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Xeon Gold 5220R 2P 2021

2 x Intel Xeon Gold 5220R testing with a TYAN S7106 (V2.01.B40 BIOS) and llvmpipe on Ubuntu 20.04 via the Phoronix Test Suite.

Automated Executive Summary

2 had the most wins, coming in first place for 37% of the tests.

Based on the geometric mean of all complete results, the fastest (2) was 1.008x the speed of the slowest (1). 3 was 0.997x the speed of 2 and 1 was 0.995x the speed of 3.

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

LULESH at 1.105x
Mobile Neural Network (Model: MobileNetV2_224) at 1.101x
Algebraic Multi-Grid Benchmark at 1.06x
Mobile Neural Network (Model: resnet-v2-50) at 1.04x
TNN (Target: CPU - Model: MobileNet v2) at 1.028x
RELION (Test: Basic - Device: CPU) at 1.019x
ONNX Runtime (Model: fcn-resnet101-11 - Device: OpenMP CPU) at 1.018x
OpenFOAM (Input: Motorbike 60M) at 1.018x
Mobile Neural Network (Model: inception-v3) at 1.014x

rav1e (Speed: 6) at 1.013x.

Test Systems:

1

2

3

Processor: 2 x Intel Xeon Gold 5220R @ 3.90GHz (36 Cores / 72 Threads), Motherboard: TYAN S7106 (V2.01.B40 BIOS), Chipset: Intel Sky Lake-E DMI3 Registers, Memory: 94GB, Disk: 500GB Samsung SSD 860, Graphics: llvmpipe, Monitor: VE228, Network: 2 x Intel I210 + 2 x QLogic cLOM8214 1/10GbE

OS: Ubuntu 20.04, Kernel: 5.9.0-050900rc6-generic (x86_64) 20200920, Desktop: GNOME Shell 3.36.4, Display Server: X Server 1.20.8, Display Driver: modesetting 1.20.8, OpenGL: 3.3 Mesa 20.0.4 (LLVM 9.0.1 256 bits), Compiler: GCC 9.3.0, File-System: ext4, Screen Resolution: 1920x1080

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++,gm2 --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none=/build/gcc-9-HskZEa/gcc-9-9.3.0/debian/tmp-nvptx/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: intel_pstate powersave - CPU Microcode: 0x5003003
Python Notes: Python 2.7.18rc1 + Python 3.8.5
Security Notes: itlb_multihit: KVM: Mitigation of VMX disabled + 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 Enhanced IBRS IBPB: conditional RSB filling + srbds: Not affected + tsx_async_abort: Mitigation of TSX disabled

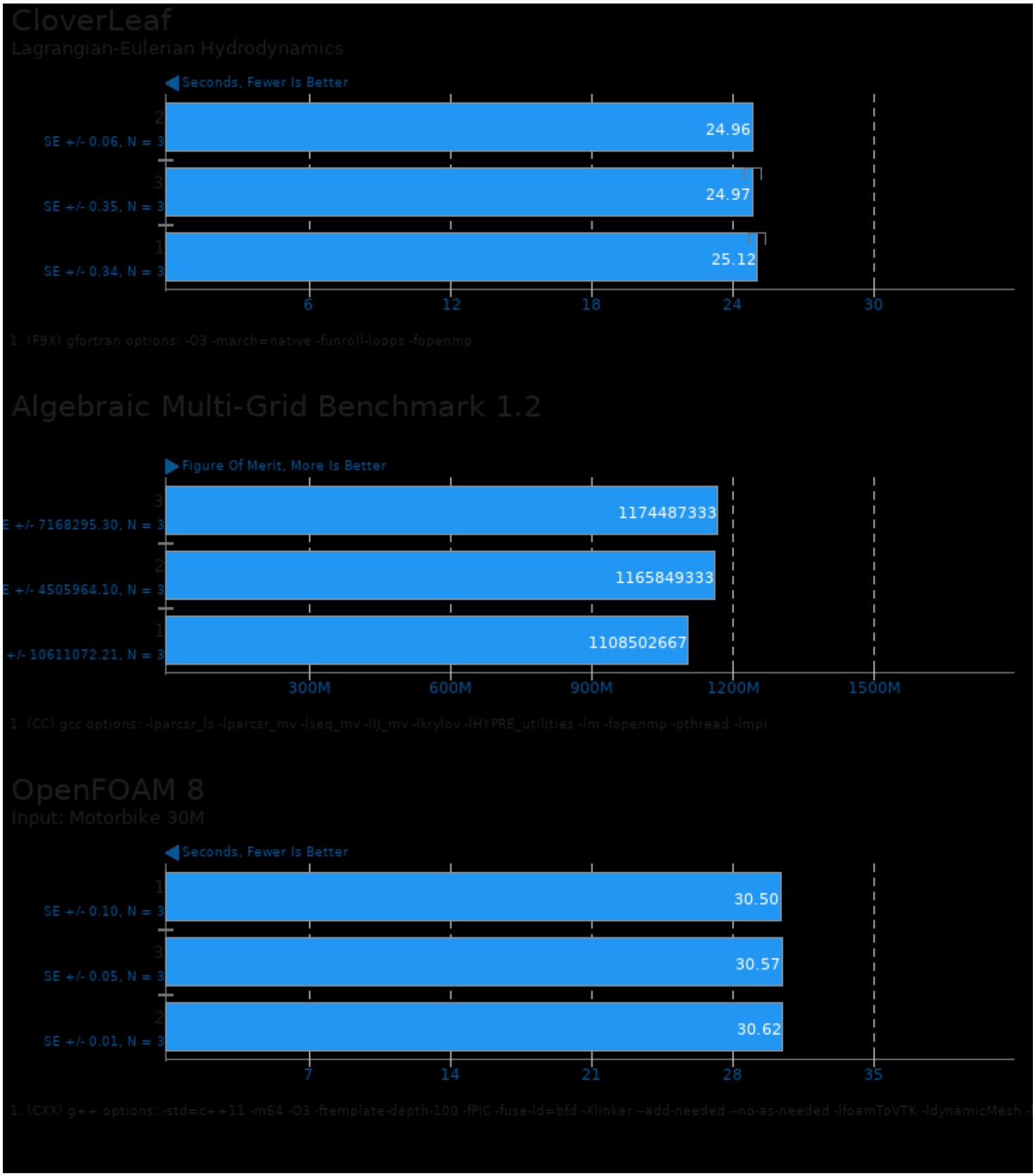
	1	2	3
CloverLeaf - L.E.H (sec)	**25.12**	**24.96**	24.97
Normalized	99.36%	100%	99.96%
Standard Deviation	2.3%	0.4%	2.4%
Algebraic Multi-Grid Benchmark (Figure Of Merit)	**1108502667**	1165849333	**1174487333**
Normalized	94.38%	99.26%	100%
Standard Deviation	1.7%	0.7%	1.1%
OpenFOAM - Motorbike 30M (sec)	**30.50**	**30.62**	30.57
Normalized	100%	99.61%	99.77%
Standard Deviation	0.5%	0.1%	0.3%
OpenFOAM - Motorbike 60M (sec)	**238.33**	**234.22**	237.59
Normalized	98.28%	100%	98.58%
Standard Deviation	0.2%	1%	0.1%
Quantum ESPRESSO - AUSURF112 (sec)	**1645**	1741	**1765**
Normalized	100%	94.53%	93.22%
Standard Deviation	7.7%	5.7%	2.9%

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RELION - Basic - CPU (sec)	652.598	**642.292**	**654.522**
Normalized	98.42%	100%	98.13%
Standard Deviation	3.6%	1.1%	0.8%
LAMMPS Molecular Dynamics Simulator - 20k Atoms (ns/day)	**18.033**	**18.091**	18.063
Normalized	99.68%	100%	99.85%
Standard Deviation	0.7%	0.2%	0.2%
LAMMPS Molecular Dynamics Simulator - Rhodopsin Protein (ns/day)	**16.728**	16.776	**16.827**
Normalized	99.41%	99.7%	100%
Standard Deviation	0.9%	4.6%	5.2%
LULESH (z/s)	**13912**	15313	**15373**
Normalized	90.5%	99.61%	100%
Standard Deviation	1.9%	3.5%	3.3%
dav1d - Chimera 1080p (FPS)	**338.35**	**338.91**	338.75
Normalized	99.83%	100%	99.95%
Standard Deviation	0.5%	0.6%	0.2%
dav1d - Summer Nature 4K (FPS)	186.73	**186.14**	**187.89**
Normalized	99.38%	99.07%	100%
Standard Deviation	1.3%	1.6%	0.4%
dav1d - S.N.1 (FPS)	**339.62**	**344.01**	343.24
Normalized	98.72%	100%	99.78%
Standard Deviation	1.4%	0.5%	0.5%
dav1d - C.1.1.b (FPS)	**70.83**	70.84	**71.34**
Normalized	99.29%	99.3%	100%
Standard Deviation	0.4%	0.3%	0.3%
rav1e - 1 (FPS)	**0.361**	**0.364**	0.363
Normalized	99.18%	100%	99.73%
Standard Deviation	1.4%	0.3%	0.2%
rav1e - 5 (FPS)	**0.964**	0.961	**0.955**
Normalized	100%	99.69%	99.07%
Standard Deviation	0.4%	0.4%	1.1%
rav1e - 6 (FPS)	**1.223**	1.236	**1.239**
Normalized	98.71%	99.76%	100%
Standard Deviation	1.4%	0.5%	0.5%
rav1e - 10 (FPS)	**2.573**	**2.573**	**2.548**
Normalized	100%	100%	99.03%
Standard Deviation	0.2%	0.5%	1.4%
Timed Godot Game Engine Compilation - Time To Compile (sec)	**82.401**	**82.919**	82.656
Normalized	100%	99.38%	99.69%
Standard Deviation	1.2%	2%	0.7%
Google SynthMark - VoiceMark_100 (Voices)	535.222	**536.681**	**534.631**
Normalized	99.73%	100%	99.62%
Standard Deviation	0.3%	0.2%	0.1%
Mobile Neural Network - SqueezeNetV1.0	**8.567**	8.493	**8.464**
Normalized	98.8%	99.66%	100%
Standard Deviation	2.2%	2.9%	4.4%
Mobile Neural Network - resnet-v2-50 (ms)	**29.878**	**31.064**	30.882
Normalized	100%	96.18%	96.75%
Standard Deviation	0.9%	2.3%	3.3%
Mobile Neural Network - MobileNetV2_224	**5.244**	**4.764**	4.952
Normalized	90.85%	100%	96.2%
Standard Deviation	2.7%	1.6%	5%

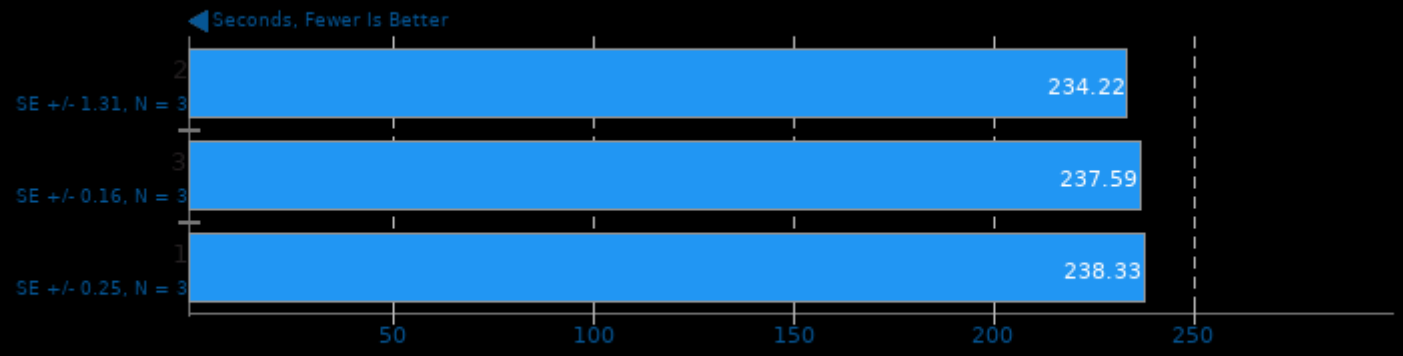
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Mobile Neural Network - mobilenet-v1-1.0	**2.839**	2.901	**2.908**
Normalized	100%	97.86%	97.63%
Standard Deviation	0.3%	4.9%	7.1%
Mobile Neural Network - inception-v3 (ms)	**36.881**	**37.414**	37.013
Normalized	100%	98.58%	99.64%
Standard Deviation	0.6%	1.1%	1.5%
TNN - CPU - MobileNet v2 (ms)	**397.487**	**386.480**	388.704
Normalized	97.23%	100%	99.43%
Standard Deviation	2.5%	0.3%	1.2%
TNN - CPU - SqueezeNet v1.1 (ms)	**349.673**	**349.815**	349.705
Normalized	100%	99.96%	99.99%
Standard Deviation	0%	0%	0%
ONNX Runtime - yolov4 - OpenMP CPU (Inferences/min)	**346**	**342**	**346**
Normalized	100%	98.84%	100%
Standard Deviation	0.8%	2.6%	0.6%
ONNX Runtime - bertsquad-10 - OpenMP CPU (Inferences/min)	**396**	**405**	398
Normalized	97.78%	100%	98.27%
Standard Deviation	2.8%	6.9%	4.5%
ONNX Runtime - fcn-resnet101-11 - OpenMP CPU (Inferences/min)	**111**	**111**	**109**
Normalized	100%	100%	98.2%
Standard Deviation	0.5%	0.9%	1.7%
ONNX Runtime - shufflenet-v2-10 - OpenMP CPU (Inferences/min)	**6334**	6582	**6596**
Normalized	96.03%	99.79%	100%
Standard Deviation	8.7%	0.3%	0.4%
ONNX Runtime - super-resolution-10 - OpenMP CPU (Inferences/min)	5319	**5327**	**5289**
Normalized	99.85%	100%	99.29%
Standard Deviation	0.4%	0.3%	0.9%
Kripke (Throughput FoM)	**76581811**	76420567	**75540700**
Normalized	100%	99.79%	98.64%
Standard Deviation	8.2%	8.5%	8.3%


CloverLeaf
Lagrangian-Eulerian Hydrodynamics
Seconds, Fewer Is Better
2
SE +/- 0.06, N = 3
24.96
3
SE +/- 0.35, N = 3
24.97
1
SE +/- 0.34, N = 3
25.12
6
12
18
24
30
1. (F9X) gfortran options: -O3 -march=native -funroll-loops -fopenmp
Algebraic Multi-Grid Benchmark 1.2
Figure Of Merit, More Is Better
3
E +/- 7168295.30, N = 3
1174487333
2
E +/- 4505964.10, N = 3
1165849333
1
+/- 10611072.21, N = 3
1108502667
300M
600M
900M
1200M
1500M
1. (CC) gcc options: -lparcsr_ls -lparcsr_mv -lseq_mv -lIJ_mv -lkrylov -lHYPRE_utilities -lm -fopenmp -pthread -lmpi
OpenFOAM 8
Input: Motorbike 30M
Seconds, Fewer Is Better
1
SE +/- 0.10, N = 3
30.50
3
SE +/- 0.05, N = 3
30.57
2
SE +/- 0.01, N = 3
30.62
7
14
21
28
35
1. (CXX) g++ options: -std=c++11 -m64 -O3 -ftemplate-depth-100 -fPIC -fuse-ld=bfd -Xlinker --add-needed --no-as-needed -lfoamToVTK -ldynamicMesh

OpenFOAM 8

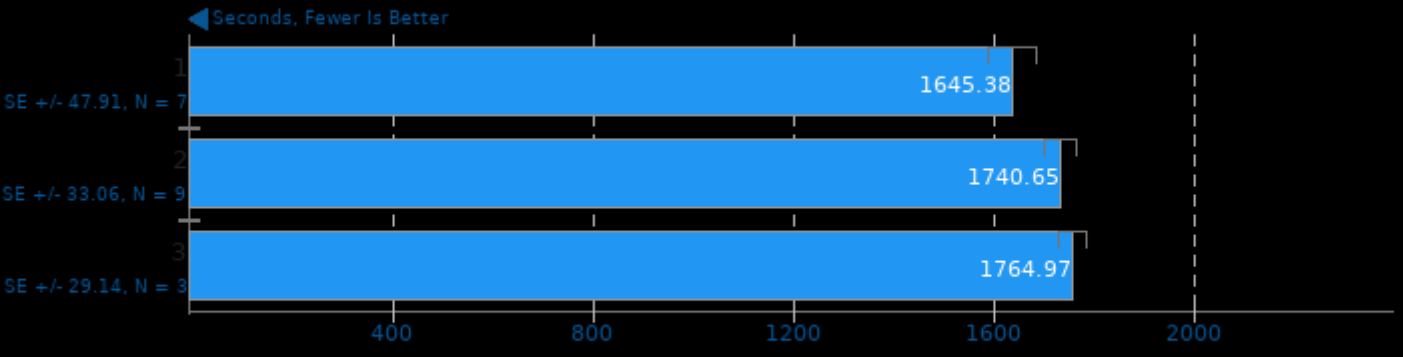
Input: Motorbike 60M



1. (CXX) g++ options: -std=c++11 -m64 -O3 -ftemplate-depth-100 -fPIC -fuse-ld=bfd -Xlinker --add-needed --no-as-needed -lfoamToVTK -ldynamicMesh -

Quantum ESPRESSO 6.7

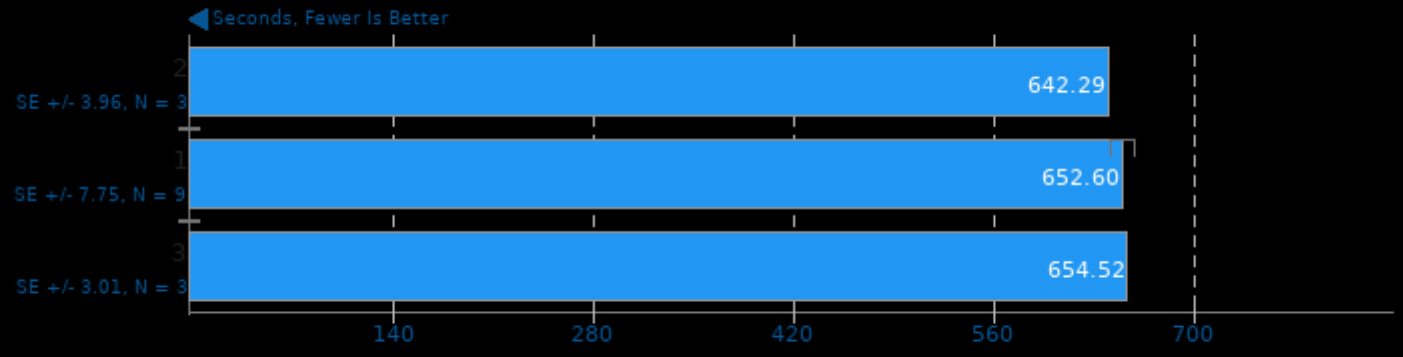
Input: AUSURF112



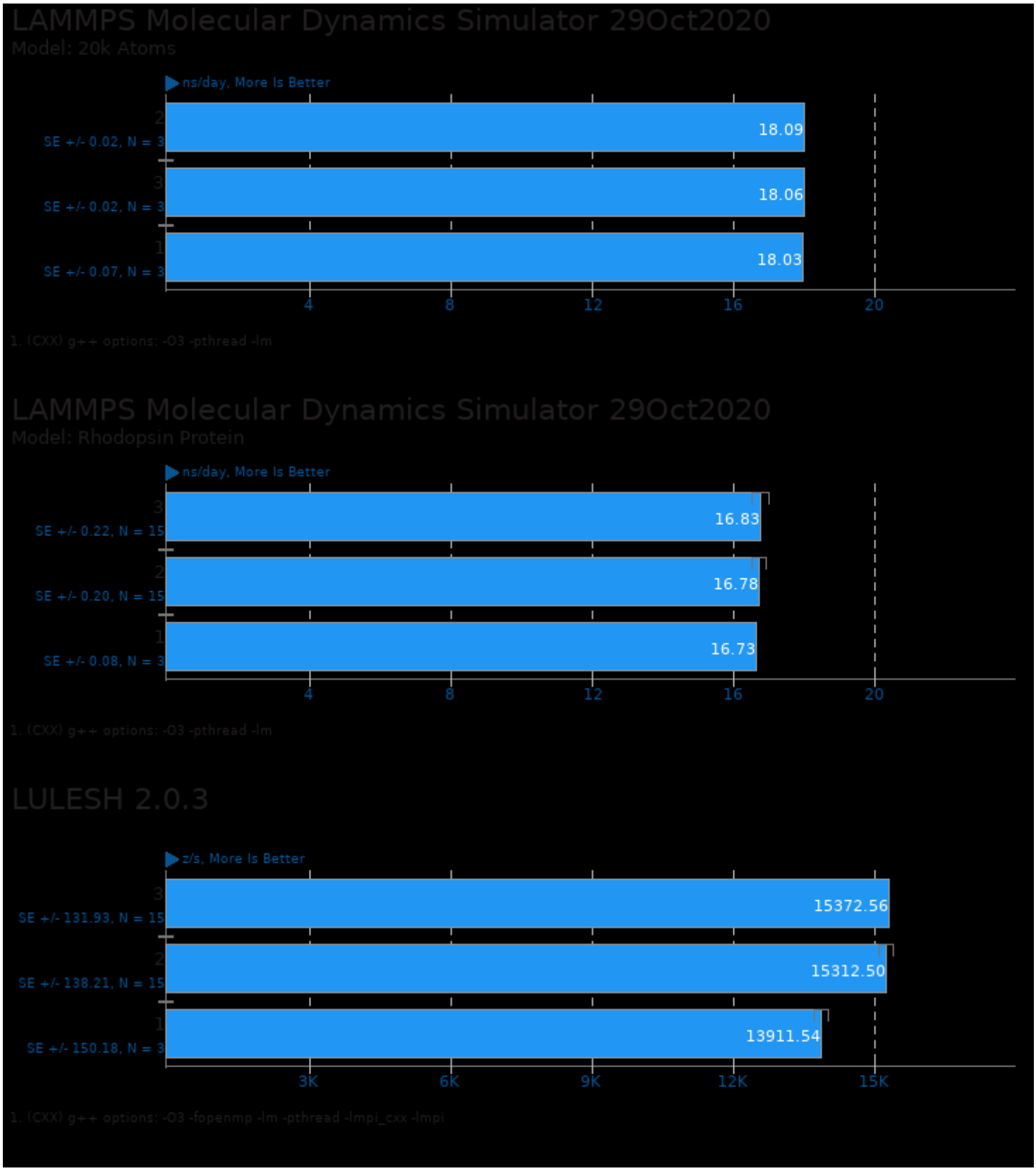
1. (F9X) gfortran options: -lopenblas -lFoX_dom -lFoX_sax -lFoX_wxml -lFoX_common -lFoX_utils -lFoX_fsys -lfftw3 -pthread -lmpi_usempif08 -lmpi_mpifh -

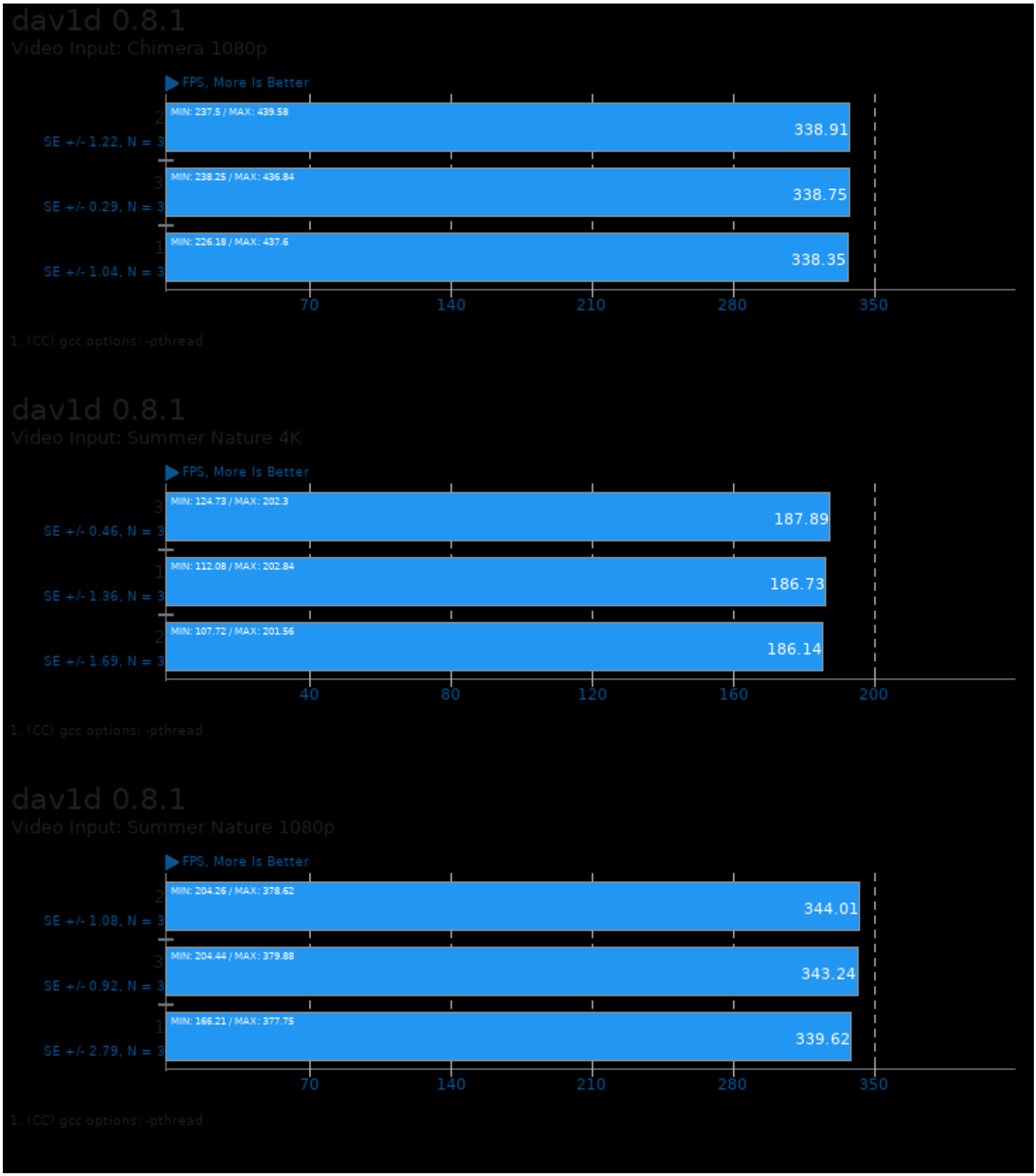
RELION 3.1.1

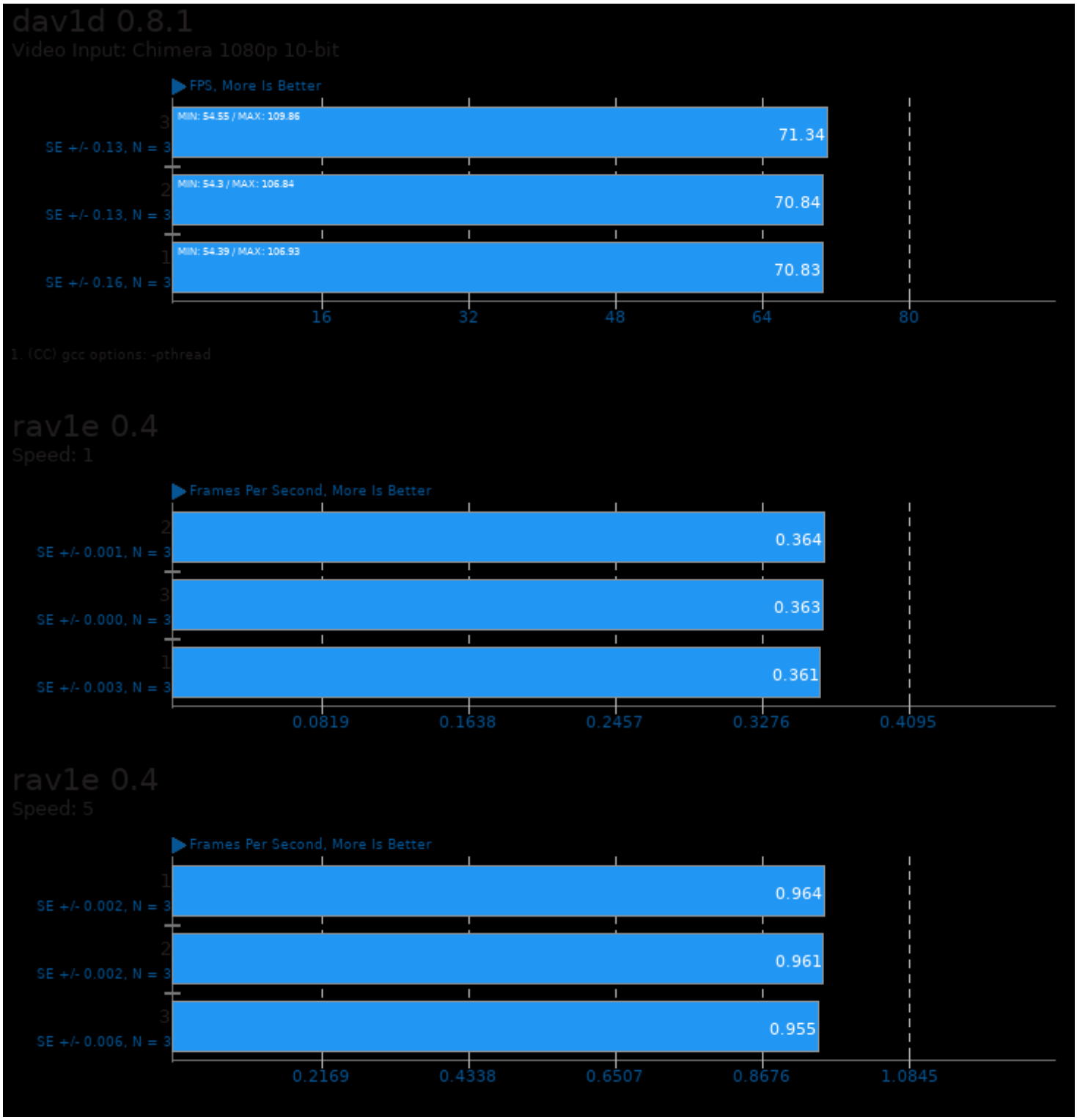
Test: Basic - Device: CPU

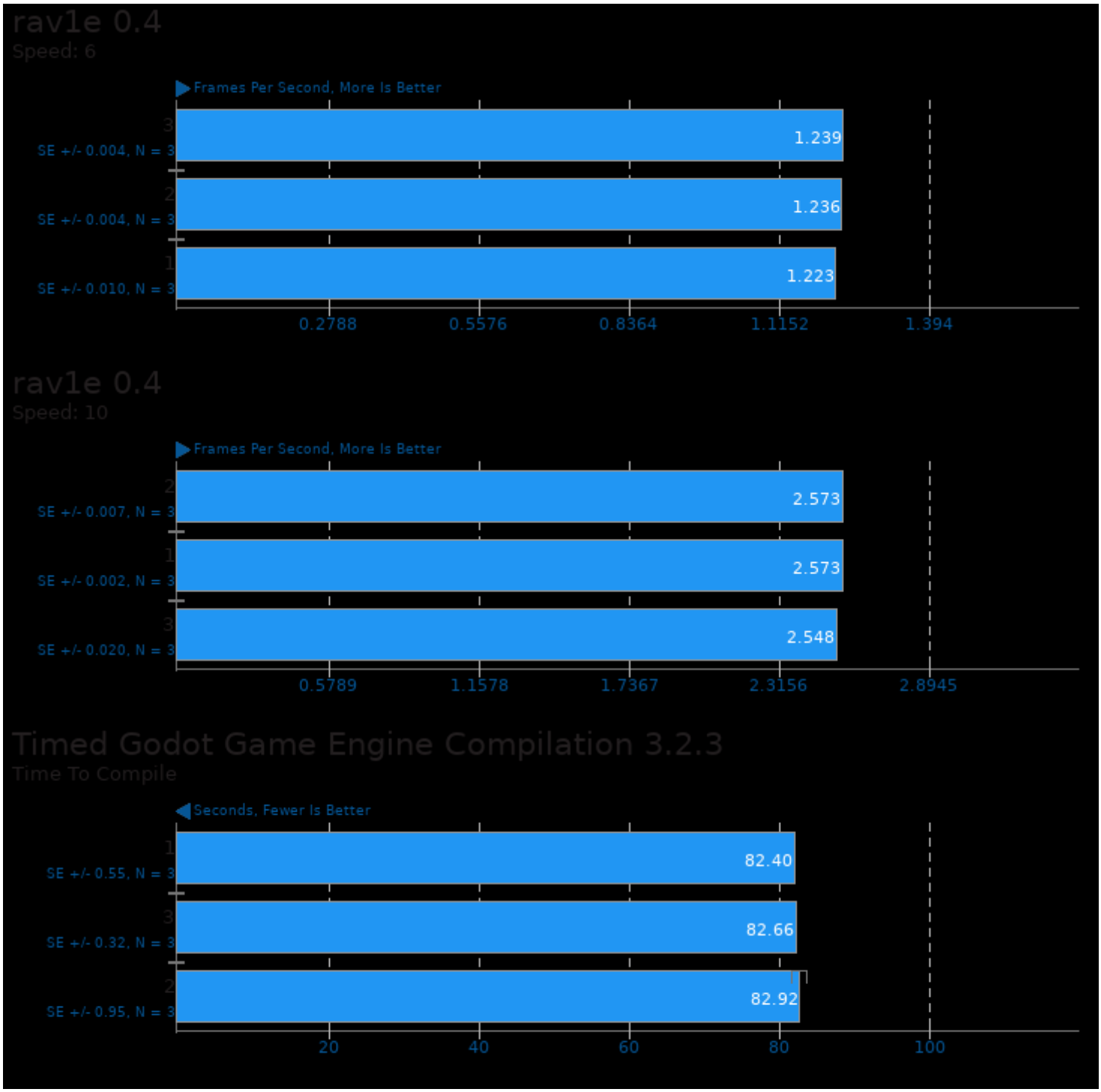


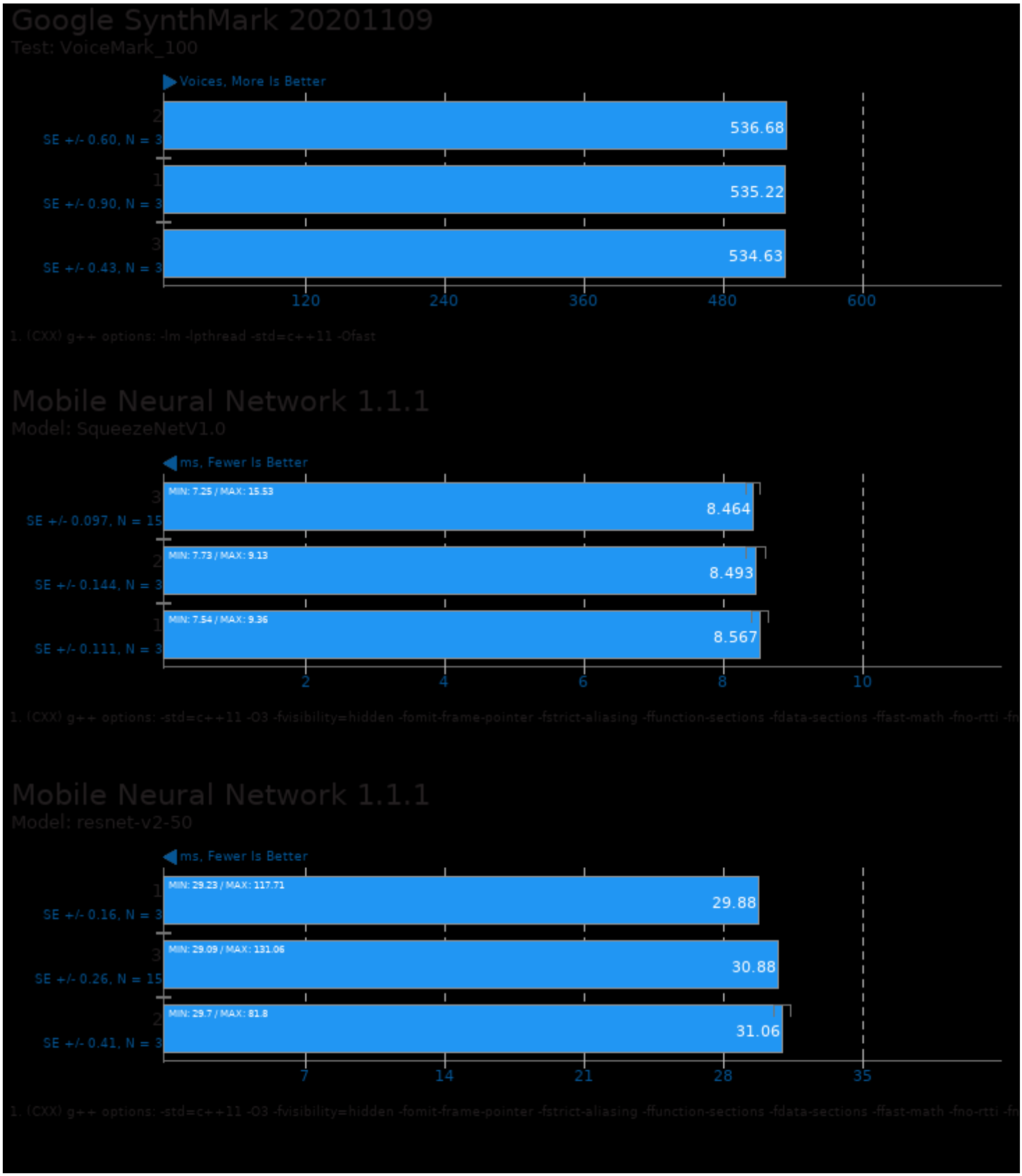
1. (CXX) g++ options: -fopenmp -std=c++0x -O3 -rdynamic -ldl -ltiff -lfftw3f -lfftw3 -lpng -pthread -lmpi_cxx -lmpi

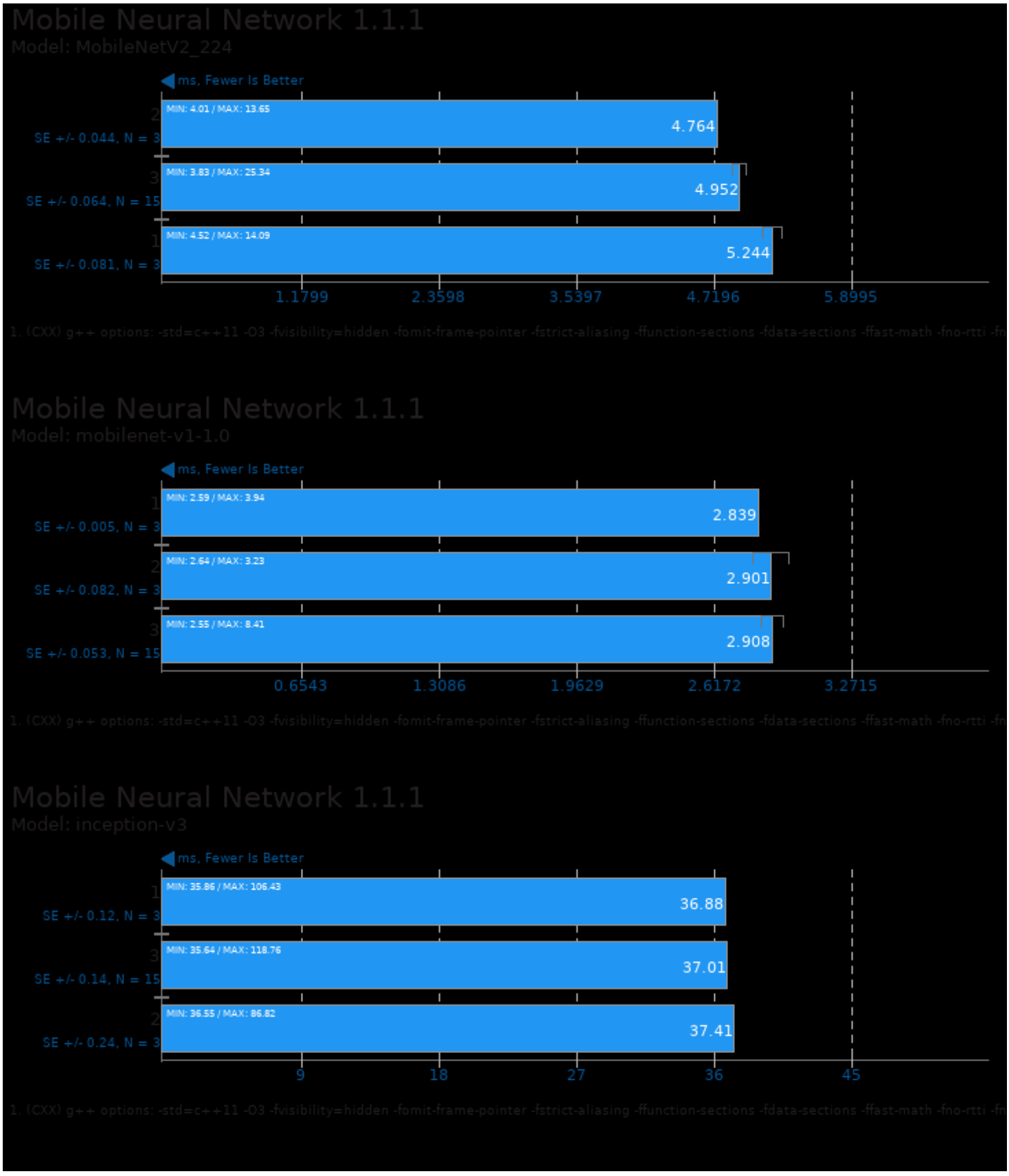

LAMMPS Molecular Dynamics Simulator 29Oct2020
Model: 20k Atoms
ns/day, More Is Better
2
SE +/- 0.02, N = 3
18.09
3
SE +/- 0.02, N = 3
18.06
1
SE +/- 0.07, N = 3
18.03
4
8
12
16
20
1. (CXX) g++ options: -O3 -pthread -lm
LAMMPS Molecular Dynamics Simulator 29Oct2020
Model: Rhodopsin Protein
ns/day, More Is Better
3
SE +/- 0.22, N = 15
16.83
2
SE +/- 0.20, N = 15
16.78
1
SE +/- 0.08, N = 3
16.73
4
8
12
16
20
1. (CXX) g++ options: -O3 -pthread -lm
LULESH 2.0.3
z/s, More Is Better
3
SE +/- 131.93, N = 15
15372.56
2
SE +/- 138.21, N = 15
15312.50
1
SE +/- 150.18, N = 3
13911.54
3K
6K
9K
12K
15K
1. (CXX) g++ options: -O3 -fopenmp -lm -pthread -lmpi_cxx -lmpi

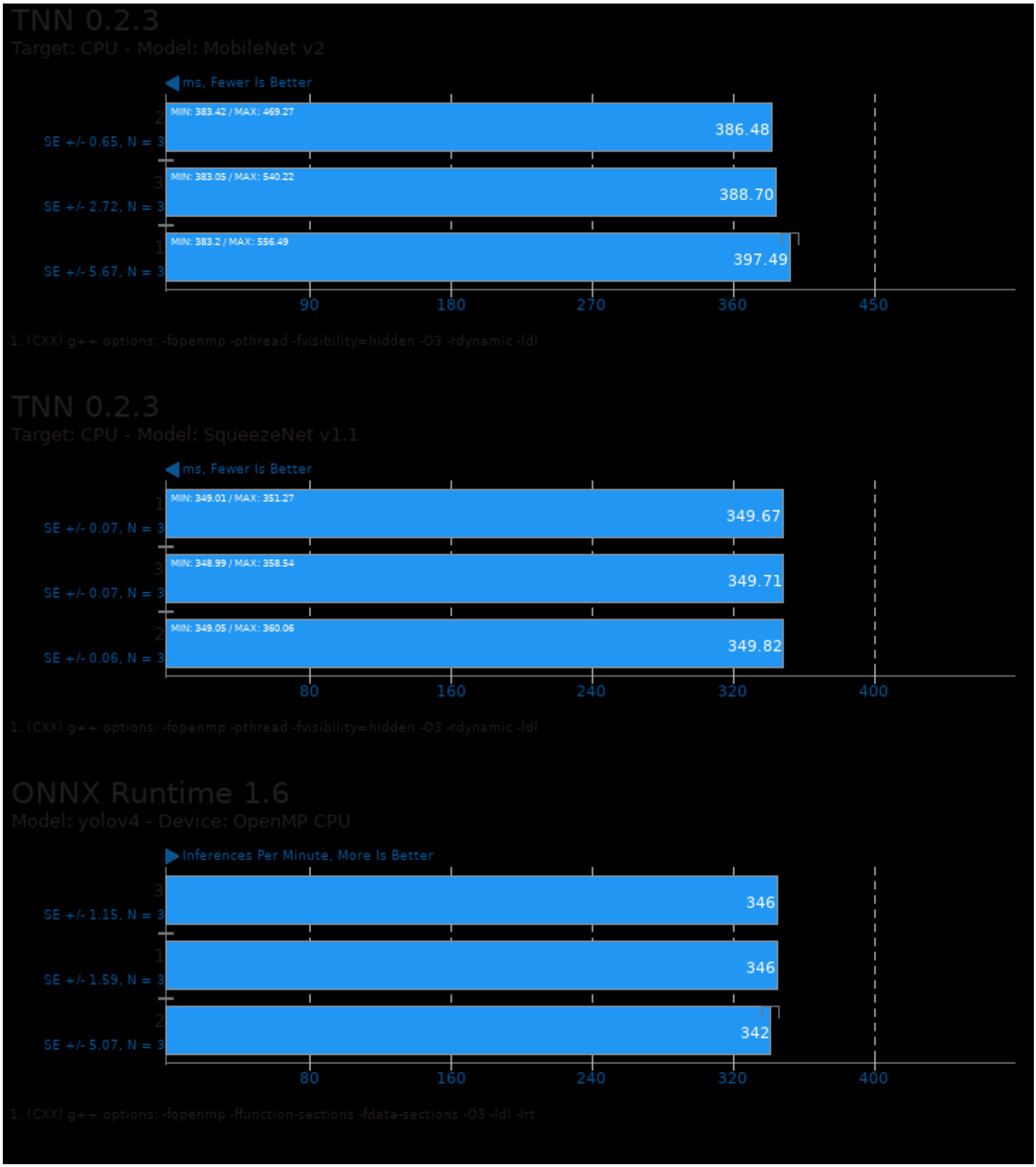

dav1d 0.8.1
Video Input: Chimera 1080p
FPS, More Is Better
MIN: 237.5 / MAX: 439.58
338.91
SE +/- 1.22, N = 3
MIN: 238.25 / MAX: 436.84
338.75
SE +/- 0.29, N = 3
MIN: 226.18 / MAX: 437.6
338.35
SE +/- 1.04, N = 3
70
140
210
280
350
1. (CC) gcc options: -pthread
dav1d 0.8.1
Video Input: Summer Nature 4K
FPS, More Is Better
MIN: 124.73 / MAX: 202.3
187.89
SE +/- 0.46, N = 3
MIN: 112.08 / MAX: 202.84
186.73
SE +/- 1.36, N = 3
MIN: 107.72 / MAX: 201.56
186.14
SE +/- 1.69, N = 3
40
80
120
160
200
1. (CC) gcc options: -pthread
dav1d 0.8.1
Video Input: Summer Nature 1080p
FPS, More Is Better
MIN: 204.26 / MAX: 378.62
344.01
SE +/- 1.08, N = 3
MIN: 204.44 / MAX: 379.88
343.24
SE +/- 0.92, N = 3
MIN: 166.21 / MAX: 377.75
339.62
SE +/- 2.79, N = 3
70
140
210
280
350
1. (CC) gcc options: -pthread

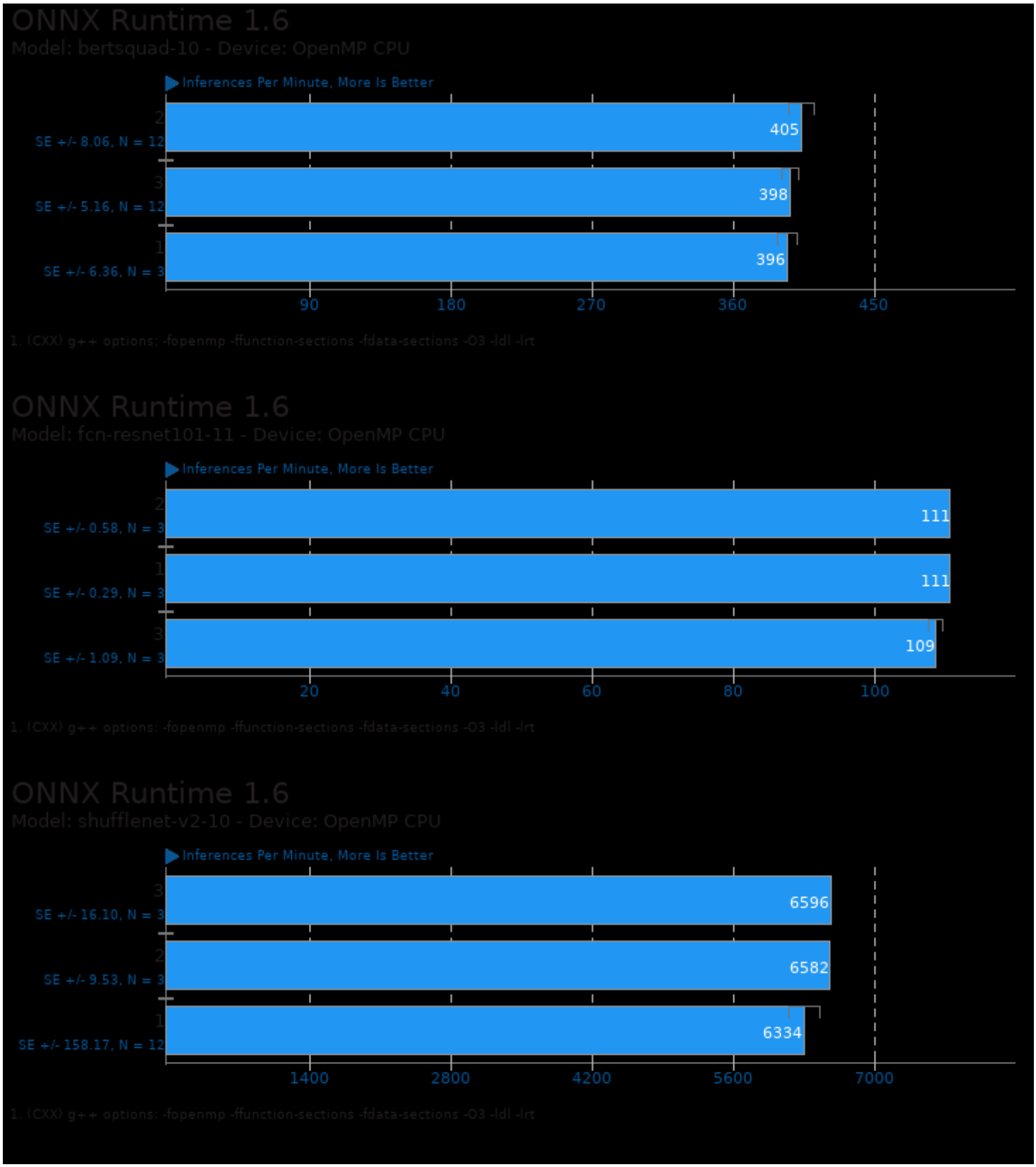

dav1d 0.8.1
Video Input: Chimera 1080p 10-bit
FPS, More Is Better
MIN: 54.55 / MAX: 109.86
71.34
SE +/- 0.13, N = 3
MIN: 54.3 / MAX: 106.84
70.84
SE +/- 0.13, N = 3
MIN: 54.39 / MAX: 106.93
70.83
SE +/- 0.16, N = 3
16
32
48
64
80
1. (CC) gcc options: -pthread
rav1e 0.4
Speed: 1
Frames Per Second, More Is Better
0.364
SE +/- 0.001, N = 3
0.363
SE +/- 0.000, N = 3
0.361
SE +/- 0.003, N = 3
0.0819
0.1638
0.2457
0.3276
0.4095
rav1e 0.4
Speed: 5
Frames Per Second, More Is Better
0.964
SE +/- 0.002, N = 3
0.961
SE +/- 0.002, N = 3
0.955
SE +/- 0.006, N = 3
0.2169
0.4338
0.6507
0.8676
1.0845

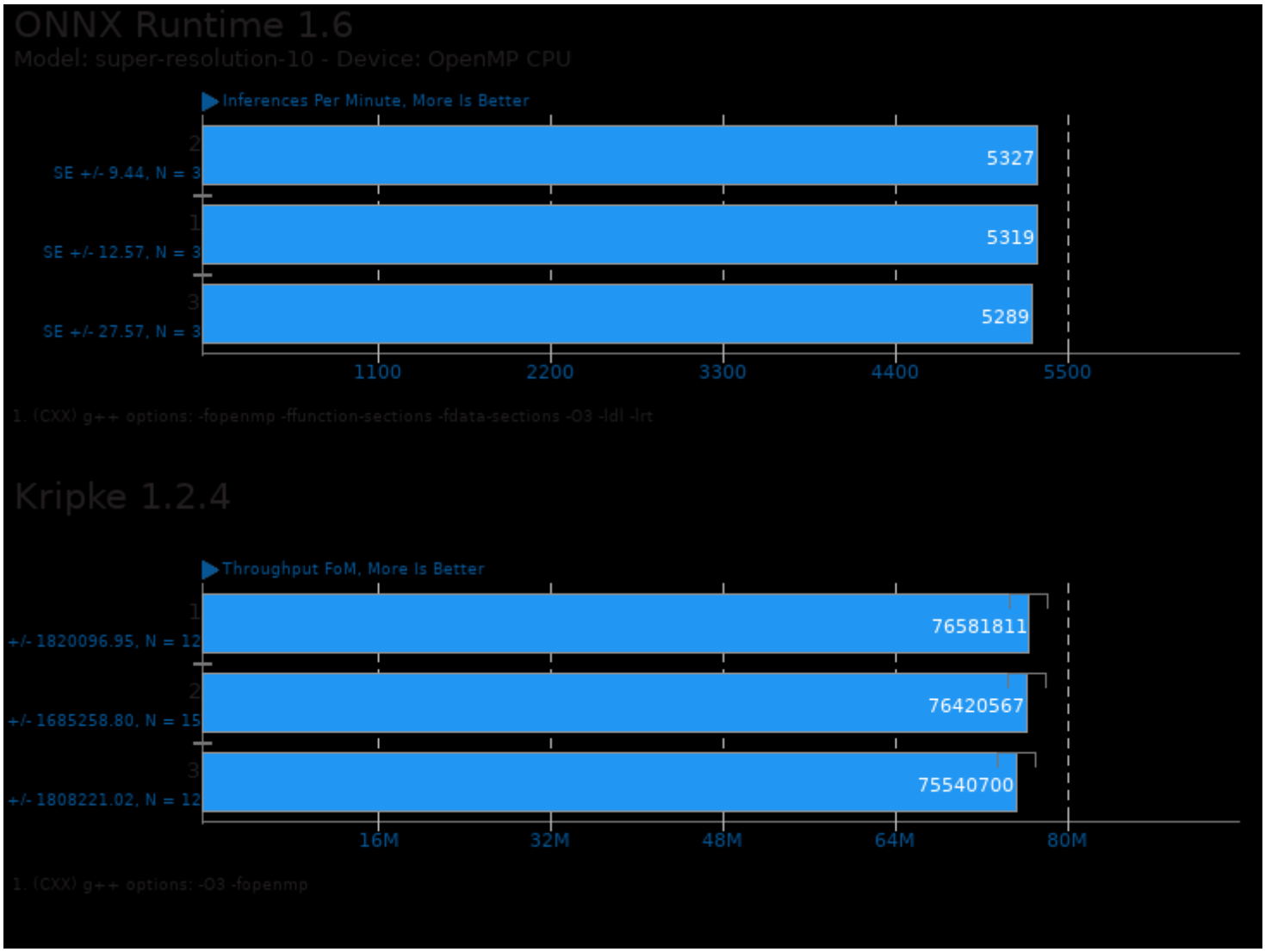

rav1e 0.4
Speed: 6
Frames Per Second, More Is Better
3
SE +/- 0.004, N = 3
1.239
2
SE +/- 0.004, N = 3
1.236
1
SE +/- 0.010, N = 3
1.223
0.2788
0.5576
0.8364
1.1152
1.394
rav1e 0.4
Speed: 10
Frames Per Second, More Is Better
2
SE +/- 0.007, N = 3
2.573
1
SE +/- 0.002, N = 3
2.573
3
SE +/- 0.020, N = 3
2.548
0.5789
1.1578
1.7367
2.3156
2.8945
Timed Godot Game Engine Compilation 3.2.3
Time To Compile
Seconds, Fewer Is Better
1
SE +/- 0.55, N = 3
82.40
3
SE +/- 0.32, N = 3
82.66
2
SE +/- 0.95, N = 3
82.92
20
40
60
80
100


Google SynthMark 20201109
Test: VoiceMark_100
Voices, More Is Better
SE +/- 0.60, N = 3
536.68
SE +/- 0.90, N = 3
535.22
SE +/- 0.43, N = 3
534.63
120
240
360
480
600
1. (CXX) g++ options: -lm -lpthread -std=c++11 -Ofast
Mobile Neural Network 1.1.1
Model: SqueezeNetV1.0
ms, Fewer Is Better
MIN: 7.25 / MAX: 15.53
SE +/- 0.097, N = 15
8.464
MIN: 7.73 / MAX: 9.13
SE +/- 0.144, N = 3
8.493
MIN: 7.54 / MAX: 9.36
SE +/- 0.111, N = 3
8.567
2
4
6
8
10
1. (CXX) g++ options: -std=c++11 -O3 -fvisibility=hidden -fomit-frame-pointer -fstrict-aliasing -ffunction-sections -fdata-sections -ffast-math -fno-rtti -fn
Mobile Neural Network 1.1.1
Model: resnet-v2-50
ms, Fewer Is Better
MIN: 29.23 / MAX: 117.71
SE +/- 0.16, N = 3
29.88
MIN: 29.09 / MAX: 131.06
SE +/- 0.26, N = 15
30.88
MIN: 29.7 / MAX: 81.8
SE +/- 0.41, N = 3
31.06
7
14
21
28
35
1. (CXX) g++ options: -std=c++11 -O3 -fvisibility=hidden -fomit-frame-pointer -fstrict-aliasing -ffunction-sections -fdata-sections -ffast-math -fno-rtti -fn

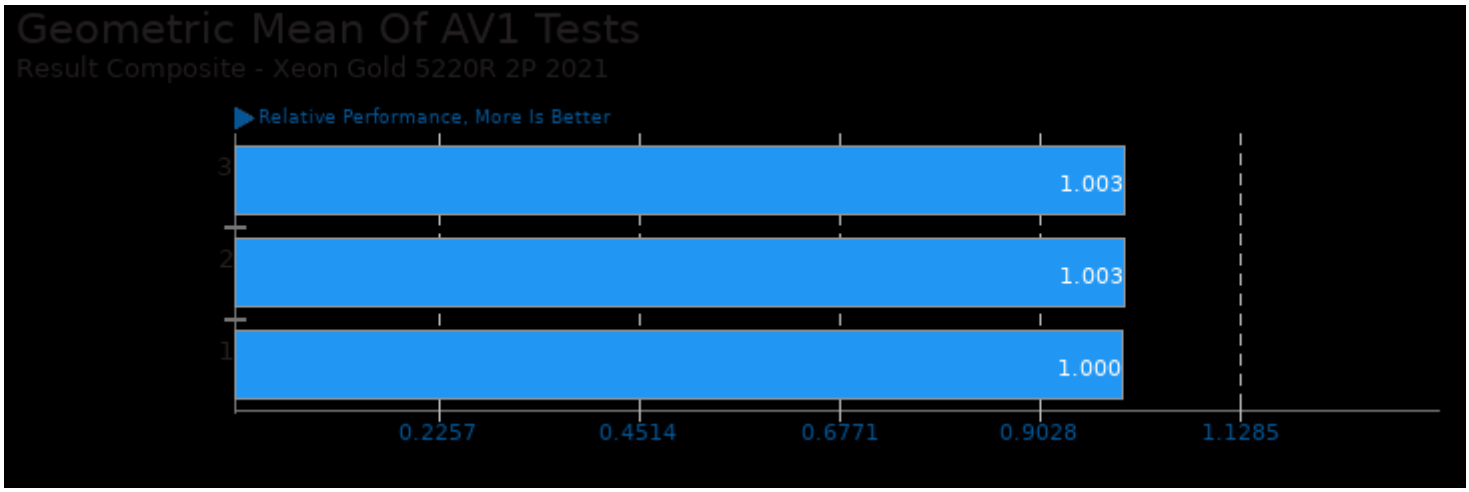

Mobile Neural Network 1.1.1
Model: MobileNetV2_224
ms, Fewer Is Better
MIN: 4.01 / MAX: 13.65
4.764
SE +/- 0.044, N = 3
MIN: 3.83 / MAX: 25.34
4.952
SE +/- 0.064, N = 15
MIN: 4.52 / MAX: 14.09
5.244
SE +/- 0.081, N = 3
1.1799
2.3598
3.5397
4.7196
5.8995
1. (CXX) g++ options: -std=c++11 -O3 -fvisibility=hidden -fomit-frame-pointer -fstrict-aliasing -ffunction-sections -fdata-sections -ffast-math -fno-rtti -fv
Mobile Neural Network 1.1.1
Model: mobilenet-v1-1.0
ms, Fewer Is Better
MIN: 2.59 / MAX: 3.94
2.839
SE +/- 0.005, N = 3
MIN: 2.64 / MAX: 3.23
2.901
SE +/- 0.082, N = 3
MIN: 2.55 / MAX: 8.41
2.908
SE +/- 0.053, N = 15
0.6543
1.3086
1.9629
2.6172
3.2715
1. (CXX) g++ options: -std=c++11 -O3 -fvisibility=hidden -fomit-frame-pointer -fstrict-aliasing -ffunction-sections -fdata-sections -ffast-math -fno-rtti -fv
Mobile Neural Network 1.1.1
Model: inception-v3
ms, Fewer Is Better
MIN: 35.86 / MAX: 106.43
36.88
SE +/- 0.12, N = 3
MIN: 35.64 / MAX: 118.76
37.01
SE +/- 0.14, N = 15
MIN: 36.55 / MAX: 86.82
37.41
SE +/- 0.24, N = 3
9
18
27
36
45
1. (CXX) g++ options: -std=c++11 -O3 -fvisibility=hidden -fomit-frame-pointer -fstrict-aliasing -ffunction-sections -fdata-sections -ffast-math -fno-rtti -fv


TNN 0.2.3
Target: CPU - Model: MobileNet v2
ms, Fewer Is Better
2
MIN: 383.42 / MAX: 469.27
386.48
SE +/- 0.65, N = 3
3
MIN: 383.05 / MAX: 540.22
388.70
SE +/- 2.72, N = 3
1
MIN: 383.2 / MAX: 556.49
397.49
SE +/- 5.67, N = 3
90
180
270
360
450
1. (CXX) g++ options: -fopenmp -pthread -fvisibility=hidden -O3 -rdynamic -ldl
TNN 0.2.3
Target: CPU - Model: SqueezeNet v1.1
ms, Fewer Is Better
1
MIN: 349.01 / MAX: 351.27
349.67
SE +/- 0.07, N = 3
3
MIN: 348.99 / MAX: 358.54
349.71
SE +/- 0.07, N = 3
2
MIN: 349.05 / MAX: 360.06
349.82
SE +/- 0.06, N = 3
80
160
240
320
400
1. (CXX) g++ options: -fopenmp -pthread -fvisibility=hidden -O3 -rdynamic -ldl
ONNX Runtime 1.6
Model: yolov4 - Device: OpenMP CPU
Inferences Per Minute, More Is Better
3
346
SE +/- 1.15, N = 3
1
346
SE +/- 1.59, N = 3
2
342
SE +/- 5.07, N = 3
80
160
240
320
400
1. (CXX) g++ options: -fopenmp -ffunction-sections -fdata-sections -O3 -ldl -lrt

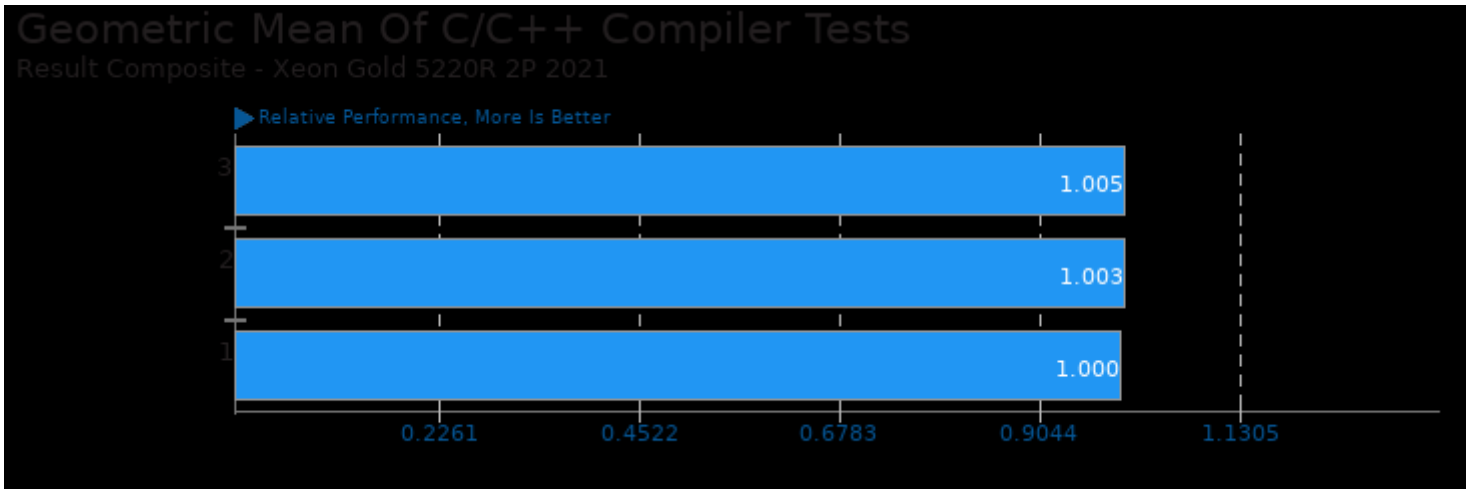

ONNX Runtime 1.6
Model: bertsquad-10 - Device: OpenMP CPU
Inferences Per Minute, More Is Better
2
SE +/- 8.06, N = 12
405
3
SE +/- 5.16, N = 12
398
1
SE +/- 6.36, N = 3
396
90
180
270
360
450
1. (CXX) g++ options: -fopenmp -ffunction-sections -fdata-sections -O3 -ldl -lrt
ONNX Runtime 1.6
Model: fcn-resnet101-11 - Device: OpenMP CPU
Inferences Per Minute, More Is Better
2
SE +/- 0.58, N = 3
111
1
SE +/- 0.29, N = 3
111
3
SE +/- 1.09, N = 3
109
20
40
60
80
100
1. (CXX) g++ options: -fopenmp -ffunction-sections -fdata-sections -O3 -ldl -lrt
ONNX Runtime 1.6
Model: shufflenet-v2-10 - Device: OpenMP CPU
Inferences Per Minute, More Is Better
3
SE +/- 16.10, N = 3
6596
2
SE +/- 9.53, N = 3
6582
1
SE +/- 158.17, N = 12
6334
1400
2800
4200
5600
7000
1. (CXX) g++ options: -fopenmp -ffunction-sections -fdata-sections -O3 -ldl -lrt


ONNX Runtime 1.6
Model: super-resolution-10 - Device: OpenMP CPU
Inferences Per Minute, More Is Better
2
SE +/- 9.44, N = 3
5327
1
SE +/- 12.57, N = 3
5319
3
SE +/- 27.57, N = 3
5289
1100
2200
3300
4400
5500
1. (CXX) g++ options: -fopenmp -ffunction-sections -fdata-sections -O3 -ldl -lrt
Kripke 1.2.4
Throughput FoM, More Is Better
1
+/- 1820096.95, N = 12
76581811
2
+/- 1685258.80, N = 15
76420567
3
+/- 1808221.02, N = 12
75540700
16M
32M
48M
64M
80M
1. (CXX) g++ options: -O3 -fopenmp

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



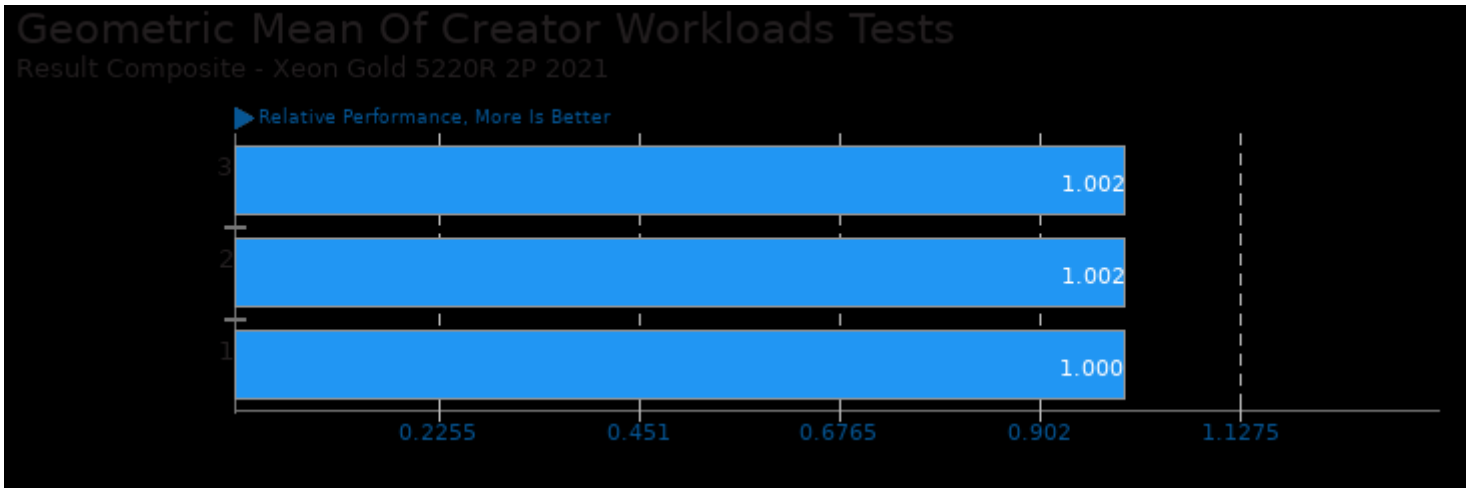
Geometric mean based upon tests: pts/dav1d and pts/rav1e



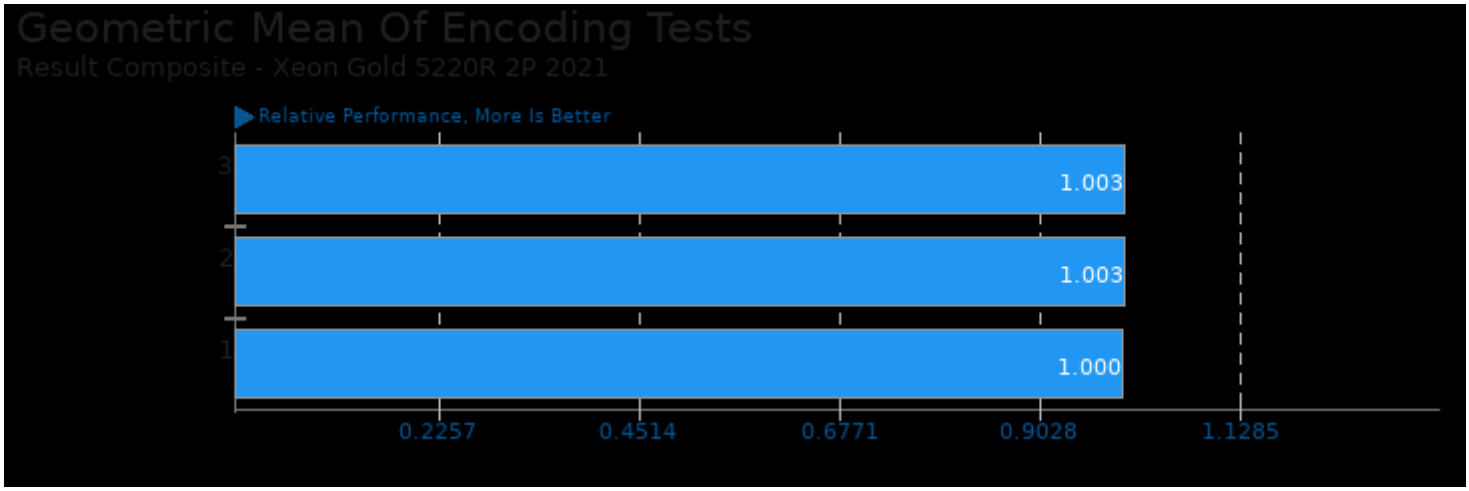
Geometric mean based upon tests: pts/dav1d and pts/lammps



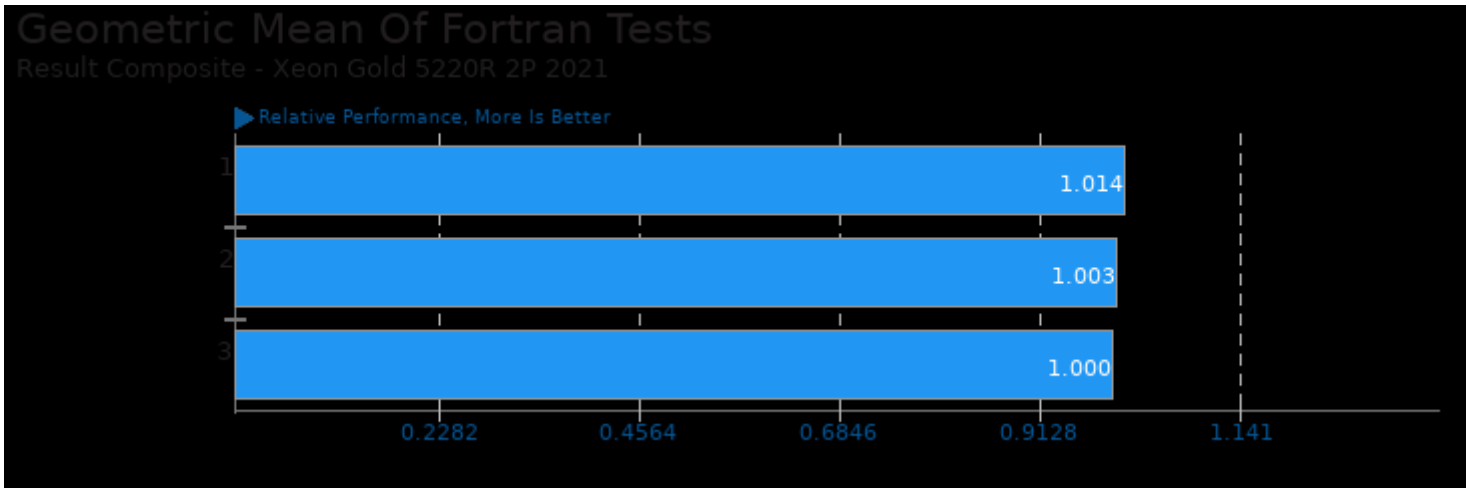
Geometric mean based upon tests: pts/cloverleaf, pts/dav1d and pts/lammps



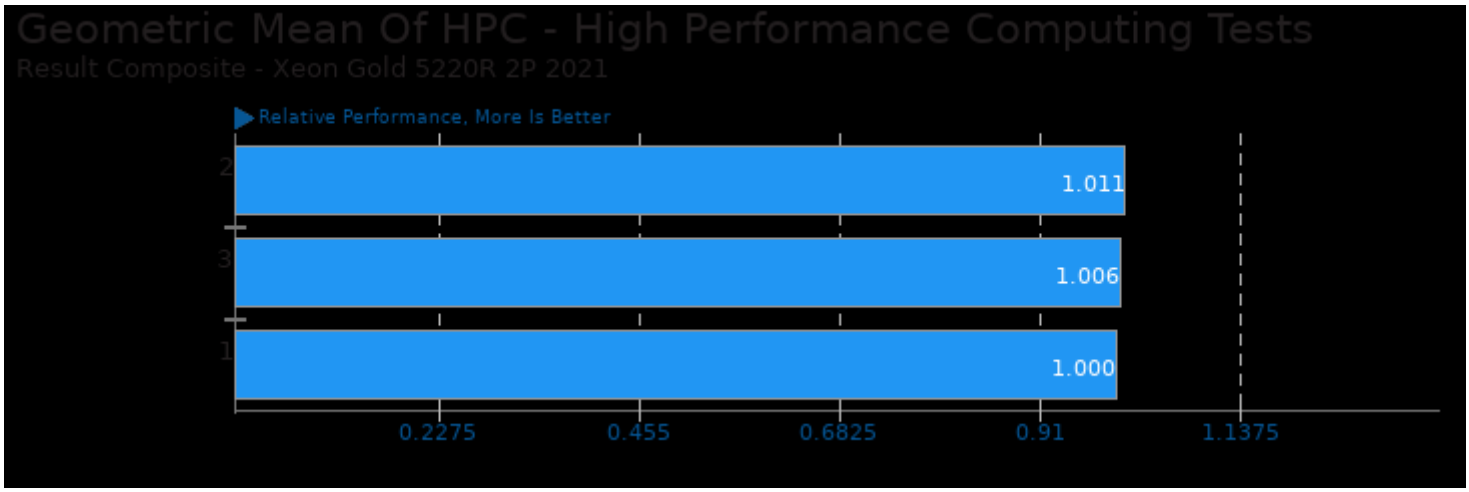
Geometric mean based upon tests: pts/dav1d, pts/rav1e, pts/build-godot and pts/synthmark



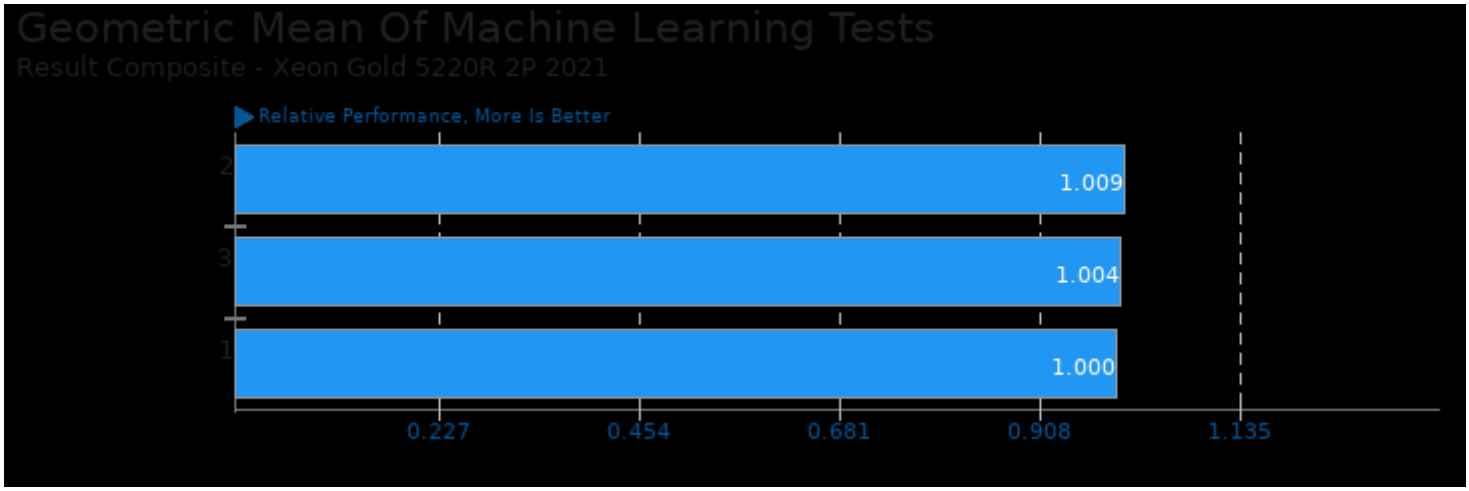
Geometric mean based upon tests: pts/dav1d and pts/rav1e



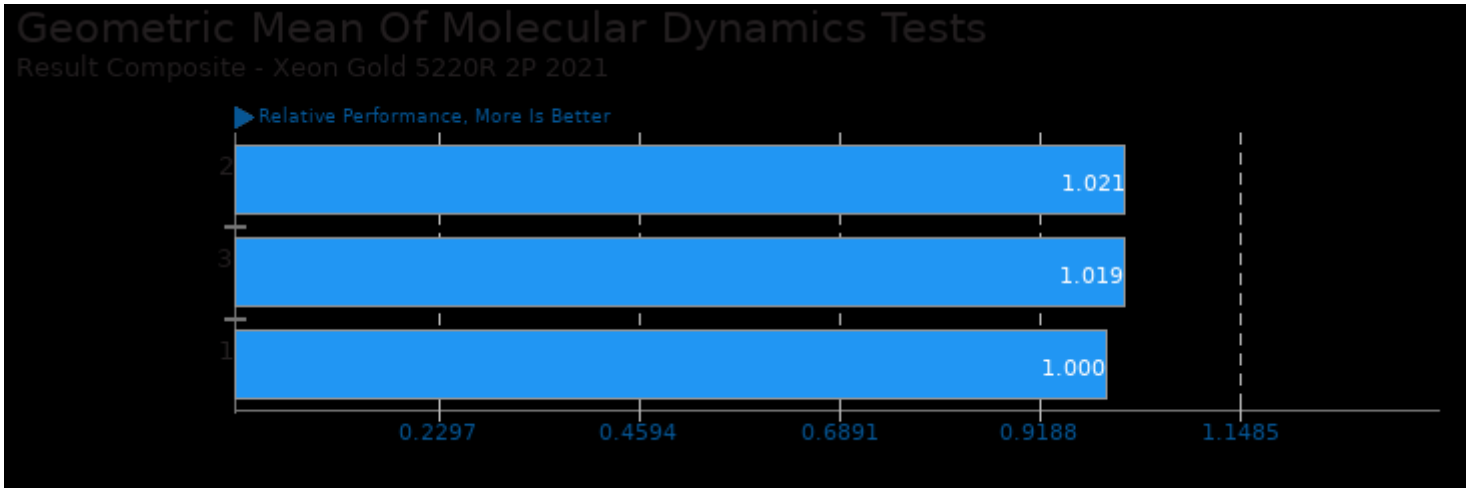
Geometric mean based upon tests: pts/cloverleaf, pts/qe and pts/lammps



Geometric mean based upon tests: pts/qe, pts/amg, pts/cloverleaf, pts/lammps, pts/lulesh, pts/openfoam, pts/kripke, pts/relion, pts/mnn, pts/tnn and pts/onnx



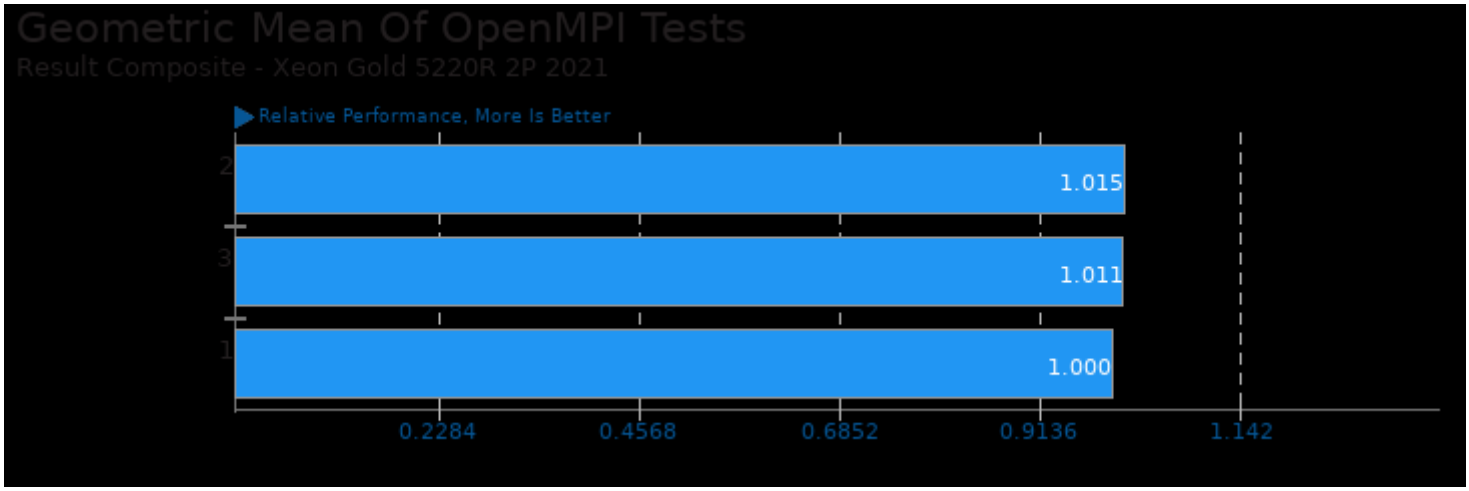
Geometric mean based upon tests: pts/mnn, pts/tnn and pts/onnx



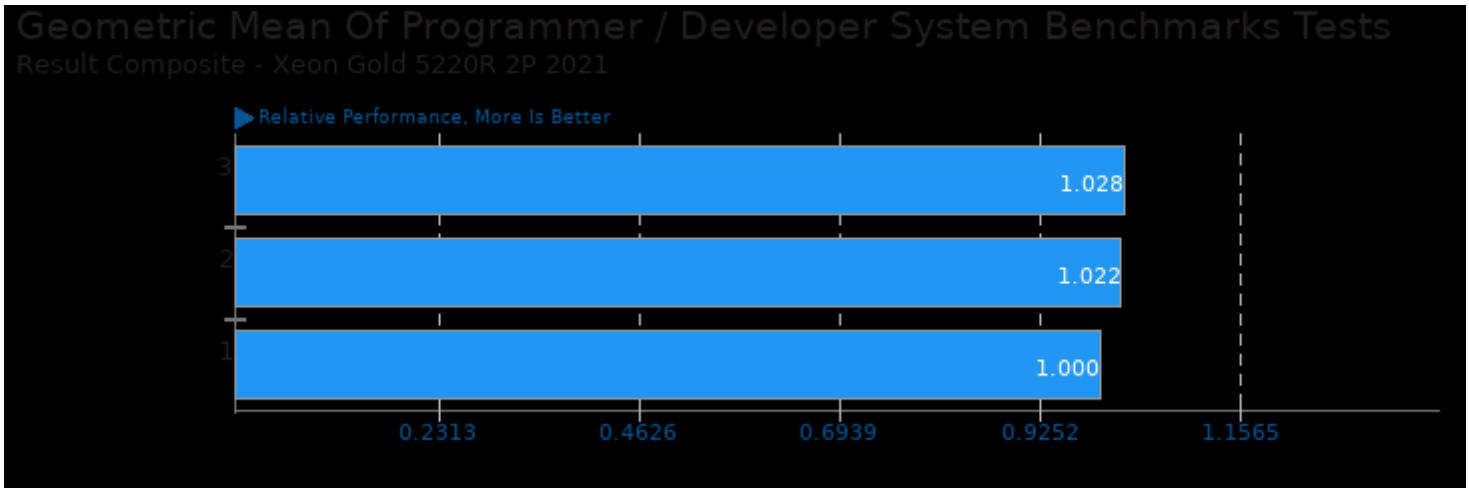
Geometric mean based upon tests: pts/cloverleaf, pts/lammps, pts/lulesh and pts/openfoam



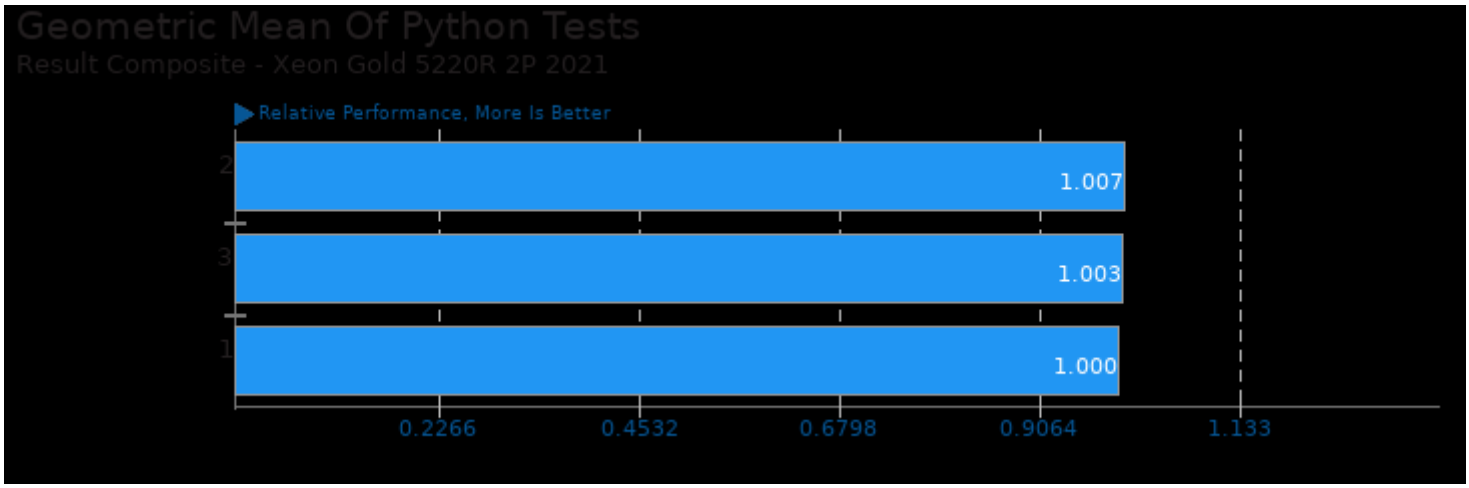
Geometric mean based upon tests: pts/dav1d, pts/rav1e, pts/lammps and pts/build-godot



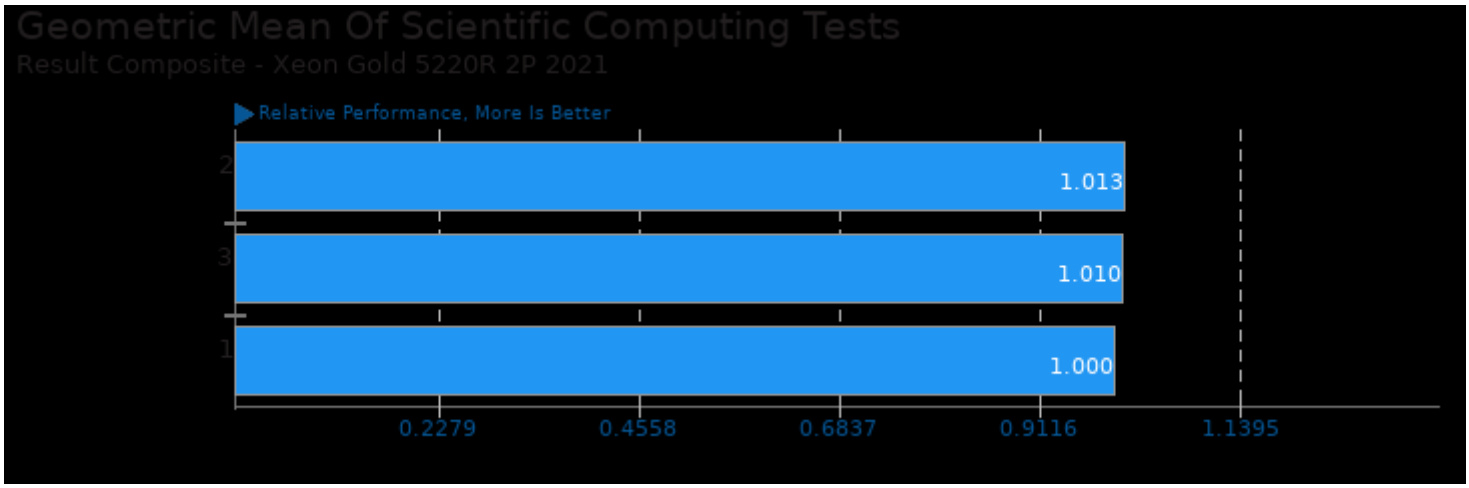
Geometric mean based upon tests: pts/cloverleaf, pts/amg, pts/openfoam, pts/qe, pts/relion, pts/lammps and pts/lulesh



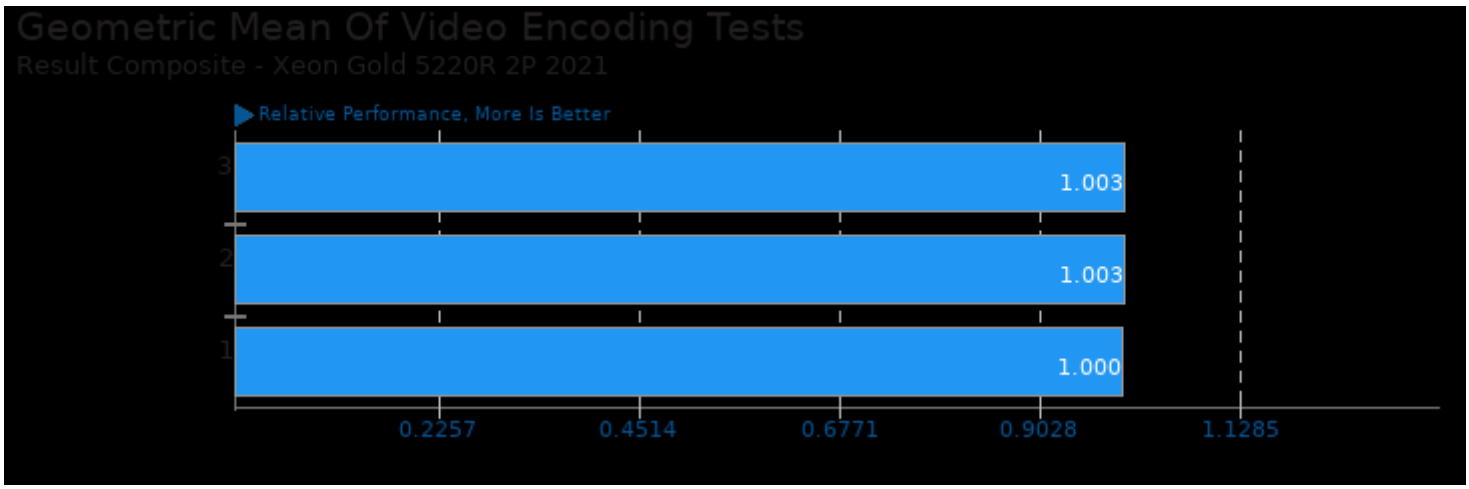
Geometric mean based upon tests: pts/build-godot and pts/amg



Geometric mean based upon tests: pts/build-godot and pts/onnx



Geometric mean based upon tests: pts/amg, pts/cloverleaf, pts/lammps, pts/lulesh, pts/openfoam, pts/qe and pts/kripke



Geometric mean based upon tests: pts/dav1d and pts/rav1e

This file was automatically generated via the Phoronix Test Suite benchmarking software on Friday, 29 March 2024 03:58.