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ASKAP 5950X

AMD Ryzen 9 5950X 16-Core testing with a ASUS ROG CROSSHAIR VIII HERO (WI-FI) (3202 BIOS) and AMD Radeon RX 5600 OEM/5600 XT / 5700/5700 8GB on Ubuntu 20.10 via the Phoronix Test Suite.

Automated Executive Summary

2 had the most wins, coming in first place for 57% of the tests.

Based on the geometric mean of all complete results, the fastest (2) was 1.009x the speed of the slowest (1). 3 was 0.999x the speed of 2, 4 was 0.997x the speed of 3, 1 was 0.996x the speed of 4.

Test Systems:

1

2

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3

4

Processor: AMD Ryzen 9 5950X 16-Core @ 3.40GHz (16 Cores / 32 Threads), Motherboard: ASUS ROG CROSSHAIR VIII HERO (WI-FI) (3202 BIOS), Chipset: AMD Starship/Matisse, Memory: 32GB, Disk: 2000GB Corsair Force MP600 + 2000GB, Graphics: AMD Radeon RX 5600 OEM/5600 XT / 5700/5700 8GB (2100/875MHz), Audio: AMD Navi 10 HDMI Audio, Monitor: ASUS MG28U, Network: Realtek RTL8125 2.5GbE + Intel I211 + Intel Wi-Fi 6 AX200

OS: Ubuntu 20.10, Kernel: 5.10.9-051009-generic (x86_64), 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-f01bca8 2021-01-08 groovy-oibaf-ppa) (LLVM 11.0.1), Vulkan: 1.2.164, Compiler: GCC 10.2.0, File-System: ext4, Screen Resolution: 3840x2160

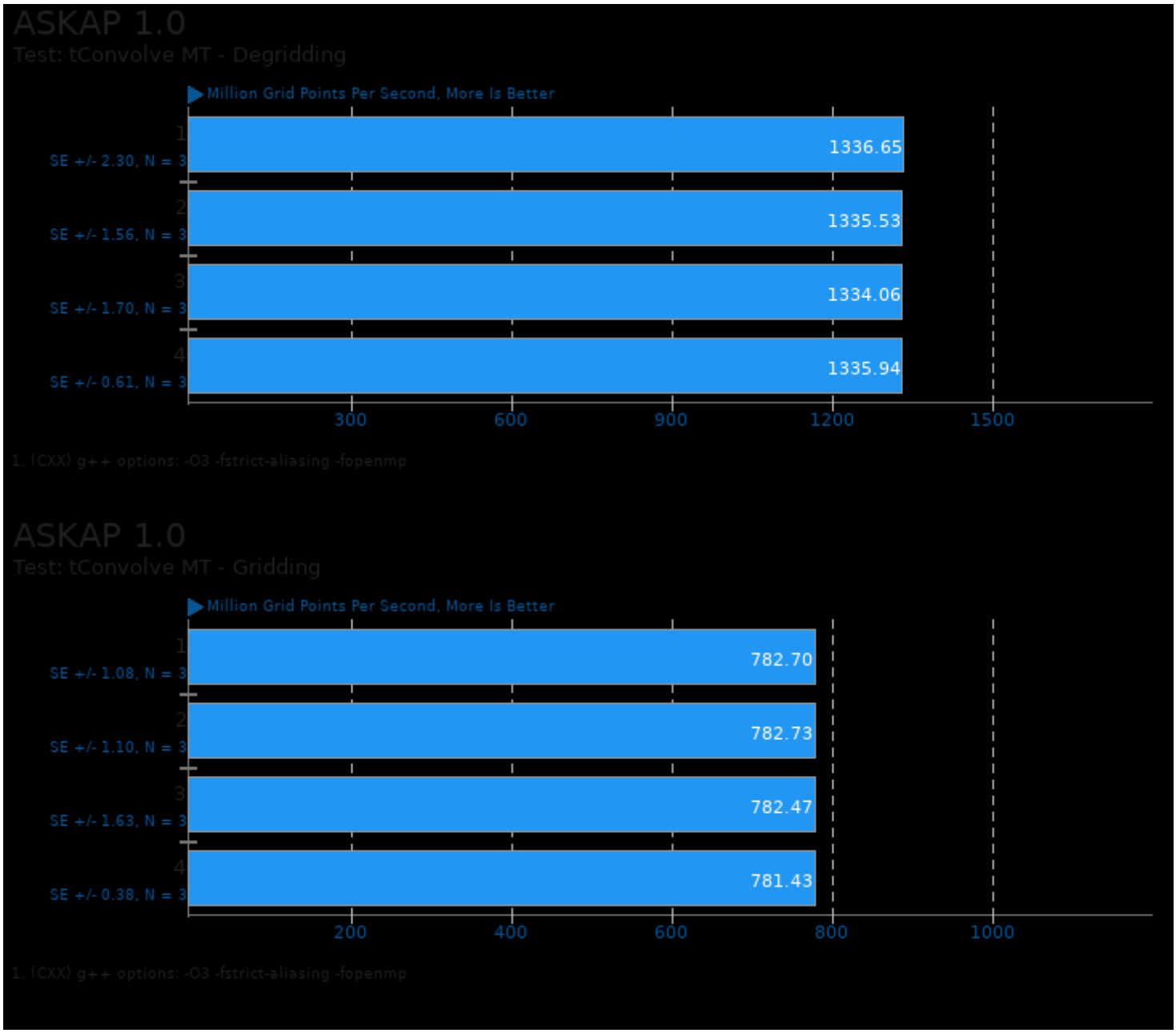
Kernel Notes: Transparent Huge Pages: madvise
Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-gnu-unique-object --enable-languages=c,ada,c++,go,brig,d,fortran,objc,obj-c++,m2 --enable-libphobos-checking=release --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: 0xa201009
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: always-on RSB filling + srbds: Not affected + tsx_async_abort: Not affected

	1	2	3	4
ASKAP - tConvolve MT - Degridding (Million Grid Points/sec)	**1337**	1336	**1334**	1336
Normalized	100%	99.92%	99.81%	99.95%
Standard Deviation	0.3%	0.2%	0.2%	0.1%
ASKAP - tConvolve MT - Gridding (Million Grid Points/sec)	782.701	**782.725**	782.465	**781.430**
Normalized	100%	100%	99.97%	99.83%
Standard Deviation	0.2%	0.2%	0.4%	0.1%
ASKAP - tConvolve MPI - Gridding (Mpix/sec)	6541	**6646**	**6521**	6589
Normalized	98.43%	100%	98.13%	99.15%
Standard Deviation	1.7%	2.5%	2.6%	1.9%
ASKAP - tConvolve MPI - Degridding (Mpix/sec)	6713	**6759**	**6700**	6729
Normalized	99.32%	100%	99.13%	99.56%
Standard Deviation	2.4%	2%	0.7%	1.3%
ASKAP - H.C.O (Iterations/sec)	203.930	**203.951**	201.650	**200.683**
Normalized	99.99%	100%	98.87%	98.4%
Standard Deviation	2.5%	0.8%	1.7%	1%
ASKAP - tConvolve OpenMP - Degridding (Million Grid Points/sec)	**3010**	3027	3049	**3084**
Normalized	97.61%	98.15%	98.89%	100%
Standard Deviation	2.2%	2.3%	1.7%	2.6%

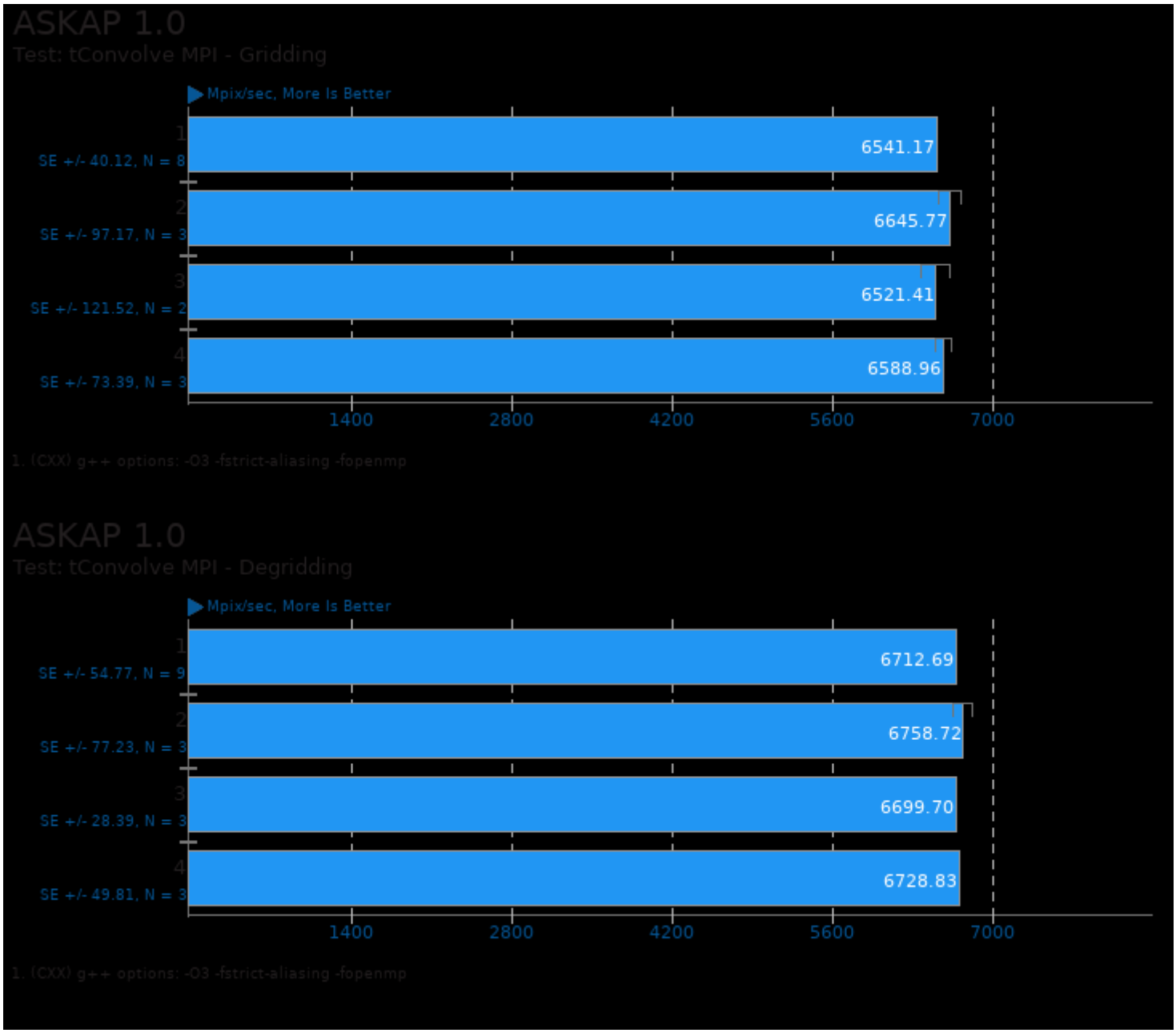
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ASKAP - tConvolve OpenMP - Gridding (Million Grid Points/sec)	2517	2602	2663	2555
Normalized	94.53%	97.73%	100%	95.96%
Standard Deviation	2.4%	1.5%	1%	2.5%

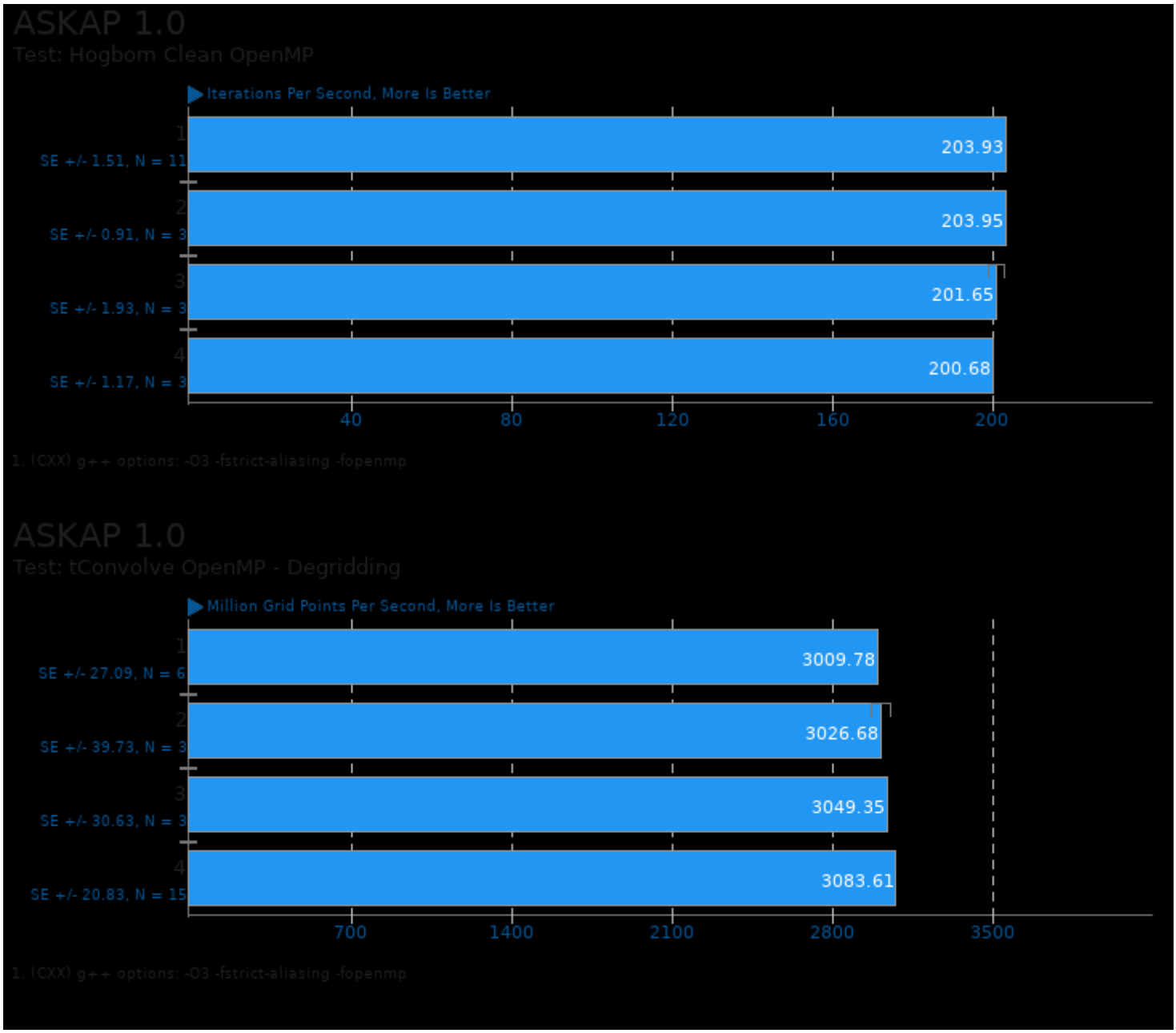
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ASKAP 1.0
Test: tConvolve MT - Degridding
Million Grid Points Per Second, More Is Better
1
SE +/- 2.30, N = 3
1336.65
2
SE +/- 1.56, N = 3
1335.53
3
SE +/- 1.70, N = 3
1334.06
4
SE +/- 0.61, N = 3
1335.94
300
600
900
1200
1500
1. (CXX) g++ options: -O3 -fstrict-aliasing -fopenmp
ASKAP 1.0
Test: tConvolve MT - Gridding
Million Grid Points Per Second, More Is Better
1
SE +/- 1.08, N = 3
782.70
2
SE +/- 1.10, N = 3
782.73
3
SE +/- 1.63, N = 3
782.47
4
SE +/- 0.38, N = 3
781.43
200
400
600
800
1000
1. (CXX) g++ options: -O3 -fstrict-aliasing -fopenmp

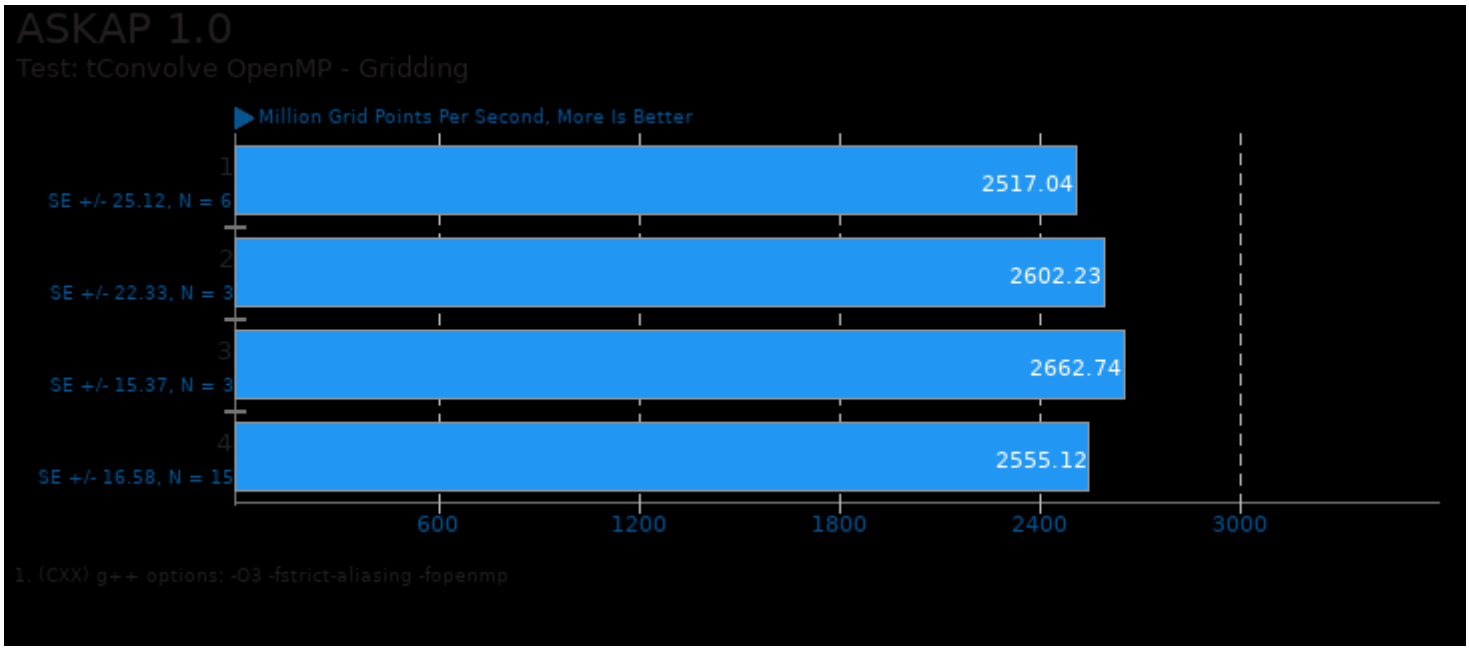
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ASKAP 1.0
Test: tConvolve MPI - Gridding
Mpix/sec, More Is Better
1
SE +/- 40.12, N = 8
6541.17
2
SE +/- 97.17, N = 3
6645.77
3
SE +/- 121.52, N = 2
6521.41
4
SE +/- 73.39, N = 3
6588.96
1400
2800
4200
5600
7000
1. (CXX) g++ options: -O3 -fstrict-aliasing -fopenmp
ASKAP 1.0
Test: tConvolve MPI - Degridding
Mpix/sec, More Is Better
1
SE +/- 54.77, N = 9
6712.69
2
SE +/- 77.23, N = 3
6758.72
3
SE +/- 28.39, N = 3
6699.70
4
SE +/- 49.81, N = 3
6728.83
1400
2800
4200
5600
7000
1. (CXX) g++ options: -O3 -fstrict-aliasing -fopenmp

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ASKAP 1.0
Test: Hogbom Clean OpenMP
Iterations Per Second, More Is Better
1
SE +/- 1.51, N = 11
203.93
2
SE +/- 0.91, N = 3
203.95
3
SE +/- 1.93, N = 3
201.65
4
SE +/- 1.17, N = 3
200.68
40
80
120
160
200
1. (CXX) g++ options: -O3 -fstrict-aliasing -fopenmp
ASKAP 1.0
Test: tConvolve OpenMP - Degridding
Million Grid Points Per Second, More Is Better
1
SE +/- 27.09, N = 6
3009.78
2
SE +/- 39.73, N = 3
3026.68
3
SE +/- 30.63, N = 3
3049.35
4
SE +/- 20.83, N = 15
3083.61
700
1400
2100
2800
3500
1. (CXX) g++ options: -O3 -fstrict-aliasing -fopenmp

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This file was automatically generated via the Phoronix Test Suite benchmarking software on Friday, 29 March 2024 05:52.