www.phoronix-test-suite.com

# 3970X Aug

AMD Ryzen Threadripper 3970X 32-Core testing with a ASUS ROG ZENITH II EXTREME (1201 BIOS) and AMD Radeon RX 5600 OEM/5600 XT / 5700/5700 8GB on Ubuntu 20.10 via the Phoronix Test Suite.

**Automated Executive Summary**

*3 had the most wins, coming in first place for 40% of the tests.*

*Based on the geometric mean of all complete results, the fastest (3) was 1.015x the speed of the slowest (2). 1 was 0.988x the speed of 3 and 2 was 0.997x the speed of 1.*

## Test Systems:

### 1

Processor: AMD Ryzen Threadripper 3970X 32-Core @ 4.55GHz (32 Cores / 64 Threads), Motherboard: ASUS ROG ZENITH II EXTREME (1201 BIOS), Chipset: AMD Starship/Matisse, Memory: 64GB, Disk: Samsung SSD 980 PRO 500GB, Graphics: AMD Radeon RX 5600 OEM/5600 XT / 5700/5700 8GB (1750/875MHz), Audio: AMD Navi 10 HDMI

Audio, Monitor: ASUS VP28U, Network: Aquantia AQC107 NBase-T/IEEE + Intel I211 + Intel Wi-Fi 6 AX200

OS: Ubuntu 20.10, Kernel: 5.11.0-rc6-phx (x86_64) 20210203, 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 10.2.0, 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: 0x8301039
Python Notes: Python 3.8.6
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

## 2

## 3

Processor: AMD Ryzen Threadripper 3970X 32-Core @ 4.55GHz (32 Cores / 64 Threads), Motherboard: ASUS ROG ZENITH II EXTREME (1201 BIOS), Chipset: AMD Starship/Matisse, Memory: 64GB, Disk: Samsung SSD 980 PRO 500GB, Graphics: AMD Radeon RX 5600 OEM/5600 XT / 5700/5700 8GB (1750/875MHz), Audio: AMD Navi 10 HDMI Audio, Monitor: ASUS VP28U, Network: Aquantia AQC107 NBase-T/IEEE + Intel I211 + Intel Wi-Fi 6 AX200

OS: Ubuntu 20.10, Kernel: 5.11.0-rc6-phx (x86_64) 20210203, 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: 0x8301039
Python Notes: 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

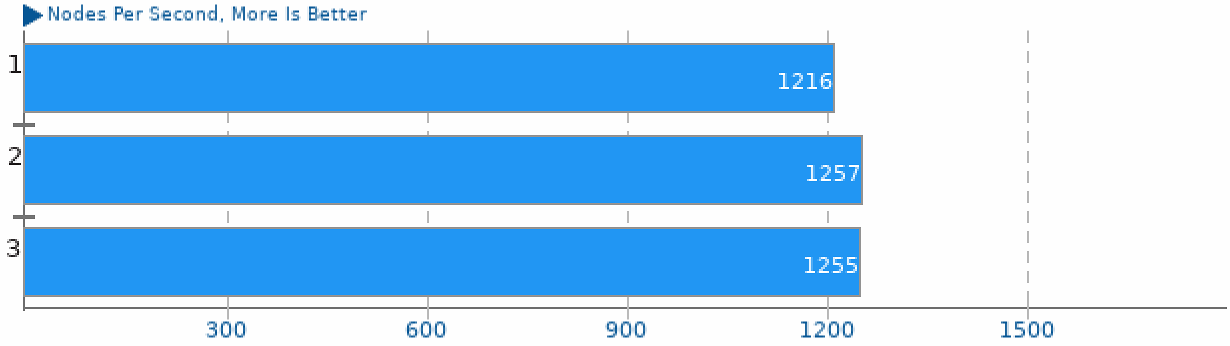
| | 1 | 2 | 3 |
|---|---|---|---|
| **LeelaChessZero - BLAS (Nodes/s)** | 1216 | 1257 | 1255 |
| **Normalized** | 96.74% | 100% | 99.84% |
| **LeelaChessZero - Eigen (Nodes/s)** | 1232 | 1178 | 1163 |
| **Normalized** | 100% | 95.62% | 94.4% |
| **Timed GCC Compilation - Time To Compile (sec)** | 633.43 | 631.318 | 632.417 |
| **Normalized** | 99.67% | 100% | 99.83% |

# 3970X Aug

| | | | |
|---|---|---|---|
| **Tachyon - Total Time (sec)** | **23.7146** | 23.742 | **23.749** |
| **Normalized** | 100% | 99.88% | 99.86% |
| **Google SynthMark - VoiceMark_100 (Voices)** | 844.595 | **841.77** | **845.748** |
| **Normalized** | 99.86% | 99.53% | 100% |
| **ONNX Runtime - yolov4 - OpenMP CPU (Inferences/min)** | **384** | 381 | **379** |
| **Normalized** | 100% | 99.22% | 98.7% |
| **ONNX Runtime - bertsquad-10 - OpenMP CPU (Inferences/min)** | **619** | 648 | **660** |
| **Normalized** | 93.79% | 98.18% | 100% |
| **ONNX Runtime - fcn-resnet101-11 - OpenMP CPU (Inferences/min)** | 227 | **223** | **229** |
| **Normalized** | 99.13% | 97.38% | 100% |
| **ONNX Runtime - shufflenet-v2-10 - OpenMP CPU (Inferences/min)** | **15848** | **15938** | 15875 |
| **Normalized** | 99.44% | 100% | 99.6% |
| **ONNX Runtime - super-resolution-10 - OpenMP CPU (Inferences/min)** | 5457 | **5249** | **5964** |
| **Normalized** | 91.5% | 88.01% | 100% |

## LeelaChessZero 0.28

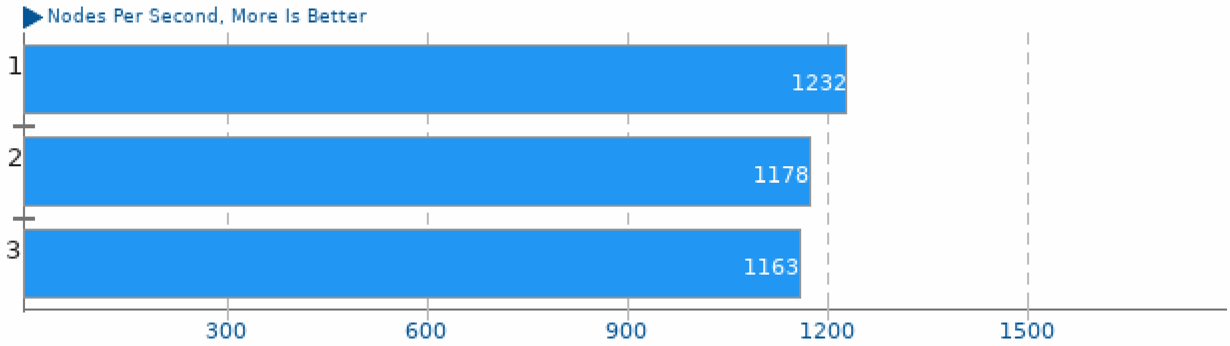
Backend: BLAS




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

## LeelaChessZero 0.28

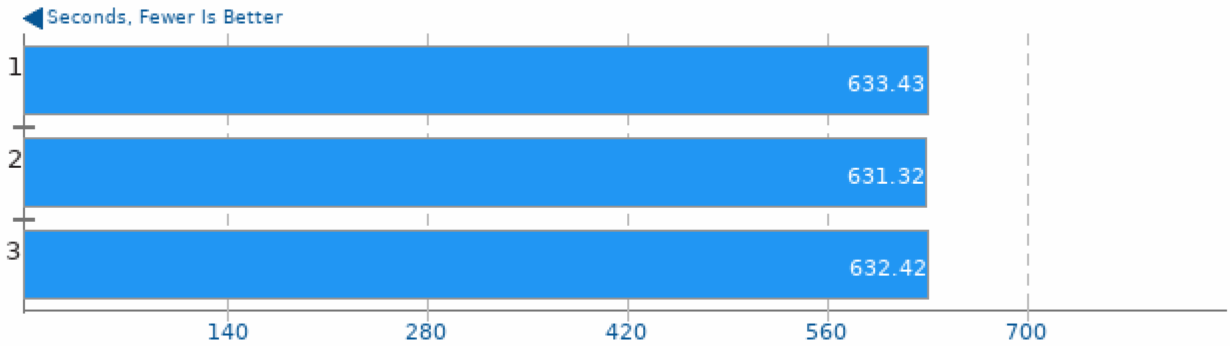
Backend: Eigen



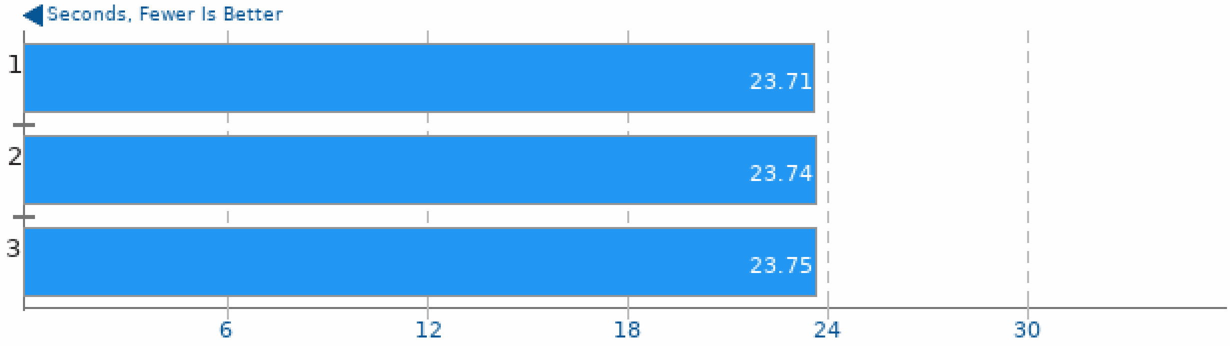

1. (CXX) g++ options: -flto -pthread

## Timed GCC Compilation 11.2.0

Time To Compile

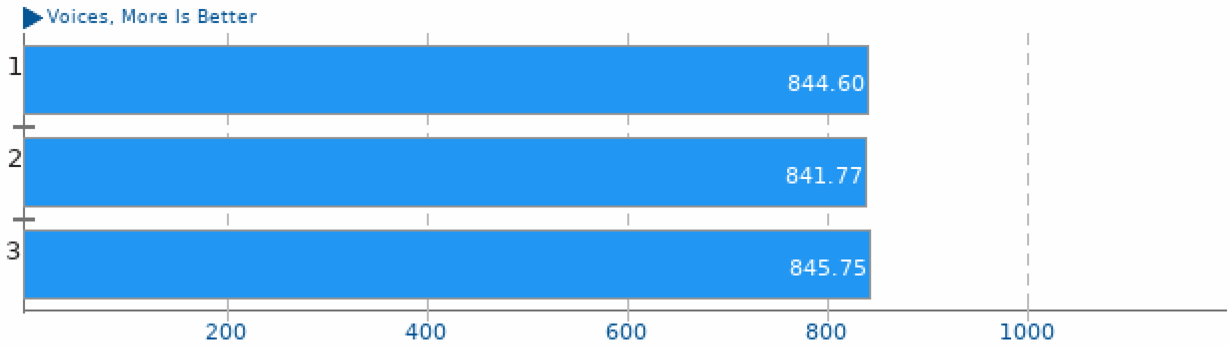


## Tachyon 0.99b6
Total Time



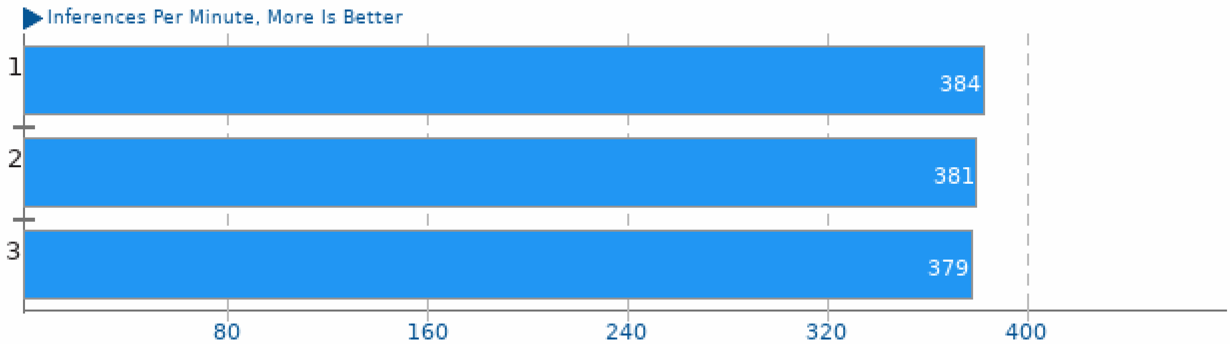

1. (CC) gcc options: -m64 -O3 -fomit-frame-pointer -ffast-math -ltachyon -lm -lpthread

## Google SynthMark 20201109
Test: VoiceMark_100




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

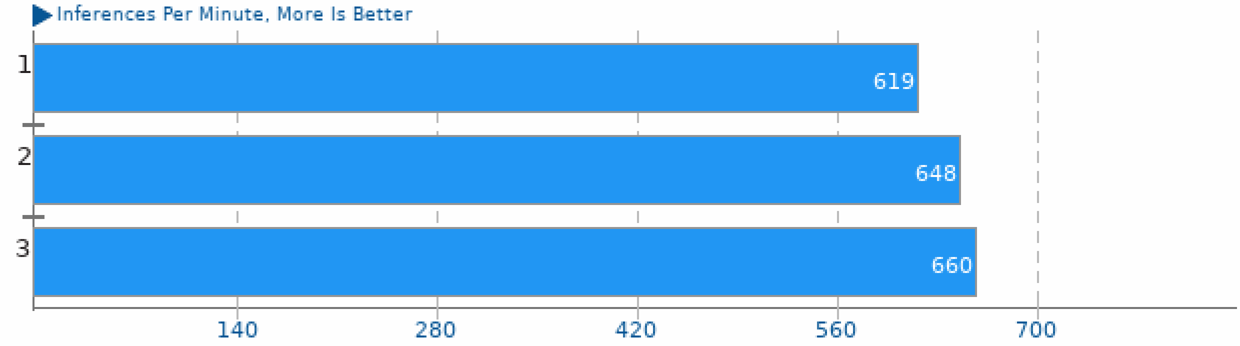
## ONNX Runtime 1.8.2
Model: yolov4 - Device: OpenMP CPU




1. (CXX) g++ options: -fopenmp -ffunction-sections -fdata-sections -O3 -ldl -lrt

## ONNX Runtime 1.8.2

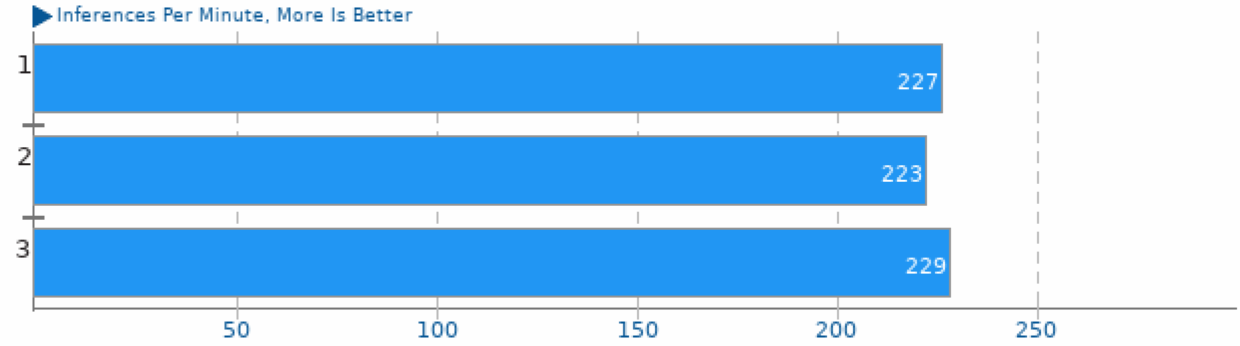
Model: bertsqaud-10 - Device: OpenMP CPU




1. (CXX) g++ options: -fopenmp -ffunction-sections -fdata-sections -O3 -ldl -lrt

## ONNX Runtime 1.8.2

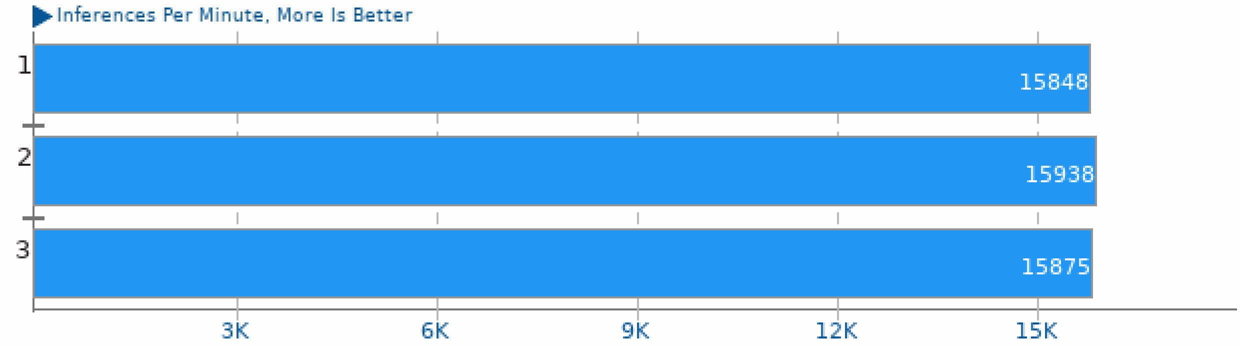
Model: fcn-resnet101-11 - Device: OpenMP CPU




1. (CXX) g++ options: -fopenmp -ffunction-sections -fdata-sections -O3 -ldl -lrt

## ONNX Runtime 1.8.2

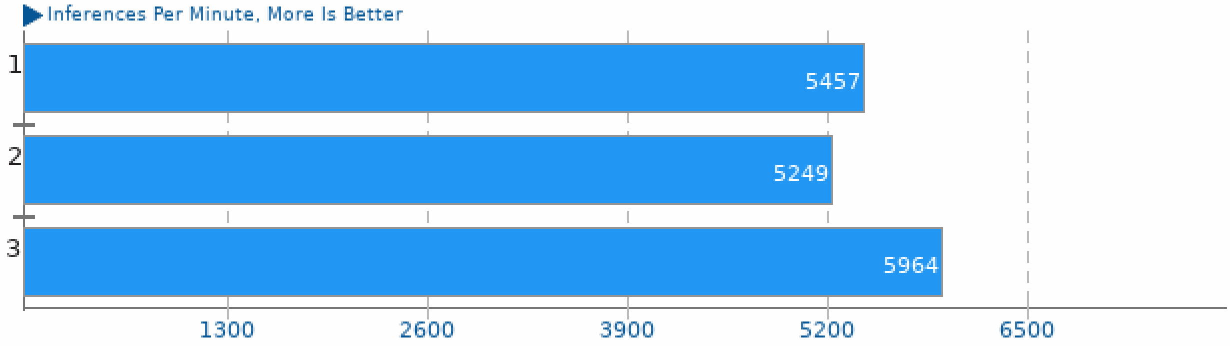
Model: shufflenet-v2-10 - Device: OpenMP CPU




1. (CXX) g++ options: -fopenmp -ffunction-sections -fdata-sections -O3 -ldl -lrt

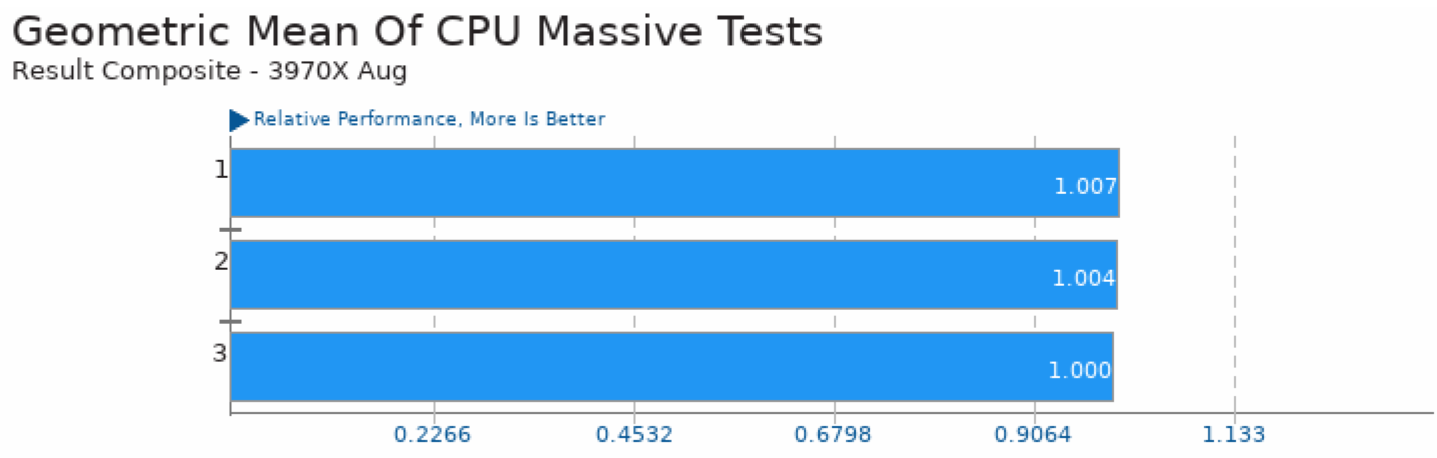
## ONNX Runtime 1.8.2

Model: super-resolution-10 - Device: OpenMP CPU

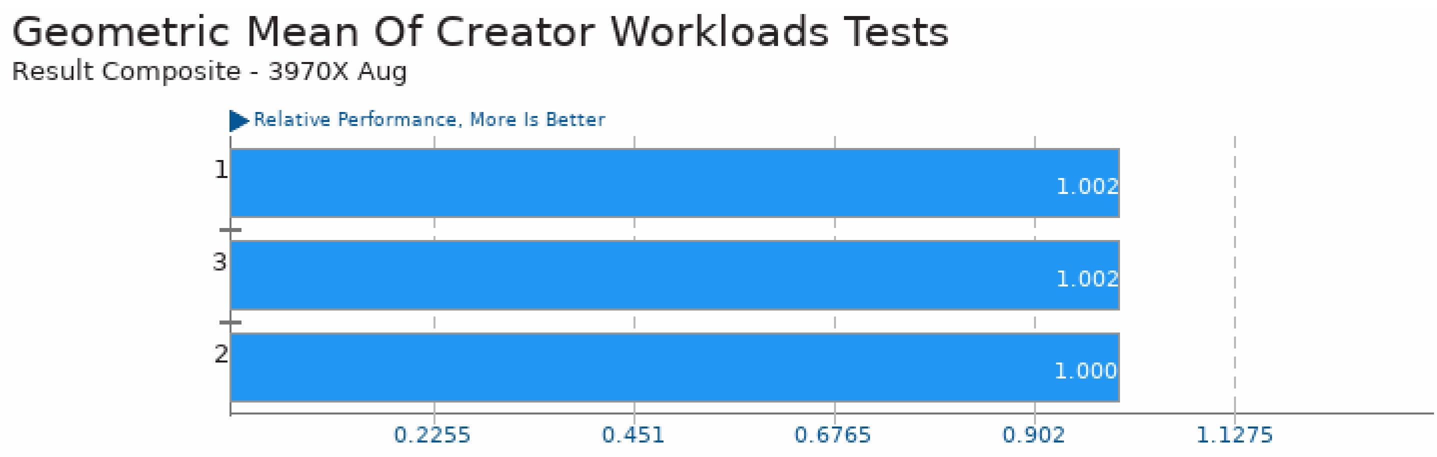



1. (CXX) g++ options: -fopenmp -ffunction-sections -fdata-sections -O3 -ldl -lrt

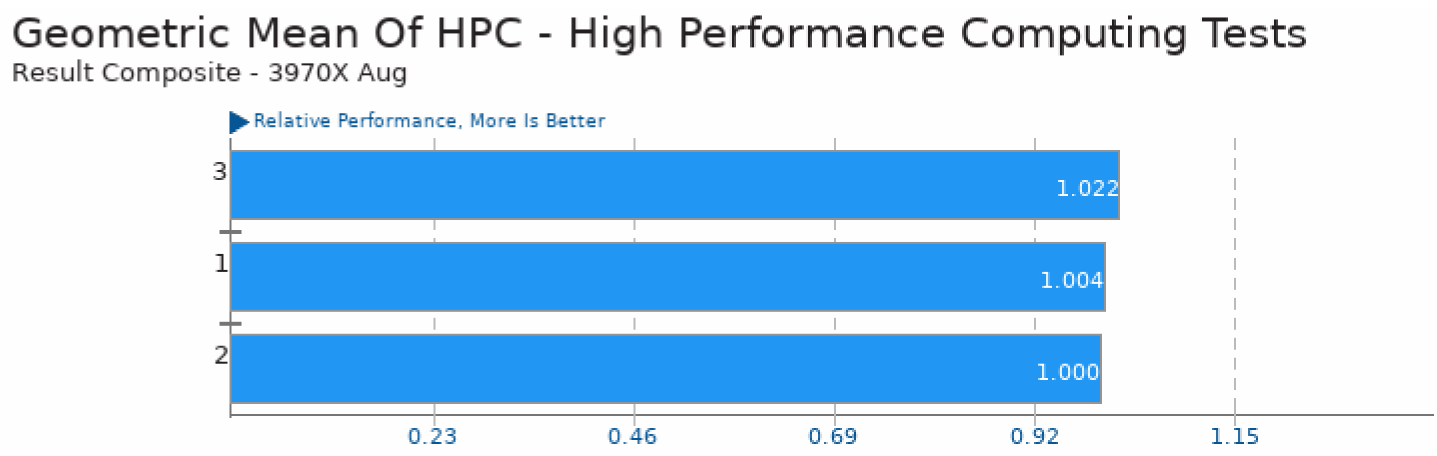
These geometric means are based upon test groupings / test suites for this result file.



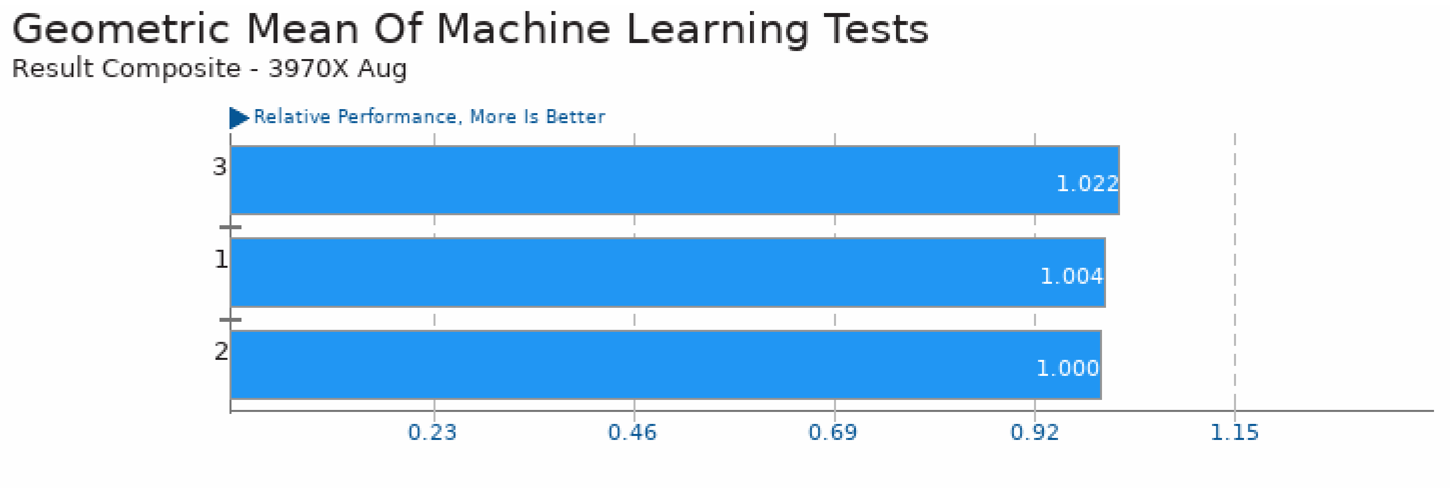

Geometric mean based upon tests: pts/build-gcc, pts/lczero and pts/tachyon



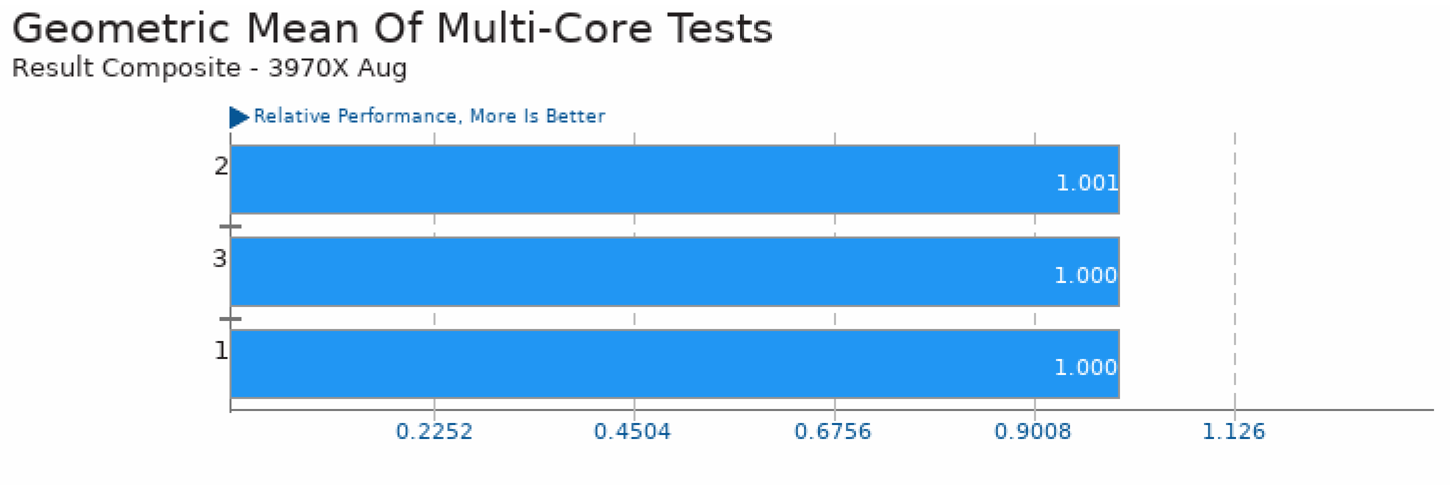

Geometric mean based upon tests: pts/tachyon and pts/synthmark




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/tachyon and pts/build-gcc

*This file was automatically generated via the Phoronix Test Suite benchmarking software on Wednesday, 8 December 2021 13:26.*