reading for 100K.gro

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| number of  threads | time of reading  from HD  (Option 1) | time of  reading  from HD  (Option 2) | time of reading  from HD +  broadcasting  data  (Option 3) | time of  calculation  (should be  independent  of the  Option) |
| 1-parallel | 0.185423 | 1.092391 | 0.287347 | 52.136590 |
| 4 | 0.198916 | 1.567179 | 0.274197 | 13.227406 |
| 8 | 0.209590 | 1.718403 | 0.282017 | 7.117575 |
| 24(1 node) | 0.252154 | 2.337281 | 0.322811 | 3.039086 |

summary:

we see that option 2 takes the longest period as every thread enters and read the file and also wait for the other threads thats take much time

option 1 is the fastest but it can cause problems while reading big amount of data

option 3 is the the most preferable way as we discussed in the lecture it is secure when using large amount of data

100K.gro

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| number of  threads | total maximum  wall time  of a thread | theor. time (T1/nproc) | speed up | Overhead |
| 1-series | 51.326598 | 51.326598 | 1.00 | 0.0 |
| 1-parallel | 52.423937 | 51.326598 | 0.97906 | 104.1674563 |
| 2 | 26.638355 | 25.663299 | 1.98677 | 105.8619341 |
| 4 | 13.500753 | 12.8316495 | 3.80175 | 107.3051113 |
| 8 | 7.396399 | 6.41582475 | 6.939 | 117.5743928 |
| 24(1node) | 3.350446 | 2.13860825 | 15.31 | 159.7777462 |
| 24(2nodes) | 2.325698 | 2.13860825 | 22.07 | 110.9090505 |
| 48(2nodes) | 8.425025 | 2.13860825 | 6.09 | 803.5536199 |
| 72(3nodes) | 2.015443 | 0.712 | 25.447 | 288.3403643 |

The number of total max time decreases while increasing number of threads except what happens in 48 threads and 2 nodes thats maybe because using the 2 different systems