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3900XT EO August

AMD Ryzen 9 3900XT 12-Core testing with a MSI MEG X570 GODLIKE (MS-7C34) v1.0 (1.B3 BIOS) and AMD Radeon RX 56/64 8GB on Ubuntu 20.10 via the Phoronix Test Suite.

Automated Executive Summary

3 had the most wins, coming in first place for 50% of the tests.

Based on the geometric mean of all complete results, the fastest (3) was 1.02x the speed of the slowest (4). 2 was 0.985x the speed of 3, 1 was 0.996x the speed of 2, 4 was 1x the speed of 1.

Test Systems:

1

2

3

4

Processor: AMD Ryzen 9 3900XT 12-Core @ 3.80GHz (12 Cores / 24 Threads), Motherboard: MSI MEG X570 GODLIKE (MS-7C34) v1.0 (1.B3 BIOS), Chipset: AMD Starship/Matisse, Memory: 16GB, Disk: 500GB Seagate FireCuda 520 SSD ZP500GM30002, Graphics: AMD Radeon RX 56/64 8GB (1630/945MHz), Audio: AMD Vega 10 HDMI Audio, Monitor: ASUS MG28U, Network: Realtek Device 2600 + Realtek Device 3000 + Intel Wi-Fi 6 AX200

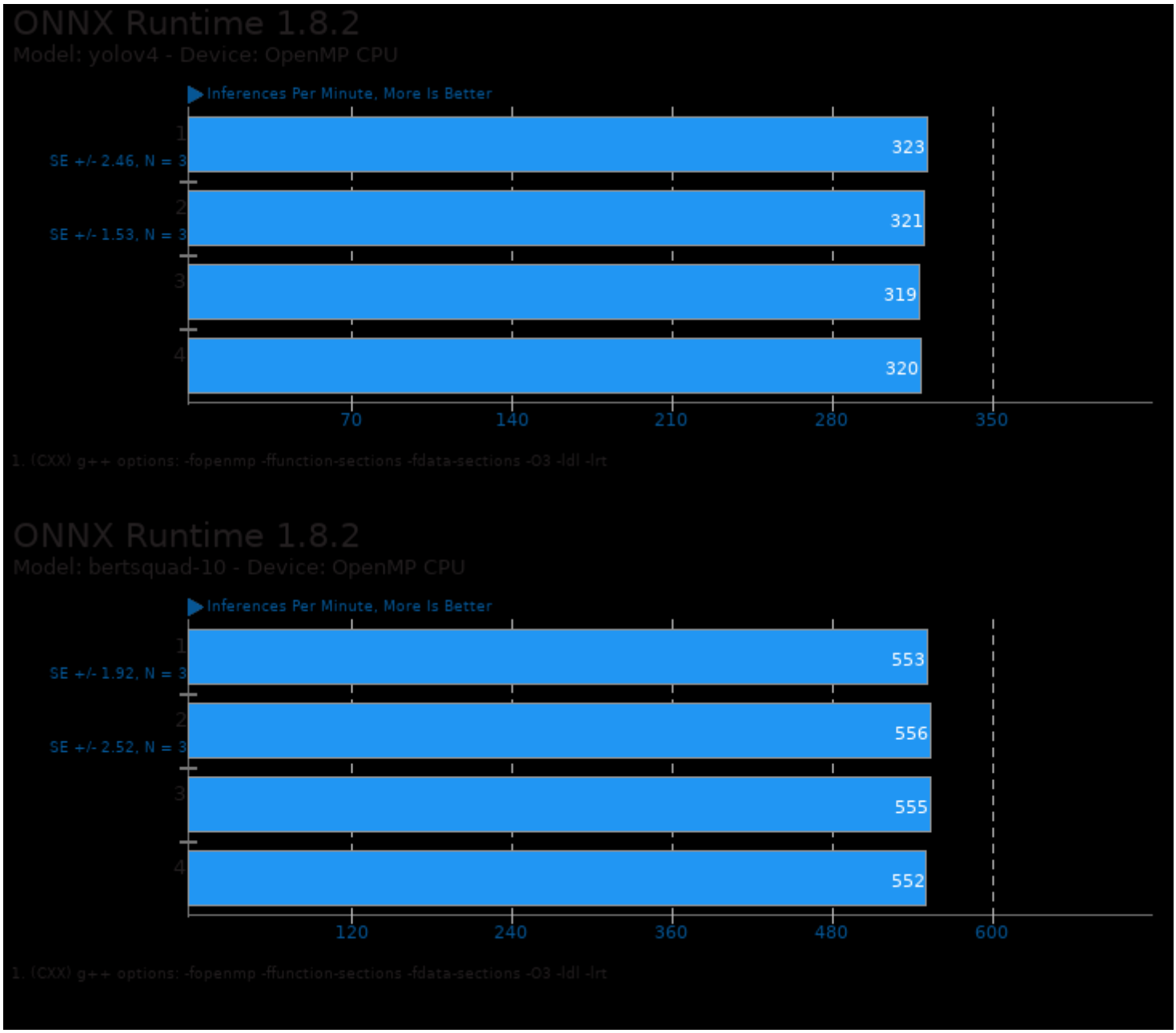
OS: Ubuntu 20.10, Kernel: 5.11.0-rc1-phx (x86_64) 20201228, Desktop: GNOME Shell 3.38.1, Display Server: X Server 1.20.9, OpenGL: 4.6 Mesa 20.2.1 (LLVM 11.0.0), Vulkan: 1.2.131, Compiler: GCC 10.3.0, File-System: ext4, Screen Resolution: 3840x2160

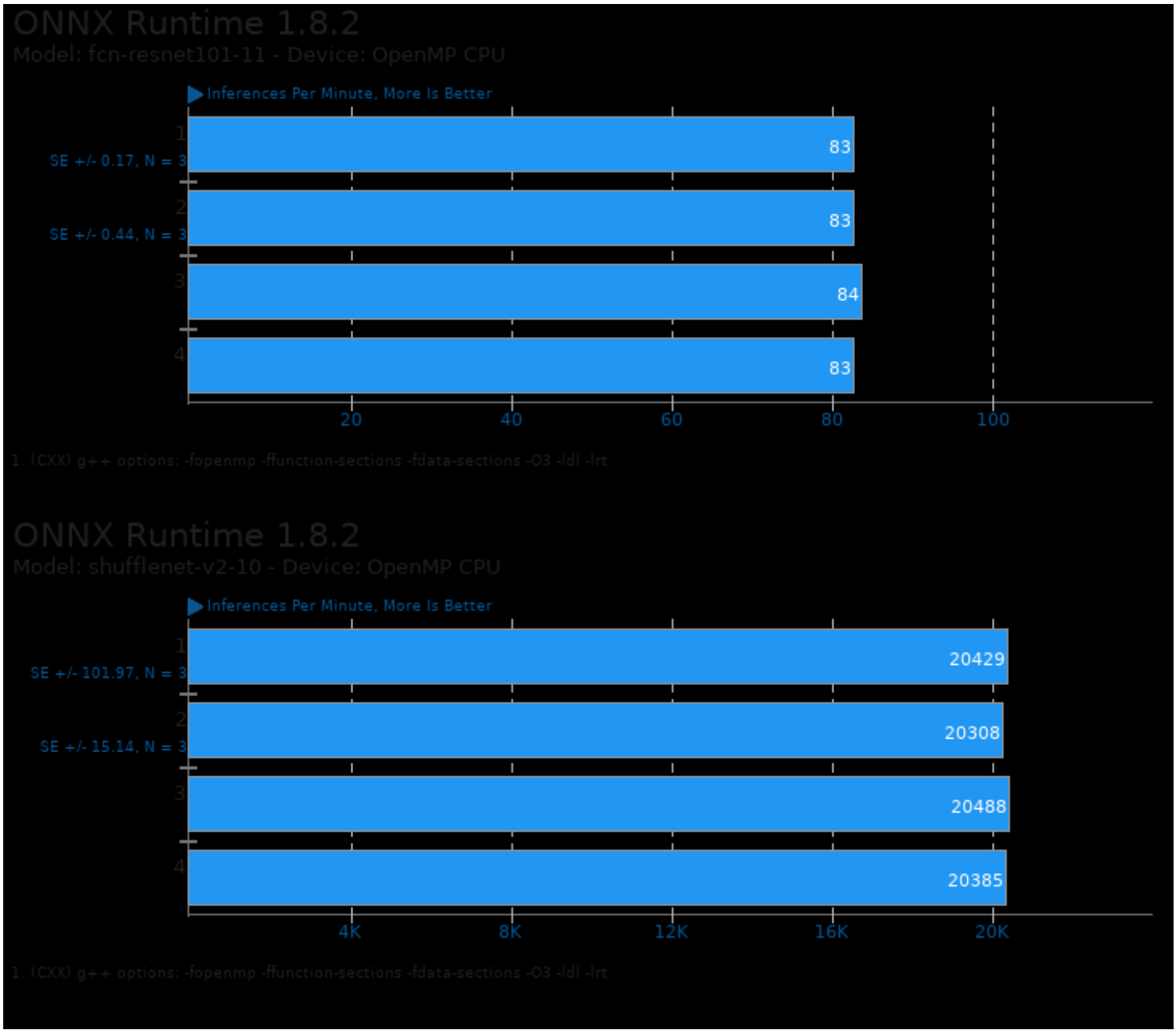
Kernel Notes: Transparent Huge Pages: madvise
Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --enable-bootstrap --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-gnu-unique-object --enable-languages=c,ada,c++,go,brig,d,fortran,objc,obj-c++,m2 --enable-libphobos-checking=release --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-link-mutex --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none=/build/gcc-10-poYruo/gcc-10-10.3.0/debian/tmp-nvptx/usr,amdgcn-amdhsa=/build/gcc-10-poYruo/gcc-10-10.3.0/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-build-config=bootstrap-lto-lean --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: 0x8701021
Python Notes: Python 2.7.18 + Python 3.8.10
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

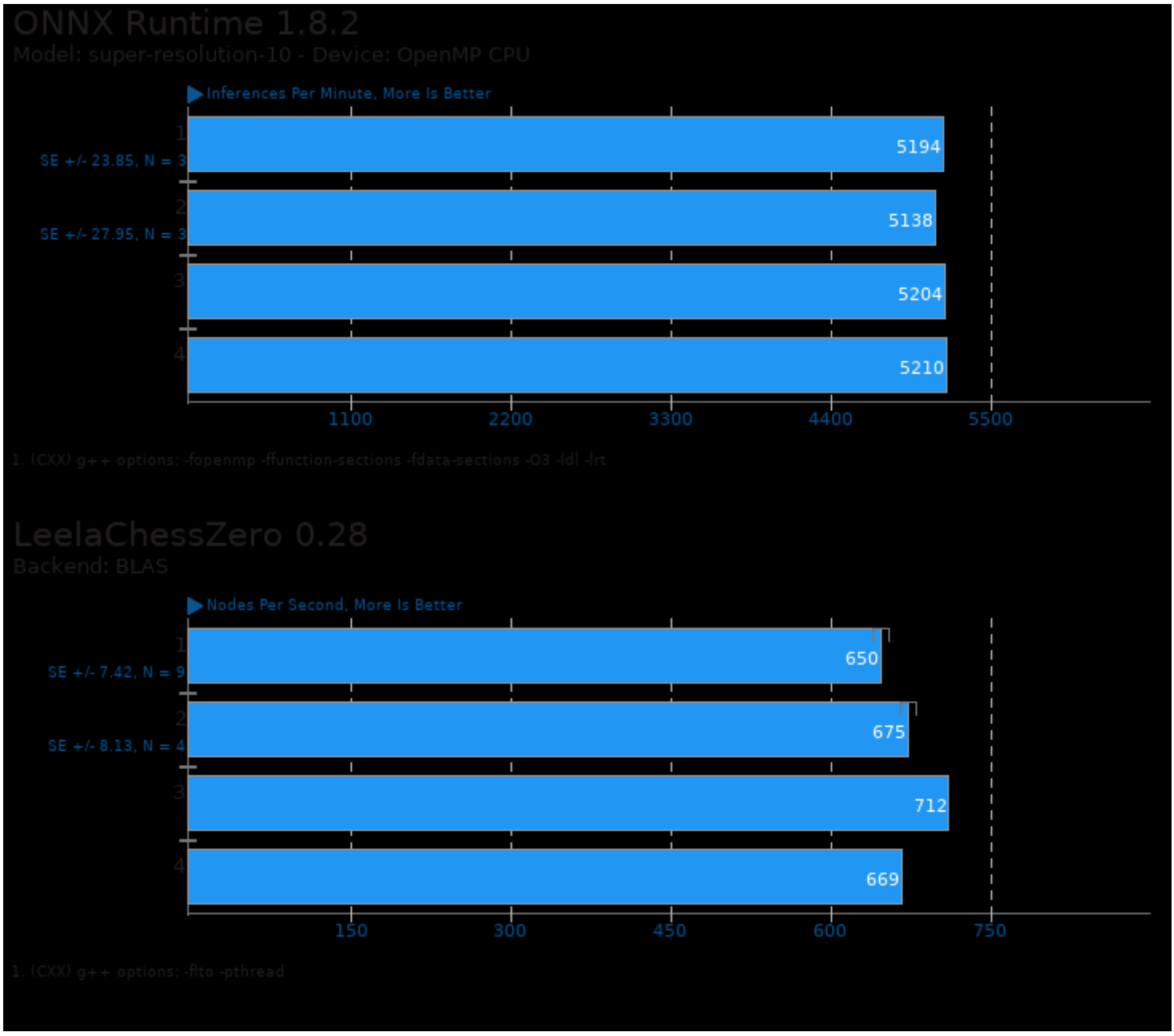
	1	2	3	4
ONNX Runtime - yolov4 - OpenMP CPU (Inferences/min)	**323**	321	**319**	320
Normalized	100%	99.38%	98.76%	99.07%
Standard Deviation	1.3%	0.8%		
ONNX Runtime - bertsquad-10 - OpenMP CPU (Inferences/min)	553	**556**	555	**552**
Normalized	99.46%	100%	99.82%	99.28%
Standard Deviation	0.6%	0.8%		
ONNX Runtime - fcn-resnet101-11 - OpenMP CPU (Inferences/min)	**83**	**83**	**84**	**83**
Normalized	98.81%	98.81%	100%	98.81%
Standard Deviation	0.3%	0.9%		
ONNX Runtime - shufflenet-v2-10 - OpenMP CPU (Inferences/min)	20429	**20308**	**20488**	20385
Normalized	99.71%	99.12%	100%	99.5%
Standard Deviation	0.9%	0.1%		
ONNX Runtime - super-resolution-10 - OpenMP CPU (Inferences/min)	5194	**5138**	5204	**5210**
Normalized	99.69%	98.62%	99.88%	100%
Standard Deviation	0.8%	0.9%		
LeelaChessZero - BLAS (Nodes/s)	**650**	675	**712**	669
Normalized	91.29%	94.8%	100%	93.96%
Standard Deviation	3.4%	2.4%		
LeelaChessZero - Eigen (Nodes/s)	**658**	675	**706**	685
Normalized	93.2%	95.61%	100%	97.03%

3900XT EO August

Standard Deviation	2.1%	2.5%		
Google SynthMark - VoiceMark_100 (Voices)	876.830	874.490	**909.776**	**834.32**
Normalized	96.38%	96.12%	100%	91.71%
Standard Deviation	3.5%	3.3%		
Timed GCC Compilation - Time To Compile (sec)	805.145	**806.416**	804.217	**803.817**
Normalized	99.84%	99.68%	99.95%	100%
Standard Deviation	0.1%	0.6%		
Timed Linux Kernel Compilation - Time To Compile (sec)	56.251	**56.108**	57.04	**57.072**
Normalized	99.75%	100%	98.37%	98.31%
Standard Deviation	1.2%	1%		

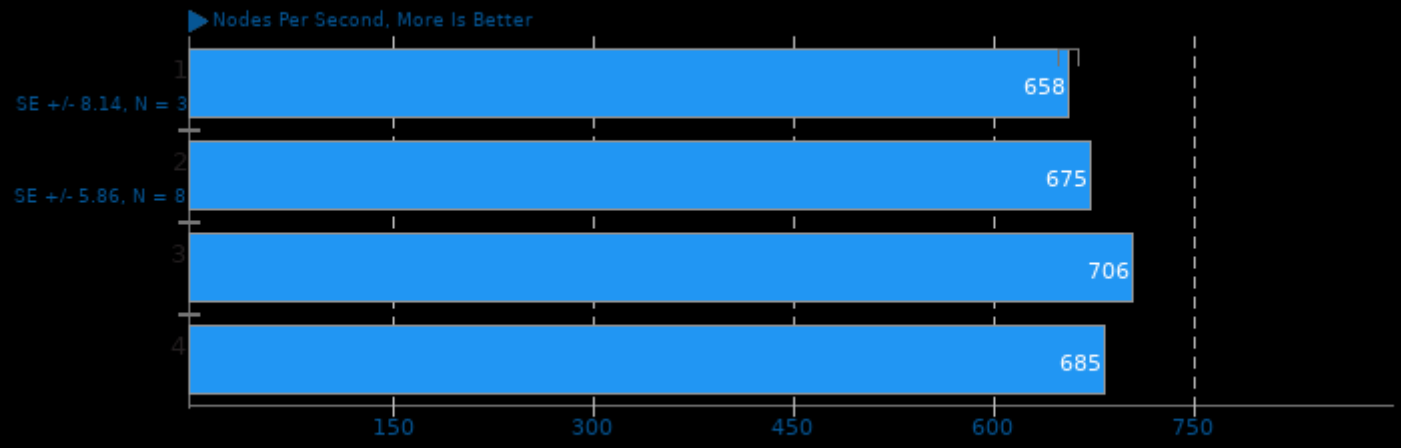

ONNX Runtime 1.8.2
Model: yolov4 - Device: OpenMP CPU
Inferences Per Minute, More Is Better
1
SE +/- 2.46, N = 3
323
2
SE +/- 1.53, N = 3
321
3
319
4
320
70
140
210
280
350
1. (CXX) g++ options: -fopenmp -ffunction-sections -fdata-sections -O3 -ldl -lrt
ONNX Runtime 1.8.2
Model: bertsquad-10 - Device: OpenMP CPU
Inferences Per Minute, More Is Better
1
SE +/- 1.92, N = 3
553
2
SE +/- 2.52, N = 3
556
3
555
4
552
120
240
360
480
600
1. (CXX) g++ options: -fopenmp -ffunction-sections -fdata-sections -O3 -ldl -lrt


ONNX Runtime 1.8.2
Model: fcn-resnet101-11 - Device: OpenMP CPU
Inferences Per Minute, More Is Better
1
SE +/- 0.17, N = 3
83
2
SE +/- 0.44, N = 3
83
3
84
4
83
20
40
60
80
100
1. (CXX) g++ options: -fopenmp -ffunction-sections -fdata-sections -O3 -ldl -lrt
ONNX Runtime 1.8.2
Model: shufflenet-v2-10 - Device: OpenMP CPU
Inferences Per Minute, More Is Better
1
SE +/- 101.97, N = 3
20429
2
SE +/- 15.14, N = 3
20308
3
20488
4
20385
4K
8K
12K
16K
20K
1. (CXX) g++ options: -fopenmp -ffunction-sections -fdata-sections -O3 -ldl -lrt


ONNX Runtime 1.8.2
Model: super-resolution-10 - Device: OpenMP CPU
Inferences Per Minute, More Is Better
1
SE +/- 23.85, N = 3
5194
2
SE +/- 27.95, N = 3
5138
3
5204
4
5210
1100
2200
3300
4400
5500
1. (CXX) g++ options: -fopenmp -ffunction-sections -fdata-sections -O3 -ldl -lrt
LeelaChessZero 0.28
Backend: BLAS
Nodes Per Second, More Is Better
1
SE +/- 7.42, N = 9
650
2
SE +/- 8.13, N = 4
675
3
712
4
669
150
300
450
600
750
1. (CXX) g++ options: -flto -pthread

LeelaChessZero 0.28

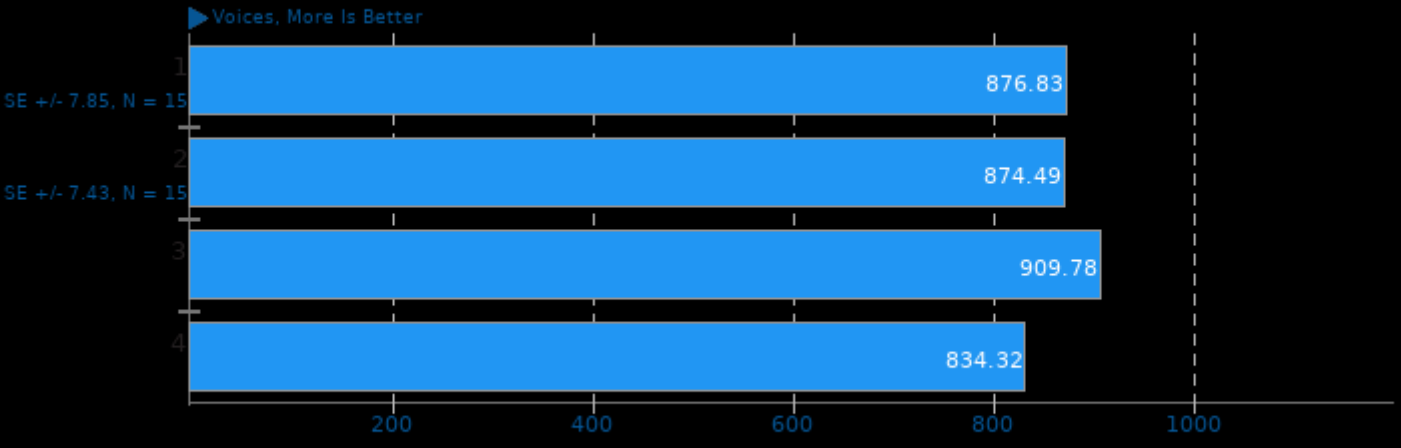
Backend: Eigen



1. (CXX) g++ options: -flto -pthread

Google SynthMark 20201109

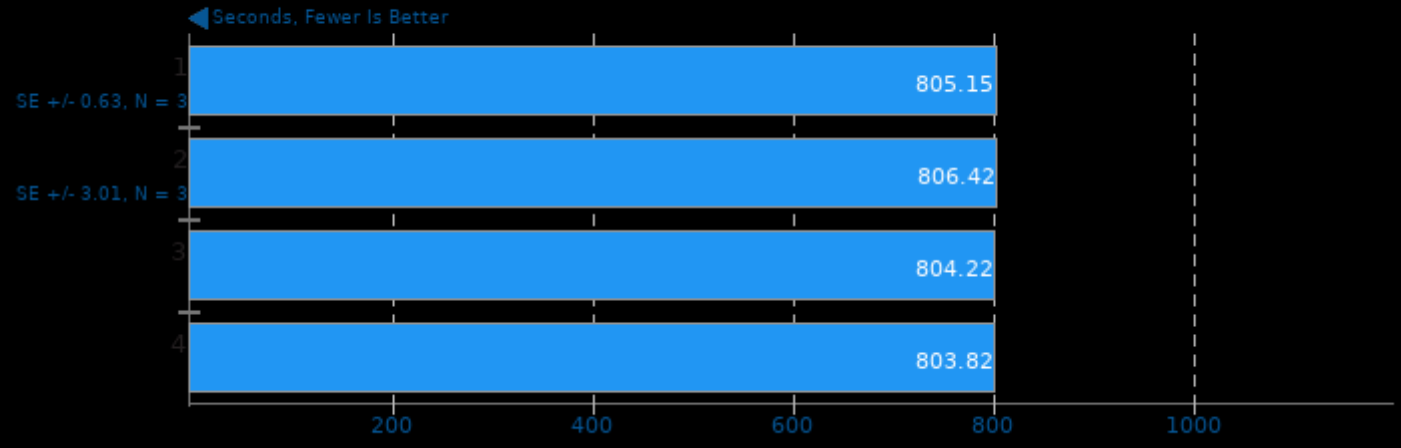
Test: VoiceMark_100

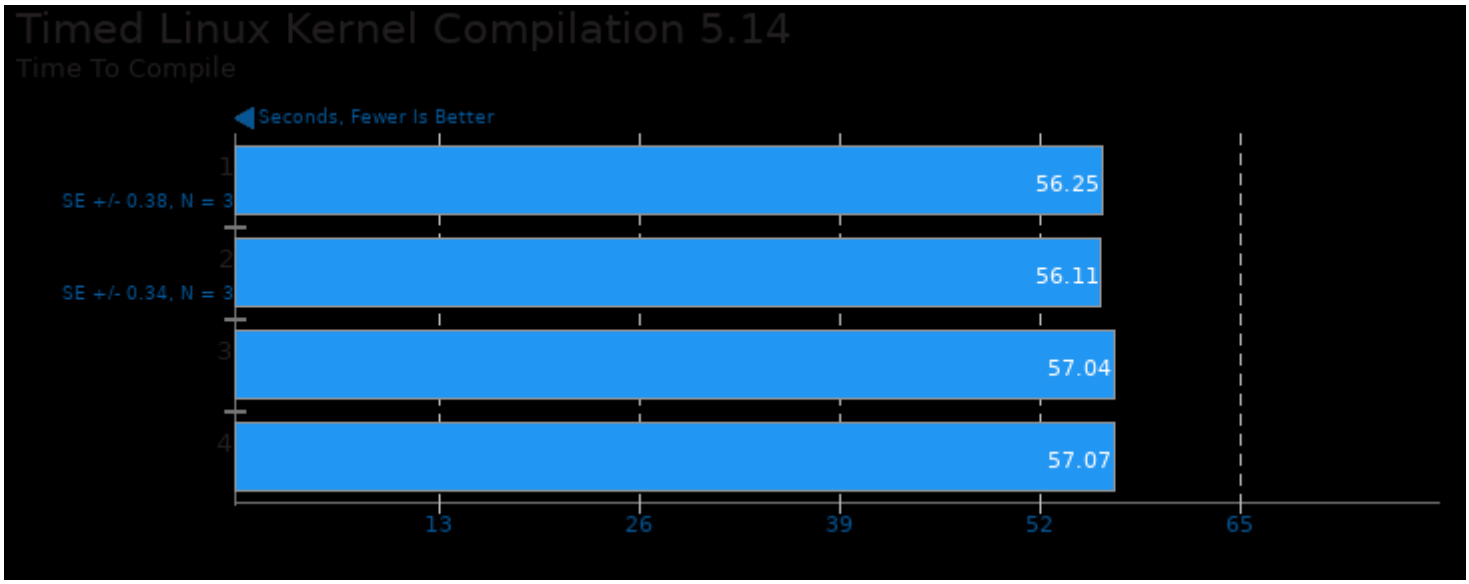


1. (CXX) g++ options: -lm -lpthread -std=c++11 -Ofast

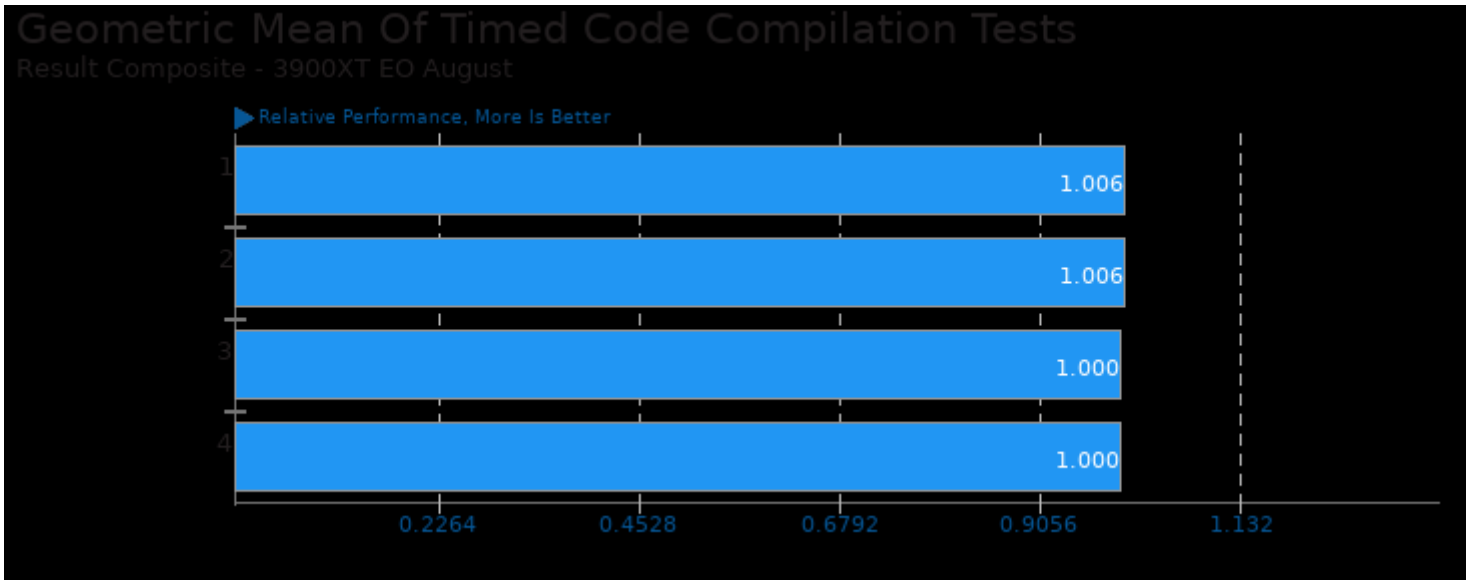
Timed GCC Compilation 11.2.0

Time To Compile

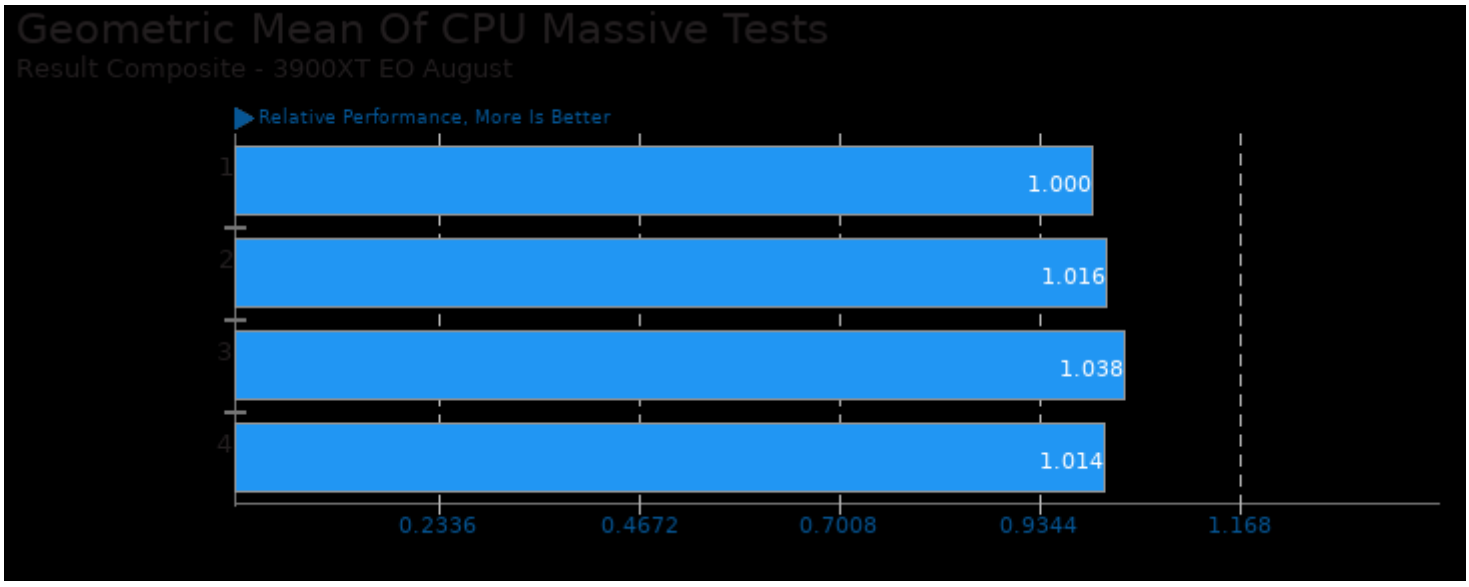



Timed Linux Kernel Compilation 5.14
Time To Compile
Seconds, Fewer Is Better
1
SE +/- 0.38, N = 3
56.25
2
SE +/- 0.34, N = 3
56.11
3
57.04
4
57.07
13
26
39
52
65

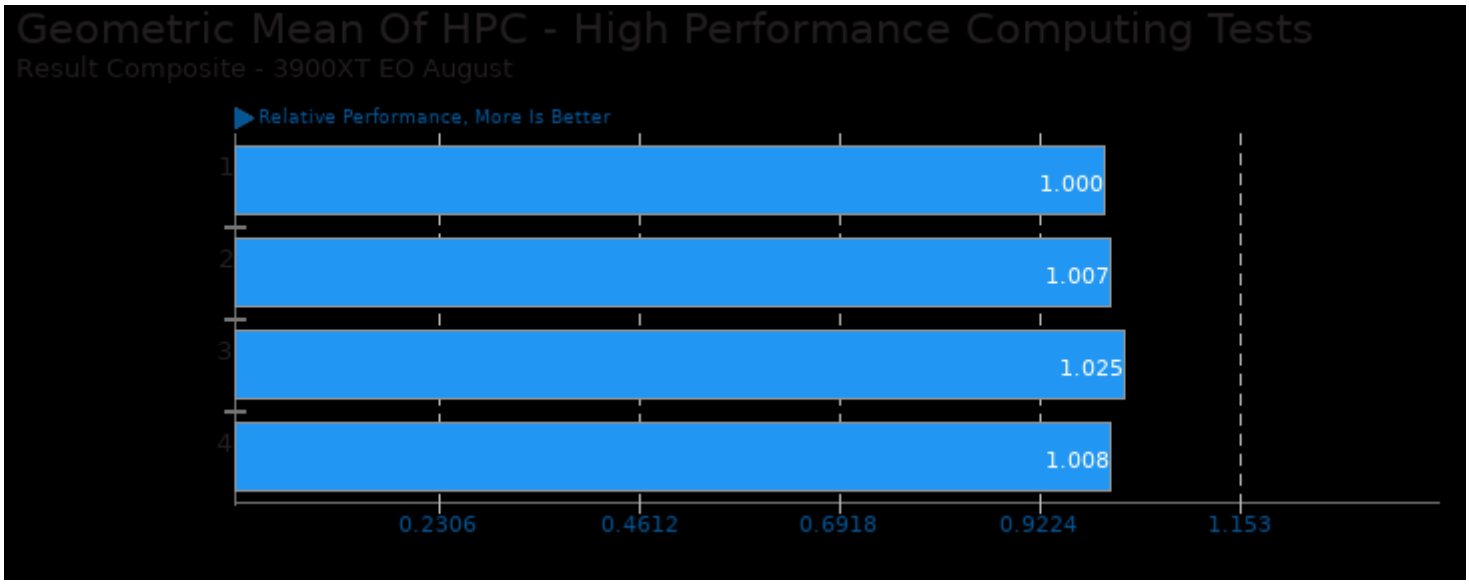
These geometric means are based upon test groupings / test suites for this result file.



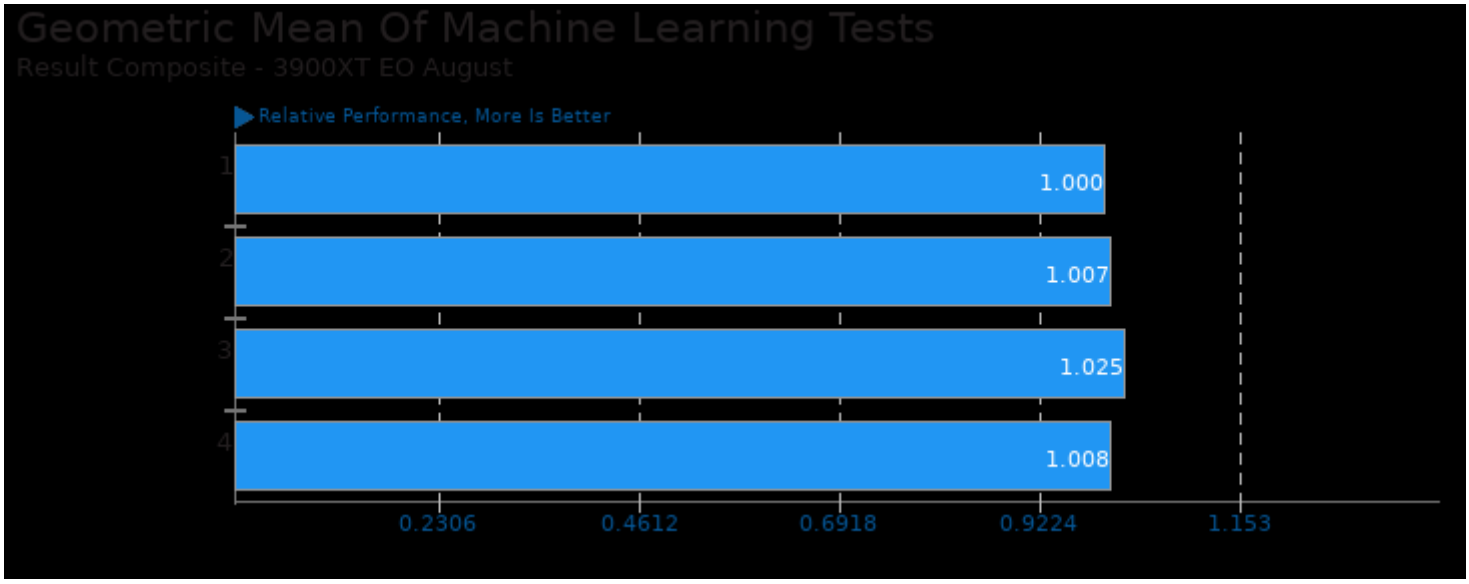
Geometric mean based upon tests: pts/build-linux-kernel and pts/build-gcc



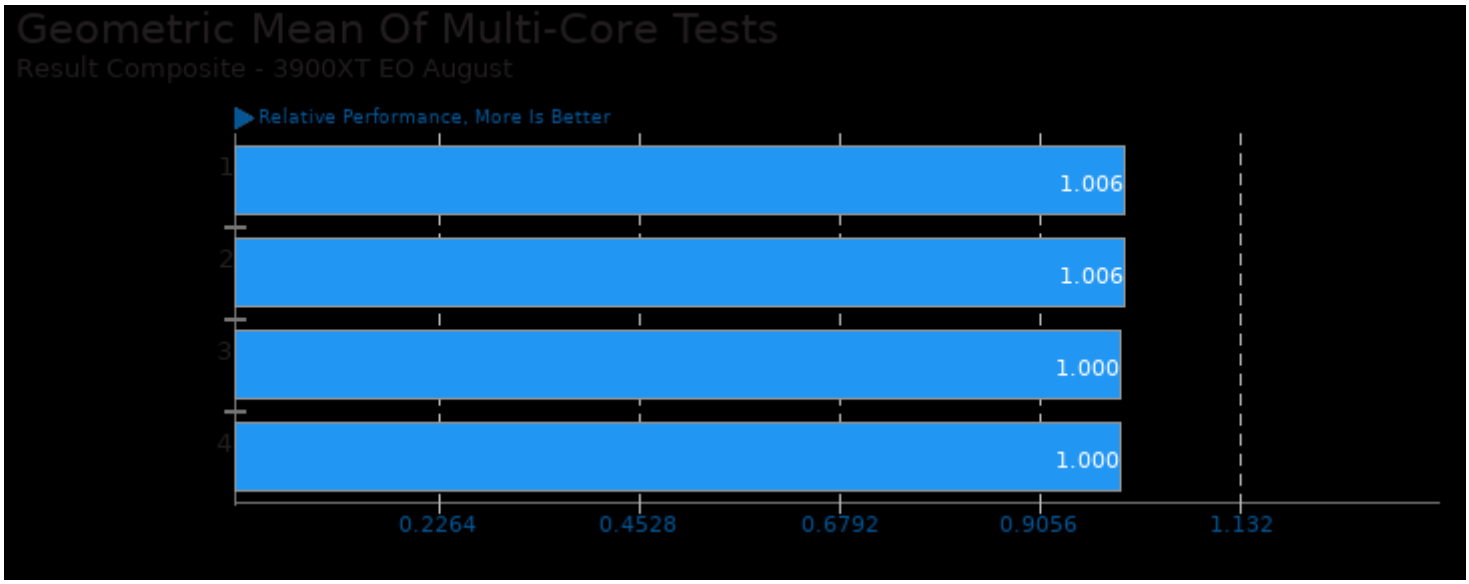
Geometric mean based upon tests: pts/build-gcc, pts/build-linux-kernel and pts/lczero



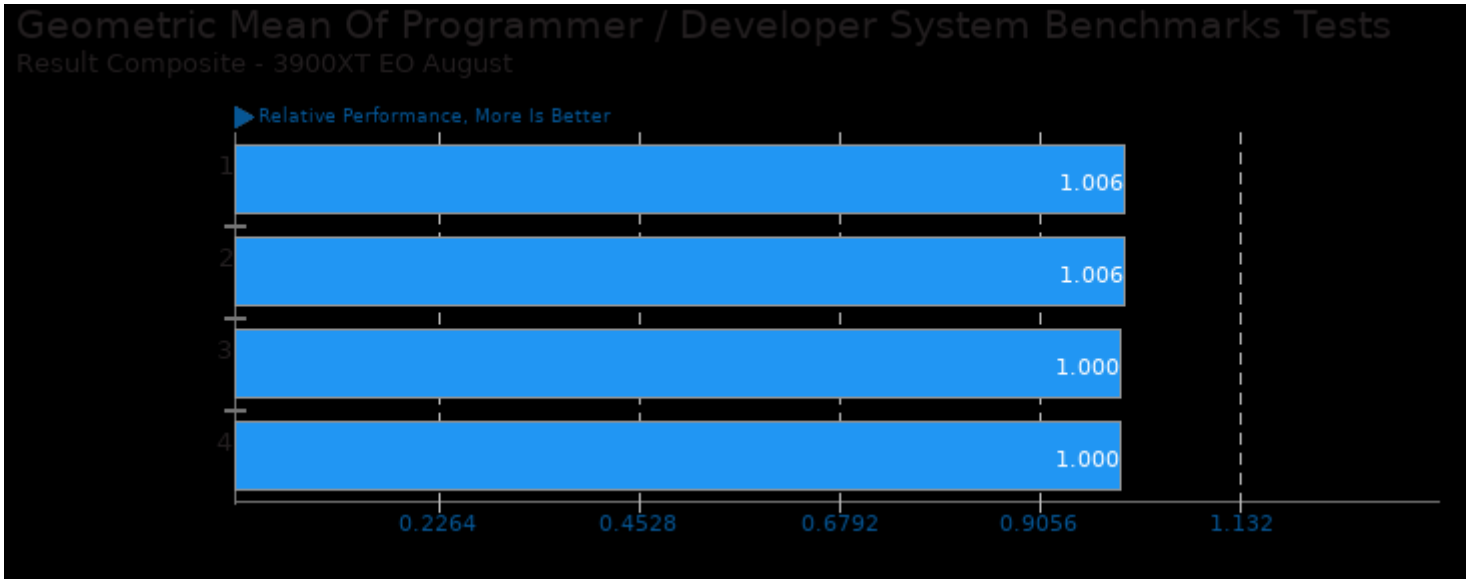
Geometric mean based upon tests: pts/onnx and pts/lczero



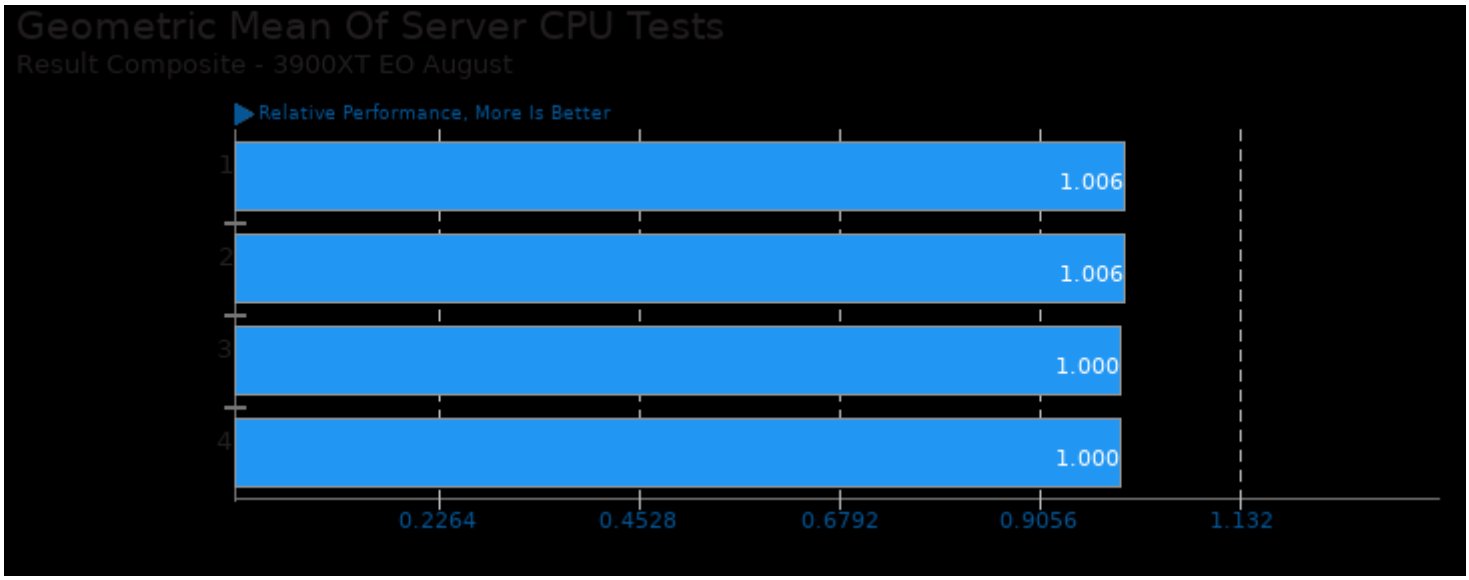
Geometric mean based upon tests: pts/onnx and pts/lczero



Geometric mean based upon tests: pts/build-linux-kernel and pts/build-gcc



Geometric mean based upon tests: pts/build-linux-kernel and pts/build-gcc



Geometric mean based upon tests: pts/build-gcc and pts/build-linux-kernel

This file was automatically generated via the Phoronix Test Suite benchmarking software on Thursday, 28 March 2024 05:13.