

## 高性能应用计算实践 2024 秋 王一鸣 2023311510

Linux DESKTOP-PMS5CUE 5.15.153.1-microsoft-standard-WSL2 #1 SMP Fri Mar 29 23:14:13 UTC 2024 x86\_64 x86\_64 x86\_64 GNU/Linux

Ubuntu 22.04.3 LTS

gcc version 11.4.0 (Ubuntu 11.4.0-1ubuntu1~22.04)

Intel(R) Core(TM) i7-10750H CPU @ 2.60GHz

Memory for Linux : 8GB

### Lab7

```
admin18@DESKTOP-PMS5CUE:~/hpc-test/lab7/hpc_practice/lab7-mpi$ mpicc gemm.c -o ge
admin18@DESKTOP-PMS5CUE:~/hpc-test/lab7/hpc_practice/lab7-mpi$ mpirun -n 2 ./gemm
diff=0.000000e+00
Matrix A:
0.019001 0.085486 -0.331432 0.024406 -0.646145 -0.746025 0.570686 -0.063912
-0.368122 0.335957 -0.835807 0.173021 -0.776262 -0.991820 -0.115530 -0.606005
0.403405 -0.657716 -0.459371 0.477517 0.705362 -0.998994 -0.424192 -0.105646
-0.265507 0.661558 -0.851475 0.743378 0.622344 -0.614096 0.706706 0.456880
0.752625 0.723811 0.352451 0.155935 0.909775 0.173560 0.051944 0.932186
-0.258011 0.538442 0.620317 0.929407 0.808566 -0.250082 0.456833 0.513682
0.050505 -0.894841 -0.071578 -0.332941 -0.722170 -0.946428 -0.467371 -0.067886
-0.144331 0.933459 0.138370 -0.214344 0.372375 -0.070469 0.566968 0.737933
Matrix B:
-0.731922 0.816565 -0.040292 0.885252 0.536170 -0.243535 -0.557882 -0.316169
0.692105 0.548829 -0.937743 -0.223951 0.503883 -0.162567 0.050869 -0.086376
-0.963825 -0.267871 0.216860 0.861024 -0.818272 -0.723104 -0.010950 0.176243
0.881710 0.888576 0.584522 0.822768 0.707933 -0.238307 0.765044 0.170300
0.340164 0.769643 -0.635006 -0.324563 -0.650711 -0.400440 0.547660 -0.860146
0.599943 -0.109658 0.050243 0.065625 -0.960459 -0.957976 -0.881995 0.637863
-0.713566 -0.673943 0.797518 0.404155 -0.161893 -0.522395 -0.760397 -0.193679
0.220921 -0.150365 -0.382420 0.942021 -0.407260 -0.925781 0.095603 0.170966
Result Matrix C:
-0.702490 -0.617593 0.713859 0.063581 1.412361 0.949780 -0.119886 -0.109187
0.549547 -0.058283 0.202383 -1.409116 2.501541 2.480544 0.843544 -0.076647
0.033263 1.469986 -0.015986 -0.063686 1.211029 1.221015 1.691703 -1.250213
1.568243 1.036256 -0.396960 -0.030991 1.298360 -0.057406 1.148578 -0.982446
0.330351 1.561958 -1.425547 1.551175 -0.556509 -2.013690 0.127171 -0.734323
0.695605 1.009126 -0.174863 1.339494 -0.285766 -1.493150 1.240700 -0.552989
-1.375815 -0.853385 0.691218 -0.171014 0.881295 1.767113 0.460513 0.088403
0.272183 -0.031813 -1.034846 0.404774 -0.438942 -1.226528 -0.131978 -0.396006
```