

www.phoronix-test-suite.com

epyc-7763-august

2 x AMD EPYC 7763 64-Core testing with a AMD DAYTONA_X (RYM1001D BIOS) and ASPEED on Ubuntu 20.10 via the Phoronix Test Suite.

Automated Executive Summary

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

Based on the geometric mean of all complete results, the fastest (A) was 1.01x the speed of the slowest (1). 1A was 0.994x the speed of A and 1 was 0.996x the speed of 1A.

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

NCNN (Target: CPU - Model: efficientnet-b0) at 1.505x
ONNX Runtime (Model: shufflenet-v2-10 - Device: OpenMP CPU) at 1.494x
NCNN (Target: CPU - Model: mnasnet) at 1.482x
NCNN (Target: CPU - Model: squeezenet_ssd) at 1.391x
NCNN (Target: CPU - Model: shufflenet-v2) at 1.359x
NCNN (Target: CPU - Model: mobilenet) at 1.335x
NCNN (Target: CPU - Model: resnet50) at 1.304x
NCNN (Target: CPU-v2-v2 - Model: mobilenet-v2) at 1.233x
ONNX Runtime (Model: bertsquad-10 - Device: OpenMP CPU) at 1.233x

ONNX Runtime (Model: super-resolution-10 - Device: OpenMP CPU) at 1.162x.

Test Systems:

1

1A

A

Processor: 2 x AMD EPYC 7763 64-Core @ 2.45GHz (128 Cores / 256 Threads), Motherboard: AMD DAYTONA_X (RYM1001D BIOS), Chipset: AMD Starship/Matisse, Memory: 16 x 32 GB DDR4-3200MT/s 36ASF4G72PZ-3G2E2, Disk: 3841GB Micron_9300_MTFDHAL3T8TDP, Graphics: ASPEED, Monitor: VE228, Network: 2 x Mellanox MT27710

OS: Ubuntu 20.10, Kernel: 5.8.0-29-generic (x86_64), Display Server: X Server 1.20.8, Compiler: GCC 10.2.0, File-System: ext4, Screen Resolution: 1920x1080

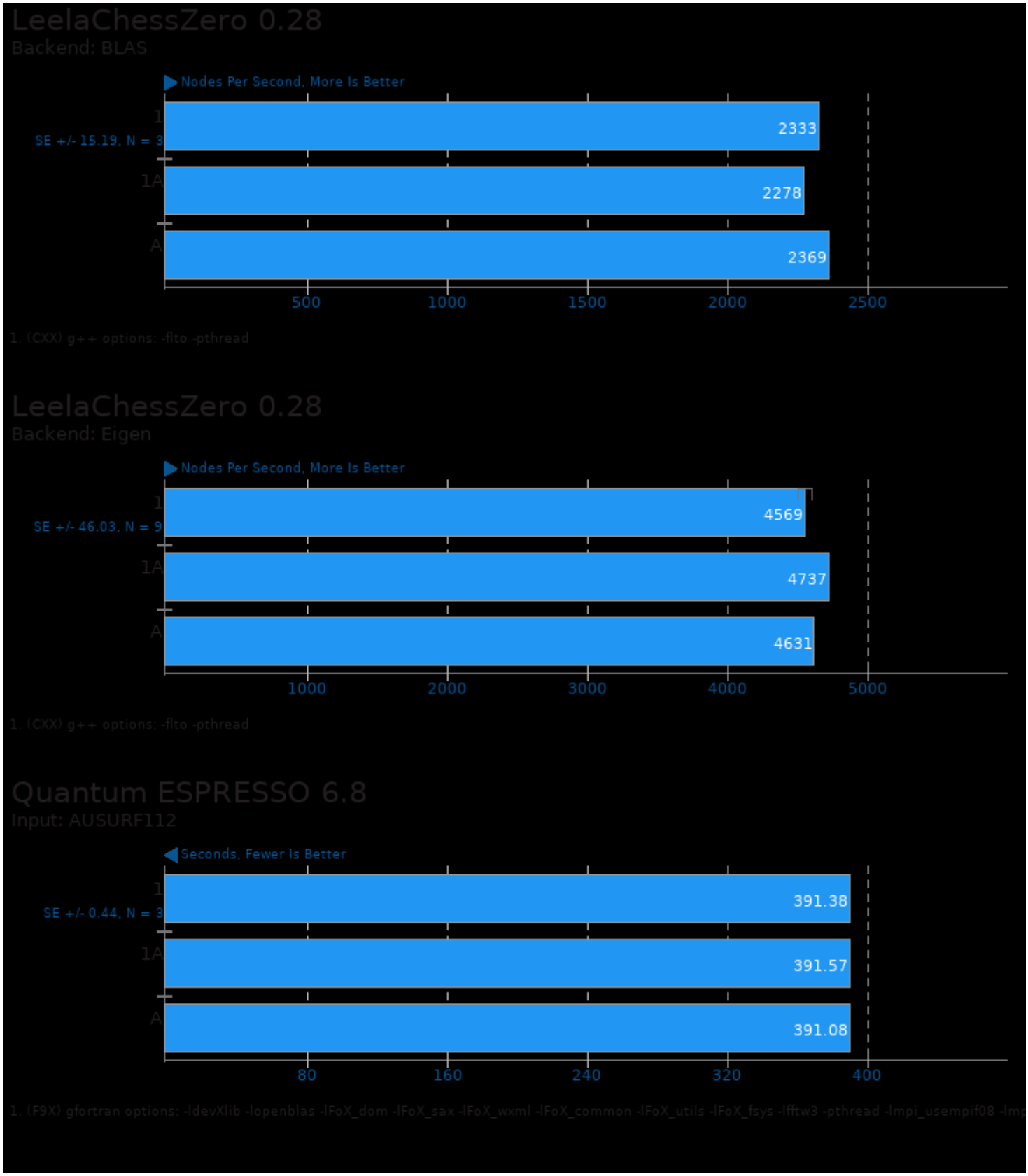
Kernel Notes: Transparent Huge Pages: madvise
Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-gnu-unique-object --enable-languages=c,ada,c++,go,brig,d,fortran,objc,obj-c++,m2 --enable-libphobos-checking=release --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 performance (Boost: Enabled) - CPU Microcode: 0xa001119
Python Notes: Python 2.7.18 + 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 IBRS_FW STIBP: always-on RSB filling + srbds: Not affected + tsx_async_abort: Not affected

	1	1A	A
LeelaChessZero - BLAS (Nodes/s)	2333	**2278**	**2369**
Normalized	98.48%	96.16%	100%
Standard Deviation	1.1%		
LeelaChessZero - Eigen (Nodes/s)	**4569**	**4737**	4631
Normalized	96.45%	100%	97.76%
Standard Deviation	3%		
Quantum ESPRESSO - AUSURF112 (sec)	391.38	**391.57**	**391.08**
Normalized	99.92%	99.87%	100%
Standard Deviation	0.2%		
OpenVKL - vklBenchmark ISPC (Items / Sec)		241	
OpenVKL - v.S (Items / Sec)		157	
Timed GCC Compilation - Time To Compile (sec)		**702.2**	**703.426**
Normalized		100%	99.83%

Timed Linux Kernel Compilation - Time To Compile (sec)	20.69	21.084
Normalized	100%	98.13%
YafaRay - T.T.F.S.S (sec)	52.443	54.367
Normalized	100%	96.46%
Tachyon - Total Time (sec)	8.8293	9.4203
Normalized	100%	93.73%
Google SynthMark - VoiceMark_100 (Voices)	764.681	764.227
Normalized	100%	99.94%
MariaDB - 256 (Queries/sec)	473	446
Normalized	100%	94.29%
MariaDB - 512 (Queries/sec)	481	476
Normalized	100%	98.96%
MariaDB - 1024 (Queries/sec)	289	305
Normalized	94.75%	100%
MariaDB - 2048 (Queries/sec)	159	158
Normalized	100%	99.37%
MariaDB - 4096 (Queries/sec)	154	158
Normalized	97.47%	100%
PostgreSQL pgbench - 100 - 250 - Read Only (TPS)	746294	759118
Normalized	98.31%	100%
PostgreSQL pgbench - 100 - 250 - Read Only - Average Latency (ms)	0.335	0.33
Normalized	98.51%	100%
PostgreSQL pgbench - 100 - 250 - Read Write (TPS)	52975	52409
Normalized	100%	98.93%
PostgreSQL pgbench - 100 - 250 - Read Write - Average Latency (ms)	4.722	4.774
Normalized	100%	98.91%
NCNN - CPU - mobilenet (ms)	85.22	113.73
Normalized	100%	74.93%
NCNN - CPU-v2-v2 - mobilenet-v2 (ms)	69.73	85.97
Normalized	100%	81.11%
NCNN - CPU-v3-v3 - mobilenet-v3 (ms)	64.19	58.12
Normalized	90.54%	100%
NCNN - CPU - shufflenet-v2 (ms)	35.61	48.39
Normalized	100%	73.59%
NCNN - CPU - mnasnet (ms)	45.63	67.64
Normalized	100%	67.46%
NCNN - CPU - efficientnet-b0 (ms)	52.23	78.59
Normalized	100%	66.46%
NCNN - CPU - blazeface (ms)	25.05	21.87
Normalized	87.31%	100%
NCNN - CPU - googlenet (ms)	97.44	108.38
Normalized	100%	89.91%
NCNN - CPU - vgg16 (ms)	43.42	43.79
Normalized	100%	99.16%
NCNN - CPU - resnet18 (ms)	66.48	62.64
Normalized	94.22%	100%
NCNN - CPU - alexnet (ms)	21	19.84
Normalized	94.48%	100%

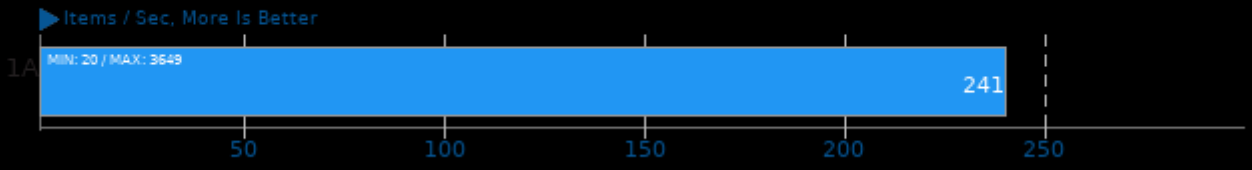
epyc-7763-august

NCNN - CPU - resnet50 (ms)	124.4	162.18
Normalized	100%	76.7%
NCNN - CPU - yolov4-tiny (ms)	50.18	46.54
Normalized	92.75%	100%
NCNN - CPU - squeezenet_ssd (ms)	66.71	92.81
Normalized	100%	71.88%
NCNN - CPU - regnety_400m (ms)	124.78	136.67
Normalized	100%	91.3%
ONNX Runtime - yolov4 - OpenMP CPU (Inferences/min)	244	228
Normalized	100%	93.44%
ONNX Runtime - bertsquad-10 - OpenMP CPU (Inferences/min)	323	262
Normalized	100%	81.11%
ONNX Runtime - fcn-resnet101-11 - OpenMP CPU (Inferences/min)	226	239
Normalized	94.56%	100%
ONNX Runtime - shufflenet-v2-10 - OpenMP CPU (Inferences/min)	2957	4417
Normalized	66.95%	100%
ONNX Runtime - super-resolution-10 - OpenMP CPU (Inferences/min)	3797	4414
Normalized	86.02%	100%
ECP-CANDLE - P1B2 (sec)	42.214	41.979
Normalized	99.44%	100%
ECP-CANDLE - P3B1 (sec)	923.897	
ECP-CANDLE - P3B2 (sec)	734.707	
nginx - 1 (Reqs/sec)	59456	
nginx - 20 (Reqs/sec)	207512	
nginx - 100 (Reqs/sec)	114598	
nginx - 200 (Reqs/sec)	101037	
nginx - 500 (Reqs/sec)	101706	
nginx - 1000 (Reqs/sec)	103561	
Natron - Spaceship (FPS)	0.7	
Apache HTTP Server - 1 (Reqs/sec)	8007	
Apache HTTP Server - 20 (Reqs/sec)	23301	
Apache HTTP Server - 100 (Reqs/sec)	88590	
Apache HTTP Server - 200 (Reqs/sec)	80770	
Apache HTTP Server - 500 (Reqs/sec)	75345	
Apache HTTP Server - 1000 (Reqs/sec)	99236	


LeelaChessZero 0.28
Backend: BLAS
Nodes Per Second, More Is Better
1
SE +/- 15.19, N = 3
2333
1A
2278
A
2369
500
1000
1500
2000
2500
1. (CXX) g++ options: -flto -pthread
LeelaChessZero 0.28
Backend: Eigen
Nodes Per Second, More Is Better
1
SE +/- 46.03, N = 9
4569
1A
4737
A
4631
1000
2000
3000
4000
5000
1. (CXX) g++ options: -flto -pthread
Quantum ESPRESSO 6.8
Input: AUSURF112
Seconds, Fewer Is Better
1
SE +/- 0.44, N = 3
391.38
1A
391.57
A
391.08
80
160
240
320
400
1. (F9X) gfortran options: -ldevXlib -lopenblas -lFoX_dom -lFoX_sax -lFoX_wxml -lFoX_common -lFoX_utils -lFoX_fsys -lfftw3 -pthread -lmpi_usempif08 -lmp

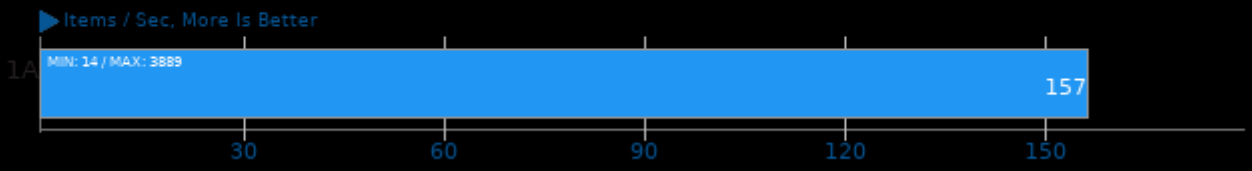
OpenVKL 1.0

Benchmark: vklBenchmark ISPC



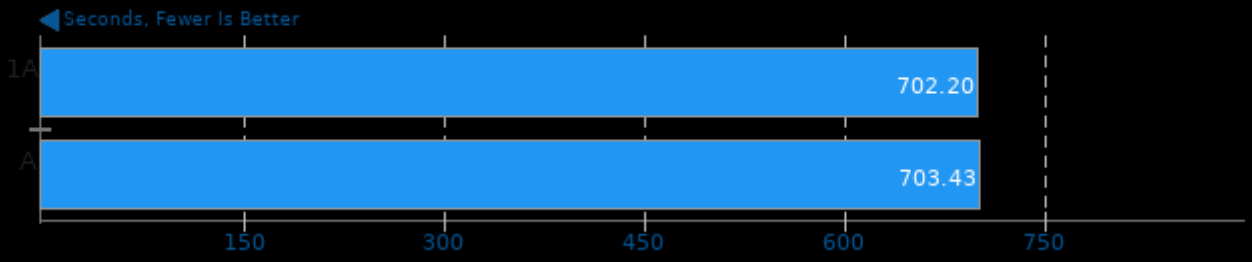
OpenVKL 1.0

Benchmark: vklBenchmark Scalar



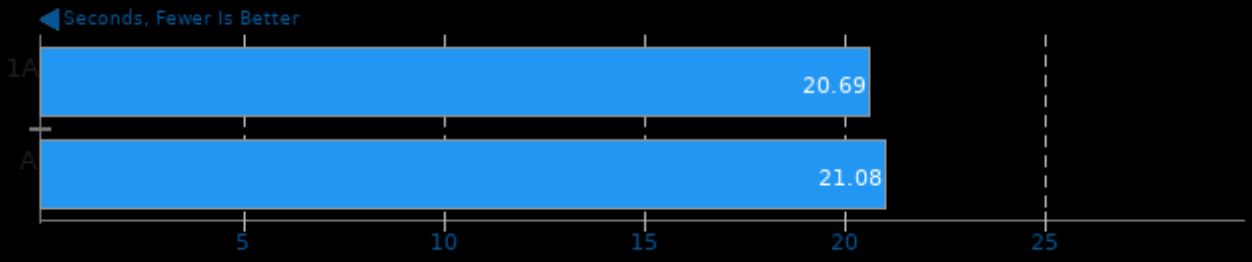
Timed GCC Compilation 11.2.0

Time To Compile



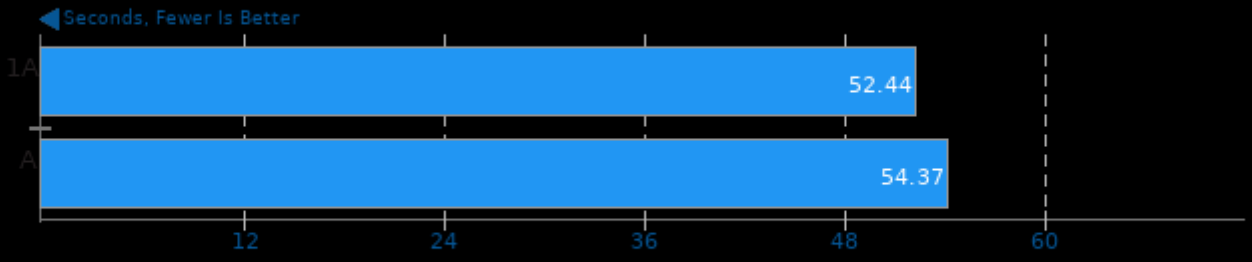
Timed Linux Kernel Compilation 5.14

Time To Compile



YafaRay 3.5.1

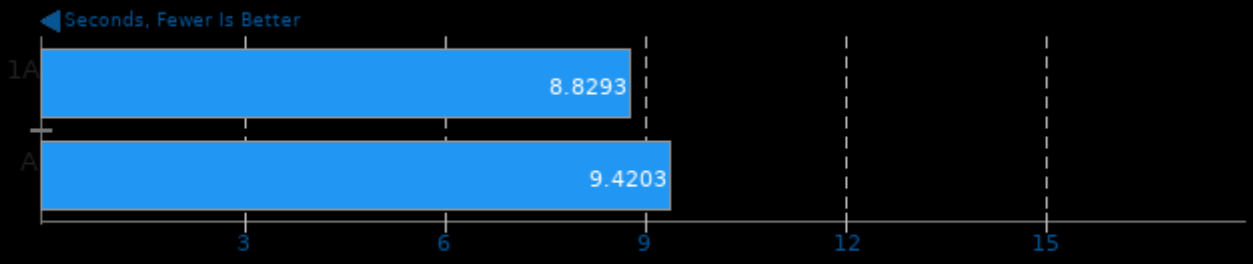
Total Time For Sample Scene



1. (CXX) g++ options: -std=c++11 -pthread -O3 -ffast-math -rdynamic -ldl -lImath -lIlmImf -lIex -lHalf -lz -lIlmThread -lxml2 -lfreetype

Tachyon 0.99b6

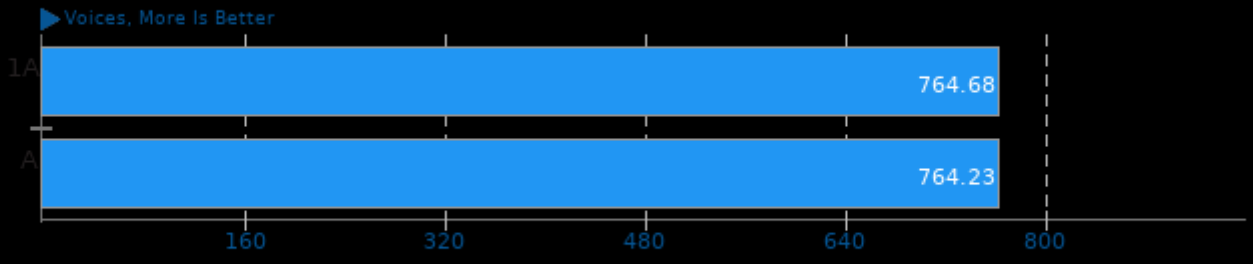
Total Time



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

Google SynthMark 20201109

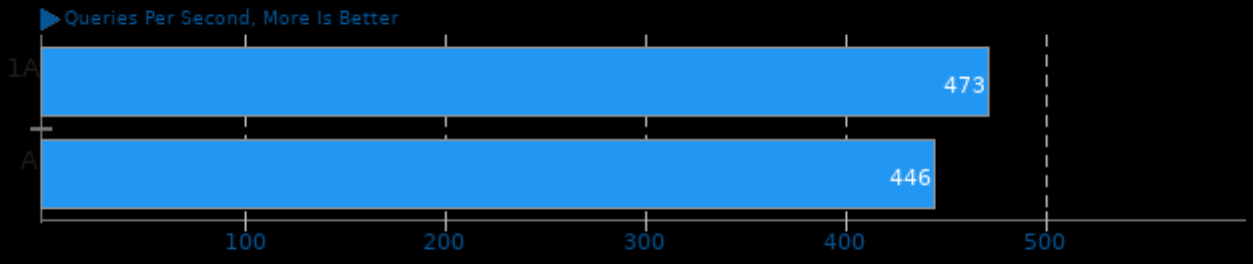
Test: VoiceMark_100



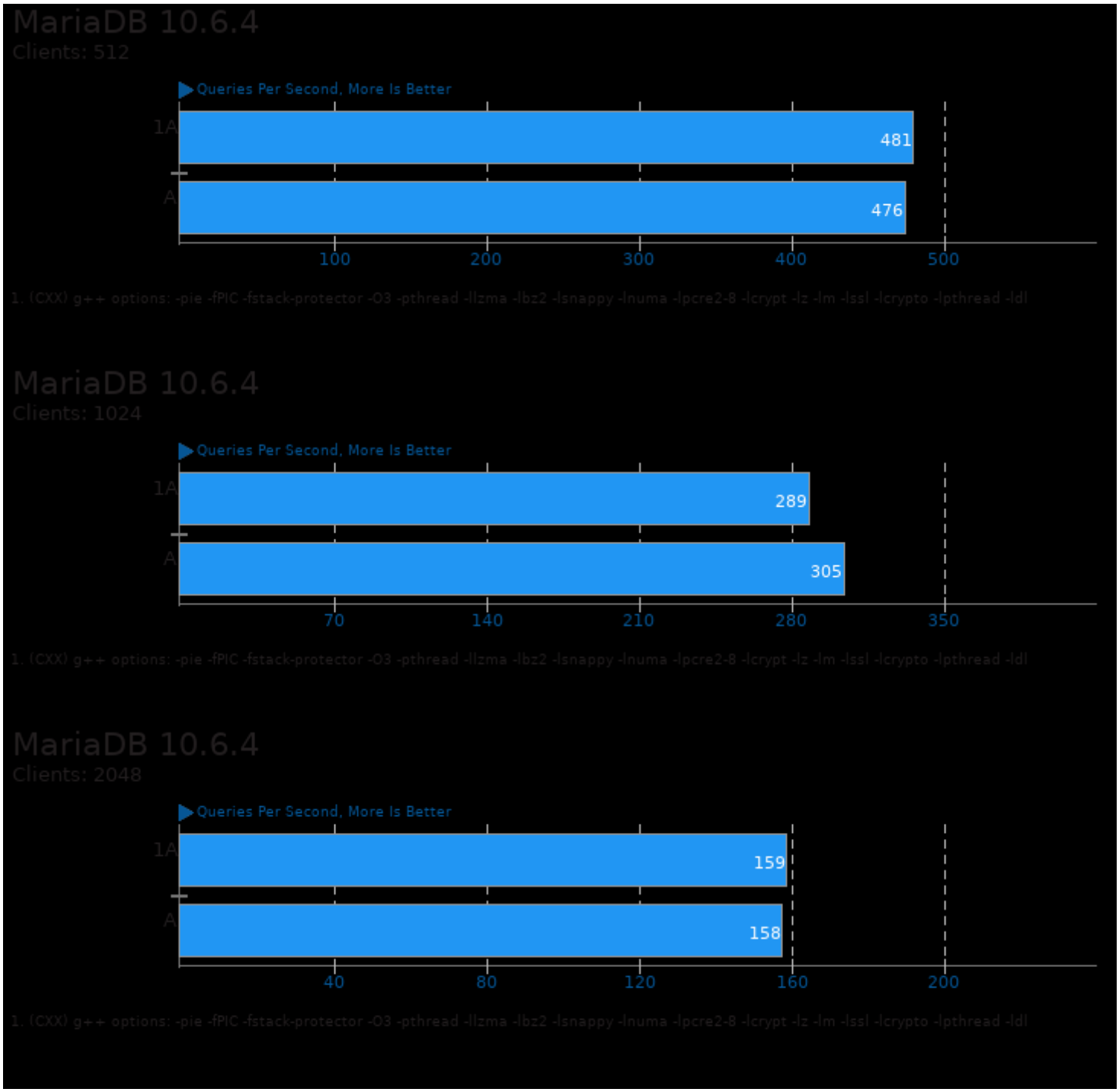
1. (CXX) g++ options: -lm -lpthread -std=c++11 -Ofast

MariaDB 10.6.4

Clients: 256

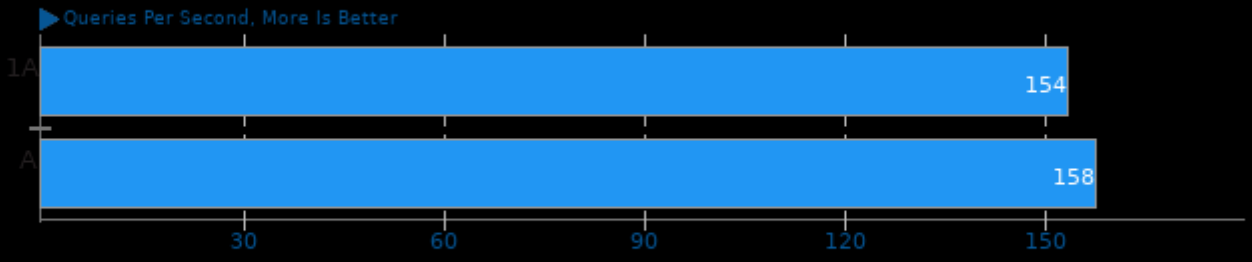


1. (CXX) g++ options: -pie -fPIC -fstack-protector -O3 -pthread -llzma -lbz2 -lsnappy -lnuma -lpcre2-8 -lcrypt -lz -lm -lssl -lcrypto -lpthread -ldl


MariaDB 10.6.4
Clients: 512
Queries Per Second, More Is Better
1A
A
481
476
100
200
300
400
500
1. (CXX) g++ options: -pie -fPIC -fstack-protector -O3 -pthread -llzma -lbz2 -lsnappy -lnuma -lpcre2-8 -lcrypt -lz -lm -lssl -lcrypto -lpthread -ldl
MariaDB 10.6.4
Clients: 1024
Queries Per Second, More Is Better
1A
A
289
305
70
140
210
280
350
1. (CXX) g++ options: -pie -fPIC -fstack-protector -O3 -pthread -llzma -lbz2 -lsnappy -lnuma -lpcre2-8 -lcrypt -lz -lm -lssl -lcrypto -lpthread -ldl
MariaDB 10.6.4
Clients: 2048
Queries Per Second, More Is Better
1A
A
159
158
40
80
120
160
200
1. (CXX) g++ options: -pie -fPIC -fstack-protector -O3 -pthread -llzma -lbz2 -lsnappy -lnuma -lpcre2-8 -lcrypt -lz -lm -lssl -lcrypto -lpthread -ldl

MariaDB 10.6.4

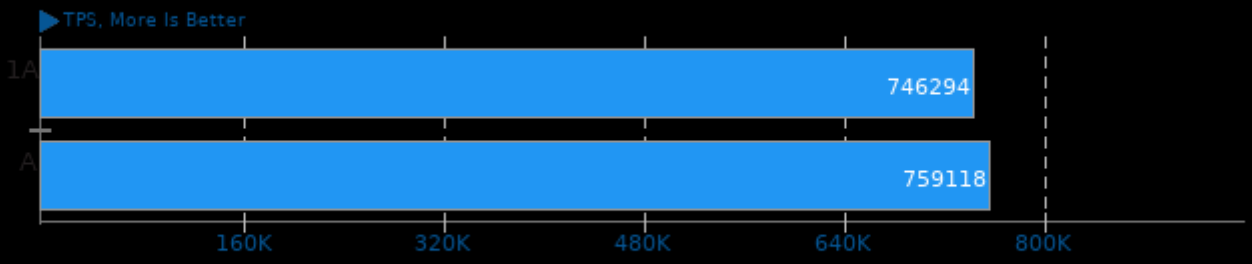
Clients: 4096



1. (CXX) g++ options: -pie -fPIC -fstack-protector -O3 -pthread -llzma -lbz2 -lsnappy -lnuma -lpcre2-8 -lcrypt -lz -lm -lssl -lcrypto -lpthread -ldl

PostgreSQL pgbench 13.0

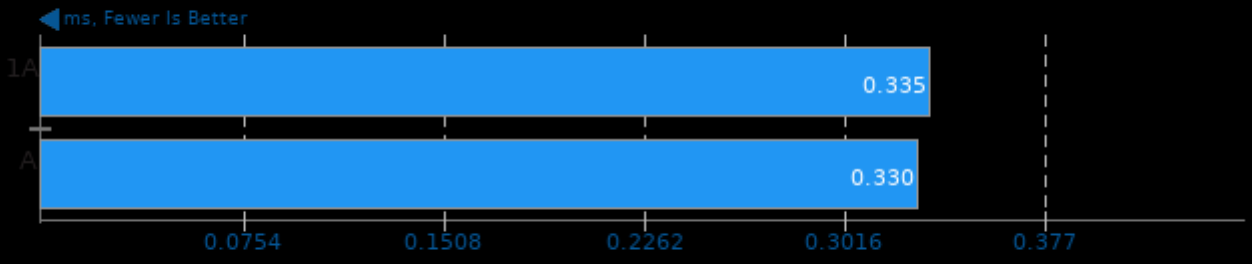
Scaling Factor: 100 - Clients: 250 - Mode: Read Only



1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lpgcommon -lpgport -lpq -lpthread -lrt -ldl -lm

PostgreSQL pgbench 13.0

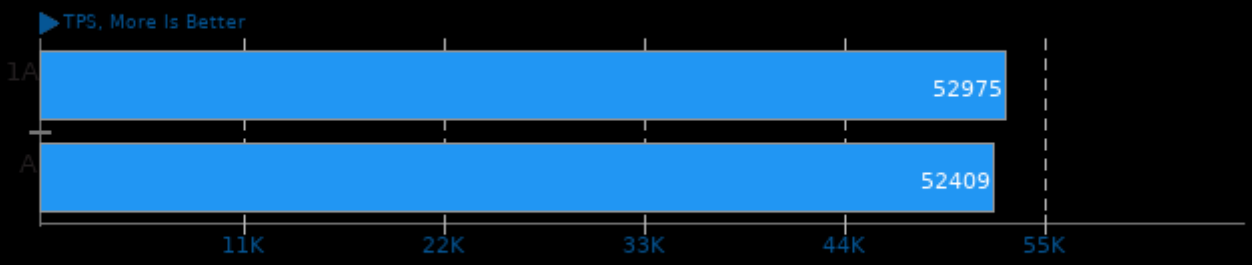
Scaling Factor: 100 - Clients: 250 - Mode: Read Only - Average Latency



1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lpgcommon -lpgport -lpq -lpthread -lrt -ldl -lm

PostgreSQL pgbench 13.0

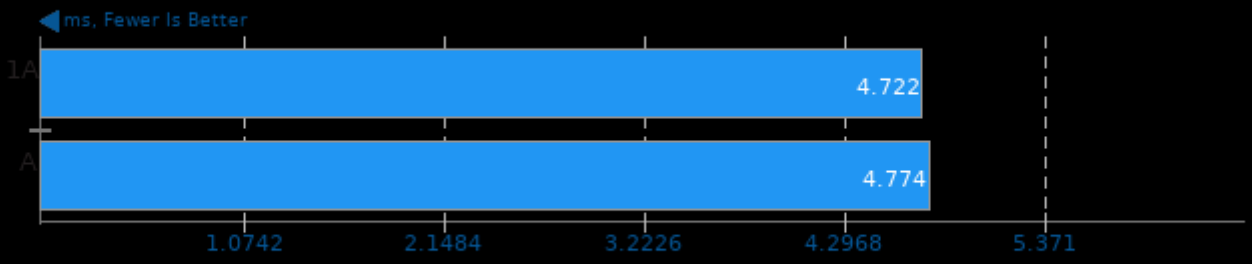
Scaling Factor: 100 - Clients: 250 - Mode: Read Write



1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lpgcommon -lpgport -lpq -lpthread -lrt -ldl -lm

PostgreSQL pgbench 13.0

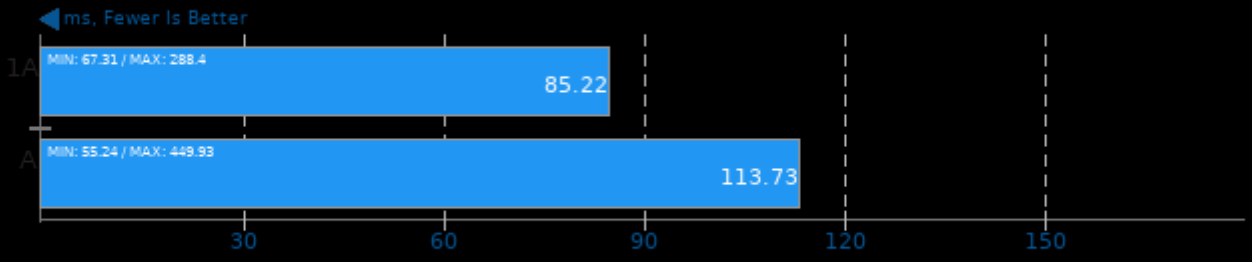
Scaling Factor: 100 - Clients: 250 - Mode: Read Write - Average Latency



1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lpgcommon -lpgport -lpq -lpthread -lrt -ldl -lm

NCNN 20210720

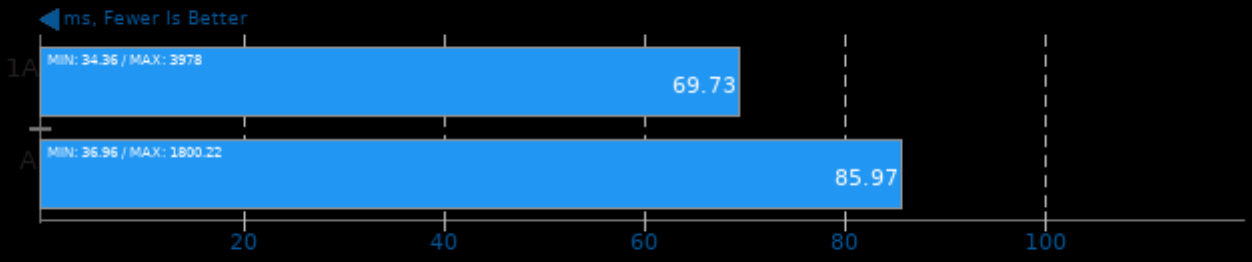
Target: CPU - Model: mobilenet



1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread -pthread

NCNN 20210720

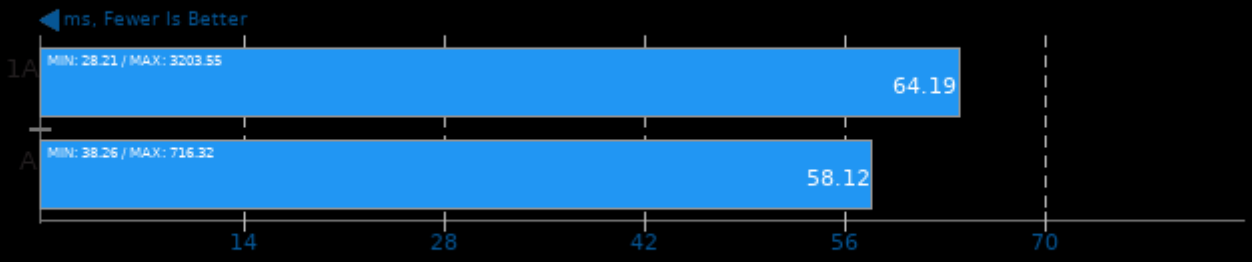
Target: CPU-v2-v2 - Model: mobilenet-v2



1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread -pthread

NCNN 20210720

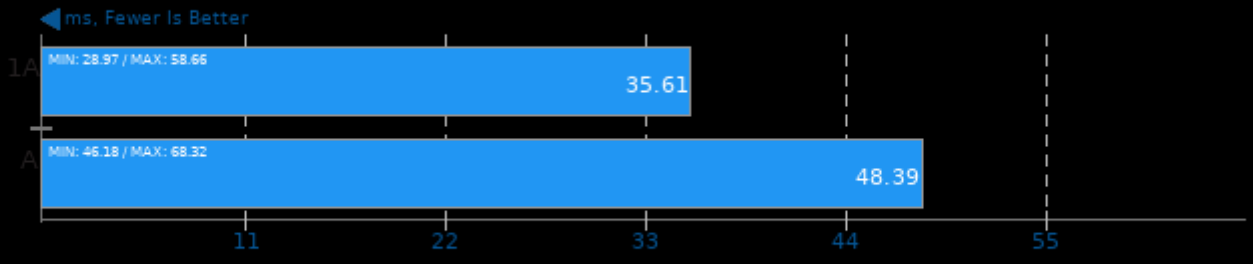
Target: CPU-v3-v3 - Model: mobilenet-v3



1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread -pthread

NCNN 20210720

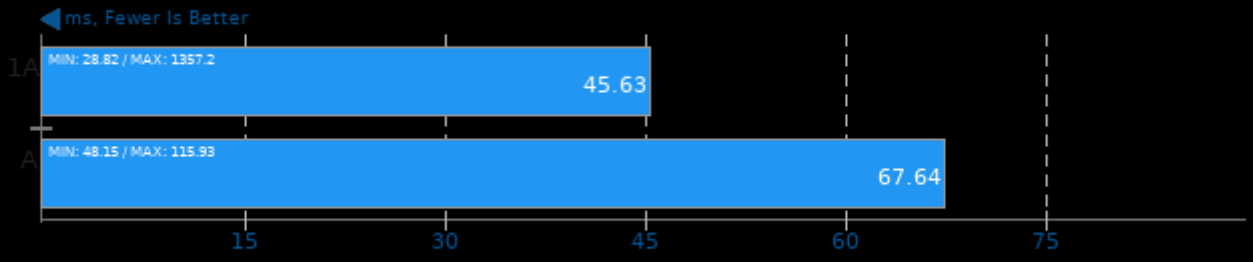
Target: CPU - Model: shufflenet-v2



1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread -pthread

NCNN 20210720

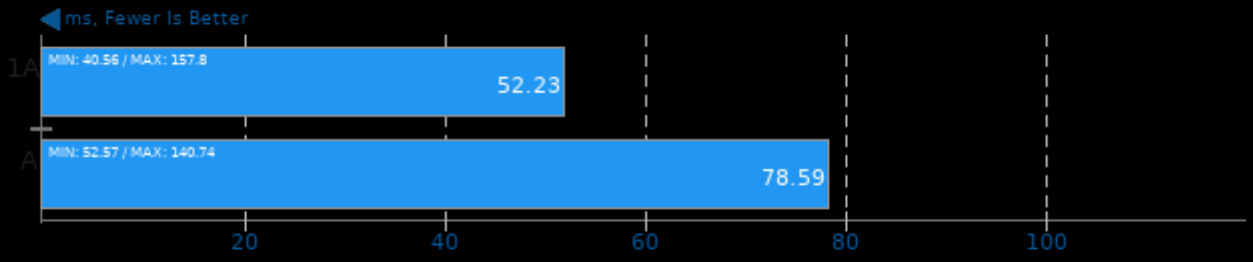
Target: CPU - Model: mnasnet



1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread -pthread

NCNN 20210720

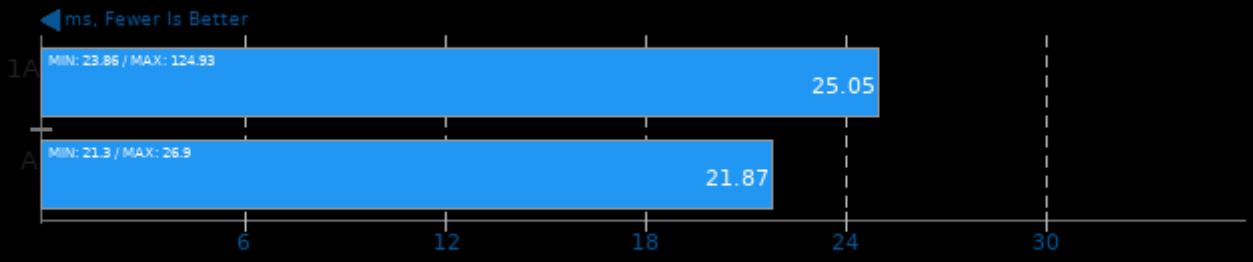
Target: CPU - Model: efficientnet-b0



1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread -pthread

NCNN 20210720

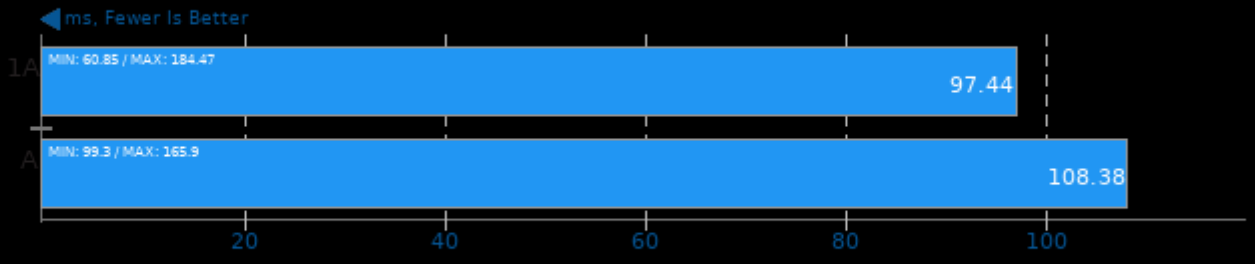
Target: CPU - Model: blazeface



1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread -pthread

NCNN 20210720

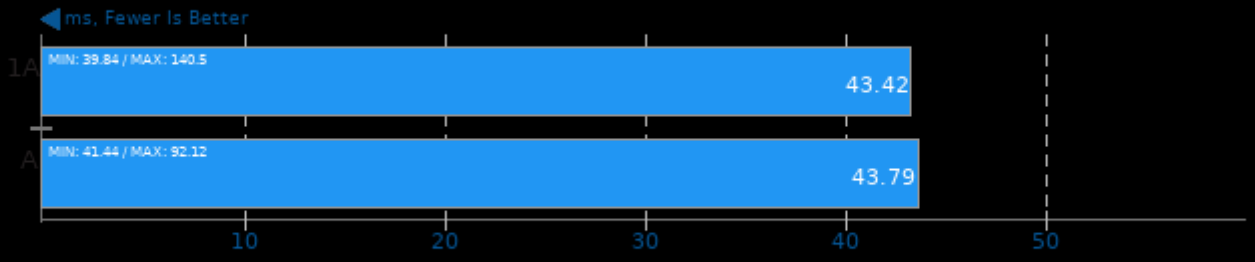
Target: CPU - Model: googlenet



1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread -pthread

NCNN 20210720

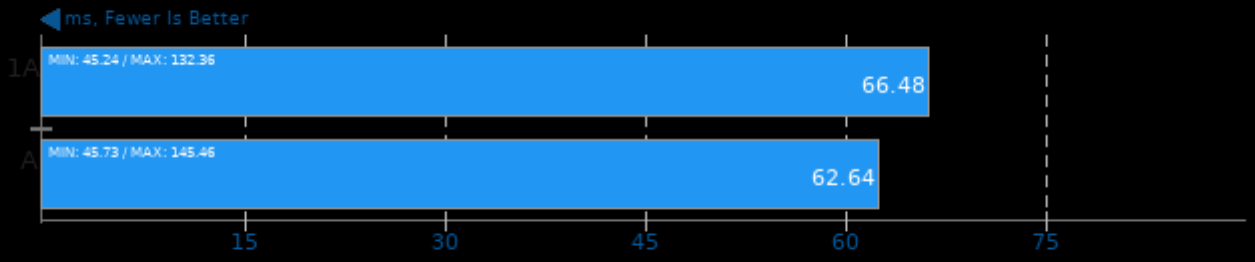
Target: CPU - Model: vgg16



1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread -pthread

NCNN 20210720

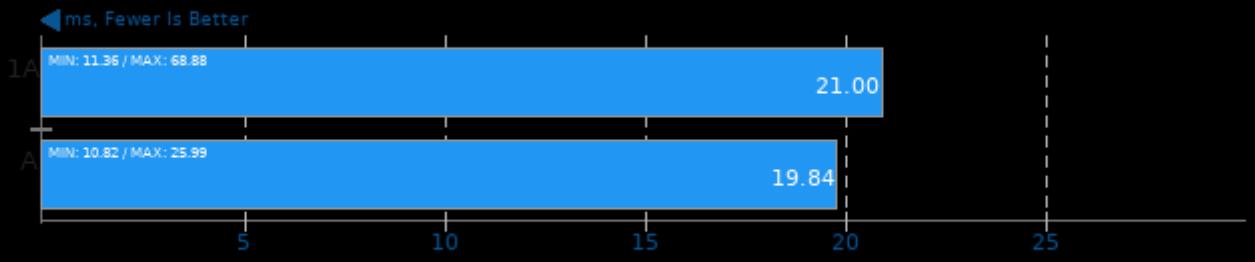
Target: CPU - Model: resnet18



1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread -pthread

NCNN 20210720

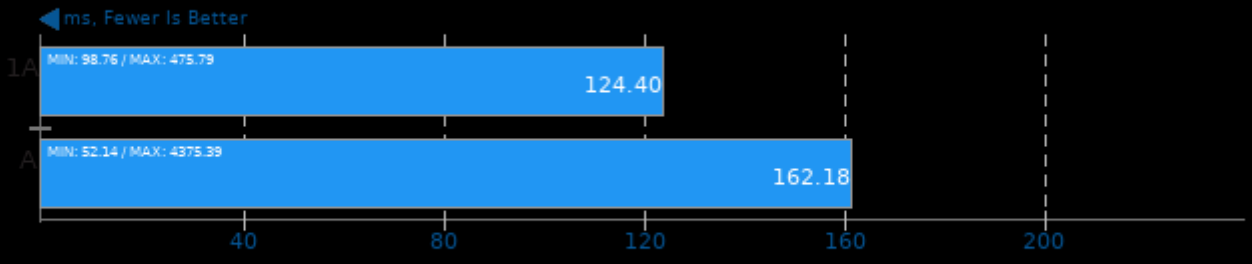
Target: CPU - Model: alexnet



1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread -pthread

NCNN 20210720

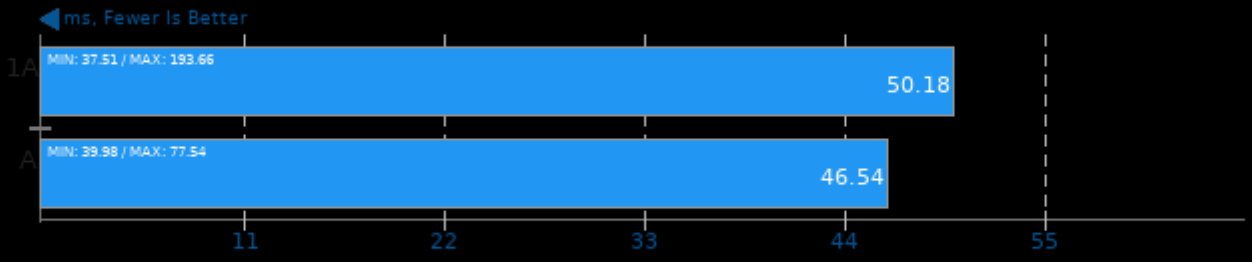
Target: CPU - Model: resnet50



1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread -pthread

NCNN 20210720

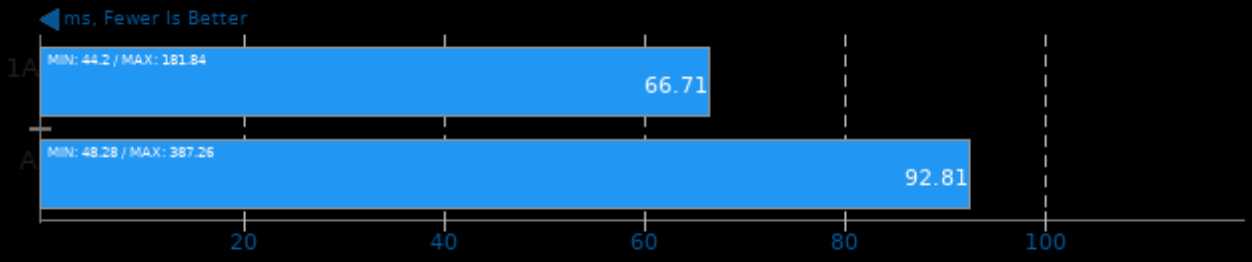
Target: CPU - Model: yolov4-tiny



1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread -pthread

NCNN 20210720

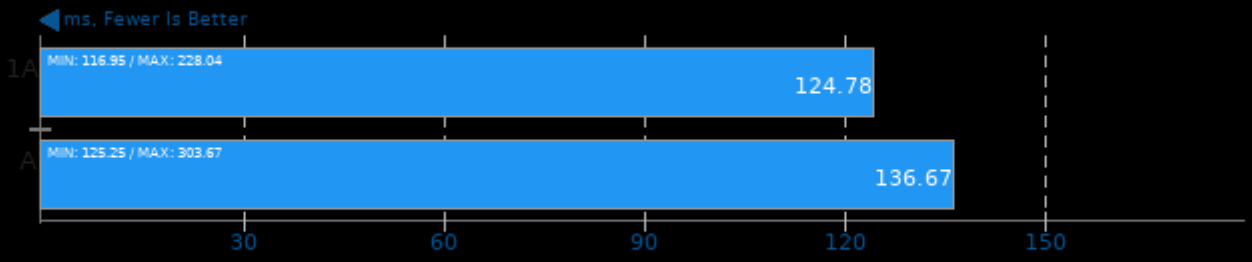
Target: CPU - Model: squeezenet_ssd



1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread -pthread

NCNN 20210720

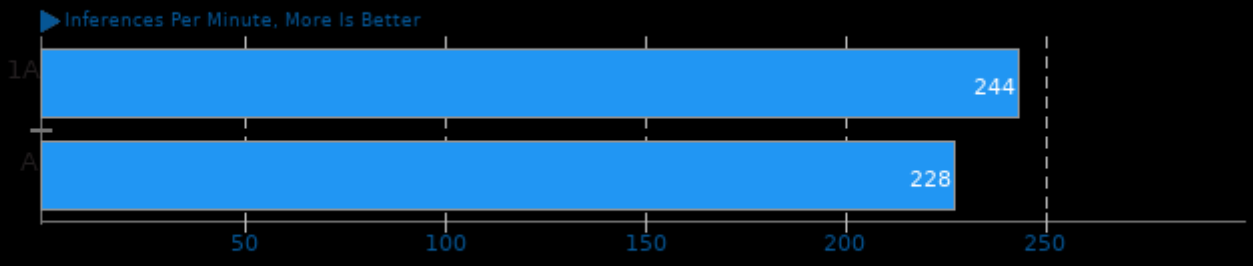
Target: CPU - Model: regnety_400m



1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread -pthread

ONNX Runtime 1.8.2

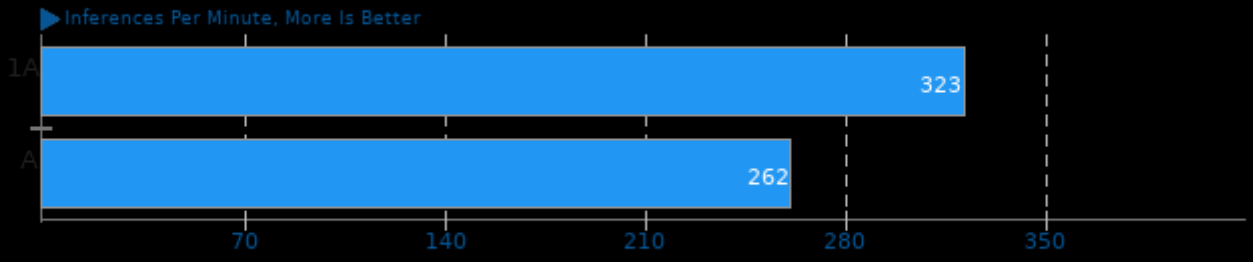
Model: yolov4 - Device: OpenMP CPU



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

ONNX Runtime 1.8.2

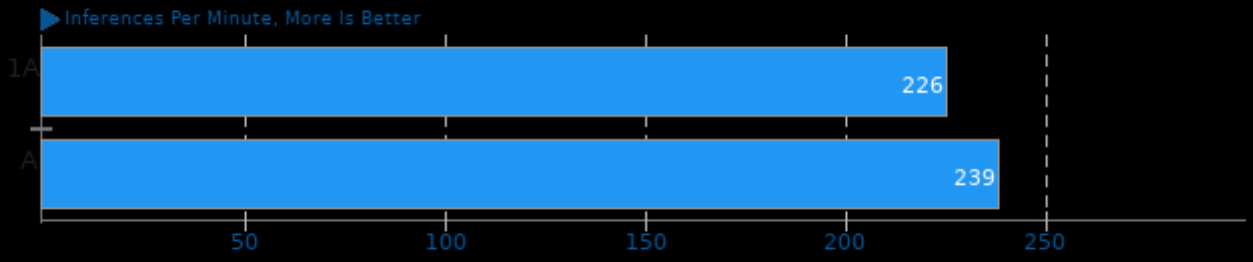
Model: bertsquad-10 - Device: OpenMP CPU



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

ONNX Runtime 1.8.2

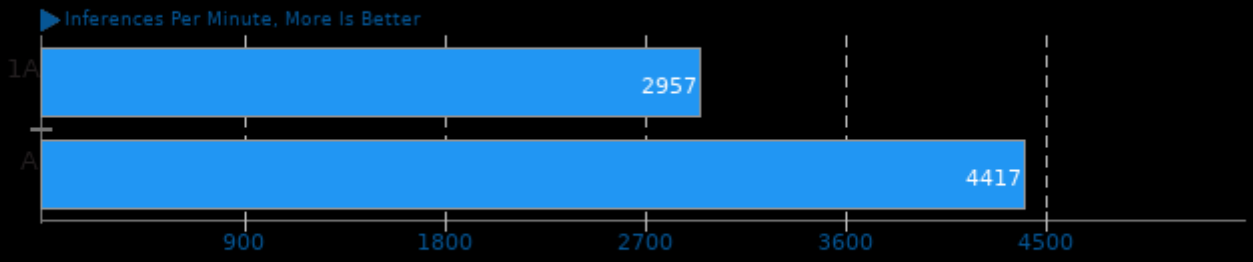
Model: fcn-resnet101-11 - Device: OpenMP CPU



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

ONNX Runtime 1.8.2

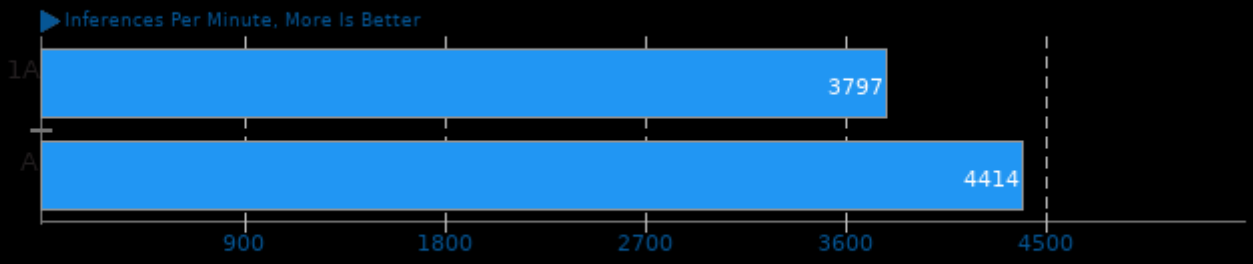
Model: shufflenet-v2-10 - Device: OpenMP CPU



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

ONNX Runtime 1.8.2

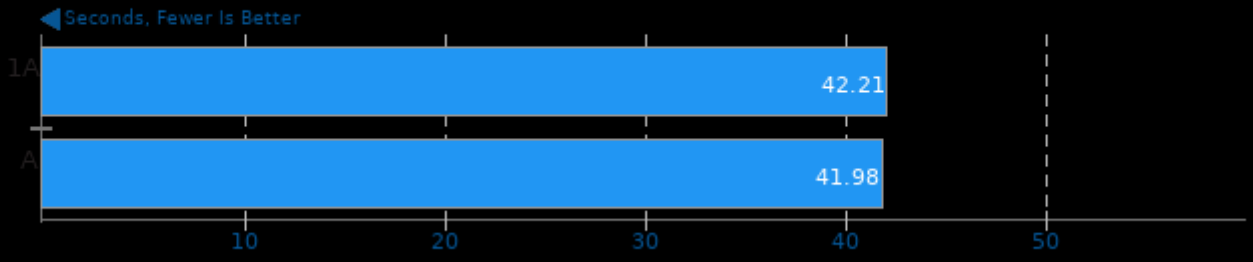
Model: super-resolution-10 - Device: OpenMP CPU



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

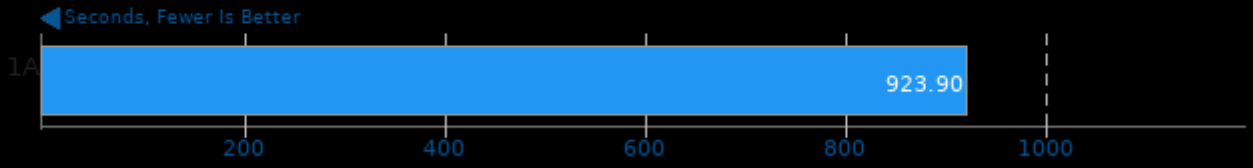
ECP-CANDLE 0.4

Benchmark: P1B2



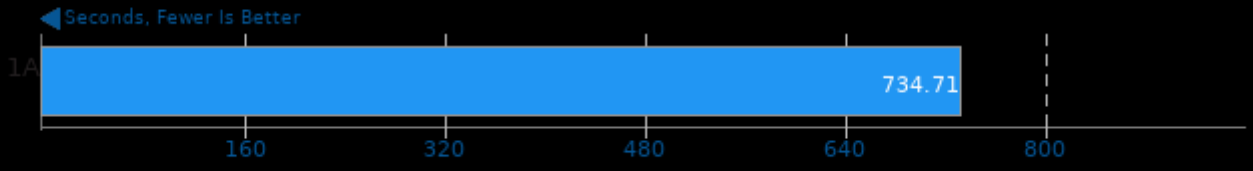
ECP-CANDLE 0.4

Benchmark: P3B1



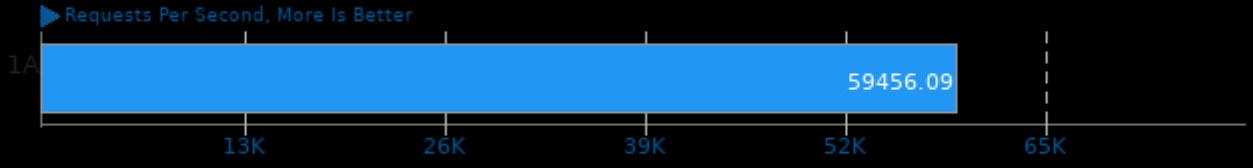
ECP-CANDLE 0.4

Benchmark: P3B2

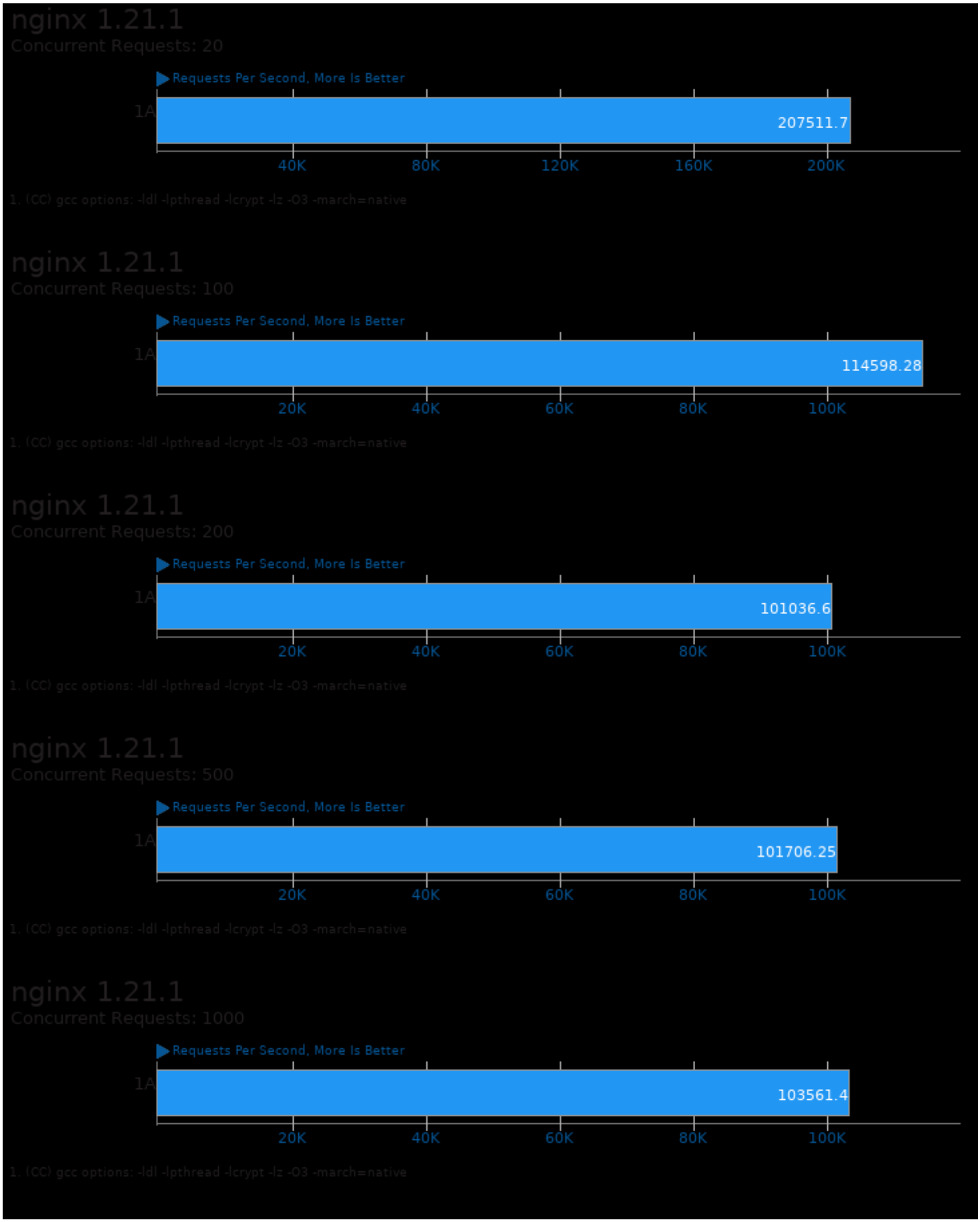


nginx 1.21.1

Concurrent Requests: 1

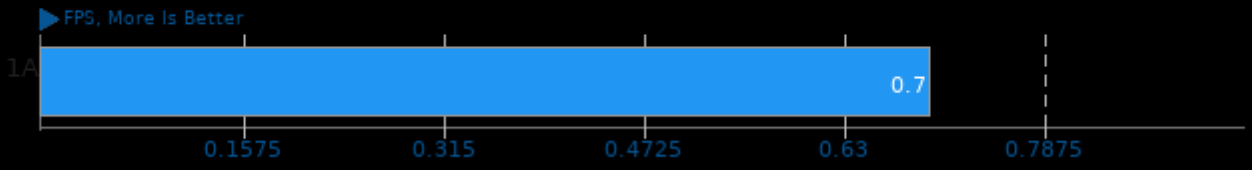


1. (CC) gcc options: -ldl -lpthread -lcrypt -lz -O3 -march=native


nginx 1.21.1
Concurrent Requests: 20
Requests Per Second, More Is Better
1A
207511.7
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
1A
114598.28
20K
40K
60K
80K
100K
1. (CC) gcc options: -ldl -lpthread -lcrypt -lz -O3 -march=native
nginx 1.21.1
Concurrent Requests: 200
Requests Per Second, More Is Better
1A
101036.6
20K
40K
60K
80K
100K
1. (CC) gcc options: -ldl -lpthread -lcrypt -lz -O3 -march=native
nginx 1.21.1
Concurrent Requests: 500
Requests Per Second, More Is Better
1A
101706.25
20K
40K
60K
80K
100K
1. (CC) gcc options: -ldl -lpthread -lcrypt -lz -O3 -march=native
nginx 1.21.1
Concurrent Requests: 1000
Requests Per Second, More Is Better
1A
103561.4
20K
40K
60K
80K
100K
1. (CC) gcc options: -ldl -lpthread -lcrypt -lz -O3 -march=native

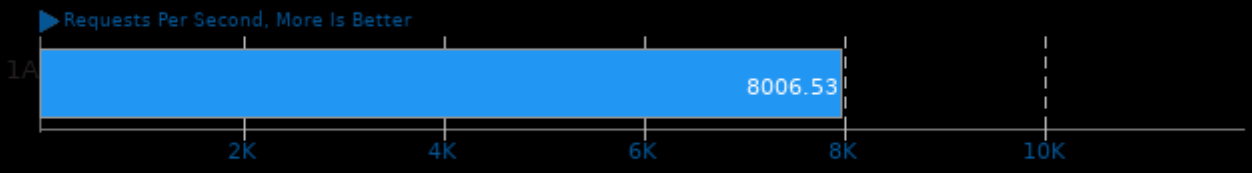
Natron 2.4

Input: Spaceship



Apache HTTP Server 2.4.48

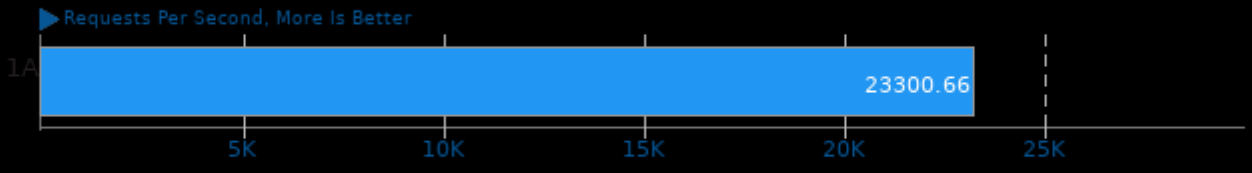
Concurrent Requests: 1



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

Apache HTTP Server 2.4.48

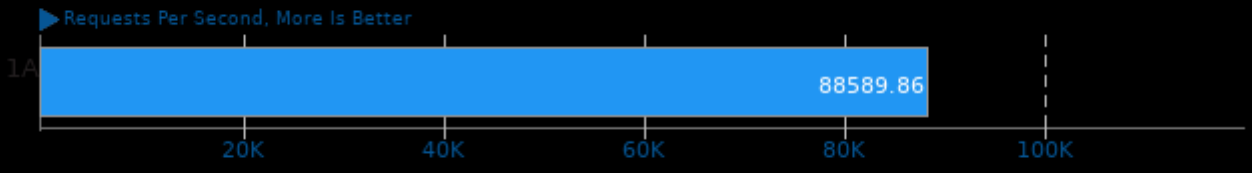
Concurrent Requests: 20



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

Apache HTTP Server 2.4.48

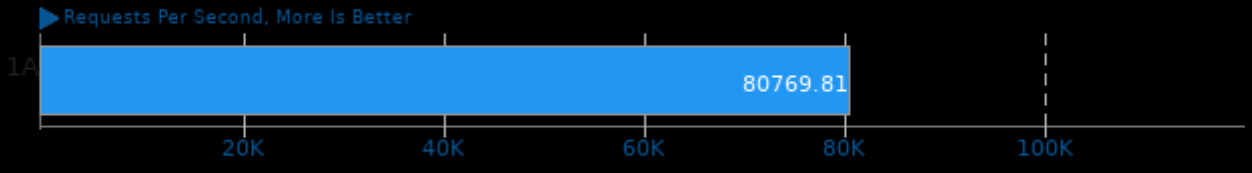
Concurrent Requests: 100



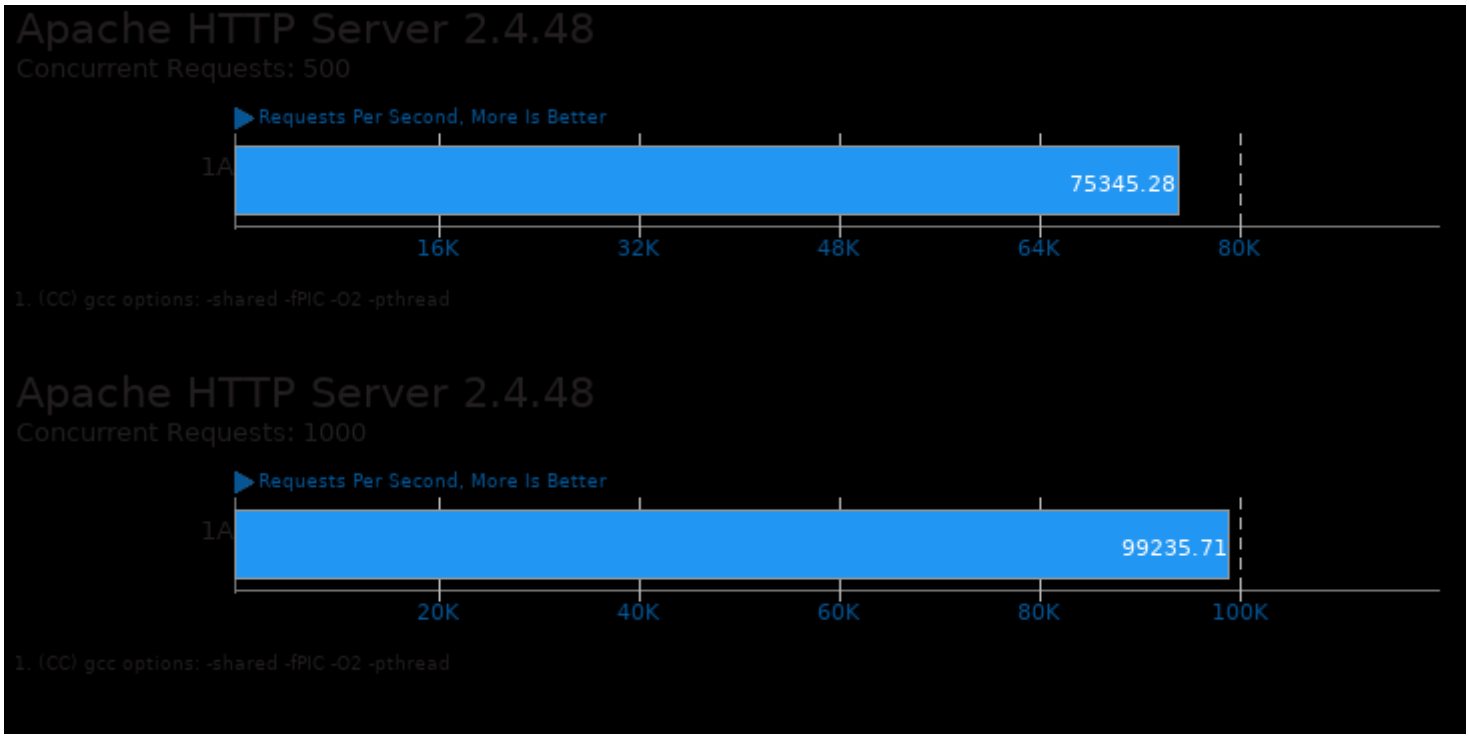
1. (CC) gcc options: -shared -fPIC -O2 -pthread

Apache HTTP Server 2.4.48

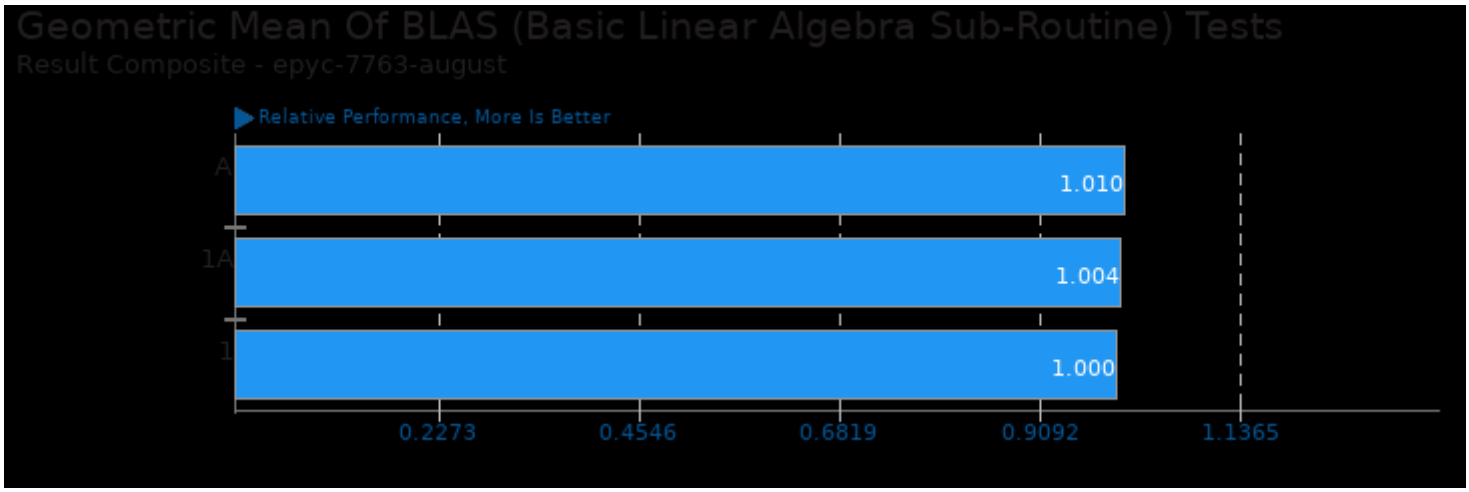
Concurrent Requests: 200



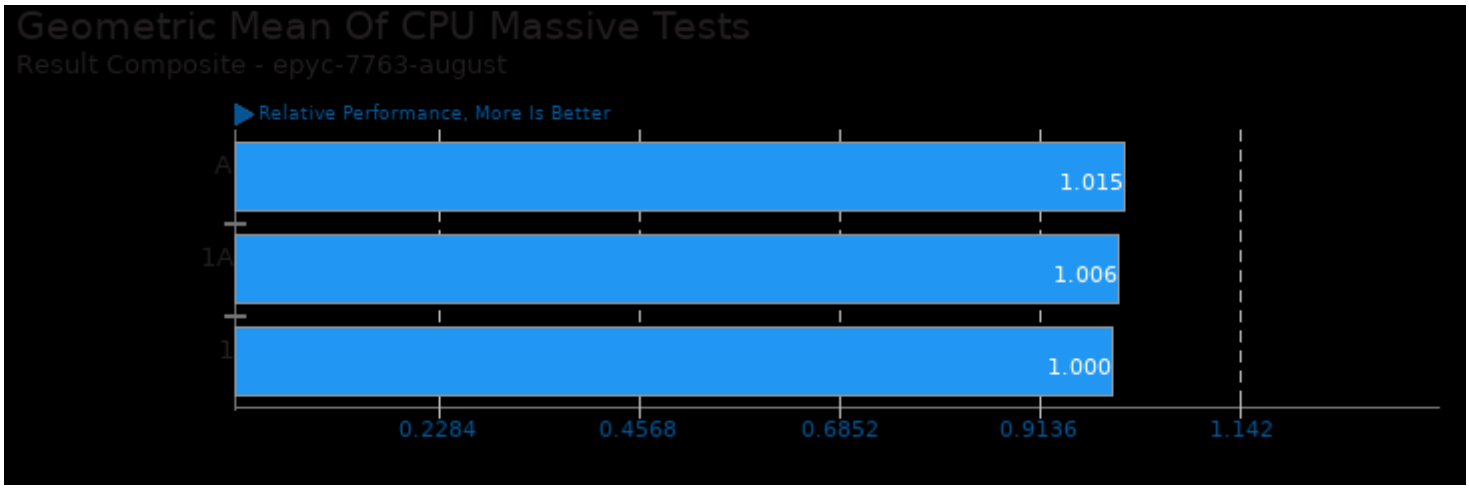
1. (CC) gcc options: -shared -fPIC -O2 -pthread


Apache HTTP Server 2.4.48
Concurrent Requests: 500
Requests Per Second, More Is Better
1A
75345.28
16K
32K
48K
64K
80K
1. (CC) gcc options: -shared -fPIC -O2 -pthread
Apache HTTP Server 2.4.48
Concurrent Requests: 1000
Requests Per Second, More Is Better
1A
99235.71
20K
40K
60K
80K
100K
1. (CC) gcc options: -shared -fPIC -O2 -pthread

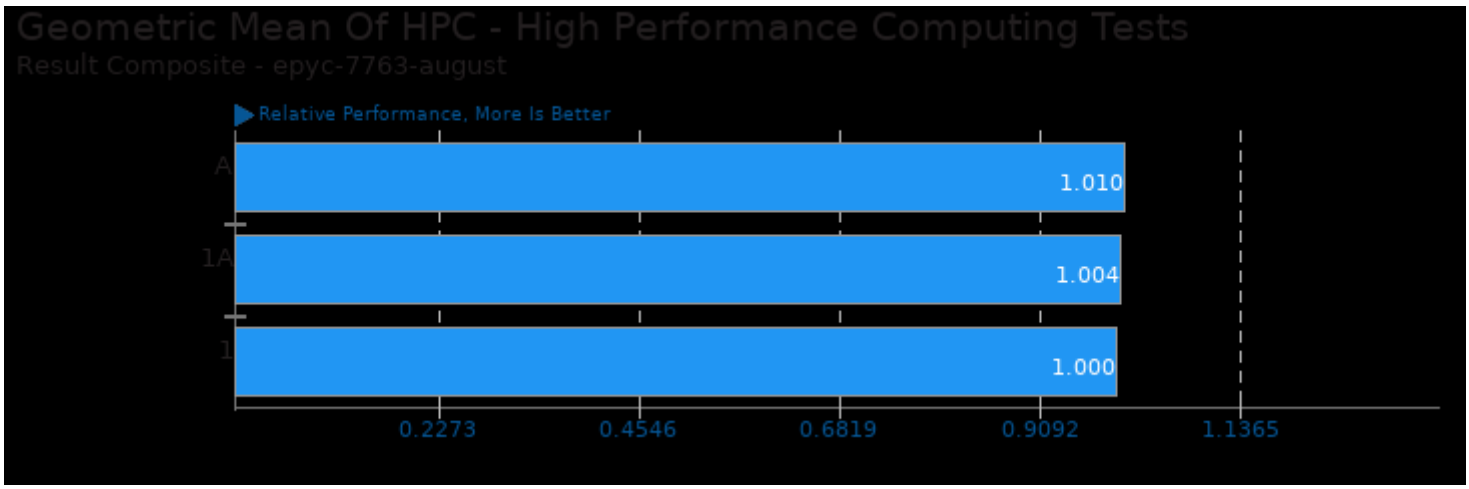
These geometric means are based upon test groupings / test suites for this result file.



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



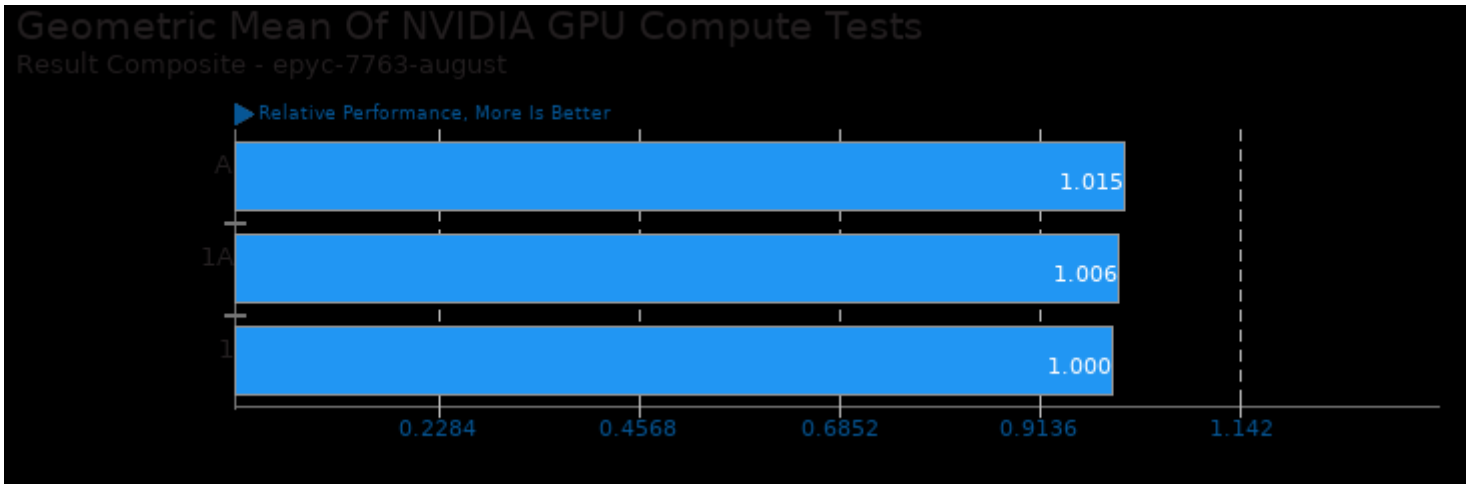
Geometric mean based upon tests: pts/apache, pts/mysqlslap, pts/build-gcc, pts/build-linux-kernel, pts/lczero, pts/nginx, pts/pgbench and pts/tachyon



Geometric mean based upon tests: pts/qe, pts/ncnn, pts/ecp-candle, pts/onnx and pts/lczero



Geometric mean based upon tests: pts/ncnn, pts/ecp-candle, pts/onnx and pts/lczero



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

This file was automatically generated via the Phoronix Test Suite benchmarking software on Thursday, 28 March 2024 14:15.