.08186
98	presto/tpcds:q99	2004010.11	61630.57	2047167.08	49627.37	2.15	43156.98	3.08	2.42	0.21116
58	presto/tpcds:q59	2827860.93	127852.67	2899349.01	87047.68	2.53	71488.08	4.52	3.00	0.28400
89	presto/tpcds:q90	283452.85	30108.44	291240.76	40135.17	2.75	7787.91	10.62	13.78	0.71174
47	presto/tpcds:q48	4914245.67	243778.92	5054452.09	175845.05	2.85	140206.42	4.96	3.48	0.27984
59	presto/tpcds:q60	1155460.96	146328.78	1193830.23	254249.34	3.32	38369.27	12.66	21.30	0.75527
65	presto/tpcds:q66	2193504.29	327426.02	2297640.03	226848.54	4.75	104135.74	14.93	9.87	0.53633
8	presto/tpcds:q09	850771.21	51225.17	891784.60	118561.98	4.82	41013.39	6.02	13.29	0.45467
63	presto/tpcds:q64	38840048.80	2187824.95	40859174.87	3403576.62	5.20	2019126.07	5.63	8.33	0.24960
64	presto/tpcds:q65	17383293.53	1260678.94	18322242.36	641572.36	5.40	938948.84	7.25	3.50	0.13502
30	presto/tpcds:q31	6610868.24	736067.65	6971373.05	194558.76	5.45	360504.81	11.13	2.79	0.27305
86	presto/tpcds:q87	19877363.25	1242870.32	21098665.66	1606557.55	6.14	1221302.40	6.25	7.61	0.17157
1	presto/tpcds:q02	2242334.46	68109.07	2388178.12	113307.16	6.50	145843.66	3.04	4.74	0.02223
72	presto/tpcds:q73	99659.06	23318.98	108635.13	21002.50	9.01	8976.07	23.40	19.33	0.49953
7	presto/tpcds:q08	597248.86	64541.50	657739.74	38702.53	10.13	60490.89	10.81	5.88	0.07729
36	presto/tpcds:q37	448831.13	41950.11	494572.58	55826.07	10.19	45741.45	9.35	11.29	0.13969
44	presto/tpcds:q45	546836.25	39851.46	604860.84	32256.25	10.61	58024.60	7.29	5.33	0.01971
20	presto/tpcds:q21	173720.42	23523.65	193430.38	28672.99	11.35	19709.96	13.54	14.82	0.22219
54	presto/tpcds:q55	198526.78	63078.60	226576.35	41888.98	14.13	28049.57	31.77	18.49	0.38555
52	presto/tpcds:q53	1040233.65	387497.71	1198892.49	317533.45	15.25	158658.84	37.25	26.49	0.45585
45	presto/tpcds:q46	1599284.78	104734.27	1844319.32	185327.83	15.32	245034.54	6.55	10.05	0.01817
68	presto/tpcds:q69	743243.54	114369.50	863165.61	172252.92	16.13	119922.07	15.39	19.96	0.18583

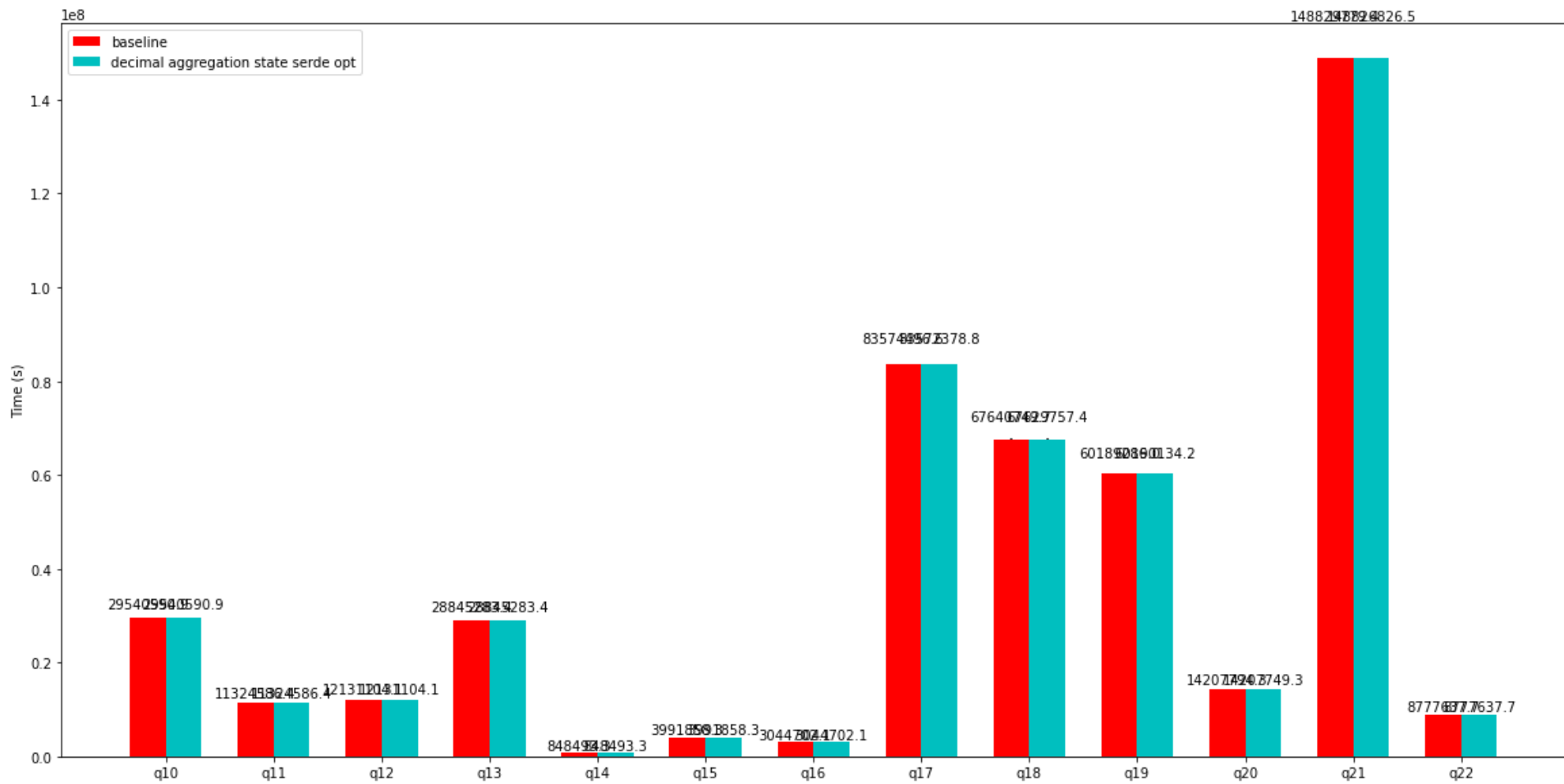
	query	baseline mean	baseline std.dev	decimal aggregation state serde opt mean	decimal aggregation state opt std.dev	serde % change	absolute change	baseline std.dev %	decimal aggregation state opt std.dev %	serde % change	p-value
41	presto/tpcds: q42	193977.40	60642.07	230418.99	81074.90	18.79	36441.59	31.26	35.19	0.39866	
25	presto/tpcds: q26	2205406.90	314372.90	2634760.04	182444.60	19.47	429353.14	14.25	6.92	0.01601	
90	presto/tpcds: q91	143167.60	14994.17	209373.18	54338.33	46.24	66205.59	10.47	25.95	0.01647	
97	presto/tpcds: q98	231201.82	113593.07	439027.24	160931.53	89.89	207825.41	49.13	36.66	0.02721	

```
count    99
mean      1
std       13
min      -47
25%      -3
50%       0
75%       2
max       90
```

Name: % change, dtype: float64

TPC-H Comparison (physicalInputDataSize)





	query	baseline mean	baseline std.dev	decimal aggregation state serde opt mean	decimal aggregation state serde opt std.dev	% change	absolute change	baseline std.dev %	decimal aggregation state serde opt std.dev %	p-value
5	presto/tpch: q06	4915231.39	3152.44	4910526.40	10960.91	-0.10	-4704.99	0.06	0.22	0.33609
3	presto/tpch: q04	31188056.45	22320.47	31179612.68	15932.21	-0.03	-8443.78	0.07	0.05	0.46811
17	presto/tpch: q18	67640749.70	16217.95	67629757.43	26070.45	-0.02	-10992.28	0.02	0.04	0.40109
4	presto/tpch: q05	65125883.51	8453.70	65123480.08	5595.04	-0.00	-2403.43	0.01	0.01	0.57427
16	presto/tpch: q17	83574496.61	2948.47	83572378.79	16806.29	-0.00	-2117.81	0.00	0.02	0.76734
20	presto/tpch: q21	148829779.44	4878.94	148826826.53	18964.05	-0.00	-2952.91	0.00	0.01	0.71954
19	presto/tpch: q20	14207794.30	123.64	14207749.26	112.25	-0.00	-45.04	0.00	0.00	0.52374

	query	baseline mean	baseline std.dev	decimal aggregation state serde opt mean	decimal aggregation state serde opt std.dev	% change	absolute change	baseline std.dev %	decimal aggregation state serde opt std.dev %	p-value
7	presto/tpch: q08	90343642.74	5459.77	90343378.21	2671.07	-0.00	-264.53	0.01	0.00	0.91721
6	presto/tpch: q07	31910907.63	197.83	31910856.98	411.71	-0.00	-50.64	0.00	0.00	0.79147
10	presto/tpch: q11	11324586.44	0.00	11324586.44	0.00	0.00	0.00	0.00	0.00	nan
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
21	presto/tpch: q22	8777637.66	0.00	8777637.66	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
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
12	presto/tpch: q13	28845283.36	0.00	28845283.36	0.00	0.00	0.00	0.00	0.00	nan
0	presto/tpch: q01	33818169.29	2285.74	33818401.79	2771.73	0.00	232.51	0.01	0.01	0.87720
18	presto/tpch: q19	60189286.03	160.40	60190134.23	984.62	0.00	848.20	0.00	0.00	0.06391
8	presto/tpch: q09	104851674.09	2827.45	104853996.27	3229.45	0.00	2322.19	0.00	0.00	0.21458
2	presto/tpch: q03	28948395.98	9743.16	28953406.83	6310.58	0.02	5010.84	0.03	0.02	0.31523
count	22									
mean	-0									
std	0									
min	-0									
25%	-0									
50%	0									
75%	0									
max	0									
Name: % change, dtype: float64										