

## FAILED QUERIES

delta lake unpartitioned baseline

benchmark query mean\_duration std\_dev

alluxio delta caching

benchmark query mean\_duration std\_dev

## SUMMARY

|   | label                             | TPCH wall time | TPC-DS wall time | TPCH CPU time | TPC-DS CPU time | TPCH physicalInputDataSize | TPC-DS physicalInputDataSize | TPCH internalNetworkInputDataSize | TPC-DS internalNetworkInputDataSize |
|---|-----------------------------------|----------------|------------------|---------------|-----------------|----------------------------|------------------------------|-----------------------------------|-------------------------------------|
| 0 | delta lake unpartitioned baseline | 423.639333     | 1073.580667      | 39177.200000  | 117849.512667   | 1.613 TiB                  | 3.292 TiB                    | 1.168 TiB                         |                                     |
| 1 | alluxio delta caching             | 306.300167     | 856.958000       | 33492.400000  | 106459.812167   | 1.613 TiB                  | 3.294 TiB                    | 1.168 TiB                         |                                     |

## Store sales flat Comparison (DURATION)

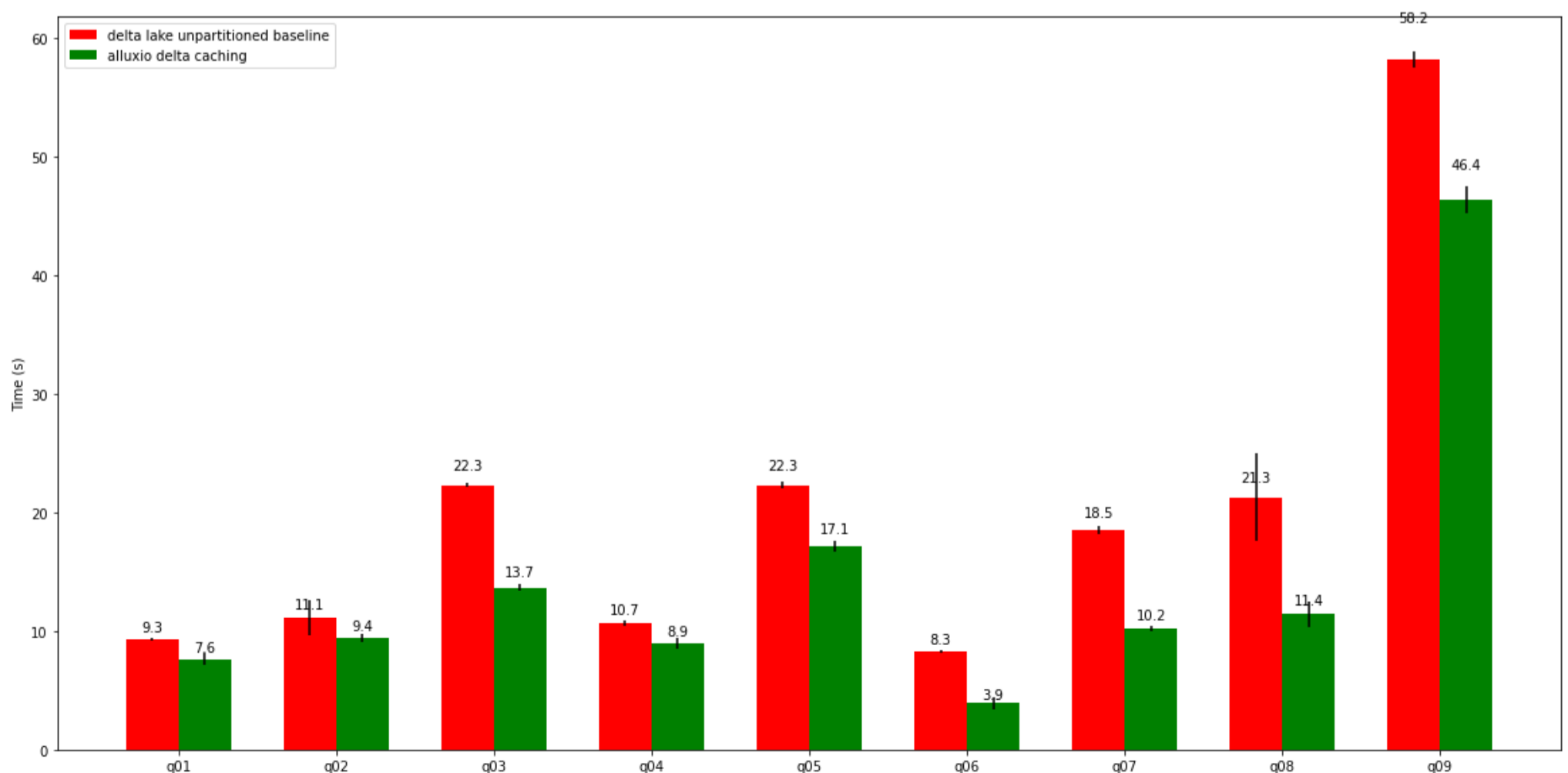
## Store sales flat Comparison (CPU)

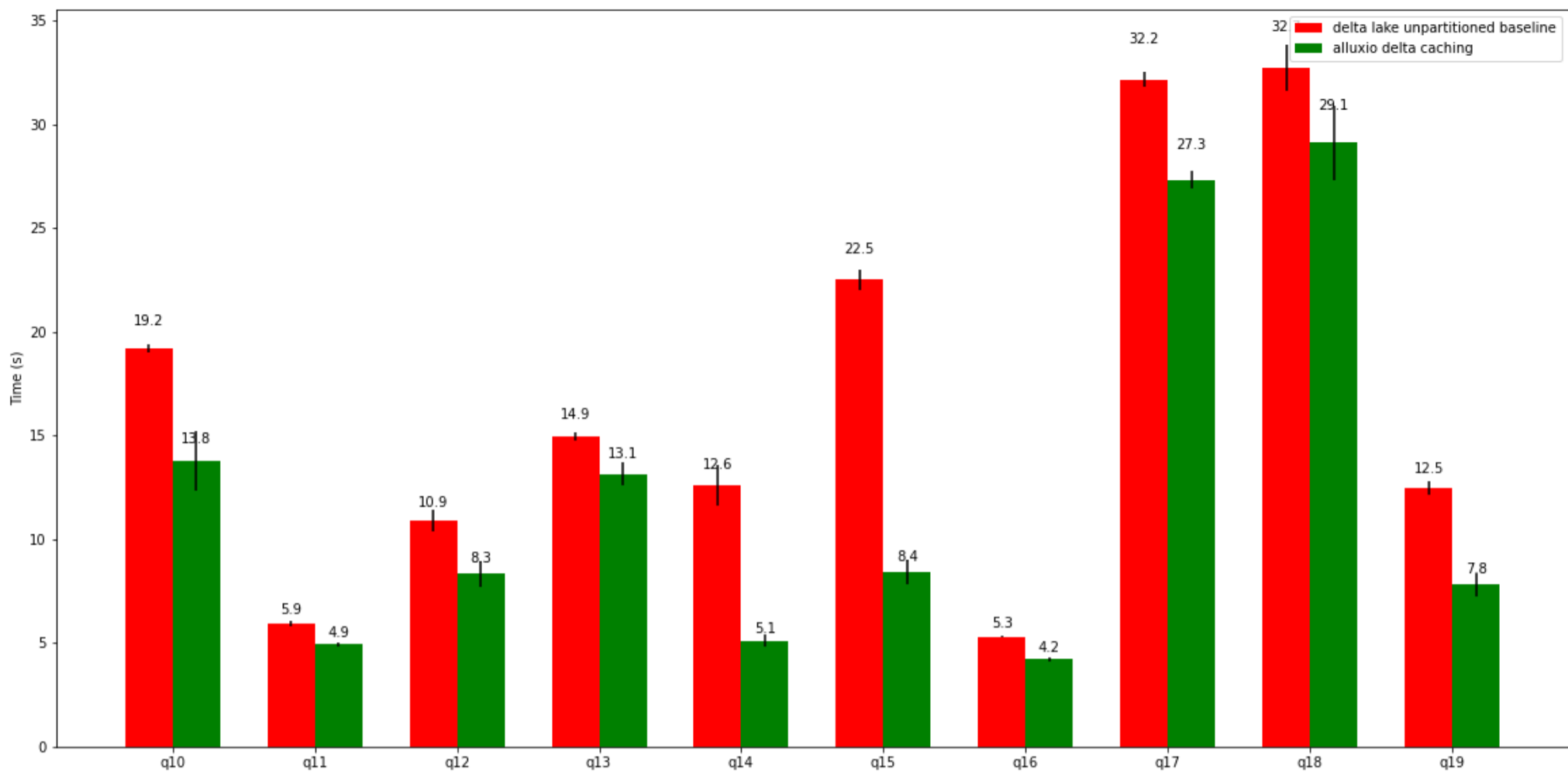
## Insert Comparison (DURATION)

## Insert Comparison (CPU)

## Insert Comparison (PEAK MEMORY)

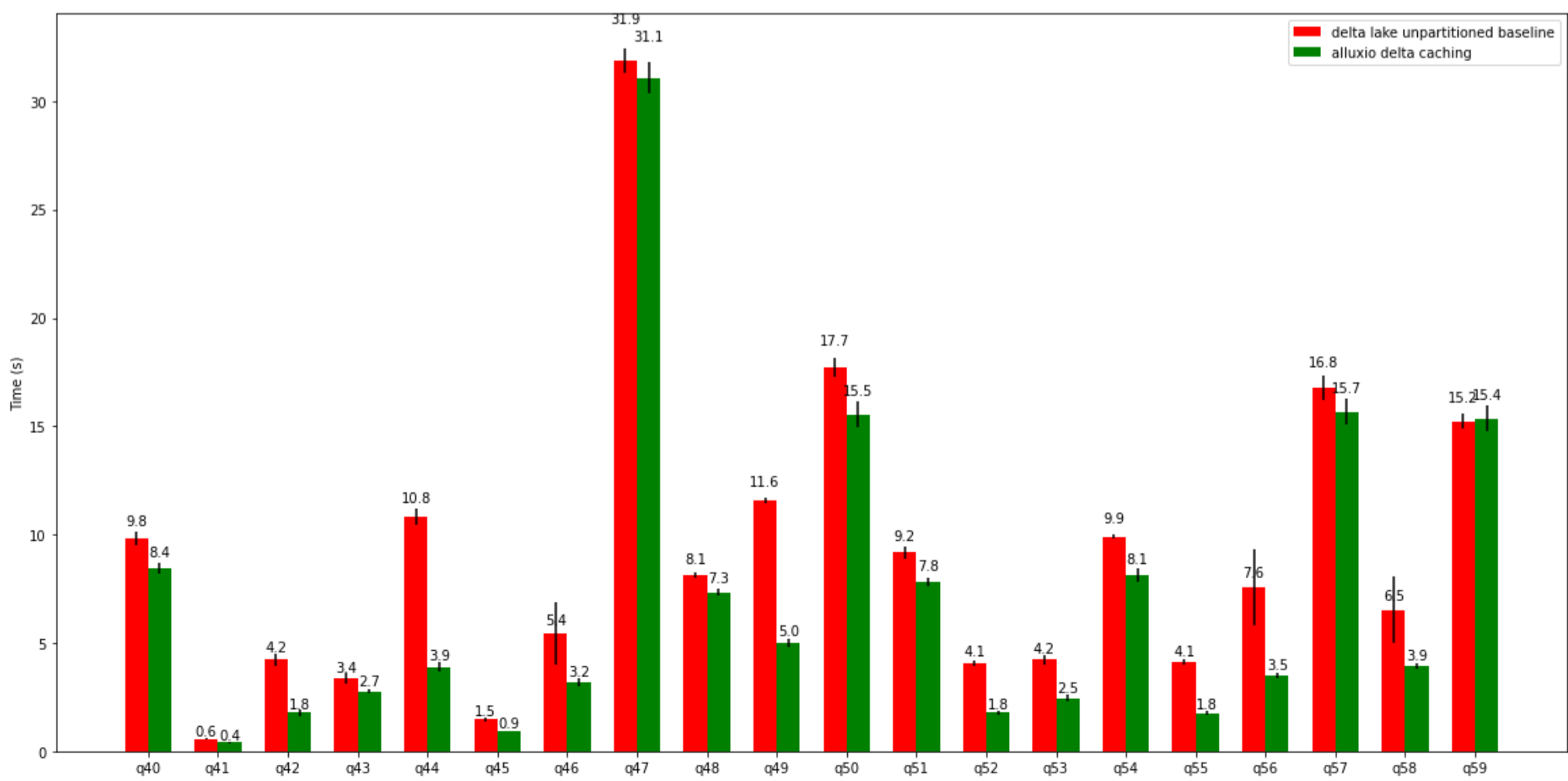
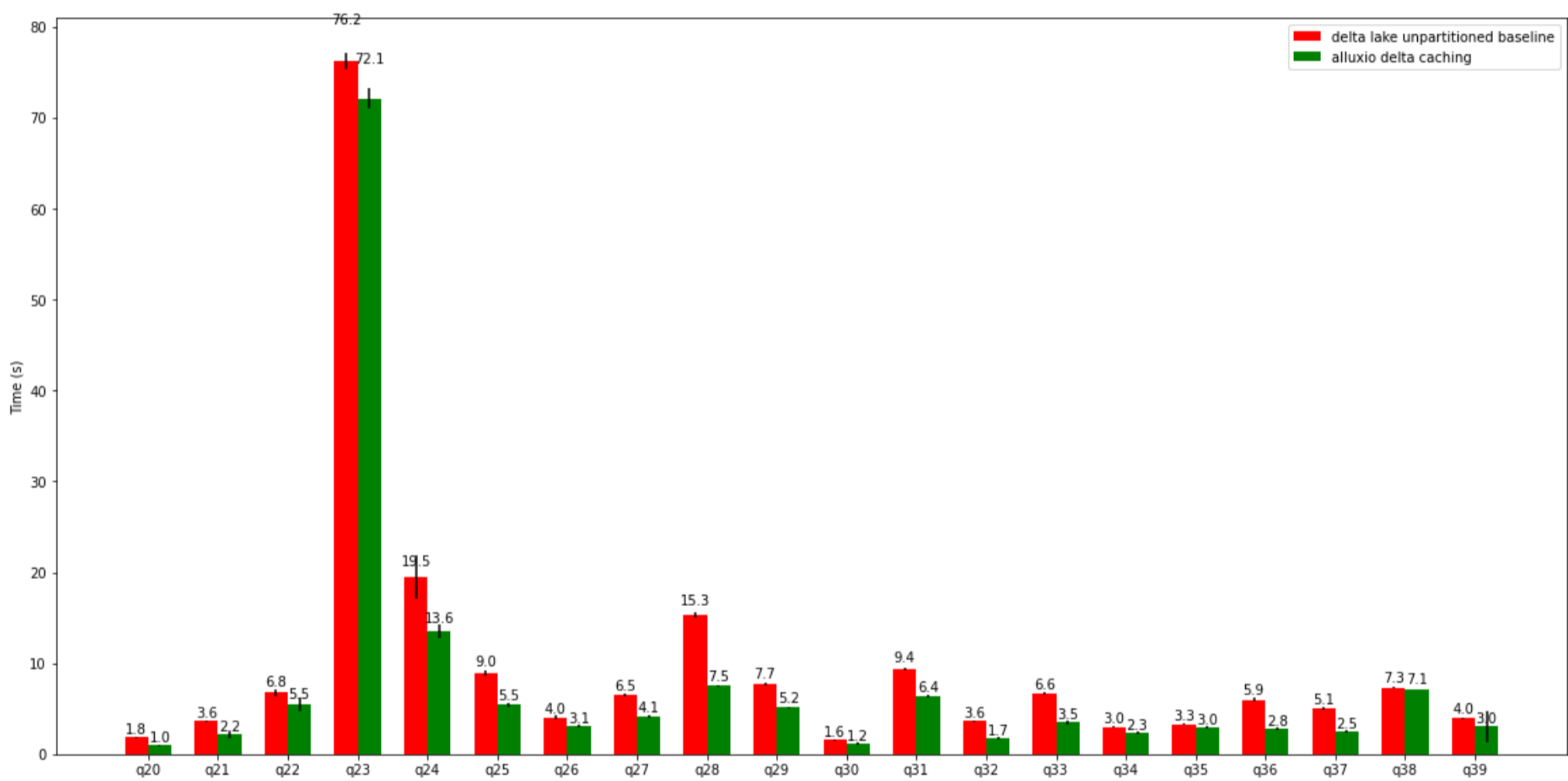
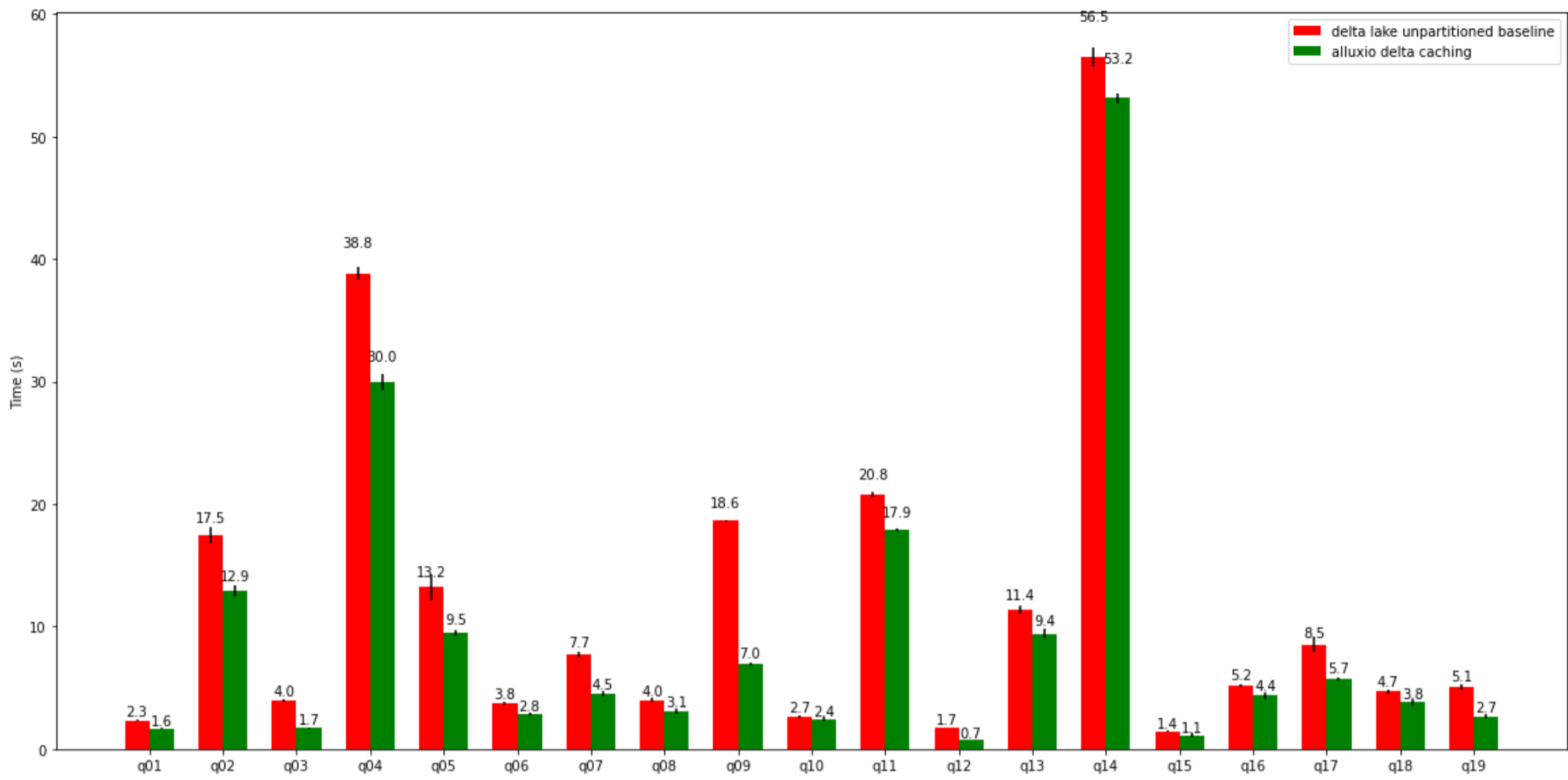
## TPC-H Comparison (DURATION)

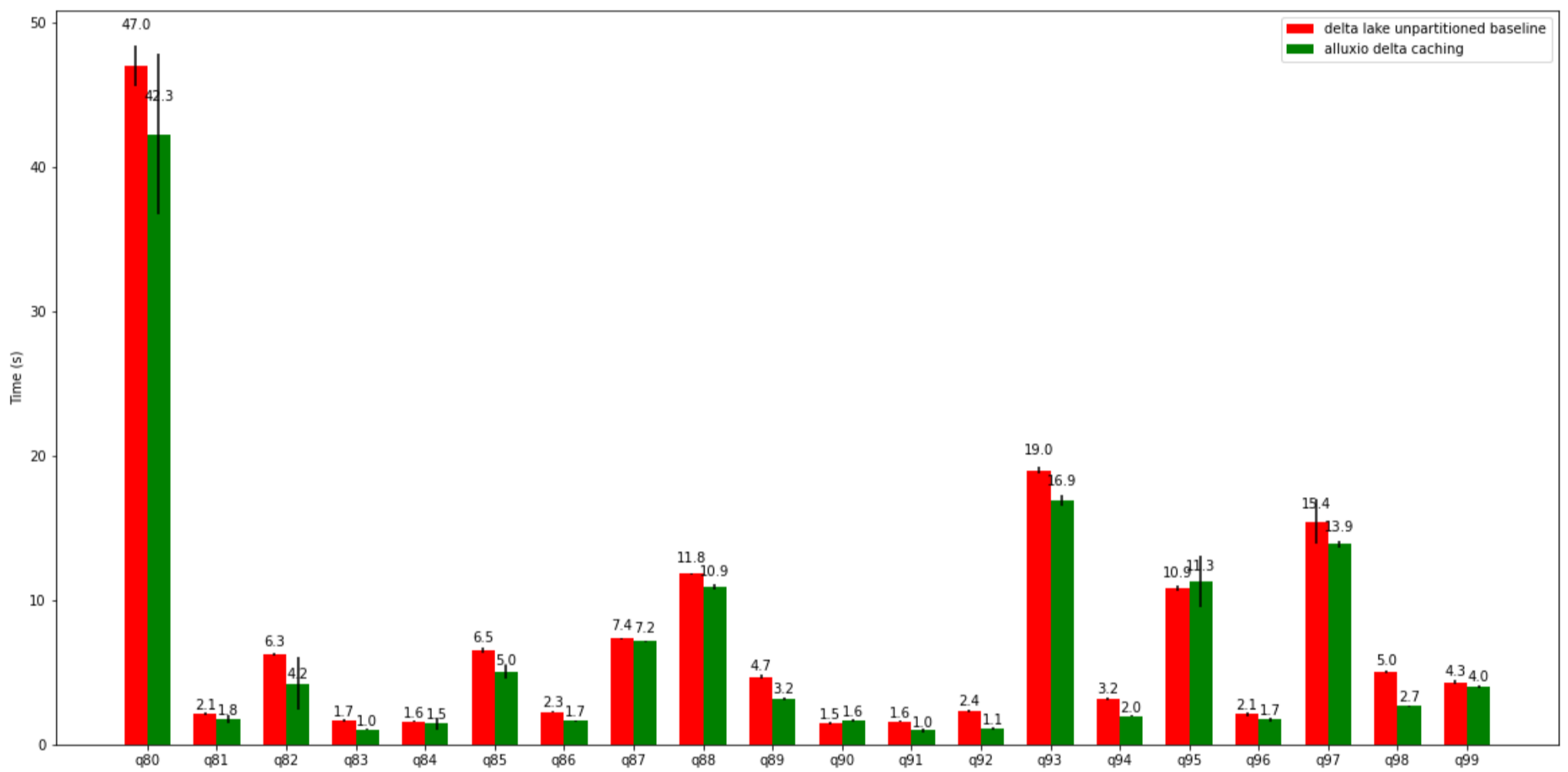
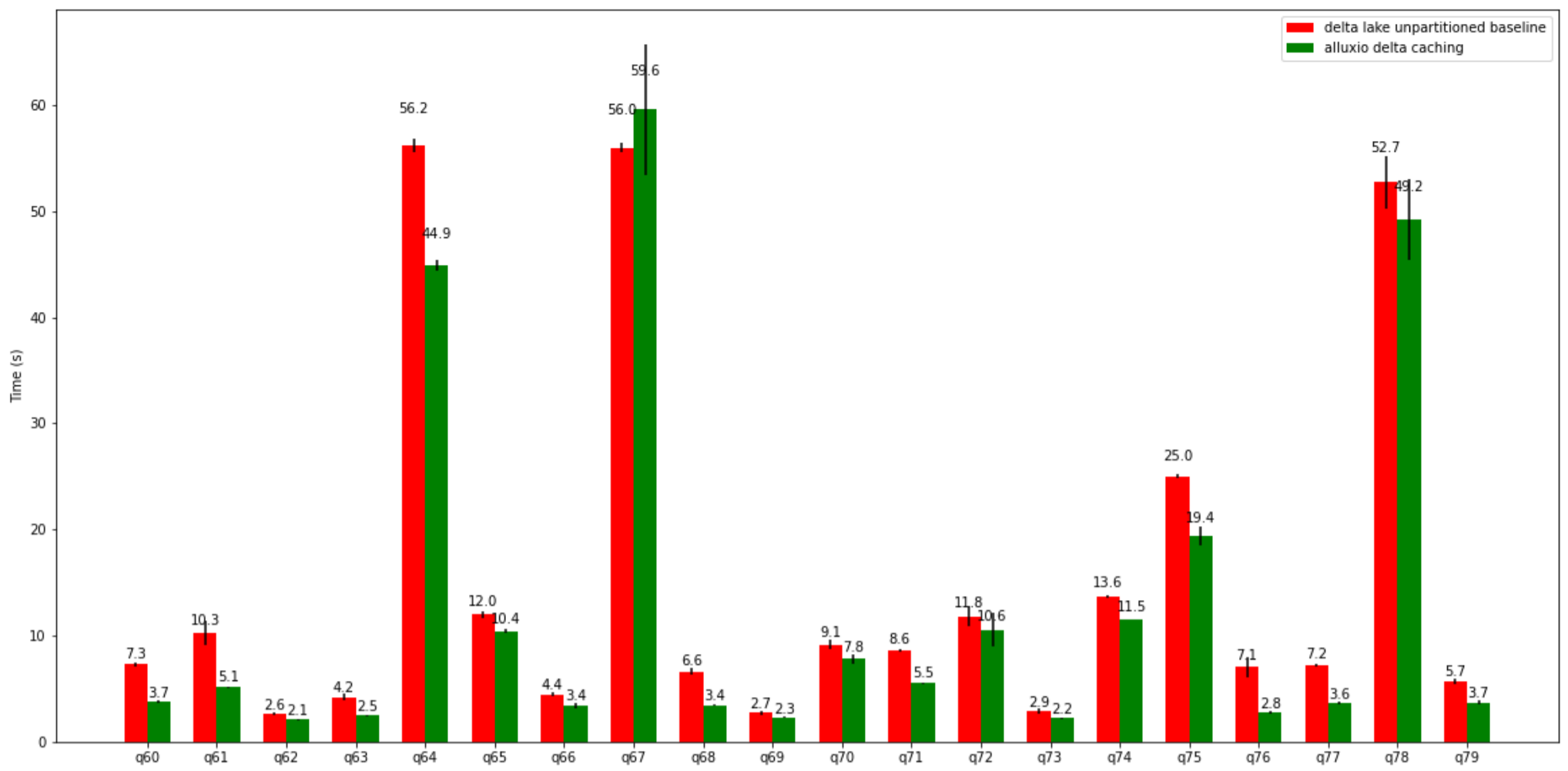




| query               | delta lake unpartitioned baseline mean | delta lake unpartitioned baseline std.dev | alluxio delta caching mean | alluxio delta caching std.dev |
|---------------------|--|---|----------------------------|-------------------------------|
| 0 presto/tpch: q01  | 9.298167                               | 0.100402                                  | 7.644833                   | 0.498316                      |
| 1 presto/tpch: q02  | 11.120000                              | 1.509310                                  | 9.385000                   | 0.320447                      |
| 2 presto/tpch: q03  | 22.296667                              | 0.201485                                  | 13.673500                  | 0.241986                      |
| 3 presto/tpch: q04  | 10.668500                              | 0.239364                                  | 8.921000                   | 0.460847                      |
| 4 presto/tpch: q05  | 22.280667                              | 0.299620                                  | 17.136667                  | 0.446967                      |
| 5 presto/tpch: q06  | 8.278333                               | 0.074185                                  | 3.903667                   | 0.481175                      |
| 6 presto/tpch: q07  | 18.501500                              | 0.386009                                  | 10.236000                  | 0.221382                      |
| 7 presto/tpch: q08  | 21.292833                              | 3.689351                                  | 11.406667                  | 1.027584                      |
| 8 presto/tpch: q09  | 58.208167                              | 0.662965                                  | 46.394333                  | 1.159714                      |
| 9 presto/tpch: q10  | 19.212833                              | 0.205108                                  | 13.797833                  | 1.441164                      |
| 10 presto/tpch: q11 | 5.938000                               | 0.159143                                  | 4.930667                   | 0.081382                      |
| 11 presto/tpch: q12 | 10.887000                              | 0.507258                                  | 8.323333                   | 0.637946                      |
| 12 presto/tpch: q13 | 14.930167                              | 0.197277                                  | 13.147500                  | 0.580080                      |
| 13 presto/tpch: q14 | 12.627833                              | 0.978719                                  | 5.110667                   | 0.312975                      |
| 14 presto/tpch: q15 | 22.521833                              | 0.494277                                  | 8.403667                   | 0.589019                      |
| 15 presto/tpch: q16 | 5.309167                               | 0.059861                                  | 4.209167                   | 0.085136                      |
| 16 presto/tpch: q17 | 32.166000                              | 0.371274                                  | 27.324000                  | 0.421775                      |
| 17 presto/tpch: q18 | 32.718667                              | 1.115355                                  | 29.129167                  | 1.801835                      |
| 18 presto/tpch: q19 | 12.456167                              | 0.314820                                  | 7.800667                   | 0.573460                      |
| 19 presto/tpch: q20 | 20.404833                              | 0.876932                                  | 11.784500                  | 1.283446                      |
| 20 presto/tpch: q21 | 48.110333                              | 0.474320                                  | 39.850333                  | 0.644745                      |
| 21 presto/tpch: q22 | 4.411667                               | 0.136117                                  | 3.787000                   | 0.443315                      |

## TPC-DS Comparison (DURATION)



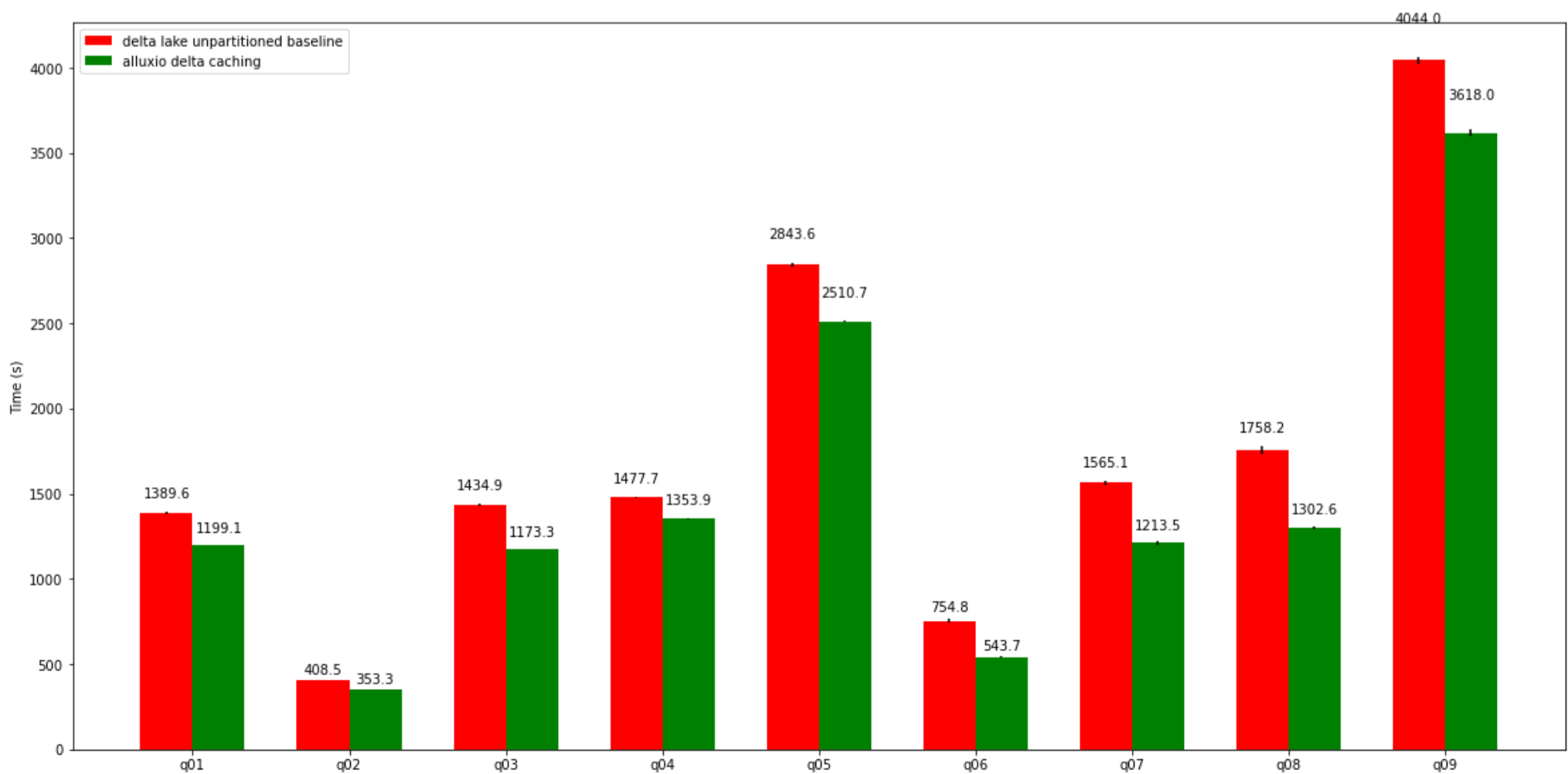


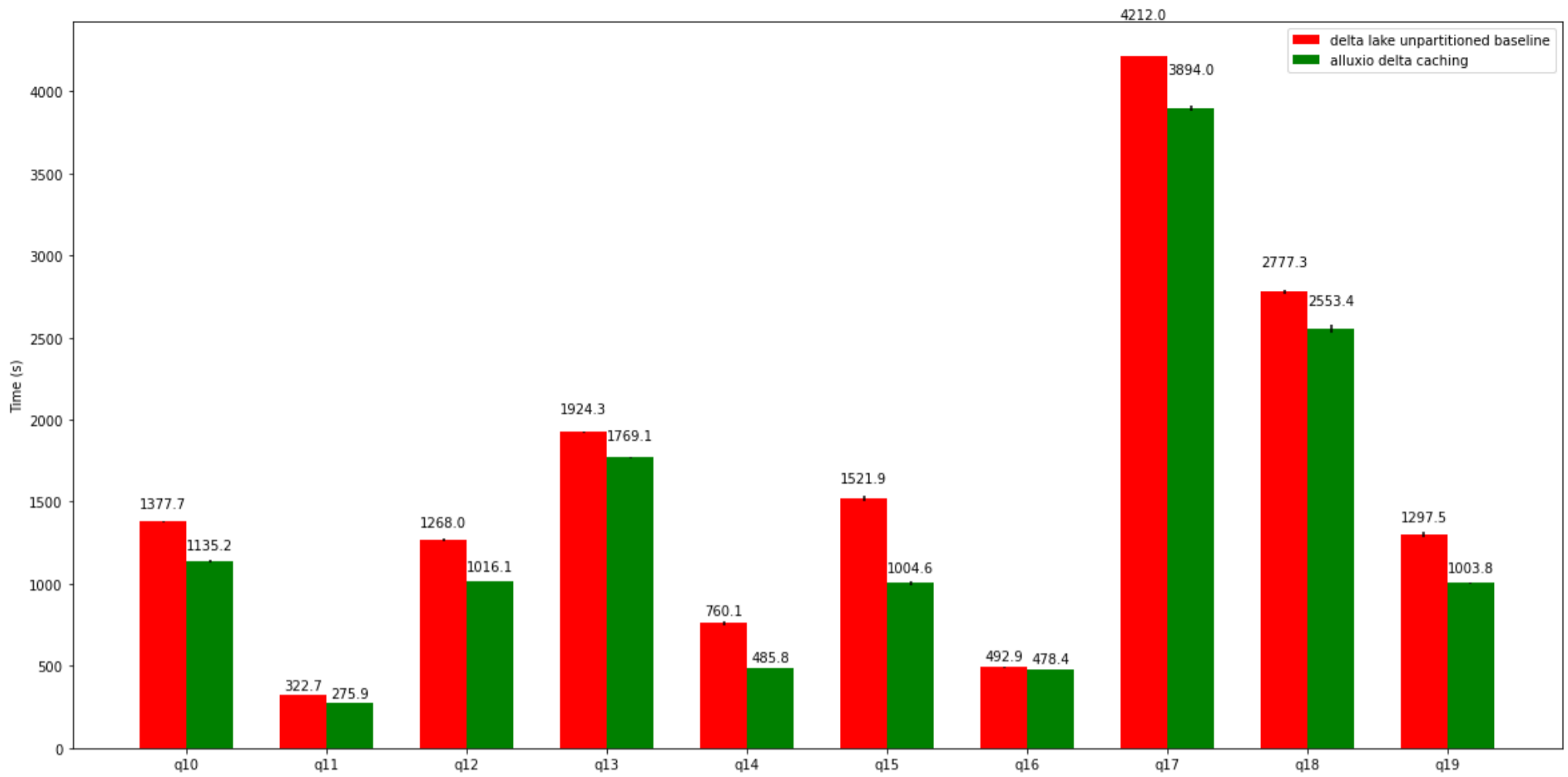
| query                | delta lake unpartitioned baseline mean | delta lake unpartitioned baseline std.dev | alluxio delta caching mean | alluxio delta caching std.dev |
|----------------------|--|---|----------------------------|-------------------------------|
| 0 presto/tpcds: q01  | 2.346833                               | 0.086578                                  | 1.647500                   | 0.058593                      |
| 1 presto/tpcds: q02  | 17.485833                              | 0.650506                                  | 12.878833                  | 0.445636                      |
| 2 presto/tpcds: q03  | 3.995833                               | 0.125532                                  | 1.717167                   | 0.047512                      |
| 3 presto/tpcds: q04  | 38.816833                              | 0.503262                                  | 29.976833                  | 0.658288                      |
| 4 presto/tpcds: q05  | 13.216500                              | 1.038450                                  | 9.521167                   | 0.200995                      |
| 5 presto/tpcds: q06  | 3.756833                               | 0.109397                                  | 2.844167                   | 0.089587                      |
| 6 presto/tpcds: q07  | 7.733000                               | 0.244982                                  | 4.528000                   | 0.199152                      |
| 7 presto/tpcds: q08  | 3.982500                               | 0.157963                                  | 3.078667                   | 0.223950                      |
| 8 presto/tpcds: q09  | 18.638167                              | 0.059240                                  | 6.955500                   | 0.117437                      |
| 9 presto/tpcds: q10  | 2.669000                               | 0.125987                                  | 2.426667                   | 0.168768                      |
| 10 presto/tpcds: q11 | 20.789500                              | 0.258673                                  | 17.892000                  | 0.142512                      |
| 11 presto/tpcds: q12 | 1.738833                               | 0.033618                                  | 0.740333                   | 0.021924                      |
| 12 presto/tpcds: q13 | 11.404000                              | 0.344454                                  | 9.419500                   | 0.361879                      |
| 13 presto/tpcds: q14 | 56.472000                              | 0.792321                                  | 53.161833                  | 0.384562                      |
| 14 presto/tpcds: q15 | 1.446333                               | 0.084540                                  | 1.130167                   | 0.121562                      |
| 15 presto/tpcds: q16 | 5.191167                               | 0.150725                                  | 4.389333                   | 0.264550                      |
| 16 presto/tpcds: q17 | 8.543000                               | 0.630534                                  | 5.707000                   | 0.094640                      |
| 17 presto/tpcds: q18 | 4.684500                               | 0.118657                                  | 3.802000                   | 0.248590                      |

|    | query             | delta lake unpartitioned baseline mean | delta lake unpartitioned baseline std.dev | alluxio delta caching mean | alluxio delta caching std.dev |
|----|-------------------|--|---|----------------------------|-------------------------------|
| 18 | presto/tpcds: q19 | 5.091500                               | 0.242541                                  | 2.656833                   | 0.163089                      |
| 19 | presto/tpcds: q20 | 1.848667                               | 0.082192                                  | 1.001833                   | 0.067526                      |
| 20 | presto/tpcds: q21 | 3.619833                               | 0.062803                                  | 2.151333                   | 0.403588                      |
| 21 | presto/tpcds: q22 | 6.815667                               | 0.370607                                  | 5.519333                   | 0.728706                      |
| 22 | presto/tpcds: q23 | 76.201333                              | 0.911911                                  | 72.129167                  | 1.053844                      |
| 23 | presto/tpcds: q24 | 19.546667                              | 2.388348                                  | 13.559333                  | 0.708188                      |
| 24 | presto/tpcds: q25 | 8.956500                               | 0.311563                                  | 5.460167                   | 0.238374                      |
| 25 | presto/tpcds: q26 | 4.028000                               | 0.219914                                  | 3.072000                   | 0.128978                      |
| 26 | presto/tpcds: q27 | 6.478333                               | 0.172397                                  | 4.132833                   | 0.123305                      |
| 27 | presto/tpcds: q28 | 15.321167                              | 0.232999                                  | 7.498500                   | 0.104959                      |
| 28 | presto/tpcds: q29 | 7.687167                               | 0.129229                                  | 5.154167                   | 0.095857                      |
| 29 | presto/tpcds: q30 | 1.560167                               | 0.046309                                  | 1.163000                   | 0.158870                      |
| 30 | presto/tpcds: q31 | 9.377333                               | 0.138799                                  | 6.353667                   | 0.113803                      |
| 31 | presto/tpcds: q32 | 3.646833                               | 0.082025                                  | 1.705667                   | 0.170623                      |
| 32 | presto/tpcds: q33 | 6.636833                               | 0.157965                                  | 3.474667                   | 0.199117                      |
| 33 | presto/tpcds: q34 | 2.974000                               | 0.057446                                  | 2.312833                   | 0.135606                      |
| 34 | presto/tpcds: q35 | 3.260000                               | 0.079612                                  | 2.959667                   | 0.166352                      |
| 35 | presto/tpcds: q36 | 5.949333                               | 0.240175                                  | 2.780167                   | 0.136569                      |
| 36 | presto/tpcds: q37 | 5.057833                               | 0.103951                                  | 2.525000                   | 0.158774                      |
| 37 | presto/tpcds: q38 | 7.322167                               | 0.033331                                  | 7.137500                   | 0.042472                      |
| 38 | presto/tpcds: q39 | 3.965000                               | 0.067876                                  | 3.048500                   | 1.678185                      |
| 39 | presto/tpcds: q40 | 9.830333                               | 0.312758                                  | 8.441333                   | 0.271611                      |
| 40 | presto/tpcds: q41 | 0.573833                               | 0.037515                                  | 0.405833                   | 0.011374                      |
| 41 | presto/tpcds: q42 | 4.237167                               | 0.273018                                  | 1.776000                   | 0.135745                      |
| 42 | presto/tpcds: q43 | 3.383167                               | 0.239818                                  | 2.746667                   | 0.093264                      |
| 43 | presto/tpcds: q44 | 10.835167                              | 0.391370                                  | 3.900667                   | 0.201458                      |
| 44 | presto/tpcds: q45 | 1.481833                               | 0.090980                                  | 0.935833                   | 0.009453                      |
| 45 | presto/tpcds: q46 | 5.443000                               | 1.466205                                  | 3.192167                   | 0.171207                      |
| 46 | presto/tpcds: q47 | 31.876333                              | 0.553755                                  | 31.086833                  | 0.731977                      |
| 47 | presto/tpcds: q48 | 8.130500                               | 0.141119                                  | 7.330500                   | 0.163759                      |
| 48 | presto/tpcds: q49 | 11.562333                              | 0.121033                                  | 5.000167                   | 0.177073                      |
| 49 | presto/tpcds: q50 | 17.728333                              | 0.421319                                  | 15.547667                  | 0.580929                      |
| 50 | presto/tpcds: q51 | 9.180333                               | 0.285119                                  | 7.841167                   | 0.181092                      |
| 51 | presto/tpcds: q52 | 4.069667                               | 0.136543                                  | 1.785833                   | 0.082686                      |
| 52 | presto/tpcds: q53 | 4.220667                               | 0.231113                                  | 2.461500                   | 0.129798                      |
| 53 | presto/tpcds: q54 | 9.904500                               | 0.109559                                  | 8.129500                   | 0.312783                      |
| 54 | presto/tpcds: q55 | 4.099667                               | 0.120789                                  | 1.770000                   | 0.084723                      |
| 55 | presto/tpcds: q56 | 7.569667                               | 1.768606                                  | 3.498000                   | 0.099928                      |
| 56 | presto/tpcds: q57 | 16.783333                              | 0.568547                                  | 15.654833                  | 0.598961                      |
| 57 | presto/tpcds: q58 | 6.530333                               | 1.518718                                  | 3.935500                   | 0.122384                      |
| 58 | presto/tpcds: q59 | 15.219667                              | 0.336641                                  | 15.352000                  | 0.605259                      |
| 59 | presto/tpcds: q60 | 7.276500                               | 0.145661                                  | 3.747833                   | 0.156728                      |
| 60 | presto/tpcds: q61 | 10.251500                              | 1.162157                                  | 5.126667                   | 0.080371                      |
| 61 | presto/tpcds: q62 | 2.633500                               | 0.098490                                  | 2.102167                   | 0.041997                      |
| 62 | presto/tpcds: q63 | 4.211833                               | 0.296317                                  | 2.462167                   | 0.047034                      |
| 63 | presto/tpcds: q64 | 56.151000                              | 0.625686                                  | 44.913667                  | 0.483301                      |
| 64 | presto/tpcds: q65 | 11.967000                              | 0.269891                                  | 10.402333                  | 0.207511                      |
| 65 | presto/tpcds: q66 | 4.438167                               | 0.174670                                  | 3.423333                   | 0.291030                      |
| 66 | presto/tpcds: q67 | 55.991333                              | 0.503267                                  | 59.552167                  | 6.137074                      |
| 67 | presto/tpcds: q68 | 6.633500                               | 0.274422                                  | 3.448333                   | 0.070110                      |
| 68 | presto/tpcds: q69 | 2.709000                               | 0.226021                                  | 2.313333                   | 0.100842                      |
| 69 | presto/tpcds: q70 | 9.128667                               | 0.461644                                  | 7.810667                   | 0.415561                      |

| query | delta lake unpartitioned baseline mean | delta lake unpartitioned baseline std.dev | alluxio delta caching mean | alluxio delta caching std.dev |          |
|-------|--|---|----------------------------|-------------------------------|----------|
| 70    | presto/tpcds: q71                      | 8.569500                                  | 0.130893                   | 5.521000                      | 0.090470 |
| 71    | presto/tpcds: q72                      | 11.821667                                 | 0.934578                   | 10.566500                     | 1.583854 |
| 72    | presto/tpcds: q73                      | 2.862167                                  | 0.232764                   | 2.219667                      | 0.088561 |
| 73    | presto/tpcds: q74                      | 13.648000                                 | 0.149304                   | 11.495333                     | 0.033381 |
| 74    | presto/tpcds: q75                      | 25.006500                                 | 0.204645                   | 19.410000                     | 0.870781 |
| 75    | presto/tpcds: q76                      | 7.072333                                  | 0.947970                   | 2.770667                      | 0.095278 |
| 76    | presto/tpcds: q77                      | 7.236000                                  | 0.126543                   | 3.619500                      | 0.122631 |
| 77    | presto/tpcds: q78                      | 52.704667                                 | 2.500393                   | 49.197667                     | 3.798105 |
| 78    | presto/tpcds: q79                      | 5.656333                                  | 0.230543                   | 3.664833                      | 0.184346 |
| 79    | presto/tpcds: q80                      | 47.025833                                 | 1.395557                   | 42.260167                     | 5.562200 |
| 80    | presto/tpcds: q81                      | 2.121833                                  | 0.070980                   | 1.751500                      | 0.292032 |
| 81    | presto/tpcds: q82                      | 6.285500                                  | 0.102311                   | 4.201167                      | 1.834126 |
| 82    | presto/tpcds: q83                      | 1.665000                                  | 0.115020                   | 1.045333                      | 0.033279 |
| 83    | presto/tpcds: q84                      | 1.616167                                  | 0.086527                   | 1.459333                      | 0.421357 |
| 84    | presto/tpcds: q85                      | 6.541667                                  | 0.158934                   | 5.038833                      | 0.438643 |
| 85    | presto/tpcds: q86                      | 2.261833                                  | 0.032059                   | 1.660000                      | 0.044086 |
| 86    | presto/tpcds: q87                      | 7.356167                                  | 0.057863                   | 7.158500                      | 0.035865 |
| 87    | presto/tpcds: q88                      | 11.820333                                 | 0.071514                   | 10.915500                     | 0.165021 |
| 88    | presto/tpcds: q89                      | 4.691167                                  | 0.169123                   | 3.169167                      | 0.111498 |
| 89    | presto/tpcds: q90                      | 1.475833                                  | 0.065713                   | 1.646000                      | 0.101623 |
| 90    | presto/tpcds: q91                      | 1.576333                                  | 0.048074                   | 0.984333                      | 0.114828 |
| 91    | presto/tpcds: q92                      | 2.362667                                  | 0.095114                   | 1.100000                      | 0.085257 |
| 92    | presto/tpcds: q93                      | 18.989667                                 | 0.228958                   | 16.897000                     | 0.360525 |
| 93    | presto/tpcds: q94                      | 3.169500                                  | 0.106808                   | 1.970500                      | 0.030494 |
| 94    | presto/tpcds: q95                      | 10.850833                                 | 0.188472                   | 11.278833                     | 1.793238 |
| 95    | presto/tpcds: q96                      | 2.097667                                  | 0.163395                   | 1.727667                      | 0.117478 |
| 96    | presto/tpcds: q97                      | 15.417000                                 | 1.541890                   | 13.875333                     | 0.251926 |
| 97    | presto/tpcds: q98                      | 5.044333                                  | 0.073080                   | 2.675667                      | 0.042245 |
| 98    | presto/tpcds: q99                      | 4.327333                                  | 0.143055                   | 3.970500                      | 0.093887 |

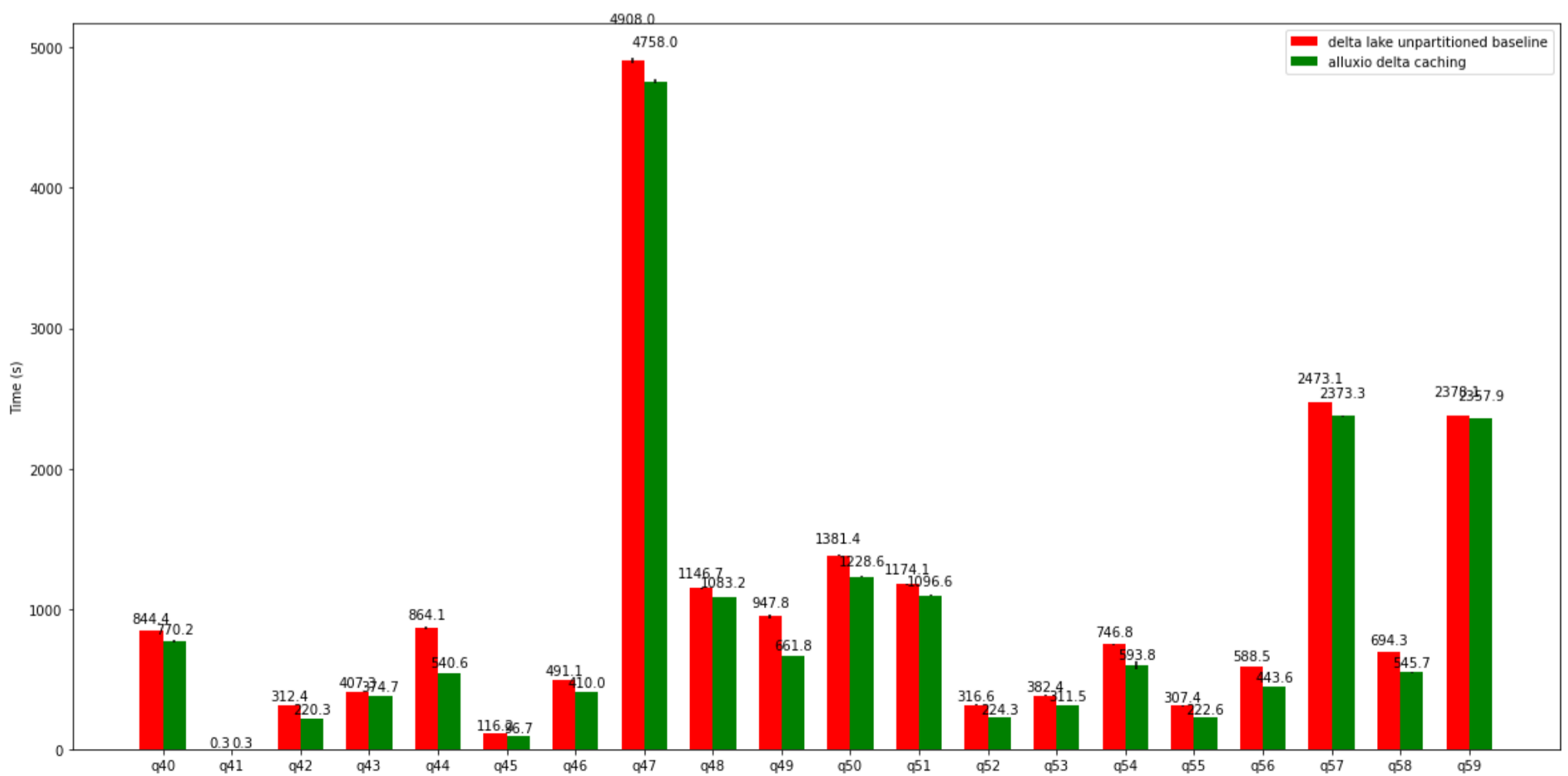
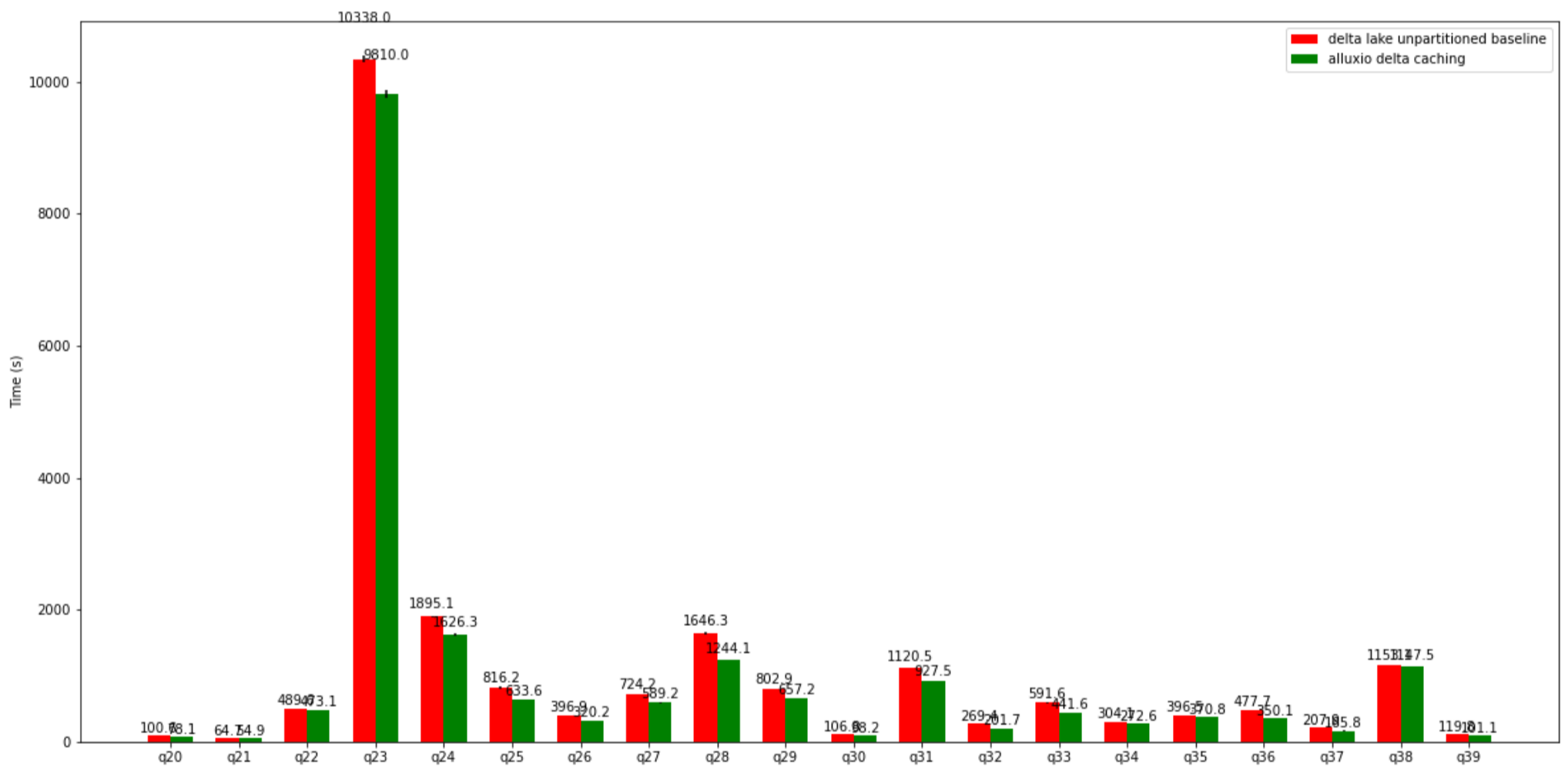
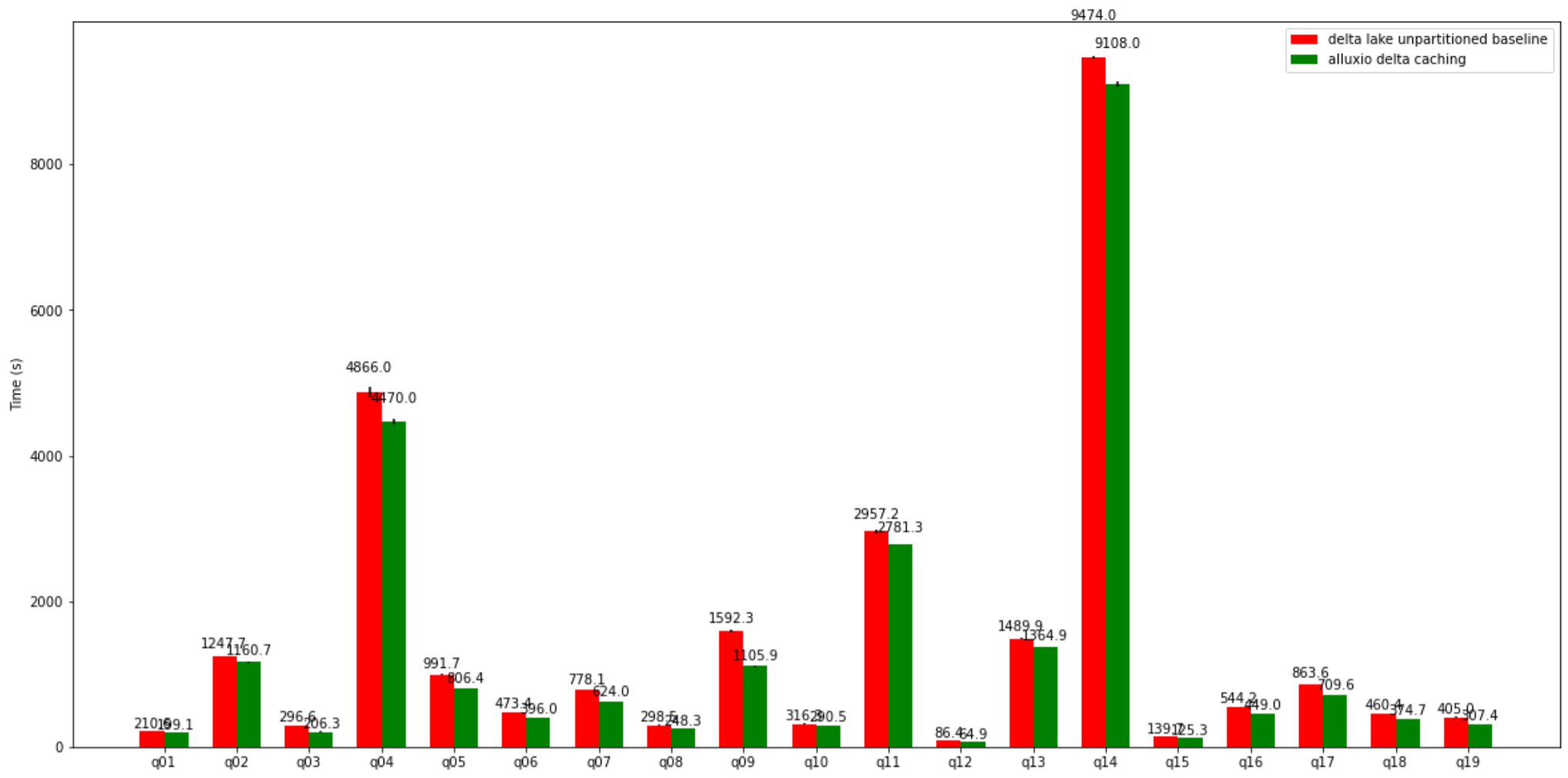
## TPC-H Comparison (CPU)



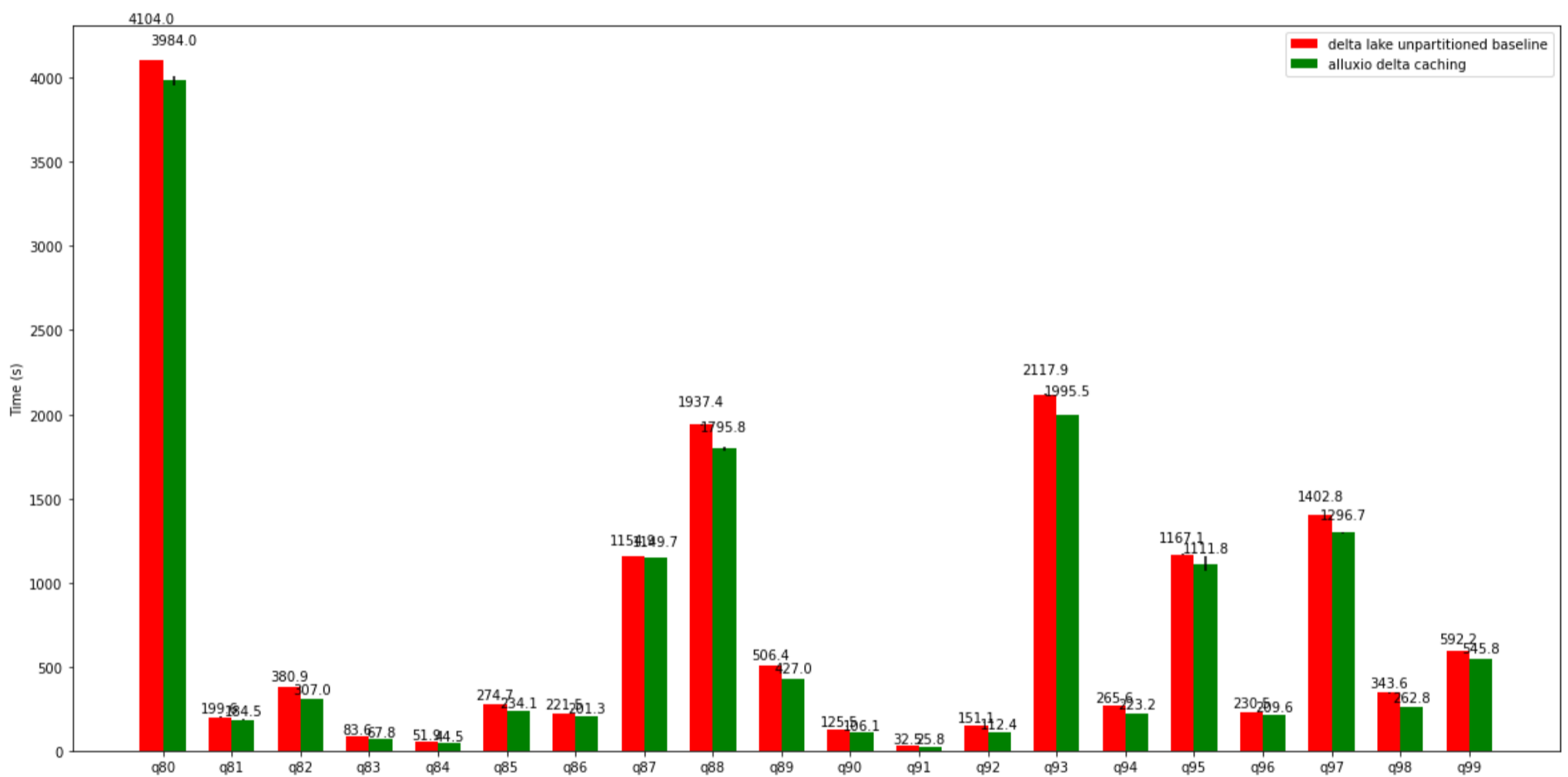
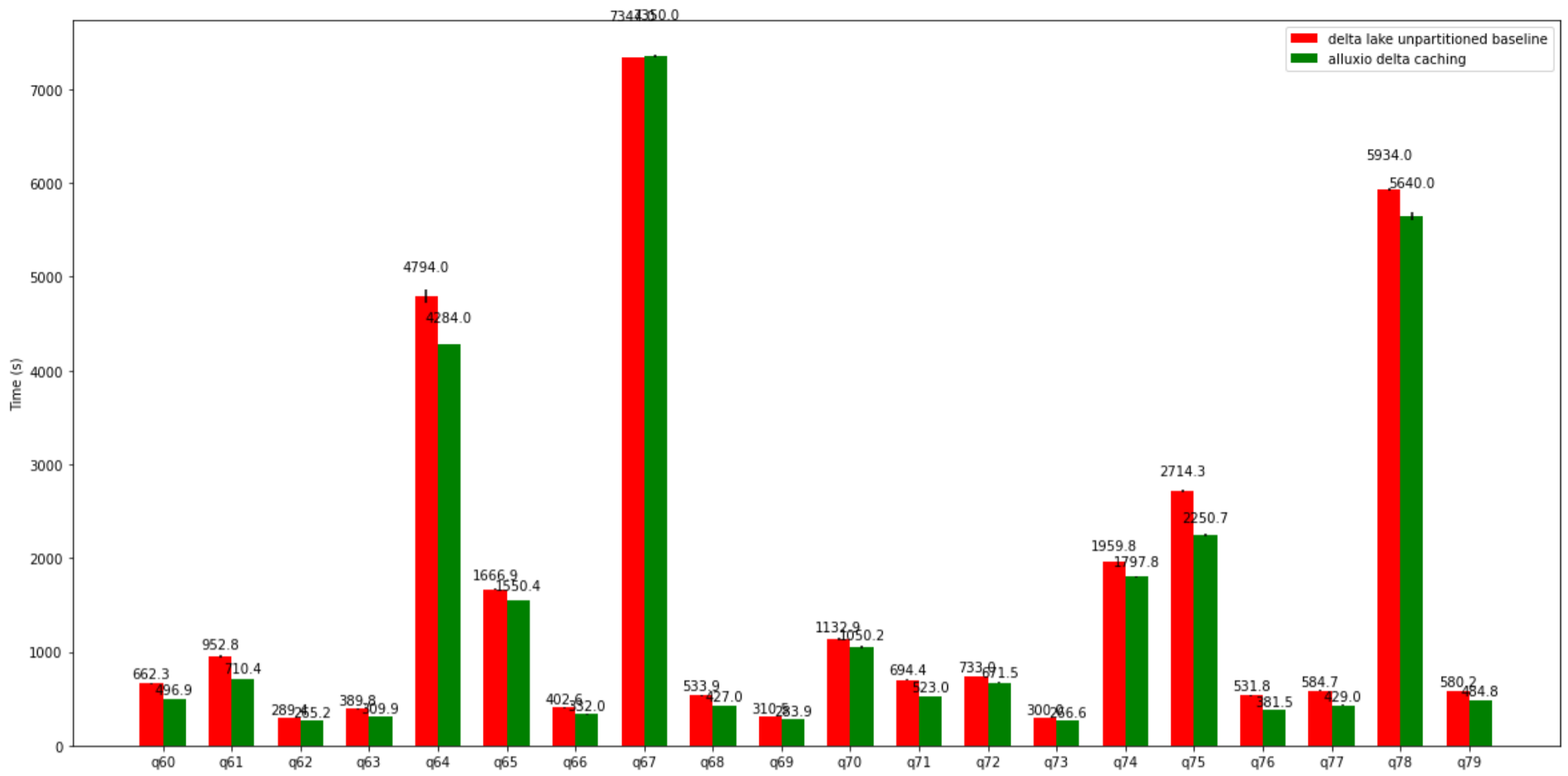


| query               | delta lake unpartitioned baseline mean | delta lake unpartitioned baseline std.dev | alluxio delta caching mean | alluxio delta caching std.dev |
|---------------------|--|---|----------------------------|-------------------------------|
| 0 presto/tpch: q01  | 1389.6                                 | 6.292853                                  | 1199.1                     | 2.138224                      |
| 1 presto/tpch: q02  | 408.5                                  | 1.756132                                  | 353.3                      | 0.883176                      |
| 2 presto/tpch: q03  | 1434.9                                 | 5.059249                                  | 1173.3                     | 0.909945                      |
| 3 presto/tpch: q04  | 1477.7                                 | 3.381716                                  | 1353.9                     | 4.047221                      |
| 4 presto/tpch: q05  | 2843.6                                 | 11.286806                                 | 2510.7                     | 3.634831                      |
| 5 presto/tpch: q06  | 754.8                                  | 9.051851                                  | 543.7                      | 2.442130                      |
| 6 presto/tpch: q07  | 1565.1                                 | 9.262181                                  | 1213.5                     | 12.022479                     |
| 7 presto/tpch: q08  | 1758.2                                 | 21.791374                                 | 1302.6                     | 8.899438                      |
| 8 presto/tpch: q09  | 4044.0                                 | 18.590320                                 | 3618.0                     | 19.718012                     |
| 9 presto/tpch: q10  | 1377.7                                 | 5.304715                                  | 1135.2                     | 6.550725                      |
| 10 presto/tpch: q11 | 322.7                                  | 0.701427                                  | 275.9                      | 0.589915                      |
| 11 presto/tpch: q12 | 1268.0                                 | 10.271514                                 | 1016.1                     | 0.909945                      |
| 12 presto/tpch: q13 | 1924.3                                 | 2.557342                                  | 1769.1                     | 1.457395                      |
| 13 presto/tpch: q14 | 760.1                                  | 9.321588                                  | 485.8                      | 1.766352                      |
| 14 presto/tpch: q15 | 1521.9                                 | 17.129974                                 | 1004.6                     | 10.963211                     |
| 15 presto/tpch: q16 | 492.9                                  | 2.331523                                  | 478.4                      | 0.309839                      |
| 16 presto/tpch: q17 | 4212.0                                 | 0.000000                                  | 3894.0                     | 14.696938                     |
| 17 presto/tpch: q18 | 2777.3                                 | 12.409512                                 | 2553.4                     | 23.782010                     |
| 18 presto/tpch: q19 | 1297.5                                 | 15.886976                                 | 1003.8                     | 2.762607                      |
| 19 presto/tpch: q20 | 1700.5                                 | 7.133863                                  | 1395.6                     | 27.205882                     |
| 20 presto/tpch: q21 | 5370.0                                 | 14.696938                                 | 4782.0                     | 14.696938                     |
| 21 presto/tpch: q22 | 475.9                                  | 0.244949                                  | 430.4                      | 0.489898                      |

## TPC-DS Comparison (CPU)







| query                | delta lake unpartitioned baseline mean | delta lake unpartitioned baseline std.dev | alluxio delta caching mean | alluxio delta caching std.dev |
|----------------------|--|---|----------------------------|-------------------------------|
| 0 presto/tpcds: q01  | 210.600000                             | 3.329865                                  | 199.100000                 | 1.337161                      |
| 1 presto/tpcds: q02  | 1247.700000                            | 3.732559                                  | 1160.700000                | 4.029392                      |
| 2 presto/tpcds: q03  | 296.600000                             | 1.766352                                  | 206.300000                 | 3.206868                      |
| 3 presto/tpcds: q04  | 4866.000000                            | 69.868448                                 | 4470.000000                | 35.394915                     |
| 4 presto/tpcds: q05  | 991.700000                             | 4.111934                                  | 806.400000                 | 4.276447                      |
| 5 presto/tpcds: q06  | 473.400000                             | 0.657267                                  | 396.000000                 | 0.758947                      |
| 6 presto/tpcds: q07  | 778.100000                             | 1.714643                                  | 624.000000                 | 1.469694                      |
| 7 presto/tpcds: q08  | 298.500000                             | 1.728583                                  | 248.300000                 | 0.244949                      |
| 8 presto/tpcds: q09  | 1592.300000                            | 25.312369                                 | 1105.900000                | 1.714643                      |
| 9 presto/tpcds: q10  | 316.300000                             | 1.033441                                  | 290.500000                 | 0.244949                      |
| 10 presto/tpcds: q11 | 2957.200000                            | 20.441135                                 | 2781.300000                | 6.667833                      |
| 11 presto/tpcds: q12 | 86.400000                              | 0.000000                                  | 64.900000                  | 0.244949                      |
| 12 presto/tpcds: q13 | 1489.900000                            | 8.239175                                  | 1364.900000                | 1.756132                      |
| 13 presto/tpcds: q14 | 9474.000000                            | 14.696938                                 | 9108.000000                | 32.199379                     |
| 14 presto/tpcds: q15 | 139.700000                             | 0.244949                                  | 125.300000                 | 0.244949                      |
| 15 presto/tpcds: q16 | 544.200000                             | 2.043526                                  | 449.000000                 | 0.903327                      |
| 16 presto/tpcds: q17 | 863.600000                             | 1.766352                                  | 709.600000                 | 1.117139                      |

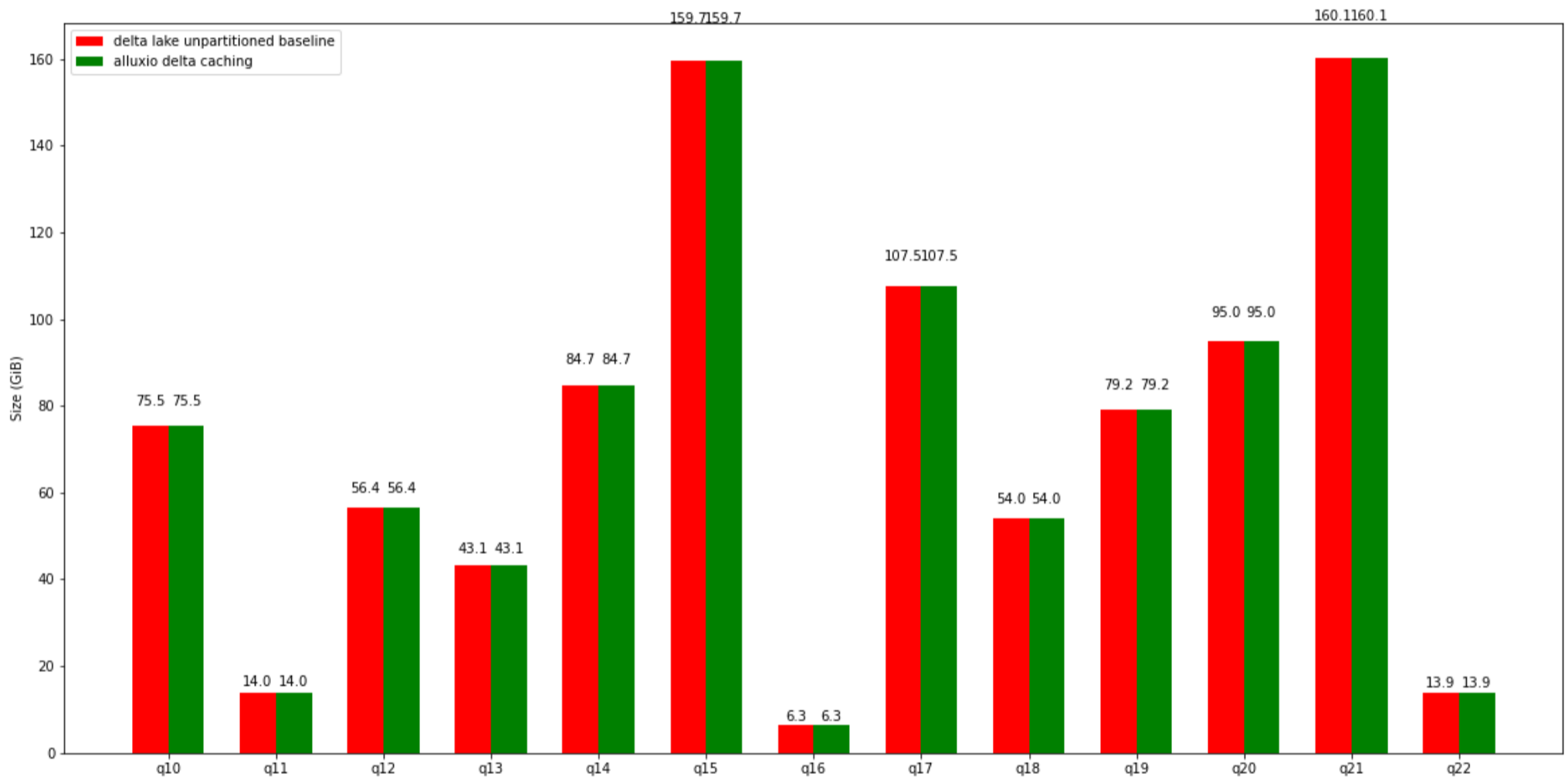
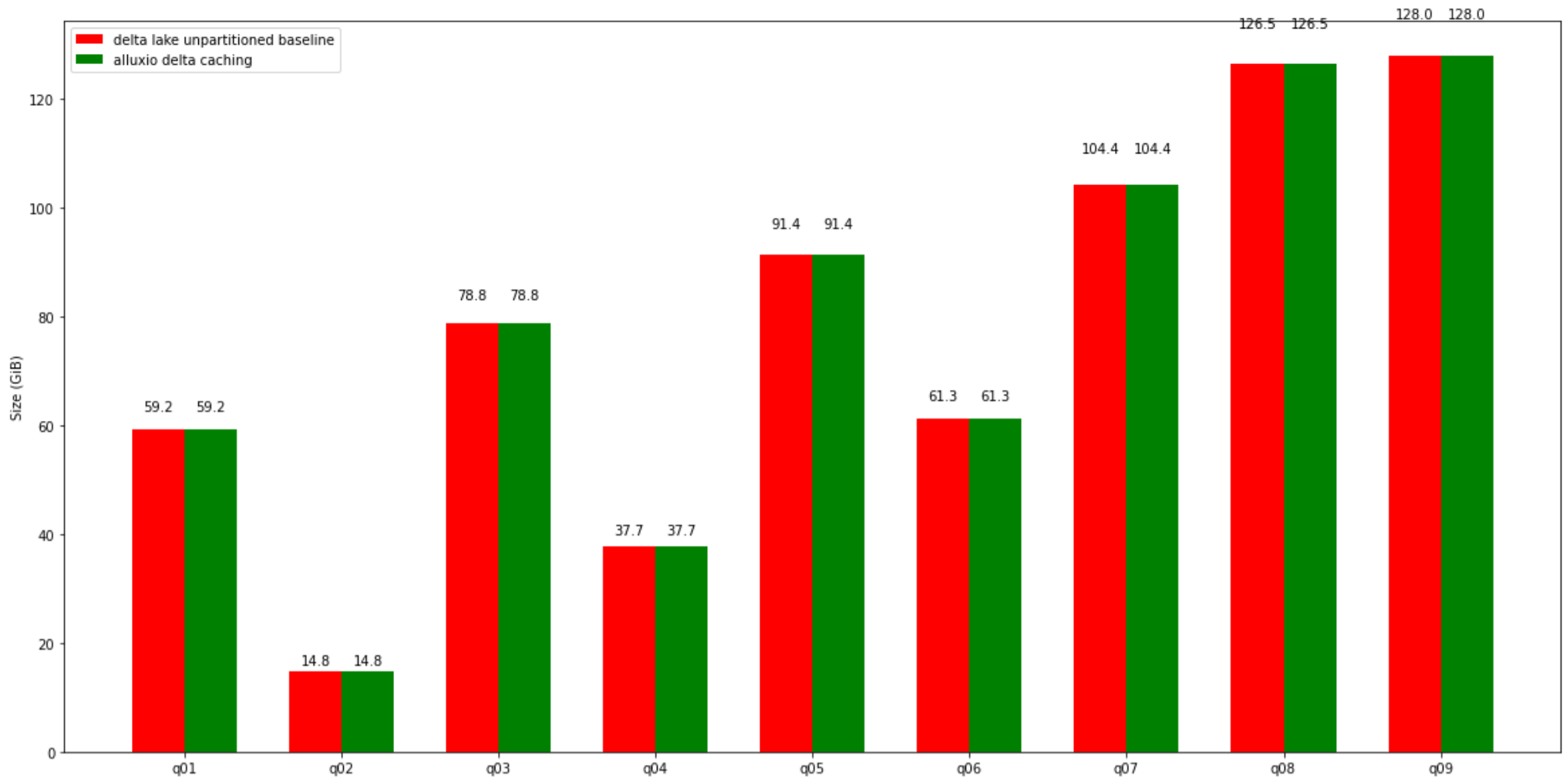
|    | query             | delta lake unpartitioned baseline mean | delta lake unpartitioned baseline std.dev | alluxio delta caching mean | alluxio delta caching std.dev |
|----|-------------------|--|---|----------------------------|-------------------------------|
| 17 | presto/tpcds: q18 | 460.400000                             | 1.117139                                  | 374.700000                 | 0.827043                      |
| 18 | presto/tpcds: q19 | 405.000000                             | 6.327085                                  | 307.400000                 | 0.979796                      |
| 19 | presto/tpcds: q20 | 100.600000                             | 0.489898                                  | 78.100000                  | 0.244949                      |
| 20 | presto/tpcds: q21 | 64.700000                              | 0.244949                                  | 54.896667                  | 0.252164                      |
| 21 | presto/tpcds: q22 | 489.600000                             | 1.419859                                  | 473.100000                 | 1.407125                      |
| 22 | presto/tpcds: q23 | 10338.000000                           | 52.990565                                 | 9810.000000                | 59.154036                     |
| 23 | presto/tpcds: q24 | 1895.100000                            | 15.371012                                 | 1626.300000                | 23.299013                     |
| 24 | presto/tpcds: q25 | 816.200000                             | 17.028447                                 | 633.600000                 | 2.244994                      |
| 25 | presto/tpcds: q26 | 396.900000                             | 3.100323                                  | 320.200000                 | 0.489898                      |
| 26 | presto/tpcds: q27 | 724.200000                             | 2.007984                                  | 589.200000                 | 1.258571                      |
| 27 | presto/tpcds: q28 | 1646.300000                            | 20.485995                                 | 1244.100000                | 1.184905                      |
| 28 | presto/tpcds: q29 | 802.900000                             | 2.092845                                  | 657.200000                 | 1.050714                      |
| 29 | presto/tpcds: q30 | 106.800000                             | 0.379473                                  | 98.200000                  | 0.309839                      |
| 30 | presto/tpcds: q31 | 1120.500000                            | 2.908608                                  | 927.500000                 | 0.961249                      |
| 31 | presto/tpcds: q32 | 269.400000                             | 1.314534                                  | 201.700000                 | 0.701427                      |
| 32 | presto/tpcds: q33 | 591.600000                             | 4.343271                                  | 441.600000                 | 1.200000                      |
| 33 | presto/tpcds: q34 | 304.100000                             | 1.033441                                  | 272.600000                 | 0.489898                      |
| 34 | presto/tpcds: q35 | 396.500000                             | 0.797496                                  | 370.800000                 | 0.848528                      |
| 35 | presto/tpcds: q36 | 477.700000                             | 2.382436                                  | 350.100000                 | 0.985901                      |
| 36 | presto/tpcds: q37 | 207.900000                             | 0.328634                                  | 165.800000                 | 0.819756                      |
| 37 | presto/tpcds: q38 | 1153.100000                            | 2.193627                                  | 1147.500000                | 1.553061                      |
| 38 | presto/tpcds: q39 | 119.800000                             | 0.309839                                  | 101.100000                 | 0.328634                      |
| 39 | presto/tpcds: q40 | 844.400000                             | 4.045738                                  | 770.200000                 | 8.002000                      |
| 40 | presto/tpcds: q41 | 0.342667                               | 0.010250                                  | 0.292167                   | 0.003920                      |
| 41 | presto/tpcds: q42 | 312.400000                             | 1.350555                                  | 220.300000                 | 0.244949                      |
| 42 | presto/tpcds: q43 | 407.300000                             | 1.033441                                  | 374.700000                 | 0.328634                      |
| 43 | presto/tpcds: q44 | 864.100000                             | 9.580605                                  | 540.600000                 | 2.400000                      |
| 44 | presto/tpcds: q45 | 116.200000                             | 0.619677                                  | 96.700000                  | 0.244949                      |
| 45 | presto/tpcds: q46 | 491.100000                             | 2.171635                                  | 410.000000                 | 0.489898                      |
| 46 | presto/tpcds: q47 | 4908.000000                            | 18.590320                                 | 4758.000000                | 14.696938                     |
| 47 | presto/tpcds: q48 | 1146.700000                            | 4.654031                                  | 1083.200000                | 0.726636                      |
| 48 | presto/tpcds: q49 | 947.800000                             | 14.986394                                 | 661.800000                 | 2.244994                      |
| 49 | presto/tpcds: q50 | 1381.400000                            | 2.135416                                  | 1228.600000                | 3.593327                      |
| 50 | presto/tpcds: q51 | 1174.100000                            | 5.318270                                  | 1096.600000                | 2.328948                      |
| 51 | presto/tpcds: q52 | 316.600000                             | 2.066882                                  | 224.300000                 | 0.589915                      |
| 52 | presto/tpcds: q53 | 382.400000                             | 1.766352                                  | 311.500000                 | 0.797496                      |
| 53 | presto/tpcds: q54 | 746.800000                             | 2.449490                                  | 593.800000                 | 29.043140                     |
| 54 | presto/tpcds: q55 | 307.400000                             | 0.726636                                  | 222.600000                 | 0.379473                      |
| 55 | presto/tpcds: q56 | 588.500000                             | 3.251461                                  | 443.600000                 | 1.050714                      |
| 56 | presto/tpcds: q57 | 2473.100000                            | 3.859015                                  | 2373.300000                | 3.732559                      |
| 57 | presto/tpcds: q58 | 694.300000                             | 2.557342                                  | 545.700000                 | 0.734847                      |
| 58 | presto/tpcds: q59 | 2378.100000                            | 1.728583                                  | 2357.900000                | 3.229241                      |
| 59 | presto/tpcds: q60 | 662.300000                             | 4.576024                                  | 496.900000                 | 0.883176                      |
| 60 | presto/tpcds: q61 | 952.800000                             | 11.199286                                 | 710.400000                 | 0.657267                      |
| 61 | presto/tpcds: q62 | 289.400000                             | 0.489898                                  | 265.200000                 | 0.379473                      |
| 62 | presto/tpcds: q63 | 389.800000                             | 3.144519                                  | 309.900000                 | 0.328634                      |
| 63 | presto/tpcds: q64 | 4794.000000                            | 73.484692                                 | 4284.000000                | 0.000000                      |
| 64 | presto/tpcds: q65 | 1666.900000                            | 1.986957                                  | 1550.400000                | 3.961818                      |
| 65 | presto/tpcds: q66 | 402.600000                             | 1.368211                                  | 332.000000                 | 1.117139                      |
| 66 | presto/tpcds: q67 | 7344.000000                            | 0.000000                                  | 7350.000000                | 14.696938                     |
| 67 | presto/tpcds: q68 | 533.900000                             | 4.730750                                  | 427.000000                 | 1.296148                      |

|    | query             | delta lake unpartitioned baseline mean | delta lake unpartitioned baseline std.dev | alluxio delta caching mean | alluxio delta caching std.dev |
|----|-------------------|--|---|----------------------------|-------------------------------|
| 68 | presto/tpcds: q69 | 310.500000                             | 1.184905                                  | 283.900000                 | 0.701427                      |
| 69 | presto/tpcds: q70 | 1132.900000                            | 11.059656                                 | 1050.200000                | 10.690557                     |
| 70 | presto/tpcds: q71 | 694.400000                             | 6.962758                                  | 523.000000                 | 0.309839                      |
| 71 | presto/tpcds: q72 | 733.000000                             | 3.189984                                  | 671.500000                 | 1.389964                      |
| 72 | presto/tpcds: q73 | 300.000000                             | 0.848528                                  | 266.600000                 | 0.619677                      |
| 73 | presto/tpcds: q74 | 1959.800000                            | 2.507588                                  | 1797.800000                | 3.051557                      |
| 74 | presto/tpcds: q75 | 2714.300000                            | 15.712288                                 | 2250.700000                | 15.190392                     |
| 75 | presto/tpcds: q76 | 531.800000                             | 2.066882                                  | 381.500000                 | 1.033441                      |
| 76 | presto/tpcds: q77 | 584.700000                             | 3.939035                                  | 429.000000                 | 2.078461                      |
| 77 | presto/tpcds: q78 | 5934.000000                            | 14.696938                                 | 5640.000000                | 43.598165                     |
| 78 | presto/tpcds: q79 | 580.200000                             | 1.368211                                  | 484.800000                 | 1.003992                      |
| 79 | presto/tpcds: q80 | 4104.000000                            | 0.000000                                  | 3984.000000                | 29.393877                     |
| 80 | presto/tpcds: q81 | 199.600000                             | 1.117139                                  | 184.500000                 | 0.629285                      |
| 81 | presto/tpcds: q82 | 380.900000                             | 1.389964                                  | 307.000000                 | 1.179830                      |
| 82 | presto/tpcds: q83 | 83.600000                              | 0.309839                                  | 67.800000                  | 0.000000                      |
| 83 | presto/tpcds: q84 | 51.913333                              | 0.464485                                  | 44.503333                  | 0.796233                      |
| 84 | presto/tpcds: q85 | 274.700000                             | 2.258318                                  | 234.100000                 | 0.701427                      |
| 85 | presto/tpcds: q86 | 221.500000                             | 0.701427                                  | 201.300000                 | 0.328634                      |
| 86 | presto/tpcds: q87 | 1154.900000                            | 2.471437                                  | 1149.700000                | 0.701427                      |
| 87 | presto/tpcds: q88 | 1937.400000                            | 6.177378                                  | 1795.800000                | 10.591317                     |
| 88 | presto/tpcds: q89 | 506.400000                             | 3.264353                                  | 427.000000                 | 0.819756                      |
| 89 | presto/tpcds: q90 | 125.500000                             | 0.451664                                  | 106.100000                 | 0.244949                      |
| 90 | presto/tpcds: q91 | 32.456667                              | 0.077632                                  | 25.820000                  | 0.053666                      |
| 91 | presto/tpcds: q92 | 151.100000                             | 0.451664                                  | 112.400000                 | 0.309839                      |
| 92 | presto/tpcds: q93 | 2117.900000                            | 4.880574                                  | 1995.500000                | 1.489966                      |
| 93 | presto/tpcds: q94 | 265.600000                             | 0.489898                                  | 223.200000                 | 0.536656                      |
| 94 | presto/tpcds: q95 | 1167.100000                            | 1.836301                                  | 1111.800000                | 44.476151                     |
| 95 | presto/tpcds: q96 | 230.500000                             | 0.451664                                  | 209.600000                 | 0.489898                      |
| 96 | presto/tpcds: q97 | 1402.800000                            | 2.339231                                  | 1296.700000                | 4.880574                      |
| 97 | presto/tpcds: q98 | 343.600000                             | 5.546891                                  | 262.800000                 | 0.379473                      |
| 98 | presto/tpcds: q99 | 592.200000                             | 1.138420                                  | 545.800000                 | 0.489898                      |

## TPC-H Comparison (Peak memory)

## TPC-DS Comparison (Peak memory)

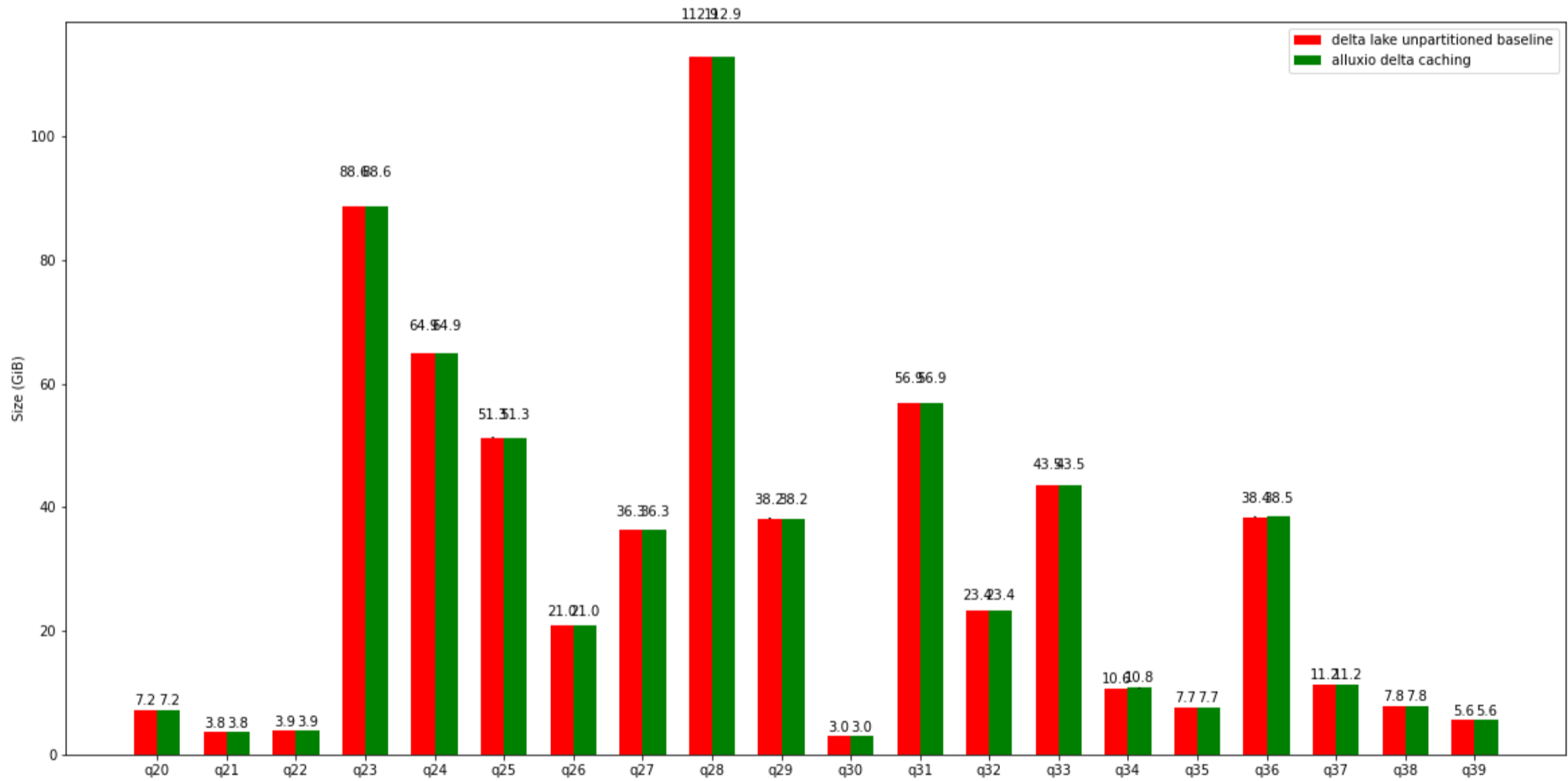
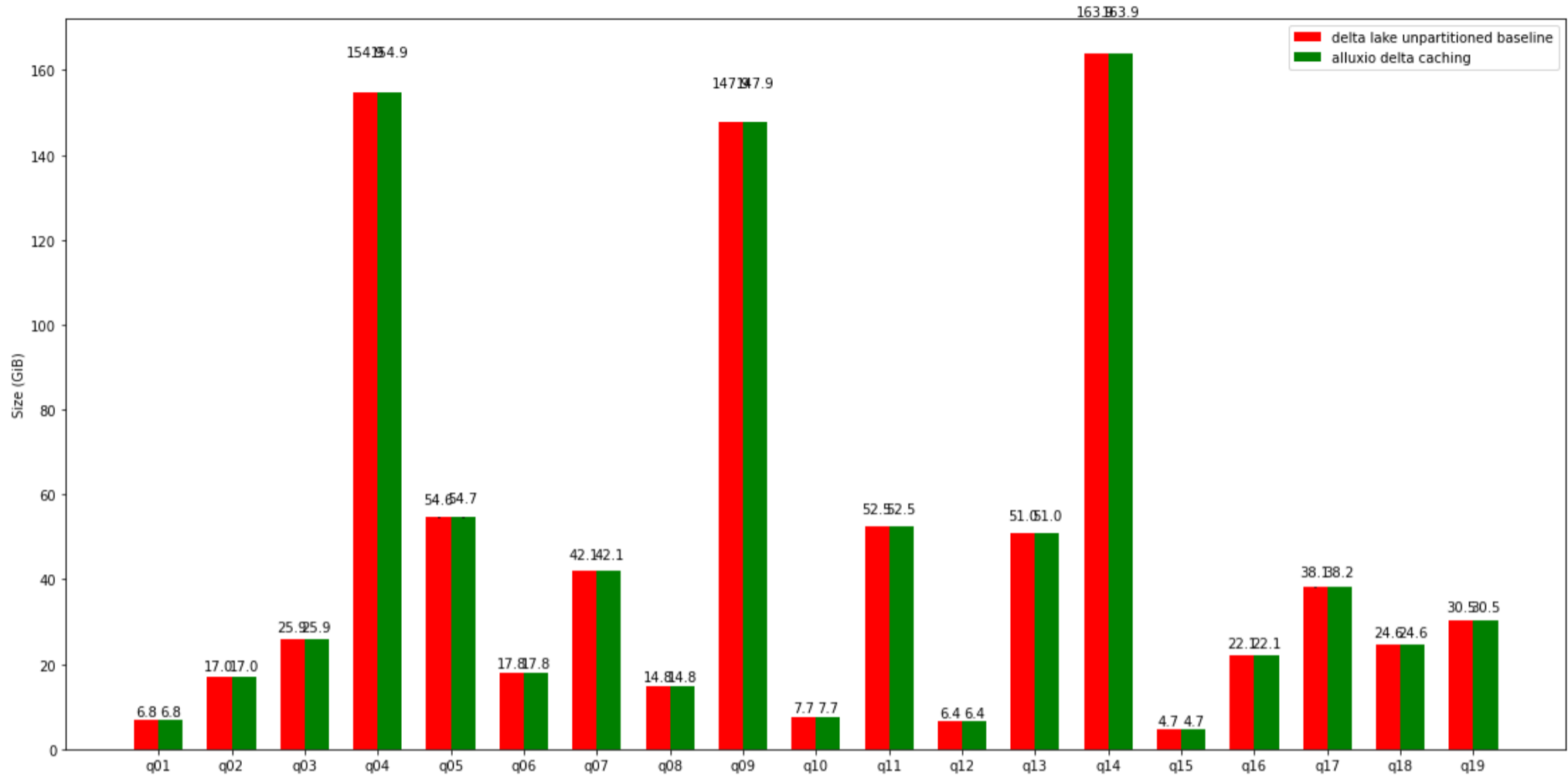
## TPC-H Comparison (physicalInputDataSize)

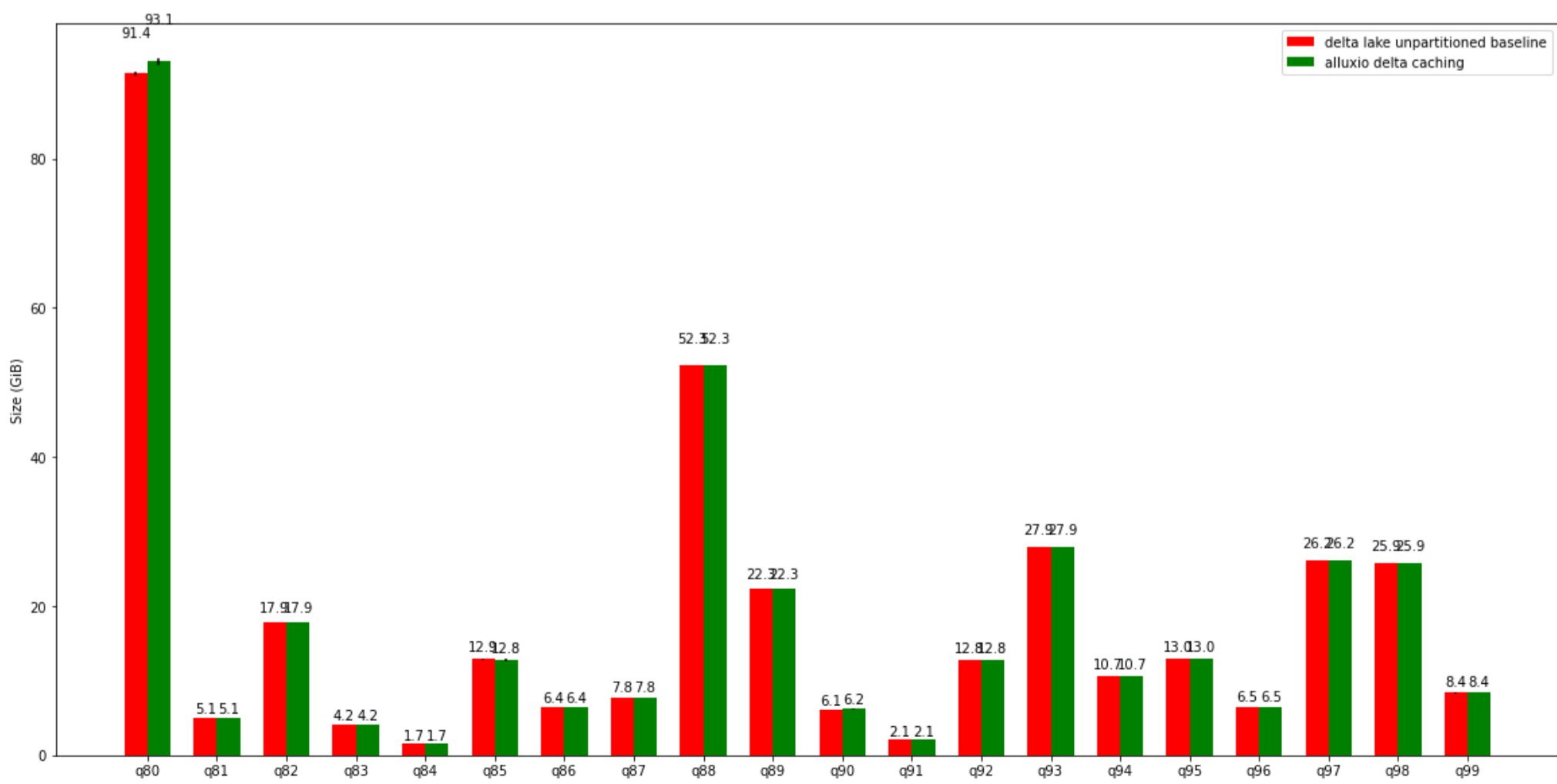
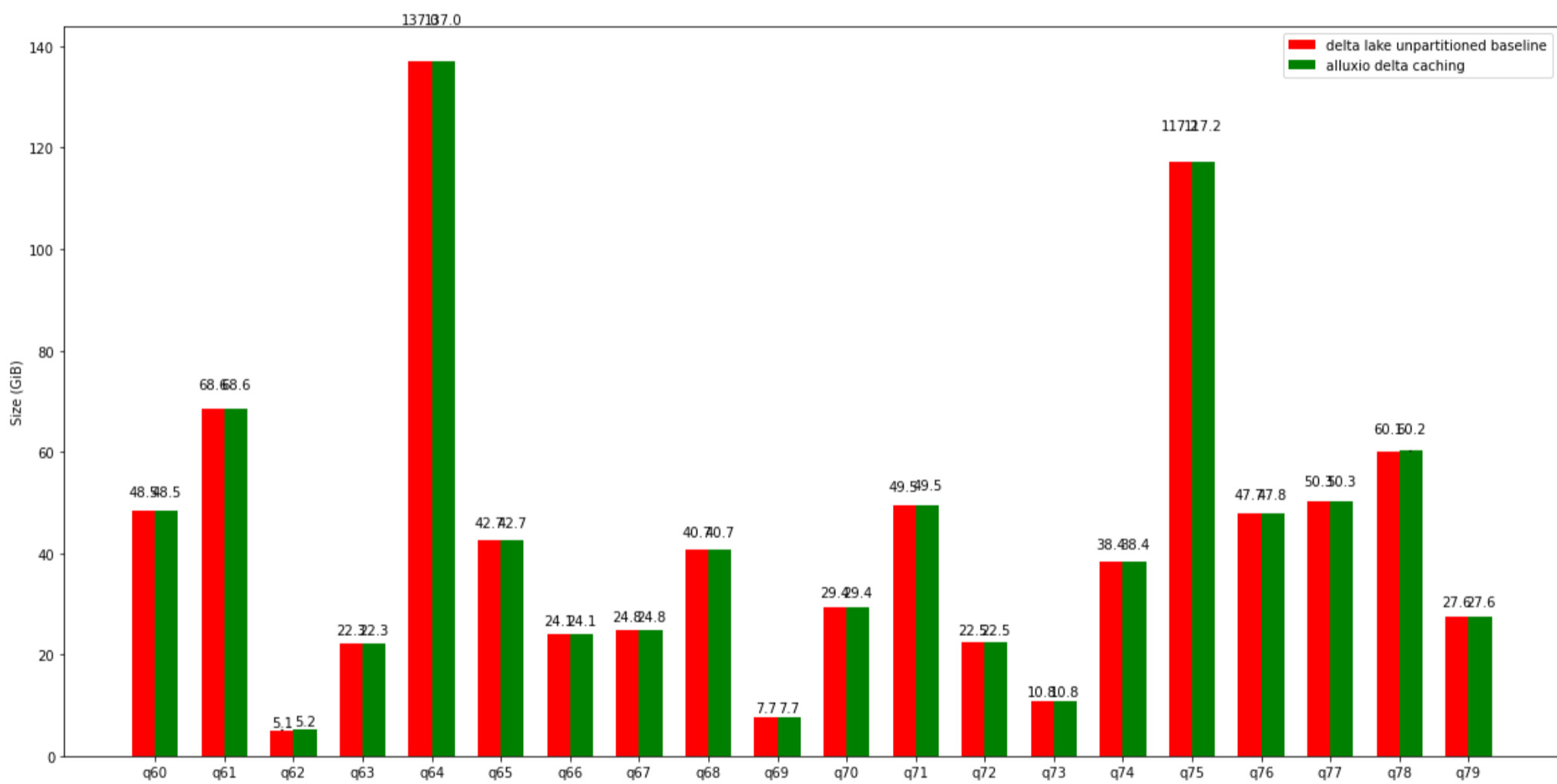
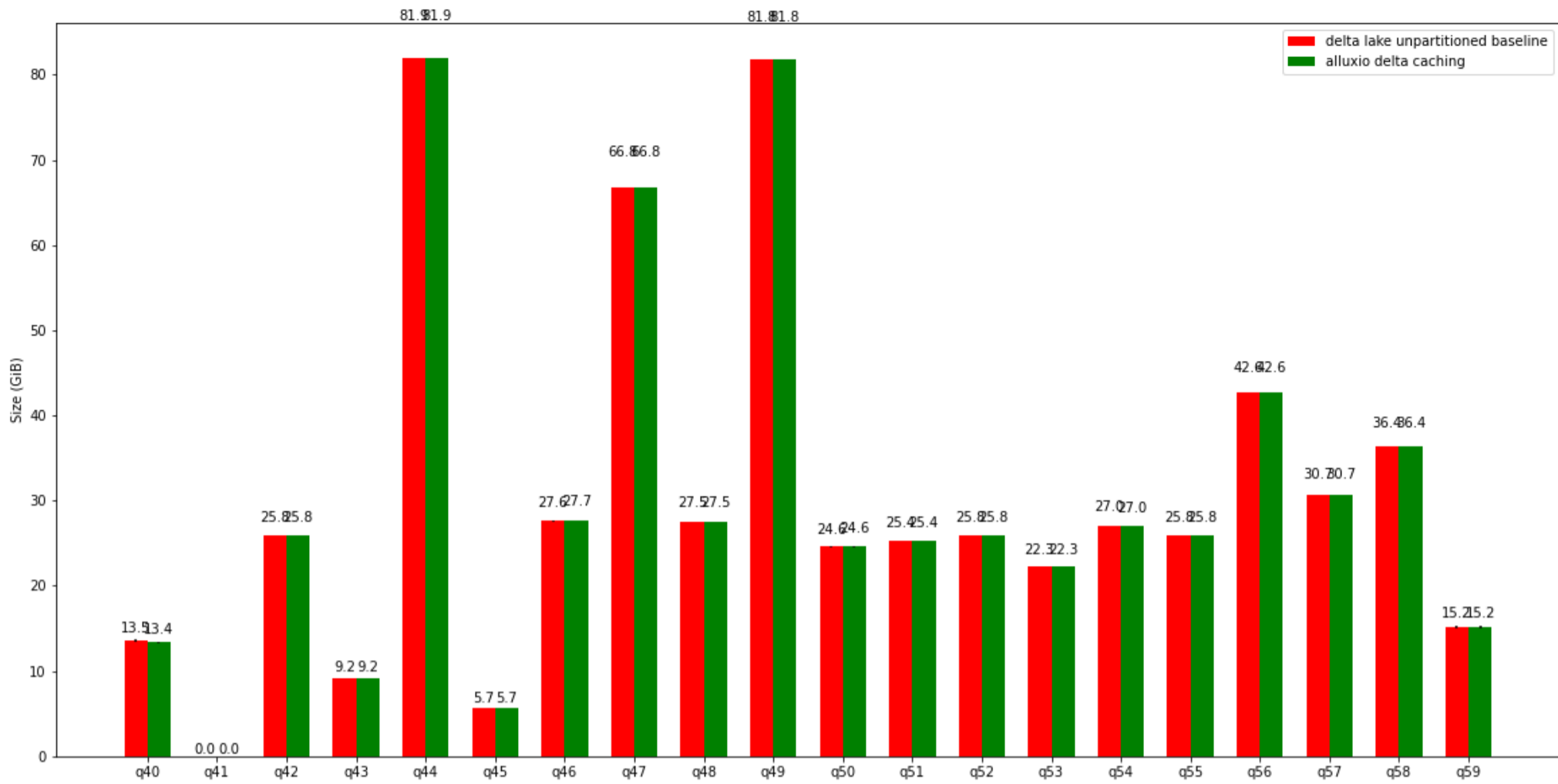


| query               | delta lake unpartitioned baseline mean | delta lake unpartitioned baseline std.dev | alluxio delta caching mean | alluxio delta caching std.dev |
|---------------------|--|---|----------------------------|-------------------------------|
| 0 presto/tpch: q01  | 59.176 GiB                             | 0   | 59.176 GiB                 | 0                             |
| 1 presto/tpch: q02  | 14.810 GiB                             | 0   | 14.810 GiB                 | 0                             |
| 2 presto/tpch: q03  | 78.774 GiB                             | 0   | 78.774 GiB                 | 0                             |
| 3 presto/tpch: q04  | 37.711 GiB                             | 0   | 37.711 GiB                 | 0                             |
| 4 presto/tpch: q05  | 91.375 GiB                             | 0   | 91.375 GiB                 | 0                             |
| 5 presto/tpch: q06  | 61.279 GiB                             | 0   | 61.279 GiB                 | 0                             |
| 6 presto/tpch: q07  | 104.398 GiB                            | 0   | 104.398 GiB                | 0                             |
| 7 presto/tpch: q08  | 126.494 GiB                            | 0   | 126.494 GiB                | 0                             |
| 8 presto/tpch: q09  | 127.995 GiB                            | 0   | 127.995 GiB                | 0                             |
| 9 presto/tpch: q10  | 75.535 GiB                             | 0   | 75.535 GiB                 | 0                             |
| 10 presto/tpch: q11 | 13.990 GiB                             | 0   | 13.990 GiB                 | 0                             |
| 11 presto/tpch: q12 | 56.394 GiB                             | 0   | 56.394 GiB                 | 0                             |
| 12 presto/tpch: q13 | 43.111 GiB                             | 0   | 43.111 GiB                 | 0                             |
| 13 presto/tpch: q14 | 84.653 GiB                             | 0   | 84.653 GiB                 | 0                             |
| 14 presto/tpch: q15 | 159.683 GiB                            | 0   | 159.683 GiB                | 0                             |
| 15 presto/tpch: q16 | 6.304 GiB                              | 0   | 6.304 GiB                  | 0                             |
| 16 presto/tpch: q17 | 107.475 GiB                            | 0   | 107.475 GiB                | 0                             |
| 17 presto/tpch: q18 | 54.014 GiB                             | 0   | 54.014 GiB                 | 0                             |

| query               | delta lake unpartitioned baseline mean | delta lake unpartitioned baseline std.dev | alluxio delta caching mean | alluxio delta caching std.dev |
|---------------------|--|---|----------------------------|-------------------------------|
| 18 presto/tpch: q19 | 79.151 GiB                             | 0   | 79.151 GiB                 | 0                             |
| 19 presto/tpch: q20 | 94.969 GiB                             | 0   | 94.969 GiB                 | 0                             |
| 20 presto/tpch: q21 | 160.137 GiB                            | 0   | 160.137 GiB                | 0                             |
| 21 presto/tpch: q22 | 13.861 GiB                             | 0   | 13.861 GiB                 | 0                             |

## TPC-DS Comparison (physicalInputDataSize)





|    | query             | delta lake unpartitioned baseline mean | delta lake unpartitioned baseline std.dev | alluxio delta caching mean | alluxio delta caching std.dev |
|----|-------------------|--|---|----------------------------|-------------------------------|
| 0  | presto/tpcds: q01 | 6.802 GiB                              | 0   | 6.786 GiB                  | 40.177 MiB                    |
| 1  | presto/tpcds: q02 | 16.999 GiB                             | 0   | 16.999 GiB                 | 0                             |
| 2  | presto/tpcds: q03 | 25.850 GiB                             | 0   | 25.850 GiB                 | 0                             |
| 3  | presto/tpcds: q04 | 154.883 GiB                            | 0   | 154.883 GiB                | 0                             |
| 4  | presto/tpcds: q05 | 54.620 GiB                             | 180.940 MiB                               | 54.666 GiB                 | 138.385 MiB                   |
| 5  | presto/tpcds: q06 | 17.834 GiB                             | 0   | 17.834 GiB                 | 0                             |
| 6  | presto/tpcds: q07 | 42.105 GiB                             | 0   | 42.105 GiB                 | 0                             |
| 7  | presto/tpcds: q08 | 14.806 GiB                             | 0   | 14.806 GiB                 | 402.759 KiB                   |
| 8  | presto/tpcds: q09 | 147.863 GiB                            | 0   | 147.863 GiB                | 0                             |
| 9  | presto/tpcds: q10 | 7.655 GiB                              | 0   | 7.655 GiB                  | 0                             |
| 10 | presto/tpcds: q11 | 52.500 GiB                             | 0   | 52.500 GiB                 | 0                             |
| 11 | presto/tpcds: q12 | 6.436 GiB                              | 0   | 6.436 GiB                  | 0                             |
| 12 | presto/tpcds: q13 | 50.979 GiB                             | 0   | 50.979 GiB                 | 0                             |
| 13 | presto/tpcds: q14 | 163.880 GiB                            | 0   | 163.880 GiB                | 0                             |
| 14 | presto/tpcds: q15 | 4.699 GiB                              | 0   | 4.699 GiB                  | 0                             |
| 15 | presto/tpcds: q16 | 22.110 GiB                             | 0   | 22.110 GiB                 | 0                             |
| 16 | presto/tpcds: q17 | 38.123 GiB                             | 112.884 MiB                               | 38.199 GiB                 | 3.423 MiB                     |
| 17 | presto/tpcds: q18 | 24.627 GiB                             | 0   | 24.627 GiB                 | 0                             |
| 18 | presto/tpcds: q19 | 30.464 GiB                             | 0   | 30.464 GiB                 | 0                             |
| 19 | presto/tpcds: q20 | 7.157 GiB                              | 0   | 7.157 GiB                  | 0                             |
| 20 | presto/tpcds: q21 | 3.764 GiB                              | 0   | 3.764 GiB                  | 0                             |
| 21 | presto/tpcds: q22 | 3.947 GiB                              | 0   | 3.947 GiB                  | 0                             |
| 22 | presto/tpcds: q23 | 88.602 GiB                             | 0   | 88.602 GiB                 | 0                             |
| 23 | presto/tpcds: q24 | 64.934 GiB                             | 0   | 64.934 GiB                 | 0                             |
| 24 | presto/tpcds: q25 | 51.253 GiB                             | 71.101 MiB                                | 51.276 GiB                 | 5.974 MiB                     |
| 25 | presto/tpcds: q26 | 20.965 GiB                             | 0   | 20.965 GiB                 | 0                             |
| 26 | presto/tpcds: q27 | 36.325 GiB                             | 0   | 36.325 GiB                 | 0                             |
| 27 | presto/tpcds: q28 | 112.869 GiB                            | 0   | 112.869 GiB                | 0                             |
| 28 | presto/tpcds: q29 | 38.215 GiB                             | 30.092 MiB                                | 38.212 GiB                 | 5.487 MiB                     |
| 29 | presto/tpcds: q30 | 2.979 GiB                              | 0   | 2.979 GiB                  | 0                             |
| 30 | presto/tpcds: q31 | 56.897 GiB                             | 0   | 56.897 GiB                 | 0                             |
| 31 | presto/tpcds: q32 | 23.367 GiB                             | 0   | 23.367 GiB                 | 0                             |
| 32 | presto/tpcds: q33 | 43.479 GiB                             | 0   | 43.479 GiB                 | 0                             |
| 33 | presto/tpcds: q34 | 10.639 GiB                             | 63.311 MiB                                | 10.768 GiB                 | 26.935 MiB                    |
| 34 | presto/tpcds: q35 | 7.683 GiB                              | 0   | 7.683 GiB                  | 0                             |
| 35 | presto/tpcds: q36 | 38.425 GiB                             | 45.225 MiB                                | 38.469 GiB                 | 24.707 MiB                    |
| 36 | presto/tpcds: q37 | 11.202 GiB                             | 0   | 11.202 GiB                 | 0                             |
| 37 | presto/tpcds: q38 | 7.750 GiB                              | 0   | 7.750 GiB                  | 0                             |
| 38 | presto/tpcds: q39 | 5.552 GiB                              | 0   | 5.552 GiB                  | 3.753 KiB                     |
| 39 | presto/tpcds: q40 | 13.536 GiB                             | 140.097 MiB                               | 13.355 GiB                 | 48.344 MiB                    |
| 40 | presto/tpcds: q41 | 5.541 MiB                              | 0   | 5.541 MiB                  | 0                             |
| 41 | presto/tpcds: q42 | 25.849 GiB                             | 0   | 25.849 GiB                 | 0                             |
| 42 | presto/tpcds: q43 | 9.174 GiB                              | 0   | 9.170 GiB                  | 8.863 MiB                     |
| 43 | presto/tpcds: q44 | 81.944 GiB                             | 0   | 81.944 GiB                 | 0                             |
| 44 | presto/tpcds: q45 | 5.691 GiB                              | 0   | 5.691 GiB                  | 0                             |
| 45 | presto/tpcds: q46 | 27.618 GiB                             | 61.390 MiB                                | 27.715 GiB                 | 9.470 MiB                     |
| 46 | presto/tpcds: q47 | 66.819 GiB                             | 4.278 MiB                                 | 66.823 GiB                 | 0                             |
| 47 | presto/tpcds: q48 | 27.491 GiB                             | 0   | 27.491 GiB                 | 0                             |
| 48 | presto/tpcds: q49 | 81.826 GiB                             | 0   | 81.826 GiB                 | 0                             |
| 49 | presto/tpcds: q50 | 24.597 GiB                             | 40.922 MiB                                | 24.631 GiB                 | 75.059 MiB                    |
| 50 | presto/tpcds: q51 | 25.363 GiB                             | 0   | 25.363 GiB                 | 0                             |
| 51 | presto/tpcds: q52 | 25.849 GiB                             | 0   | 25.849 GiB                 | 0                             |
| 52 | presto/tpcds: q53 | 22.275 GiB                             | 0   | 22.275 GiB                 | 0                             |

|    | query             | delta lake unpartitioned baseline mean | delta lake unpartitioned baseline std.dev | alluxio delta caching mean | alluxio delta caching std.dev |
|----|-------------------|--|---|----------------------------|-------------------------------|
| 53 | presto/tpcds: q54 | 27.035 GiB                             | 5.063 MiB                                 | 27.022 GiB                 | 6.470 MiB                     |
| 54 | presto/tpcds: q55 | 25.849 GiB                             | 0   | 25.849 GiB                 | 0                             |
| 55 | presto/tpcds: q56 | 42.632 GiB                             | 0   | 42.632 GiB                 | 0                             |
| 56 | presto/tpcds: q57 | 30.693 GiB                             | 0   | 30.691 GiB                 | 5.638 MiB                     |
| 57 | presto/tpcds: q58 | 36.396 GiB                             | 0   | 36.396 GiB                 | 0                             |
| 58 | presto/tpcds: q59 | 15.157 GiB                             | 199.770 MiB                               | 15.157 GiB                 | 134.840 MiB                   |
| 59 | presto/tpcds: q60 | 48.471 GiB                             | 0   | 48.471 GiB                 | 0                             |
| 60 | presto/tpcds: q61 | 68.582 GiB                             | 10.637 MiB                                | 68.575 GiB                 | 16.179 MiB                    |
| 61 | presto/tpcds: q62 | 5.107 GiB                              | 90.233 MiB                                | 5.151 GiB                  | 42.043 MiB                    |
| 62 | presto/tpcds: q63 | 22.275 GiB                             | 0   | 22.275 GiB                 | 0                             |
| 63 | presto/tpcds: q64 | 137.040 GiB                            | 3.428 MiB                                 | 137.039 GiB                | 0                             |
| 64 | presto/tpcds: q65 | 42.654 GiB                             | 0   | 42.654 GiB                 | 0                             |
| 65 | presto/tpcds: q66 | 24.122 GiB                             | 37.646 MiB                                | 24.148 GiB                 | 18.793 MiB                    |
| 66 | presto/tpcds: q67 | 24.830 GiB                             | 0   | 24.827 GiB                 | 2.424 MiB                     |
| 67 | presto/tpcds: q68 | 40.734 GiB                             | 0   | 40.725 GiB                 | 21.289 MiB                    |
| 68 | presto/tpcds: q69 | 7.651 GiB                              | 0   | 7.651 GiB                  | 0                             |
| 69 | presto/tpcds: q70 | 29.398 GiB                             | 0   | 29.398 GiB                 | 510.390 KiB                   |
| 70 | presto/tpcds: q71 | 49.467 GiB                             | 46.308 MiB                                | 49.506 GiB                 | 15.491 MiB                    |
| 71 | presto/tpcds: q72 | 22.497 GiB                             | 1.148 MiB                                 | 22.497 GiB                 | 421.722 KiB                   |
| 72 | presto/tpcds: q73 | 10.782 GiB                             | 2.104 MiB                                 | 10.765 GiB                 | 7.355 MiB                     |
| 73 | presto/tpcds: q74 | 38.447 GiB                             | 0   | 38.447 GiB                 | 0                             |
| 74 | presto/tpcds: q75 | 117.233 GiB                            | 0   | 117.233 GiB                | 0                             |
| 75 | presto/tpcds: q76 | 47.738 GiB                             | 1.723 MiB                                 | 47.821 GiB                 | 12.036 MiB                    |
| 76 | presto/tpcds: q77 | 50.261 GiB                             | 2.312 MiB                                 | 50.256 GiB                 | 13.161 MiB                    |
| 77 | presto/tpcds: q78 | 60.091 GiB                             | 75.297 MiB                                | 60.186 GiB                 | 53.645 MiB                    |
| 78 | presto/tpcds: q79 | 27.569 GiB                             | 40.706 MiB                                | 27.560 GiB                 | 24.897 MiB                    |
| 79 | presto/tpcds: q80 | 91.432 GiB                             | 307.918 MiB                               | 93.059 GiB                 | 429.484 MiB                   |
| 80 | presto/tpcds: q81 | 5.082 GiB                              | 0   | 5.082 GiB                  | 0                             |
| 81 | presto/tpcds: q82 | 17.877 GiB                             | 0   | 17.877 GiB                 | 0                             |
| 82 | presto/tpcds: q83 | 4.188 GiB                              | 0   | 4.188 GiB                  | 0                             |
| 83 | presto/tpcds: q84 | 1.653 GiB                              | 0   | 1.653 GiB                  | 0                             |
| 84 | presto/tpcds: q85 | 12.884 GiB                             | 134.639 MiB                               | 12.770 GiB                 | 148.830 MiB                   |
| 85 | presto/tpcds: q86 | 6.415 GiB                              | 0   | 6.415 GiB                  | 0                             |
| 86 | presto/tpcds: q87 | 7.750 GiB                              | 0   | 7.750 GiB                  | 0                             |
| 87 | presto/tpcds: q88 | 52.292 GiB                             | 42.686 MiB                                | 52.313 GiB                 | 31.182 MiB                    |
| 88 | presto/tpcds: q89 | 22.275 GiB                             | 0   | 22.275 GiB                 | 0                             |
| 89 | presto/tpcds: q90 | 6.101 GiB                              | 50.095 MiB                                | 6.201 GiB                  | 29.897 MiB                    |
| 90 | presto/tpcds: q91 | 2.121 GiB                              | 0   | 2.121 GiB                  | 0                             |
| 91 | presto/tpcds: q92 | 12.840 GiB                             | 0   | 12.840 GiB                 | 0                             |
| 92 | presto/tpcds: q93 | 27.897 GiB                             | 0   | 27.897 GiB                 | 0                             |
| 93 | presto/tpcds: q94 | 10.662 GiB                             | 0   | 10.662 GiB                 | 0                             |
| 94 | presto/tpcds: q95 | 12.956 GiB                             | 0   | 12.956 GiB                 | 0                             |
| 95 | presto/tpcds: q96 | 6.546 GiB                              | 1.896 MiB                                 | 6.546 GiB                  | 0                             |
| 96 | presto/tpcds: q97 | 26.174 GiB                             | 0   | 26.174 GiB                 | 0                             |
| 97 | presto/tpcds: q98 | 25.865 GiB                             | 0   | 25.865 GiB                 | 0                             |
| 98 | presto/tpcds: q99 | 8.409 GiB                              | 71.652 MiB                                | 8.413 GiB                  | 22.336 MiB                    |

## TPC-H Comparison (internalNetworkInputDataSize GB)



# TPC-DS Comparison (internalNetworkInputDataSize GB)