高性能实验
2023311I04 I 罗艺洋

1.

Ubuntu 版本 22.04.3

Linux 5.15.153.1

CPU 信息：

```
Architecture:            x86_64
  CPU op-mode(s):        32-bit, 64-bit
  Address sizes:         39 bits physical, 48 bits virtual
  Byte Order:            Little Endian
CPU(s):                  20
  On-line CPU(s) list:   0-19
Vendor ID:               GenuineIntel
  Model name:            13th Gen Intel(R) Core(TM) i7-13700H
    CPU family:          6
    Model:               186
    Thread(s) per core:  2
    Core(s) per socket:  10
    Socket(s):           1
    Stepping:            2
    BogoMIPS:            5836.79
    Flags:               fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov pat pse36 clflush mmx fxsr sse ss
                         e2 ss ht syscall nx pdpe1gb rdtscp lm constant_tsc rep_good nopl xtopology tsc_reliable nonstop
                         _tsc cpuid pni pclmulqdq vmx ssse3 fma cx16 sse4_1 sse4_2 x2apic movbe popcnt tsc_deadline_time
                         r aes xsave avx f16c rdrand hypervisor lahf_lm abm 3dnowprefetch ssbd ibrs ibpb stibp ibrs_enha
                         nced tpr_shadow vnmi ept vpid ept_ad fsgsbase tsc_adjust bmi1 avx2 smep bmi2 erms invpcid rdsee
                         d adx smap clflushopt clwb sha_ni xsaveopt xsavec xgetbv1 xsaves avx_vnni umip waitpkg gfni vae
                         s vpclmulqdq rdpid movdiri movdir64b fsrm md_clear serialize flush_l1d arch_capabilities
Virtualization features:
  Virtualization:        VT-x
  Hypervisor vendor:     Microsoft
```

内存：

```
             total        used        free      shared  buff/cache   available
Mem:       7942524      921792     6640576        3248      380156     6782624
Swap:      2097152        7216     2089936
```

2. test_cblas_dgemm.c 修改为行主序后结果有什么不同？

数据按行存储，适合 C/C++ 的默认存储方式。

3.

	256	1024	4096	8129	
cblas_d gemm duratio	0.0029	0.01241	0.84922	5.54155	

n	62	2170	1	0	
naive_d gemm duratio n	0.0401 70	2.55133 9	无	无	
cblas_d gemm gflops	22.656 605	346.033 459	323.682 418	396.824 581	
naive_d gemm gflops	1.6706 21	1.68341 7	无	无	