Programming Assignment 5

CSCE 313-503

4/3/2018

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This table is the results collected from both PA4 and PA5 with the fixed number of requests(10000), fixed buffer size (5), and increasing number of worker threads. Both PA’s were ran on Ubuntu installed on my personal computer:

|  |  |  |
| --- | --- | --- |
| test.sh results | with n=10k, b=50 |  |
| w | time(s) for PA4 | time(s) for PA5 |
| 5 | 22.35698 | 21.67724 |
| 10 | 11.09 | 10.79319 |
| 15 | 7.3737 | 7.181765 |
| 20 | 5.504534 | 5.368874 |
| 25 | 4.403469 | 4.301861 |
| 30 | 3.790703 | 3.631179 |
| 35 | 3.231393 | 3.10386 |
| 40 | 2.798102 | 2.72734 |
| 45 | 2.499317 | 2.461547 |
| 50 | 2.278127 | 2.208755 |
| 55 | 2.0927 | 2.002561 |
| 60 | 1.944695 | 1.837908 |
| 65 | 1.857902 | 1.768593 |
| 70 | 1.699158 | 1.625 |
| 75 | 1.597411 | 1.549998 |
| 80 | 1.512779 | 1.437514 |
| 85 | 1.43268 | 1.366997 |
| 90 | 1.394121 | 1.302182 |
| 95 | 1.316433 | 1.235248 |
| 100 | 1.283623 | 1.178475 |
| 105 | 1.210263 | 1.165981 |
| 110 | 1.165291 | 1.067454 |
| 115 | 1.123334 | 1.065277 |
| 120 | 1.10245 | 0.972671 |
| 125 | 1.085334 | 0.996905 |
| 130 | 1.067159 | 1.009772 |
| 135 | 1.090014 | 0.928047 |
| 140 | 1.039637 | 0.935939 |
| 145 | 0.947392 | 0.943714 |
| 150 | 0.939459 | 0.936136 |
| 155 | 0.953246 | 0.899152 |
| 160 | 0.905213 | 0.852507 |
| 165 | 0.909927 | 0.846903 |
| 170 | 0.88845 | 0.814475 |
| 175 | 0.843838 | 0.834277 |
| 180 | 0.827398 | 0.789472 |
| 185 | 0.825066 | 0.792414 |
| 190 | 0.797439 | 0.757969 |
| 195 | 0.791124 | 0.752007 |
| 200 | 0.761222 | 0.751695 |
| 205 | 0.81448 | 0.765415 |
| 210 | 0.780194 | 0.754353 |
| 215 | 0.776044 | 0.755735 |
| 220 | 0.77972 | 0.696134 |
| 225 | 0.788753 | 0.718541 |
| 230 | 0.686699 | 0.708419 |
| 235 | 0.69843 | 0.732669 |
| 240 | 0.700885 | 0.70916 |
| 245 | 0.677965 | 0.708801 |
| 250 | 0.677008 | 0.660957 |

The graph comparing results of PA4 and PA5

For the graph above, it’s hard to tell that there is any significant improvement in term of performance between PA4 and PA5. If we look at the raw data table above, we can see that the performance in PA5 is slightly better (even though not much, but noticeable if looking at the table). If we increase the number of worker threads from 1 to 50, the performance is greatly increased. After the number of worker threads reaches 100 or more, there’s not much change in term of performance. In my opinion, the best number of worker threads to have in this program should be around 50. The program can run much faster at this amount of worker threads and also doesn’t consume too much resource from the computer.