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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

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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

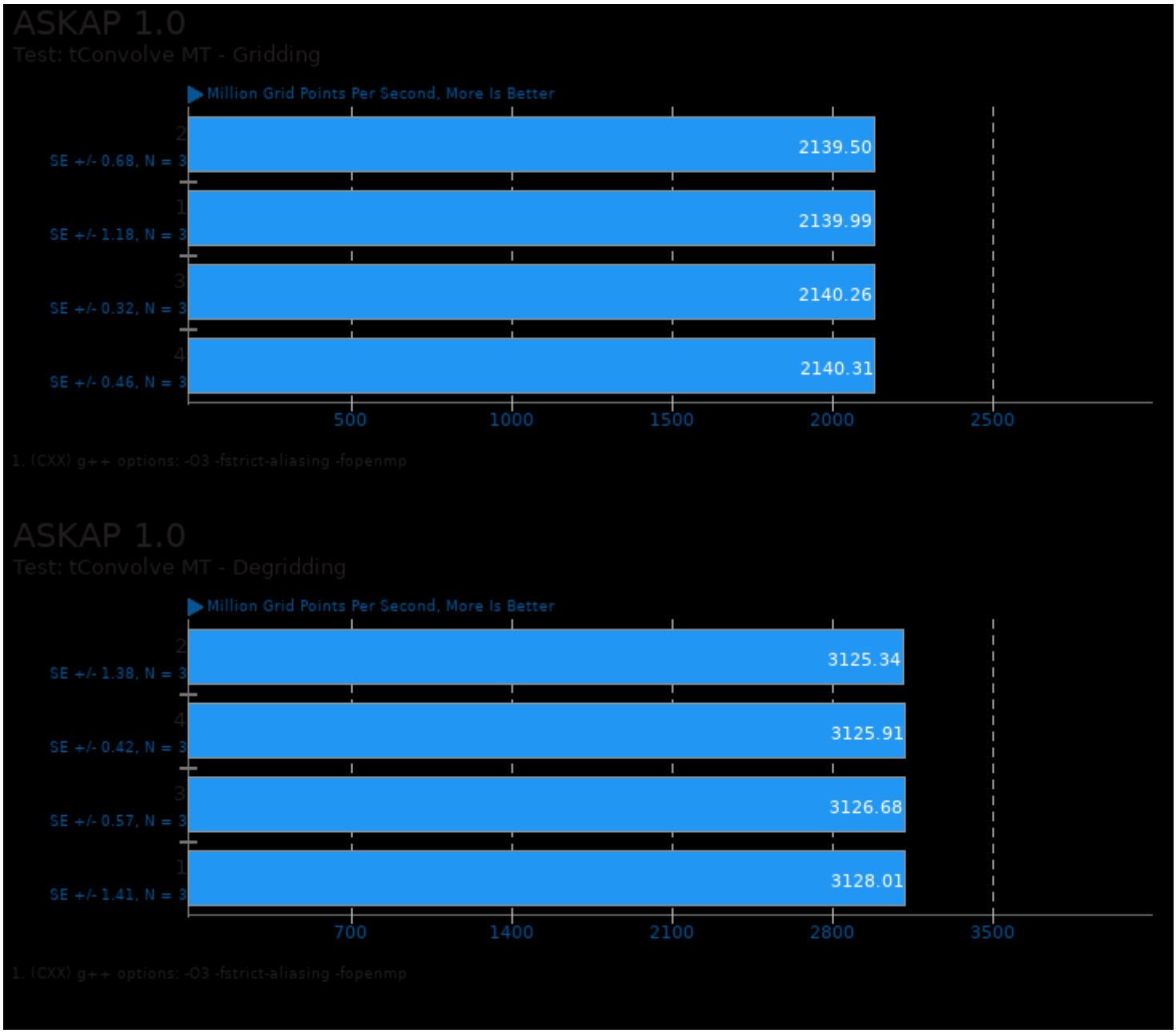
Kernel Notes: snd_usb_audio.ignore_ctl_error=1 - Transparent Huge Pages: madvise
Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-gnu-unique-object --enable-languages=c,ada,c++,go,brig,d,fortran,objc,obj-c++,m2 --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 - 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 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 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%
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 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%
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%

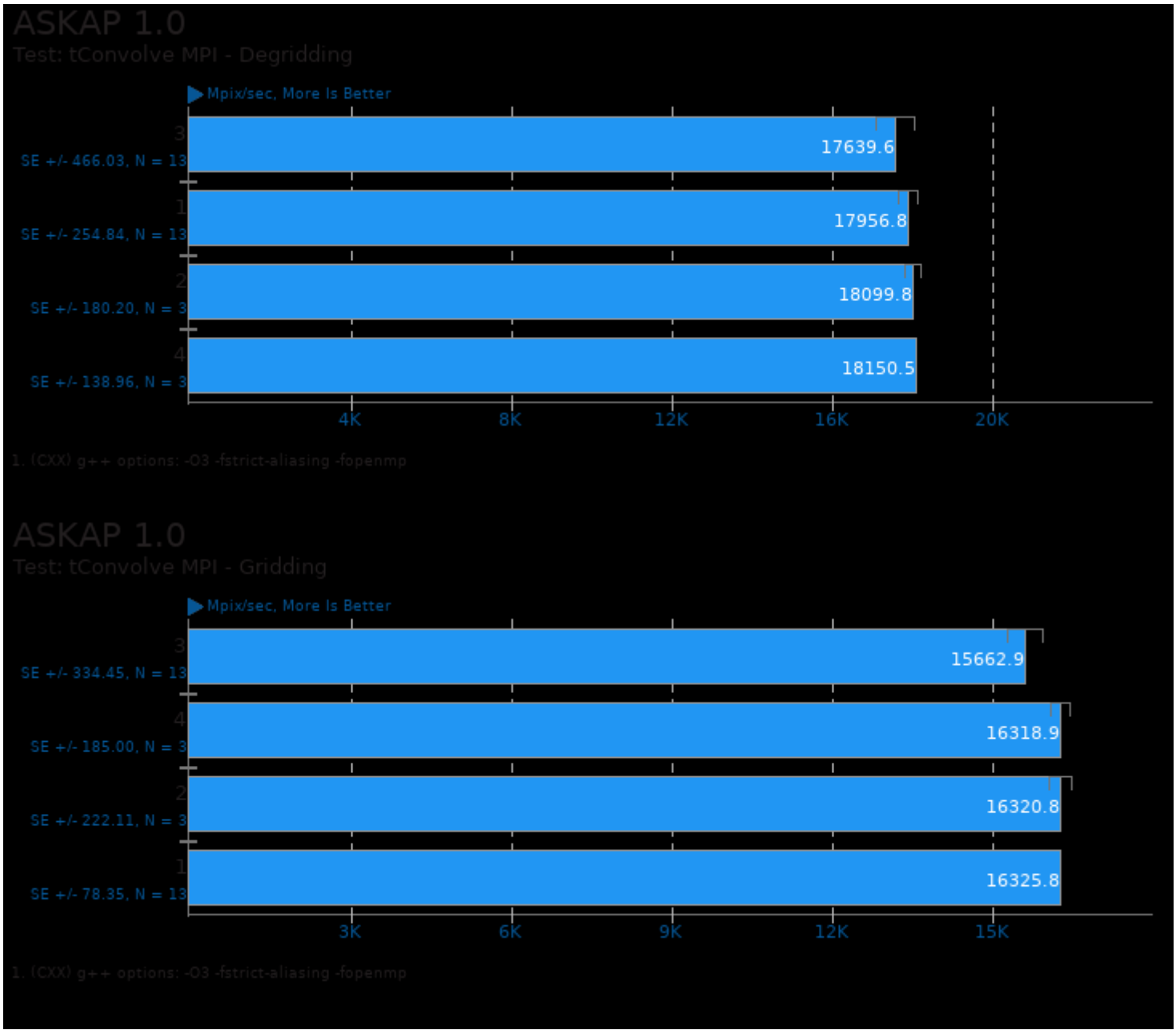
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ASKAP - H.C.O (Iterations/sec)	360.581	360.584	**361.453**	**358.859**
Normalized	99.76%	99.76%	100%	99.28%
Standard Deviation	0.4%	0.5%	0.6%	0.5%
Gcrypt Library (sec)	204.262	204.192	**204.956**	**203.669**
Normalized	99.71%	99.74%	99.37%	100%
Standard Deviation	0.7%	0.2%	0.6%	0.7%
Redis - 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 - 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%
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%
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%

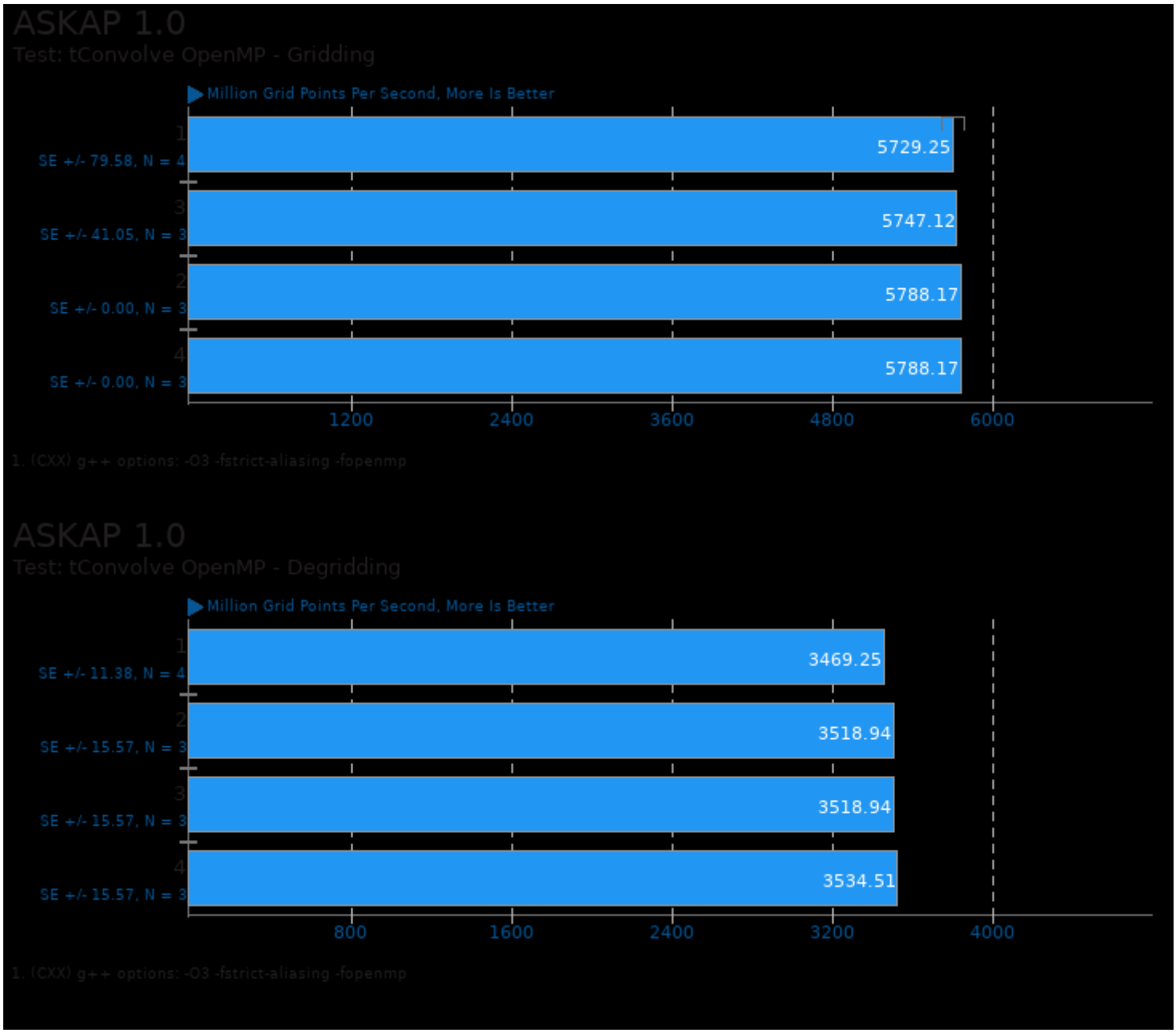
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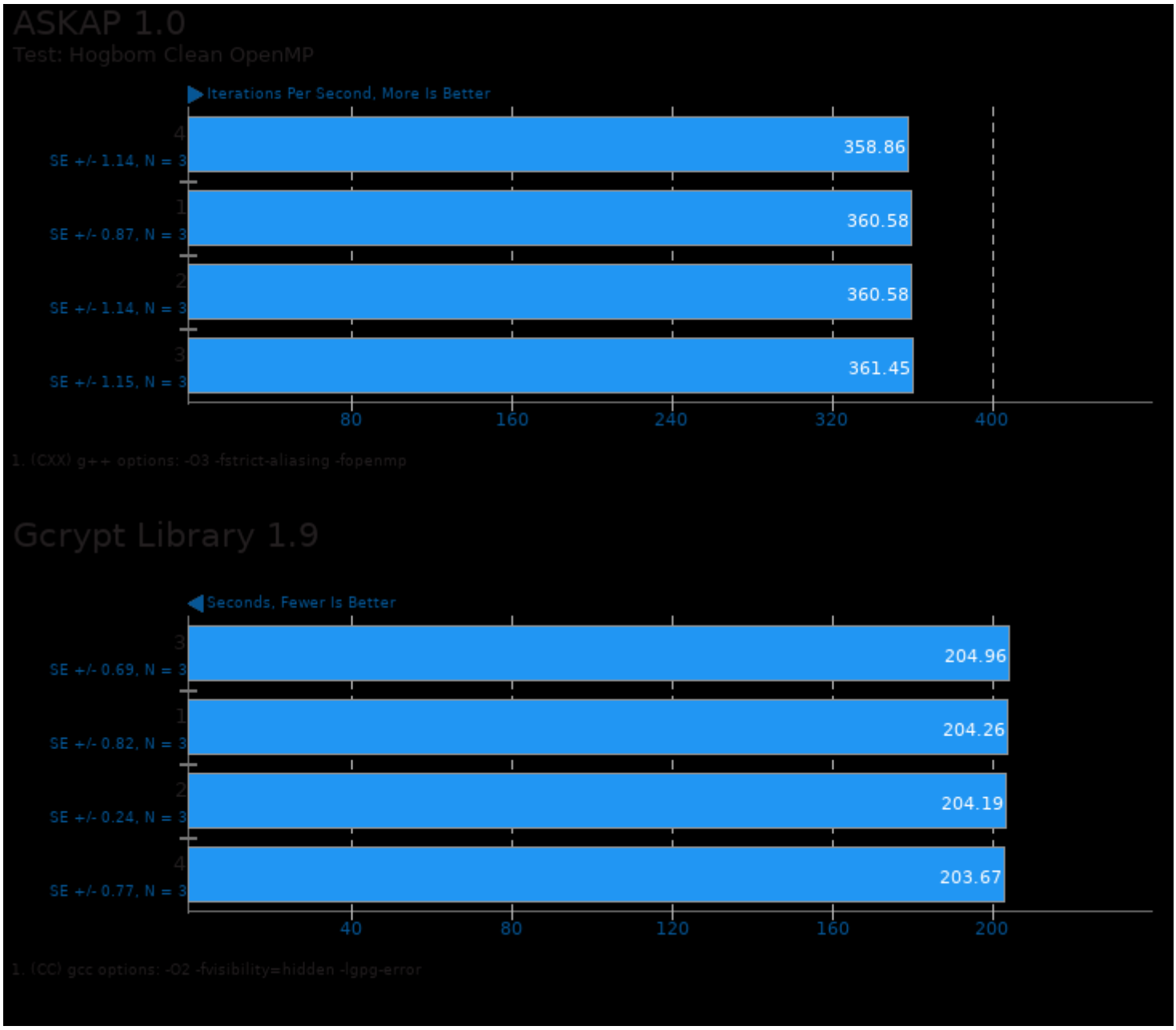
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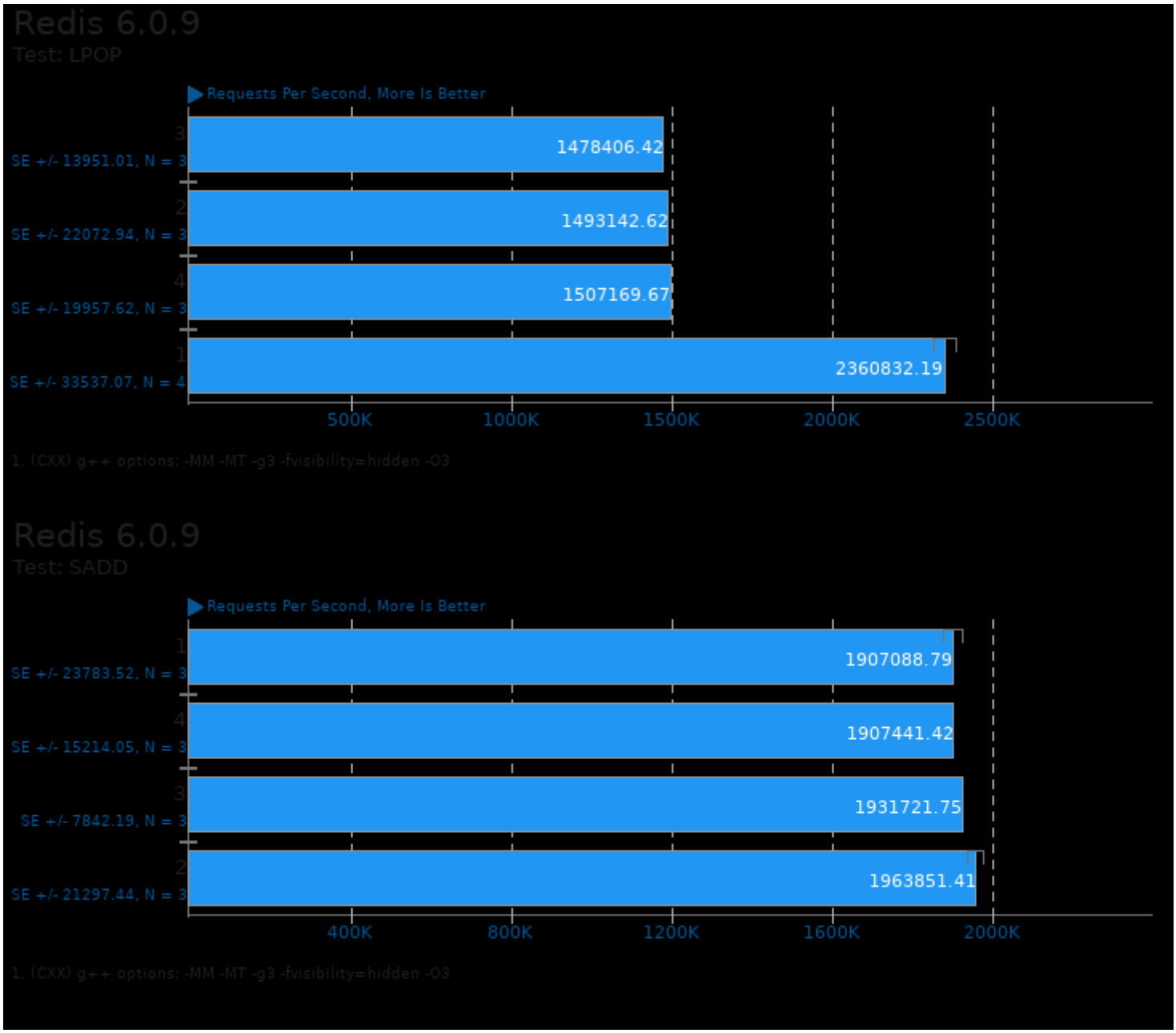
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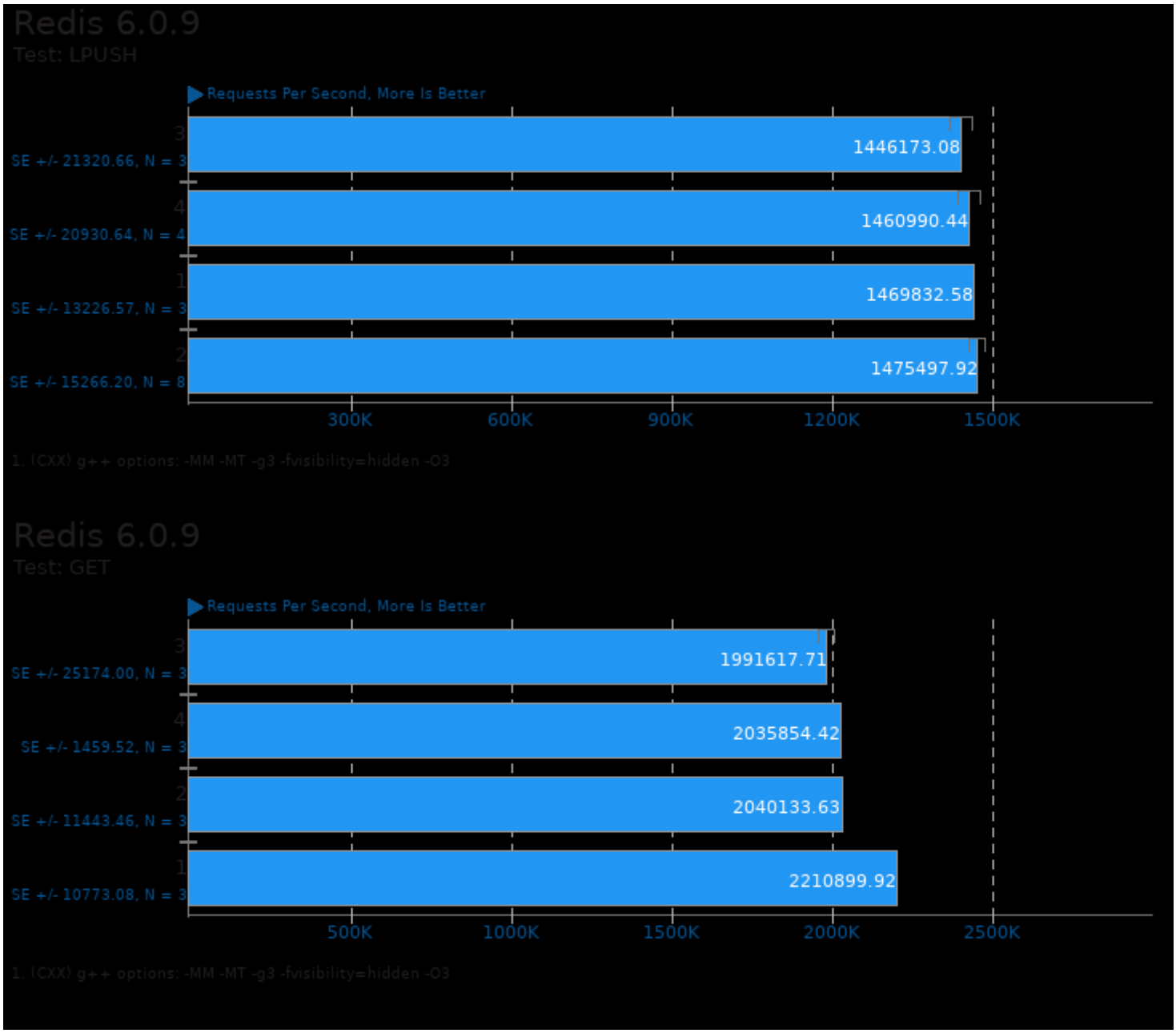
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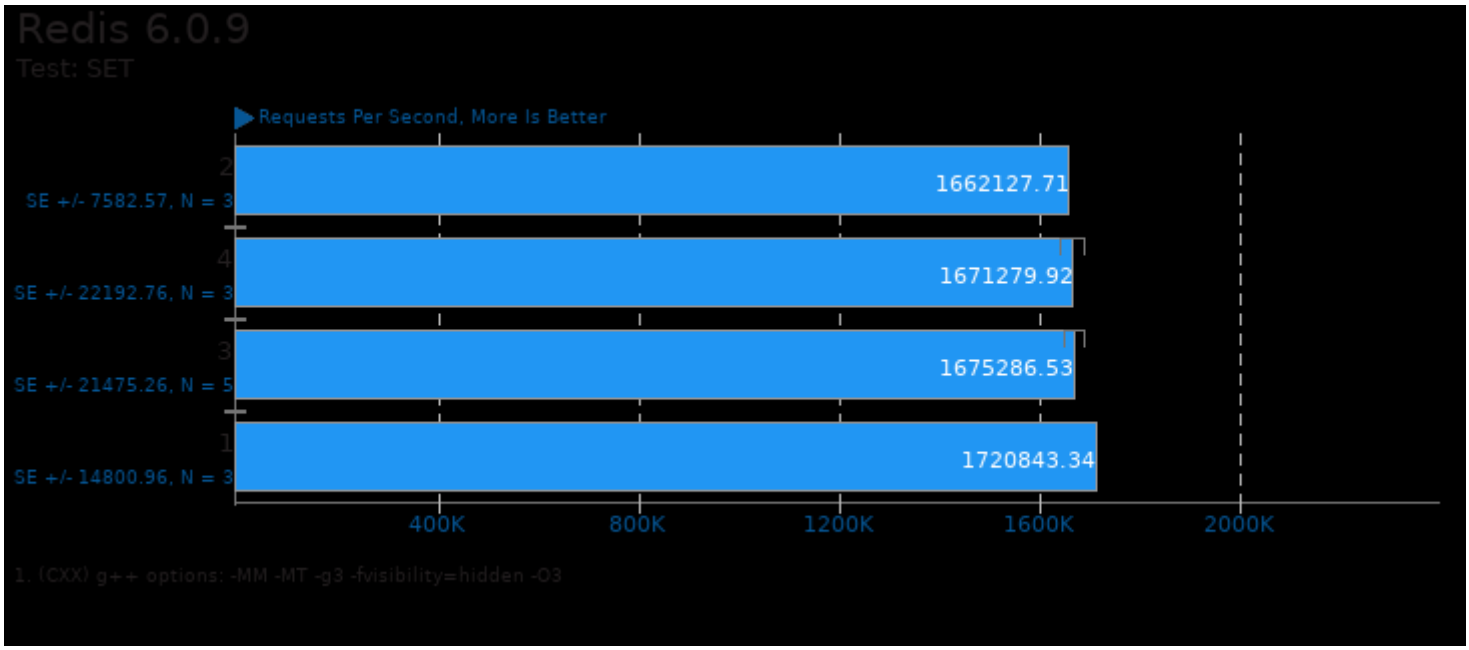
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