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4500U Aug

AMD Ryzen 5 4500U testing with a LENOVO LNVNB161216 (EECN20WW BIOS) and AMD Renoir 512MB on Ubuntu 21.04 via the Phoronix Test Suite.

Automated Executive Summary

1 had the most wins, coming in first place for 60% of the tests.

Based on the geometric mean of all complete results, the fastest (1) was 1.06x the speed of the slowest (3). 2 was 0.995x the speed of 1 and 3 was 0.948x the speed of 2.

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

ONNX Runtime (Model: shufflenet-v2-10 - Device: OpenMP CPU) at 2.398x
ONNX Runtime (Model: bertsquad-10 - Device: OpenMP CPU) at 1.151x
ONNX Runtime (Model: yolov4 - Device: OpenMP CPU) at 1.104x
OpenVKL (Benchmark: vklBenchmark Scalar) at 1.091x
ONNX Runtime (Model: super-resolution-10 - Device: OpenMP CPU) at 1.056x
ONNX Runtime (Model: fcn-resnet101-11 - Device: OpenMP CPU) at 1.05x
nginx (Concurrent Requests: 1) at 1.039x
Apache HTTP Server (Concurrent Requests: 1) at 1.03x
Apache HTTP Server (Concurrent Requests: 20) at 1.019x

Timed GCC Compilation (Time To Compile) at 1.014x.

Test Systems:

1

2

3

Processor: AMD Ryzen 5 4500U @ 2.38GHz (6 Cores), Motherboard: LENOVO LNVNB161216 (EECN20WW BIOS), Chipset: AMD Renoir Root Complex, Memory: 16GB, Disk: 256GB SK hynix HFM256GDHTNI-87A0B, Graphics: AMD Renoir 512MB (1500/400MHz), Audio: AMD Renoir Radeon HD Audio, Network: Realtek RTL8822CE 802.11ac PCIe

OS: Ubuntu 21.04, Kernel: 5.13.0-051300-generic (x86_64), Desktop: GNOME Shell 3.38.4, Display Server: X Server + Wayland, OpenGL: 4.6 Mesa 21.2.0-devel (git-c246af0 2021-07-04 hirsute-oibaf-ppa) (LLVM 12.0.0), Vulkan: 1.2.182, Compiler: GCC 10.3.0, File-System: ext4, Screen Resolution: 1920x1080

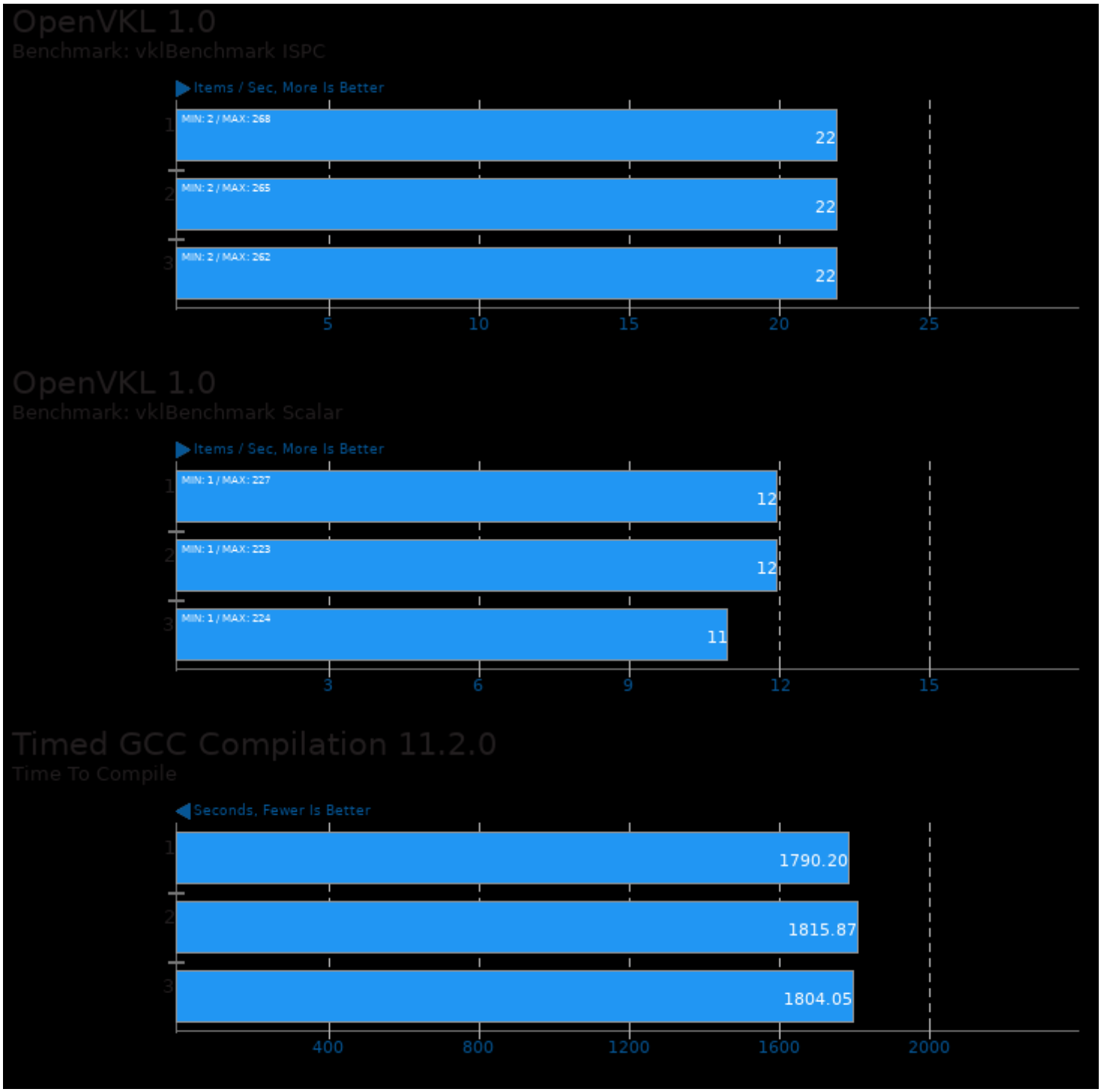
Kernel Notes: Transparent Huge Pages: madvise
Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --enable-bootstrap --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-gnu-unique-object --enable-languages=c,ada,c++,go,brig,d,fortran,objc,obj-c++,m2 --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-gDeRY6/gcc-10-10.3.0/debian/tmp-nvptx/usr,amdgcn-amdhsa=/build/gcc-10-gDeRY6/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: 0x8600102 - ACPI Profile: balanced
Python Notes: Python 3.9.5
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 IBRS_FW STIBP: disabled RSB filling + srbds: Not affected + tsx_async_abort: Not affected

	1	2	3
OpenVKL - vklBenchmark ISPC (Items / Sec)	22	22	22
OpenVKL - v.S (Items / Sec)	**12**	**12**	**11**
Normalized	100%	100%	91.67%
Timed GCC Compilation - Time To Compile (sec)	**1790**	**1816**	1804
Normalized	100%	98.59%	99.23%
Tachyon - Total Time (sec)	**205.6081**	**208.0441**	205.8295
Normalized	100%	98.83%	99.89%
Google SynthMark - VoiceMark_100 (Voices)	**762.632**	761.889	**761.769**
Normalized	100%	99.9%	99.89%
KeyDB (Ops/sec)	**185842**	184919	**183316**
Normalized	100%	99.5%	98.64%

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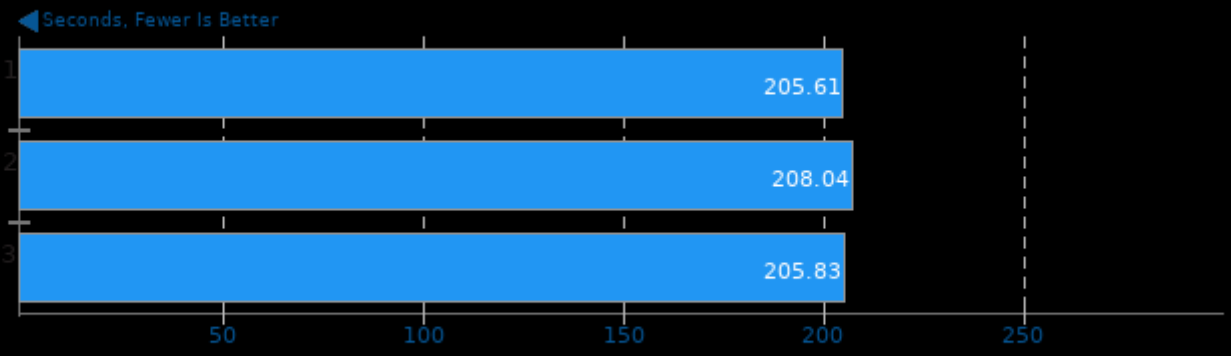
ONNX Runtime - yolov4 - OpenMP CPU (Inferences/min)	201	**202**	**183**
Normalized	99.5%	100%	90.59%
ONNX Runtime - bertsquad-10 - OpenMP CPU (Inferences/min)	**382**	**382**	**332**
Normalized	100%	100%	86.91%
ONNX Runtime - fcn-resnet101-11 - OpenMP CPU (Inferences/min)	**42**	41	**40**
Normalized	100%	97.62%	95.24%
ONNX Runtime - shufflenet-v2-10 - OpenMP CPU (Inferences/min)	**18887**	18715	**7875**
Normalized	100%	99.09%	41.7%
ONNX Runtime - super-resolution-10 - OpenMP CPU (Inferences/min)	2900	**2926**	**2771**
Normalized	99.11%	100%	94.7%
nginx - 1 (Reqs/sec)	27713	**27090**	**28136**
Normalized	98.5%	96.28%	100%
nginx - 20 (Reqs/sec)	**170068**	**168011**	168045
Normalized	100%	98.79%	98.81%
nginx - 100 (Reqs/sec)	**164496**	**162337**	163715
Normalized	100%	98.69%	99.52%
nginx - 200 (Reqs/sec)	**160089**	**158194**	159633
Normalized	100%	98.82%	99.71%
nginx - 500 (Reqs/sec)	**154519**	**153111**	153160
Normalized	100%	99.09%	99.12%
nginx - 1000 (Reqs/sec)	**147514**	**145801**	147494
Normalized	100%	98.84%	99.99%
Apache HTTP Server - 1 (Reqs/sec)	6915	**7109**	**6901**
Normalized	97.27%	100%	97.08%
Apache HTTP Server - 20 (Reqs/sec)	30139	**30307**	**29756**
Normalized	99.45%	100%	98.18%
Apache HTTP Server - 100 (Reqs/sec)	**29915**	**30098**	30003
Normalized	99.39%	100%	99.68%
Apache HTTP Server - 200 (Reqs/sec)	30257	**29928**	**30332**
Normalized	99.75%	98.67%	100%
Apache HTTP Server - 500 (Reqs/sec)	26689	**26775**	**26544**
Normalized	99.68%	100%	99.14%
Apache HTTP Server - 1000 (Reqs/sec)	26051	**25897**	**26111**
Normalized	99.77%	99.18%	100%

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OpenVKL 1.0
Benchmark: vklBenchmark ISPC
Items / Sec, More Is Better
1
MIN: 2 / MAX: 268
22
2
MIN: 2 / MAX: 265
22
3
MIN: 2 / MAX: 262
22
5
10
15
20
25
OpenVKL 1.0
Benchmark: vklBenchmark Scalar
Items / Sec, More Is Better
1
MIN: 1 / MAX: 227
12
2
MIN: 1 / MAX: 223
12
3
MIN: 1 / MAX: 224
11
3
6
9
12
15
Timed GCC Compilation 11.2.0
Time To Compile
Seconds, Fewer Is Better
1
1790.20
2
1815.87
3
1804.05
400
800
1200
1600
2000

Tachyon 0.99b6

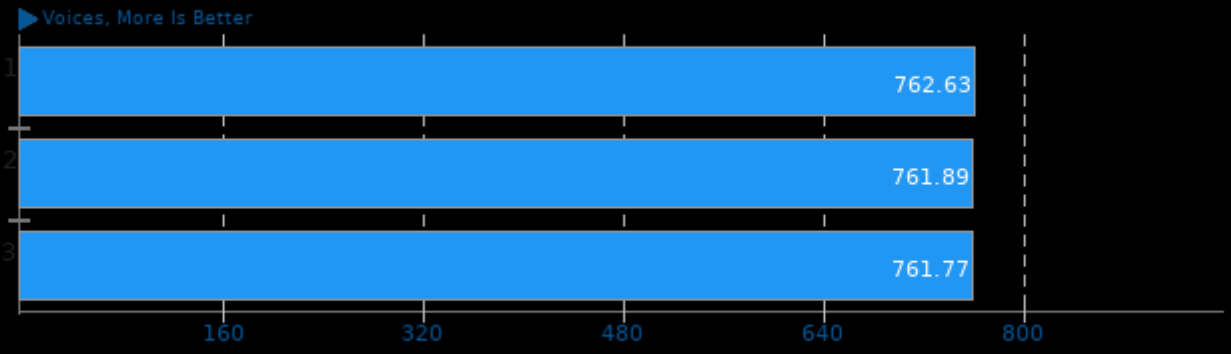
Total Time



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

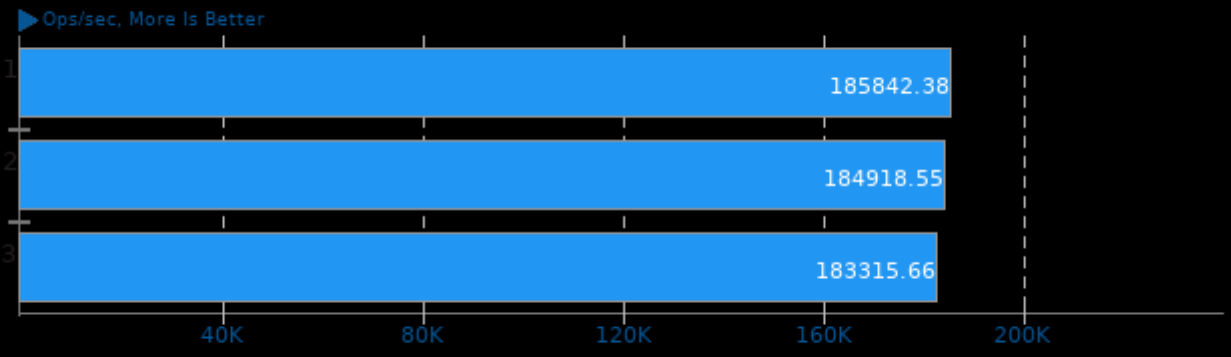
Google SynthMark 20201109

Test: VoiceMark_100

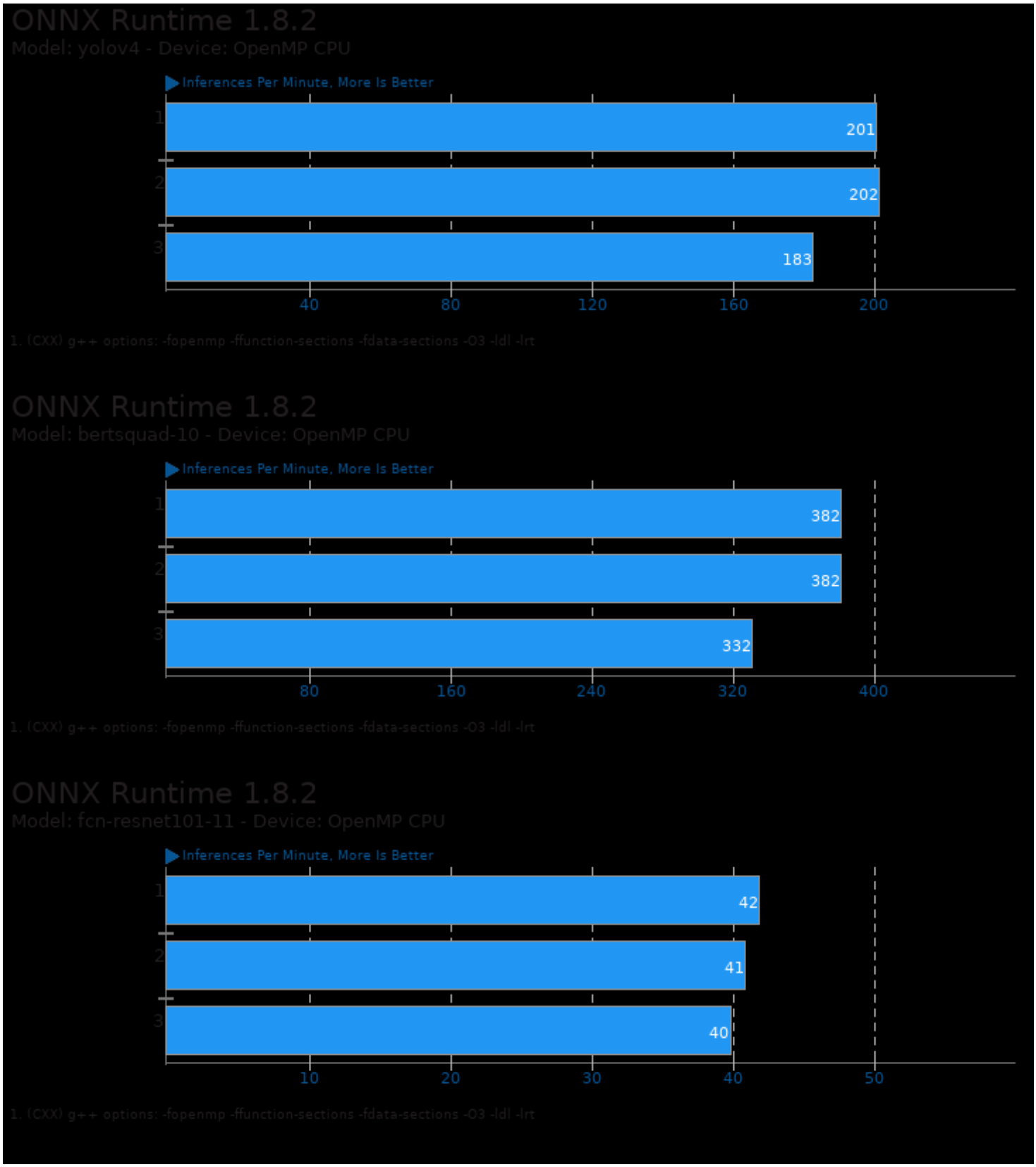


1. (CXX) g++ options: -lm -lpthread -std=c++11 -Ofast

KeyDB 6.2.0

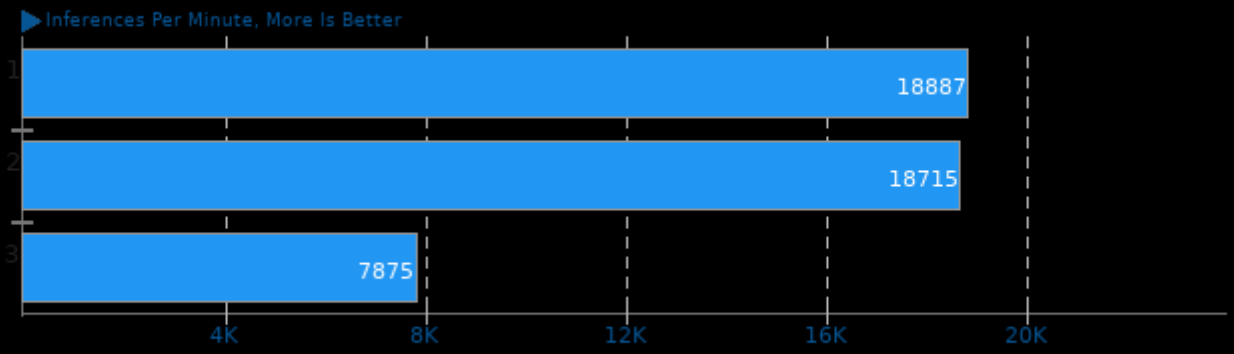


1. (CXX) g++ options: -O2 -levent_openssl -levent -lcrypto -lssl -lpthread -lz -lpcre


ONNX Runtime 1.8.2
Model: yolov4 - Device: OpenMP CPU
Inferences Per Minute, More Is Better
1
2
3
201
202
183
40
80
120
160
200
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
2
3
382
382
332
80
160
240
320
400
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
2
3
42
41
40
10
20
30
40
50
1. (CXX) g++ options: -fopenmp -ffunction-sections -fdata-sections -O3 -ldl -lrt

ONNX Runtime 1.8.2

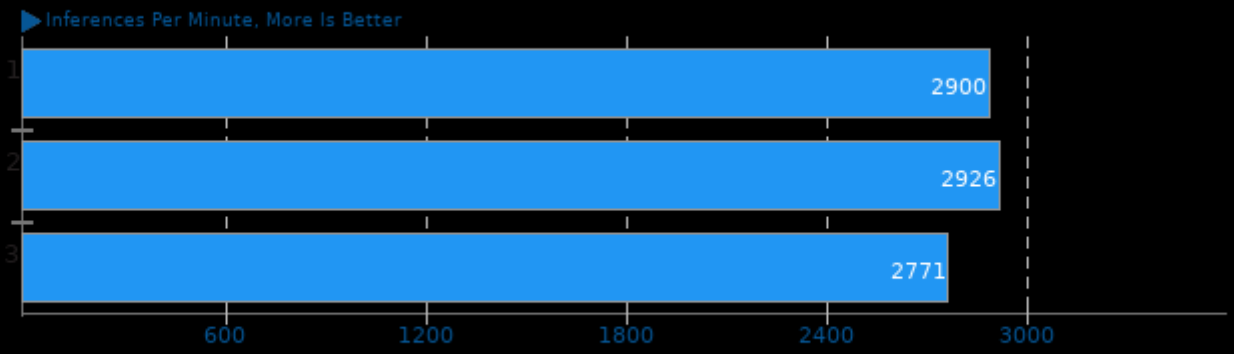
Model: shufflenet-v2-10 - Device: OpenMP CPU



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

ONNX Runtime 1.8.2

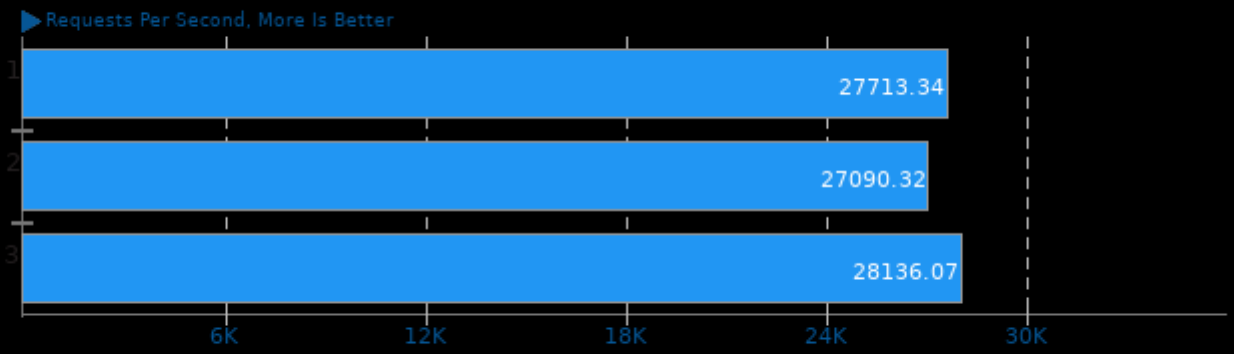
Model: super-resolution-10 - Device: OpenMP CPU



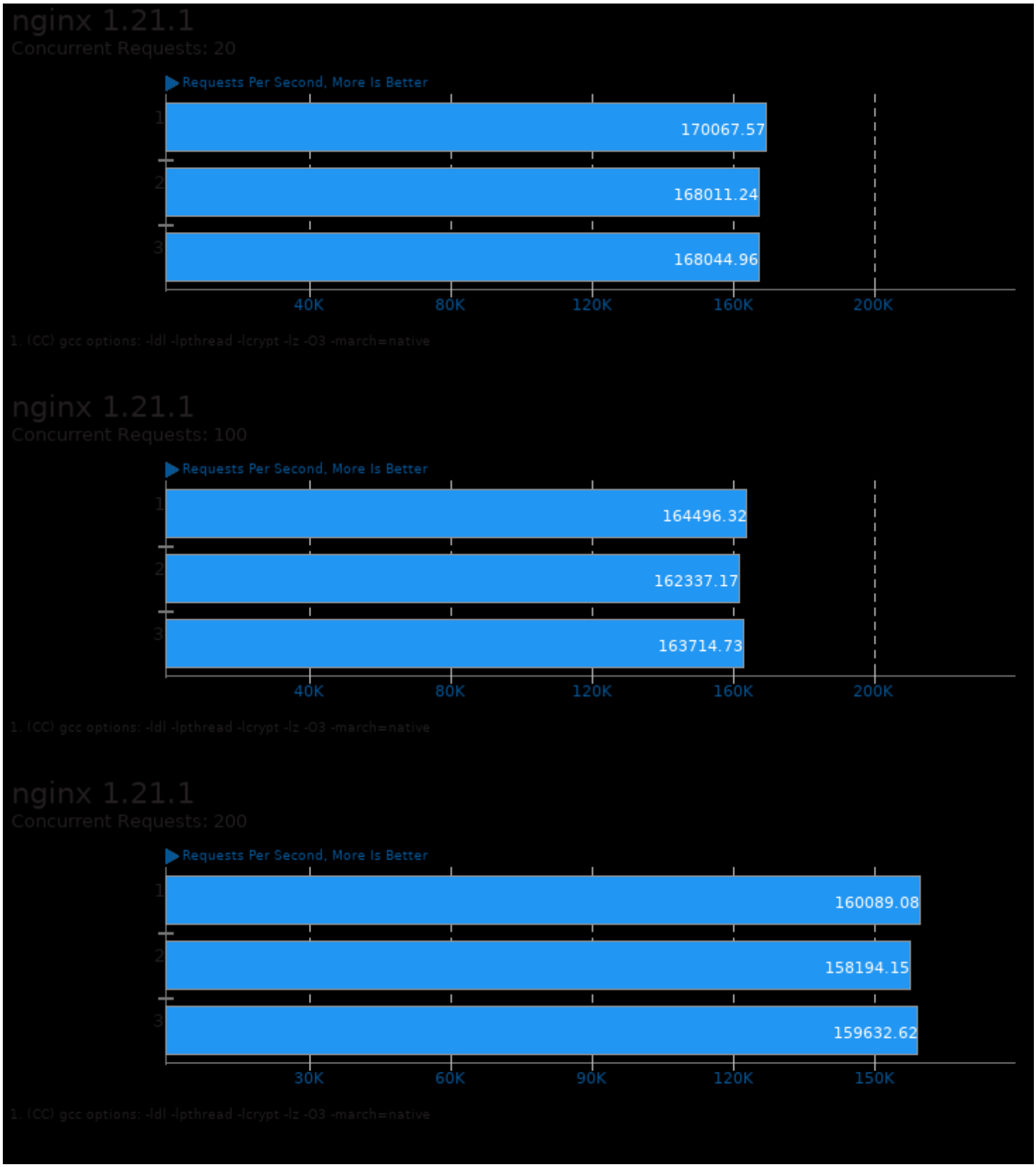
1. (CXX) g++ options: -fopenmp -ffunction-sections -fdata-sections -O3 -ldl -lrt

nginx 1.21.1

Concurrent Requests: 1

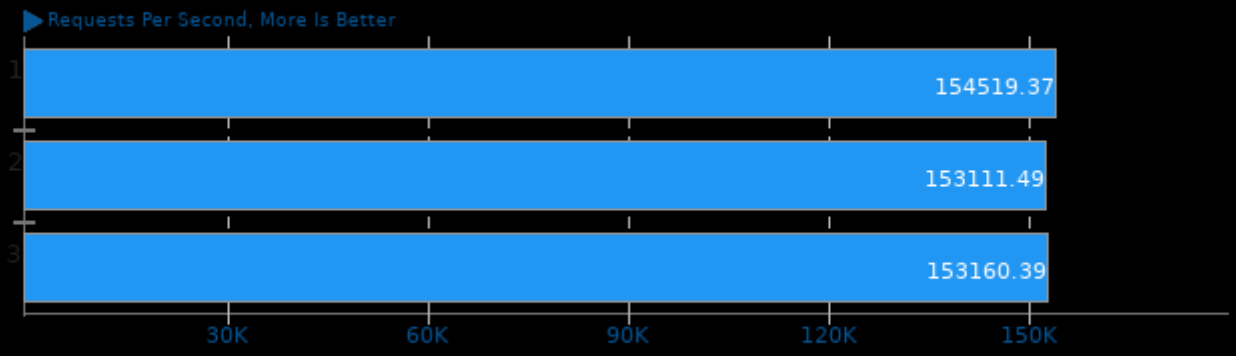


1. (CC) gcc options: -ldl -lpthread -lcrypt -lz -O3 -march=native


nginx 1.21.1
Concurrent Requests: 20
Requests Per Second, More Is Better
1
2
3
170067.57
168011.24
168044.96
40K
80K
120K
160K
200K
1. (CC) gcc options: -ldl -lpthread -lcrypt -lz -O3 -march=native
nginx 1.21.1
Concurrent Requests: 100
Requests Per Second, More Is Better
1
2
3
164496.32
162337.17
163714.73
40K
80K
120K
160K
200K
1. (CC) gcc options: -ldl -lpthread -lcrypt -lz -O3 -march=native
nginx 1.21.1
Concurrent Requests: 200
Requests Per Second, More Is Better
1
2
3
160089.08
158194.15
159632.62
30K
60K
90K
120K
150K
1. (CC) gcc options: -ldl -lpthread -lcrypt -lz -O3 -march=native

nginx 1.21.1

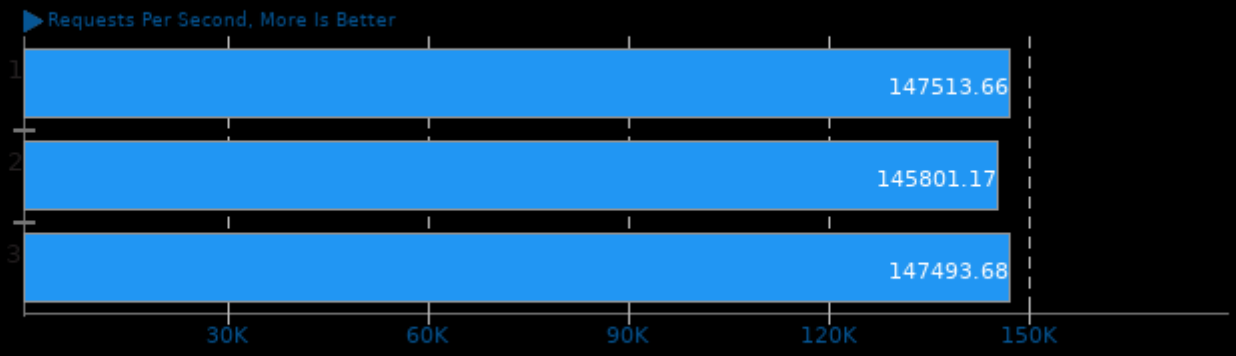
Concurrent Requests: 500



1. (CC) gcc options: -ldl -lpthread -lcrypt -lz -O3 -march=native

nginx 1.21.1

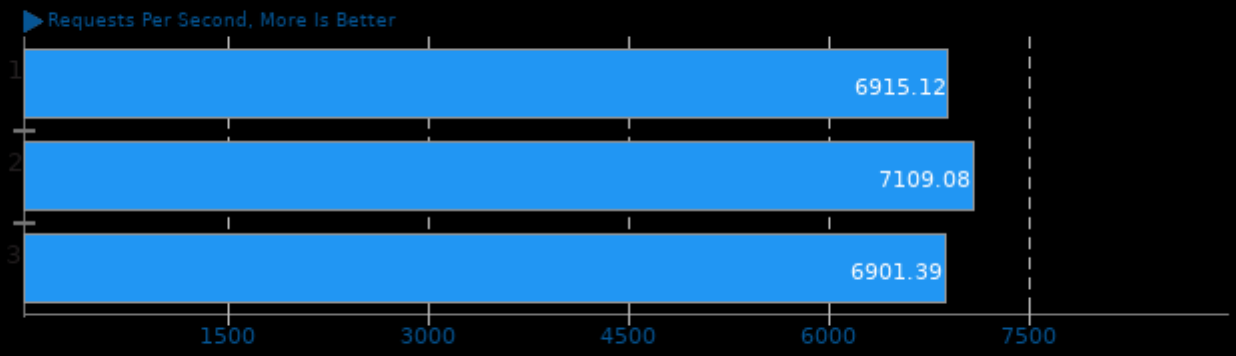
Concurrent Requests: 1000



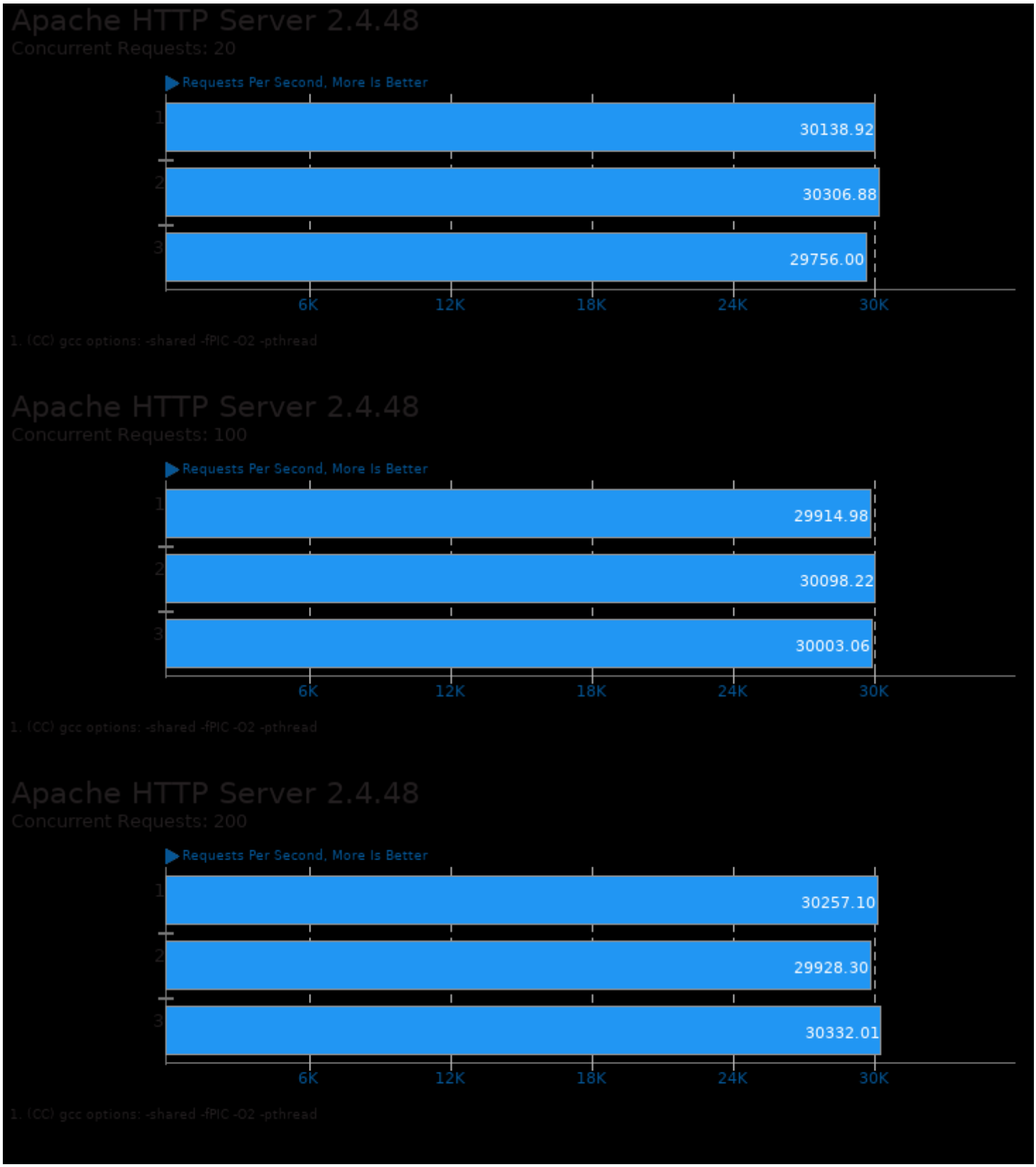
1. (CC) gcc options: -ldl -lpthread -lcrypt -lz -O3 -march=native

Apache HTTP Server 2.4.48

Concurrent Requests: 1



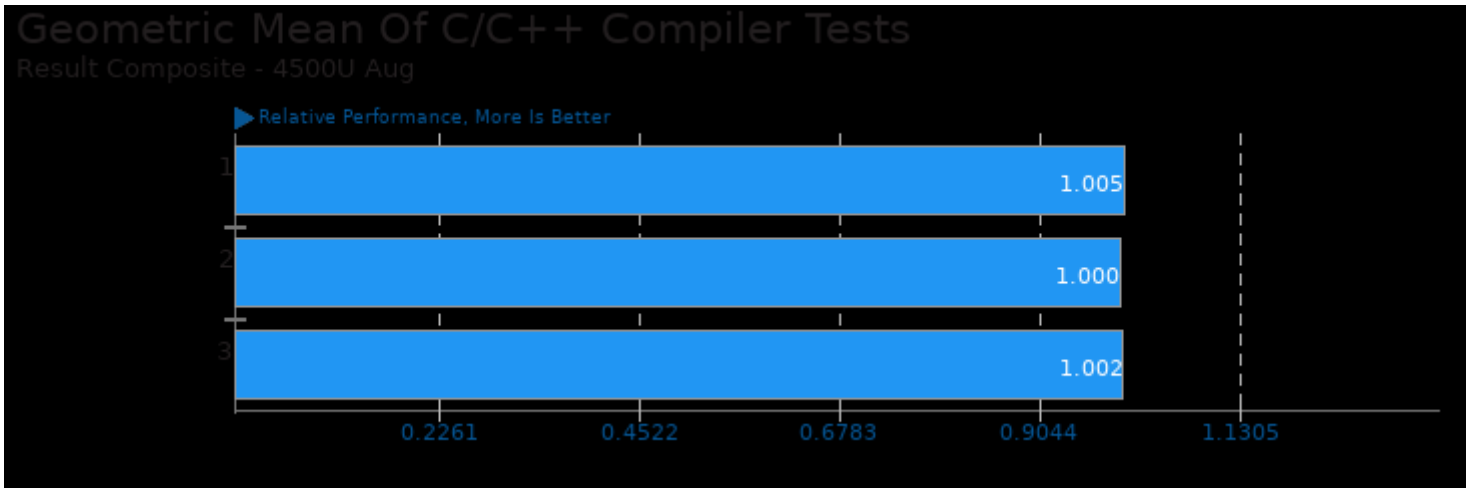
1. (CC) gcc options: -shared -fPIC -O2 -pthread


Apache HTTP Server 2.4.48
Concurrent Requests: 20
Requests Per Second, More Is Better
1
30138.92
2
30306.88
3
29756.00
6K
12K
18K
24K
30K
1. (CC) gcc options: -shared -fPIC -O2 -pthread
Apache HTTP Server 2.4.48
Concurrent Requests: 100
Requests Per Second, More Is Better
1
29914.98
2
30098.22
3
30003.06
6K
12K
18K
24K
30K
1. (CC) gcc options: -shared -fPIC -O2 -pthread
Apache HTTP Server 2.4.48
Concurrent Requests: 200
Requests Per Second, More Is Better
1
30257.10
2
29928.30
3
30332.01
6K
12K
18K
24K
30K
1. (CC) gcc options: -shared -fPIC -O2 -pthread


Apache HTTP Server 2.4.48
Concurrent Requests: 500
Requests Per Second, More Is Better
1
26689.12
2
26775.37
3
26544.26
6K
12K
18K
24K
30K
1. (CC) gcc options: -shared -fPIC -O2 -pthread
Apache HTTP Server 2.4.48
Concurrent Requests: 1000
Requests Per Second, More Is Better
1
26050.58
2
25896.65
3
26111.07
6K
12K
18K
24K
30K
1. (CC) gcc options: -shared -fPIC -O2 -pthread

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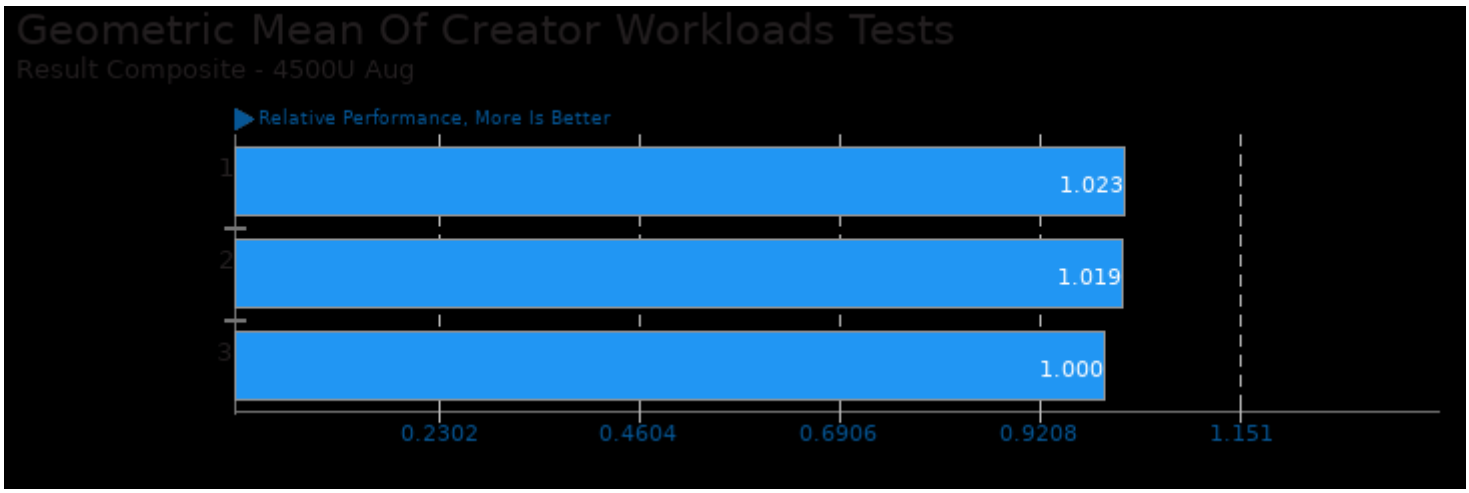
These geometric means are based upon test groupings / test suites for this result file.



Geometric mean based upon tests: pts/apache, pts/nginx, pts/tachyon and pts/keydb

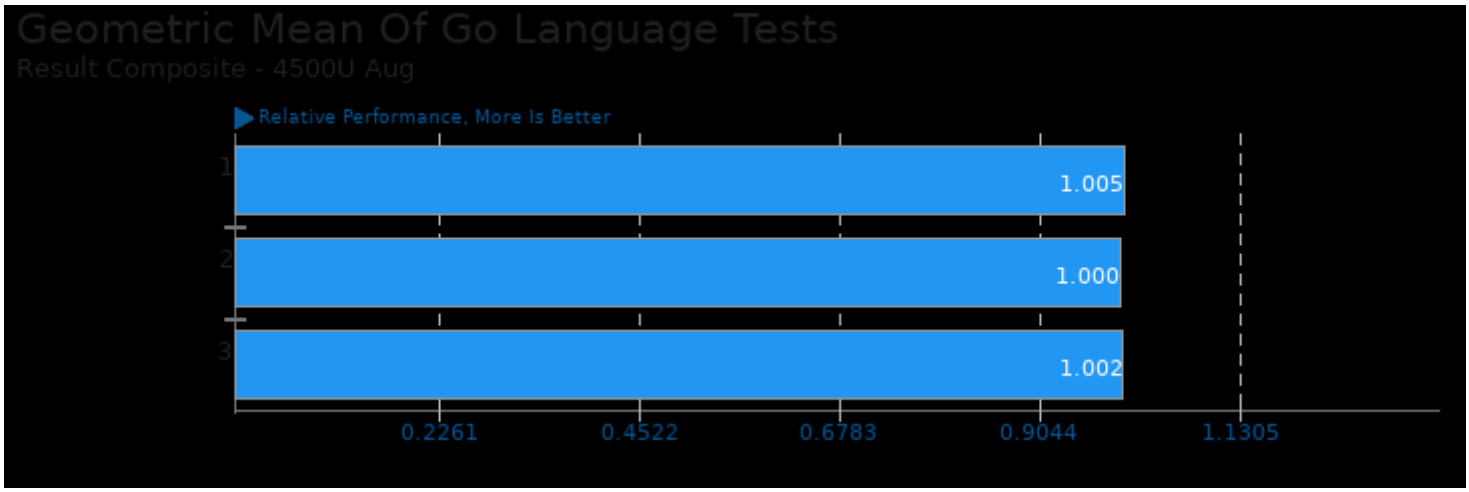


Geometric mean based upon tests: pts/apache, pts/build-gcc, pts/nginx and pts/tachyon



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

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Geometric mean based upon tests: pts/nginx and pts/apache



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



Geometric mean based upon tests: pts/apache, pts/nginx and pts/keydb

This file was automatically generated via the Phoronix Test Suite benchmarking software on Thursday, 28 March 2024 11:37.