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# 3990X ASKAP Redis

AMD Ryzen Threadripper 3990X 64-Core testing with a System76 Thelio Major (F4c Z5 BIOS) and AMD Radeon RX 5600 OEM/5600 XT / 5700/5700 8GB on Pop 20.10 via the Phoronix Test Suite.

**Automated Executive Summary**

*1 had the most wins, coming in first place for 38% of the tests.*

*Based on the geometric mean of all complete results, the fastest (1) was 1.051x the speed of the slowest (3). 2 was 0.962x the speed of 1, 4 was 0.998x the speed of 2, 3 was 0.991x the speed of 4.*

## Test Systems:

**1**

**2**

## 3

## 4

Processor: AMD Ryzen Threadripper 3990X 64-Core @ 2.90GHz (64 Cores / 128 Threads), Motherboard: System76 Thelio Major (F4c Z5 BIOS), Chipset: AMD Starship/Matisse, Memory: 126GB, Disk: Samsung SSD 970 EVO Plus 500GB, Graphics: AMD Radeon RX 5600 OEM/5600 XT / 5700/5700 8GB (1750/875MHz), Audio: AMD Navi 10 HDMI Audio, Monitor: DELL P2415Q, Network: Intel I211 + Intel Wi-Fi 6 AX200

OS: Pop 20.10, Kernel: 5.8.0-7630-generic (x86_64), Desktop: GNOME Shell 3.38.2, Display Server: X Server 1.20.8, Display Driver: amdgpu 19.1.0, OpenGL: 4.6 Mesa 21.1.0-devel (git-96d7555 2021-01-22 groovy-oibaf-ppa) (LLVM 11.0.1), Vulkan: 1.2.145, Compiler: GCC 10.2.0 + Clang 11.0.1-1~oibaf~g, File-System: ext4, Screen Resolution: 3840x2160

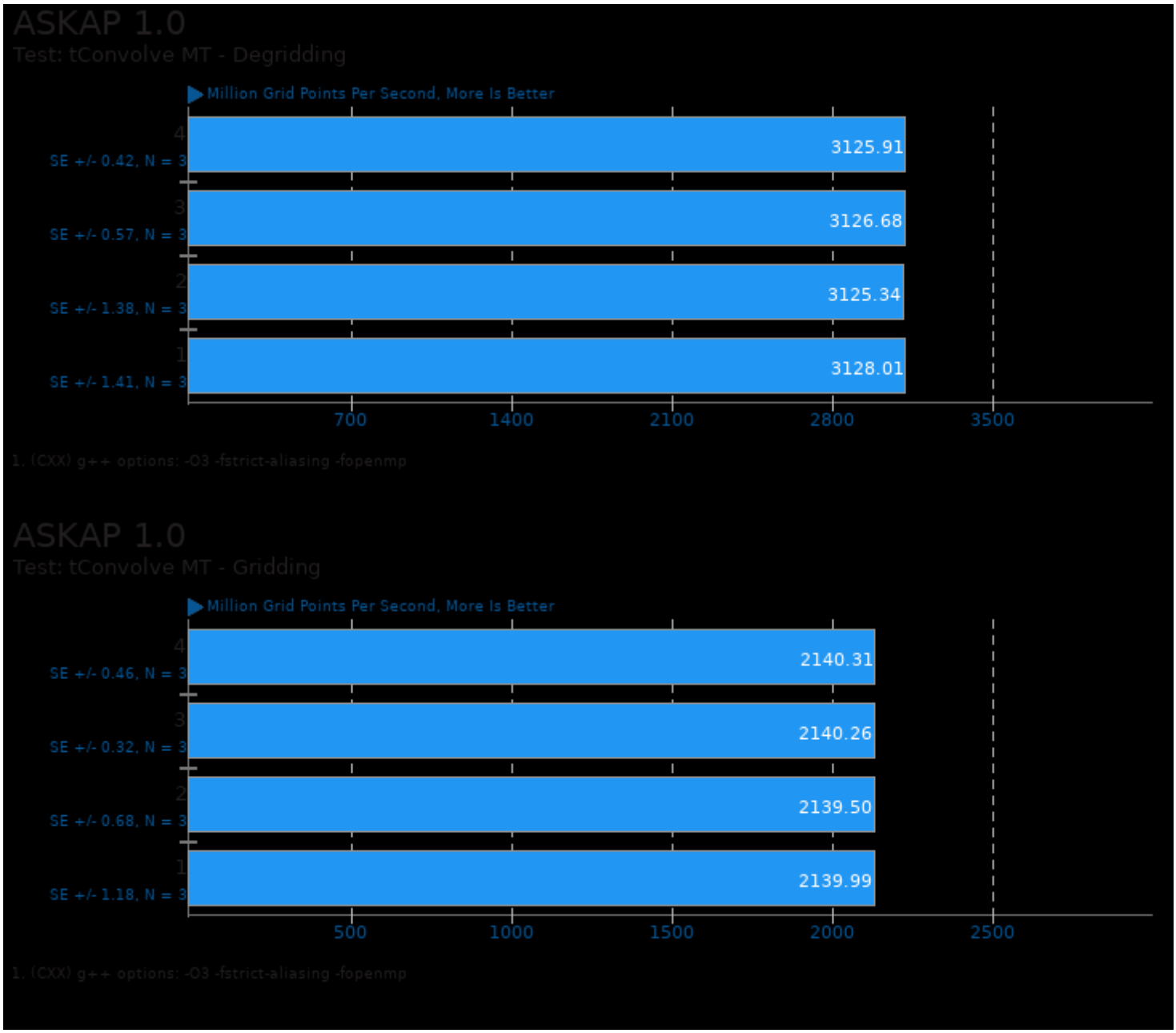
Kernel Notes: snd_usb_audio.ignore_ctl_error=1 - Transparent Huge Pages: madvise
Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-gnu-unique-object --enable-languages=c,ada,c++,go,brig,d,fortran,objc,obj-c++,m2 --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 ondemand (Boost: Enabled) - CPU Microcode: 0x8301025
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 STIBP: conditional RSB filling + srbds: Not affected + tsx_async_abort: Not affected

| | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| **ASKAP - tConvolve MT - Degridding (Million Grid Points/sec)** | **3128** | **3125** | 3127 | 3126 |
| **Normalized** | 100% | 99.91% | 99.96% | 99.93% |
| **Standard Deviation** | 0.1% | 0.1% | 0% | 0% |
| **ASKAP - tConvolve MT - Gridding (Million Grid Points/sec)** | 2140 | **2140** | 2140 | **2140** |
| **Normalized** | 99.99% | 99.96% | 100% | 100% |
| **Standard Deviation** | 0.1% | 0.1% | 0% | 0% |
| **ASKAP - tConvolve MPI - Gridding (Mpix/sec)** | **16326** | 16321 | **15663** | 16319 |
| **Normalized** | 100% | 99.97% | 95.94% | 99.96% |
| **Standard Deviation** | 1.7% | 2.4% | 7.7% | 2% |
| **ASKAP - tConvolve MPI - Degridding (Mpix/sec)** | 17957 | 18100 | **17640** | **18151** |
| **Normalized** | 98.93% | 99.72% | 97.19% | 100% |
| **Standard Deviation** | 5.1% | 1.7% | 9.5% | 1.3% |
| **Gcrypt Library (sec)** | 204.262 | 204.192 | **204.956** | **203.669** |
| **Normalized** | 99.71% | 99.74% | 99.37% | 100% |
| **Standard Deviation** | 0.7% | 0.2% | 0.6% | 0.7% |
| **Redis - LPUSH (Reqs/sec)** | 1469833 | **1475498** | **1446173** | 1460990 |
| **Normalized** | 99.62% | 100% | 98.01% | 99.02% |
| **Standard Deviation** | 1.6% | 2.9% | 2.6% | 2.9% |
| **ASKAP - H.C.O (Iterations/sec)** | 360.581 | 360.584 | **361.453** | **358.859** |
| **Normalized** | 99.76% | 99.76% | 100% | 99.28% |
| **Standard Deviation** | 0.4% | 0.5% | 0.6% | 0.5% |

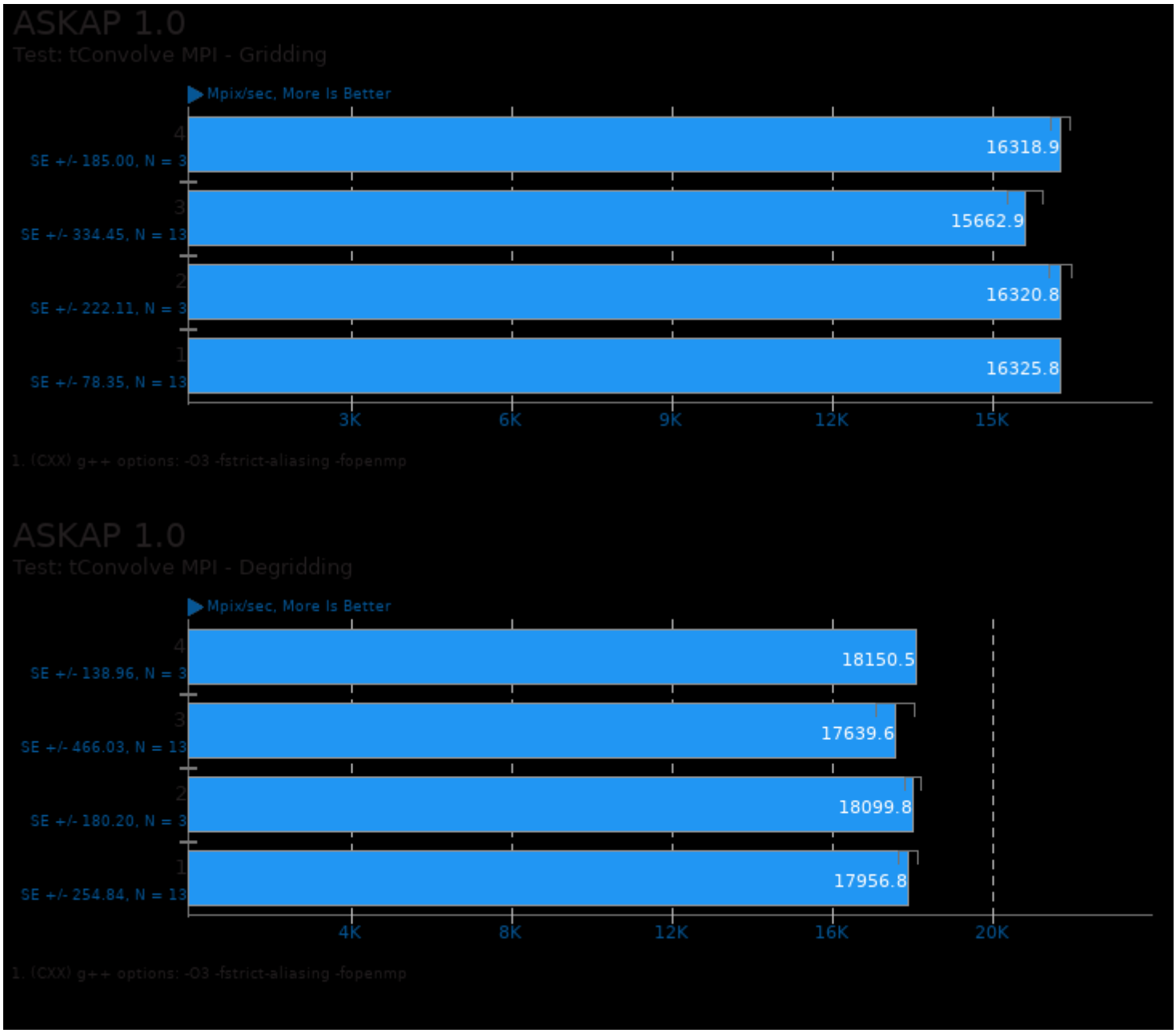
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| | | | | |
|---|---|---|---|---|
| **Redis - SET (Reqs/sec)** | **1720843** | **1662128** | 1675287 | 1671280 |
| **Normalized** | 100% | 96.59% | 97.35% | 97.12% |
| **Standard Deviation** | 1.5% | 0.8% | 2.9% | 2.3% |
| **Redis - LPOP (Reqs/sec)** | **2360832** | 1493143 | **1478406** | 1507170 |
| **Normalized** | 100% | 63.25% | 62.62% | 63.84% |
| **Standard Deviation** | 2.8% | 2.6% | 1.6% | 2.3% |
| **Redis - SADD (Reqs/sec)** | **1907089** | **1963851** | 1931722 | 1907441 |
| **Normalized** | 97.11% | 100% | 98.36% | 97.13% |
| **Standard Deviation** | 2.2% | 1.9% | 0.7% | 1.4% |
| **Redis - GET (Reqs/sec)** | **2210900** | 2040134 | **1991618** | 2035854 |
| **Normalized** | 100% | 92.28% | 90.08% | 92.08% |
| **Standard Deviation** | 0.8% | 1% | 2.2% | 0.1% |
| **ASKAP - tConvolve OpenMP - Degridding (Million Grid Points/sec)** | **3469** | 3519 | 3519 | **3535** |
| **Normalized** | 98.15% | 99.56% | 99.56% | 100% |
| **Standard Deviation** | 0.7% | 0.8% | 0.8% | 0.8% |
| **ASKAP - tConvolve OpenMP - Gridding (Million Grid Points/sec)** | **5729** | **5788** | 5747 | **5788** |
| **Normalized** | 98.98% | 100% | 99.29% | 100% |
| **Standard Deviation** | 2.8% | 0% | 1.2% | 0% |

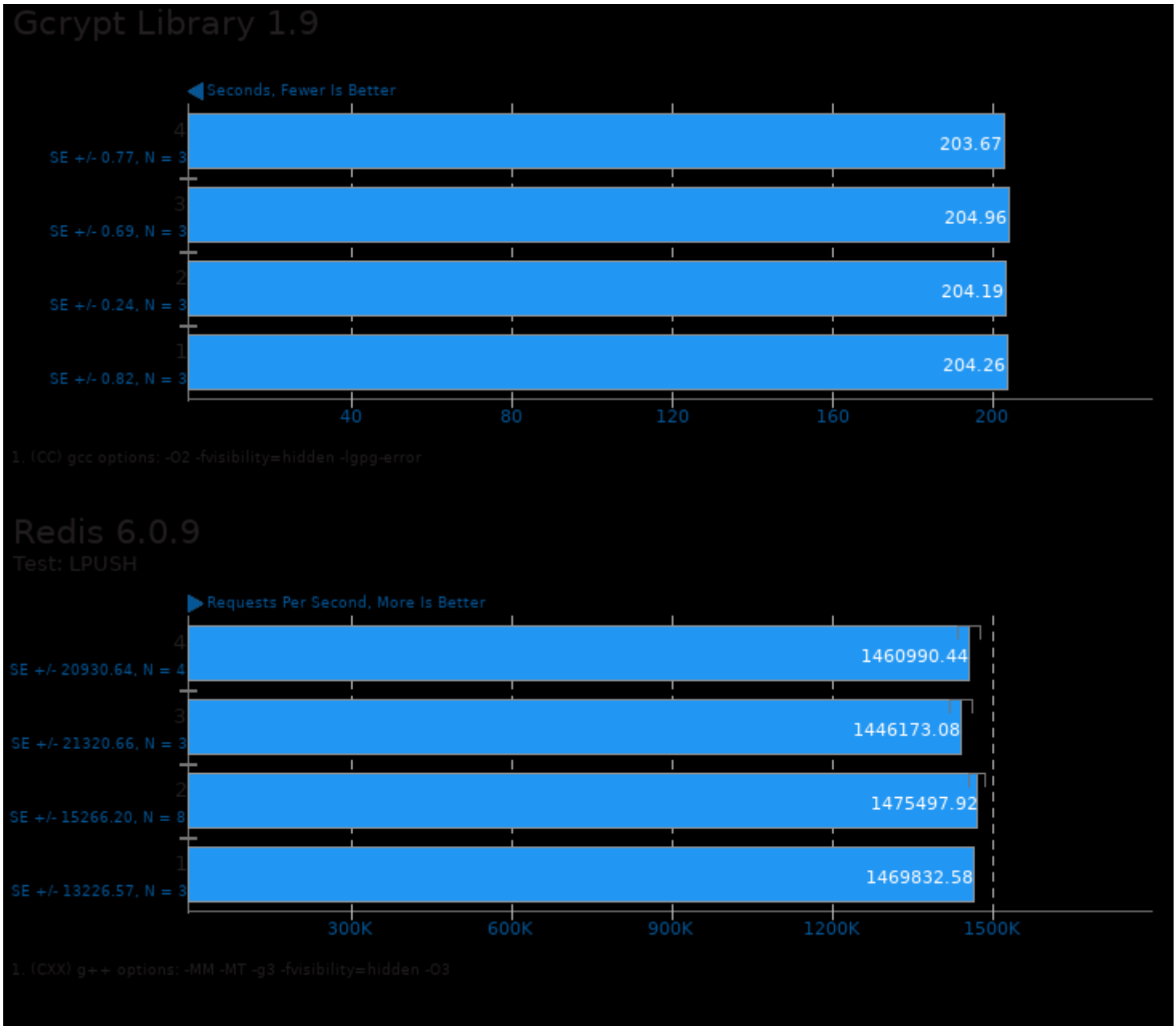
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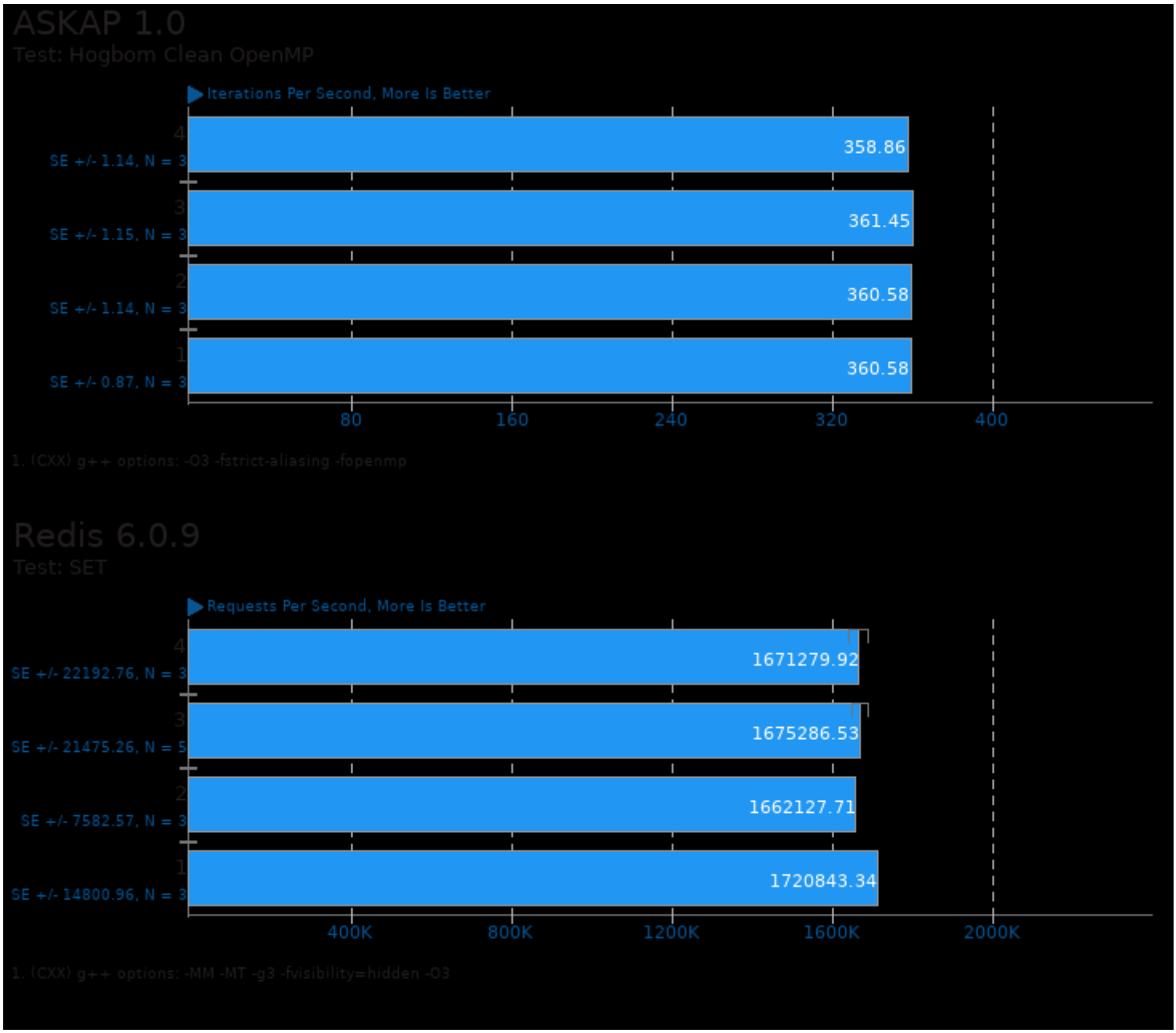
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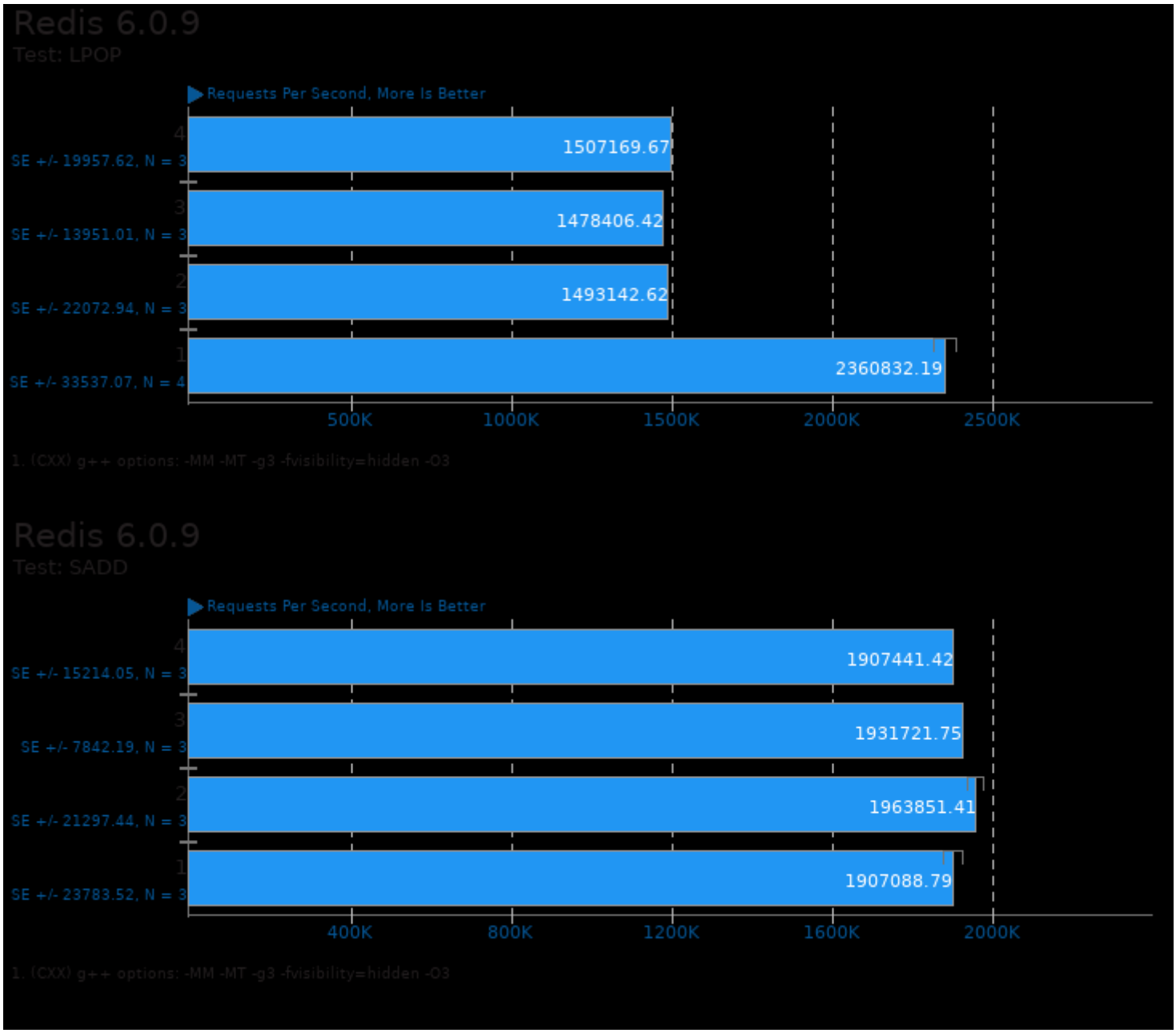
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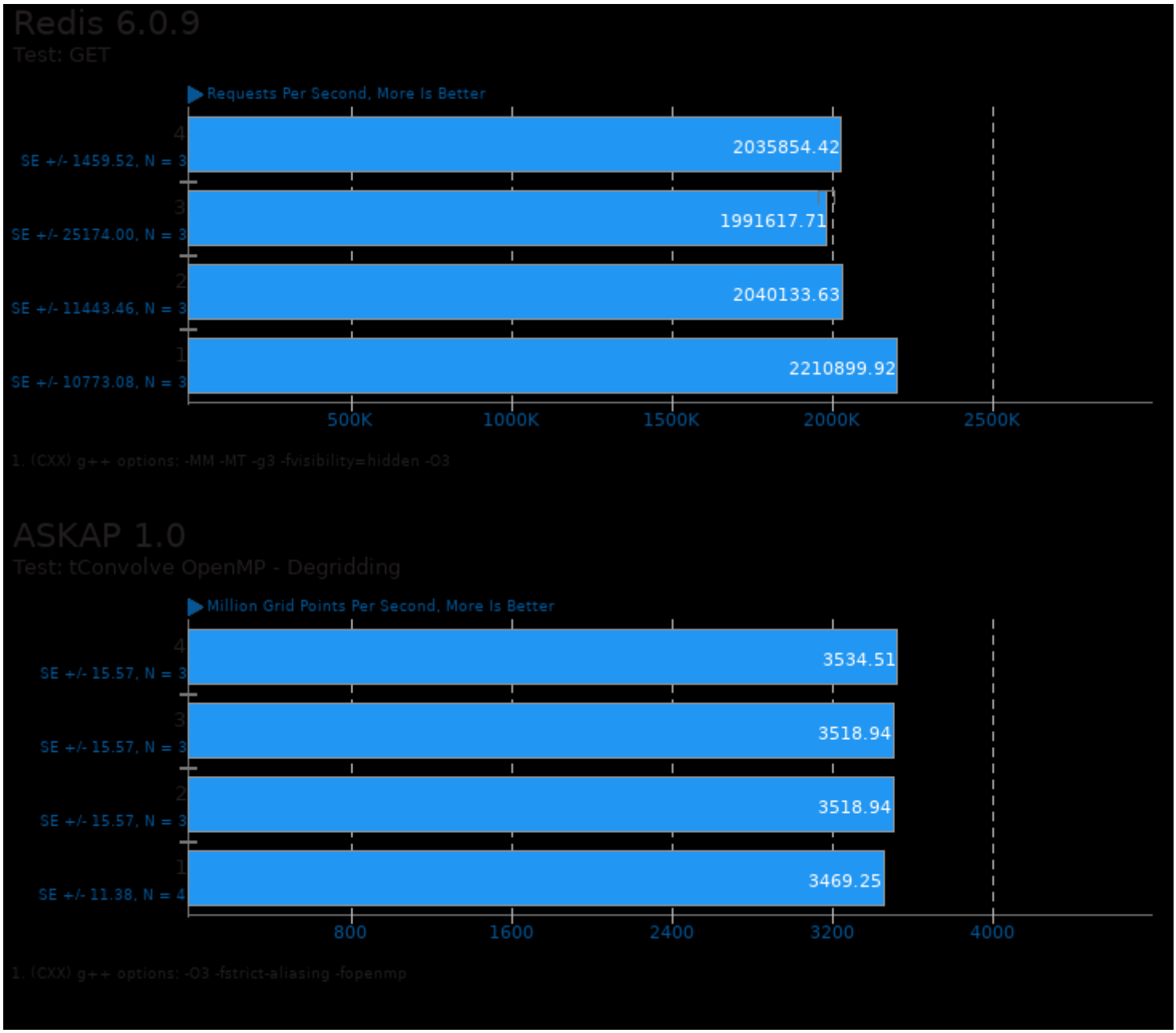
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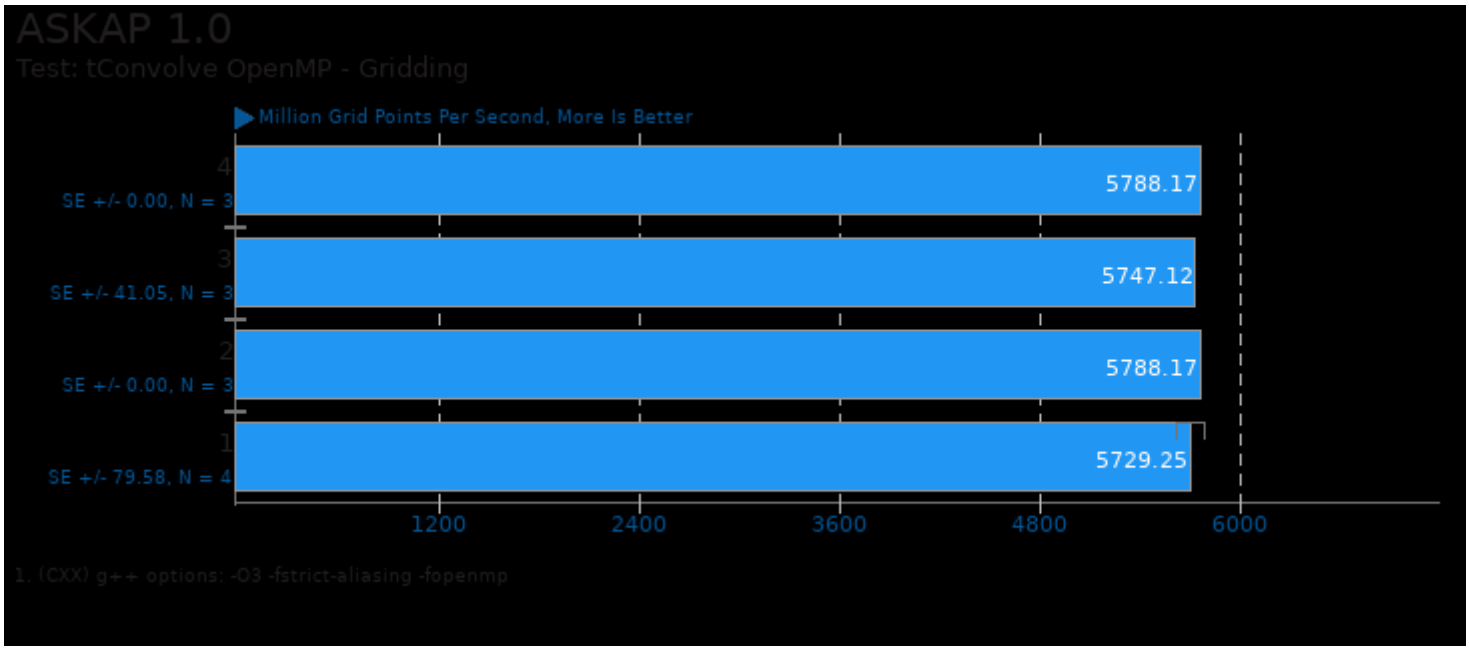
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