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# renoir bench

AMD Ryzen 5 4500U testing with a LENOVO LNVNB161216 (EECN20WW BIOS) and AMD Renoir 512MB on Ubuntu 20.10 via the Phoronix Test Suite.

**Automated Executive Summary**

*1 had the most wins, coming in first place for 40% of the tests.*

*Based on the geometric mean of all complete results, the fastest (1) was 1.003x the speed of the slowest (4). 2 was 0.999x the speed of 1, 3 was 1x the speed of 2, 4 was 0.998x the speed of 3.*

*The results with the greatest spread from best to worst included:*

*Redis (Test: LPOP) at 1.118x*
*FinanceBench (Benchmark: Bonds OpenMP) at 1.047x*
*lzbench (Test: Zstd 8 - Process: Compression) at 1.047x*
*NAS Parallel Benchmarks (Test / Class: EP.D) at 1.045x*
*lzbench (Test: Crush 0 - Process: Compression) at 1.044x*
*lzbench (Test: Brotli 2 - Process: Compression) at 1.038x*
*FinanceBench (Benchmark: Repo OpenMP) at 1.038x*
*NAS Parallel Benchmarks (Test / Class: EP.C) at 1.035x*
*lzbench (Test: XZ 0 - Process: Compression) at 1.027x*

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*NAS Parallel Benchmarks (Test / Class: LU.C) at 1.025x.*

## Test Systems:

### 1

### 2

### 3

### 4

Processor: AMD Ryzen 5 4500U @ 2.38GHz (6 Cores), Motherboard: LENOVO LNVNB161216 (EECN20WW BIOS), Chipset: AMD Renoir Root Complex, Memory: 16GB, Disk: 256GB SK hynix HFM256GDHTNI-87A0B, Graphics: AMD Renoir 512MB (1500/400MHz), Audio: AMD Device 1637, Network: Realtek RTL8822CE 802.11ac PCIe

OS: Ubuntu 20.10, Kernel: 5.11.0-051100rc4daily20210122-generic (x86_64) 20210121, Desktop: GNOME Shell 3.38.1, Display Server: X Server 1.20.9, Display Driver: amdgpu 19.1.0, OpenGL: 4.6 Mesa 21.0.0-devel (git-448e603 2020-12-21 groovy-oibaf-ppa) (LLVM 11.0.0), Vulkan: 1.2.145, Compiler: GCC 10.2.0, File-System: ext4, Screen Resolution: 1920x1080

Kernel Notes: Transparent Huge Pages: madvise
Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-gnu-unique-object --enable-languages=c,ada,c++,go,brig,d,fortran,objc,obj-c++,m2 --enable-libphobos-checking=release --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none=/build/gcc-10-JvwpWM/gcc-10-10.2.0/debian/tmp-nvptx/usr,amdgcn-amdhsa=/build/gcc-10-JvwpWM/gcc-10-10.2.0/debian/tmp-gcn/usr,hsa --enable-plugin --enable-shared --enable-threads=posix --host=x86_64-linux-gnu --program-prefix=x86_64-linux-gnu- --target=x86_64-linux-gnu --with-abi=m64 --with-arch-32=i686 --with-default-libstdcxx-abi=new --with-gcc-major-version-only --with-multilib-list=m32,m64,mx32 --with-target-system-zlib=auto --with-tune=generic --without-cuda-driver -v
Processor Notes: Scaling Governor: acpi-cpufreq schedutil (Boost: Enabled) - CPU Microcode: 0x8600102
Python Notes: Python 3.8.6
Security Notes: itlb_multihit: Not affected + l1tf: Not affected + mds: Not affected + meltdown: Not affected + spec_store_bypass: Mitigation of SSB disabled via prctl and seccomp + spectre_v1: Mitigation of usercopy/swapgs barriers and __user pointer sanitization + spectre_v2: Mitigation of Full AMD retpoline IBPB: conditional IBRS_FW STIBP: disabled RSB filling + srbds: Not affected + tsx_async_abort: Not affected

| | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| **NAS Parallel Benchmarks - EP.C (Mop/s)** | 506.62 | 499.03 | **509.61** | **492.18** |
| **Normalized** | 99.41% | 97.92% | 100% | 96.58% |
| **Standard Deviation** | 0.9% | 1.4% | 1.8% | 1.5% |
| **NAS Parallel Benchmarks - EP.D (Mop/s)** | **450.74** | 469.73 | 466.03 | **470.89** |
| **Normalized** | 95.72% | 99.75% | 98.97% | 100% |
| **Standard Deviation** | 3.4% | 2.7% | 2.9% | 1.4% |

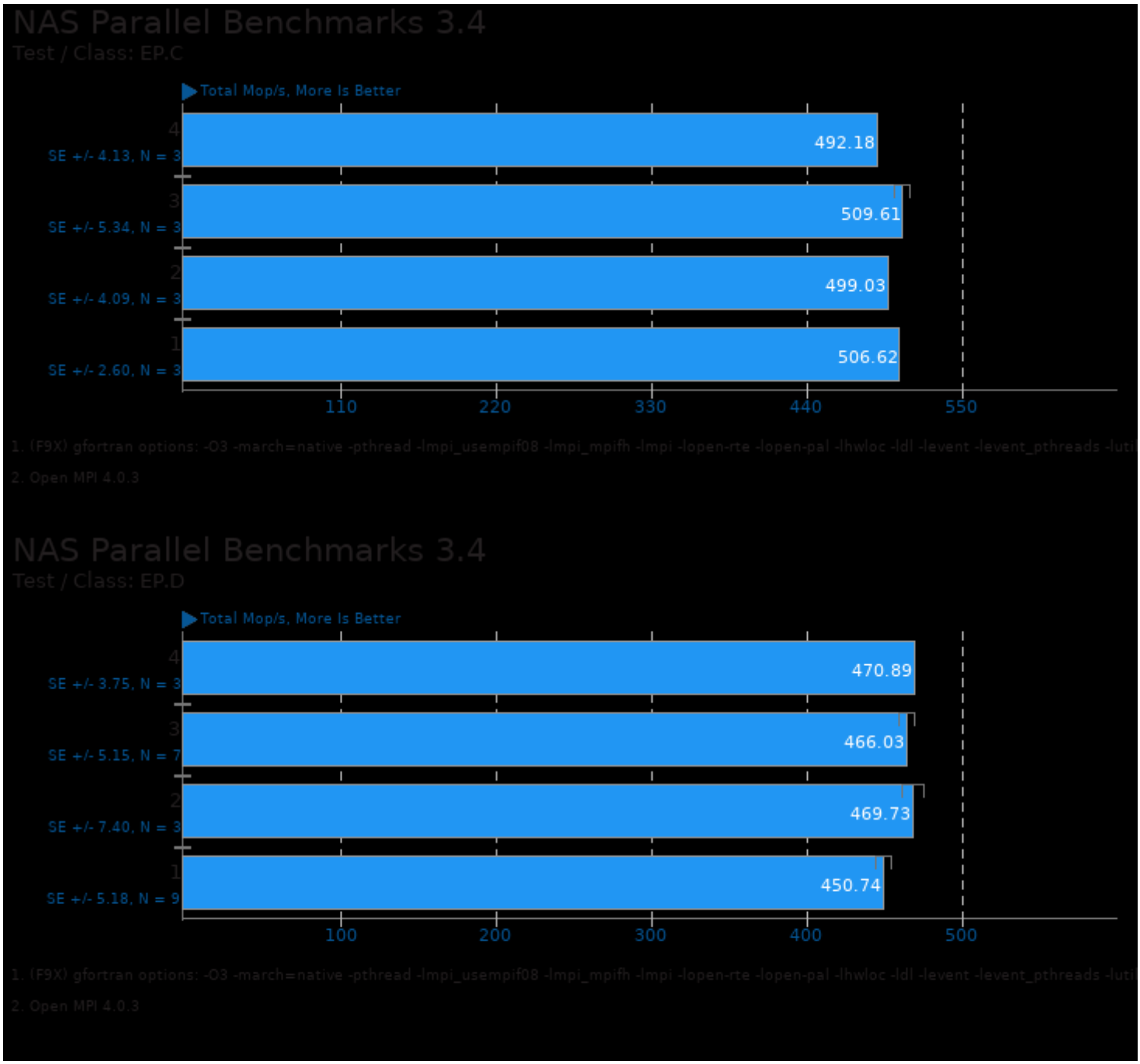
# renoir bench

| | | | | |
|---|---|---|---|---|
| **NAS Parallel Benchmarks - LU.C (Mop/s)** | 16489 | 16909 | 16870 | 16794 |
| Normalized | 97.52% | 100% | 99.77% | 99.32% |
| Standard Deviation | 1.2% | 0.4% | 0.4% | 0.5% |
| **lzbench - XZ 0 - Compression (MB/s)** | 38 | 37 | 38 | 38 |
| Normalized | 100% | 97.37% | 100% | 100% |
| **lzbench - XZ 0 - Decompression** | 119 | 119 | 119 | 119 |
| **lzbench - Zstd 1 - Compression (MB/s)** | 515 | 515 | 517 | 519 |
| Normalized | 99.23% | 99.23% | 99.61% | 100% |
| Standard Deviation | 0.1% | 0.4% | | 0.4% |
| **lzbench - Zstd 1 - Decompression** | 1578 | 1576 | 1574 | 1576 |
| Normalized | 100% | 99.87% | 99.75% | 99.87% |
| Standard Deviation | 0.1% | | 0.3% | 0.1% |
| **lzbench - Zstd 8 - Compression (MB/s)** | 67 | 65 | 64 | 67 |
| Normalized | 100% | 97.01% | 95.52% | 100% |
| Standard Deviation | 1.7% | 5.9% | 5.4% | 3% |
| **lzbench - Zstd 8 - Decompression** | 1736 | 1723 | 1719 | 1714 |
| Normalized | 100% | 99.25% | 99.02% | 98.73% |
| Standard Deviation | 0.9% | 1.2% | 1.8% | 0.8% |
| **lzbench - Crush 0 - Compression** | 69 | 71 | 71 | 68 |
| Normalized | 97.18% | 100% | 100% | 95.77% |
| Standard Deviation | 3.2% | | | |
| **lzbench - Crush 0 - Decompression (MB/s)** | 474 | 476 | 473 | 474 |
| Normalized | 99.58% | 100% | 99.37% | 99.58% |
| Standard Deviation | 0.5% | 0.9% | | 0.8% |
| **lzbench - Brotli 0 - Compression** | 490 | 489 | 484 | 489 |
| Normalized | 100% | 99.8% | 98.78% | 99.8% |
| Standard Deviation | 0.5% | 0.3% | 0.4% | 0.5% |
| **lzbench - Brotli 0 - Decompression (MB/s)** | 559 | 566 | 557 | 558 |
| Normalized | 98.76% | 100% | 98.41% | 98.59% |
| Standard Deviation | 0.5% | 0.6% | 0.2% | 1% |
| **lzbench - Brotli 2 - Compression** | 189 | 185 | 188 | 182 |
| Normalized | 100% | 97.88% | 99.47% | 96.3% |
| Standard Deviation | 2.1% | 2.7% | 1.1% | 2.9% |
| **lzbench - Brotli 2 - Decompression (MB/s)** | 638 | 637 | 640 | 637 |
| Normalized | 99.69% | 99.53% | 100% | 99.53% |
| Standard Deviation | 0.6% | 0.8% | 0.6% | 0.2% |
| **lzbench - Libdeflate 1 - Compression (MB/s)** | 247 | 247 | 247 | 248 |
| Normalized | 99.6% | 99.6% | 99.6% | 100% |
| **Cython Benchmark - N-Queens (sec)** | 24.658 | 25.283 | 24.973 | 24.896 |
| Normalized | 100% | 97.53% | 98.74% | 99.04% |
| Standard Deviation | 0.8% | 0.3% | 1.4% | 0.2% |
| **Gcrypt Library (sec)** | 217.110 | 217.178 | 217.465 | 217.874 |
| Normalized | 100% | 99.97% | 99.84% | 99.65% |
| Standard Deviation | 0.1% | 0.4% | 0.3% | 0.4% |
| **FinanceBench - Repo OpenMP (ms)** | 57355 | 55272 | 55447 | 55654 |
| Normalized | 96.37% | 100% | 99.69% | 99.31% |
| Standard Deviation | 0.8% | 0.3% | 0.4% | 1.2% |
| **FinanceBench - Bonds OpenMP (ms)** | 82190 | 78499 | 79300 | 78687 |
| Normalized | 95.51% | 100% | 98.99% | 99.76% |

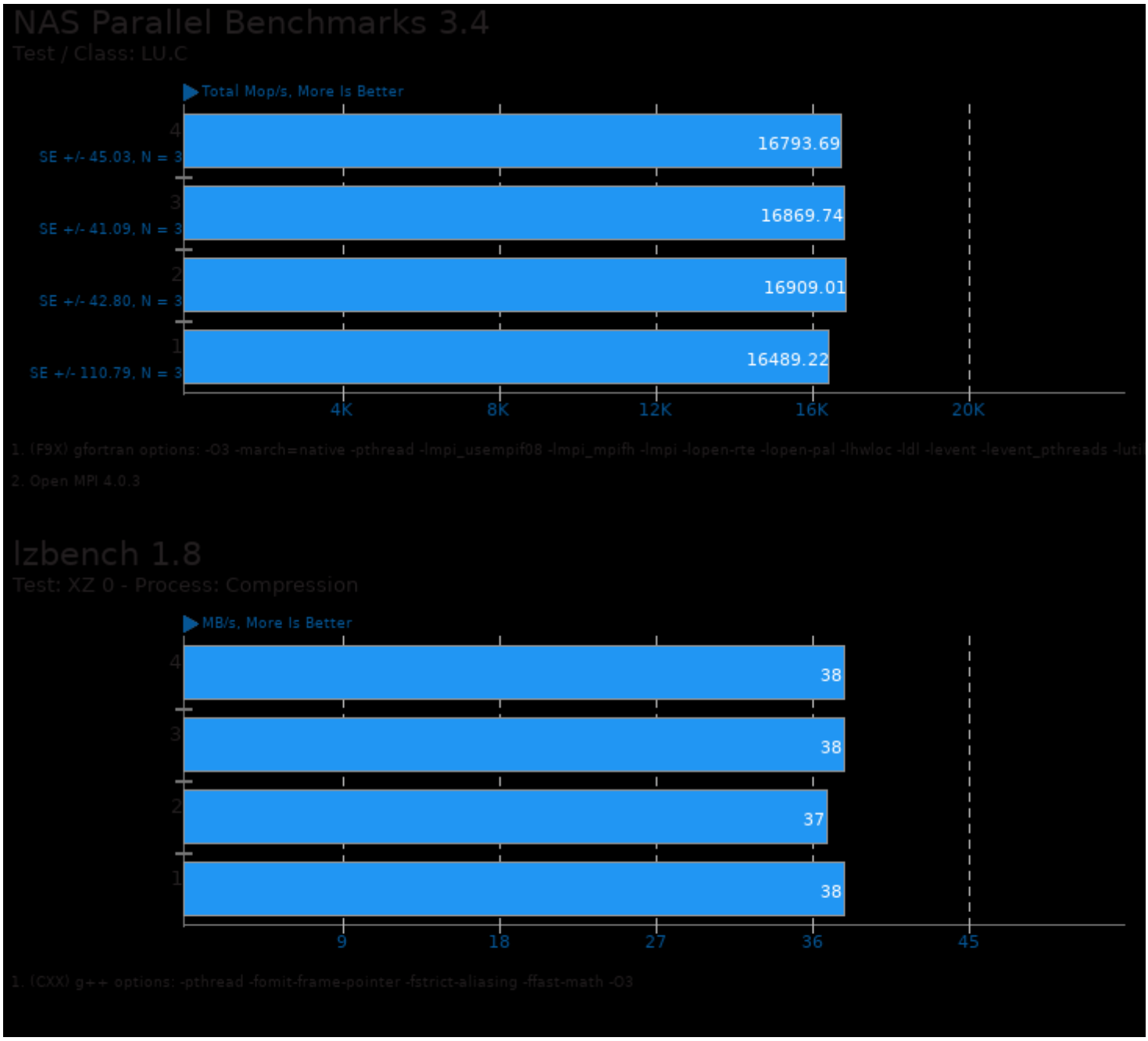
# renoir bench

| | | | | |
|---|---|---|---|---|
| Standard Deviation | 1.9% | 0.3% | 1.2% | 1.1% |
| **ASKAP - tConvolve MT - Gridding (Million Grid Points/sec)** | 718.217 | **718.445** | **712.991** | 716.173 |
| Normalized | 99.97% | 100% | 99.24% | 99.68% |
| Standard Deviation | 0.4% | 0.7% | 0.6% | 0.3% |
| **ASKAP - tConvolve MT - Degridding (Million Grid Points/sec)** | **1373** | **1357** | 1360 | 1357 |
| Normalized | 100% | 98.81% | 99.06% | 98.86% |
| Standard Deviation | 0.8% | 0.4% | 0.7% | 0.1% |
| **ASKAP - tConvolve MPI - Degridding (Mpix/sec)** | **1303** | **1333** | 1324 | 1318 |
| Normalized | 97.79% | 100% | 99.33% | 98.89% |
| Standard Deviation | 0.7% | 0.4% | 0.4% | 0.8% |
| **ASKAP - tConvolve MPI - Gridding (Mpix/sec)** | **1032** | **1038** | 1034 | 1036 |
| Normalized | 99.48% | 100% | 99.65% | 99.82% |
| Standard Deviation | 0.6% | 0.3% | 0.6% | 0% |
| **ASKAP - tConvolve OpenMP - Gridding (Million Grid Points/sec)** | **726.157** | 728.811 | 727.479 | **729.512** |
| Normalized | 99.54% | 99.9% | 99.72% | 100% |
| Standard Deviation | 0.3% | 0.4% | 0.3% | 1% |
| **ASKAP - tConvolve OpenMP - Degridding (Million Grid Points/sec)** | **1452** | **1458** | **1458** | **1452** |
| Normalized | 99.64% | 100% | 100% | 99.64% |
| Standard Deviation | 0.3% | 0.3% | 0.3% | 0.3% |
| **ASKAP - H.C.O (Iterations/sec)** | 126.853 | **127.503** | 127.073 | **126.425** |
| Normalized | 99.49% | 100% | 99.66% | 99.15% |
| Standard Deviation | 0.6% | 0.8% | 1% | 0.6% |
| **Redis - LPOP (Reqs/sec)** | **363357** | **324920** | 325166 | 325086 |
| Normalized | 100% | 89.42% | 89.49% | 89.47% |
| Standard Deviation | 0.5% | 0.6% | 0.6% | 0.4% |
| **Redis - SADD (Reqs/sec)** | **346749** | **348092** | 346809 | 346917 |
| Normalized | 99.61% | 100% | 99.63% | 99.66% |
| Standard Deviation | 0.8% | 1.4% | 0.6% | 0.8% |
| **Redis - LPUSH (Reqs/sec)** | **323428** | 322889 | 322228 | **321847** |
| Normalized | 100% | 99.83% | 99.63% | 99.51% |
| Standard Deviation | 0.2% | 0.1% | 0.3% | 0.6% |
| **Redis - GET (Reqs/sec)** | **362894** | 359101 | 357983 | **356853** |
| Normalized | 100% | 98.95% | 98.65% | 98.34% |
| Standard Deviation | 0.2% | 0.5% | 0.4% | 0.6% |
| **Redis - SET (Reqs/sec)** | 337931 | **337153** | **339461** | 337964 |
| Normalized | 99.55% | 99.32% | 100% | 99.56% |
| Standard Deviation | 0.4% | 0.8% | 0.4% | 0.7% |

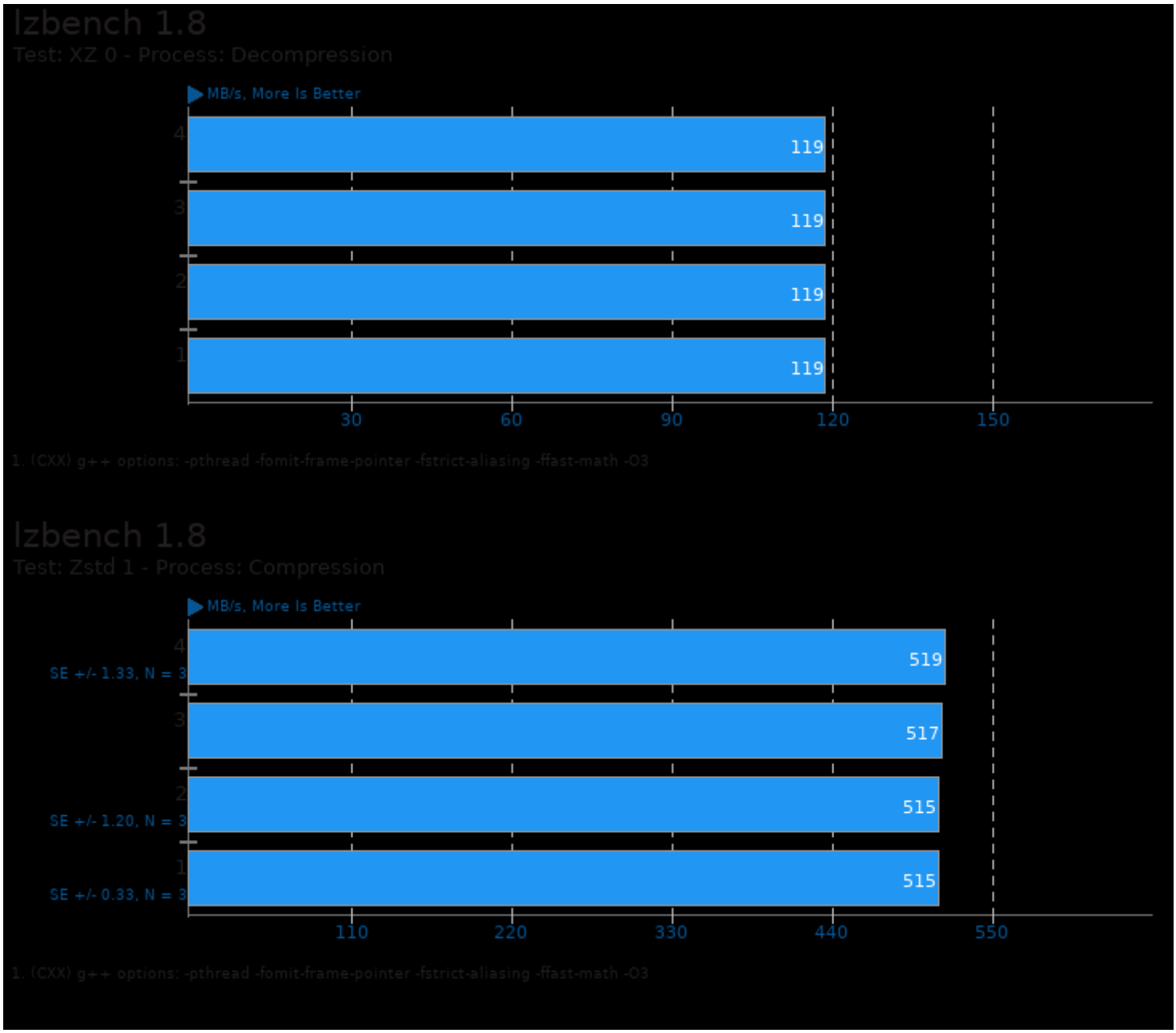
# renoir bench



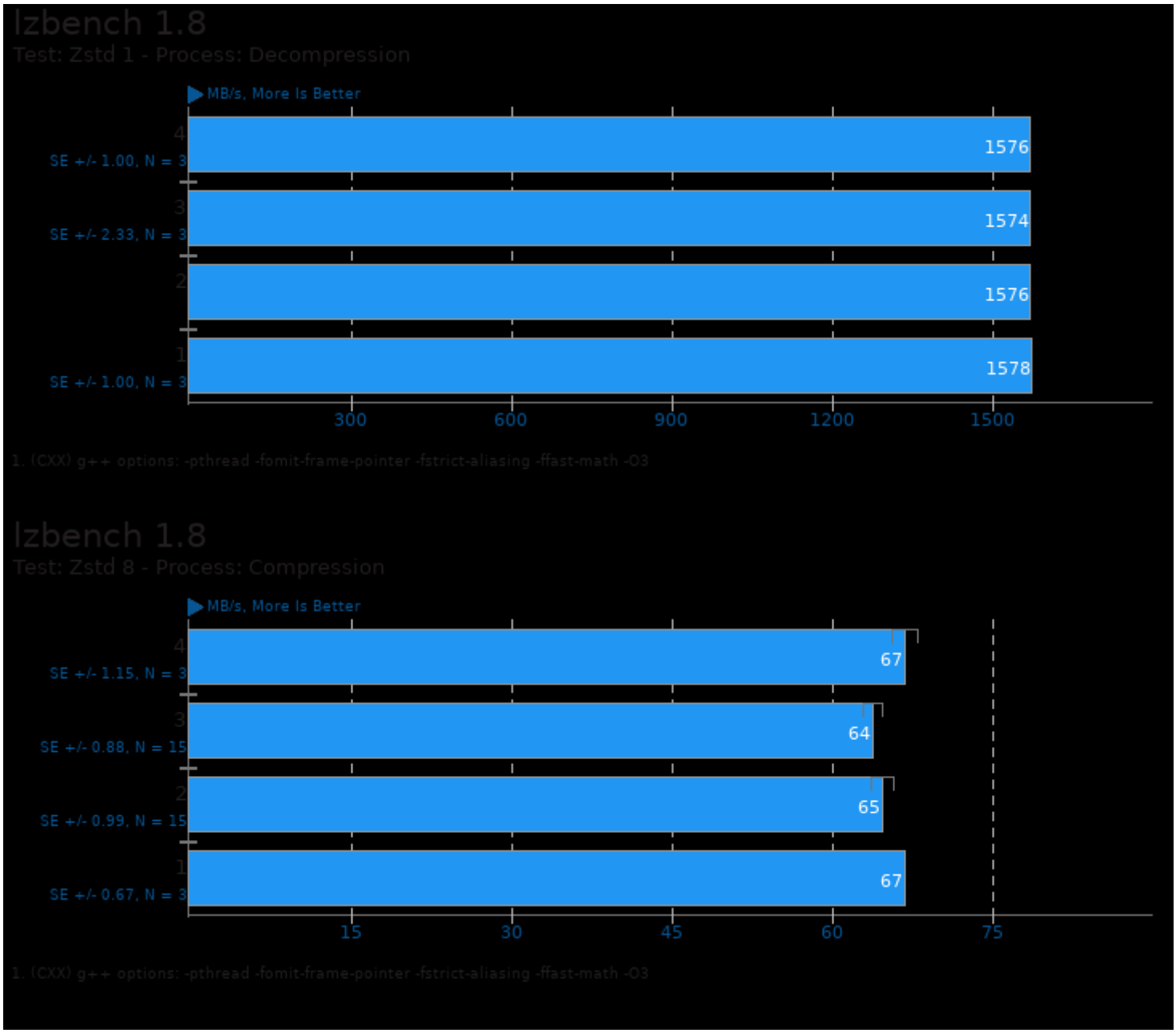
# renoir bench



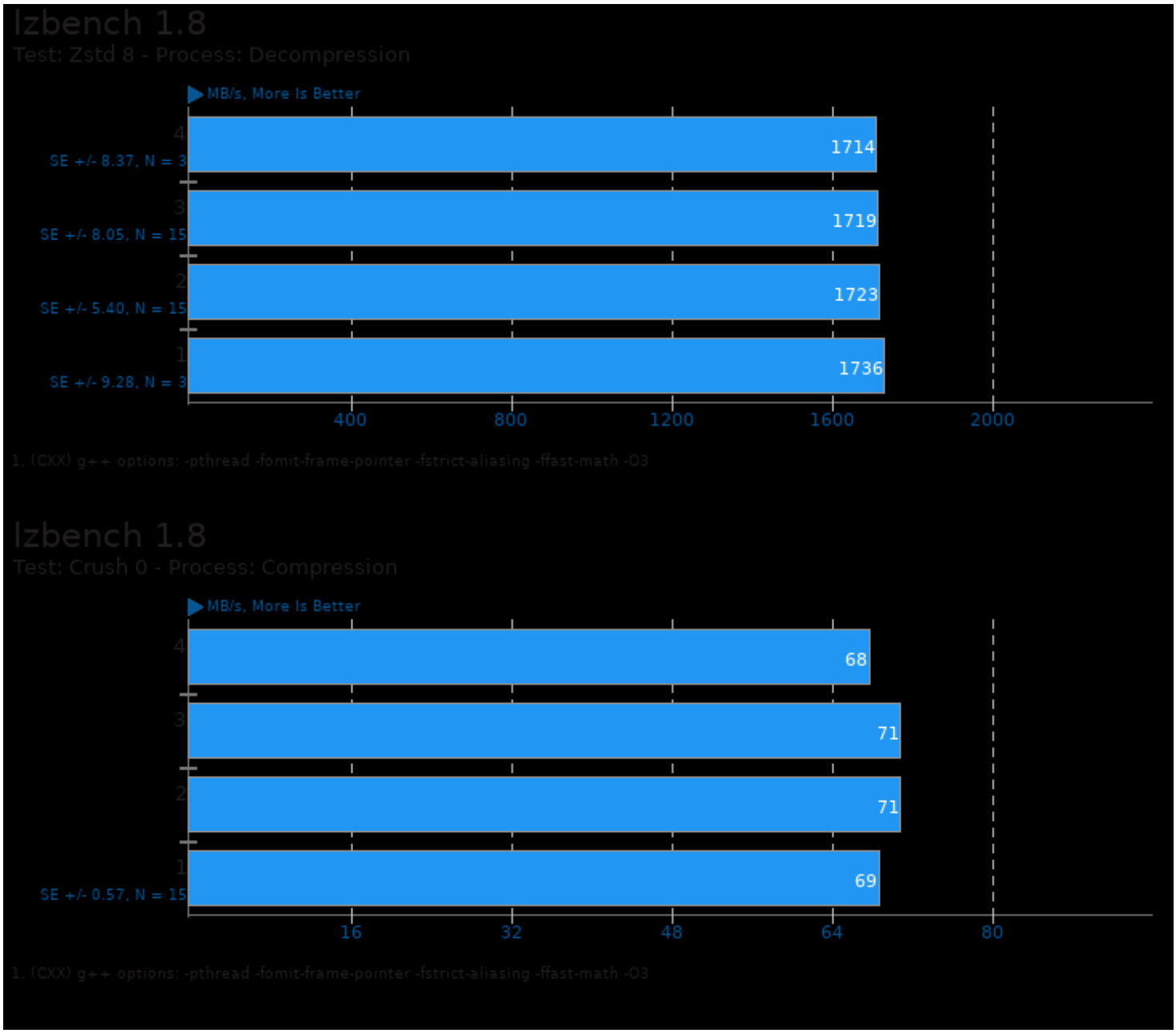
# renoir bench



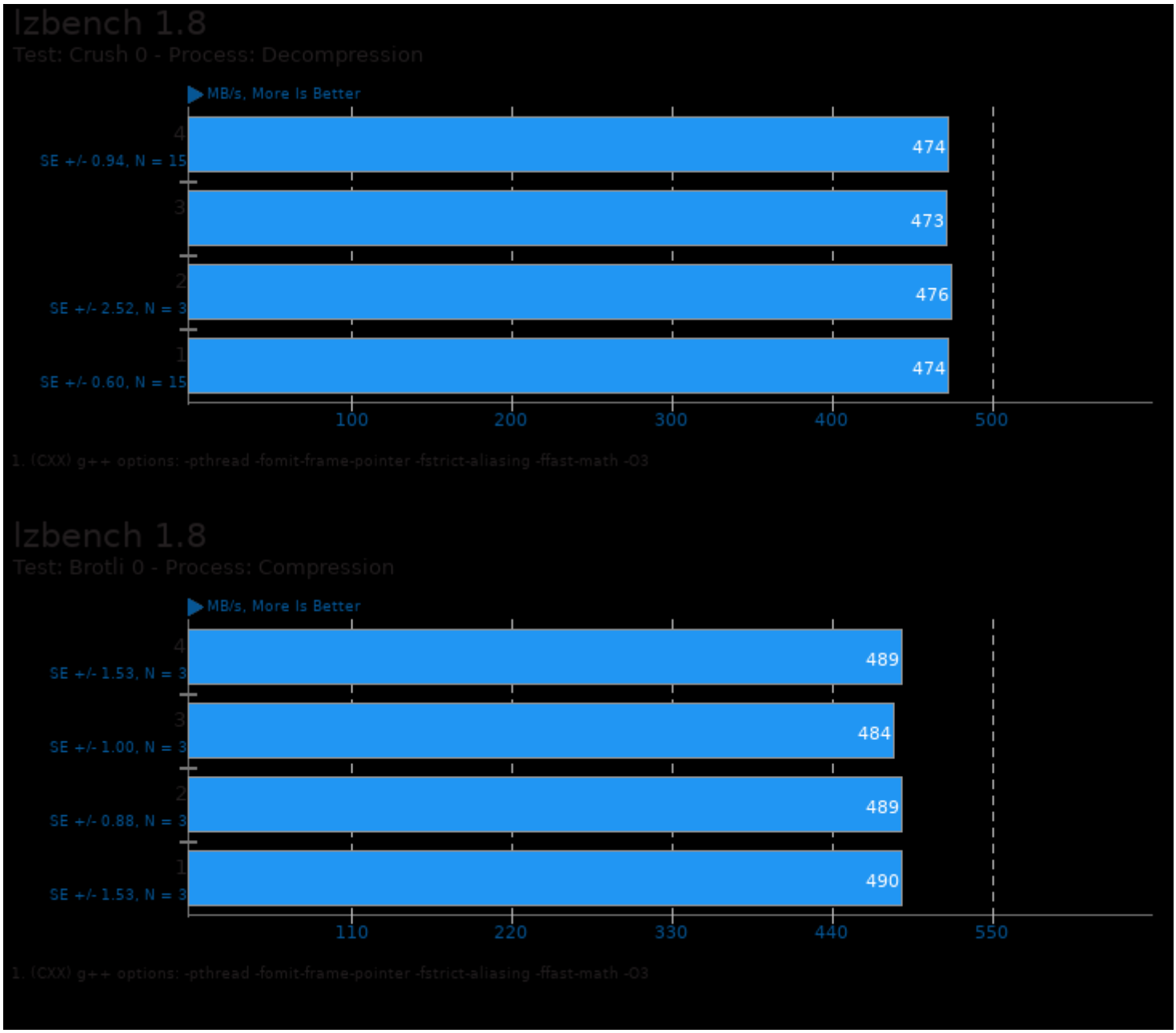
# renoir bench

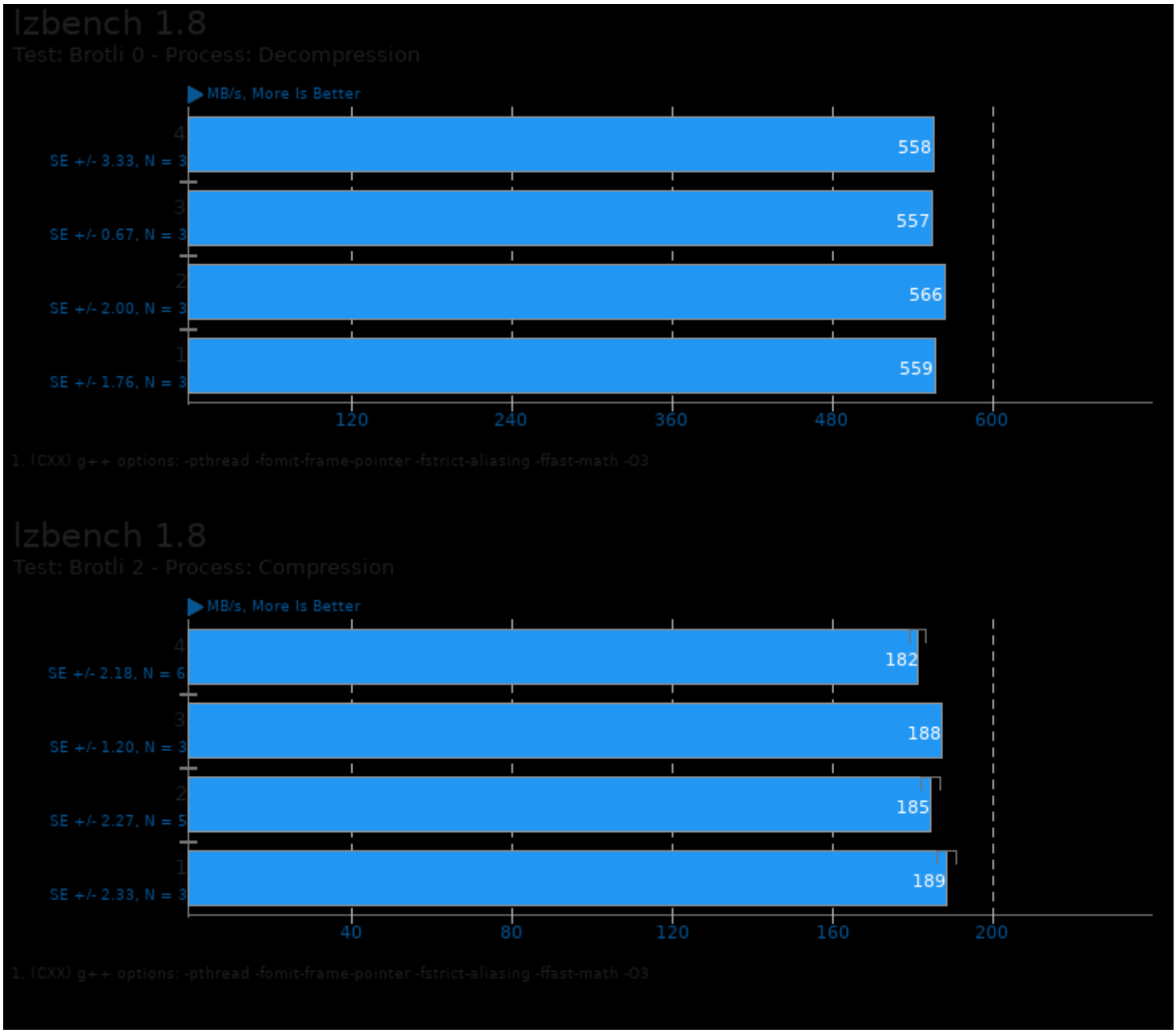


# renoir bench



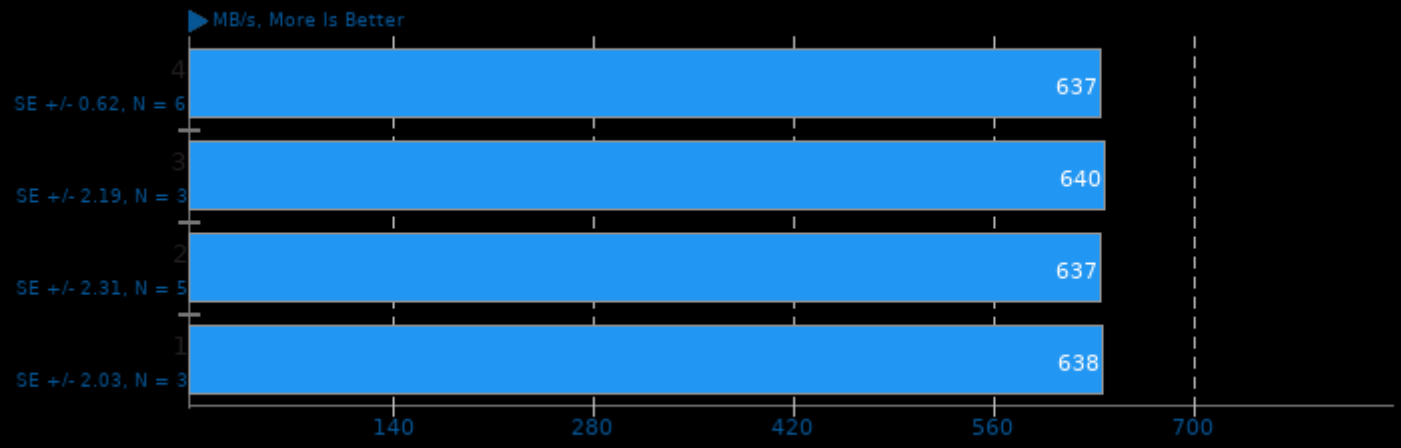
# renoir bench




lzbench 1.8
Test: Brotli 0 - Process: Decompression
MB/s, More Is Better
4
SE +/- 3.33, N = 3
558
3
SE +/- 0.67, N = 3
557
2
SE +/- 2.00, N = 3
566
1
SE +/- 1.76, N = 3
559
120
240
360
480
600
1. (CXX) g++ options: -pthread -fomit-frame-pointer -fstrict-aliasing -ffast-math -O3
lzbench 1.8
Test: Brotli 2 - Process: Compression
MB/s, More Is Better
4
SE +/- 2.18, N = 6
182
3
SE +/- 1.20, N = 3
188
2
SE +/- 2.27, N = 5
185
1
SE +/- 2.33, N = 3
189
40
80
120
160
200
1. (CXX) g++ options: -pthread -fomit-frame-pointer -fstrict-aliasing -ffast-math -O3

## lzbench 1.8

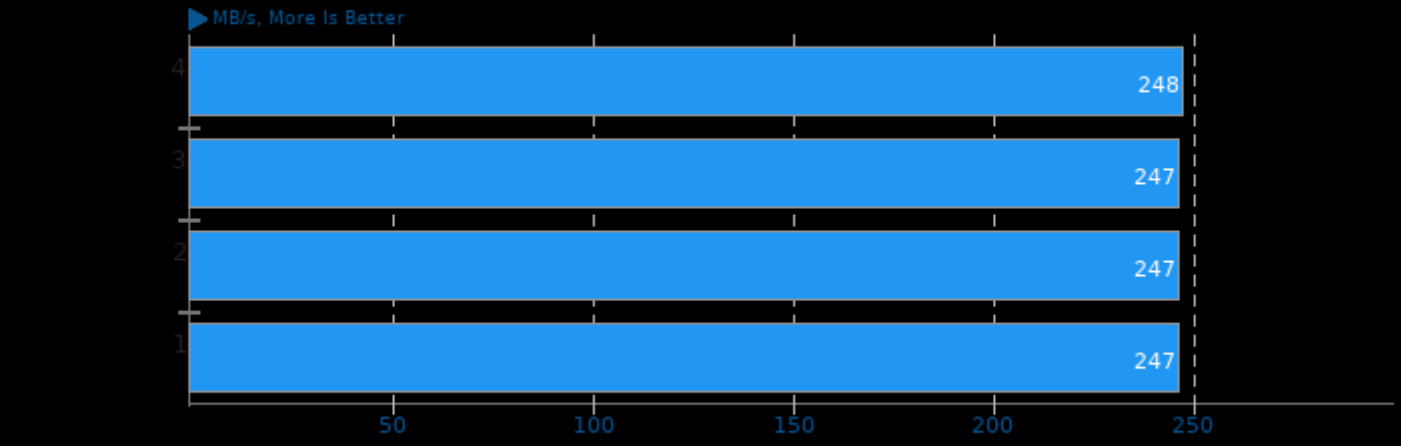
Test: Brotli 2 - Process: Decompression




1. (CXX) g++ options: -pthread -fomit-frame-pointer -fstrict-aliasing -ffast-math -O3

## lzbench 1.8

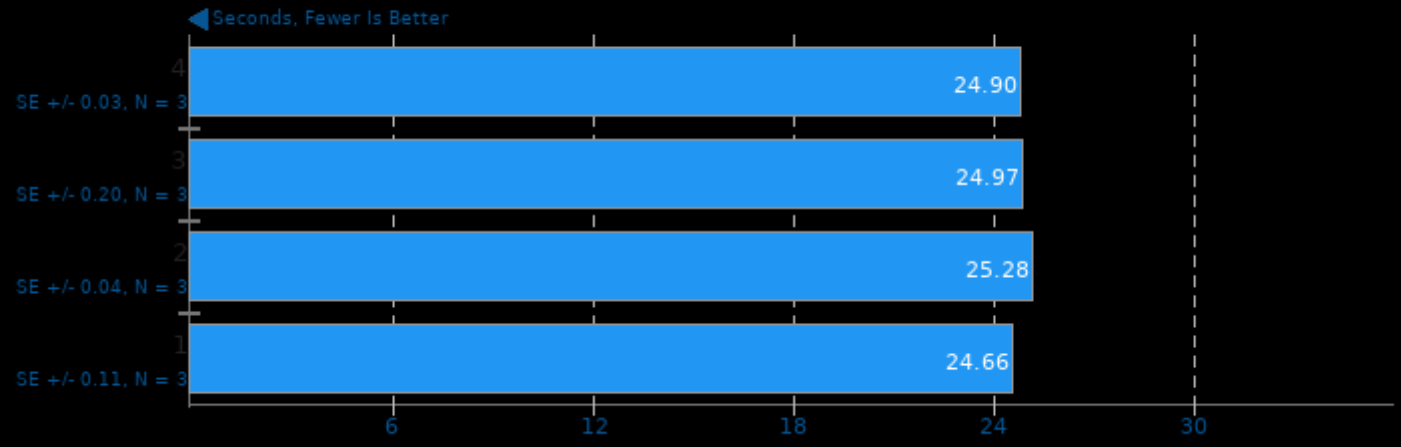
Test: Libdeflate 1 - Process: Compression



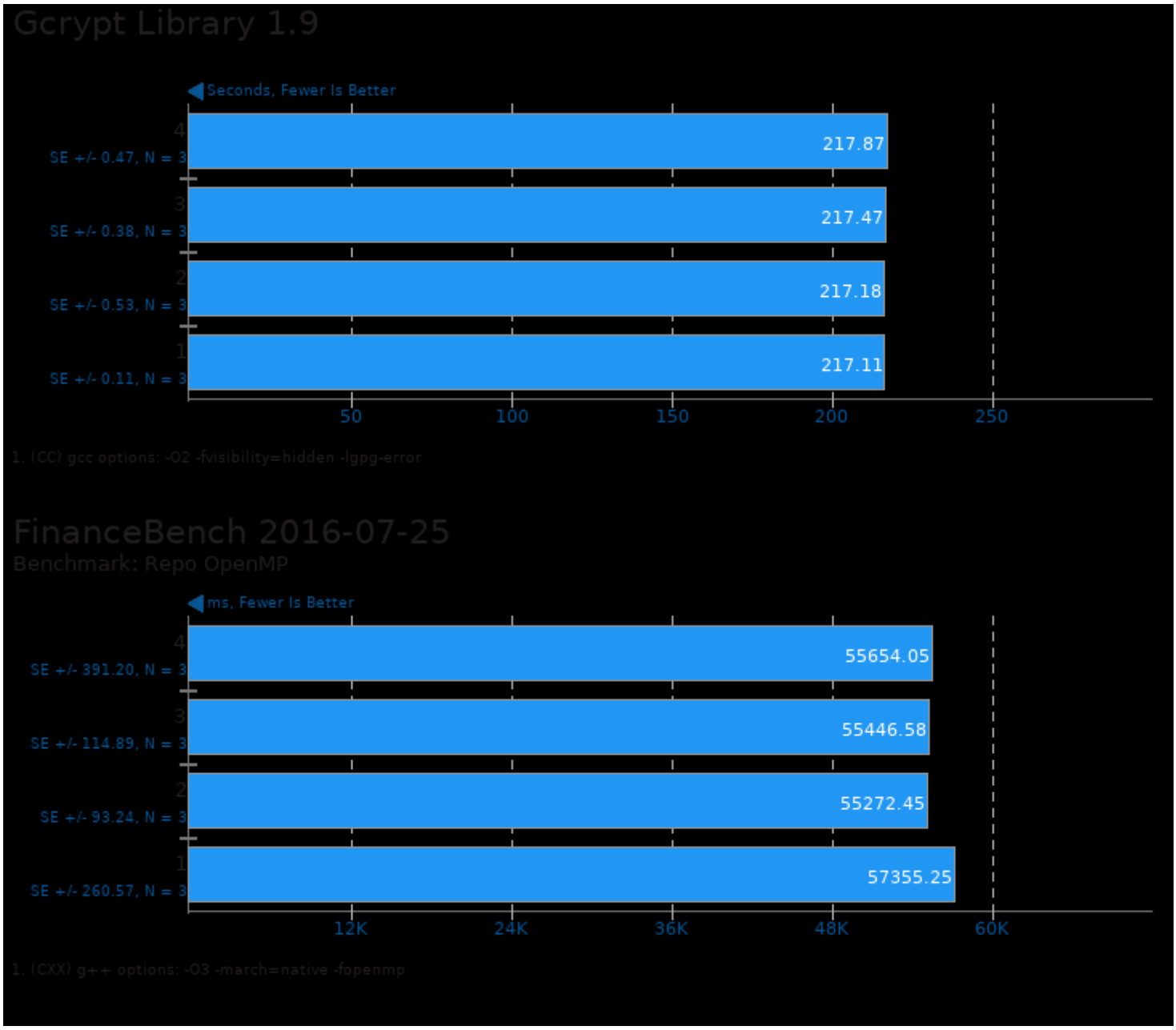

1. (CXX) g++ options: -pthread -fomit-frame-pointer -fstrict-aliasing -ffast-math -O3

## Cython Benchmark 0.29.21

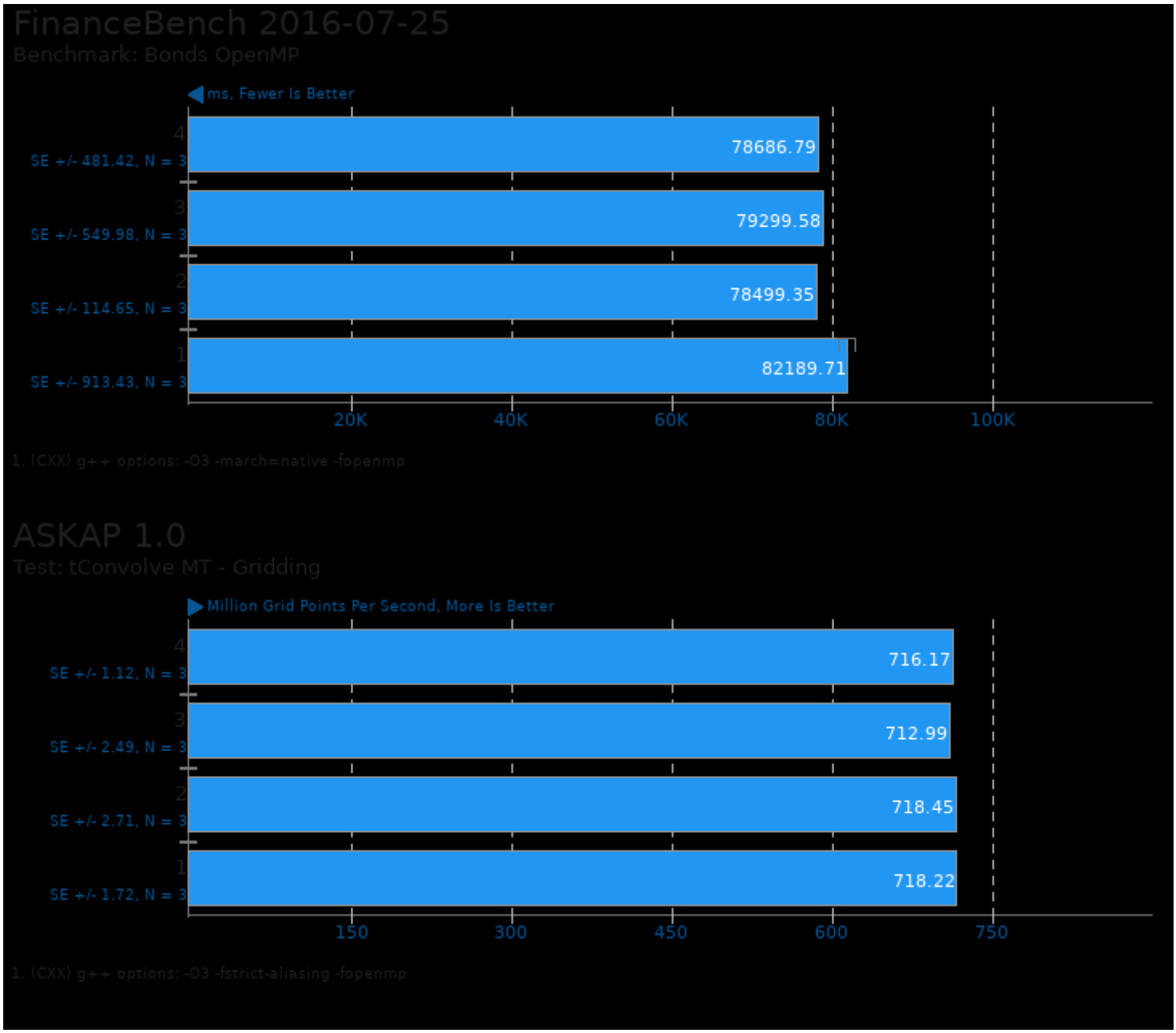
Test: N-Queens



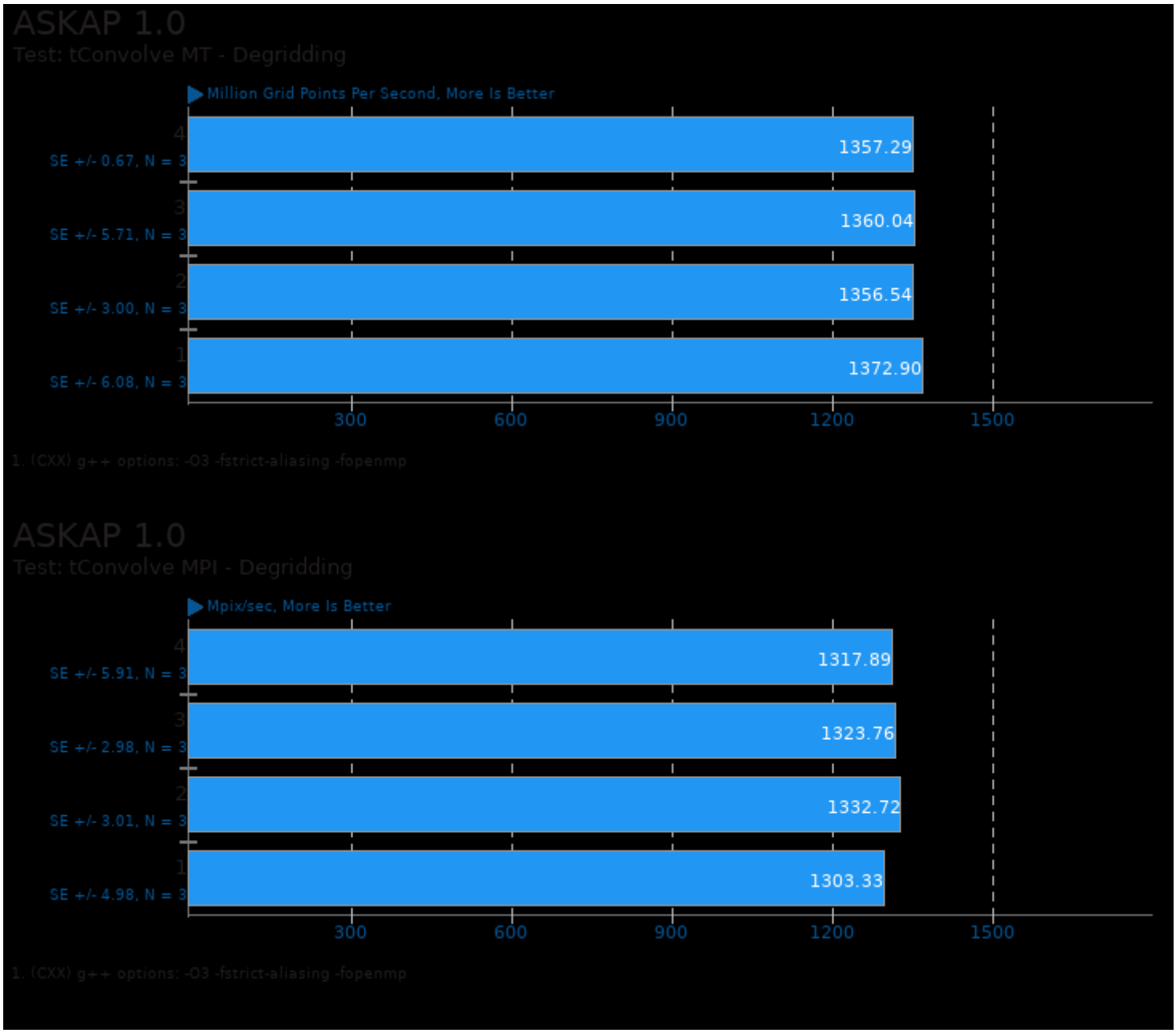
# renoir bench



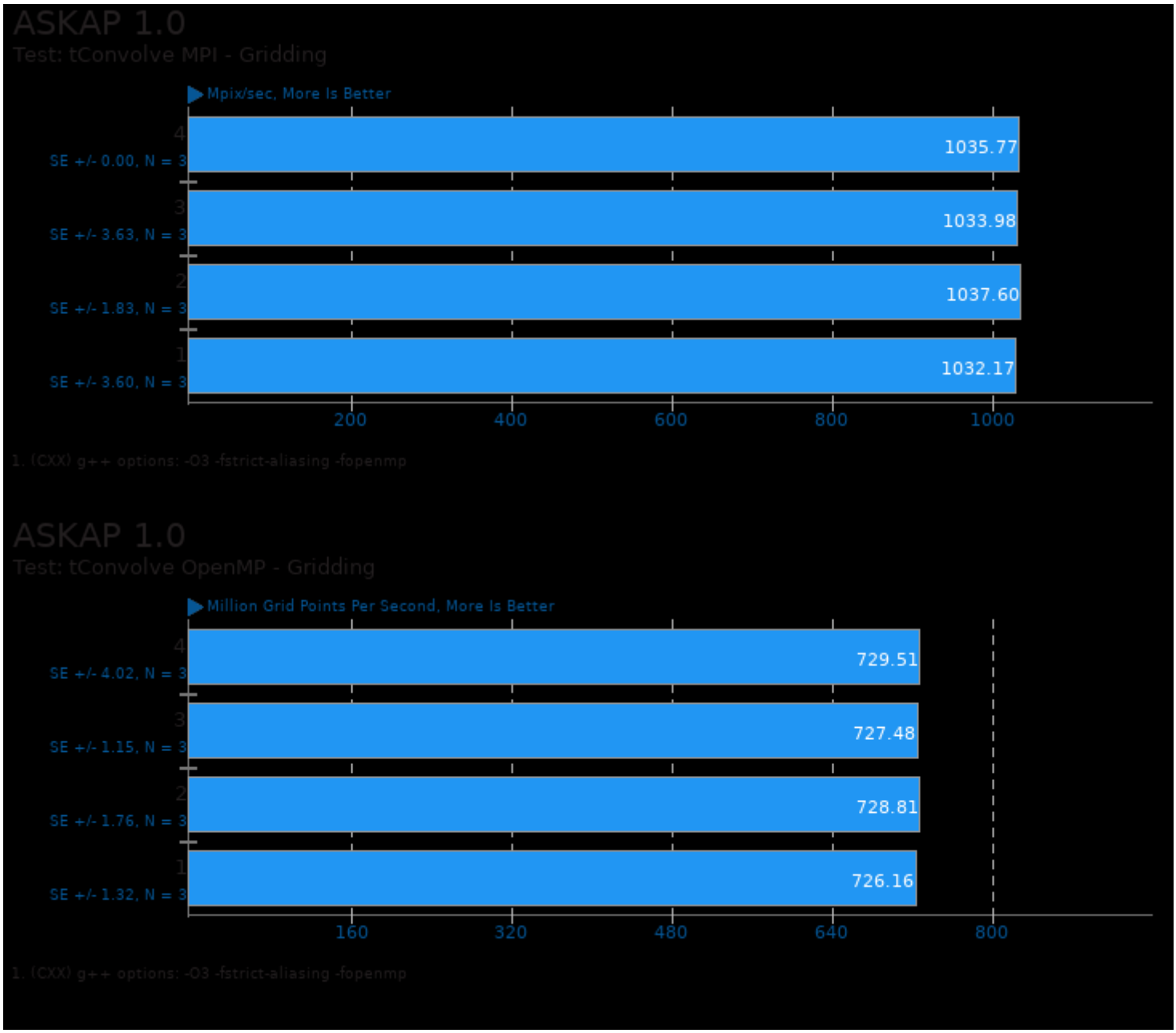
# renoir bench



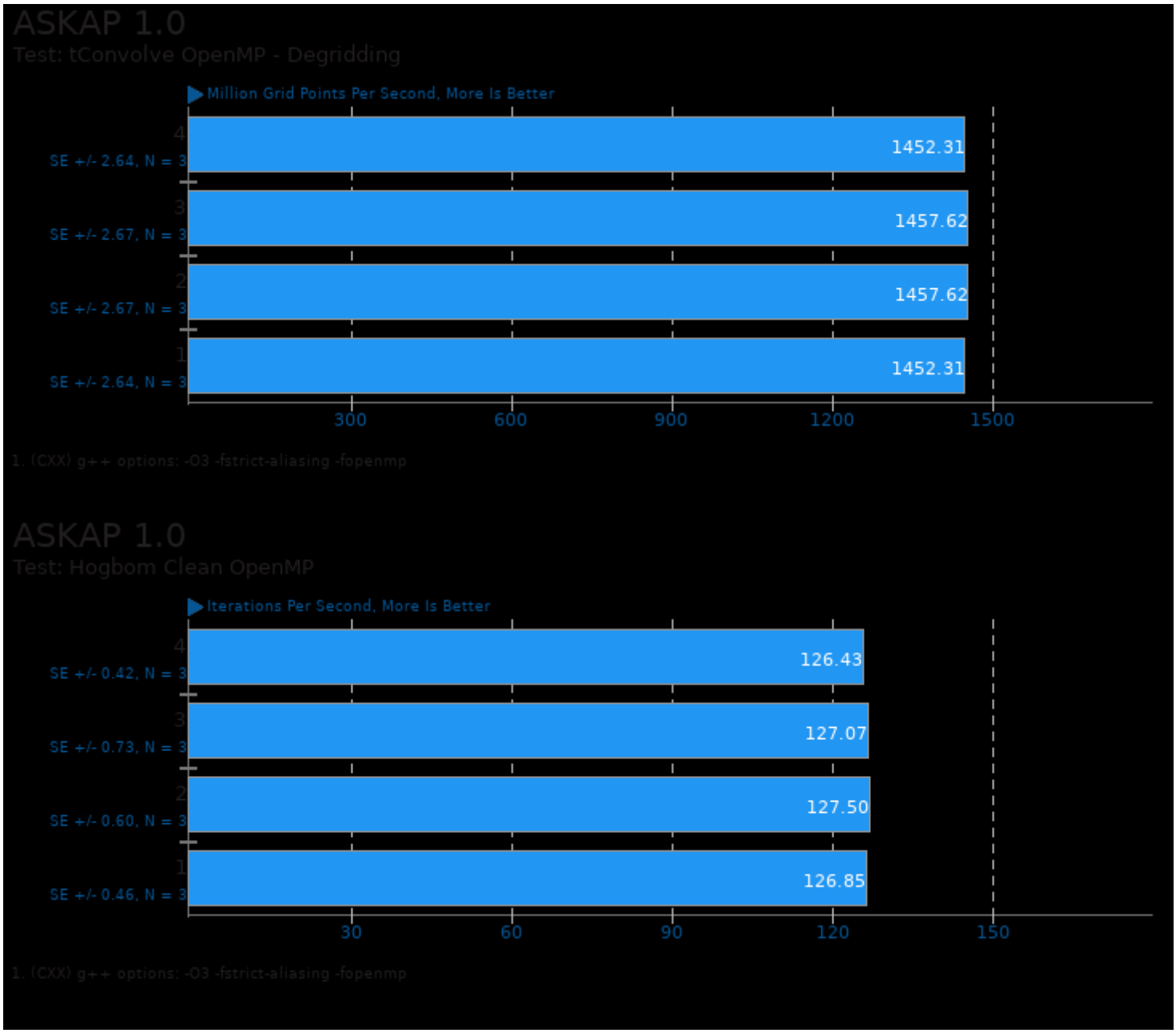
# renoir bench



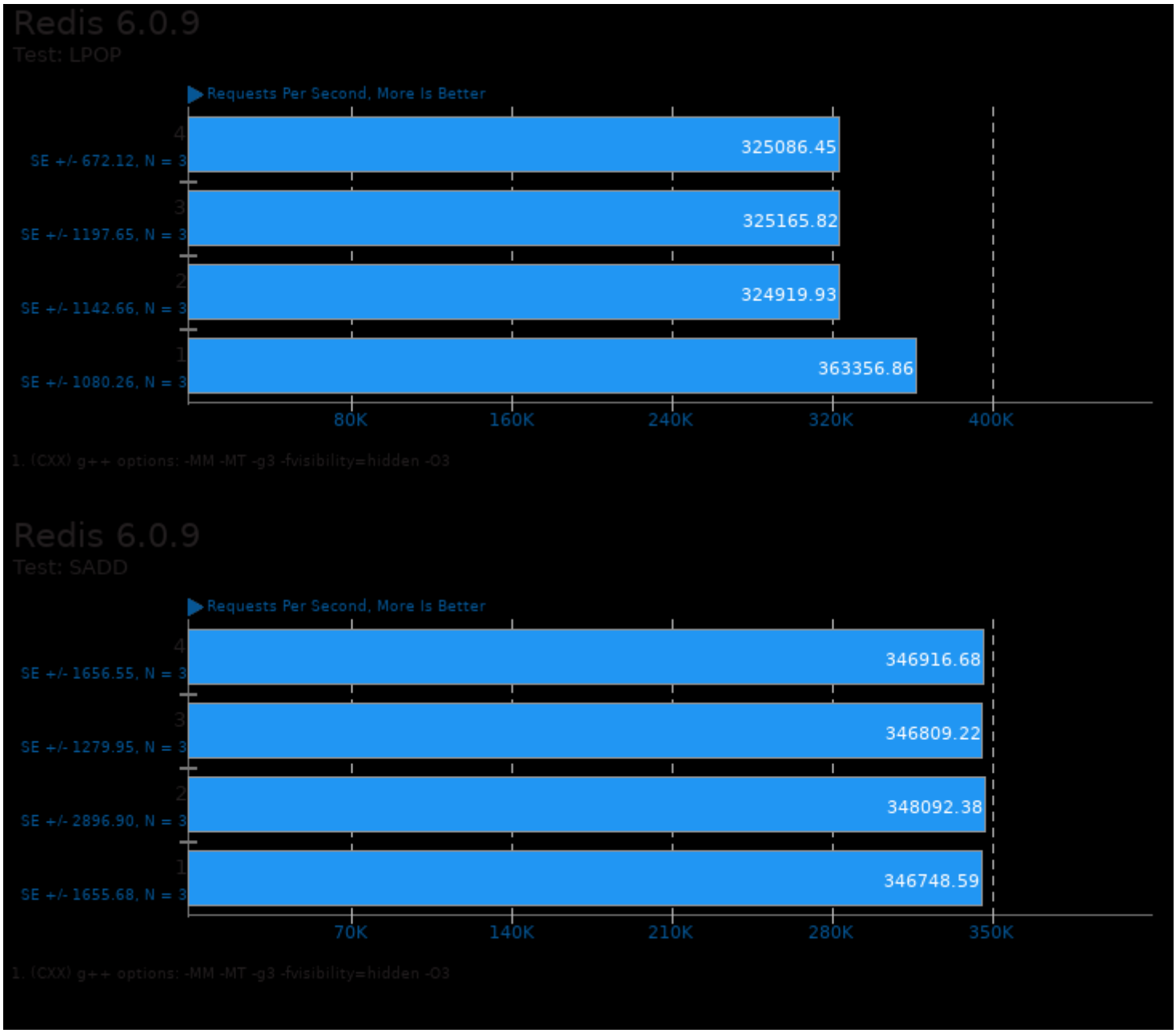
# renoir bench



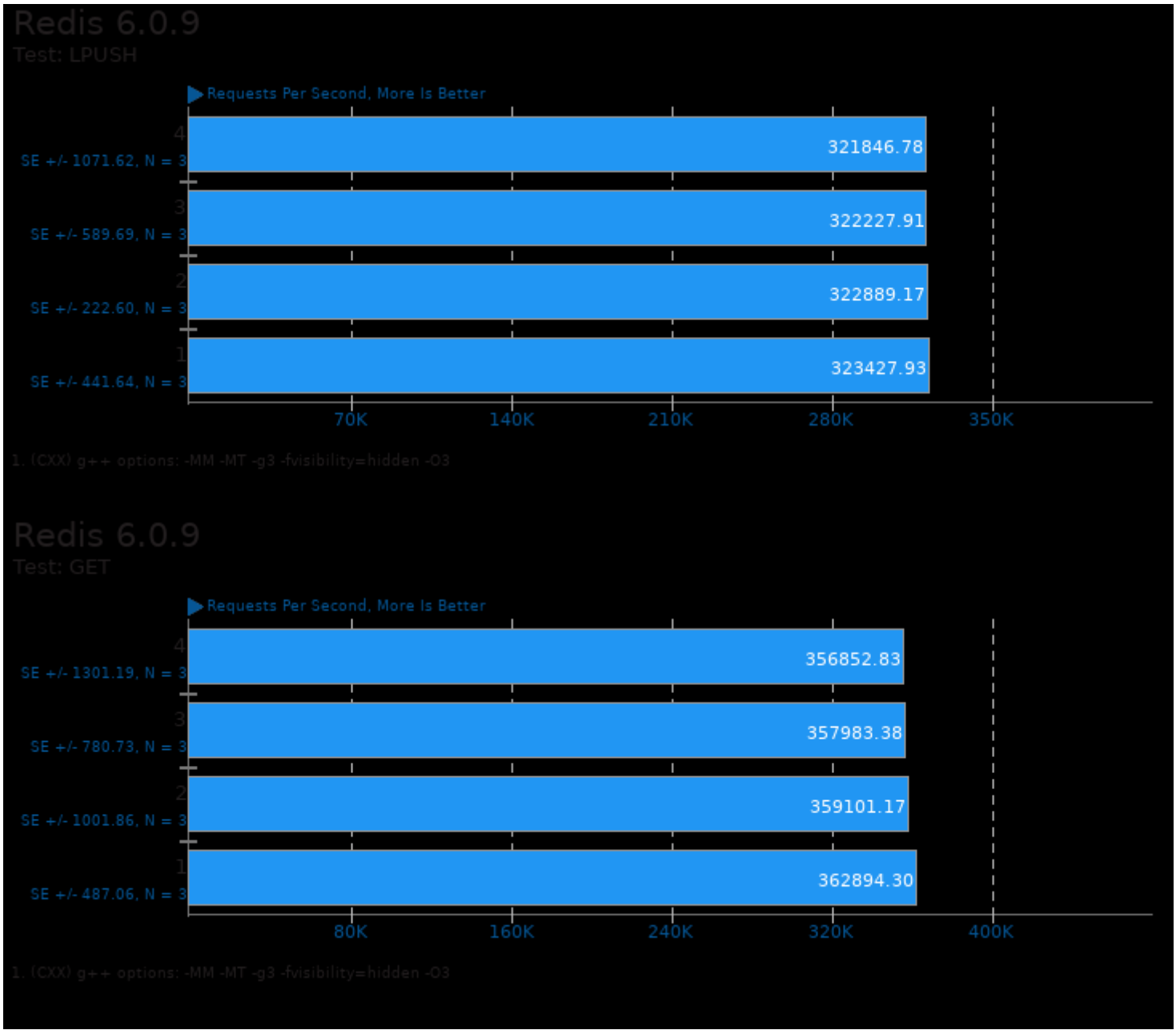
# renoir bench



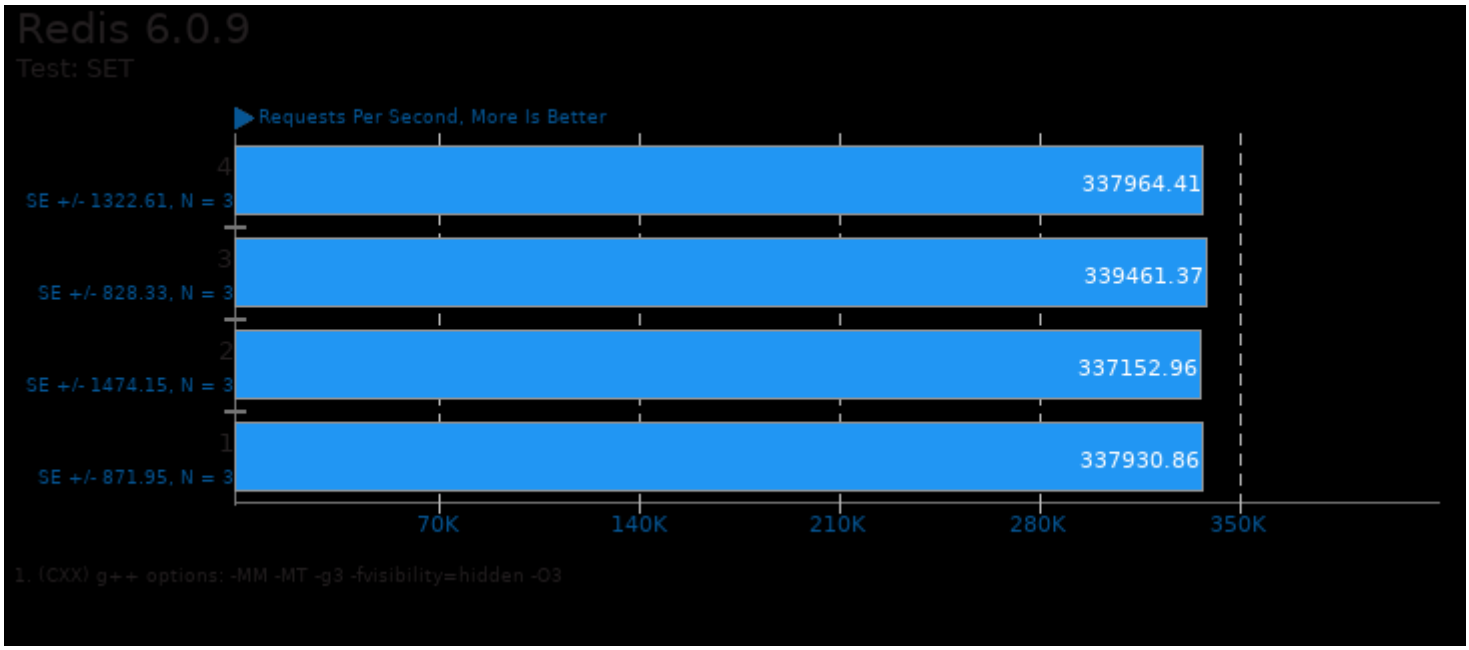
# renoir bench



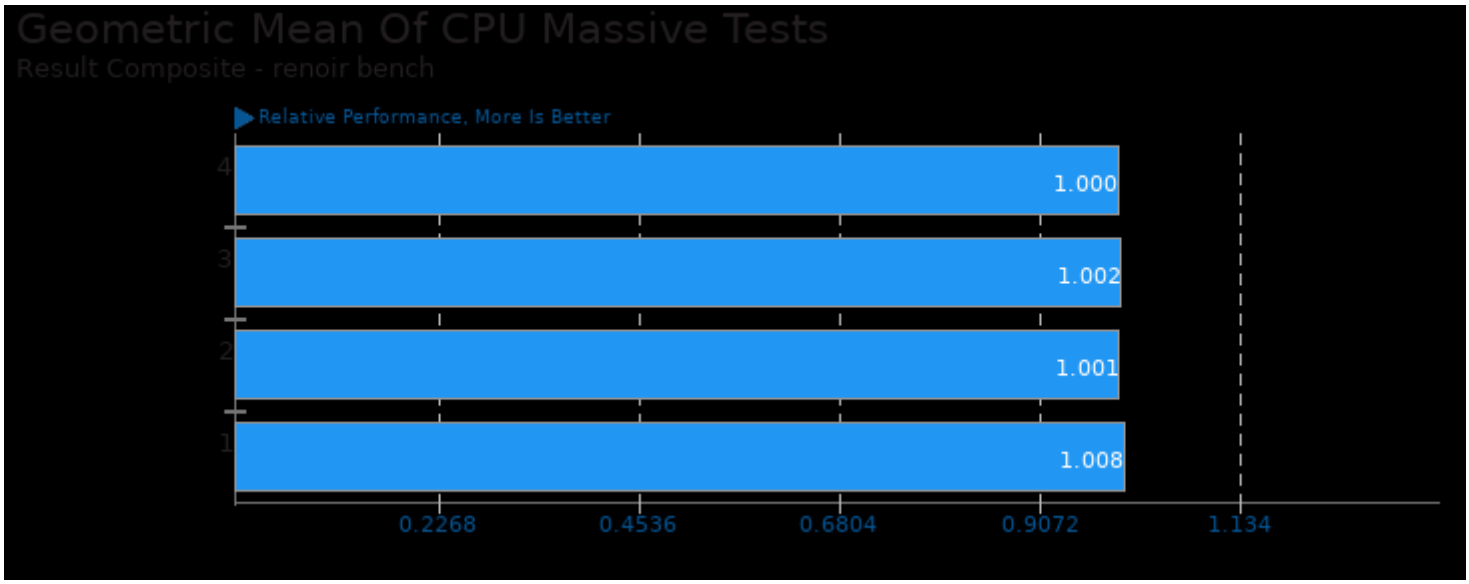
# renoir bench



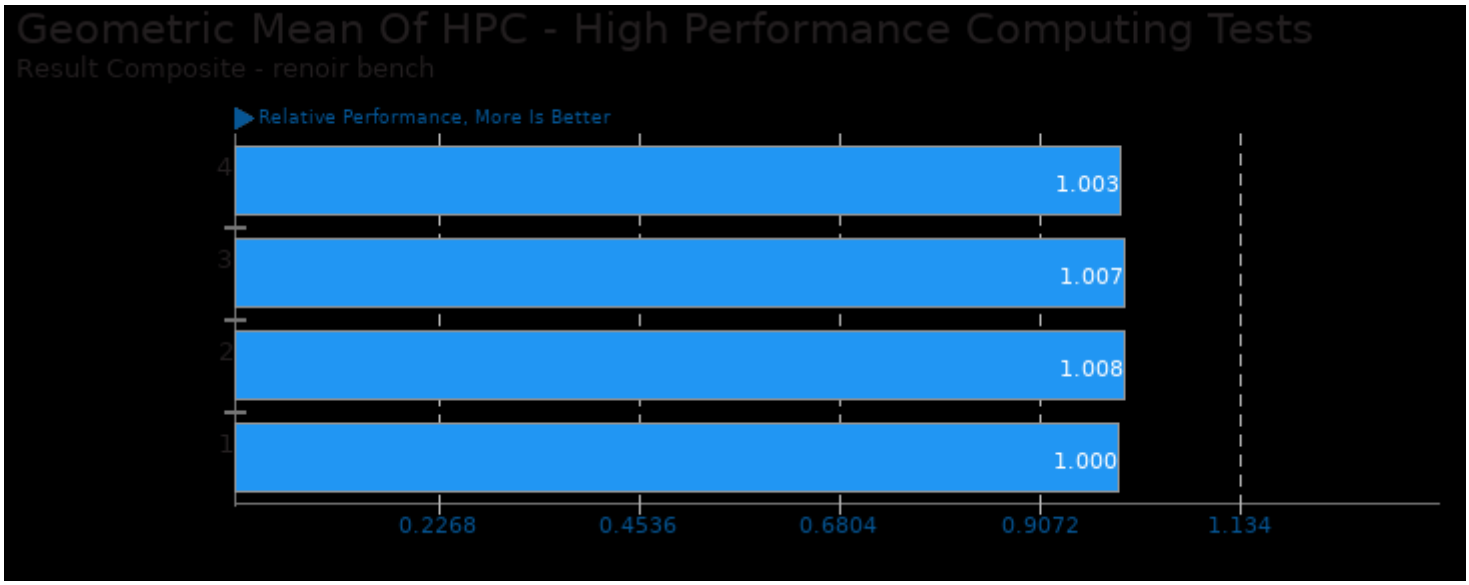
# renoir bench



These geometric means are based upon test groupings / test suites for this result file.

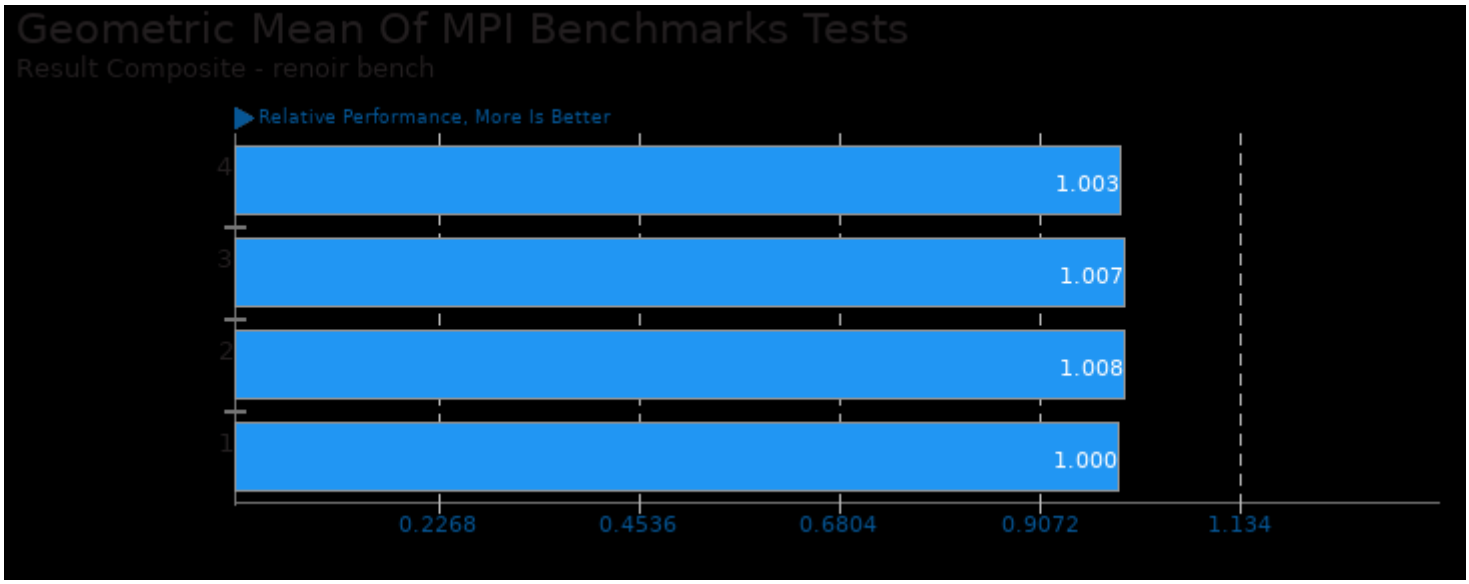



Geometric mean based upon tests: pts/cython-bench, pts/lzbench, pts/npb and pts/redis

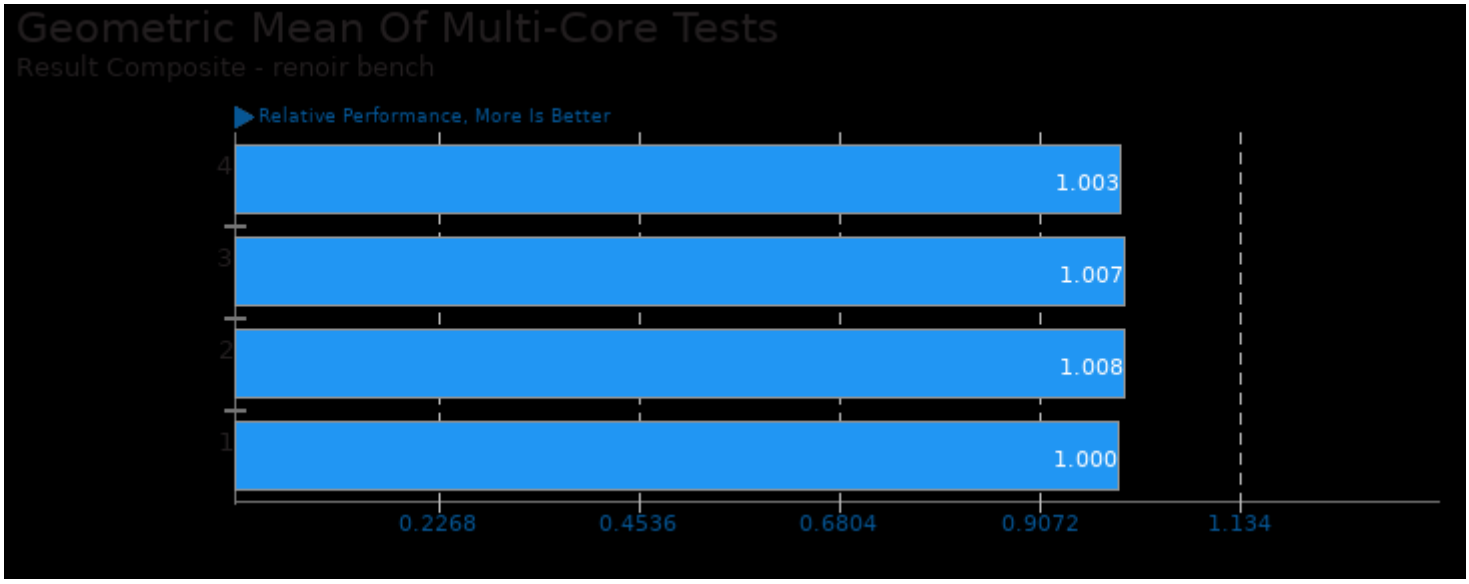



Geometric mean based upon tests: pts/npb and pts/askap

# renoir bench

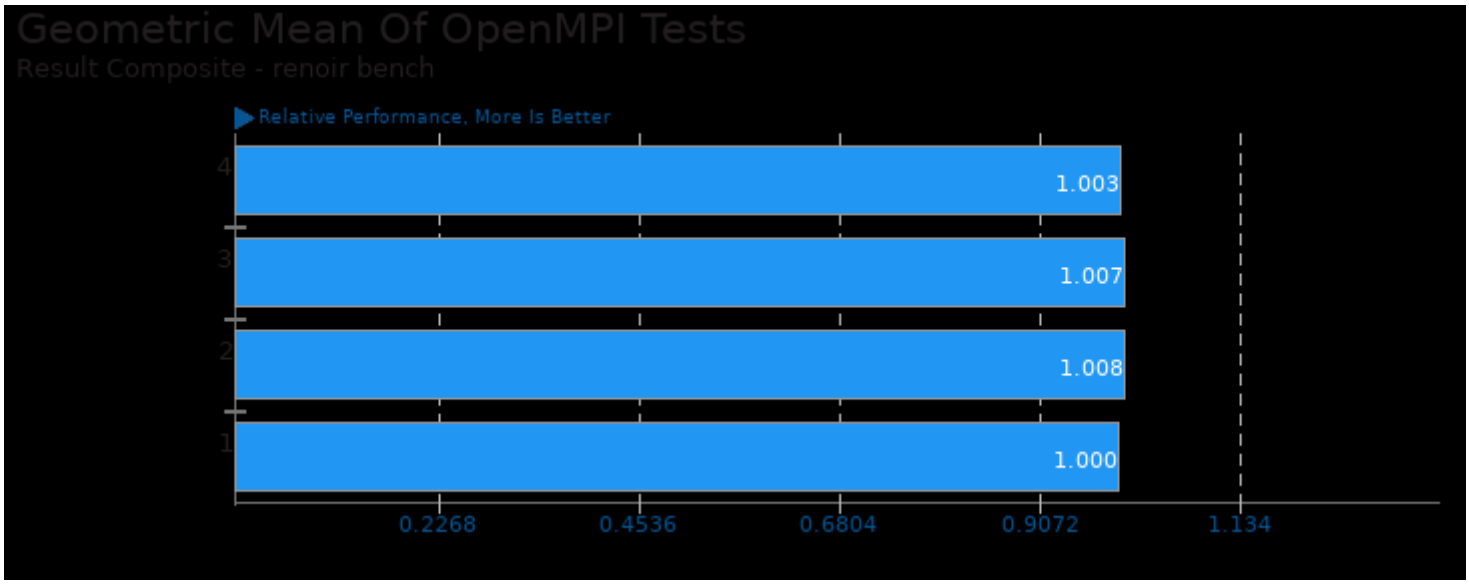



Geometric mean based upon tests: pts/askap and pts/npb

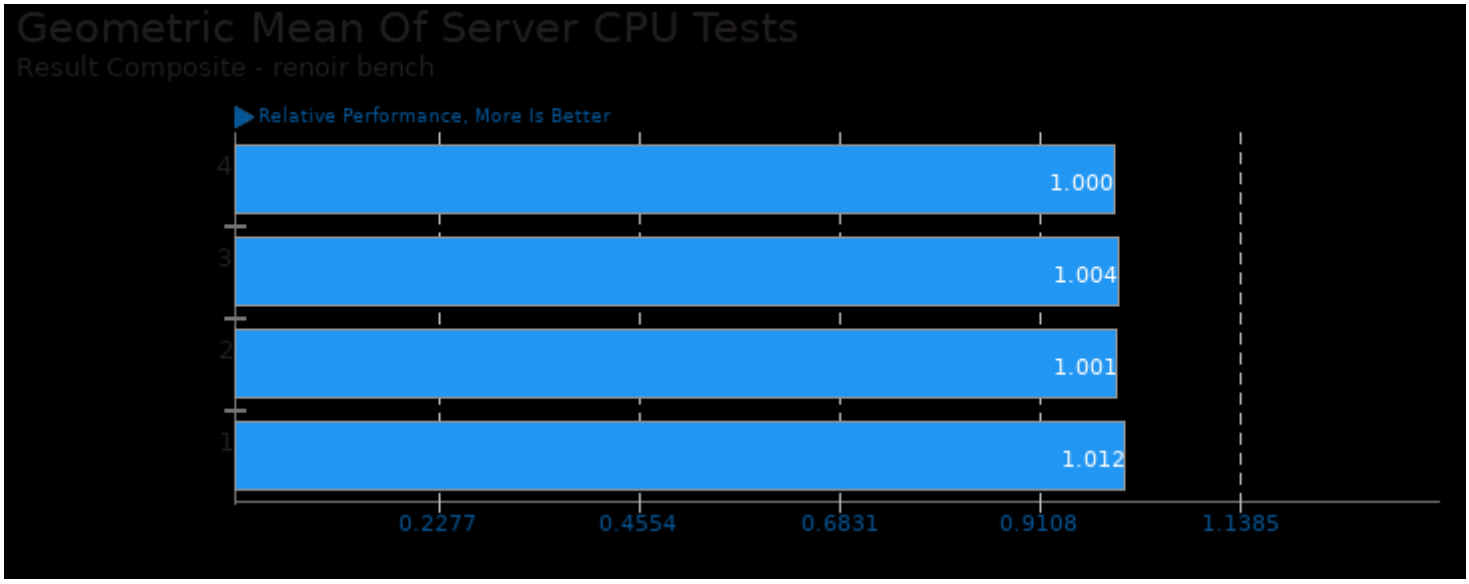



Geometric mean based upon tests: pts/askap and pts/npb

# renoir bench

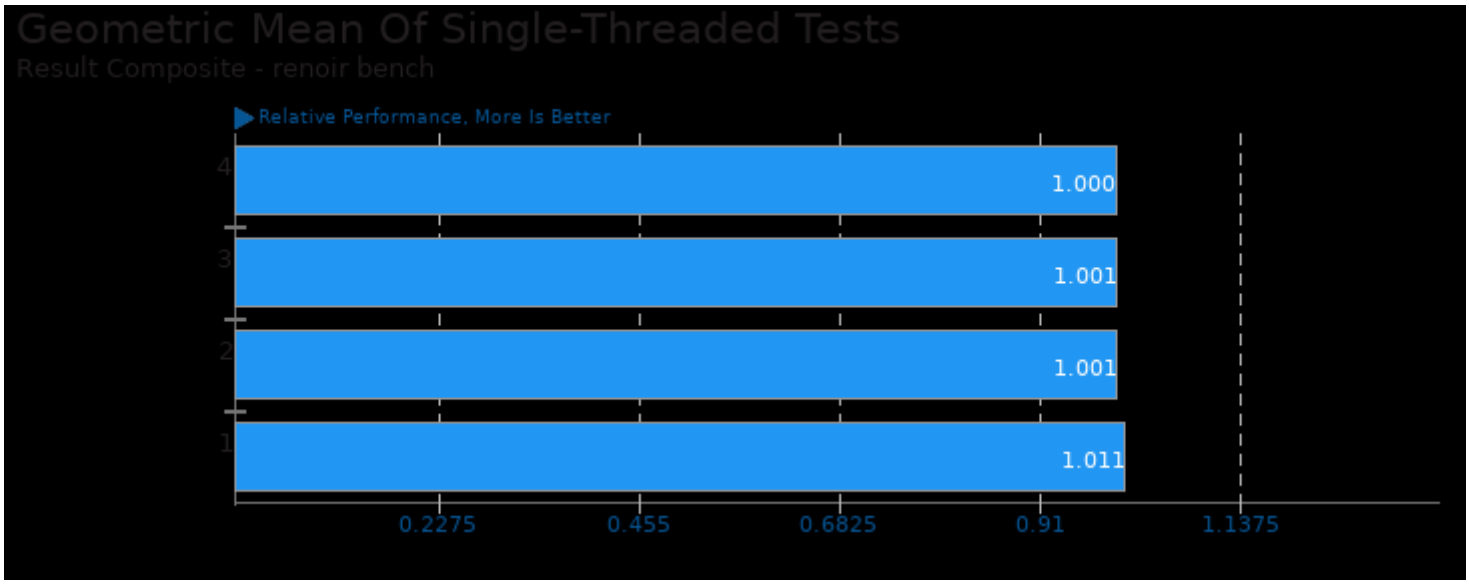



Geometric mean based upon tests: pts/npb and pts/askap




Geometric mean based upon tests: pts/npb, pts/redis and pts/cython-bench

# renoir bench




Geometric mean based upon tests: pts/lzbench and pts/redis

*This file was automatically generated via the Phoronix Test Suite benchmarking software on Thursday, 28 March 2024 04:37.*