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Xeon Bro

Intel Xeon E5-2609 v4 testing with a MSI X99A RAIDER (MS-7885) v5.0 (P.50 BIOS) and llvmpipe on Ubuntu 20.04 via the Phoronix Test Suite.

Automated Executive Summary

1 had the most wins, coming in first place for 68% of the tests.

Based on the geometric mean of all complete results, the fastest (2) was 1.001x the speed of the slowest (3). 1 was 1x the speed of 2 and 3 was 0.999x the speed of 1.

Test Systems:

1

2

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3

Processor: Intel Xeon E5-2609 v4 @ 1.70GHz (8 Cores), Motherboard: MSI X99A RAIDER (MS-7885) v5.0 (P.50 BIOS), Chipset: Intel Xeon E7 v4/Xeon, Memory: 16GB, Disk: 256GB CORSAIR FORCE LX, Graphics: llvmpipe, Audio: Realtek ALC892, Network: Intel I218-V

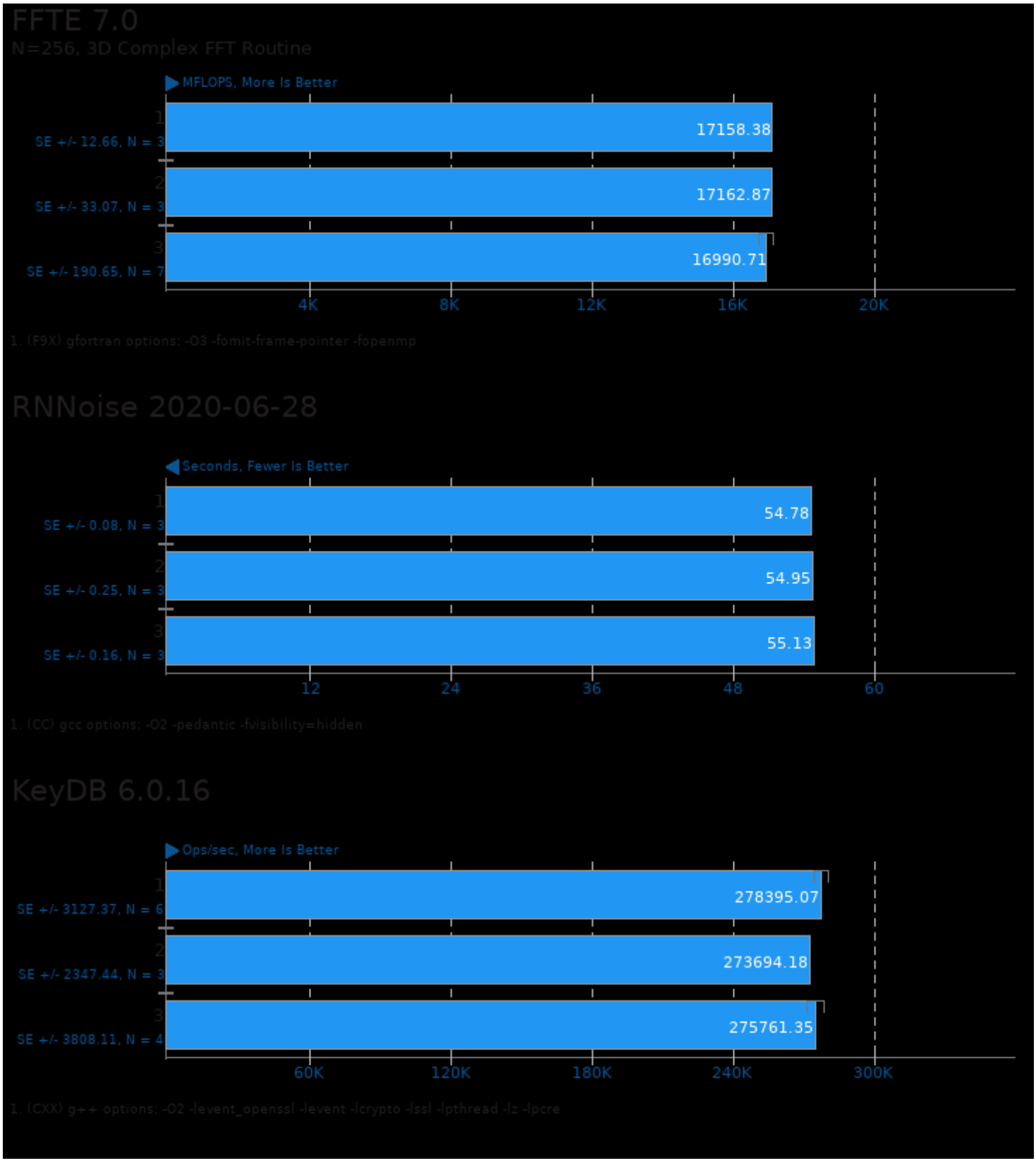
OS: Ubuntu 20.04, Kernel: 5.9.0-050900rc6daily20200926-generic (x86_64) 20200925, Desktop: GNOME Shell 3.36.2, Display Server: X Server 1.20.8, Display Driver: modesetting 1.20.8, OpenGL: 3.3 Mesa 20.0.4 (LLVM 9.0.1 256 bits), Compiler: GCC 9.3.0, File-System: ext4, Screen Resolution: 1024x768

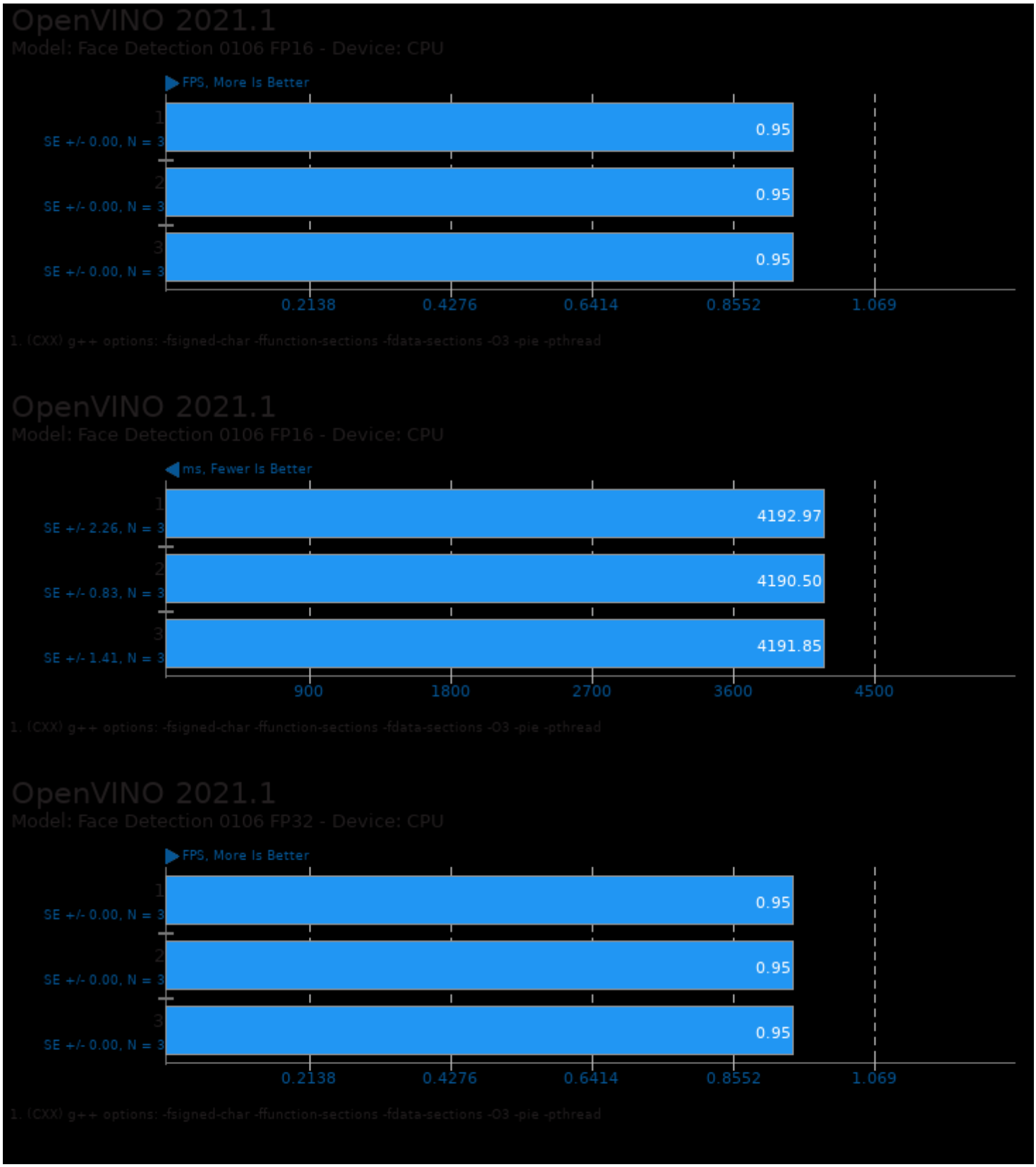
Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-gnu-unique-object --enable-languages=c,ada,c++,go,brig,d,fortran,objc,obj-c++,gm2 --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none,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_cpufreq ondemand - CPU Microcode: 0xb000038
Java Notes: OpenJDK Runtime Environment (build 11.0.7+10-post-Ubuntu-3ubuntu1)
Python Notes: Python 2.7.18rc1 + Python 3.8.2
Security Notes: itlb_multihit: KVM: Mitigation of VMX disabled + l1tf: Mitigation of PTE Inversion; VMX: conditional cache flushes SMT disabled + mds: Mitigation of Clear buffers; SMT disabled + meltdown: Mitigation of PTI + 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 generic retpoline IBPB: conditional IBRS_FW STIBP: disabled RSB filling + srbds: Not affected + tsx_async_abort: Mitigation of Clear buffers; SMT disabled

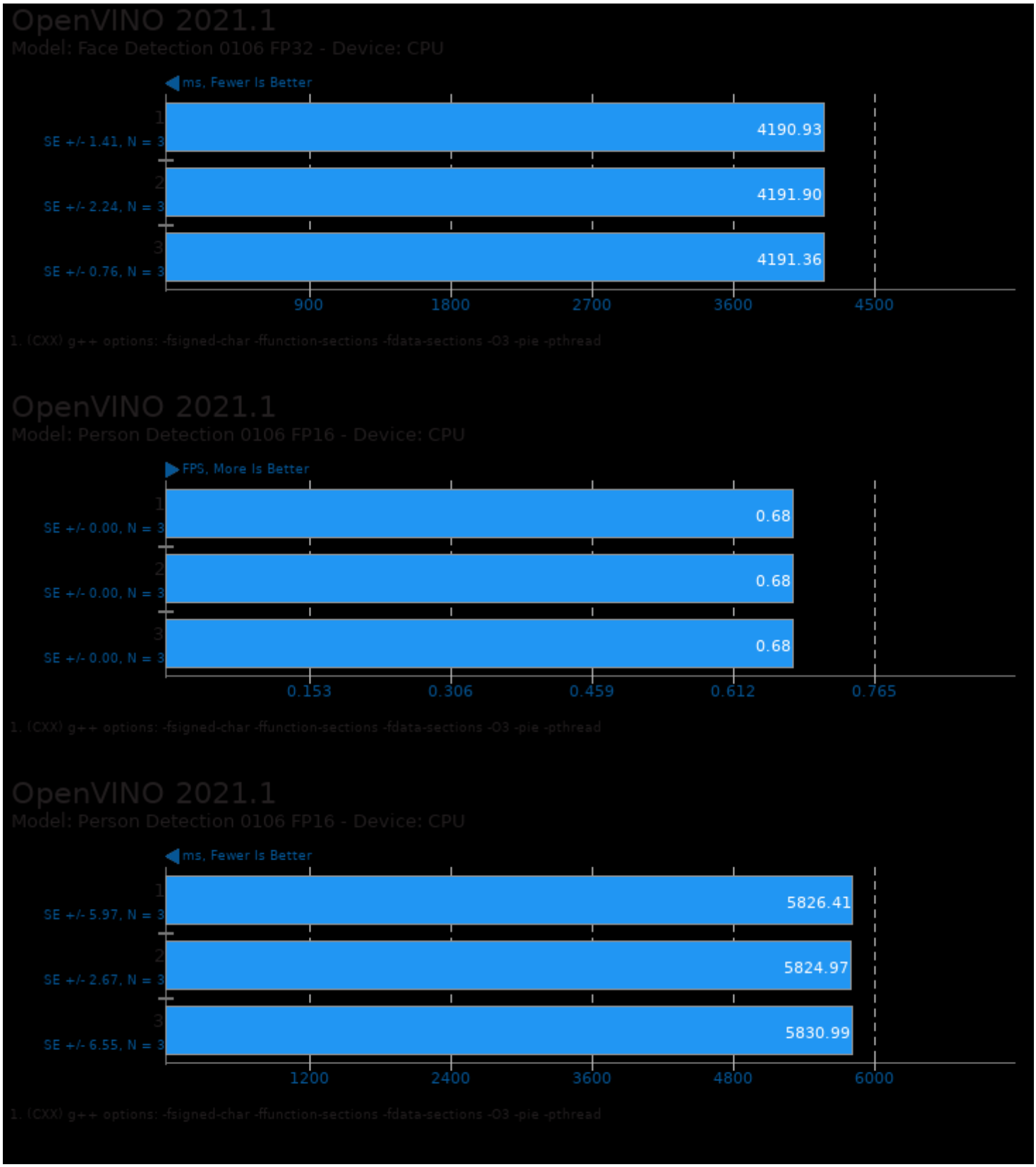
	1	2	3
FFTE - N.2.3.C.F.R (MFLOPS)	17158	**17163**	**16991**
Normalized	99.97%	100%	99%
Standard Deviation	0.1%	0.3%	3%
RNNoise (sec)	**54.779**	54.949	**55.129**
Normalized	100%	99.69%	99.37%
Standard Deviation	0.2%	0.8%	0.5%
KeyDB (Ops/sec)	**278395**	**273694**	275761
Normalized	100%	98.31%	99.05%
Standard Deviation	2.8%	1.5%	2.8%
OpenVINO - F.D.0.F - CPU (FPS)	0.95	0.95	0.95
Standard Deviation	0%	0%	0%
OpenVINO - F.D.0.F - CPU (ms)	**4193**	**4191**	4192
Normalized	99.94%	100%	99.97%
Standard Deviation	0.1%	0%	0.1%
OpenVINO - F.D.0.F - CPU (FPS)	0.95	0.95	0.95
Standard Deviation	0%	0%	0%
OpenVINO - F.D.0.F - CPU (ms)	**4191**	**4192**	4191
Normalized	100%	99.98%	99.99%
Standard Deviation	0.1%	0.1%	0%
OpenVINO - P.D.0.F - CPU (FPS)	0.68	0.68	0.68
Standard Deviation	0%	0%	0%
OpenVINO - P.D.0.F - CPU (ms)	5826	**5825**	**5831**
Normalized	99.98%	100%	99.9%
Standard Deviation	0.2%	0.1%	0.2%
OpenVINO - P.D.0.F - CPU (FPS)	0.68	0.68	0.68
Standard Deviation	0%	0%	0%
OpenVINO - P.D.0.F - CPU (ms)	5824	**5824**	**5825**
Normalized	99.99%	100%	99.98%
Standard Deviation	0.1%	0.1%	0.2%

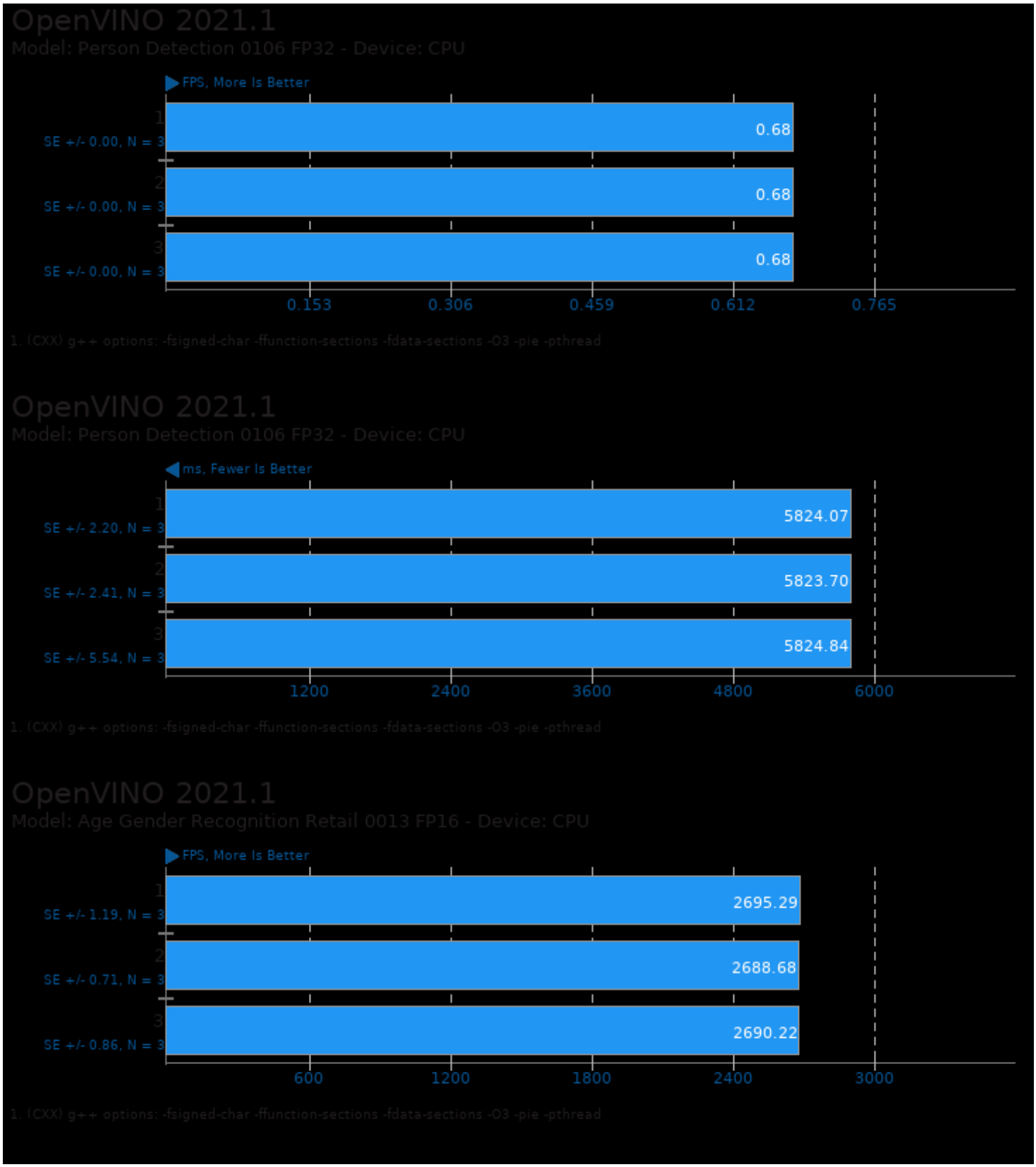
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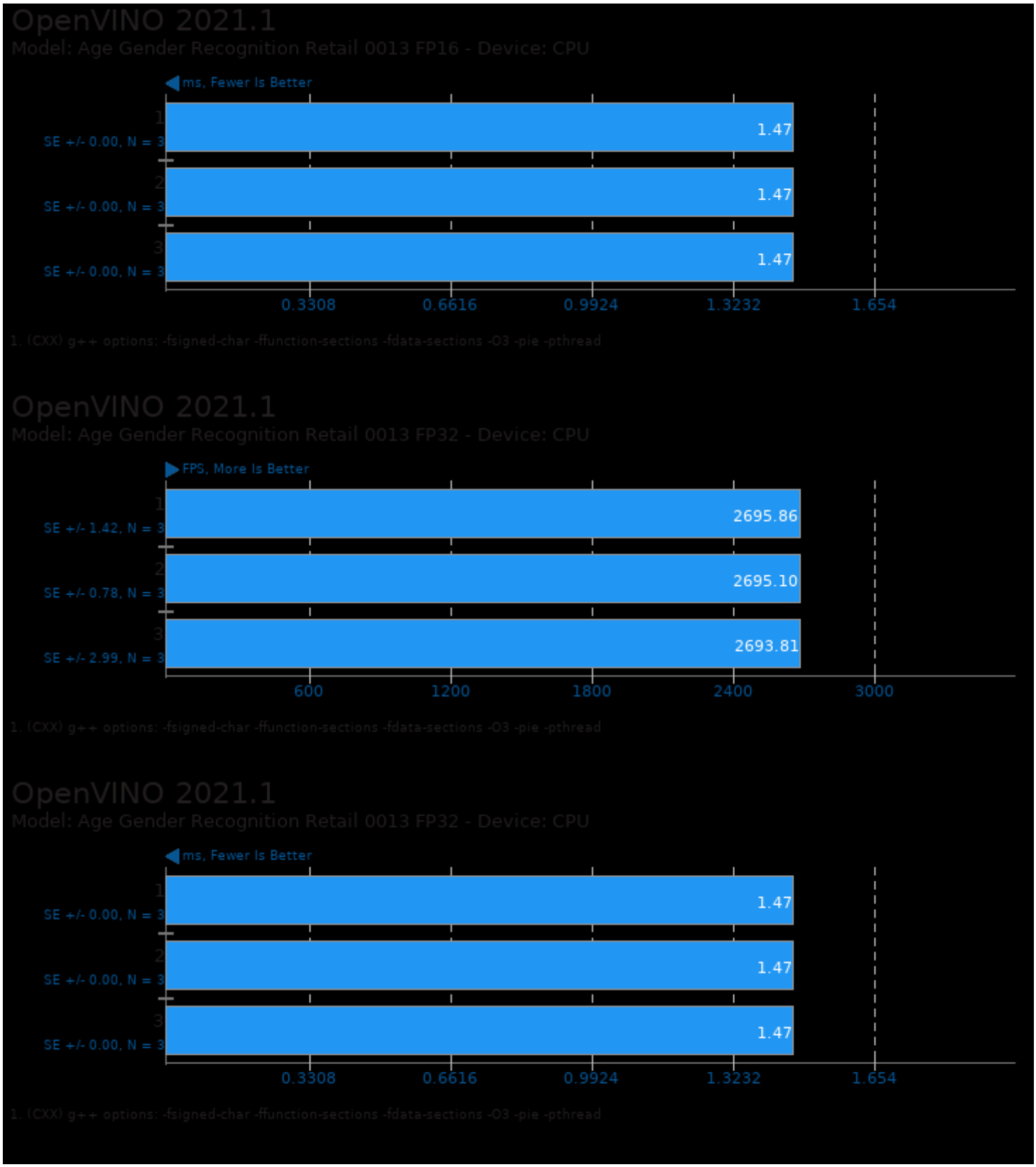
OpenVINO - A.G.R.R.0.F - CPU (FPS)	**2695**	**2689**	2690
Normalized	100%	99.75%	99.81%
Standard Deviation	0.1%	0%	0.1%
OpenVINO - A.G.R.R.0.F - CPU (ms)	1.47	1.47	1.47
Standard Deviation	0.4%	0%	0%
OpenVINO - A.G.R.R.0.F - CPU (FPS)	**2696**	2695	**2694**
Normalized	100%	99.97%	99.92%
Standard Deviation	0.1%	0%	0.2%
OpenVINO - A.G.R.R.0.F - CPU (ms)	1.47	1.47	1.47
Standard Deviation	0.4%	0.4%	0.4%
Sunflow Rendering System - G.I.I.S (sec)	**3.169**	**3.089**	3.110
Normalized	97.48%	100%	99.32%
Standard Deviation	2%	0.8%	1.7%

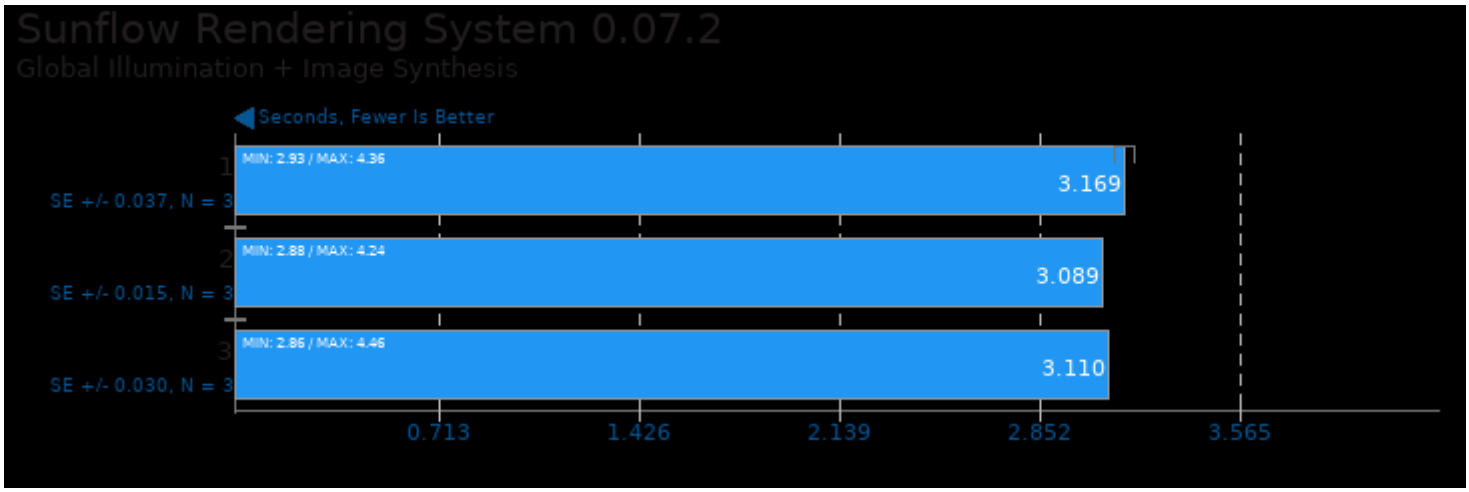

FFTE 7.0
N=256, 3D Complex FFT Routine
MFLOPS, More Is Better
1
SE +/- 12.66, N = 3
17158.38
2
SE +/- 33.07, N = 3
17162.87
3
SE +/- 190.65, N = 7
16990.71
4K
8K
12K
16K
20K
1. (F9X) gfortran options: -O3 -fomit-frame-pointer -fopenmp
RNNoise 2020-06-28
Seconds, Fewer Is Better
1
SE +/- 0.08, N = 3
54.78
2
SE +/- 0.25, N = 3
54.95
3
SE +/- 0.16, N = 3
55.13
12
24
36
48
60
1. (CC) gcc options: -O2 -pedantic -fvisibility=hidden
KeyDB 6.0.16
Ops/sec, More Is Better
1
SE +/- 3127.37, N = 6
278395.07
2
SE +/- 2347.44, N = 3
273694.18
3
SE +/- 3808.11, N = 4
275761.35
60K
120K
180K
240K
300K
1. (CXX) g++ options: -O2 -levent_openssl -levent -lcrypto -lssl -lpthread -lz -lpcre


OpenVINO 2021.1
Model: Face Detection 0106 FP16 - Device: CPU
FPS, More Is Better
1
SE +/- 0.00, N = 3
0.95
2
SE +/- 0.00, N = 3
0.95
3
SE +/- 0.00, N = 3
0.95
0.2138
0.4276
0.6414
0.8552
1.069
1. (CXX) g++ options: -fsigned-char -ffunction-sections -fdata-sections -O3 -pie -pthread
OpenVINO 2021.1
Model: Face Detection 0106 FP16 - Device: CPU
ms, Fewer Is Better
1
SE +/- 2.26, N = 3
4192.97
2
SE +/- 0.83, N = 3
4190.50
3
SE +/- 1.41, N = 3
4191.85
900
1800
2700
3600
4500
1. (CXX) g++ options: -fsigned-char -ffunction-sections -fdata-sections -O3 -pie -pthread
OpenVINO 2021.1
Model: Face Detection 0106 FP32 - Device: CPU
FPS, More Is Better
1
SE +/- 0.00, N = 3
0.95
2
SE +/- 0.00, N = 3
0.95
3
SE +/- 0.00, N = 3
0.95
0.2138
0.4276
0.6414
0.8552
1.069
1. (CXX) g++ options: -fsigned-char -ffunction-sections -fdata-sections -O3 -pie -pthread


OpenVINO 2021.1
Model: Face Detection 0106 FP32 - Device: CPU
ms, Fewer Is Better
1
SE +/- 1.41, N = 3
4190.93
2
SE +/- 2.24, N = 3
4191.90
3
SE +/- 0.76, N = 3
4191.36
900
1800
2700
3600
4500
1. (CXX) g++ options: -fsigned-char -ffunction-sections -fdata-sections -O3 -pie -pthread
OpenVINO 2021.1
Model: Person Detection 0106 FP16 - Device: CPU
FPS, More Is Better
1
SE +/- 0.00, N = 3
0.68
2
SE +/- 0.00, N = 3
0.68
3
SE +/- 0.00, N = 3
0.68
0.153
0.306
0.459
0.612
0.765
1. (CXX) g++ options: -fsigned-char -ffunction-sections -fdata-sections -O3 -pie -pthread
OpenVINO 2021.1
Model: Person Detection 0106 FP16 - Device: CPU
ms, Fewer Is Better
1
SE +/- 5.97, N = 3
5826.41
2
SE +/- 2.67, N = 3
5824.97
3
SE +/- 6.55, N = 3
5830.99
1200
2400
3600
4800
6000
1. (CXX) g++ options: -fsigned-char -ffunction-sections -fdata-sections -O3 -pie -pthread


OpenVINO 2021.1
Model: Person Detection 0106 FP32 - Device: CPU
FPS, More Is Better
1
SE +/- 0.00, N = 3
0.68
2
SE +/- 0.00, N = 3
0.68
3
SE +/- 0.00, N = 3
0.68
0.153
0.306
0.459
0.612
0.765
1. (CXX) g++ options: -fsigned-char -ffunction-sections -fdata-sections -O3 -pie -pthread
OpenVINO 2021.1
Model: Person Detection 0106 FP32 - Device: CPU
ms, Fewer Is Better
1
SE +/- 2.20, N = 3
5824.07
2
SE +/- 2.41, N = 3
5823.70
3
SE +/- 5.54, N = 3
5824.84
1200
2400
3600
4800
6000
1. (CXX) g++ options: -fsigned-char -ffunction-sections -fdata-sections -O3 -pie -pthread
OpenVINO 2021.1
Model: Age Gender Recognition Retail 0013 FP16 - Device: CPU
FPS, More Is Better
1
SE +/- 1.19, N = 3
2695.29
2
SE +/- 0.71, N = 3
2688.68
3
SE +/- 0.86, N = 3
2690.22
600
1200
1800
2400
3000
1. (CXX) g++ options: -fsigned-char -ffunction-sections -fdata-sections -O3 -pie -pthread


OpenVINO 2021.1
Model: Age Gender Recognition Retail 0013 FP16 - Device: CPU
ms, Fewer Is Better
1
SE +/- 0.00, N = 3
1.47
2
SE +/- 0.00, N = 3
1.47
3
SE +/- 0.00, N = 3
1.47
0.3308
0.6616
0.9924
1.3232
1.654
1. (CXX) g++ options: -fsigned-char -ffunction-sections -fdata-sections -O3 -pie -pthread
OpenVINO 2021.1
Model: Age Gender Recognition Retail 0013 FP32 - Device: CPU
FPS, More Is Better
1
SE +/- 1.42, N = 3
2695.86
2
SE +/- 0.78, N = 3
2695.10
3
SE +/- 2.99, N = 3
2693.81
600
1200
1800
2400
3000
1. (CXX) g++ options: -fsigned-char -ffunction-sections -fdata-sections -O3 -pie -pthread
OpenVINO 2021.1
Model: Age Gender Recognition Retail 0013 FP32 - Device: CPU
ms, Fewer Is Better
1
SE +/- 0.00, N = 3
1.47
2
SE +/- 0.00, N = 3
1.47
3
SE +/- 0.00, N = 3
1.47
0.3308
0.6616
0.9924
1.3232
1.654
1. (CXX) g++ options: -fsigned-char -ffunction-sections -fdata-sections -O3 -pie -pthread

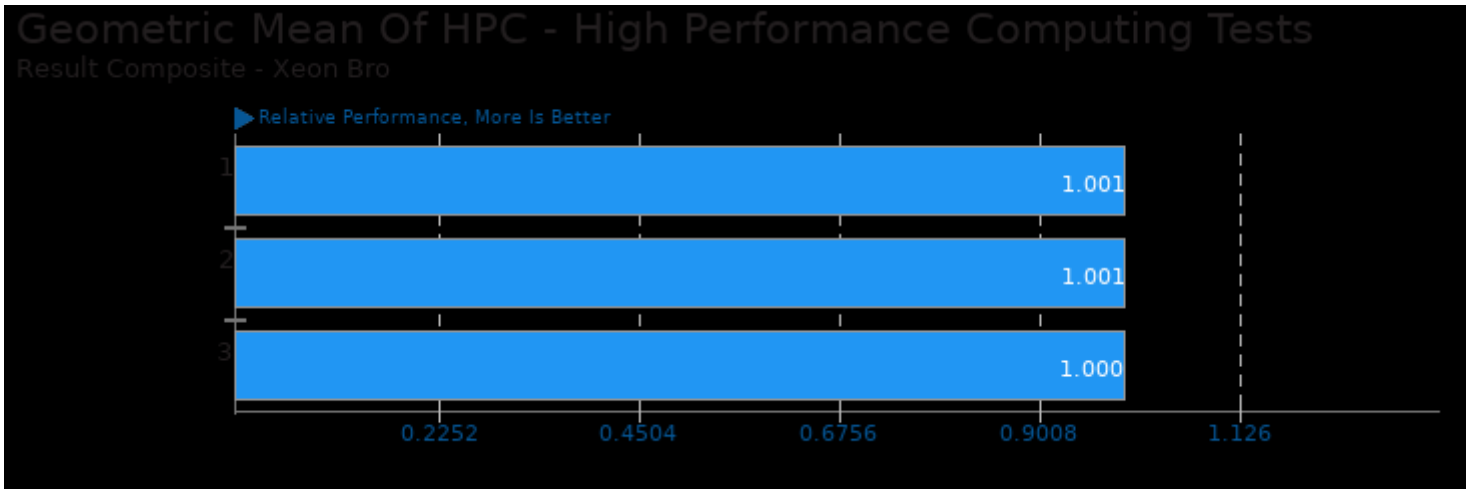

Sunflow Rendering System 0.07.2
Global Illumination + Image Synthesis
Seconds, Fewer Is Better
1
MIN: 2.93 / MAX: 4.36
3.169
SE +/- 0.037, N = 3
2
MIN: 2.88 / MAX: 4.24
3.089
SE +/- 0.015, N = 3
3
MIN: 2.86 / MAX: 4.46
3.110
SE +/- 0.030, N = 3
0.713
1.426
2.139
2.852
3.565

Xeon Bro

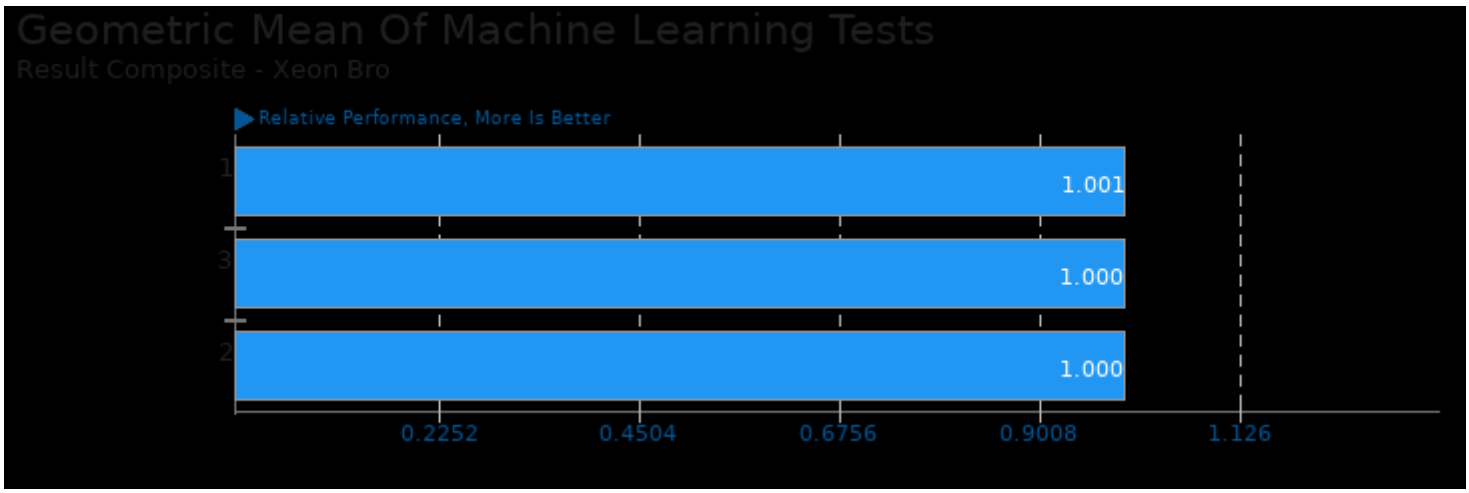
These geometric means are based upon test groupings / test suites for this result file.



Geometric mean based upon tests: pts/openvino and pts/rnnoise



Geometric mean based upon tests: pts/ffte, pts/rnnoise and pts/openvino



Geometric mean based upon tests: pts/rnnoise and pts/openvino

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