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Ice Lake Nov

Intel Core i7-1065G7 testing with a Dell 06CDVY (1.0.9 BIOS) and Intel Iris Plus G7 3GB on Ubuntu 20.10 via the Phoronix Test Suite.

Automated Executive Summary

1 had the most wins, coming in first place for 55% of the tests.

Based on the geometric mean of all complete results, the fastest (1) was 1.011x the speed of the slowest (3). 2 was 0.994x the speed of 1 and 3 was 0.995x the speed of 2.

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

Darktable (Test: Server Rack - Acceleration: CPU-only) at 1.323x
ASTC Encoder (Preset: Fast) at 1.035x
eSpeak-NG Speech Engine (Text-To-Speech Synthesis) at 1.02x
Embree (Binary: Pathtracer - Model: Asian Dragon) at 1.017x
Darktable (Test: Masskrug - Acceleration: CPU-only) at 1.012x
Embree (Binary: Pathtracer - Model: Asian Dragon Obj) at 1.011x
AI Benchmark Alpha (Device Inference Score) at 1.01x
Darktable (Test: Boat - Acceleration: CPU-only) at 1.009x
Numpy Benchmark at 1.009x

GROMACS (Water Benchmark) at 1.009x.

Test Systems:

1

2

3

Processor: Intel Core i7-1065G7 @ 3.90GHz (4 Cores / 8 Threads), Motherboard: Dell 06CDVY (1.0.9 BIOS), Chipset: Intel Device 34ef, Memory: 16GB, Disk: Toshiba KBG40ZPZ512G NVMe 512GB, Graphics: Intel Iris Plus G7 3GB (1100MHz), Audio: Realtek ALC289, Network: Intel Killer Wi-Fi 6 AX1650i 160MHz

OS: Ubuntu 20.10, Kernel: 5.8.0-25-generic (x86_64), Desktop: GNOME Shell 3.38.1, Display Server: X Server 1.20.9, Display Driver: modesetting 1.20.9, OpenGL: 4.6 Mesa 20.2.1, Vulkan: 1.2.145, Compiler: GCC 10.2.0, File-System: ext4, Screen Resolution: 1920x1200

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: intel_pstate powersave - CPU Microcode: 0x78 - Thermald 2.3
Python Notes: Python 3.8.6
Security Notes: itlb_multihit: KVM: Mitigation of VMX disabled + l1tf: Not affected + mds: Not affected + meltdown: Not affected + spec_store_bypass: Vulnerable + spectre_v1: Vulnerable: __user pointer sanitization and usercopy barriers only; no swapgs barriers + spectre_v2: Vulnerable IBPB: disabled STIBP: disabled + srbds: Not affected + tsx_async_abort: Not affected

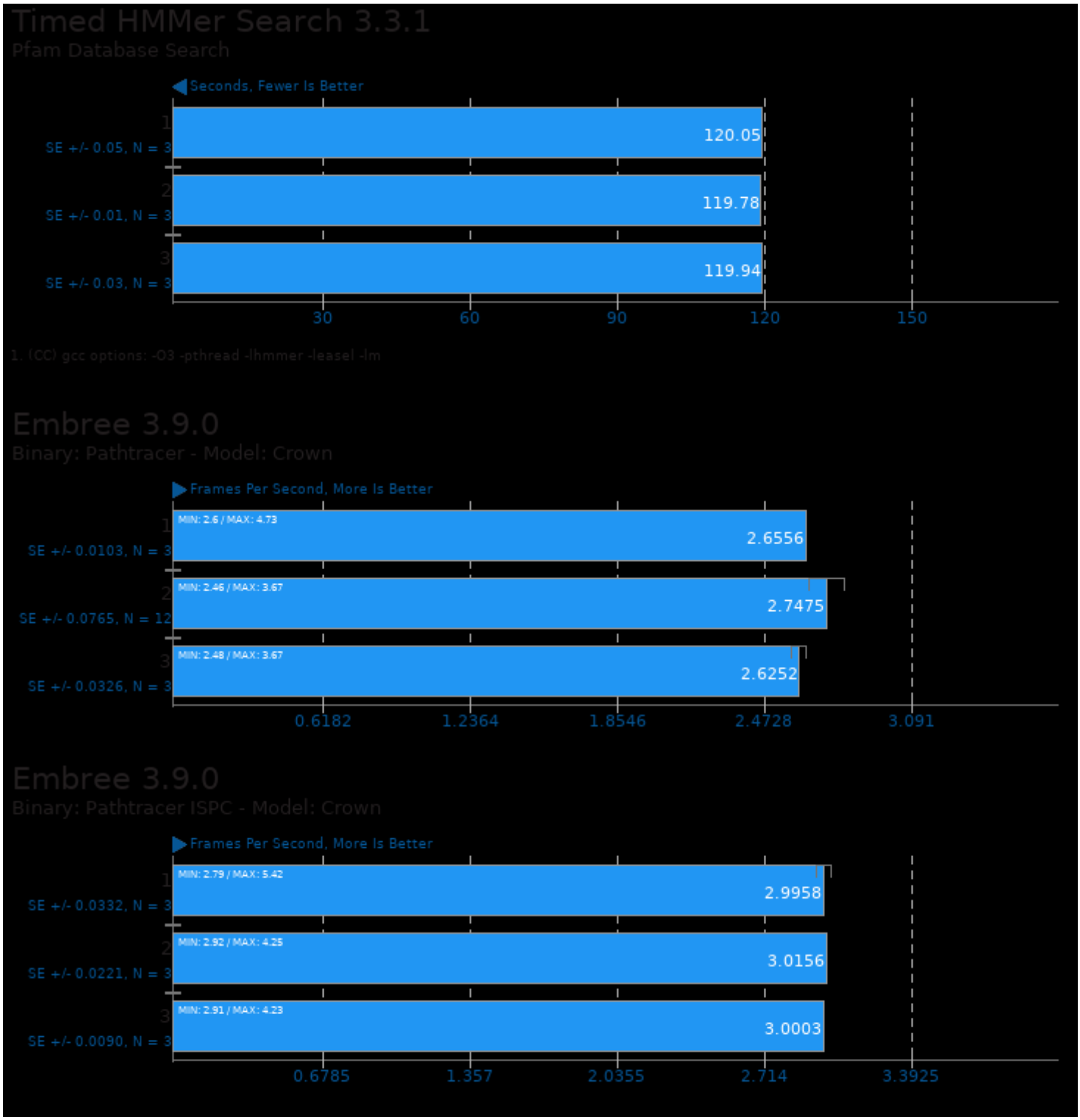
	1	2	3
Timed HMMer Search - P.D.S (sec)	**120.048**	**119.779**	119.944
Normalized	99.78%	100%	99.86%
Standard Deviation	0.1%	0%	0%
Embree - Pathtracer - Crown (FPS)	2.6556	**2.7475**	**2.6252**
Normalized	96.66%	100%	95.55%
Standard Deviation	0.7%	9.6%	2.1%
Embree - Pathtracer ISPC - Crown (FPS)	**2.9958**	**3.0156**	3.0003
Normalized	99.34%	100%	99.49%
Standard Deviation	1.9%	1.3%	0.5%
Embree - Pathtracer - Asian Dragon (FPS)	**3.3204**	3.2698	**3.2648**
Normalized	100%	98.48%	98.33%
Standard Deviation	0.3%	1%	1.2%
Embree - Pathtracer - Asian Dragon Obj	**3.0386**	3.0155	**3.0063**
Normalized	100%	99.24%	98.94%
Standard Deviation	0.4%	0.4%	0.5%

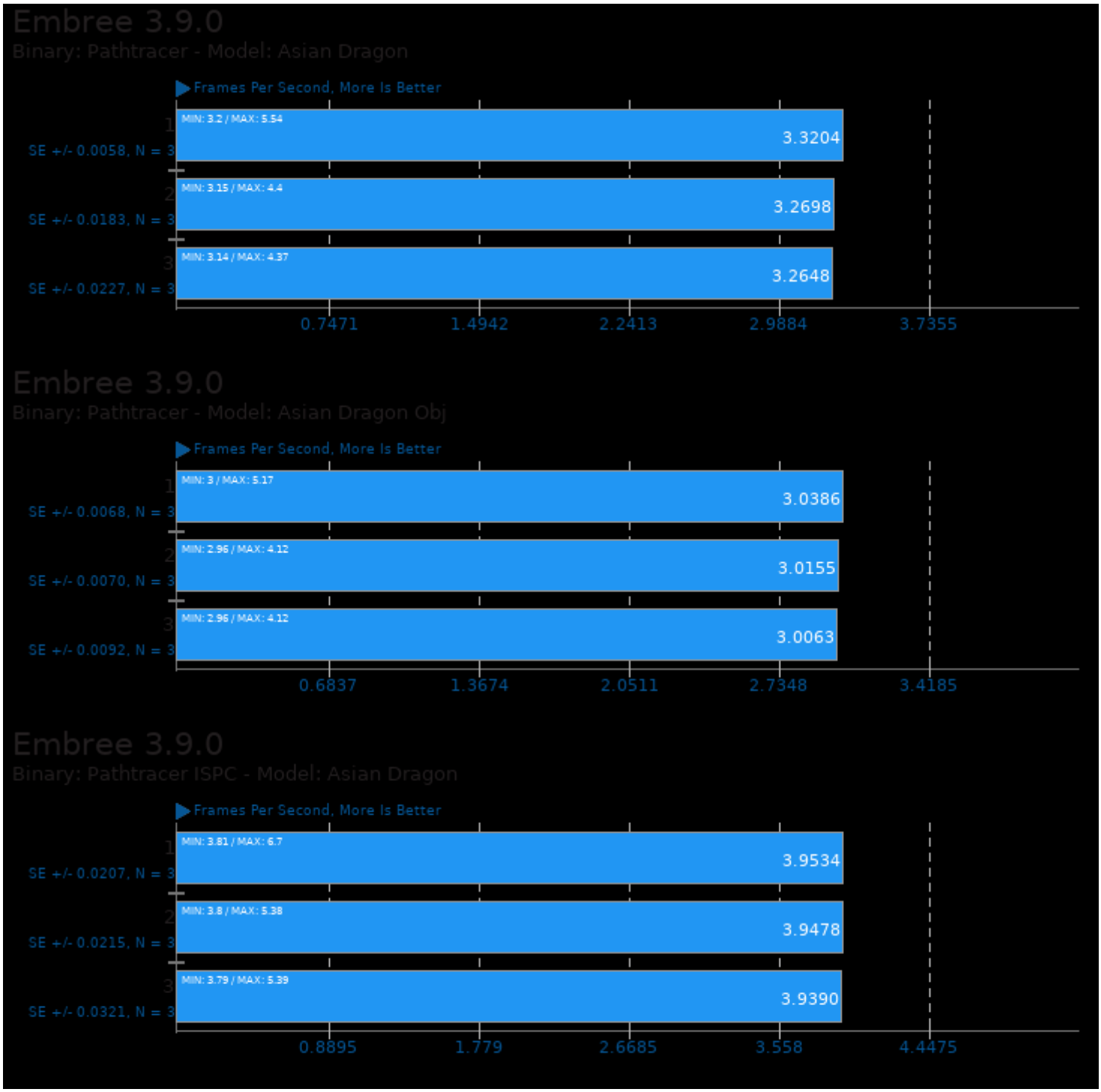
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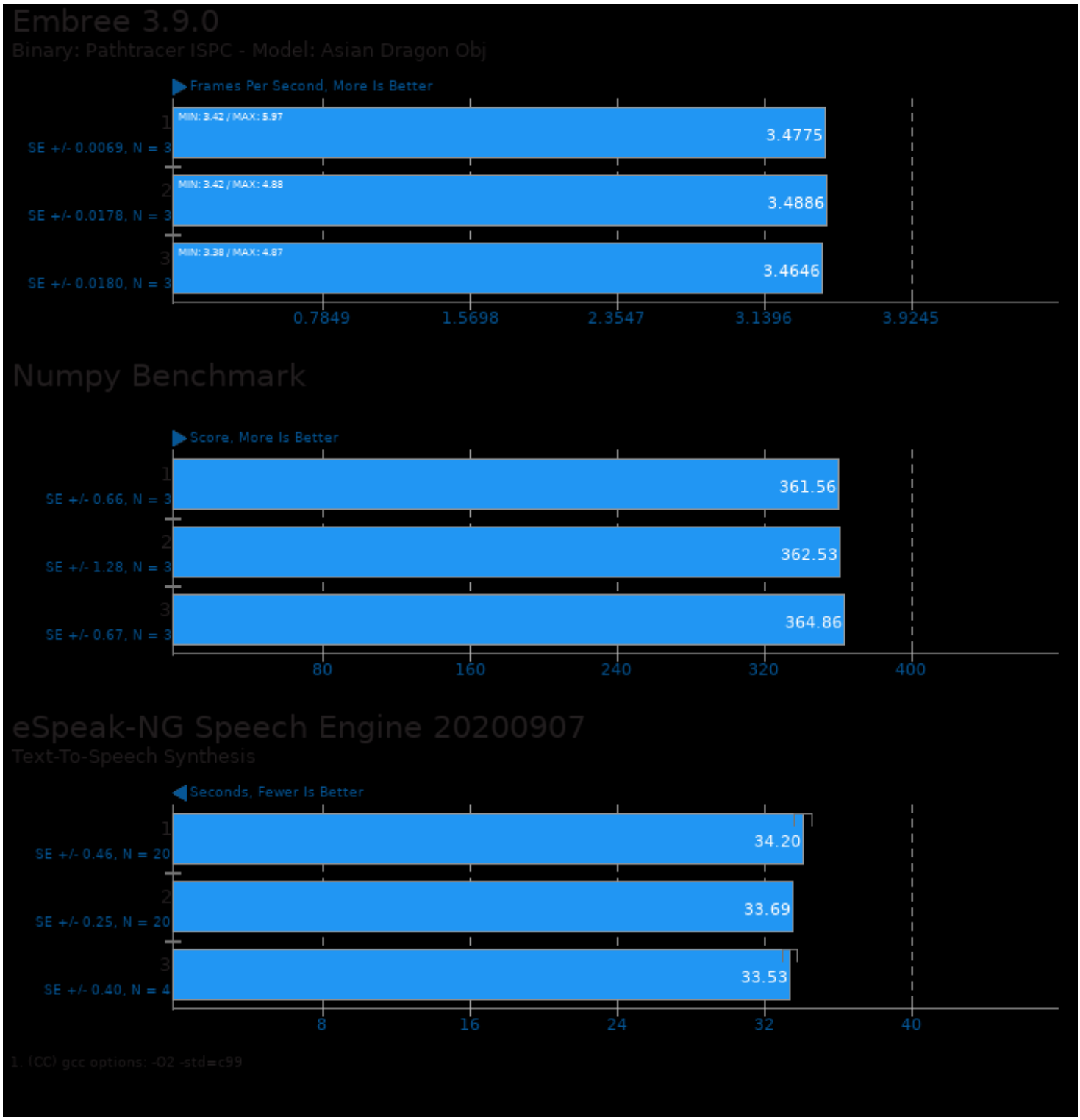
Embree - Pathtracer ISPC - Asian Dragon (FPS)	**3.9534**	3.9478	**3.9390**
Normalized	100%	99.86%	99.64%
Standard Deviation	0.9%	0.9%	1.4%
Embree - Pathtracer ISPC - Asian Dragon Obj (FPS)	3.4775	**3.4886**	**3.4646**
Normalized	99.68%	100%	99.31%
Standard Deviation	0.3%	0.9%	0.9%
Numpy Benchmark (Score)	**361.56**	362.53	**364.86**
Normalized	99.1%	99.36%	100%
Standard Deviation	0.3%	0.6%	0.3%
eSpeak-NG Speech Engine - T.T.S.S (sec)	**34.200**	33.693	**33.529**
Normalized	98.04%	99.51%	100%
Standard Deviation	6%	3.3%	2.4%
GROMACS - Water Benchmark (Ns/Day)	**0.336**	**0.339**	**0.339**
Normalized	99.12%	100%	100%
Standard Deviation	1.6%	0.5%	0.8%
ASTC Encoder - Fast (sec)	**8.48**	**8.19**	**8.19**
Normalized	96.58%	100%	100%
Standard Deviation	4.4%	0.1%	0.3%
ASTC Encoder - Medium (sec)	**14.79**	**14.68**	14.74
Normalized	99.26%	100%	99.59%
Standard Deviation	3%	2.9%	2.6%
ASTC Encoder - Thorough (sec)	**109.53**	109.89	**110.09**
Normalized	100%	99.67%	99.49%
Standard Deviation	0.4%	0.7%	0.6%
ASTC Encoder - Exhaustive (sec)	**920.81**	922.33	**924.52**
Normalized	100%	99.84%	99.6%
Standard Deviation	0.1%	0%	0.1%
Darktable - Boat - CPU-only (sec)	**19.469**	19.472	**19.651**
Normalized	100%	99.98%	99.07%
Standard Deviation	2.3%	2.9%	2.9%
Darktable - Masskrug - CPU-only (sec)	**11.596**	**11.456**	11.500
Normalized	98.79%	100%	99.62%
Standard Deviation	3.1%	3.8%	3.9%
Darktable - Server Rack - CPU-only (sec)	**0.226**	0.290	**0.299**
Normalized	100%	77.93%	75.59%
Standard Deviation	0.7%	1.4%	0.8%
Darktable - Server Room - CPU-only (sec)	**9.015**	**8.830**	8.893
Normalized	97.95%	100%	99.29%
Standard Deviation	8.8%	5%	5.1%
IndigoBench - CPU - Bedroom (M samples/s)	**0.421**	0.420	**0.419**
Normalized	100%	99.76%	99.52%
Standard Deviation	0.2%	0.4%	0%
IndigoBench - CPU - Supercar (M samples/s)	**0.944**	0.939	**0.936**
Normalized	100%	99.47%	99.15%
Standard Deviation	0.1%	0.2%	0.2%
AI Benchmark Alpha - D.I.S (Score)	**419**	417	**415**
Normalized	100%	99.52%	99.05%
AI Benchmark Alpha - D.T.S (Score)	**518**	**518**	**515**
Normalized	100%	100%	99.42%
AI Benchmark Alpha - Device AI Score	**937**	935	**930**
Normalized	100%	99.79%	99.25%
Geekbench - GPU Vulkan (Score)	**6053**	**6009**	6021
Normalized	100%	99.27%	99.47%

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Standard Deviation	2.9%	3%	2.7%
Geekbench - CPU Multi Core (Score)	**3779**	**3806**	3792
Normalized	99.29%	100%	99.63%
Standard Deviation	0.5%	0.2%	0.5%
Geekbench - CPU Single Core (Score)	**1418**	**1413**	1416
Normalized	100%	99.65%	99.86%
Standard Deviation	0.2%	0.4%	0.5%
BRL-CAD - V.P.M (VGR Performance Metric)	**28510**	28410	**28391**
Normalized	100%	99.65%	99.58%


Timed HMMer Search 3.3.1
Pfam Database Search
Seconds, Fewer Is Better
1
SE +/- 0.05, N = 3
120.05
2
SE +/- 0.01, N = 3
119.78
3
SE +/- 0.03, N = 3
119.94
30
60
90
120
150
1. (CC) gcc options: -O3 -pthread -lhmmer -leasel -lm
Embree 3.9.0
Binary: Pathtracer - Model: Crown
Frames Per Second, More Is Better
1
MIN: 2.6 / MAX: 4.73
SE +/- 0.0103, N = 3
2.6556
2
MIN: 2.46 / MAX: 3.67
SE +/- 0.0765, N = 12
2.7475
3
MIN: 2.48 / MAX: 3.67
SE +/- 0.0326, N = 3
2.6252
0.6182
1.2364
1.8546
2.4728
3.091
Embree 3.9.0
Binary: Pathtracer ISPC - Model: Crown
Frames Per Second, More Is Better
1
MIN: 2.79 / MAX: 5.42
SE +/- 0.0332, N = 3
2.9958
2
MIN: 2.92 / MAX: 4.25
SE +/- 0.0221, N = 3
3.0156
3
MIN: 2.91 / MAX: 4.23
SE +/- 0.0090, N = 3
3.0003
0.6785
1.357
2.0355
2.714
3.3925

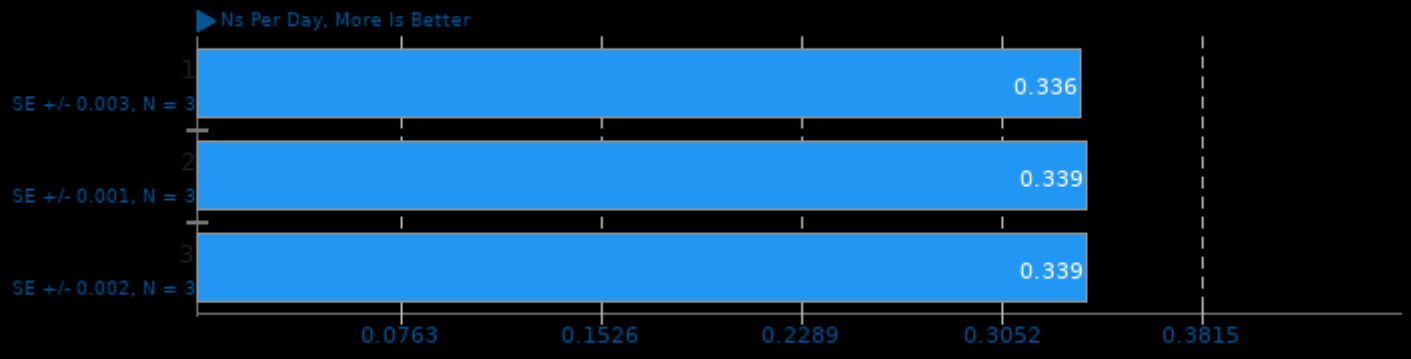

Embree 3.9.0
Binary: Pathtracer - Model: Asian Dragon
Frames Per Second, More Is Better
1
MIN: 3.2 / MAX: 5.54
3.3204
SE +/- 0.0058, N = 3
2
MIN: 3.15 / MAX: 4.4
3.2698
SE +/- 0.0183, N = 3
3
MIN: 3.14 / MAX: 4.37
3.2648
SE +/- 0.0227, N = 3
0.7471
1.4942
2.2413
2.9884
3.7355
Embree 3.9.0
Binary: Pathtracer - Model: Asian Dragon Obj
Frames Per Second, More Is Better
1
MIN: 3 / MAX: 5.17
3.0386
SE +/- 0.0068, N = 3
2
MIN: 2.96 / MAX: 4.12
3.0155
SE +/- 0.0070, N = 3
3
MIN: 2.96 / MAX: 4.12
3.0063
SE +/- 0.0092, N = 3
0.6837
1.3674
2.0511
2.7348
3.4185
Embree 3.9.0
Binary: Pathtracer ISPC - Model: Asian Dragon
Frames Per Second, More Is Better
1
MIN: 3.81 / MAX: 6.7
3.9534
SE +/- 0.0207, N = 3
2
MIN: 3.8 / MAX: 5.38
3.9478
SE +/- 0.0215, N = 3
3
MIN: 3.79 / MAX: 5.39
3.9390
SE +/- 0.0321, N = 3
0.8895
1.779
2.6685
3.558
4.4475


Embree 3.9.0
Binary: Pathtracer ISPC - Model: Asian Dragon Obj
Frames Per Second, More Is Better
1
MIN: 3.42 / MAX: 5.97
3.4775
SE +/- 0.0069, N = 3
2
MIN: 3.42 / MAX: 4.88
3.4886
SE +/- 0.0178, N = 3
3
MIN: 3.38 / MAX: 4.87
3.4646
SE +/- 0.0180, N = 3
0.7849
1.5698
2.3547
3.1396
3.9245
Numpy Benchmark
Score, More Is Better
1
361.56
SE +/- 0.66, N = 3
2
362.53
SE +/- 1.28, N = 3
3
364.86
SE +/- 0.67, N = 3
80
160
240
320
400
eSpeak-NG Speech Engine 20200907
Text-To-Speech Synthesis
Seconds, Fewer Is Better
1
34.20
SE +/- 0.46, N = 20
2
33.69
SE +/- 0.25, N = 20
3
33.53
SE +/- 0.40, N = 4
8
16
24
32
40
1. (CC) gcc options: -O2 -std=c99

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GROMACS 2020.3

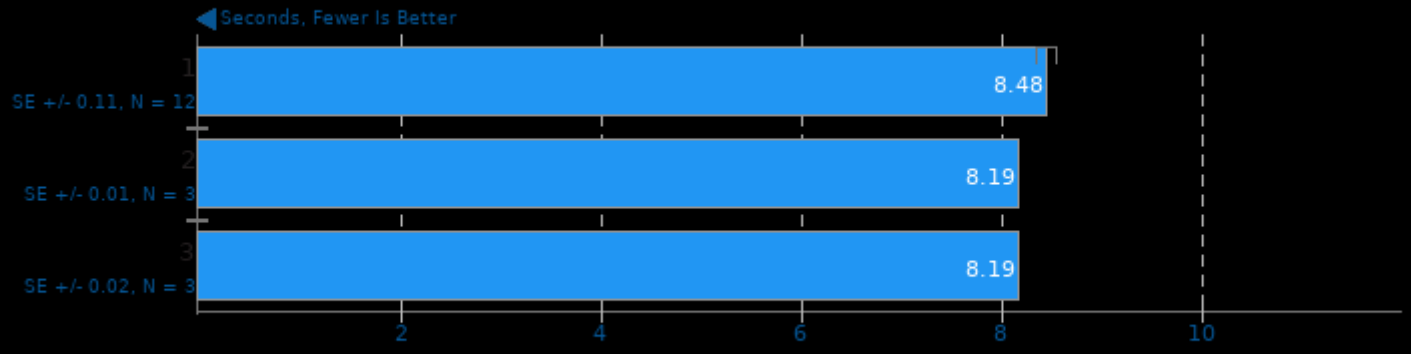
Water Benchmark



1. (CXX) g++ options: -O3 -pthread -lrt -lpthread -lm

ASTC Encoder 2.0

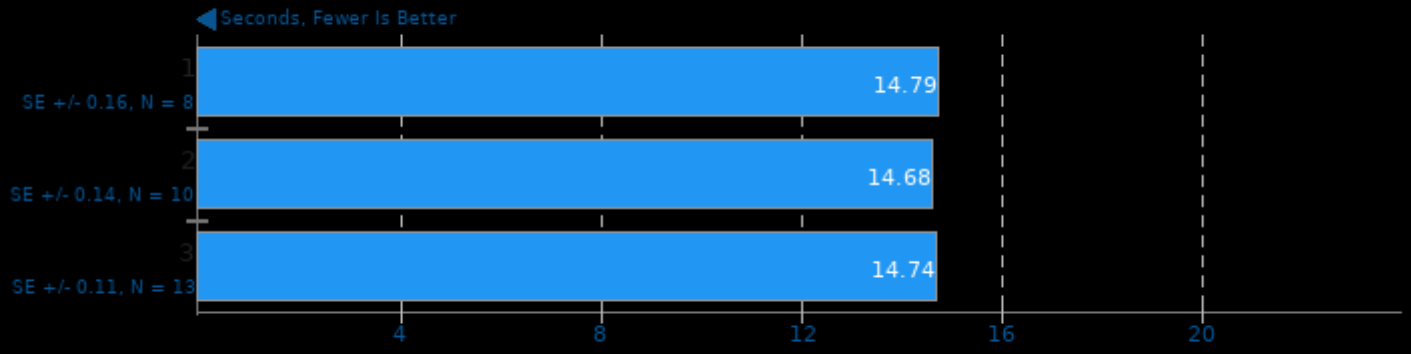
Preset: Fast



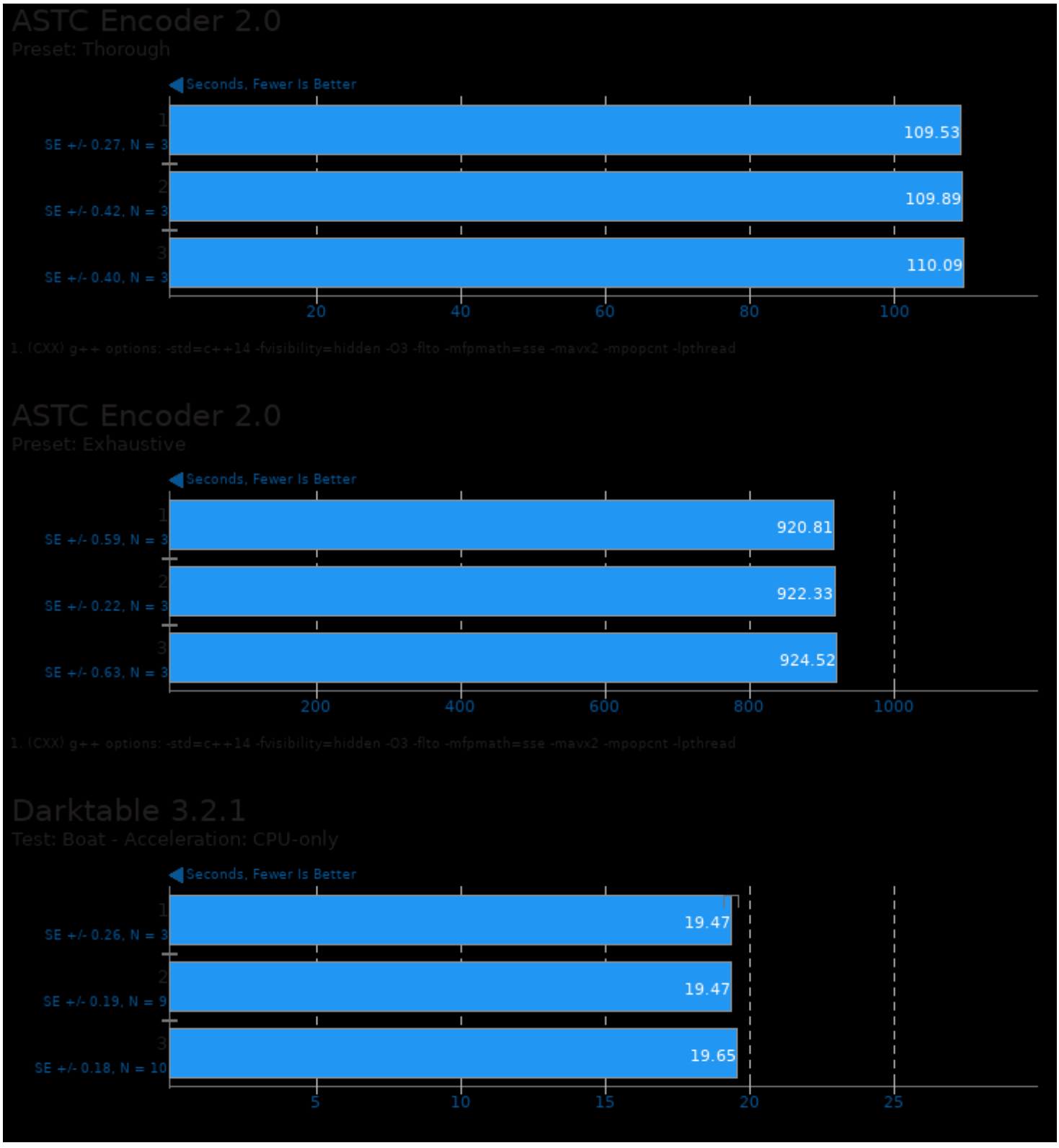
1. (CXX) g++ options: -std=c++14 -fvisibility=hidden -O3 -flto -mfpmath=sse -mavx2 -mpopcnt -lpthread

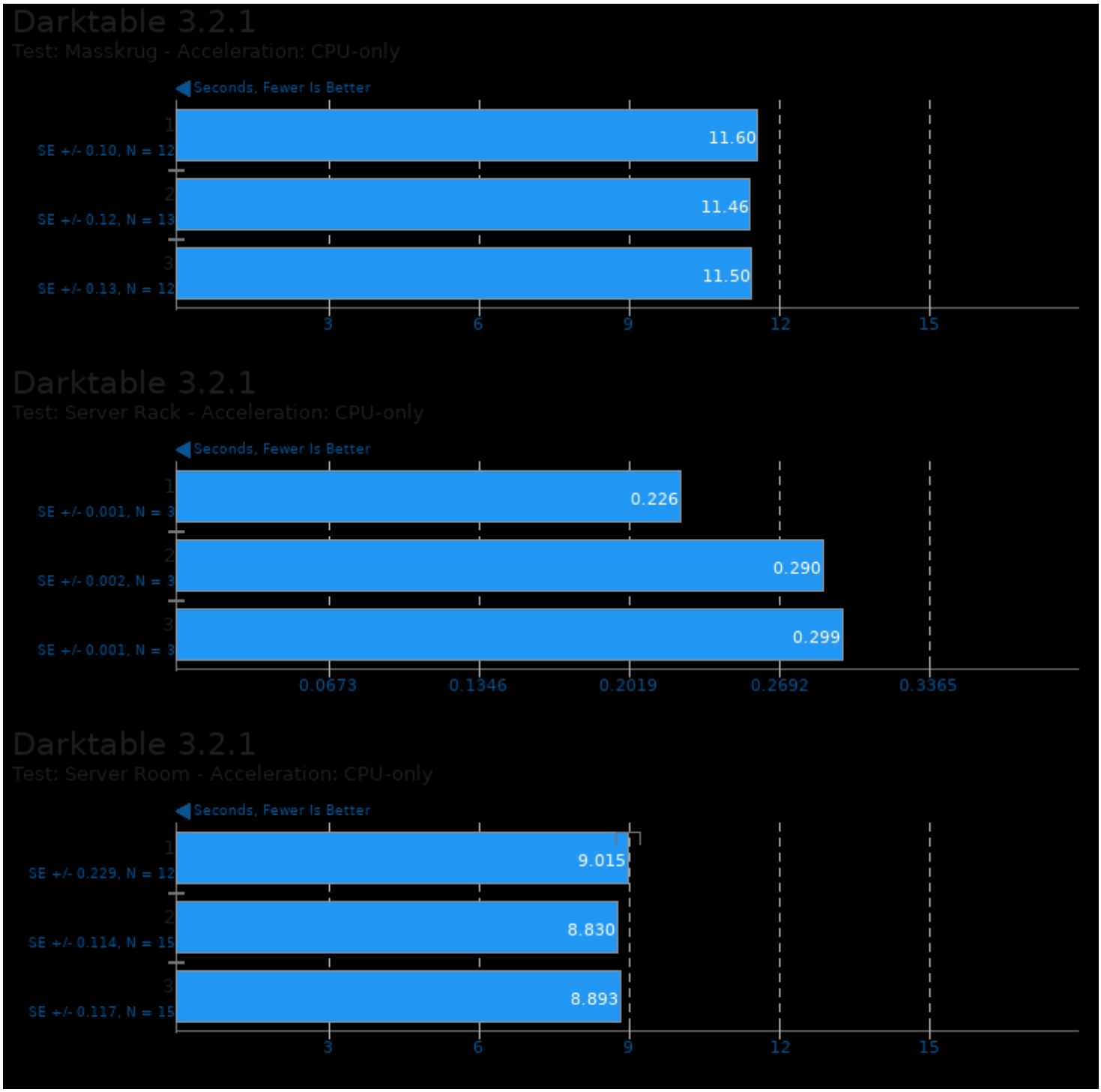
ASTC Encoder 2.0

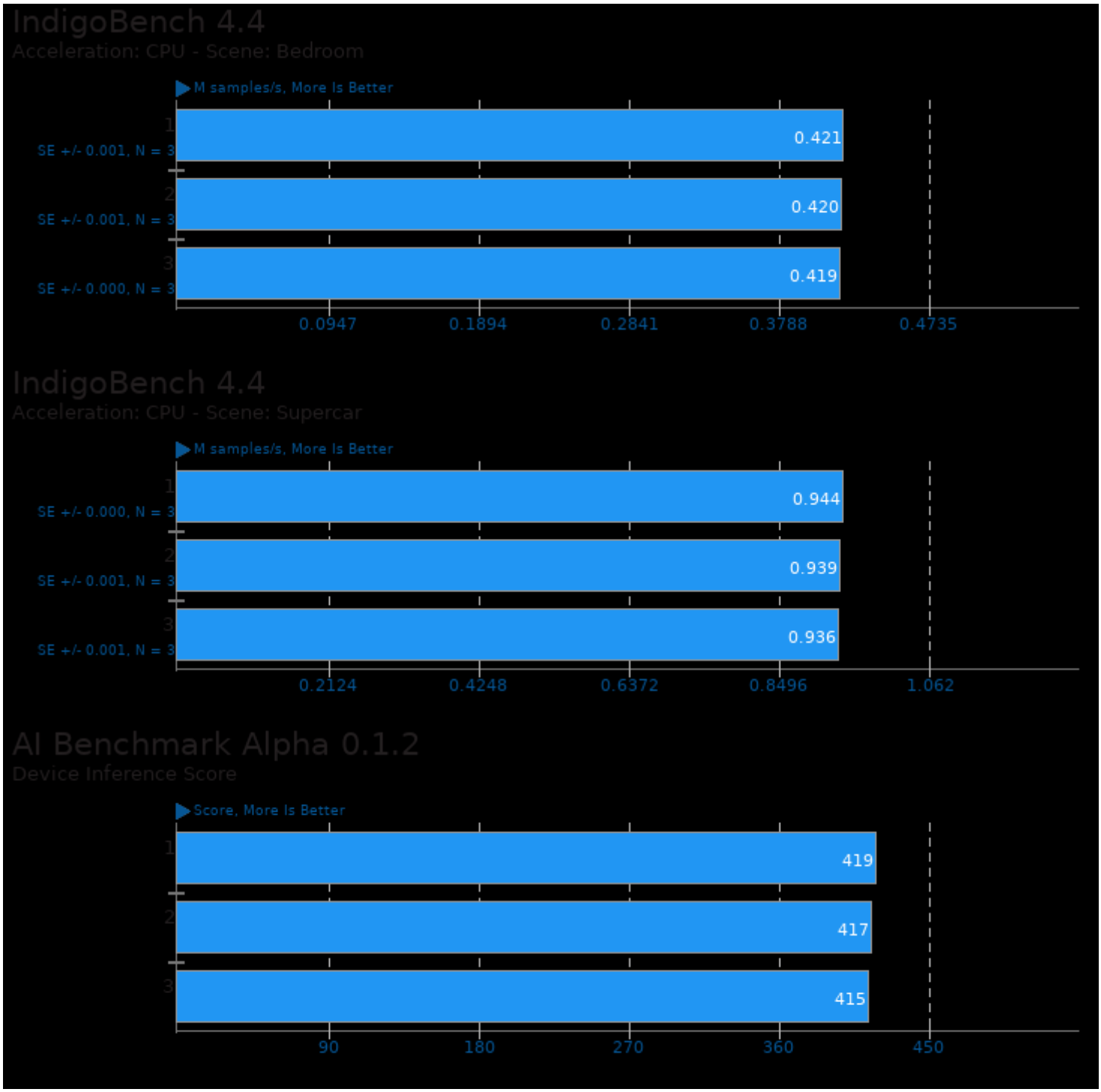
Preset: Medium

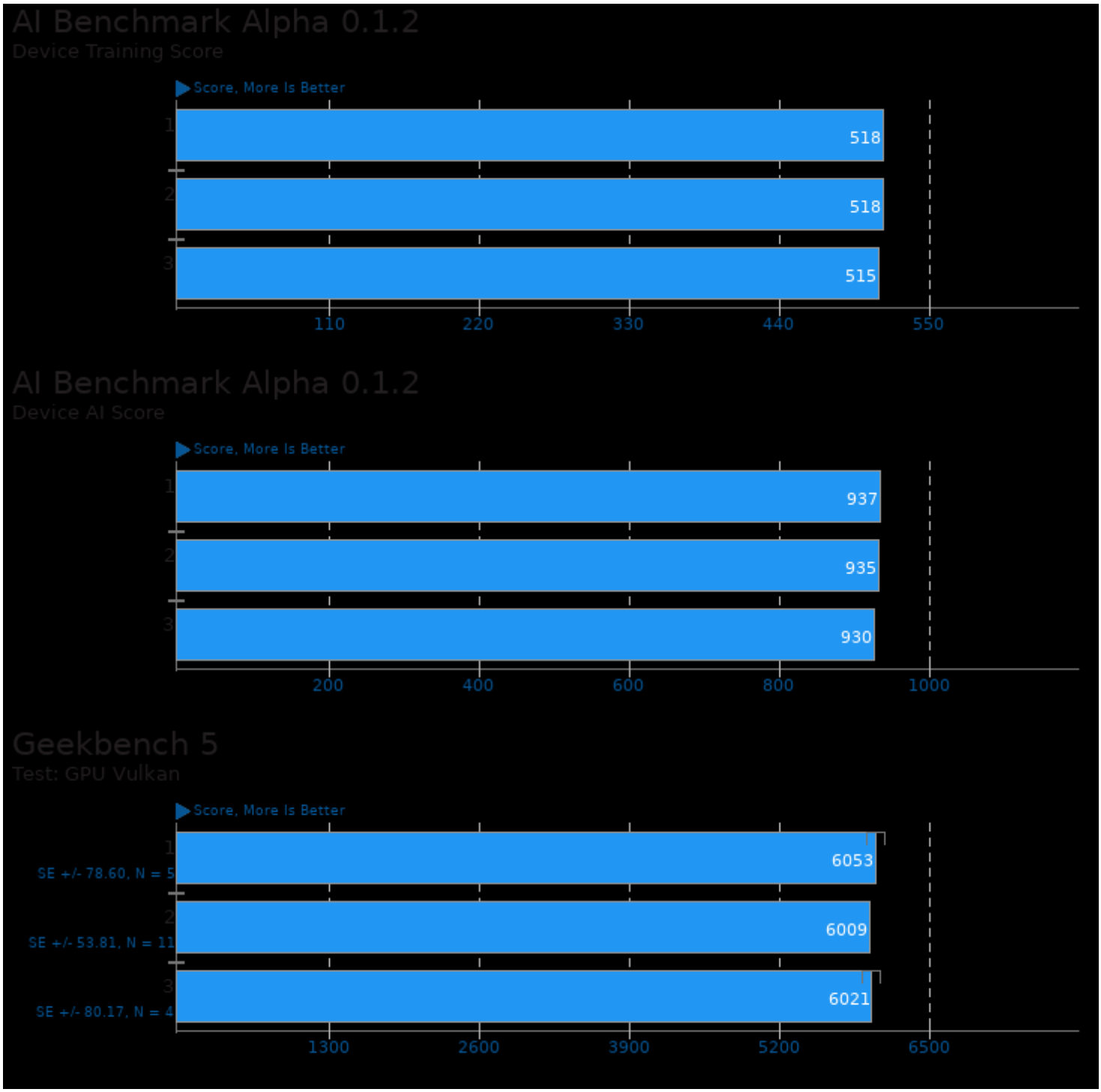


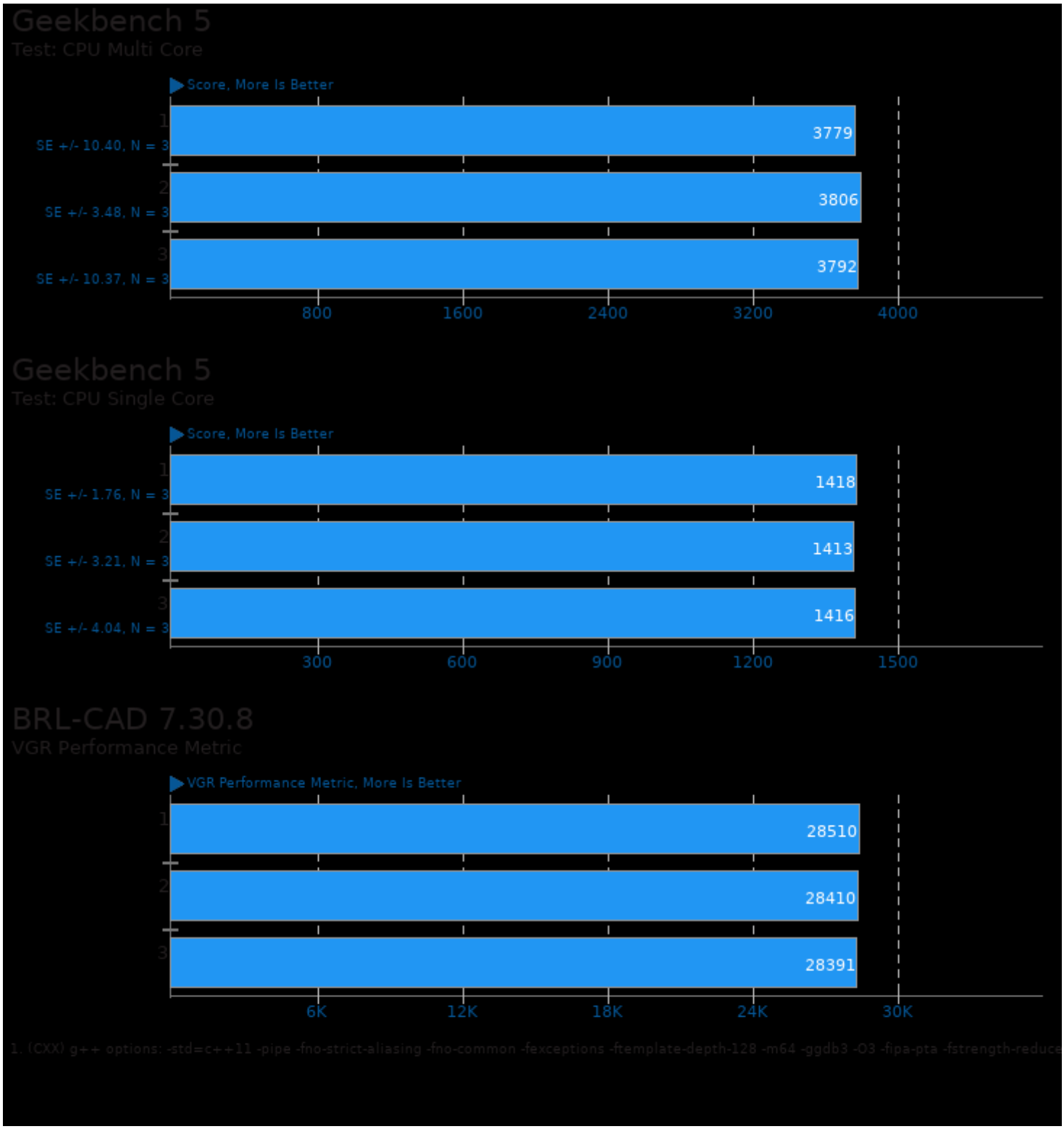
1. (CXX) g++ options: -std=c++14 -fvisibility=hidden -O3 -flto -mfpmath=sse -mavx2 -mpopcnt -lpthread


ASTC Encoder 2.0
Preset: Thorough
Seconds, Fewer Is Better
1
SE +/- 0.27, N = 3
109.53
2
SE +/- 0.42, N = 3
109.89
3
SE +/- 0.40, N = 3
110.09
20
40
60
80
100
1. (CXX) g++ options: -std=c++14 -fvisibility=hidden -O3 -flto -mfpmath=sse -mavx2 -mpopcnt -lpthread
ASTC Encoder 2.0
Preset: Exhaustive
Seconds, Fewer Is Better
1
SE +/- 0.59, N = 3
920.81
2
SE +/- 0.22, N = 3
922.33
3
SE +/- 0.63, N = 3
924.52
200
400
600
800
1000
1. (CXX) g++ options: -std=c++14 -fvisibility=hidden -O3 -flto -mfpmath=sse -mavx2 -mpopcnt -lpthread
Darktable 3.2.1
Test: Boat - Acceleration: CPU-only
Seconds, Fewer Is Better
1
SE +/- 0.26, N = 3
19.47
2
SE +/- 0.19, N = 9
19.47
3
SE +/- 0.18, N = 10
19.65
5
10
15
20
25

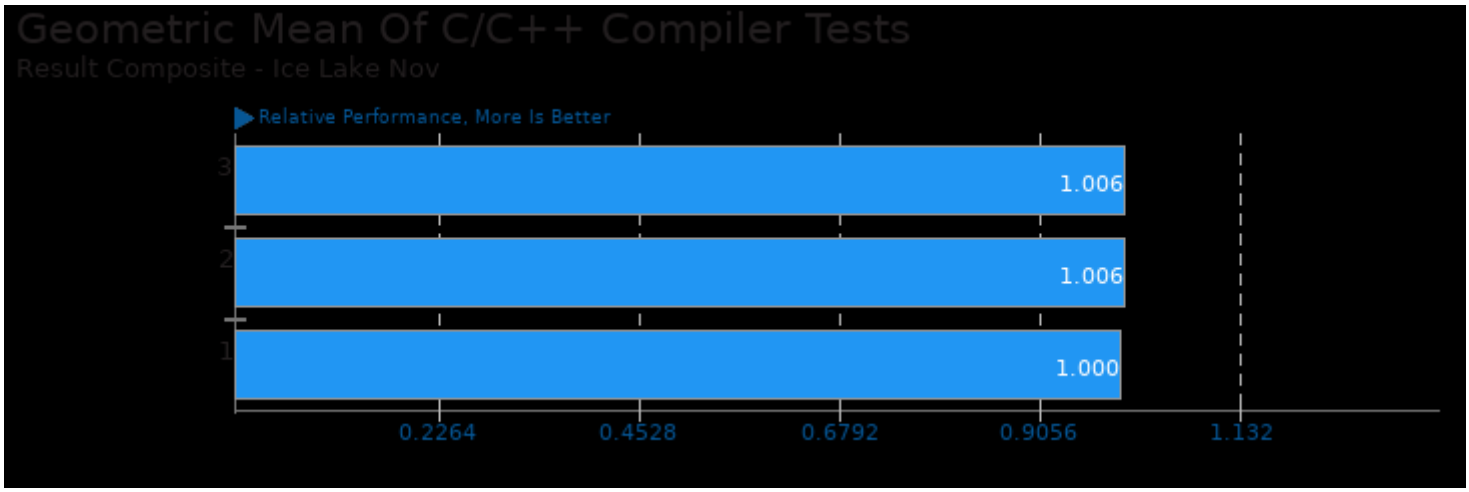

Darktable 3.2.1
Test: Masskrug - Acceleration: CPU-only
Seconds, Fewer Is Better
1
SE +/- 0.10, N = 12
11.60
2
SE +/- 0.12, N = 13
11.46
3
SE +/- 0.13, N = 12
11.50
3
6
9
12
15
Darktable 3.2.1
Test: Server Rack - Acceleration: CPU-only
Seconds, Fewer Is Better
1
SE +/- 0.001, N = 3
0.226
2
SE +/- 0.002, N = 3
0.290
3
SE +/- 0.001, N = 3
0.299
0.0673
0.1346
0.2019
0.2692
0.3365
Darktable 3.2.1
Test: Server Room - Acceleration: CPU-only
Seconds, Fewer Is Better
1
SE +/- 0.229, N = 12
9.015
2
SE +/- 0.114, N = 15
8.830
3
SE +/- 0.117, N = 15
8.893
3
6
9
12
15


IndigoBench 4.4
Acceleration: CPU - Scene: Bedroom
M samples/s, More Is Better
1
SE +/- 0.001, N = 3
0.421
2
SE +/- 0.001, N = 3
0.420
3
SE +/- 0.000, N = 3
0.419
0.0947
0.1894
0.2841
0.3788
0.4735
IndigoBench 4.4
Acceleration: CPU - Scene: Supercar
M samples/s, More Is Better
1
SE +/- 0.000, N = 3
0.944
2
SE +/- 0.001, N = 3
0.939
3
SE +/- 0.001, N = 3
0.936
0.2124
0.4248
0.6372
0.8496
1.062
AI Benchmark Alpha 0.1.2
Device Inference Score
Score, More Is Better
1
419
2
417
3
415
90
180
270
360
450


AI Benchmark Alpha 0.1.2
Device Training Score
Score, More Is Better
1
518
2
518
3
515
110
220
330
440
550
AI Benchmark Alpha 0.1.2
Device AI Score
Score, More Is Better
1
937
2
935
3
930
200
400
600
800
1000
Geekbench 5
Test: GPU Vulkan
Score, More Is Better
1
SE +/- 78.60, N = 5
6053
2
SE +/- 53.81, N = 11
6009
3
SE +/- 80.17, N = 4
6021
1300
2600
3900
5200
6500


Geekbench 5
Test: CPU Multi Core
Score, More Is Better
1
SE +/- 10.40, N = 3
3779
2
SE +/- 3.48, N = 3
3806
3
SE +/- 10.37, N = 3
3792
800
1600
2400
3200
4000
Geekbench 5
Test: CPU Single Core
Score, More Is Better
1
SE +/- 1.76, N = 3
1418
2
SE +/- 3.21, N = 3
1413
3
SE +/- 4.04, N = 3
1416
300
600
900
1200
1500
BRL-CAD 7.30.8
VGR Performance Metric
VGR Performance Metric, More Is Better
1
28510
2
28410
3
28391
6K
12K
18K
24K
30K
1. (CXX) g++ options: -std=c++11 -pipe -fno-strict-aliasing -fno-common -fexceptions -ftemplate-depth-128 -m64 -ggdb3 -O3 -fipa-pta -fstrength-reduce

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



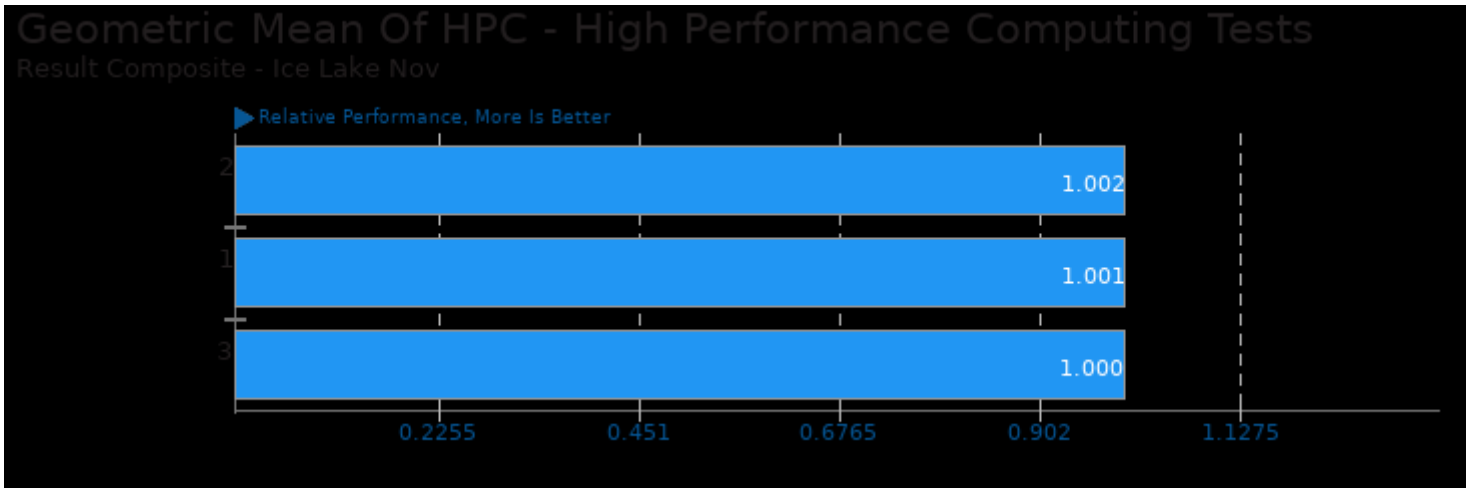
Geometric mean based upon tests: pts/hmmer and pts/gromacs



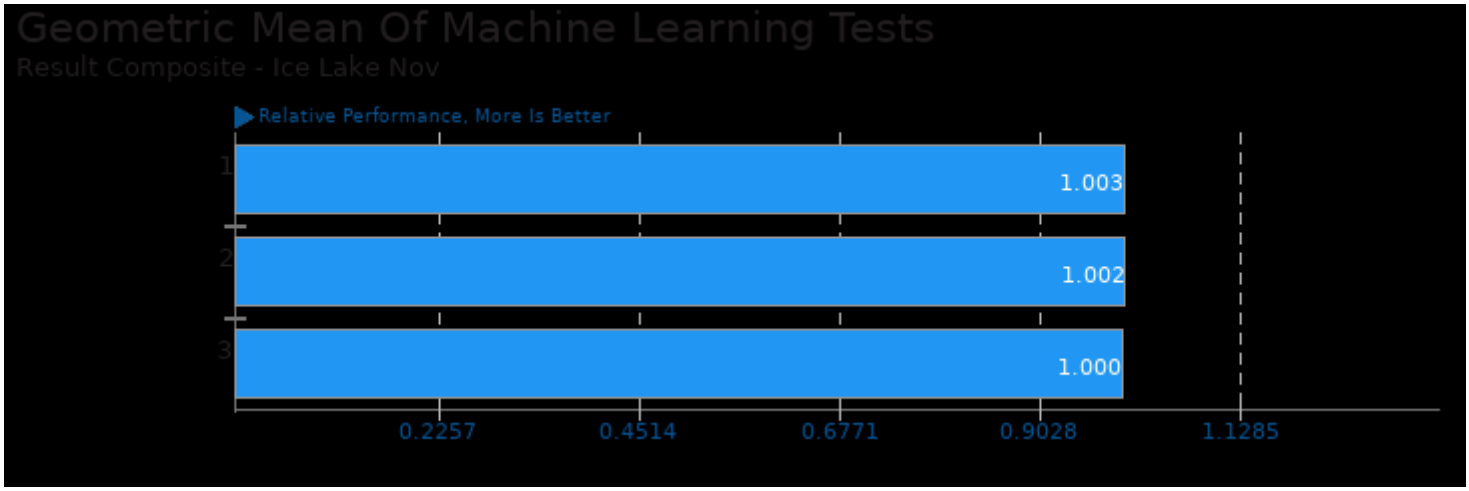
Geometric mean based upon tests: pts/brl-cad, pts/geekbench, pts/hmmer, pts/numpy and system/darktable



Geometric mean based upon tests: pts/indigobench, system/darktable, pts/embree, pts/astcenc, pts/espeak and pts/brl-cad



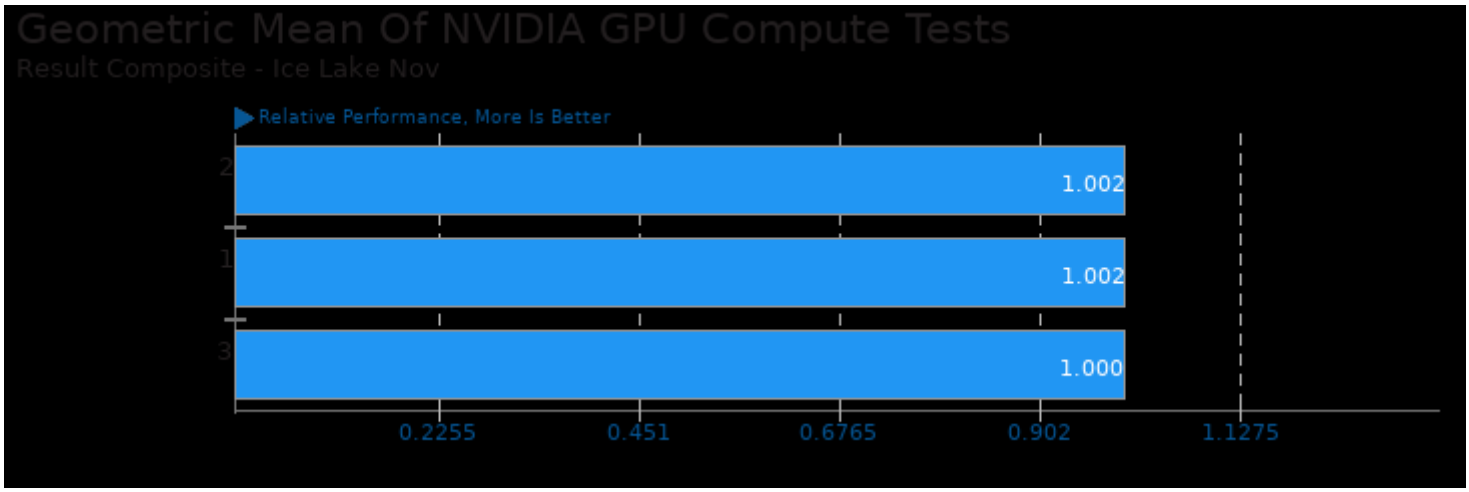
Geometric mean based upon tests: pts/gromacs, pts/hmmer, pts/numpy and pts/ai-benchmark



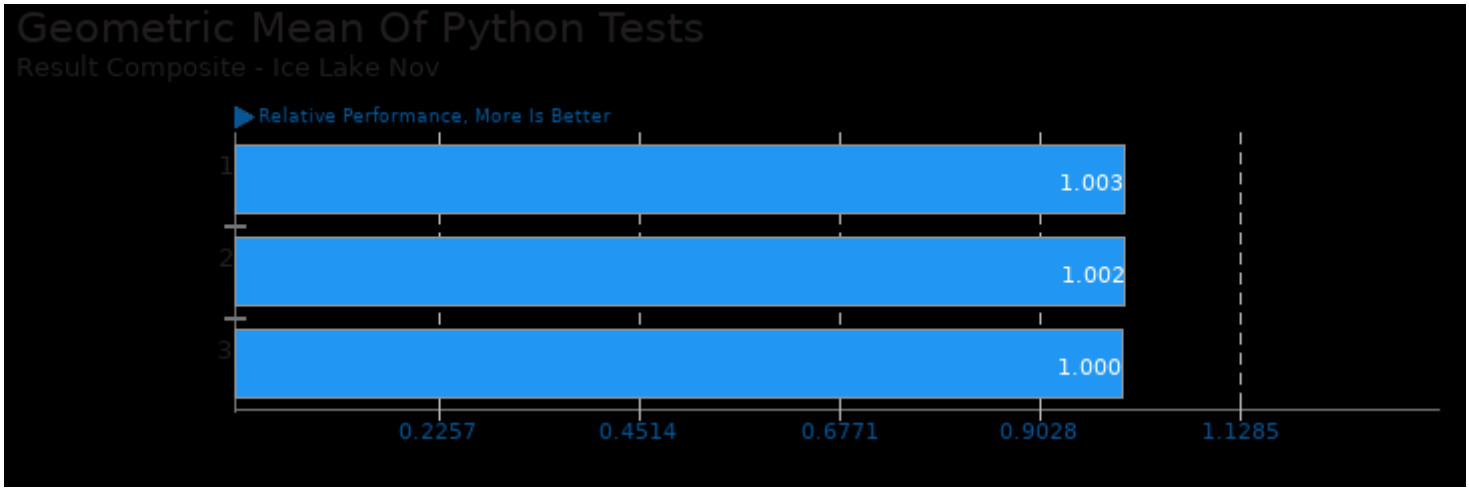
Geometric mean based upon tests: pts/numpy and pts/ai-benchmark



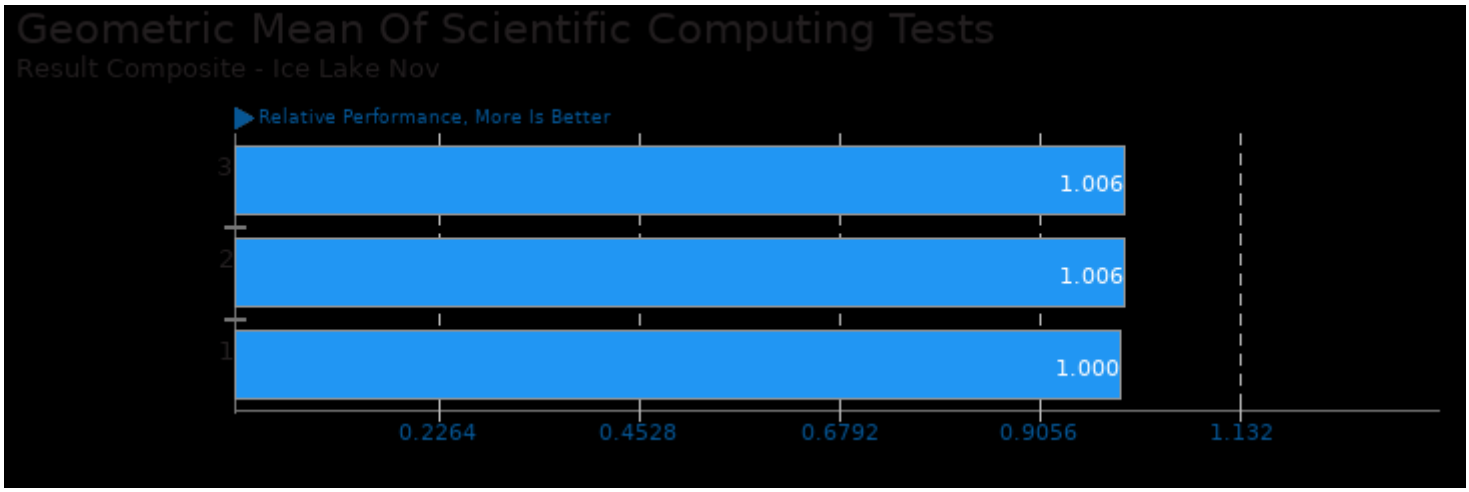
Geometric mean based upon tests: pts/gromacs, pts/indigobench and pts/embree



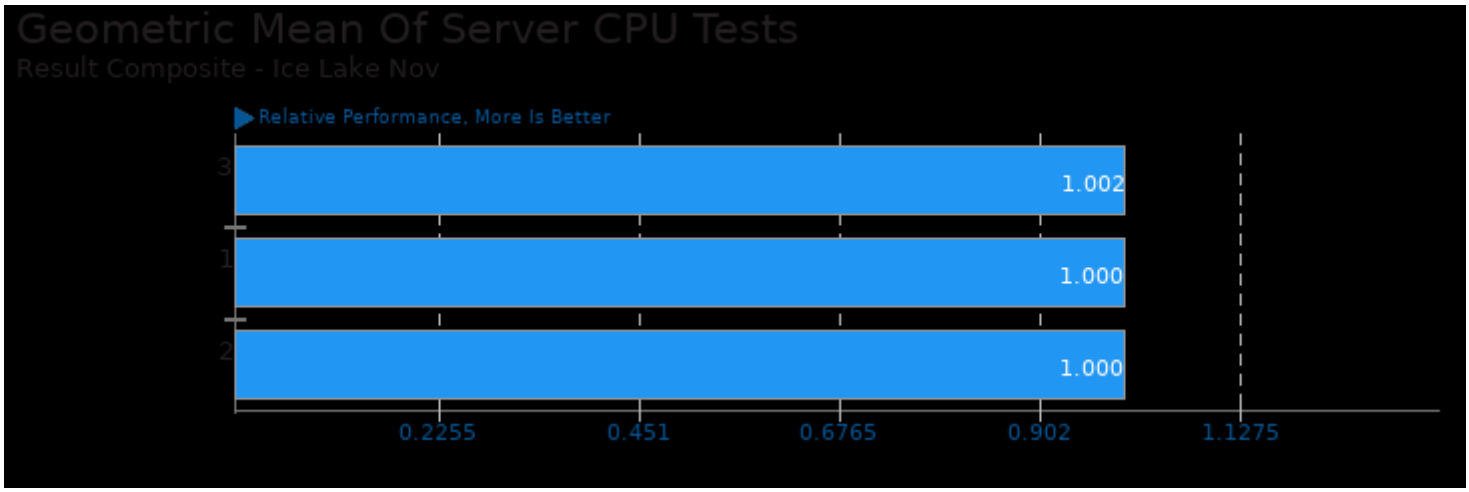
Geometric mean based upon tests: pts/gromacs and pts/indigobench



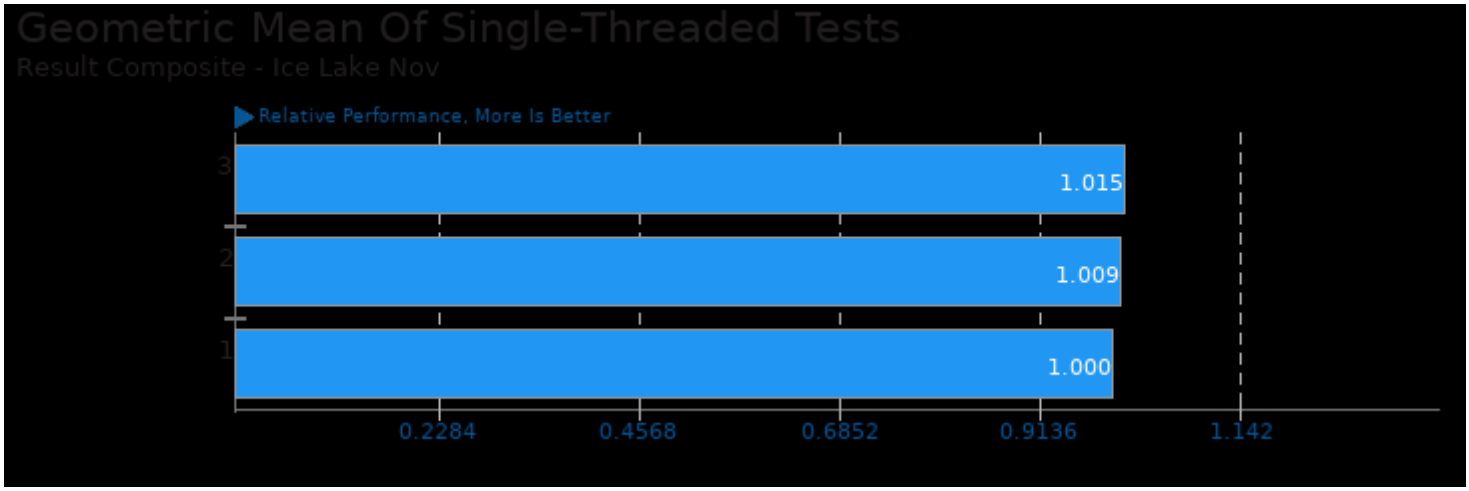
Geometric mean based upon tests: pts/numpy and pts/ai-benchmark



Geometric mean based upon tests: pts/gromacs and pts/hmmer



Geometric mean based upon tests: pts/numpy and pts/geekbench



Geometric mean based upon tests: pts/numpy and pts/espeak

This file was automatically generated via the Phoronix Test Suite benchmarking software on Thursday, 28 March 2024 18:40.