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Intel Core i7-8700K testing with a ASUS TUF Z370-PLUS GAMING (2001 BIOS) and ASUS Intel UHD 630 CFL GT2 3GB on Ubuntu 20.04 via the Phoronix Test Suite.

Automated Executive Summary

1 had the most wins, coming in first place for 38% of the tests.

Based on the geometric mean of all complete results, the fastest (4) was 1.709x the speed of the slowest (1). 2 was 0.589x the speed of 4, 3 was 1x the speed of 2, 1 was 0.993x the speed of 3.

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

Stress-NG (Test: Memory Copying) at 2.025x
Stress-NG (Test: MMAP) at 1.655x
NCNN (Target: Vulkan GPU-v2-v2 - Model: mobilenet-v2) at 1.327x
Renaissance (Test: Apache Spark Bayes) at 1.296x
NCNN (Target: Vulkan GPU - Model: blazeface) at 1.295x
Renaissance (Test: Apache Spark PageRank) at 1.194x
Renaissance (Test: Scala Dotty) at 1.15x
Apache Cassandra (Test: Reads) at 1.143x
Apache Cassandra (Test: Mixed 1:3) at 1.101x

Zstd Compression (Compression Level: 8, Long Mode - Compression Speed) at 1.087x.

Test Systems:

1

2

3

4

Processor: Intel Core i7-8700K @ 4.70GHz (6 Cores / 12 Threads), Motherboard: ASUS TUF Z370-PLUS GAMING (2001 BIOS), Chipset: Intel 8th Gen Core, Memory: 16GB, Disk: 128GB Toshiba THNSN5128GPU7, Graphics: ASUS Intel UHD 630 CFL GT2 3GB (1200MHz), Audio: Realtek ALC887-VD, Monitor: VA2431, Network: Intel I219-V

OS: Ubuntu 20.04, Kernel: 5.9.0-050900rc6daily20200923-generic (x86_64) 20200922, Desktop: GNOME Shell 3.36.4, Display Server: X Server 1.20.9, OpenGL: 4.6 Mesa 20.0.8, OpenCL: OpenCL 2.1, Compiler: GCC 9.3.0, 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-checking=release --enable-clocale=gnu --enable-default-pie --enable-gnu-unique-object --enable-languages=c,ada,c++,go,brig,d,fortran,objc,obj-c++,gm2 --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none=/build/gcc-9-HskZEa/gcc-9-9.3.0/debian/tmp-nvptx/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: 0xde - Thermald 1.9.1
Java Notes: OpenJDK Runtime Environment (build 11.0.11+9-Ubuntu-0ubuntu2.20.04)
Python Notes: Python 2.7.18 + Python 3.8.10
Security Notes: itlb_multihit: KVM: Mitigation of VMX disabled + l1tf: Mitigation of PTE Inversion; VMX: conditional cache flushes SMT vulnerable + mds: Mitigation of Clear buffers; SMT vulnerable + meltdown: Mitigation of PTI + 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 generic retpoline IBPB: conditional IBRS_FW STIBP: conditional RSB filling + srbds: Mitigation of Microcode + tsx_async_abort: Mitigation of Clear buffers; SMT vulnerable

	1	2	3	4
Stress-NG - Memory Copying (Bogo Ops/s)	**2861**	2804	**1413**	
Normalized	100%	97.98%	49.38%	
Stress-NG - MMAP (Bogo Ops/s)	**82.1**	64.28	**49.6**	
Normalized	100%	78.29%	60.41%	
NCNN - Vulkan GPU-v2-v2 - mobilenet-v2 (ms)	**16.35**	15.96	**15.81**	
Normalized	75.35%	77.19%	77.93%	
Renaissance - Apache Spark Bayes (ms)	1943	**1832**	1926	**2374**
Normalized	94.28%	100%	95.14%	77.18%

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NCNN - Vulkan GPU - blazeface (ms)	**3.34**	2.7	**2.58**	
Normalized	77.25%	95.56%	100%	
Renaissance - A.S.P (ms)	**3714**	3134	**3112**	3674
Normalized	83.78%	99.29%	100%	84.71%
Renaissance - Scala Dotty (ms)	**837.8**	**963.8**	954.3	849.1
Normalized	100%	86.93%	87.79%	98.67%
Apache Cassandra - Reads (Op/s)	**59507**	56706	**52074**	
Normalized	100%	95.29%	87.51%	
Apache Cassandra - Mixed 1:3 (Op/s)	**50971**	51719	**56102**	
Normalized	90.85%	92.19%	100%	
Zstd Compression - 8, Long Mode - Compression Speed (MB/s)	**267.6**	265.7	254.5	**246.2**
Normalized	100%	99.29%	95.1%	92%
nginx - 1 (Reqs/sec)	**25589**	**27640**	26183	
Normalized	92.58%	100%	94.73%	
Facebook RocksDB - Seq Fill (Op/s)	895892	**888058**	**958352**	
Normalized	93.48%	92.67%	100%	
Stress-NG - Atomic (Bogo Ops/s)	**198493**	211340	**211695**	
Normalized	93.76%	99.83%	100%	
Facebook RocksDB - Rand Fill (Op/s)	**588391**	**553494**	556988	
Normalized	100%	94.07%	94.66%	
Facebook RocksDB - Read While Writing (Op/s)	**1256835**	1278309	**1329713**	
Normalized	94.52%	96.13%	100%	
NAS Parallel Benchmarks - EP.D (Mop/s)	**947.62**	946.23	944.43	**897.17**
Normalized	100%	99.85%	99.66%	94.68%
Natron - Spaceship (FPS)	**1.8**	**1.9**	**1.8**	
Normalized	94.74%	100%	94.74%	
Apache Cassandra - Mixed 1:1 (Op/s)	**52402**	53528	**55154**	
Normalized	95.01%	97.05%	100%	
NCNN - Vulkan GPU - mnasnet (ms)	**16.68**	**15.85**	16.44	
Normalized	95.02%	100%	96.41%	
ECP-CANDLE - P1B2 (sec)	**39.137**	**37.199**	37.668	
Normalized	95.05%	100%	98.75%	
NCNN - Vulkan GPU - mobilenet (ms)	**34.63**	34.7	**36.36**	
Normalized	100%	99.8%	95.24%	
NAS Parallel Benchmarks - EP.C (Mop/s)	**900.51**	**945.49**	943.65	941.83
Normalized	95.24%	100%	99.81%	99.61%
VP9 libvpx Encoding - Speed 0 - Bosphorus 1080p (FPS)	**9.42**	9.61	**9.87**	
Normalized	95.44%	97.37%	100%	
Embree - Pathtracer - Crown (FPS)	**7.3522**	7.6673	**7.6921**	
Normalized	95.58%	99.68%	100%	
OpenVKL - v.S (Items / Sec)	**24**	**23**	**24**	
Normalized	100%	95.83%	100%	
Stress-NG - CPU Cache (Bogo Ops/s)	183.16	**183.06**	**190.9**	
Normalized	95.95%	95.89%	100%	
LeelaChessZero - BLAS (Nodes/s)	**1076**	1080	1084	**1120**
Normalized	96.07%	96.43%	96.79%	100%

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Facebook RocksDB - Rand Fill Sync (Op/s)	**1036**	1029	**997**	
Normalized	100%	99.32%	96.24%	
LeelaChessZero - Eigen (Nodes/s)	**1033**	**995**	1003	1016
Normalized	100%	96.32%	97.1%	98.35%
NCNN - Vulkan GPU - alexnet (ms)	**44.82**	46.01	**45.71**	
Normalized	100%	97.41%	98.05%	
Renaissance - Rand Forest (ms)	**681.9**	667.4	**659.3**	664.4
Normalized	96.69%	98.79%	100%	99.23%
NAS Parallel Benchmarks - FT.C (Mop/s)	**10034**	10318	10284	**10350**
Normalized	96.95%	99.69%	99.36%	100%
srsRAN - OFDM_Test (Samples / Second)	119200000	**120300000**	**116700000**	
Normalized	99.09%	100%	97.01%	
Stress-NG - Matrix Math (Bogo Ops/s)	**31888**	31065	**31000**	
Normalized	100%	97.42%	97.22%	
Renaissance - I.M.D.S (ms)	**3082**	3152	3143	**3170**
Normalized	100%	97.79%	98.06%	97.22%
Renaissance - Apache Spark ALS	**2394**	2352	**2328**	2359
Normalized	97.23%	98.98%	100%	98.65%
Stress-NG - Context Switching (Bogo Ops/s)	2404624	**2347276**	**2413519**	
Normalized	99.63%	97.26%	100%	
VP9 libvpx Encoding - Speed 5 - Bosphorus 4K (FPS)	10.57	**10.62**	**10.33**	
Normalized	99.53%	100%	97.27%	
NCNN - CPU - blazeface (ms)	1.52	**1.54**	**1.5**	
Normalized	98.68%	97.4%	100%	
Renaissance - G.A.U.J.F (ms)	**1379**	**1412**	1394	1403
Normalized	100%	97.64%	98.91%	98.3%
Facebook RocksDB - R.R.W.R (Op/s)	**1212611**	1220547	**1240848**	
Normalized	97.72%	98.36%	100%	
Zstd Compression - 3, Long Mode - Compression Speed (MB/s)	**1001**	1018	**1025**	1019
Normalized	97.73%	99.35%	100%	99.42%
Apache Cassandra - Writes (Op/s)	**67763**	**66242**	67639	
Normalized	100%	97.76%	99.82%	
NAS Parallel Benchmarks - CG.C (Mop/s)	4205	**4185**	**4280**	4203
Normalized	98.25%	97.79%	100%	98.21%
NCNN - CPU - shufflenet-v2 (ms)	**3.66**	**3.74**	3.71	
Normalized	100%	97.86%	98.65%	
NCNN - Vulkan GPU-v3-v3 - mobilenet-v3 (ms)	16.95	**16.79**	**17.15**	
Normalized	99.06%	100%	97.9%	
Facebook RocksDB - Rand Read	**34111986**	34523483	**34795505**	
Normalized	98.04%	99.22%	100%	
NCNN - CPU-v3-v3 - mobilenet-v3 (ms)	**4.05**	**4.13**	4.06	
Normalized	100%	98.06%	99.75%	
Renaissance - A.U.C.T (ms)	**11786**	11706	**11574**	11683
Normalized	98.2%	98.87%	100%	99.06%

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Renaissance - F.H.R (ms)	2263	**2293**	**2252**	2268
Normalized	99.5%	98.23%	100%	99.3%
Zstd Compression - 3 - Compression Speed (MB/s)	1957	**1980**	**1948**	1978
Normalized	98.8%	100%	98.36%	99.89%
Mobile Neural Network - squeezenetv1.1 (ms)	**3.664**	3.679	**3.725**	
Normalized	100%	99.59%	98.36%	
Zstd Compression - 8 - Compression Speed (MB/s)	**217**	219.3	**220.5**	218.6
Normalized	98.41%	99.46%	100%	99.14%
Renaissance - Savina Reactors.IO	10119	10112	**10002**	**10157**
Normalized	98.84%	98.91%	100%	98.47%
Renaissance - ALS Movie Lens (ms)	**6931**	6901	6891	**6826**
Normalized	98.49%	98.91%	99.06%	100%
NAS Parallel Benchmarks - LU.C (Mop/s)	**19134**	**19423**	19390	19394
Normalized	98.51%	100%	99.83%	99.85%
NCNN - Vulkan GPU - shufflenet-v2	**16.97**	**16.72**	**16.72**	
Normalized	98.53%	100%	100%	
Stress-NG - Forking (Bogo Ops/s)	**40882**	41030	**41476**	
Normalized	98.57%	98.92%	100%	
yquake2 - OpenGL 3.x - 1920 x 1080 (FPS)	**227.8**	230.2	230.6	**230.9**
Normalized	98.66%	99.7%	99.87%	100%
NCNN - Vulkan GPU - regnety_400m (ms)	17.24	**17.4**	**17.2**	
Normalized	99.59%	98.68%	99.83%	
Stress-NG - G.Q.D.S (Bogo Ops/s)	**106.6**	**105.23**	106.37	
Normalized	100%	98.71%	99.78%	
Facebook RocksDB - Update Rand (Op/s)	**356642**	355812	**352203**	
Normalized	100%	99.77%	98.76%	
Stress-NG - Socket Activity (Bogo	**6245**	**6168**	6191	
Normalized	100%	98.77%	99.14%	
srsRAN - 4.P.1.P.S.2.Q (UE Mb/s)	**266.3**	**269.6**	269.4	
Normalized	98.78%	100%	99.93%	
VP9 libvpx Encoding - Speed 5 - Bosphorus 1080p (FPS)	**27.06**	**26.73**	26.88	
Normalized	100%	98.78%	99.33%	
JPEG XL Decoding libjxl - 1 (MP/s)	**55.14**	**55.81**	55.57	
Normalized	98.8%	100%	99.57%	
Stress-NG - Semaphores (Bogo	**836842**	**846677**	836974	
Normalized	98.84%	100%	98.85%	
yquake2 - OpenGL 1.x - 1920 x 1080 (FPS)	**165.8**	166.4	166.3	**167.7**
Normalized	98.87%	99.22%	99.17%	100%
GLmark2 - 1920 x 1080 (Score)	713	**710**	**718**	715
Normalized	99.3%	98.89%	100%	99.58%
Zstd Compression - 19 - Compression Speed (MB/s)	**27.2**	27	27.1	**26.9**
Normalized	100%	99.26%	99.63%	98.9%

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NCNN - Vulkan GPU - vgg16 (ms)	187.81	187.06	189.1	
Normalized	99.6%	100%	98.92%	
JPEG XL libjxl - JPEG - 8 (MP/s)	28.17	28.36	28.46	
Normalized	98.98%	99.65%	100%	
SVT-AV1 - Preset 4 - Bosphorus 1080p (FPS)	3.119	3.151	3.141	
Normalized	98.98%	100%	99.68%	
NCNN - Vulkan GPU - yolov4-tiny (ms)	74.98	75.37	74.84	
Normalized	99.51%	98.99%	99.69%	
simdjson - Kostya (GB/s)	2.97	2.96	2.99	2.98
Normalized	99.33%	99%	100%	99.67%
srsRAN - 4.P.1.P.M.2.Q (UE Mb/s)	140.4	140.5	139.1	
Normalized	99.93%	100%	99%	
Mobile Neural Network - inception-v3 (ms)	37.154	37.267	37.526	
Normalized	100%	99.7%	99.01%	
simdjson - LargeRand (GB/s)	1	1	1.01	1
Normalized	99.01%	99.01%	100%	99.01%
srsRAN - 4.P.1.P.S.2.Q (eNb Mb/s)	426.5	426.1	422.4	
Normalized	100%	99.91%	99.04%	
GLmark2 - 1024 x 768 (Score)	2095	2114	2094	2102
Normalized	99.1%	100%	99.05%	99.43%
dav1d - S.N.1 (FPS)	500.2	502.74	504.84	
Normalized	99.08%	99.58%	100%	
Mobile Neural Network - MobileNetV2_224 (ms)	3.164	3.142	3.135	
Normalized	99.08%	99.78%	100%	
yquake2 - Software CPU - 1920 x 1080 (FPS)	121.5	120.4	121.3	120.8
Normalized	100%	99.09%	99.84%	99.42%
ASTC Encoder - Medium (sec)	5.2883	5.3328	5.3364	
Normalized	100%	99.17%	99.1%	
Zstd Compression - 19, Long Mode - Compression Speed (MB/s)	22.2	22.2	22.2	22
Normalized	100%	100%	100%	99.1%
Embree - Pathtracer ISPC - Crown (FPS)	8.6217	8.5676	8.6429	
Normalized	99.75%	99.13%	100%	
Embree - Pathtracer ISPC - Asian Dragon Obj (FPS)	9.3601	9.2938	9.2822	
Normalized	100%	99.29%	99.17%	
Timed GCC Compilation - Time To Compile (sec)	1246	1255	1257	
Normalized	100%	99.31%	99.18%	
simdjson - DistinctUserID (GB/s)	4.94	4.95	4.91	4.94
Normalized	99.8%	100%	99.19%	99.8%
Stress-NG - S.V.M.P (Bogo Ops/s)	5045344	5031153	5072092	
Normalized	99.47%	99.19%	100%	
NAS Parallel Benchmarks - BT.C (Mop/s)	18433	18533	18385	18486
Normalized	99.46%	100%	99.2%	99.74%
dav1d - Chimera 1080p (FPS)	547.92	546.2	543.56	

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Normalized	100%	99.69%	99.2%	
Stress-NG - G.C.S.F (Bogo Ops/s)	854400	854447	847660	
Normalized	99.99%	100%	99.21%	
Zstd Compression - 19, Long Mode - D.S (MB/s)	3467	3486	3461	3459
Normalized	99.45%	100%	99.29%	99.22%
Mobile Neural Network - mobilenetV3 (ms)	1.923	1.938	1.93	
Normalized	100%	99.23%	99.64%	
GROMACS - MPI CPU - water_GMX50_bare (Ns/Day)	0.778	0.778	0.772	
Normalized	100%	100%	99.23%	
GLmark2 - 1280 x 1024 (Score)	1170	1179	1173	1179
Normalized	99.24%	100%	99.49%	100%
NCNN - CPU - mnasnet (ms)	3.91	3.94	3.91	
Normalized	100%	99.24%	100%	
NCNN - CPU - regnety_400m (ms)	9.62	9.69	9.64	
Normalized	100%	99.28%	99.79%	
srsRAN - 4.P.1.P.M.6.Q (UE Mb/s)	128.4	128.5	127.6	
Normalized	99.92%	100%	99.3%	
BRL-CAD - V.P.M (VGR Performance Metric)	85965	86546		
Normalized	99.33%	100%		
TNN - CPU - DenseNet (ms)	3470	3489	3467	
Normalized	99.91%	99.38%	100%	
srsRAN - 5.P.T.2.P.S.2.Q (eNb Mb/s)	148.6	147.7	148.4	
Normalized	100%	99.39%	99.87%	
Timed FFmpeg Compilation - Time To Compile (sec)	80.916	81.388	81.217	
Normalized	100%	99.42%	99.63%	
Stress-NG - RdRand (Bogo Ops/s)	5757	5724	5746	
Normalized	100%	99.42%	99.81%	
NCNN - Vulkan GPU - efficientnet-b0 (ms)	24.63	24.6	24.58	
Normalized	99.8%	99.92%	100%	
Stress-NG - NUMA (Bogo Ops/s)	137.69	138.46	138.4	
Normalized	99.44%	100%	99.96%	
srsRAN - 4.P.1.P.M.6.Q (eNb Mb/s)	385.1	387.2	386.6	
Normalized	99.46%	100%	99.85%	
Zstd Compression - 8 - D.S (MB/s)	3941	3961	3946	3948
Normalized	99.5%	100%	99.62%	99.68%
JPEG XL Decoding libjxl - All (MP/s)	241.96	243.18	242.65	
Normalized	99.5%	100%	99.78%	
srsRAN - 5.P.T.5.P.S.6.Q (UE Mb/s)	60.4	60.1	60.1	
Normalized	100%	99.5%	99.5%	
JPEG XL libjxl - PNG - 7 (MP/s)	8.2	8.17	8.17	8.21
Normalized	99.88%	99.51%	99.51%	100%
TNN - CPU - MobileNet v2 (ms)	330.699	329.114	330.725	
Normalized	99.52%	100%	99.51%	
YafaRay - T.T.F.S.S (sec)	208.641	208.008	207.628	
Normalized	99.51%	99.82%	100%	
nginx - 500 (Reqs/sec)	338834	339410	337780	
Normalized	99.83%	100%	99.52%	

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Timed GDB GNU Debugger Compilation - Time To Compile (sec)	89.744	**89.928**	**89.51**	
Normalized	99.74%	99.54%	100%	
yquake2 - Vulkan - 1920 x 1080 (FPS)	**65.1**	**65.4**	**65.4**	65.3
Normalized	99.54%	100%	100%	99.85%
Zstd Compression - 8, Long Mode - D.S (MB/s)	4225	**4206**	**4225**	4211
Normalized	99.99%	99.54%	100%	99.65%
SVT-AV1 - Preset 8 - Bosphorus 4K (FPS)	**11.882**	**11.829**	11.862	
Normalized	100%	99.55%	99.83%	
Embree - Pathtracer - Asian Dragon (FPS)	8.8994	**8.8749**	**8.914**	
Normalized	99.84%	99.56%	100%	
JPEG XL libjxl - PNG - 5 (MP/s)	**31.96**	31.87	**31.96**	**31.82**
Normalized	100%	99.72%	100%	99.56%
Stress-NG - MEMFD (Bogo Ops/s)	**587.49**	584.95	**584.92**	
Normalized	100%	99.57%	99.56%	
NCNN - CPU - resnet50 (ms)	**28.16**	**28.16**	**28.28**	
Normalized	100%	100%	99.58%	
Mobile Neural Network - SqueezeNetV1.0 (ms)	5.11	**5.114**	**5.093**	
Normalized	99.67%	99.59%	100%	
C-Blosc - blosclz (MB/s)	**13281**	13324	13292	**13335**
Normalized	99.6%	99.92%	99.68%	100%
SVT-AV1 - Preset 8 - Bosphorus 1080p (FPS)	38.149	**38.005**	**38.157**	
Normalized	99.98%	99.6%	100%	
Mobile Neural Network - resnet-v2-50 (ms)	36.473	**36.383**	**36.528**	
Normalized	99.75%	100%	99.6%	
Zstd Compression - 19 - D.S (MB/s)	3432	**3441**	**3428**	3435
Normalized	99.74%	100%	99.62%	99.82%
GLmark2 - 800 x 600 (Score)	3204	3206	**3198**	**3210**
Normalized	99.81%	99.88%	99.63%	100%
KeyDB (Ops/sec)	**604573**	**602322**	603561	
Normalized	100%	99.63%	99.83%	
NCNN - CPU - alexnet (ms)	**13.82**	**13.77**	13.78	
Normalized	99.64%	100%	99.93%	
Embree - Pathtracer ISPC - Asian Dragon (FPS)	**10.3291**	**10.3665**	10.3568	
Normalized	99.64%	100%	99.91%	
nginx - 1000 (Reqs/sec)	**324545**	**323378**	323870	
Normalized	100%	99.64%	99.79%	
srsRAN - 4.P.1.P.S.6.Q (UE Mb/s)	**223.8**	224.4	**224.6**	
Normalized	99.64%	99.91%	100%	
Stress-NG - CPU Stress (Bogo Ops/s)	**12710**	12739	**12754**	
Normalized	99.66%	99.89%	100%	
JPEG XL libjxl - JPEG - 7 (MP/s)	**72.4**	72.59	**72.65**	
Normalized	99.66%	99.92%	100%	

8700k september

Google SynthMark - VoiceMark_100 (Voices)	**737.084**	**734.609**	735.625	
Normalized	100%	99.66%	99.8%	
NCNN - CPU - googlenet (ms)	**15**	**15.05**	15.04	
Normalized	100%	99.67%	99.73%	
Mobile Neural Network - mobilenet-v1-1.0 (ms)	**4.223**	**4.237**	4.236	
Normalized	100%	99.67%	99.69%	
JPEG XL libjxl - JPEG - 5 (MP/s)	**72.35**	72.56	**72.58**	
Normalized	99.68%	99.97%	100%	
ECP-CANDLE - P3B2 (sec)	**482.081**	482.333	**483.596**	
Normalized	100%	99.95%	99.69%	
srsRAN - 5.P.T.5.P.S.6.Q (eNb Mb/s)	**132**	**131.6**	**131.6**	
Normalized	100%	99.7%	99.7%	
Zstd Compression - 3, Long Mode - D.S (MB/s)	4098	**4102**	4099	**4091**
Normalized	99.89%	100%	99.92%	99.72%
SVT-AV1 - Preset 4 - Bosphorus 4K (FPS)	**1.121**	1.122	**1.124**	
Normalized	99.73%	99.82%	100%	
srsRAN - 4.P.1.P.M.2.Q (eNb Mb/s)	423.9	**422.9**	**424**	
Normalized	99.98%	99.74%	100%	
srsRAN - 4.P.1.P.S.6.Q (eNb Mb/s)	**390.4**	389.7	**389.4**	
Normalized	100%	99.82%	99.74%	
NCNN - CPU - resnet18 (ms)	**16.08**	16.11	**16.12**	
Normalized	100%	99.81%	99.75%	
NCNN - Vulkan GPU - googlenet (ms)	**33.24**	33.17	**33.16**	
Normalized	99.76%	99.97%	100%	
Embree - Pathtracer - Asian Dragon Obj (FPS)	**8.3126**	**8.3322**	8.332	
Normalized	99.76%	100%	100%	
simdjson - PartialTweets (GB/s)	**4.25**	**4.25**	**4.26**	**4.26**
Normalized	99.77%	99.77%	100%	100%
NCNN - CPU - mobilenet (ms)	17.58	**17.55**	**17.59**	
Normalized	99.83%	100%	99.77%	
Stress-NG - Vector Math (Bogo Ops/s)	22944	**22983**	**22933**	
Normalized	99.83%	100%	99.78%	
NAS Parallel Benchmarks - MG.C (Mop/s)	**9825**	9832	9844	**9846**
Normalized	99.78%	99.85%	99.98%	100%
Tachyon - Total Time (sec)	**125.2927**	125.5128	**125.5626**	
Normalized	100%	99.82%	99.79%	
ASTC Encoder - Thorough (sec)	**10.0999**	**10.1208**	10.1154	
Normalized	100%	99.79%	99.85%	
NCNN - CPU-v2-v2 - mobilenet-v2 (ms)	**5**	**4.99**	**5**	
Normalized	99.8%	100%	99.8%	
NCNN - Vulkan GPU - squeezenet_ssd (ms)	**40.34**	40.35	**40.42**	
Normalized	100%	99.98%	99.8%	
NCNN - CPU - yolov4-tiny (ms)	26.87	**26.84**	**26.89**	
Normalized	99.89%	100%	99.81%	
Stress-NG - Malloc (Bogo Ops/s)	**44237989**	**44158669**	44174106	

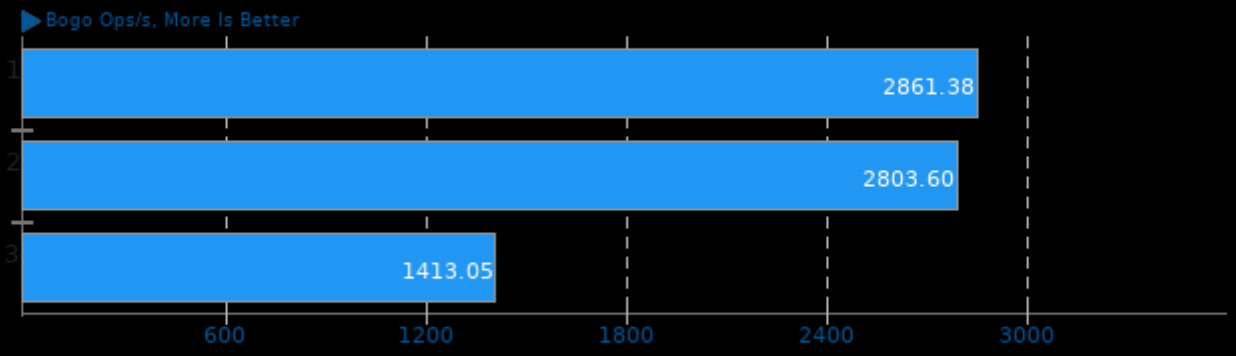
8700k september

Normalized	100%	99.82%	99.86%	
dav1d - Summer Nature 4K (FPS)	142.64	142.89	142.72	
Normalized	99.83%	100%	99.88%	
Stress-NG - SENDFILE (Bogo Ops/s)	89586	89742	89690	
Normalized	99.83%	100%	99.94%	
NCNN - Vulkan GPU - resnet18 (ms)	29.33	29.31	29.28	
Normalized	99.83%	99.9%	100%	
NCNN - CPU - vgg16 (ms)	64.69	64.71	64.8	
Normalized	100%	99.97%	99.83%	
TNN - CPU - SqueezeNet v2 (ms)	68.236	68.193	68.134	
Normalized	99.85%	99.91%	100%	
TNN - CPU - SqueezeNet v1.1 (ms)	288.053	287.92	288.326	
Normalized	99.95%	100%	99.86%	
OpenSSL - RSA4096 (verify/s)	130208	130221	130380	
Normalized	99.87%	99.88%	100%	
nginx - 20 (Reqs/sec)	351418	351021	350960	
Normalized	100%	99.89%	99.87%	
NAS Parallel Benchmarks - SP.B (Mop/s)	5904	5912	5908	5905
Normalized	99.87%	100%	99.94%	99.88%
Timed Linux Kernel Compilation - Time To Compile (sec)	131.962	131.799	131.896	
Normalized	99.88%	100%	99.93%	
srsRAN - 5.P.T.2.P.S.2.Q (UE Mb/s)	82	81.9	81.9	
Normalized	100%	99.88%	99.88%	
nginx - 200 (Reqs/sec)	344511	344930	344691	
Normalized	99.88%	100%	99.93%	
nginx - 100 (Reqs/sec)	343249	342834	343172	
Normalized	100%	99.88%	99.98%	
NCNN - Vulkan GPU - resnet50 (ms)	69.61	69.67	69.62	
Normalized	99.99%	99.9%	99.97%	
dav1d - C.1.1.b (FPS)	408.18	407.88	407.79	
Normalized	100%	99.93%	99.9%	
OpenSSL - RSA4096 (sign/s)	1982	1982	1981	
Normalized	100%	99.96%	99.91%	
ASTC Encoder - Exhaustive (sec)	93.7305	93.7767	93.6921	
Normalized	99.96%	99.91%	100%	
Stress-NG - Crypto (Bogo Ops/s)	1405	1404	1404	
Normalized	100%	99.92%	99.91%	
ECP-CANDLE - P3B1 (sec)	886.95	887.696	887.231	
Normalized	100%	99.92%	99.97%	
NAS Parallel Benchmarks - SP.C (Mop/s)	5976	5980	5981	5978
Normalized	99.92%	99.99%	100%	99.95%
NCNN - CPU - squeezenet_ssd (ms)	20.36	20.37	20.36	
Normalized	100%	99.95%	100%	
OpenSSL - SHA256 (byte/s)	2253793670	2253807270	2253767030	
Normalized	100%	100%	100%	
NCNN - CPU - efficientnet-b0 (ms)	6.64	6.64	6.64	
OpenVKL - vklBenchmark ISPC (Items / Sec)	54	54	54	

Intel Open Image Denoise - RTLightmap.hdr.4096x4096 (Images / Sec)	0.14	0.14	0.14	
Intel Open Image Denoise - RT.ldr_alb_nrm.3840x2160 (Images / Sec)	0.29	0.29	0.29	
Intel Open Image Denoise - RT.hdr_alb_nrm.3840x2160 (Images / Sec)	0.29	0.29	0.29	
VP9 libvpx Encoding - Speed 0 - Bosphorus 4K (FPS)	4.42	4.42	4.42	
JPEG XL libjxl - PNG - 8 (MP/s)	0.8	0.8	0.8	0.8

Stress-NG 0.13.02

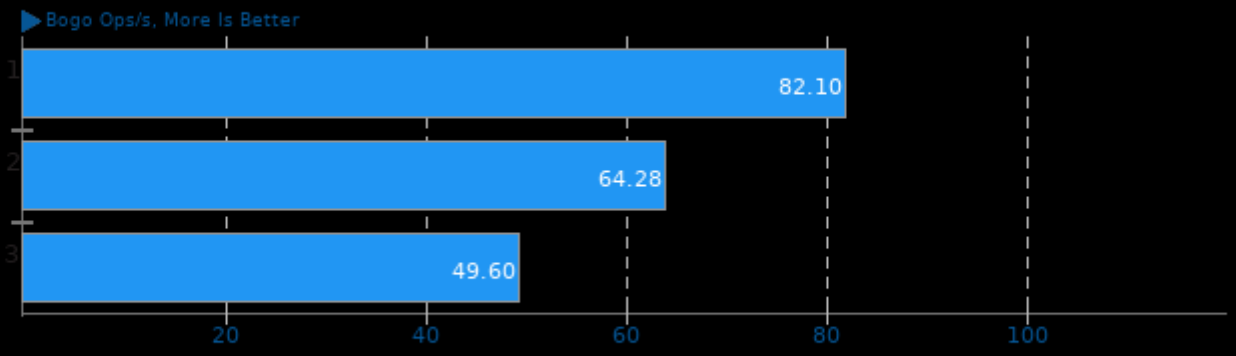
Test: Memory Copying



1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lcrypt -lrt -lsctp -lz -ldl -pthread -lc -latomic

Stress-NG 0.13.02

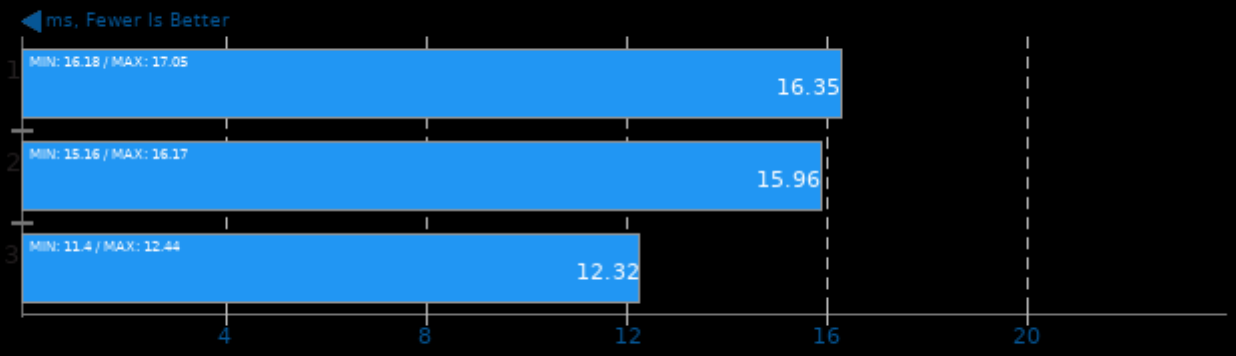
Test: MMAP



1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lcrypt -lrt -lsctp -lz -ldl -pthread -lc -latomic

NCNN 20210720

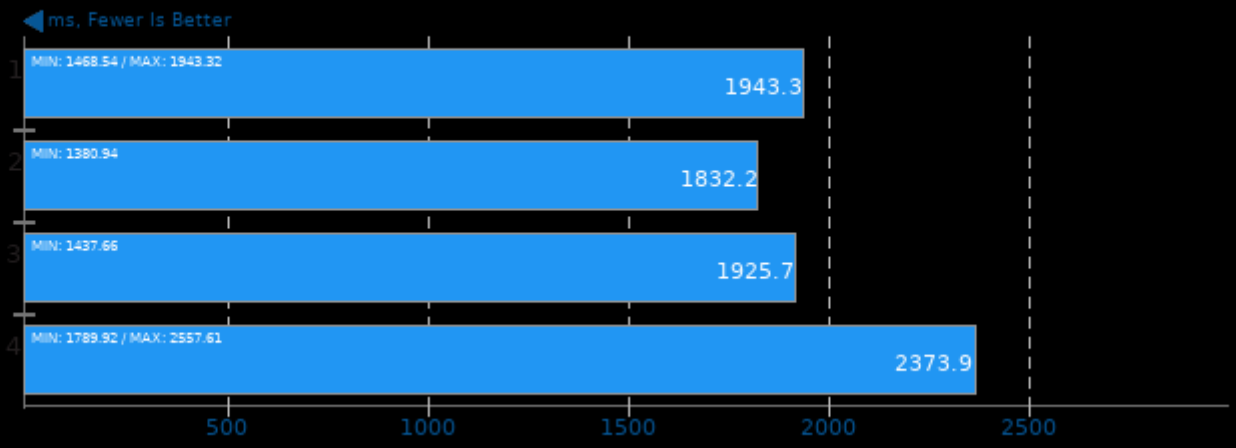
Target: Vulkan GPU-v2-v2 - Model: mobilenet-v2



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

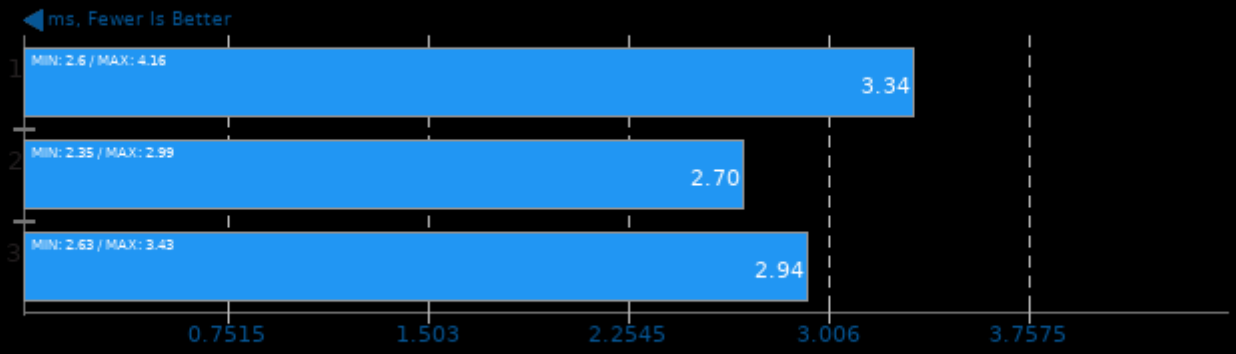
Renaissance 0.12

Test: Apache Spark Bayes



NCNN 20210720

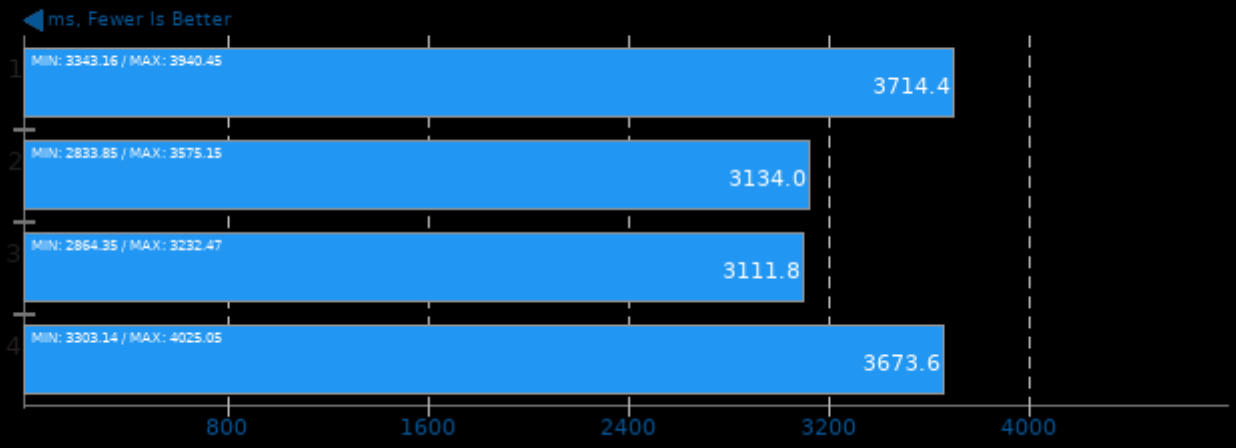
Target: Vulkan GPU - Model: blazeface

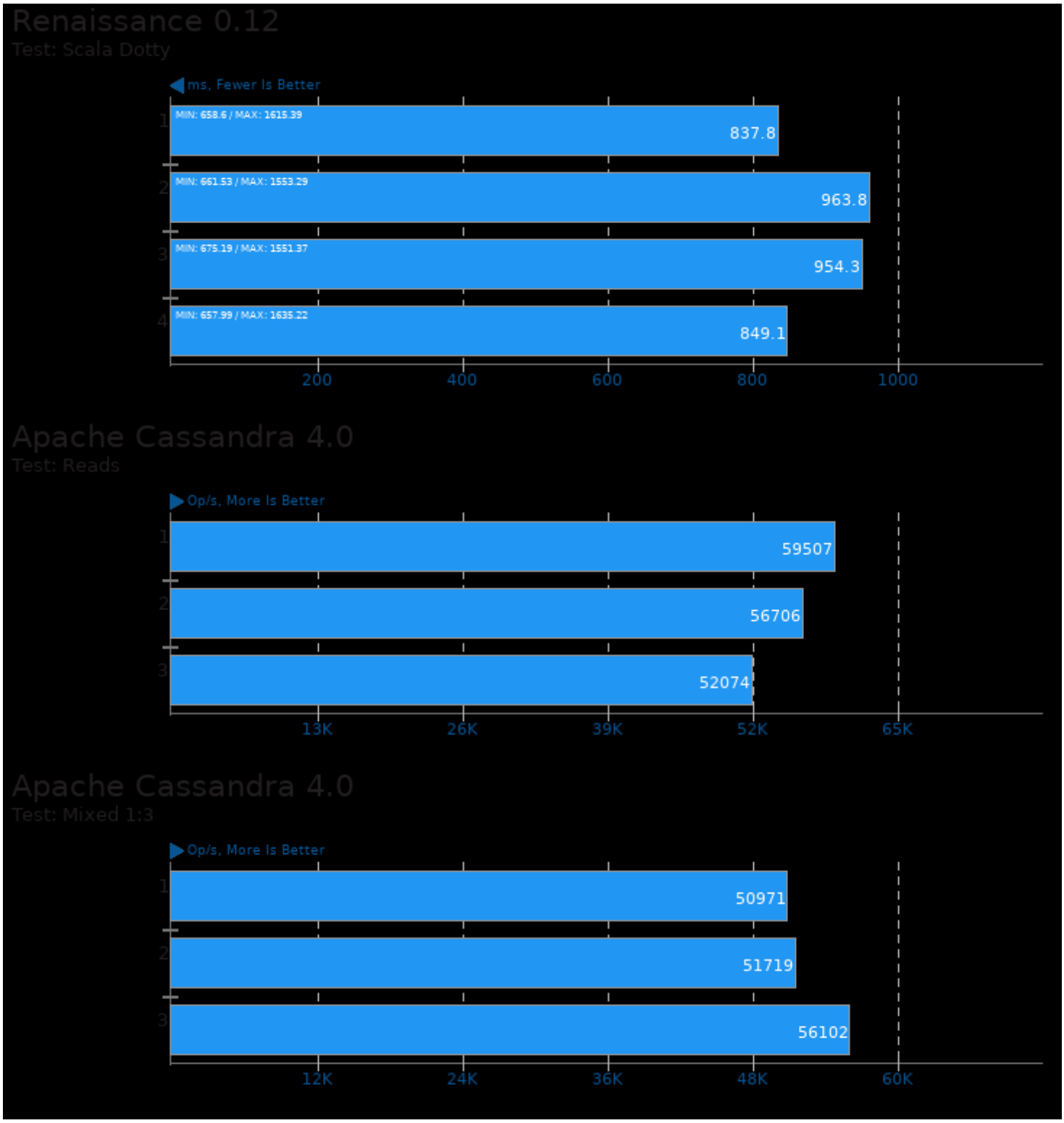


1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread -pthread

Renaissance 0.12

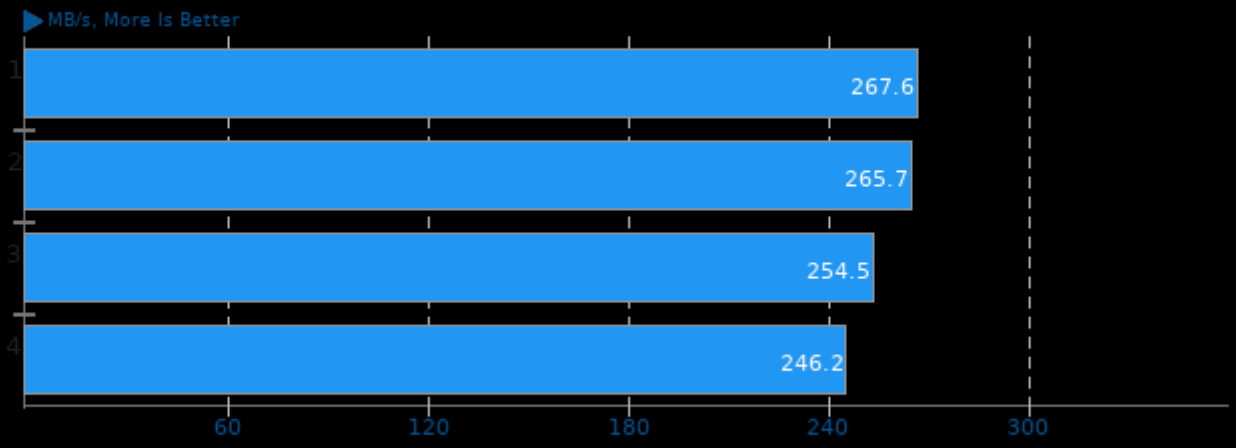
Test: Apache Spark PageRank




Renaissance 0.12
Test: Scala Dotty
ms, Fewer Is Better
1
MIN: 658.6 / MAX: 1615.39
837.8
2
MIN: 661.53 / MAX: 1553.29
963.8
3
MIN: 675.19 / MAX: 1551.37
954.3
4
MIN: 657.99 / MAX: 1635.22
849.1
200
400
600
800
1000
Apache Cassandra 4.0
Test: Reads
Op/s, More Is Better
1
59507
2
56706
3
52074
13K
26K
39K
52K
65K
Apache Cassandra 4.0
Test: Mixed 1:3
Op/s, More Is Better
1
50971
2
51719
3
56102
12K
24K
36K
48K
60K

Zstd Compression 1.5.0

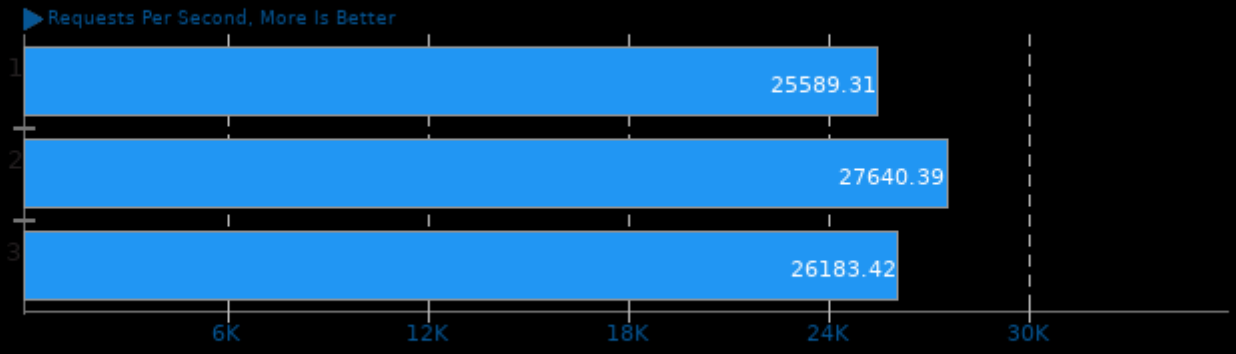
Compression Level: 8, Long Mode - Compression Speed



1. (CC) gcc options: -O3 -pthread -lz -llzma

nginx 1.21.1

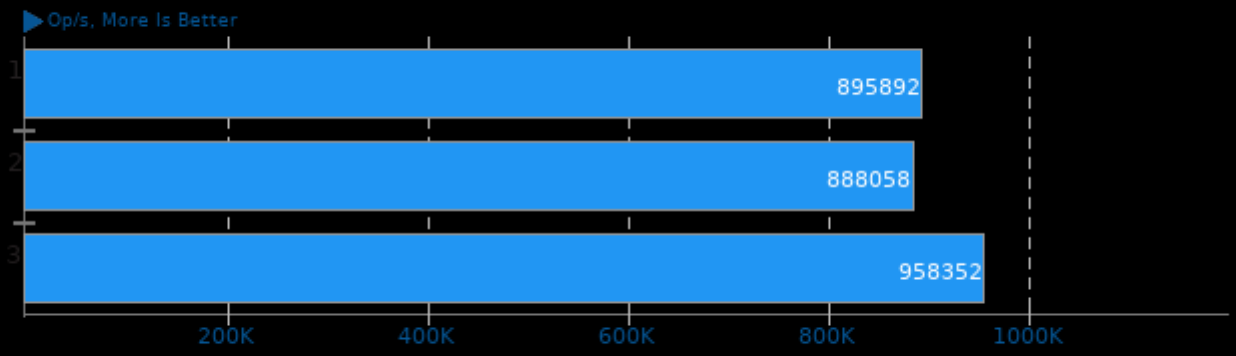
Concurrent Requests: 1



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

Facebook RocksDB 6.22.1

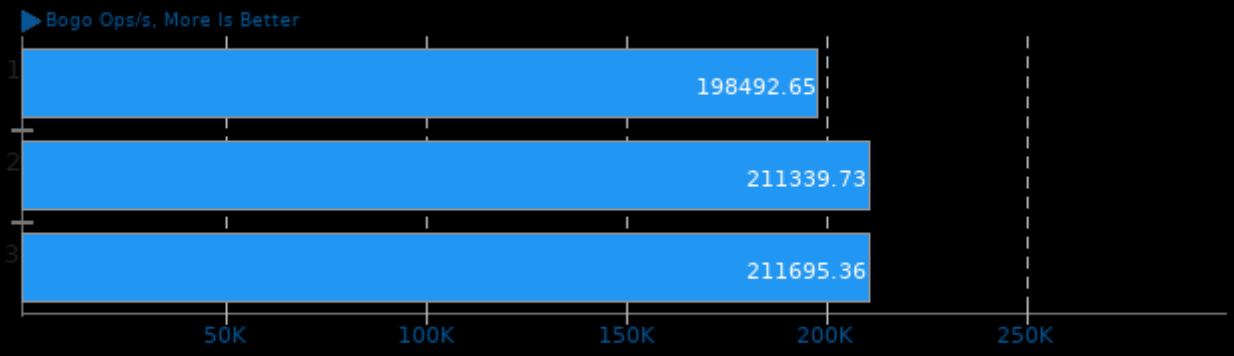
Test: Sequential Fill



1. (CXX) g++ options: -O3 -march=native -pthread -fno-builtin-memcmp -fno-rtti -lpthread

Stress-NG 0.13.02

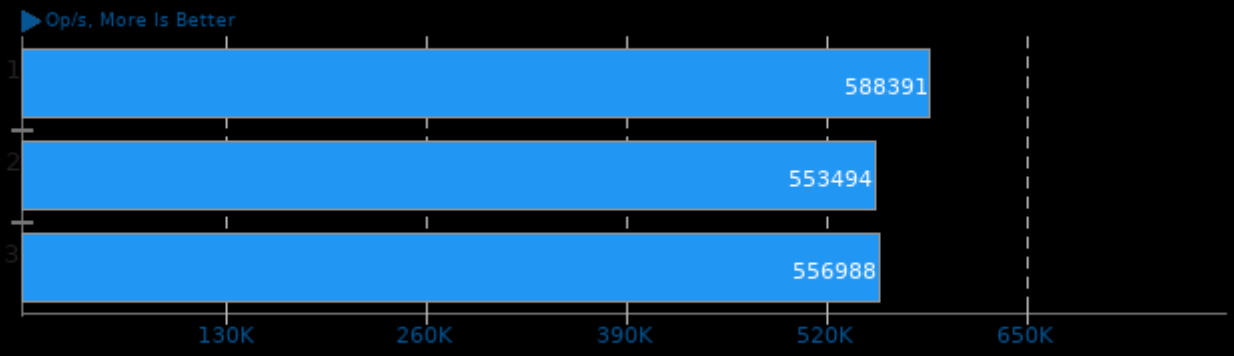
Test: Atomic



1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lcrypt -lrt -lsctp -lz -ldl -pthread -lc -latomic

Facebook RocksDB 6.22.1

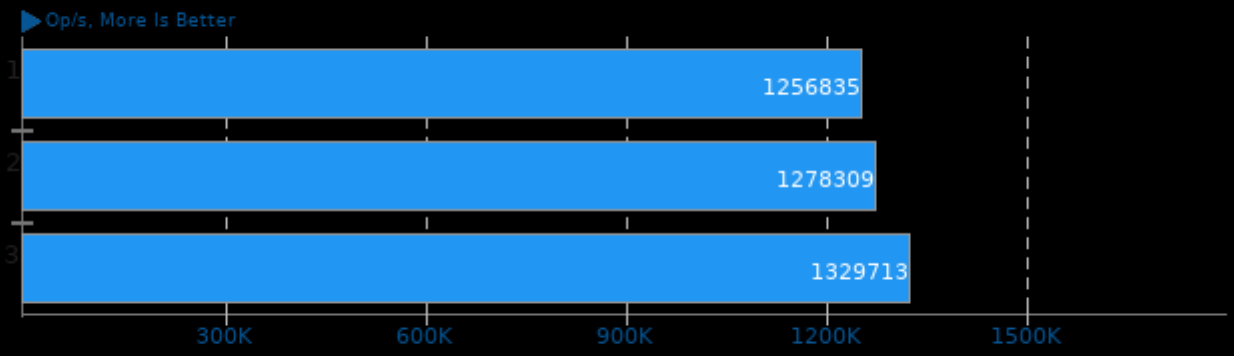
Test: Random Fill



1. (CXX) g++ options: -O3 -march=native -pthread -fno-builtin-memcmp -fno-rtti -lpthread

Facebook RocksDB 6.22.1

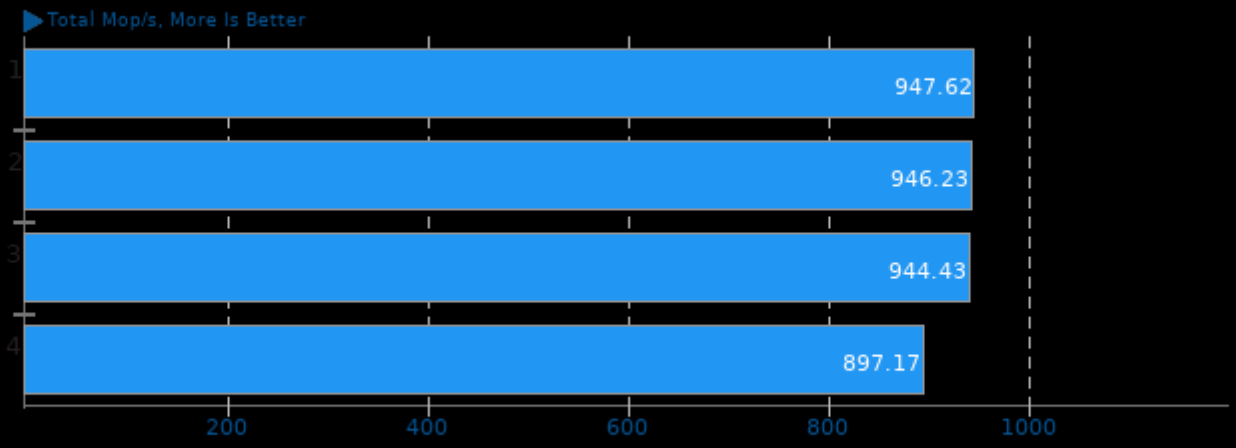
Test: Read While Writing



1. (CXX) g++ options: -O3 -march=native -pthread -fno-builtin-memcmp -fno-rtti -lpthread

NAS Parallel Benchmarks 3.4

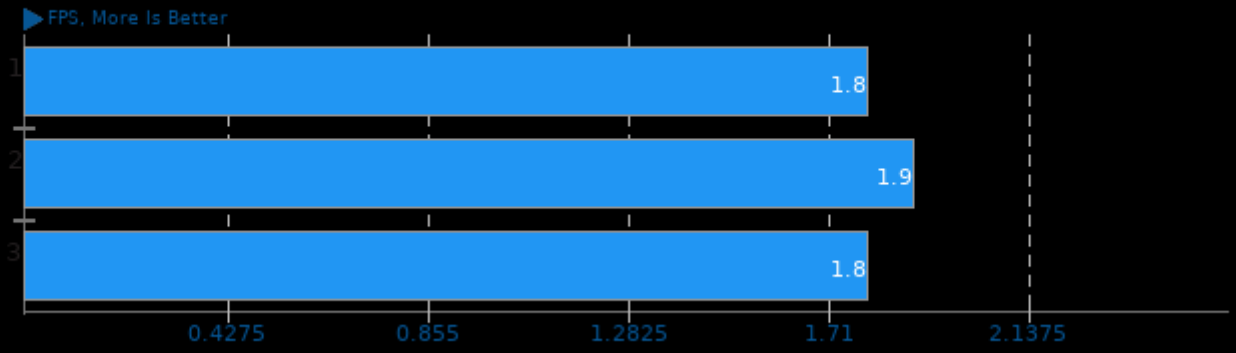
Test / Class: EP.D



1. (F9X) gfortran options: -O3 -march=native -pthread -lmpi_usempif08 -lmpi_mpifh -lmpi
2. Open MPI 4.0.3

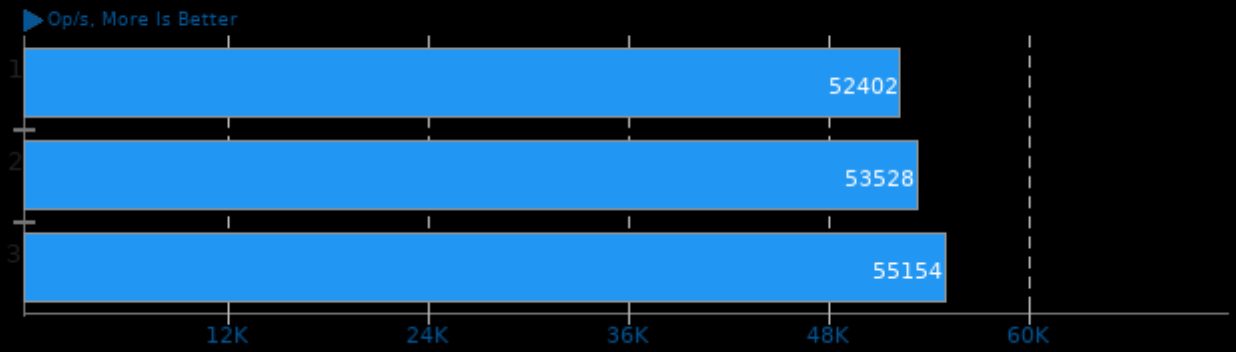
Natron 2.4

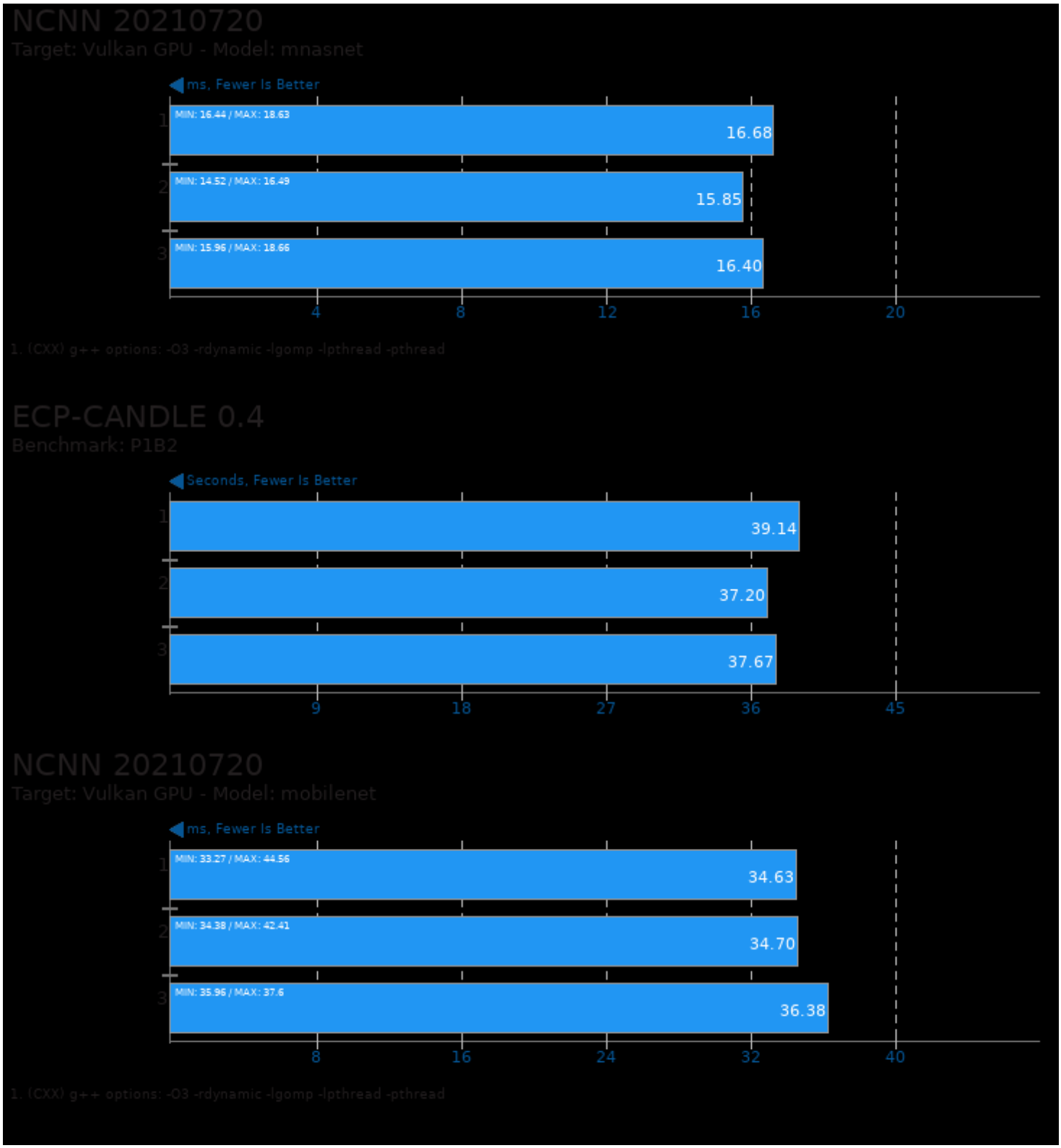
Input: Spaceship



Apache Cassandra 4.0

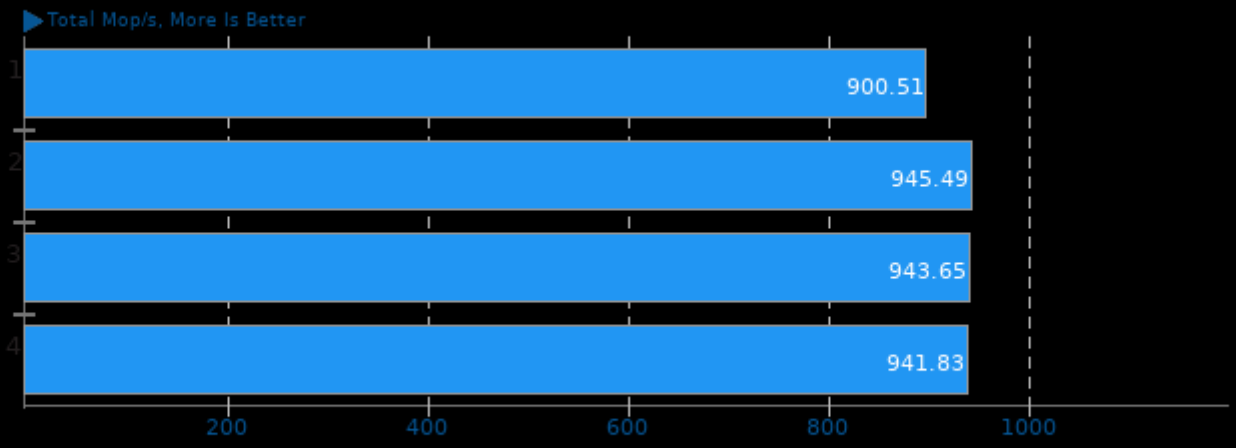
Test: Mixed 1:1




NCNN 20210720
Target: Vulkan GPU - Model: mnasnet
ms, Fewer Is Better
1
MIN: 16.44 / MAX: 18.63
16.68
2
MIN: 14.52 / MAX: 16.49
15.85
3
MIN: 15.96 / MAX: 18.66
16.40
4
8
12
16
20
1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread -pthread
ECP-CANDLE 0.4
Benchmark: P1B2
Seconds, Fewer Is Better
1
39.14
2
37.20
3
37.67
9
18
27
36
45
NCNN 20210720
Target: Vulkan GPU - Model: mobilenet
ms, Fewer Is Better
1
MIN: 33.27 / MAX: 44.56
34.63
2
MIN: 34.38 / MAX: 42.41
34.70
3
MIN: 35.96 / MAX: 37.6
36.38
8
16
24
32
40
1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread -pthread

NAS Parallel Benchmarks 3.4

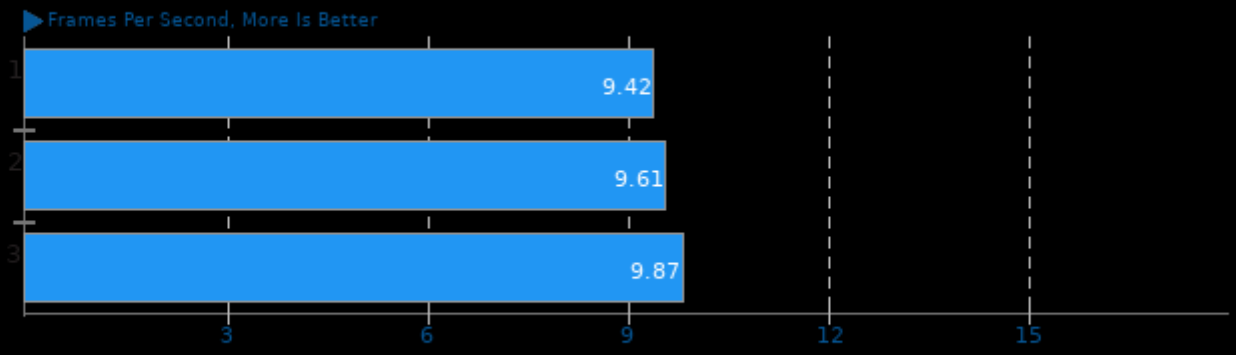
Test / Class: EP.C



1. (F9X) gfortran options: -O3 -march=native -pthread -lmpi_usempif08 -lmpi_mpifh -lmpi
2. Open MPI 4.0.3

VP9 libvpx Encoding 1.10.0

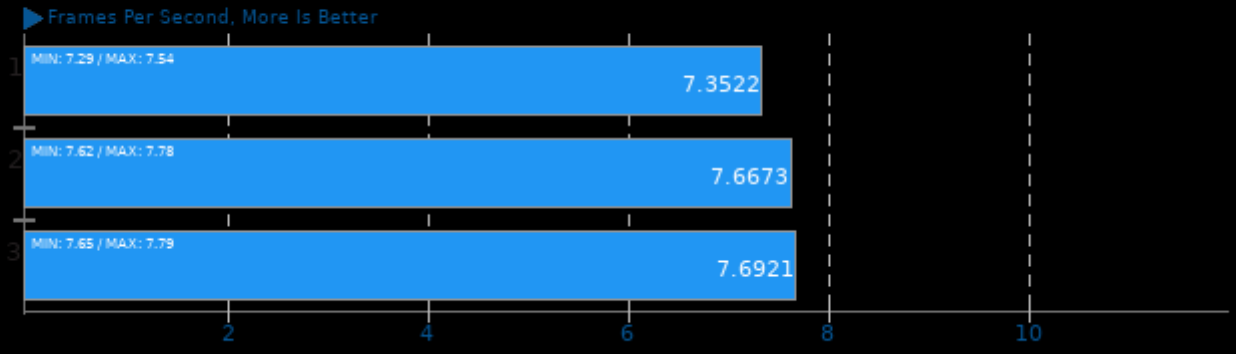
Speed: Speed 0 - Input: Bosphorus 1080p



1. (CXX) g++ options: -m64 -lm -lpthread -O3 -fPIC -U_FORTIFY_SOURCE -std=gnu++11

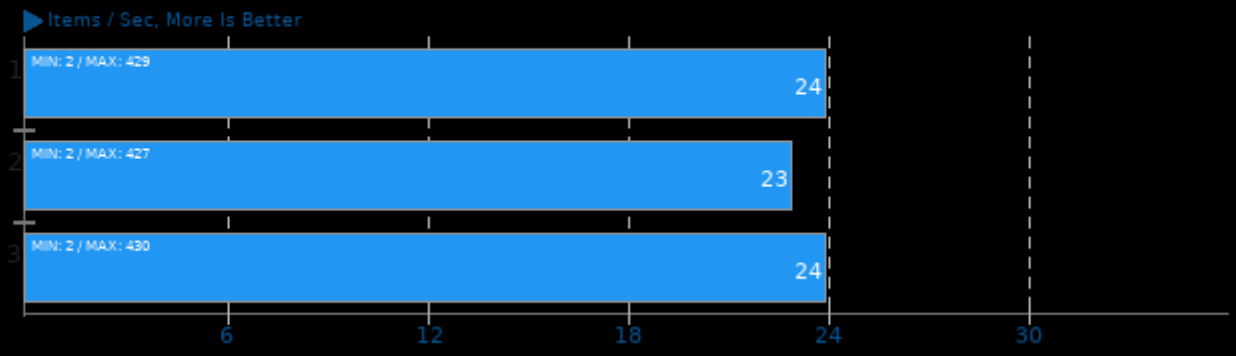
Embree 3.13

Binary: Pathtracer - Model: Crown



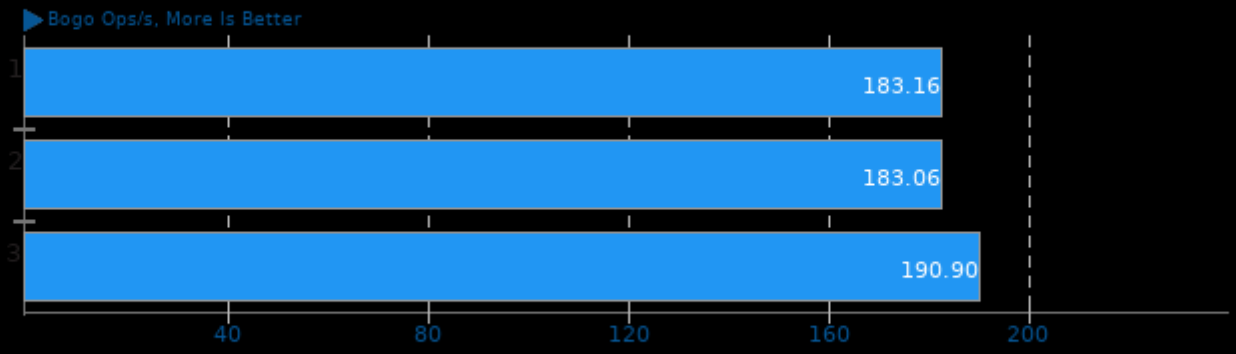
OpenVKL 1.0

Benchmark: vklBenchmark Scalar



Stress-NG 0.13.02

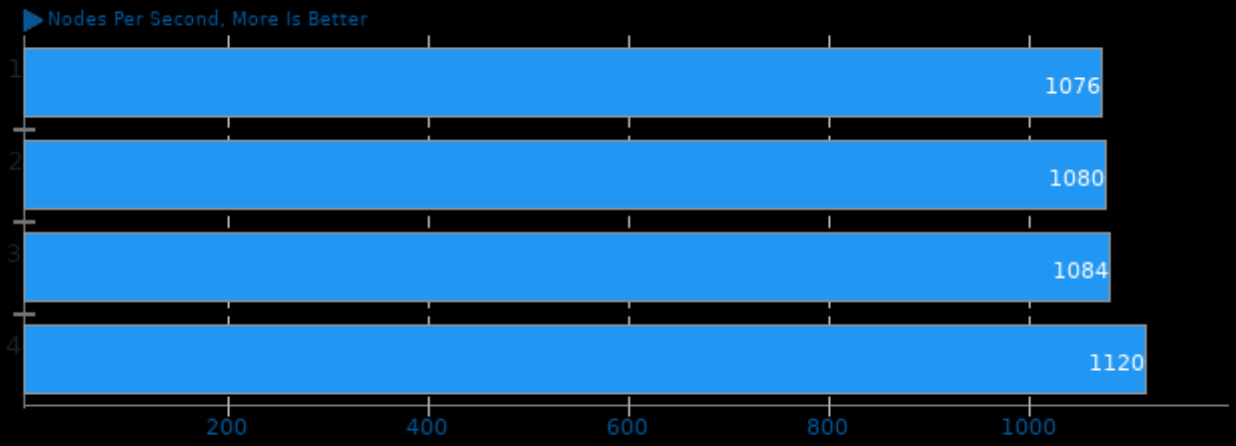
Test: CPU Cache



1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lcrypt -lrt -lsctp -lz -ldl -pthread -lc -latomic

LeelaChessZero 0.28

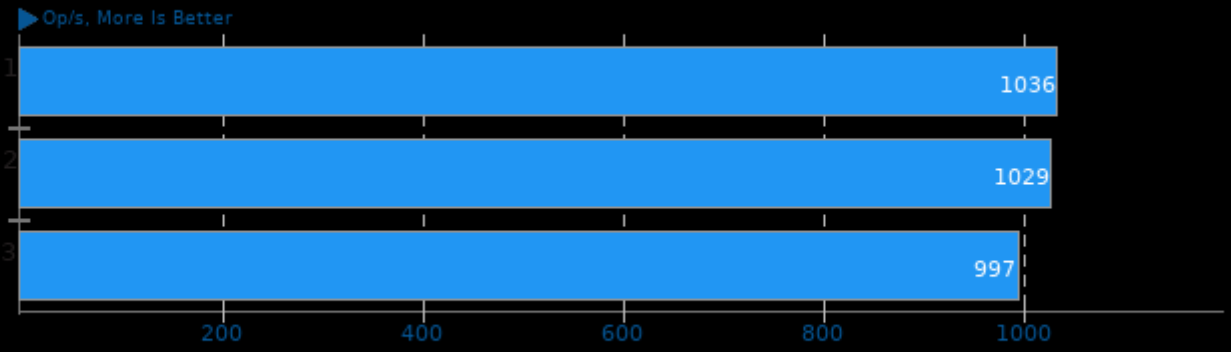
Backend: BLAS



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

Facebook RocksDB 6.22.1

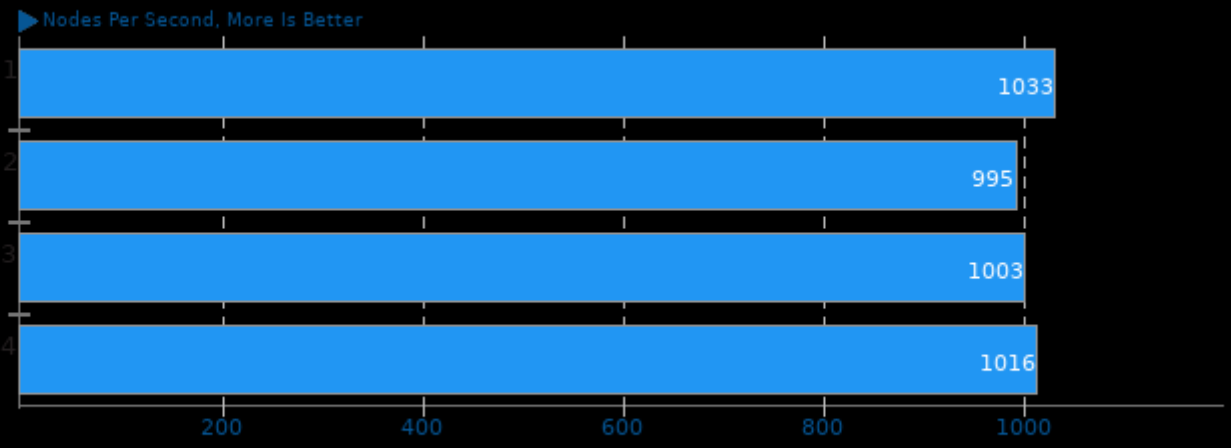
Test: Random Fill Sync



1. (CXX) g++ options: -O3 -march=native -pthread -fno-builtin-memcmp -fno-rtti -lpthread

LeelaChessZero 0.28

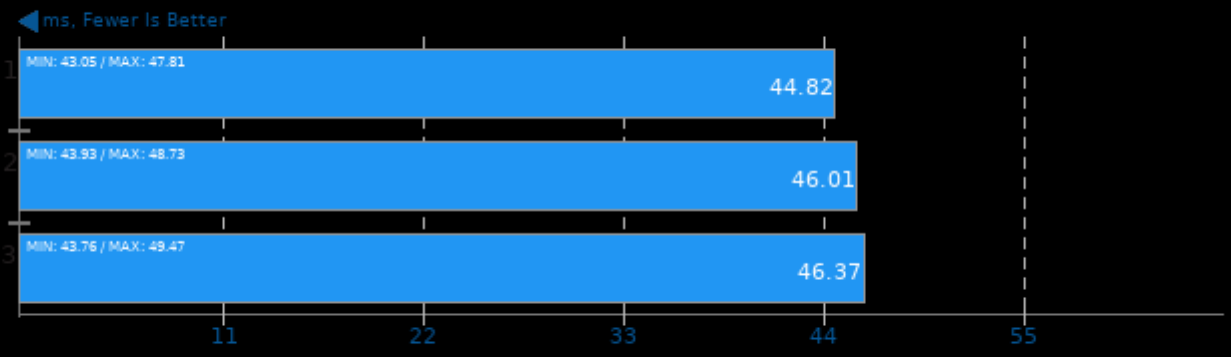
Backend: Eigen



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

NCNN 20210720

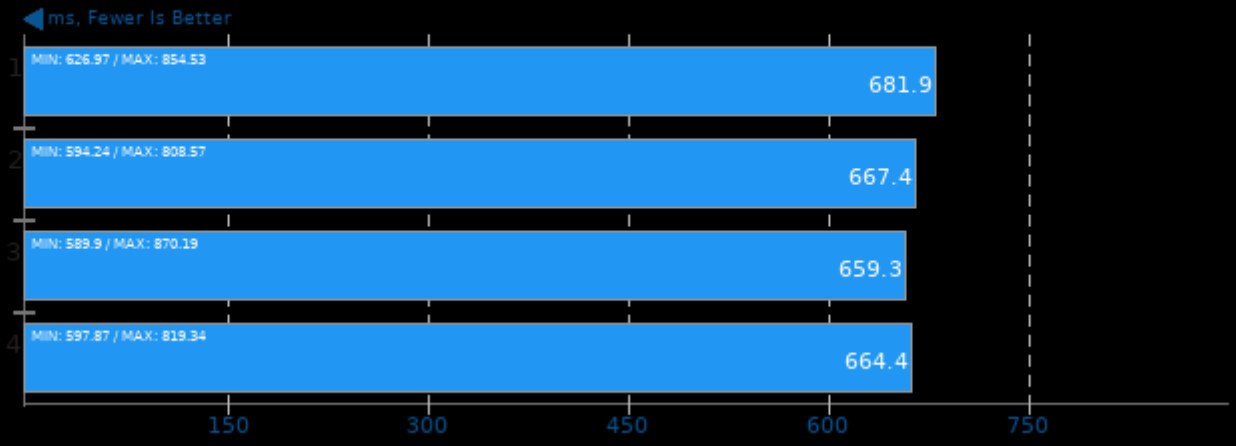
Target: Vulkan GPU - Model: alexnet



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

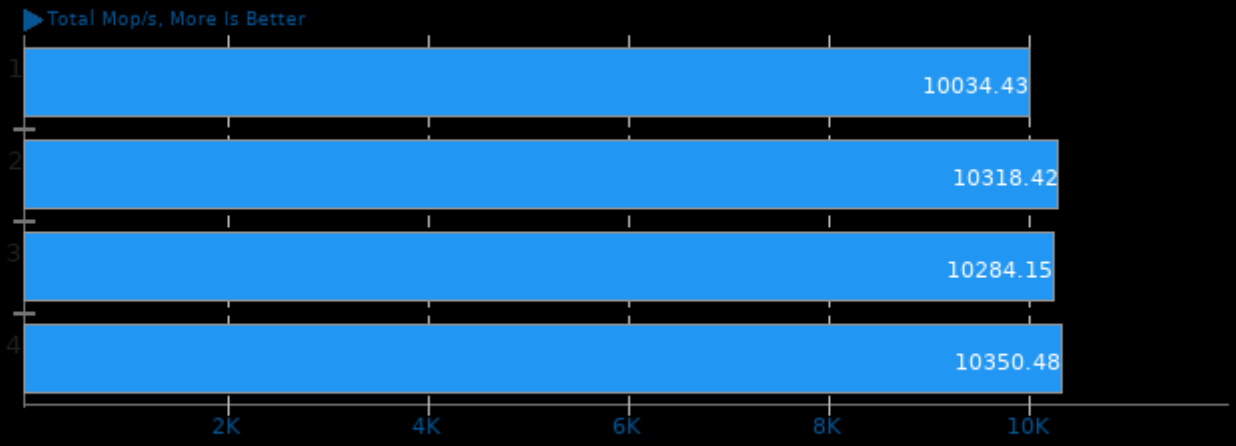
Renaissance 0.12

Test: Random Forest



NAS Parallel Benchmarks 3.4

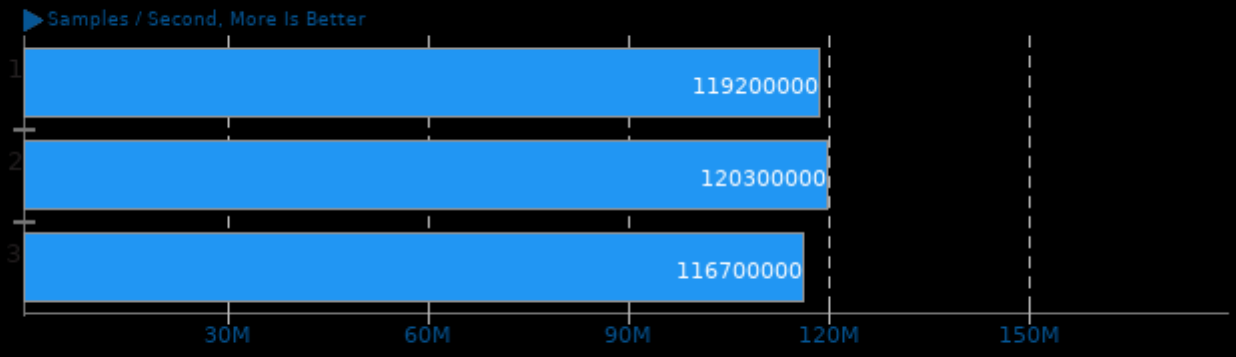
Test / Class: FT.C



1. (F9X) gfortran options: -O3 -march=native -pthread -lmpi_usempif08 -lmpi_mpifh -lmpi
2. Open MPI 4.0.3

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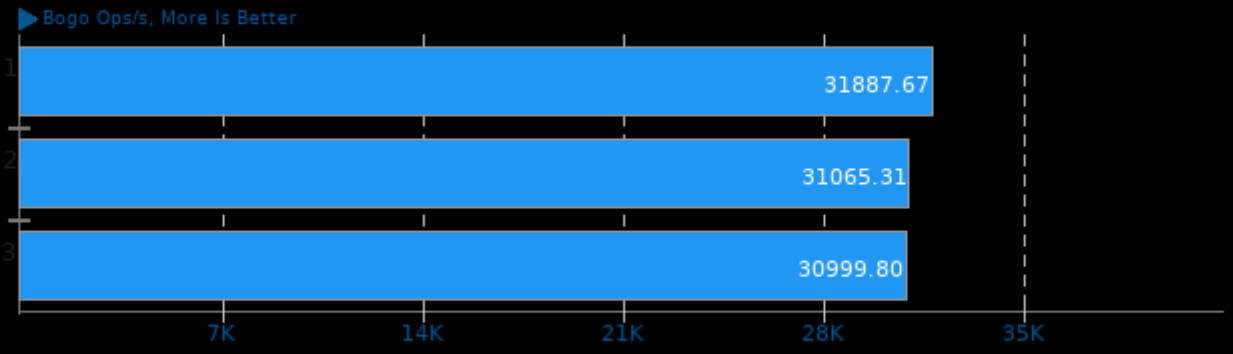
Test: OFDM_Test



1. (CXX) g++ options: -std=c++11 -fno-strict-aliasing -march=native -mfpmath=sse -mavx2 -fvisibility=hidden -O3 -fno-trapping-math -fno-math-errno

Stress-NG 0.13.02

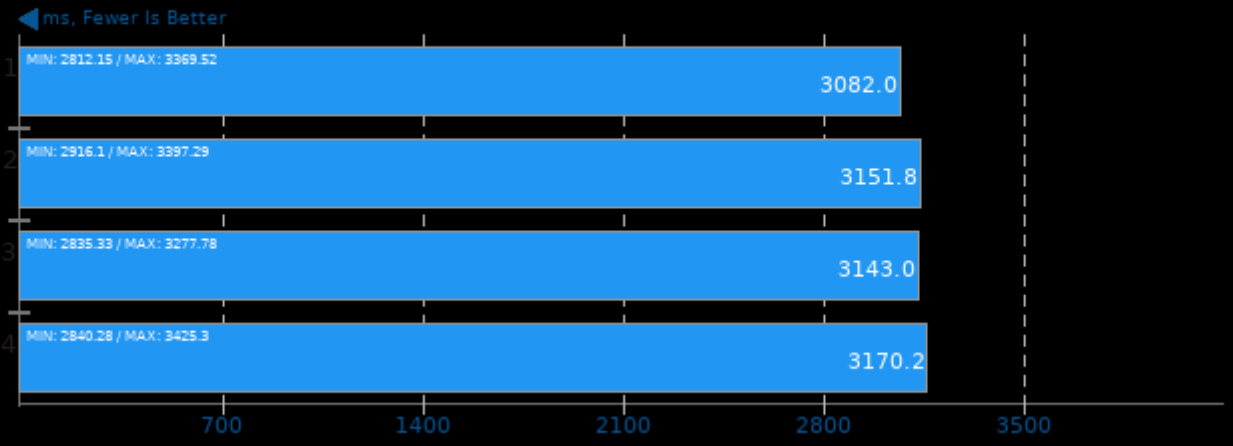
Test: Matrix Math



1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lcrypt -lrt -lsctp -lz -ldl -pthread -lc -latomic

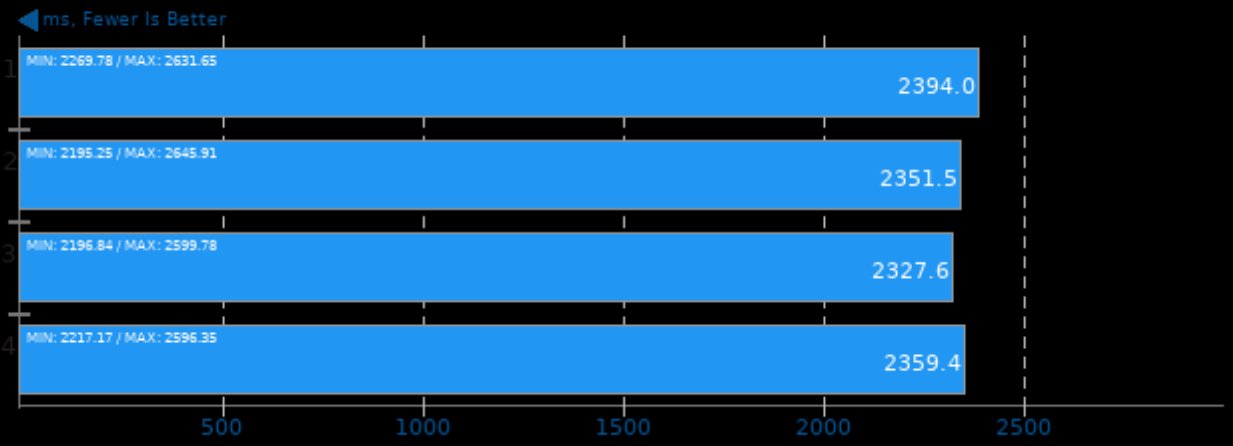
Renaissance 0.12

Test: In-Memory Database Shootout



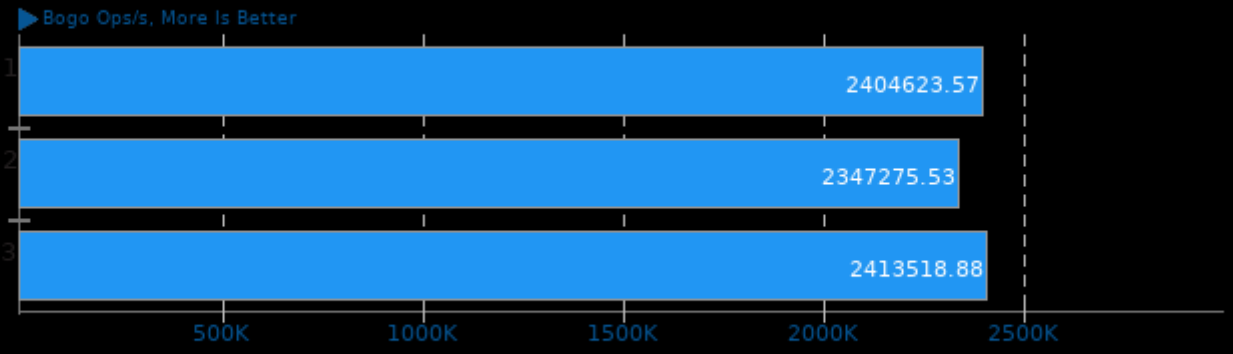
Renaissance 0.12

Test: Apache Spark ALS



Stress-NG 0.13.02

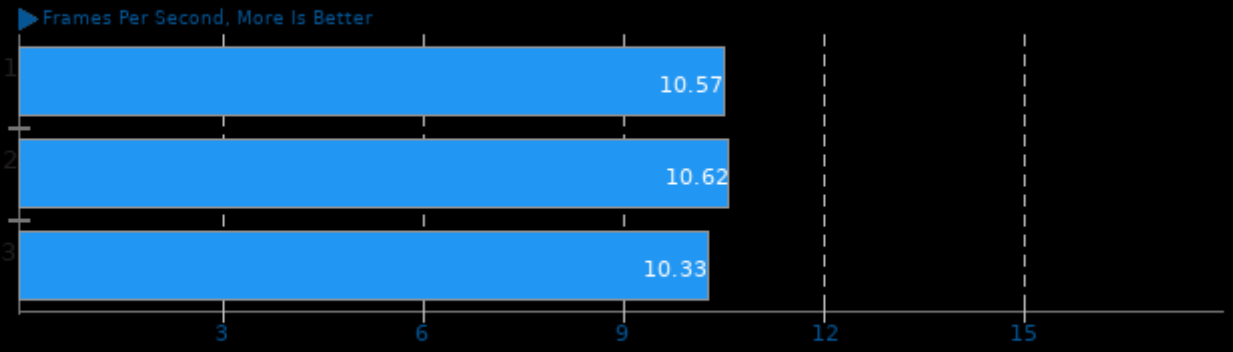
Test: Context Switching



1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lcrypt -lrt -lsctp -lz -ldl -pthread -lc -latomic

VP9 libvpx Encoding 1.10.0

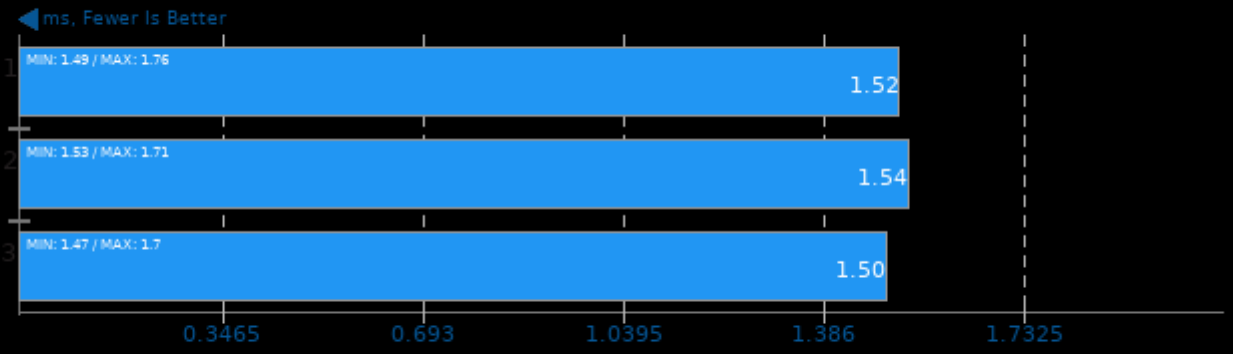
Speed: Speed 5 - Input: Bosphorus 4K



1. (CXX) g++ options: -m64 -lm -lpthread -O3 -fPIC -U_FORTIFY_SOURCE -std=gnu++11

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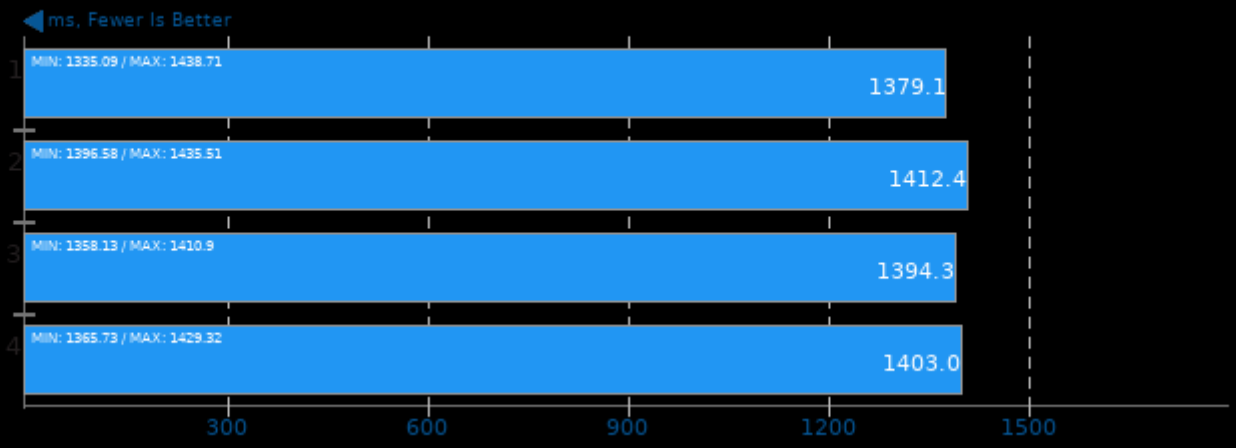
Target: CPU - Model: blazeface



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

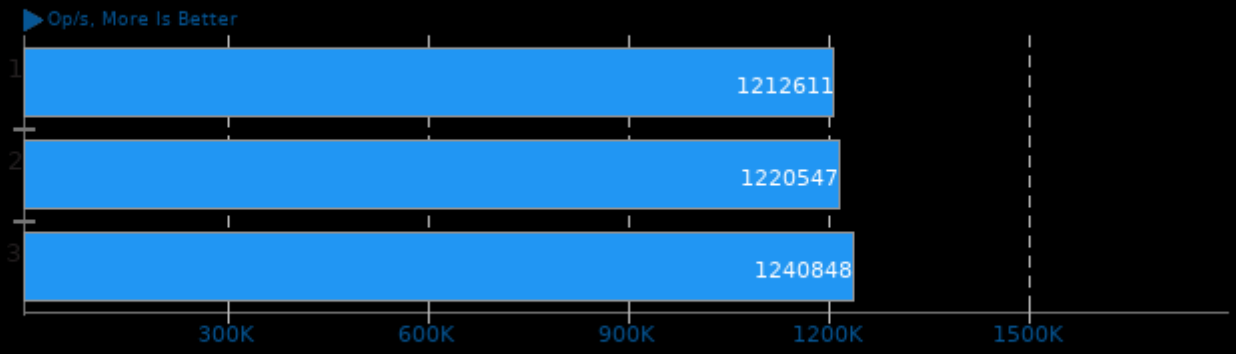
Renaissance 0.12

Test: Genetic Algorithm Using Jenetics + Futures



Facebook RocksDB 6.22.1

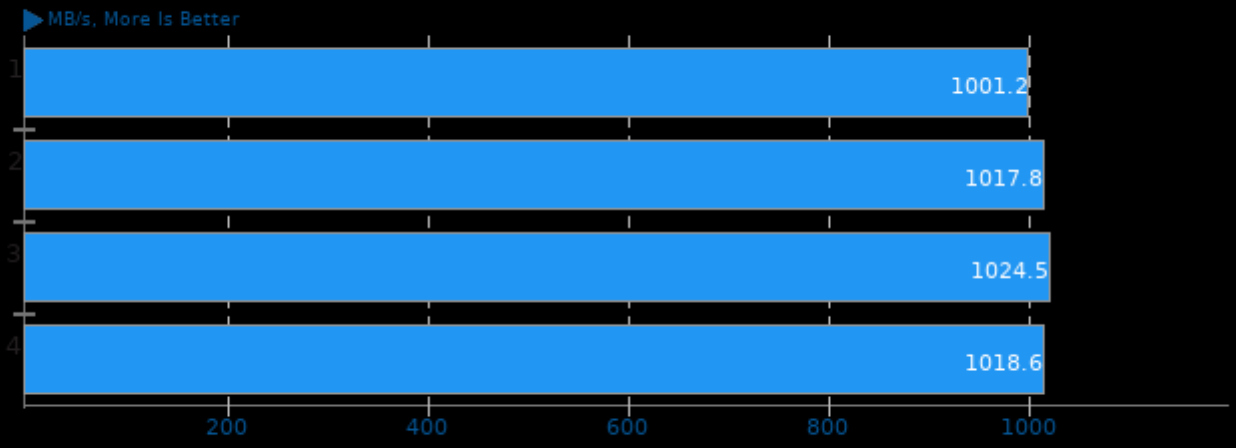
Test: Read Random Write Random



1. (CXX) g++ options: -O3 -march=native -pthread -fno-builtin-memcmp -fno-rtti -lpthread

Zstd Compression 1.5.0

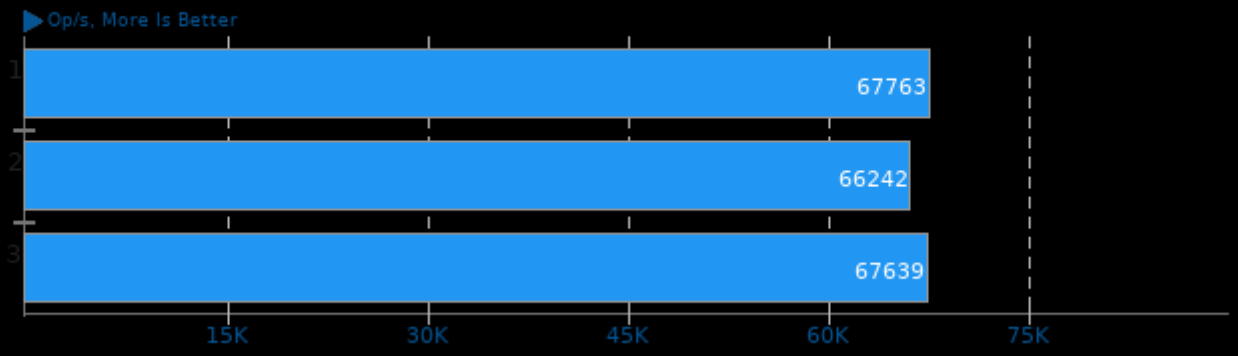
Compression Level: 3, Long Mode - Compression Speed



1. (CC) gcc options: -O3 -pthread -lz -llzma

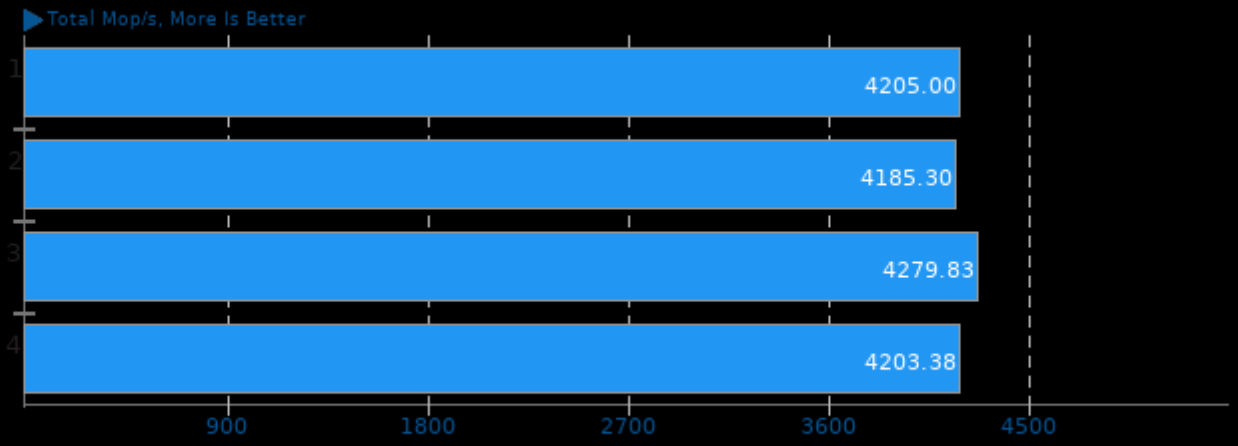
Apache Cassandra 4.0

Test: Writes



NAS Parallel Benchmarks 3.4

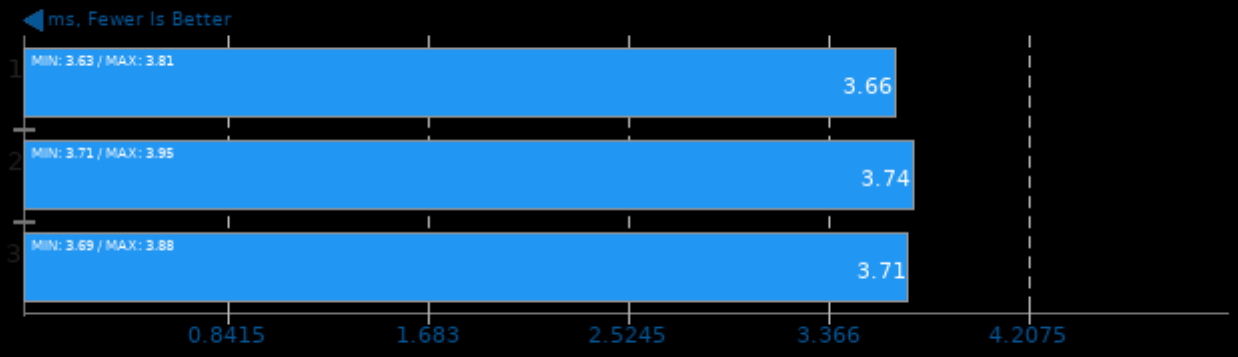
Test / Class: CG.C



1. (F9X) gfortran options: -O3 -march=native -pthread -lmpi_usempif08 -lmpi_mpifh -lmpi
2. Open MPI 4.0.3

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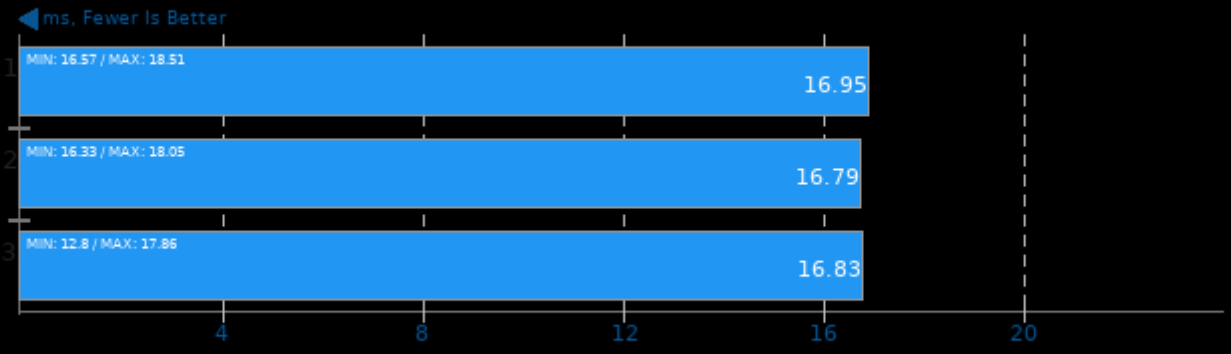
Target: CPU - Model: shufflenet-v2



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

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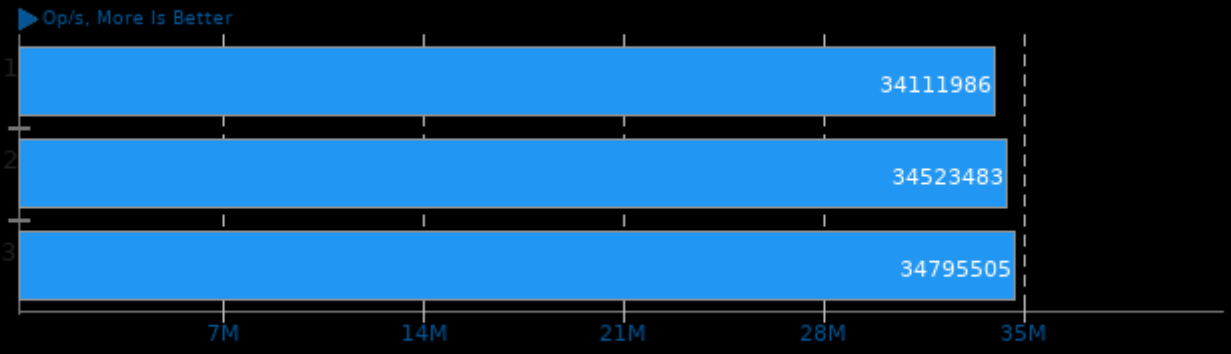
Target: Vulkan GPU-v3-v3 - Model: mobilenet-v3



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

Facebook RocksDB 6.22.1

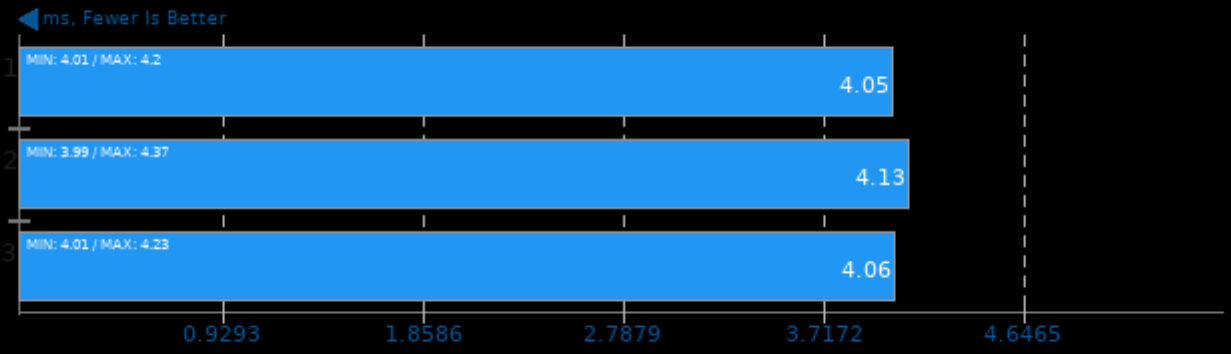
Test: Random Read



1. (CXX) g++ options: -O3 -march=native -pthread -fno-builtin-memcmp -fno-rtti -lpthread

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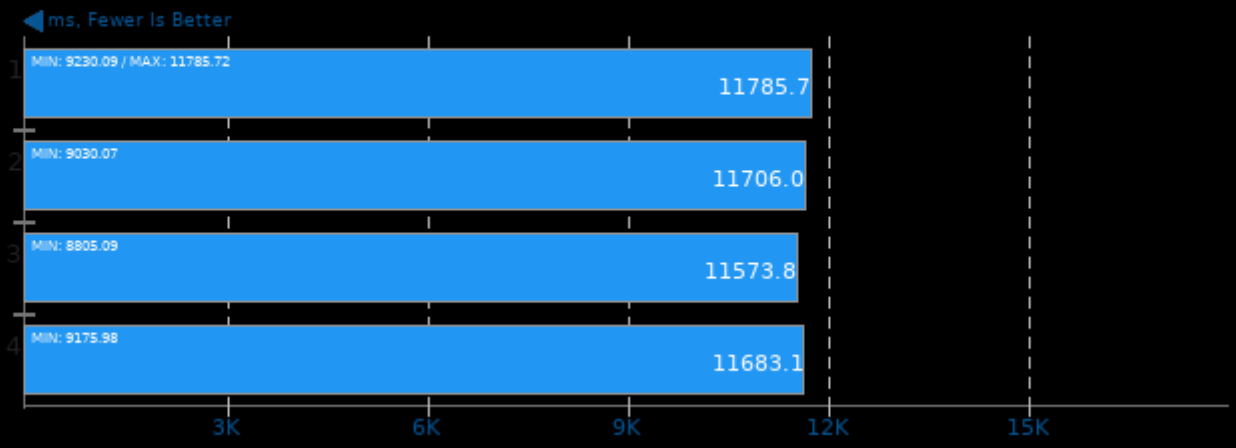
Target: CPU-v3-v3 - Model: mobilenet-v3



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

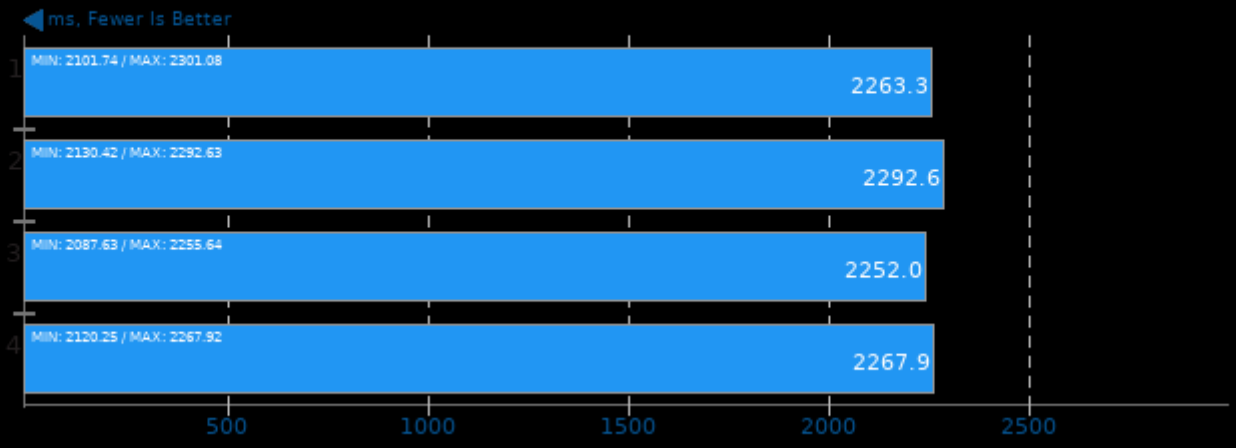
Renaissance 0.12

Test: Akka Unbalanced Cobwebbed Tree



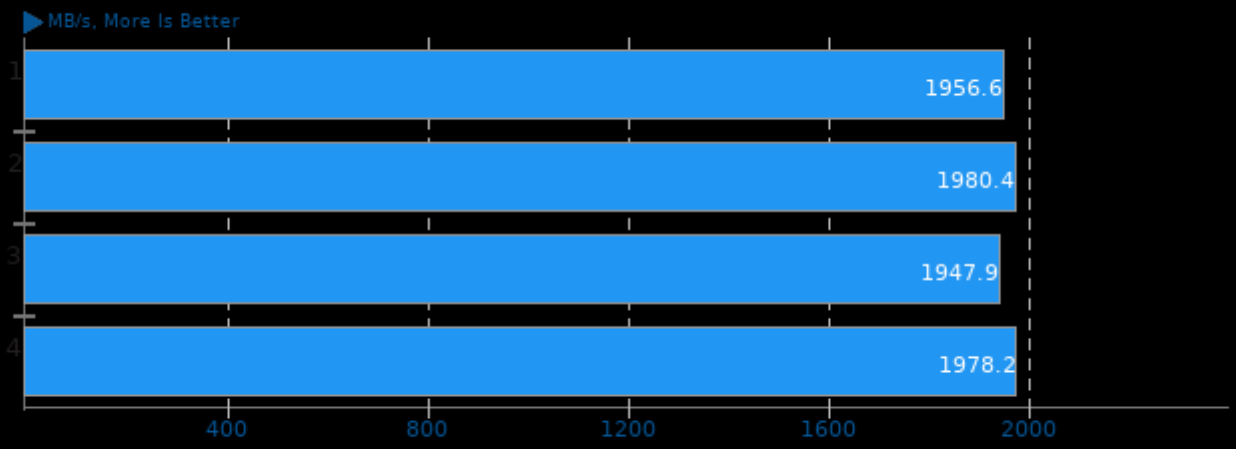
Renaissance 0.12

Test: Finagle HTTP Requests



Zstd Compression 1.5.0

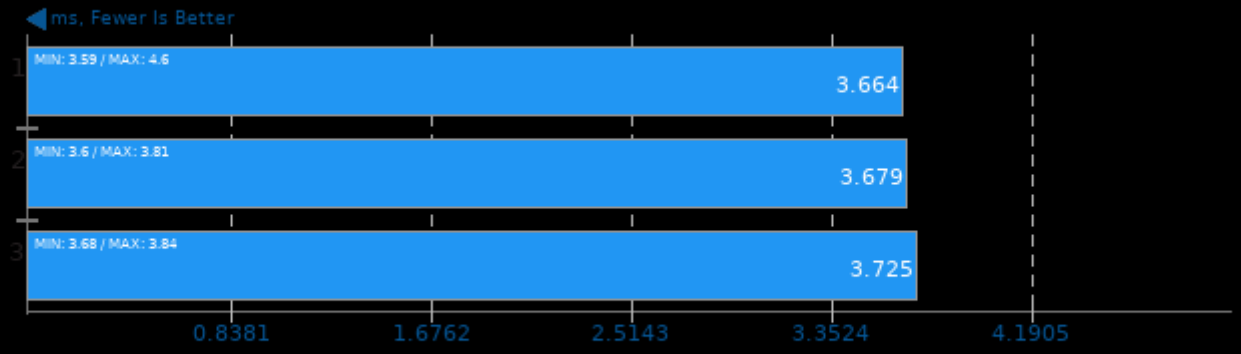
Compression Level: 3 - Compression Speed



1. (CC) gcc options: -O3 -pthread -lz -llzma

Mobile Neural Network 1.2

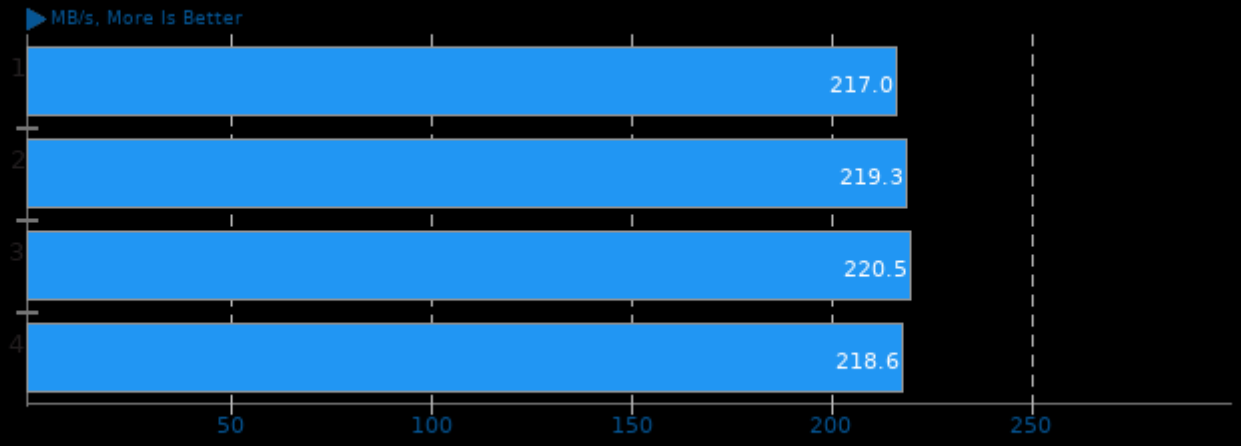
Model: squeezenetv1.1



1. (CXX) g++ options: -std=c++11 -O3 -fvisibility=hidden -fomit-frame-pointer -fstrict-aliasing -ffunction-sections -fdata-sections -ffast-math -fno-rtti -fv

Zstd Compression 1.5.0

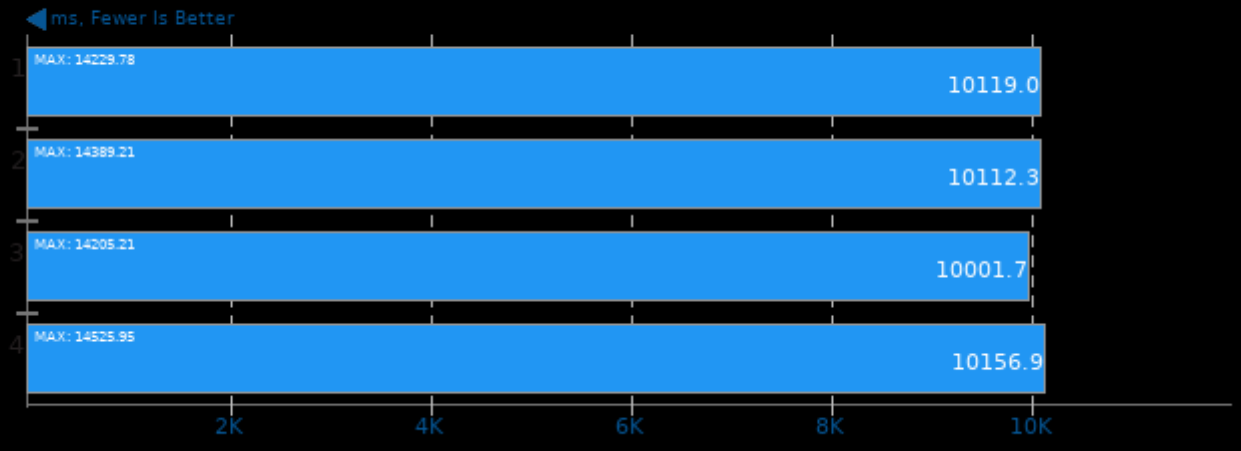
Compression Level: 8 - Compression Speed



1. (CC) gcc options: -O3 -pthread -lz -llzma

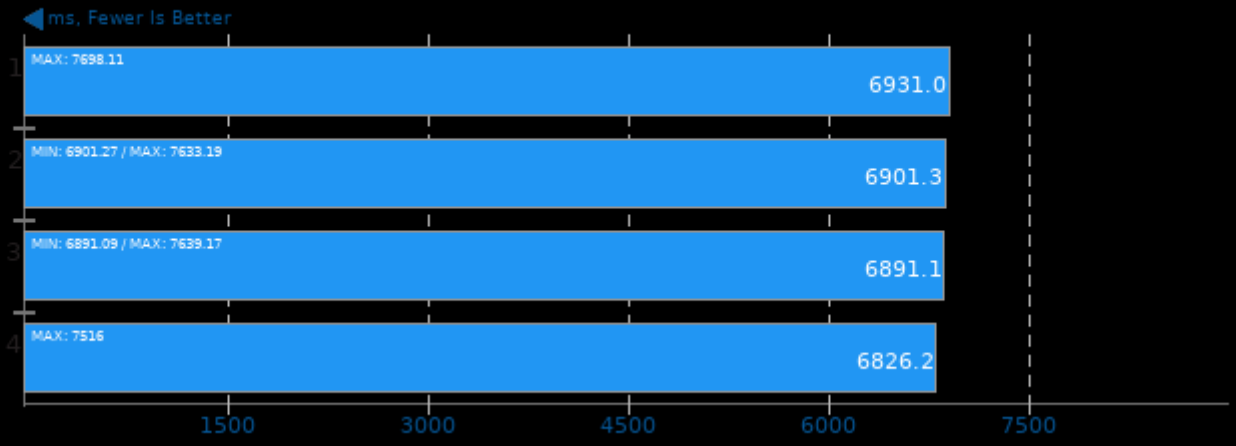
Renaissance 0.12

Test: Savina Reactors.IO



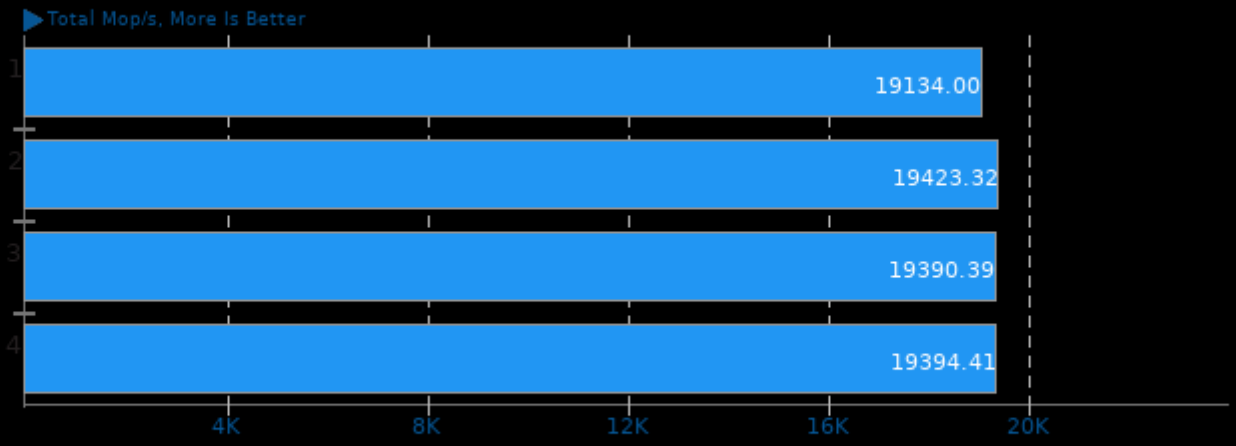
Renaissance 0.12

Test: ALS Movie Lens



NAS Parallel Benchmarks 3.4

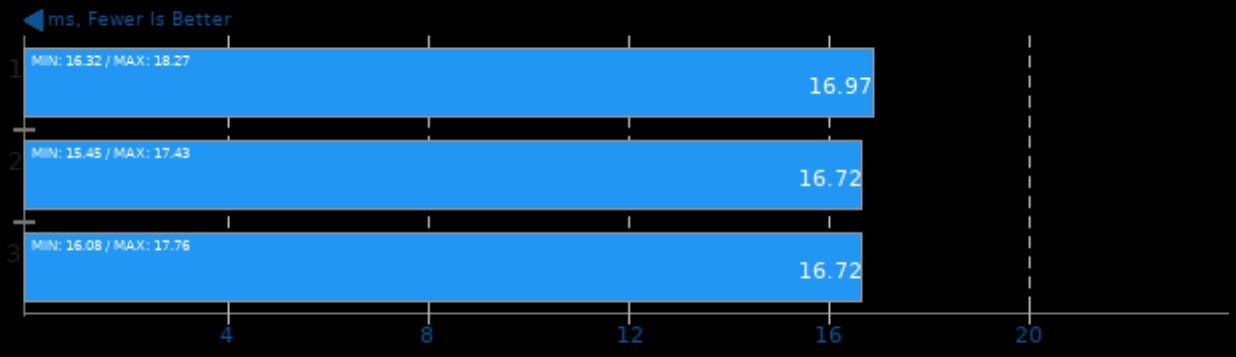
Test / Class: LU.C



1. (F9X) gfortran options: -O3 -march=native -pthread -lmpi_usempif08 -lmpi_mpifh -lmpi
2. Open MPI 4.0.3

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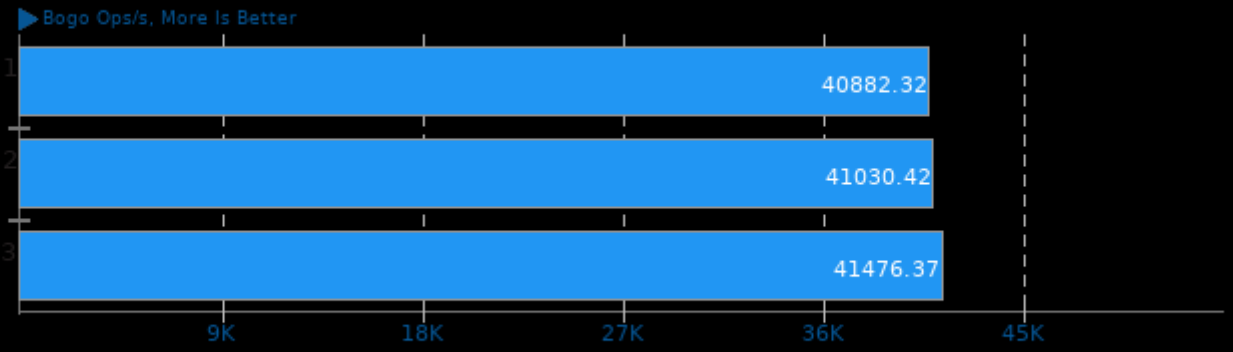
Target: Vulkan GPU - Model: shufflenet-v2



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

Stress-NG 0.13.02

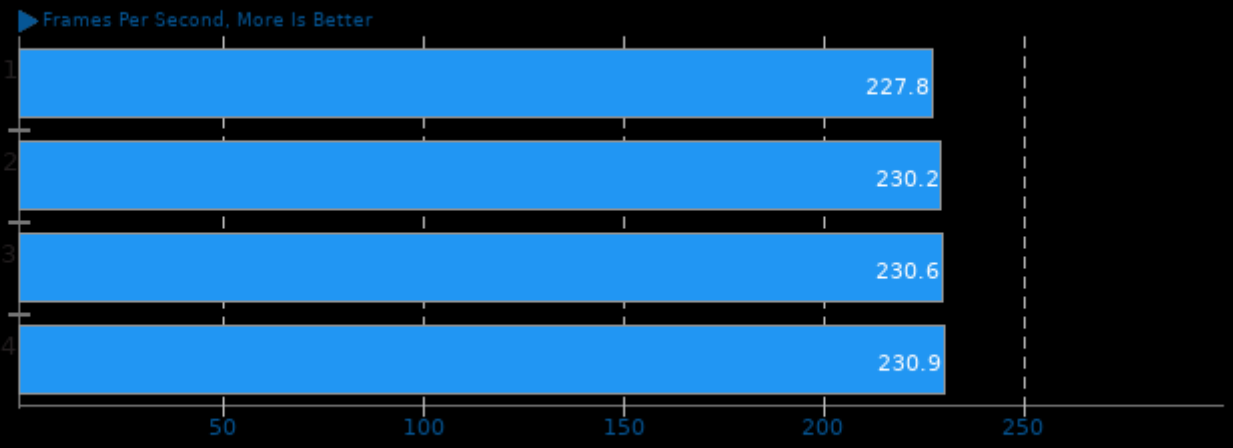
Test: Forking



1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lcrypt -lrt -lsctp -lz -ldl -pthread -lc -latomic

yquake2 8.0

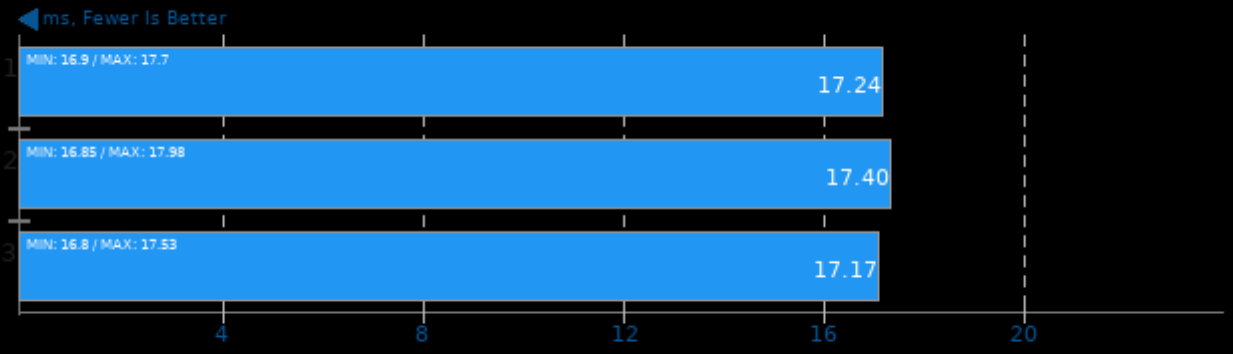
Renderer: OpenGL 3.x - Resolution: 1920 x 1080



1. (CC) gcc options: -lm -ldl -rdynamic -shared -lSDL2 -O2 -pipe -fomit-frame-pointer -std=gnu99 -fno-strict-aliasing -fwrapv -fvisibility=hidden -MMD -mfp

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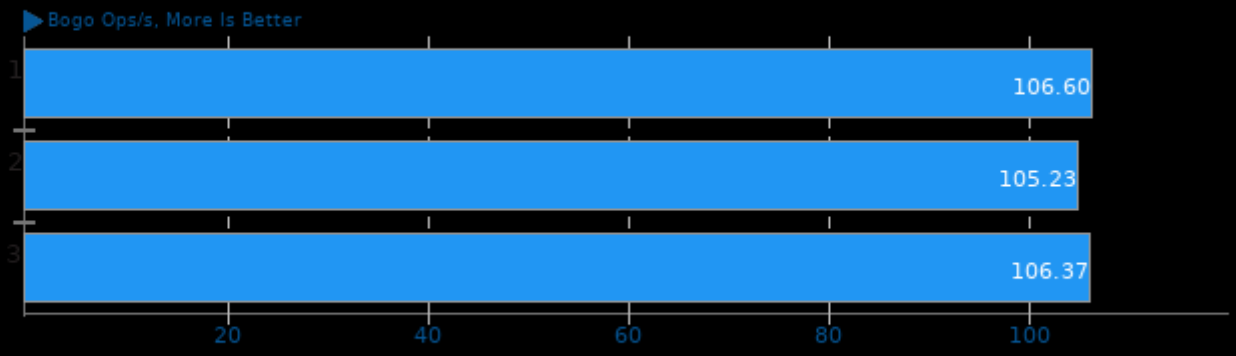
Target: Vulkan GPU - Model: regnety_400m



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

Stress-NG 0.13.02

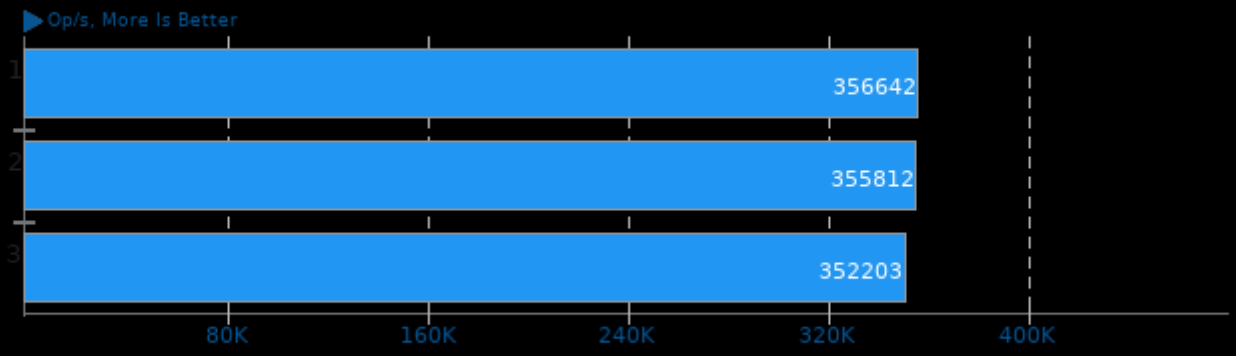
Test: Glibc Qsort Data Sorting



1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lcrypt -lrt -lsctp -lz -ldl -pthread -lc -latomic

Facebook RocksDB 6.22.1

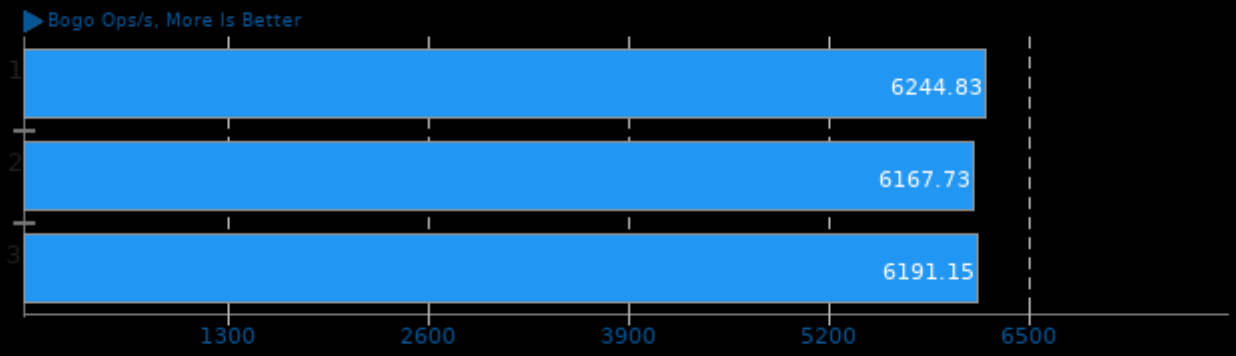
Test: Update Random



1. (CXX) g++ options: -O3 -march=native -pthread -fno-builtin-memcmp -fno-rtti -lpthread

Stress-NG 0.13.02

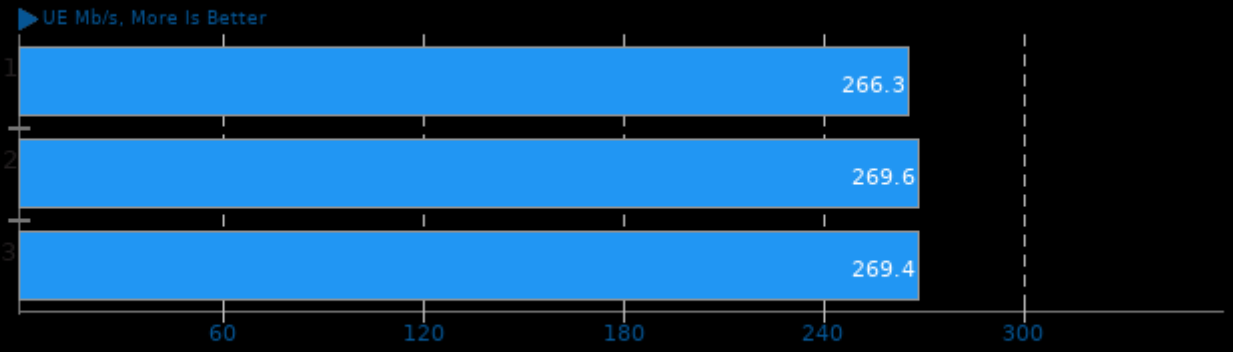
Test: Socket Activity



1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lcrypt -lrt -lsctp -lz -ldl -pthread -lc -latomic

srsRAN 21.04

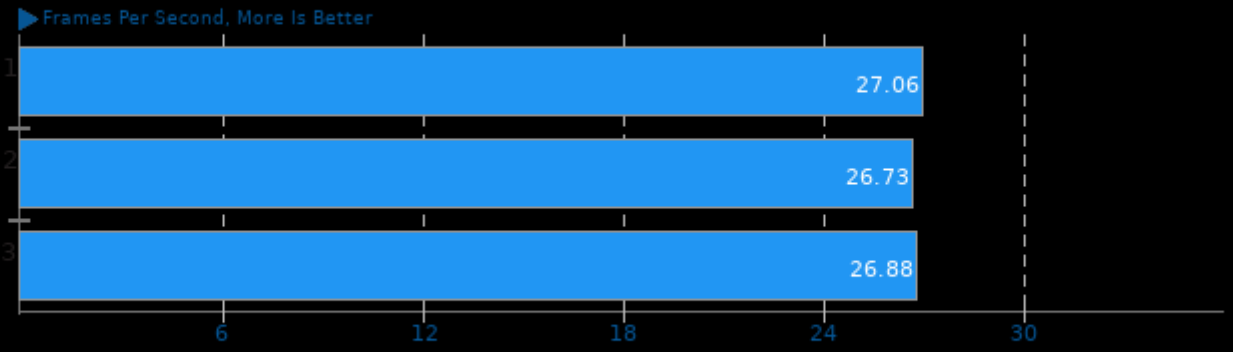
Test: 4G PHY_DL_Test 100 PRB SISO 256-QAM



1. (CXX) g++ options: -std=c++11 -fno-strict-aliasing -march=native -mfpmath=sse -mavx2 -fvisibility=hidden -O3 -fno-trapping-math -fno-math-errno

VP9 libvpx Encoding 1.10.0

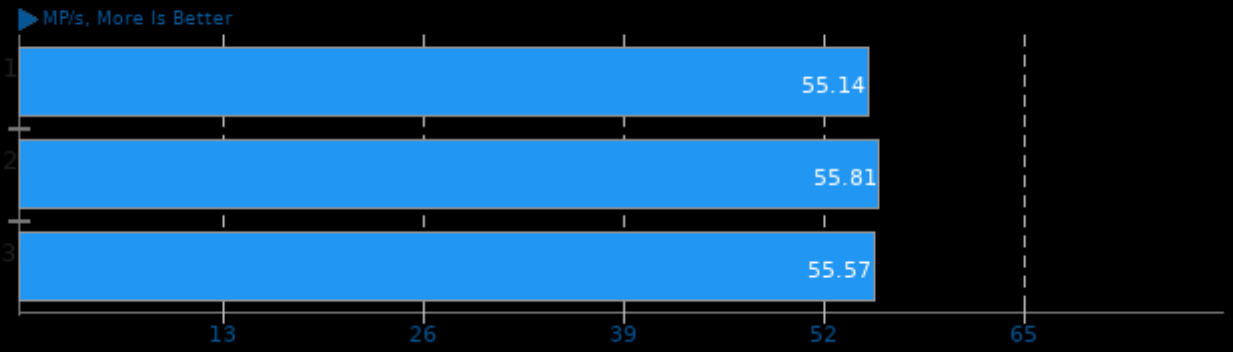
Speed: Speed 5 - Input: Bosphorus 1080p



1. (CXX) g++ options: -m64 -lm -lpthread -O3 -fPIC -U_FORTIFY_SOURCE -std=gnu++11

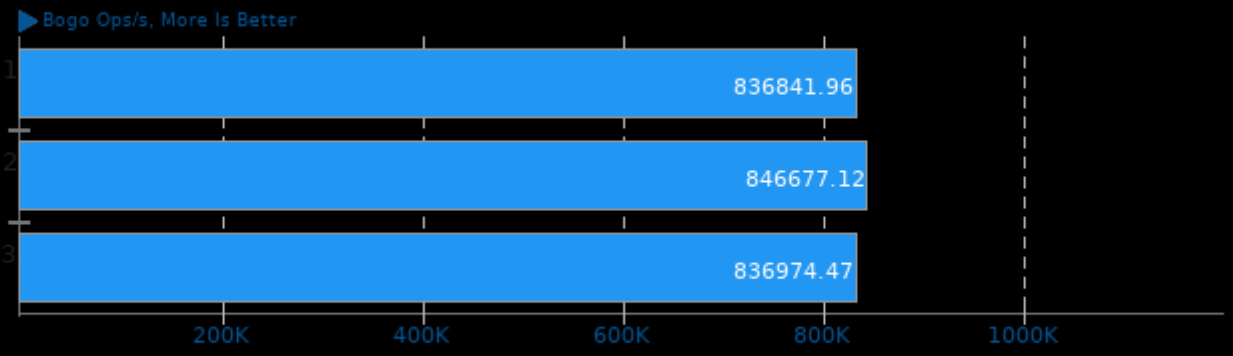
JPEG XL Decoding libjxl 0.5

CPU Threads: 1



Stress-NG 0.13.02

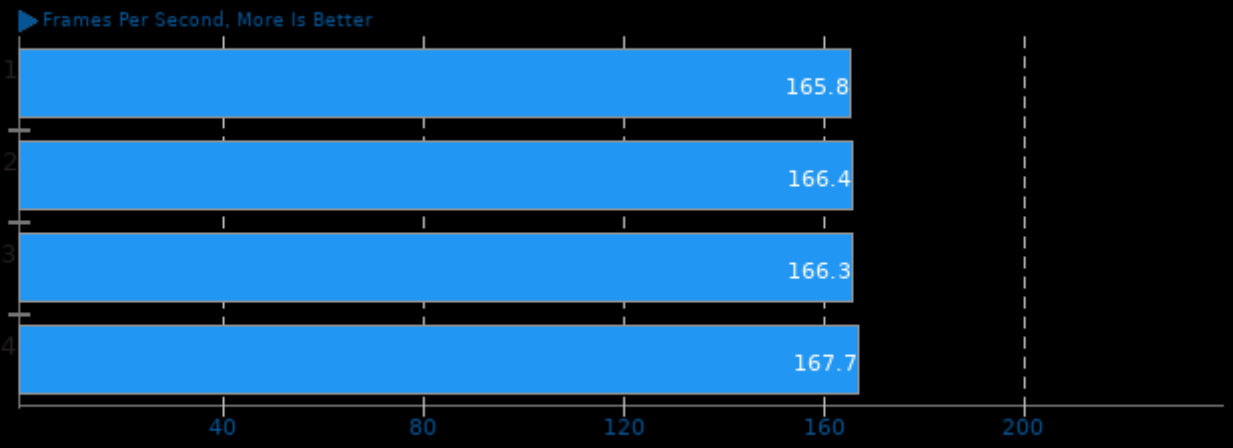
Test: Semaphores



1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lcrypt -lrt -lsctp -lz -ldl -pthread -lc -latomic

yquake2 8.0

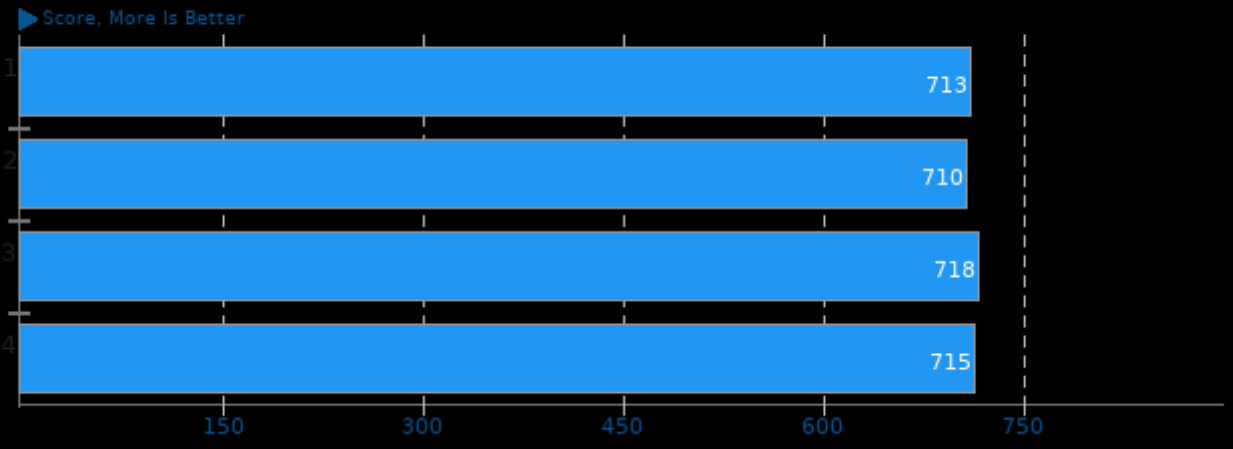
Renderer: OpenGL 1.x - Resolution: 1920 x 1080



1. (CC) gcc options: -lm -ldl -rdynamic -shared -lSDL2 -O2 -pipe -fomit-frame-pointer -std=gnu99 -fno-strict-aliasing -fwrapv -fvisibility=hidden -MMD -mfp

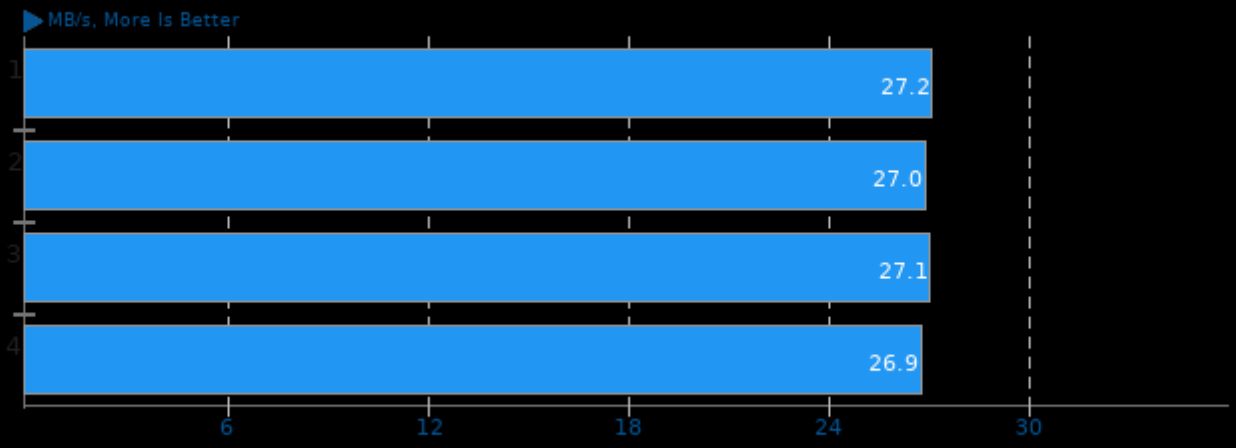
GLmark2 2021.08.30

Resolution: 1920 x 1080



Zstd Compression 1.5.0

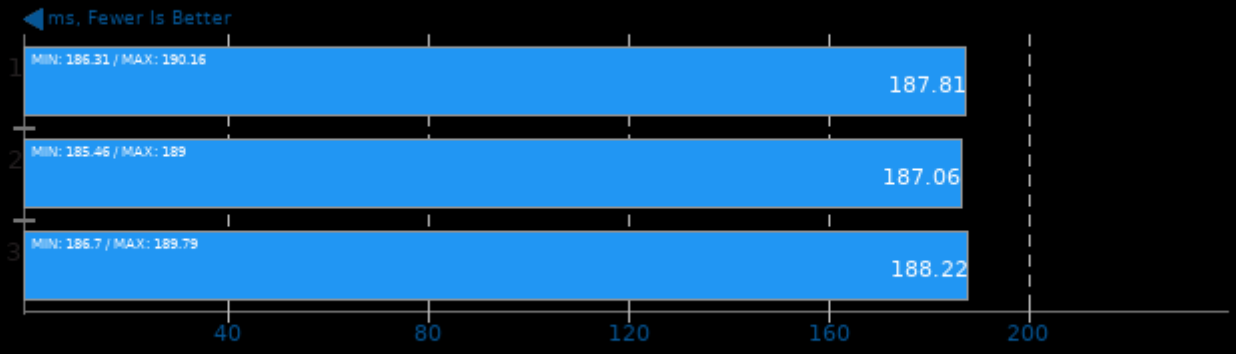
Compression Level: 19 - Compression Speed



1. (CC) gcc options: -O3 -pthread -lz -llzma

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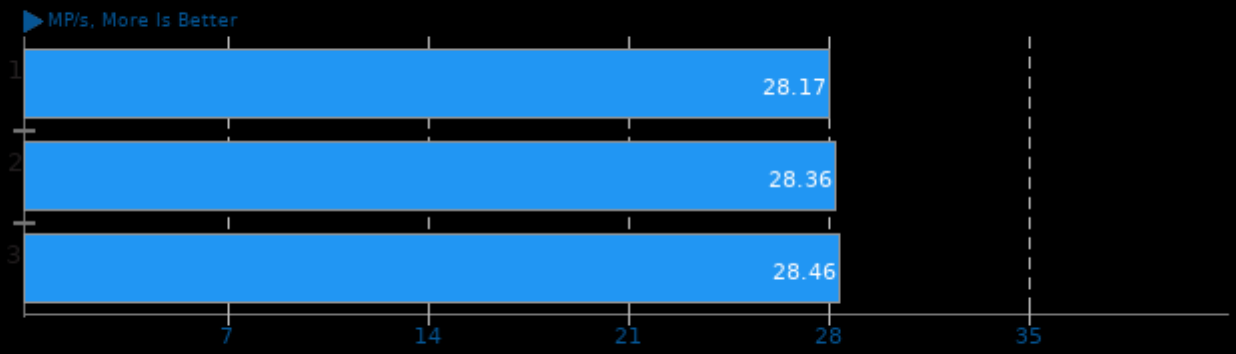
Target: Vulkan GPU - Model: vgg16



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

JPEG XL libjxl 0.5

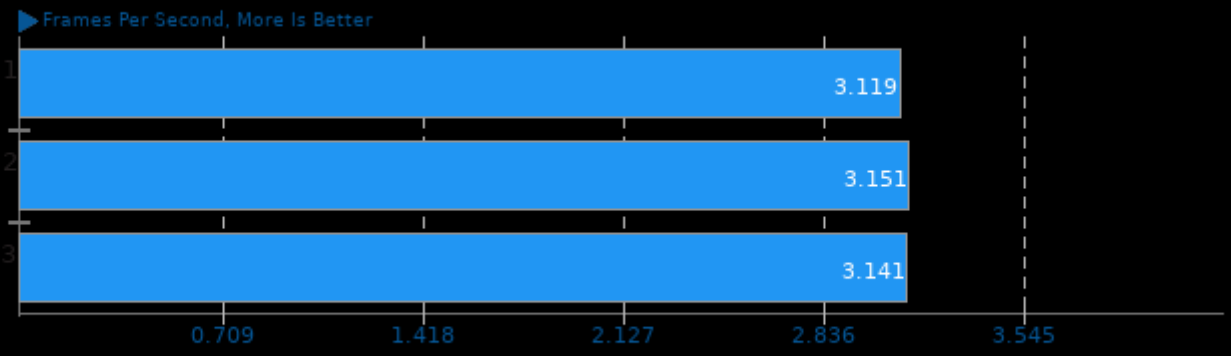
Input: JPEG - Encode Speed: 8



1. (CXX) g++ options: -funwind-tables -O3 -O2 -fPIE -pie -pthread

SVT-AV1 0.8.7

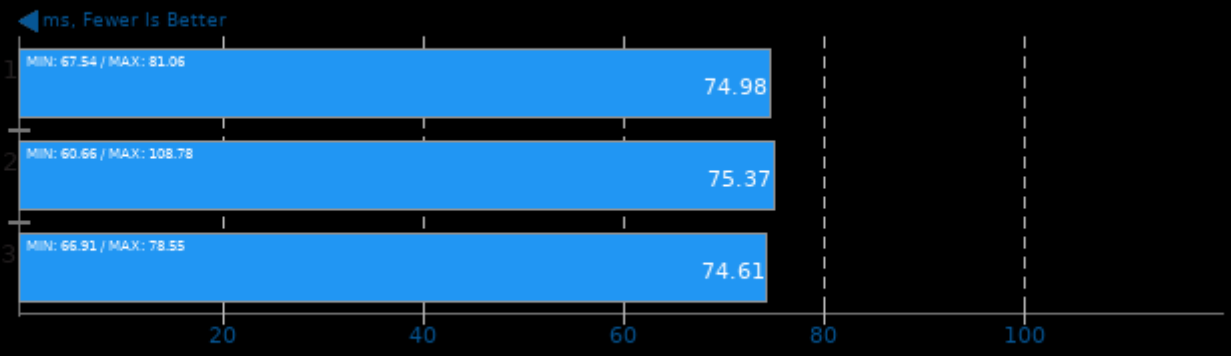
Encoder Mode: Preset 4 - Input: Bosphorus 1080p



1. (CXX) g++ options: -mno-avx -mavx2 -mavx512f -mavx512bw -mavx512dq -pie

NCNN 20210720

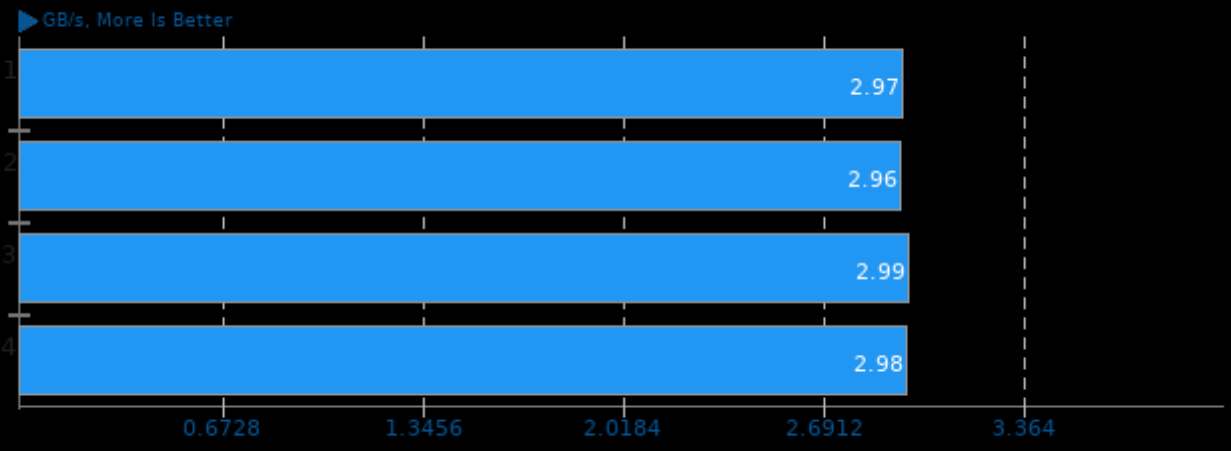
Target: Vulkan GPU - Model: yolov4-tiny



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

simdjson 1.0

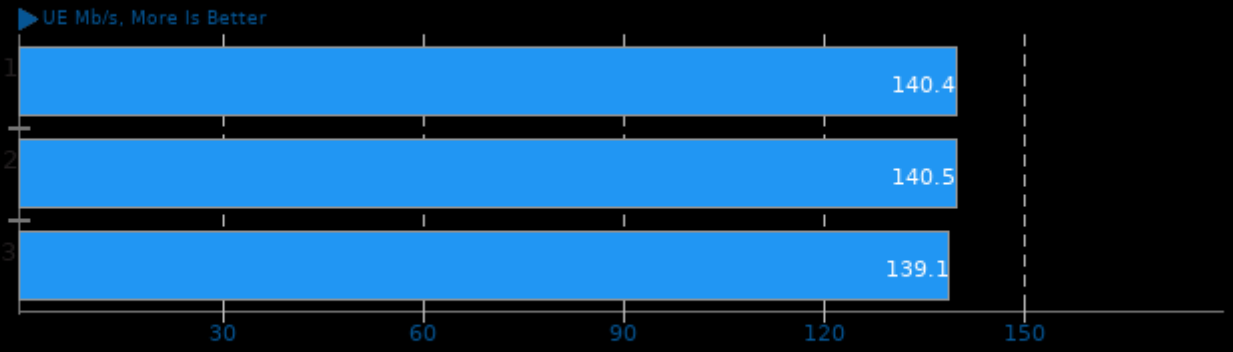
Throughput Test: Kostya



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

srsRAN 21.04

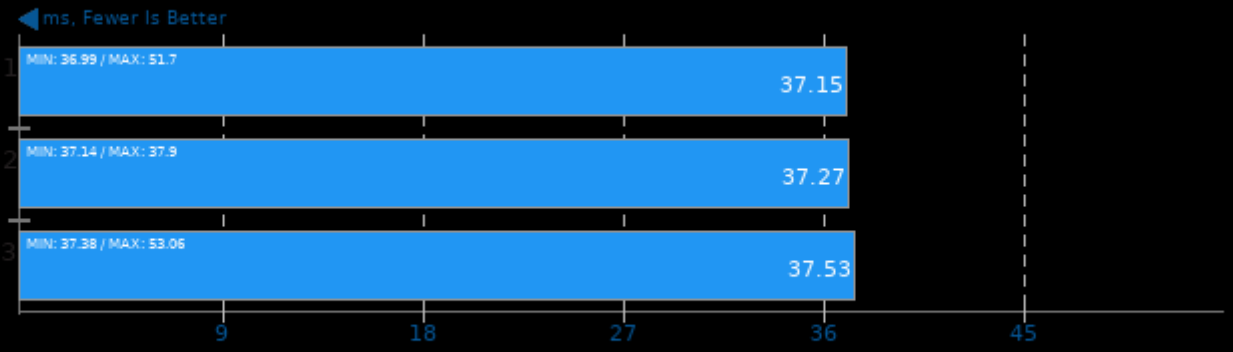
Test: 4G PHY_DL_Test 100 PRB MIMO 256-QAM



1. (CXX) g++ options: -std=c++11 -fno-strict-aliasing -march=native -mfpmath=sse -mavx2 -fvisibility=hidden -O3 -fno-trapping-math -fno-math-errno

Mobile Neural Network 1.2

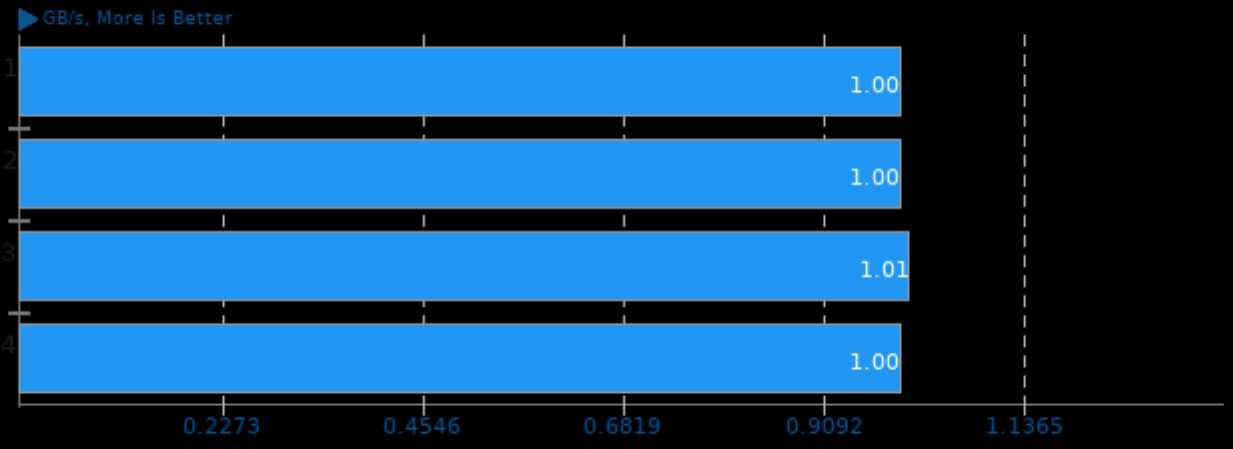
Model: inception-v3



1. (CXX) g++ options: -std=c++11 -O3 -fvisibility=hidden -fomit-frame-pointer -fstrict-aliasing -ffunction-sections -fdata-sections -ffast-math -fno-rtti -fn

simdjson 1.0

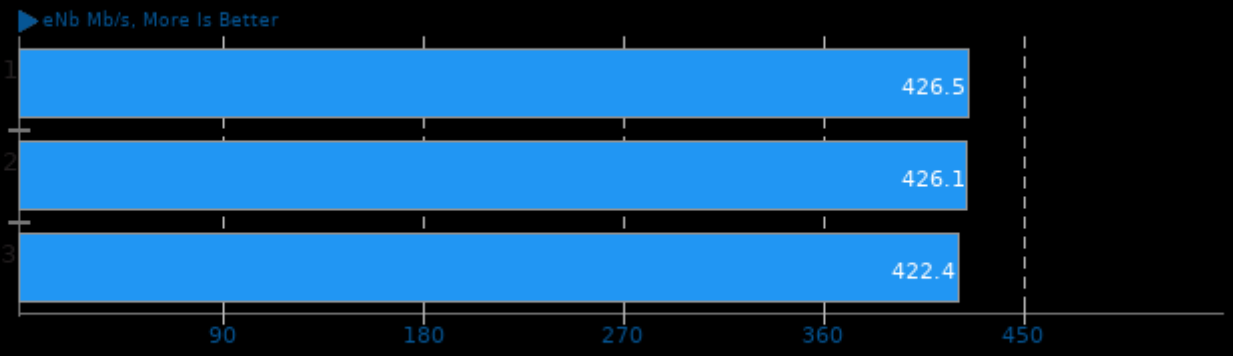
Throughput Test: LargeRandom



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

srsRAN 21.04

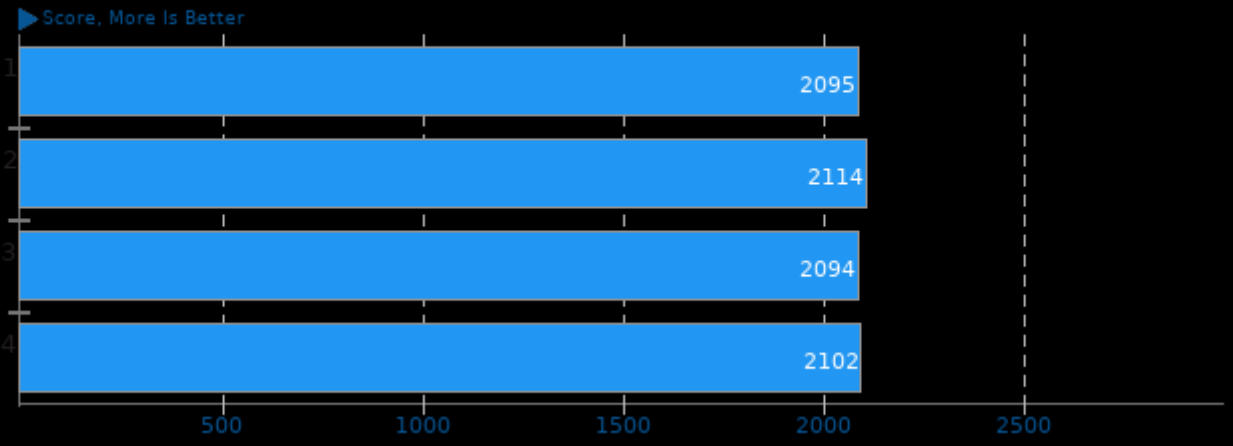
Test: 4G PHY_DL_Test 100 PRB SISO 256-QAM



1. (CXX) g++ options: -std=c++11 -fno-strict-aliasing -march=native -mfpmath=sse -mavx2 -fvisibility=hidden -O3 -fno-trapping-math -fno-math-errno

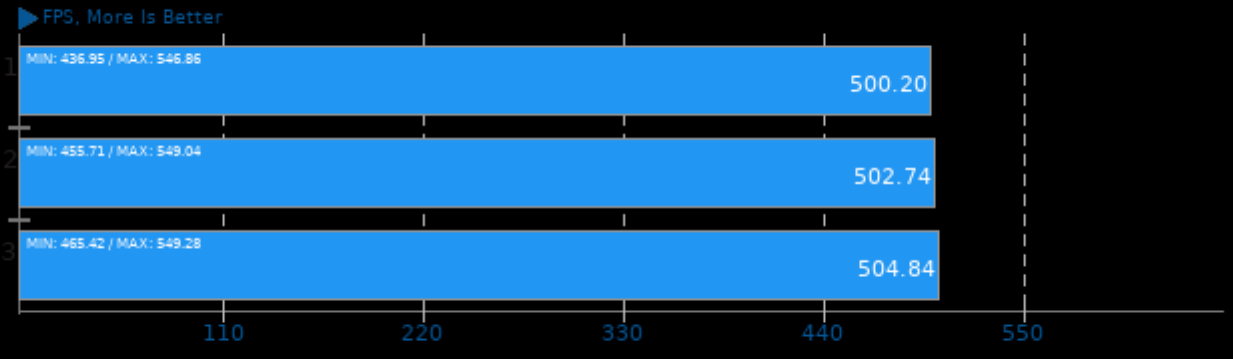
GLmark2 2021.08.30

Resolution: 1024 x 768



dav1d 0.9.2

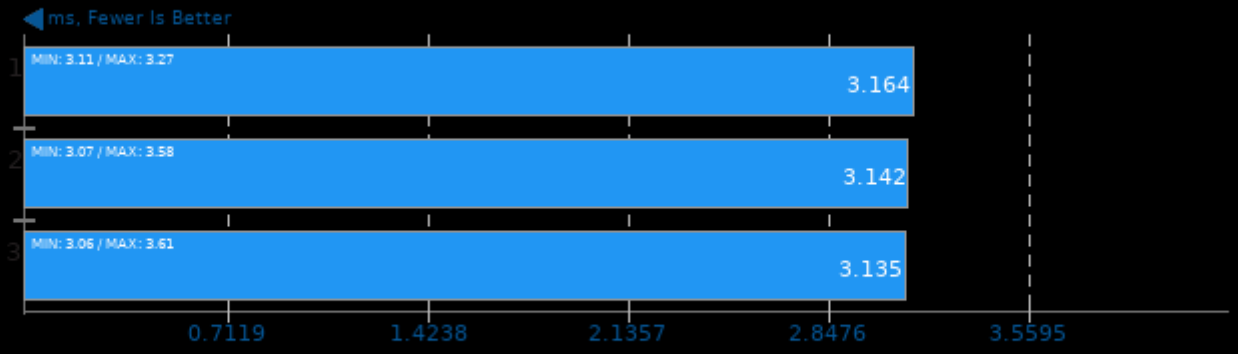
Video Input: Summer Nature 1080p



1. (CC) gcc options: -pthread -lm

Mobile Neural Network 1.2

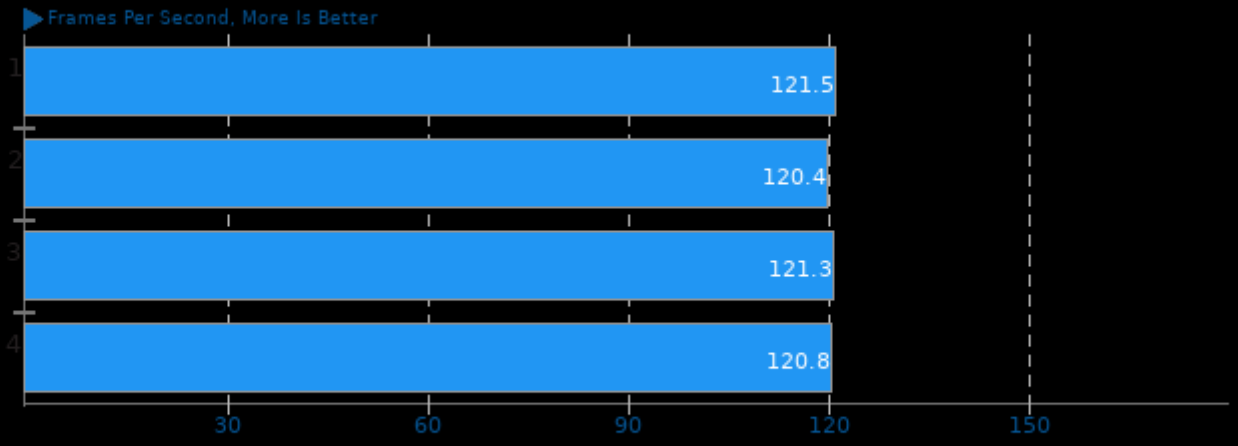
Model: MobileNetV2_224



1. (CXX) g++ options: -std=c++11 -O3 -fvisibility=hidden -fomit-frame-pointer -fstrict-aliasing -ffunction-sections -fdata-sections -ffast-math -fno-rtti -f

yquake2 8.0

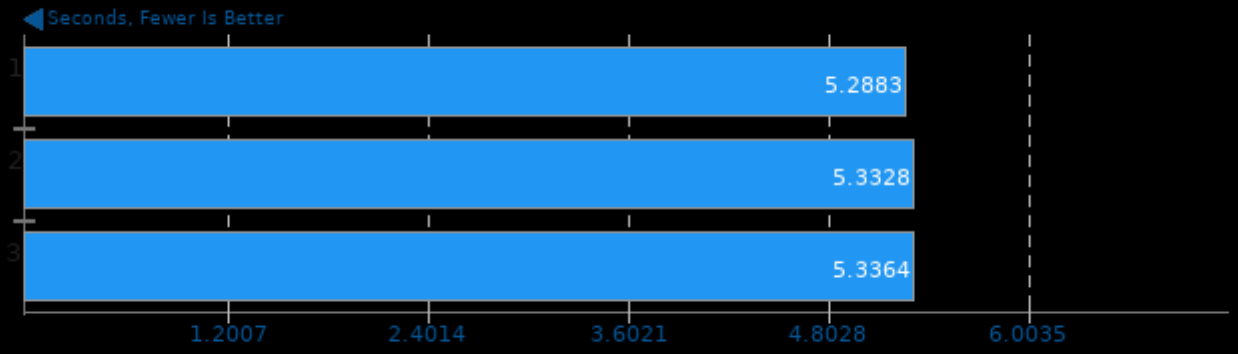
Renderer: Software CPU - Resolution: 1920 x 1080



1. (CC) gcc options: -lm -ldl -rdynamic -shared -lSDL2 -O2 -pipe -fomit-frame-pointer -std=gnu99 -fno-strict-aliasing -fwrapv -fvisibility=hidden -MMD -mf

ASTC Encoder 3.0

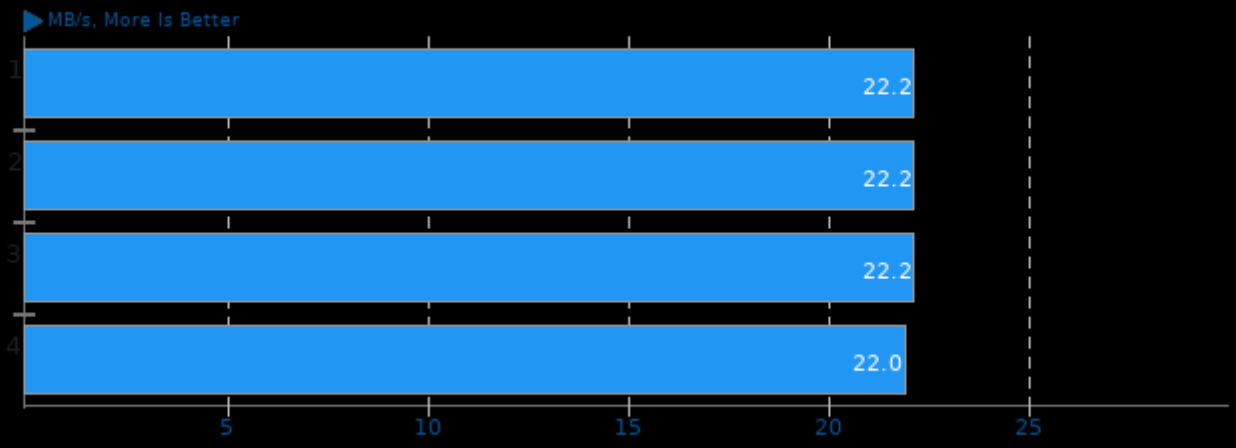
Preset: Medium



1. (CXX) g++ options: -O3 -flto -pthread

Zstd Compression 1.5.0

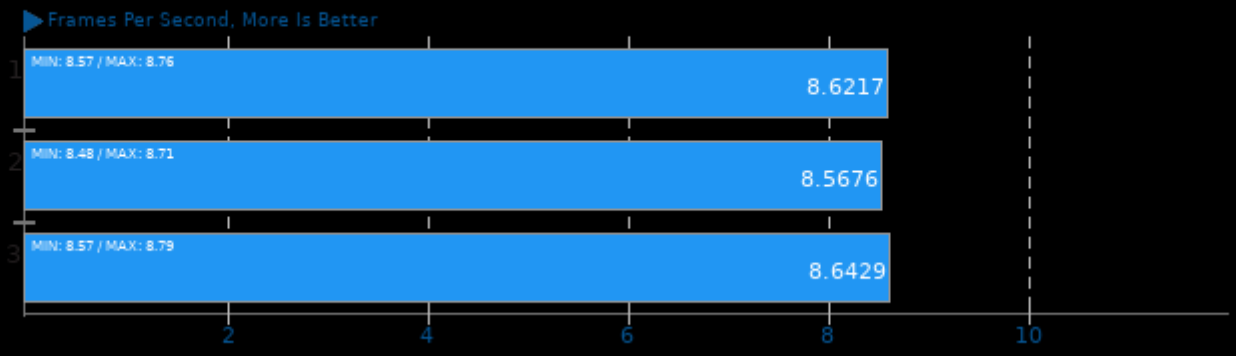
Compression Level: 19, Long Mode - Compression Speed



1. (CC) gcc options: -O3 -pthread -lz -llzma

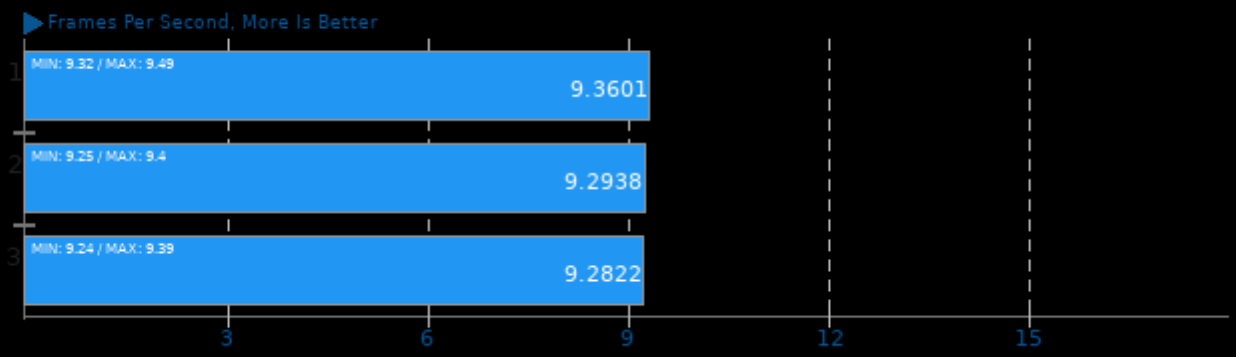
Embree 3.13

Binary: Pathtracer ISPC - Model: Crown



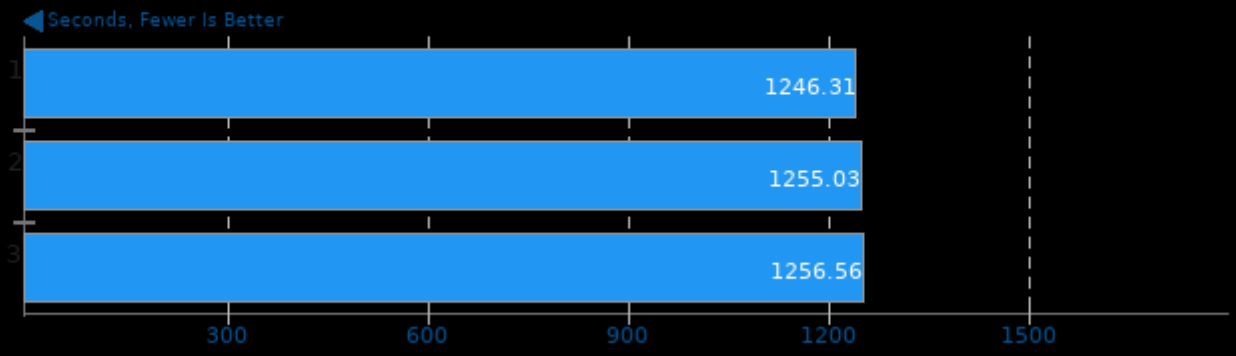
Embree 3.13

Binary: Pathtracer ISPC - Model: Asian Dragon Obj



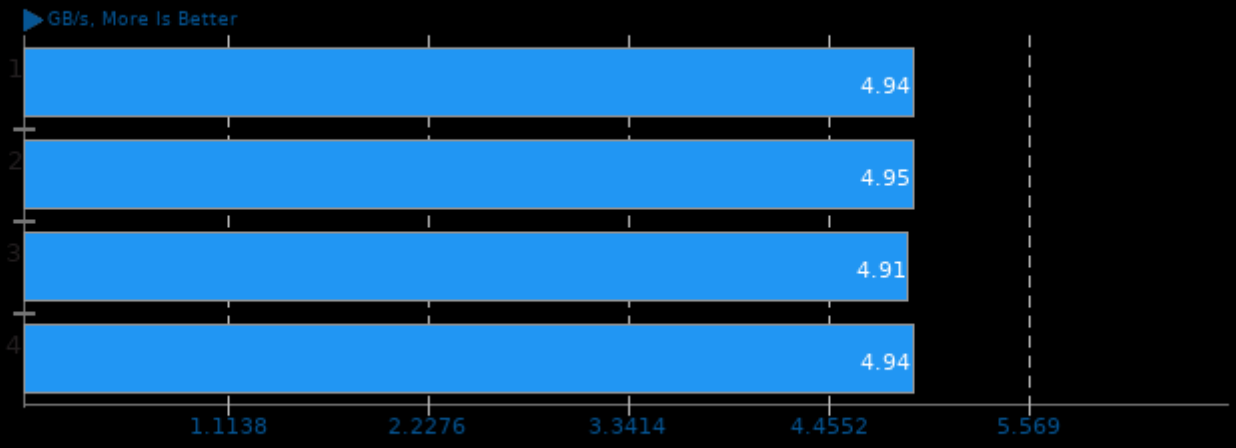
Timed GCC Compilation 11.2.0

Time To Compile



simdjson 1.0

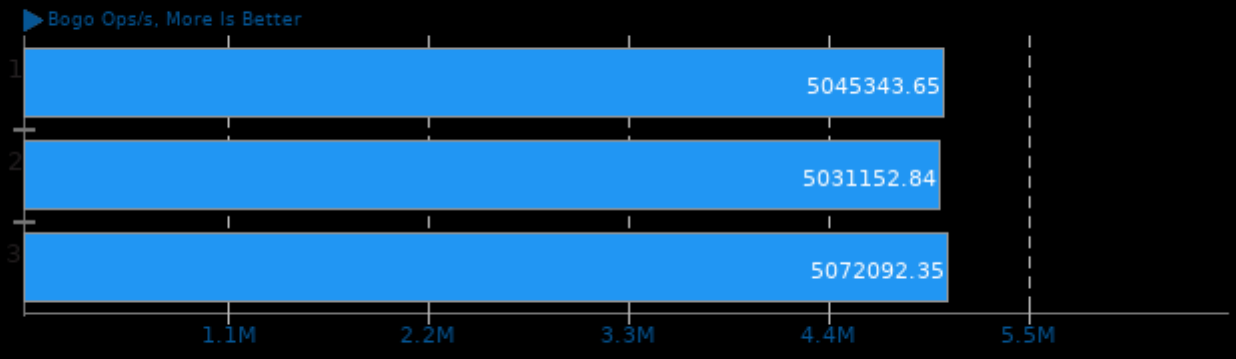
Throughput Test: DistinctUserID



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

Stress-NG 0.13.02

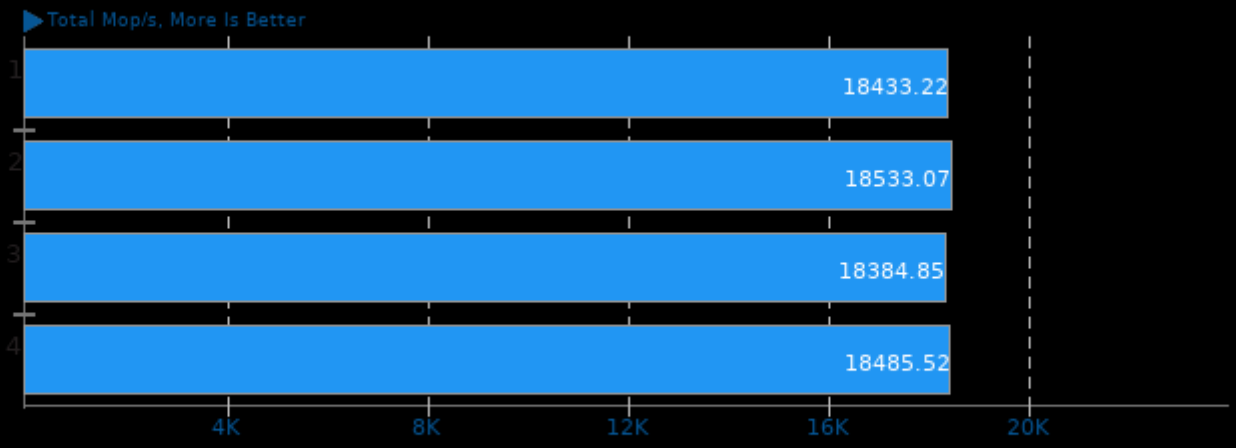
Test: System V Message Passing



1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lcrypt -lrt -lsctp -lz -ldl -pthread -lc -latomic

NAS Parallel Benchmarks 3.4

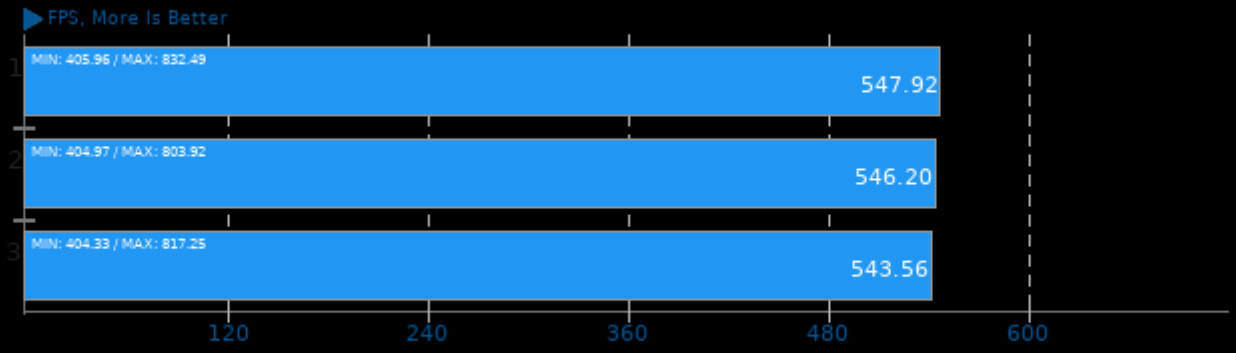
Test / Class: BT.C



1. (F9X) gfortran options: -O3 -march=native -pthread -lmpi_usempif08 -lmpi_mpifh -lmpi
2. Open MPI 4.0.3

dav1d 0.9.2

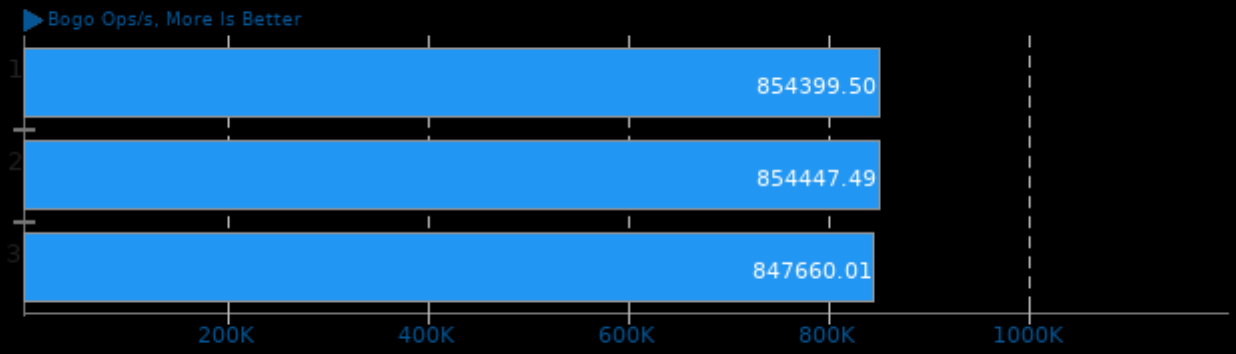
Video Input: Chimera 1080p



1. (CC) gcc options: -pthread -lm

Stress-NG 0.13.02

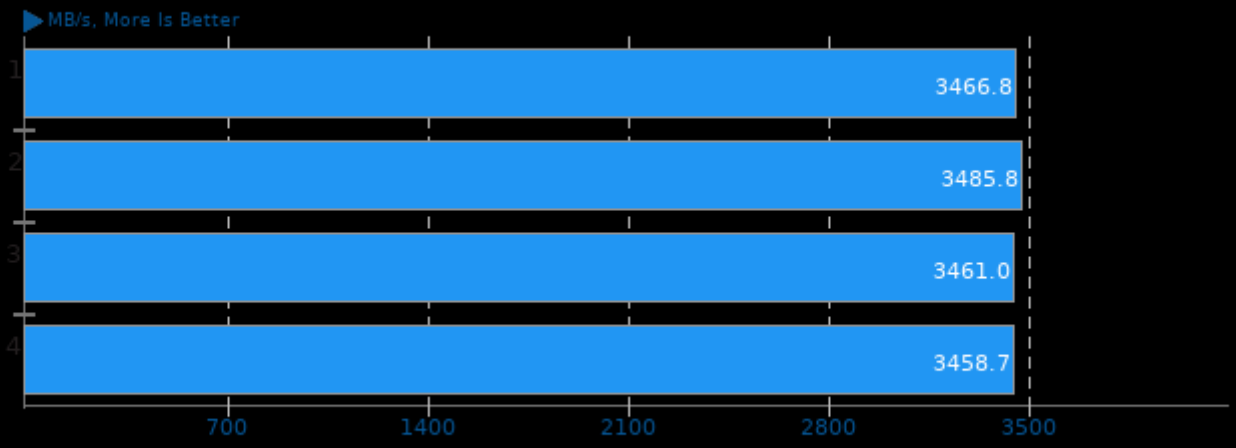
Test: Glibc C String Functions



1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lcrypt -lrt -lsctp -lz -ldl -pthread -lc -latomic

Zstd Compression 1.5.0

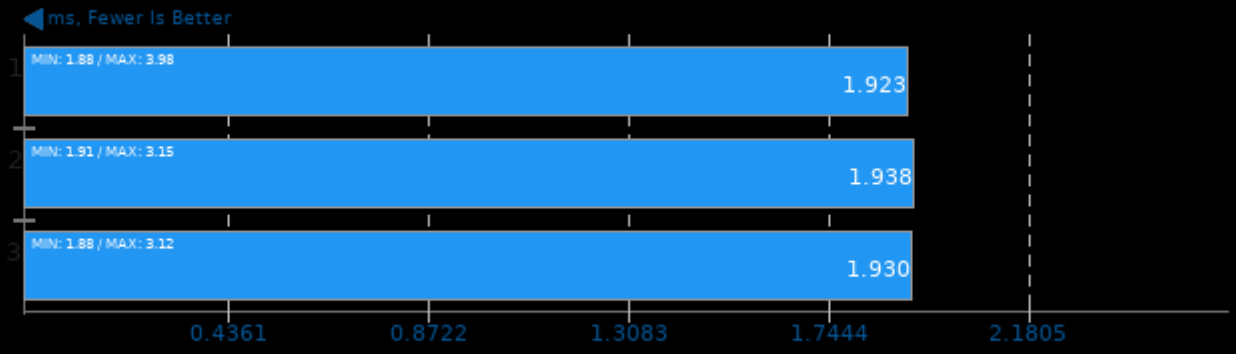
Compression Level: 19, Long Mode - Decompression Speed



1. (CC) gcc options: -O3 -pthread -lz -llzma

Mobile Neural Network 1.2

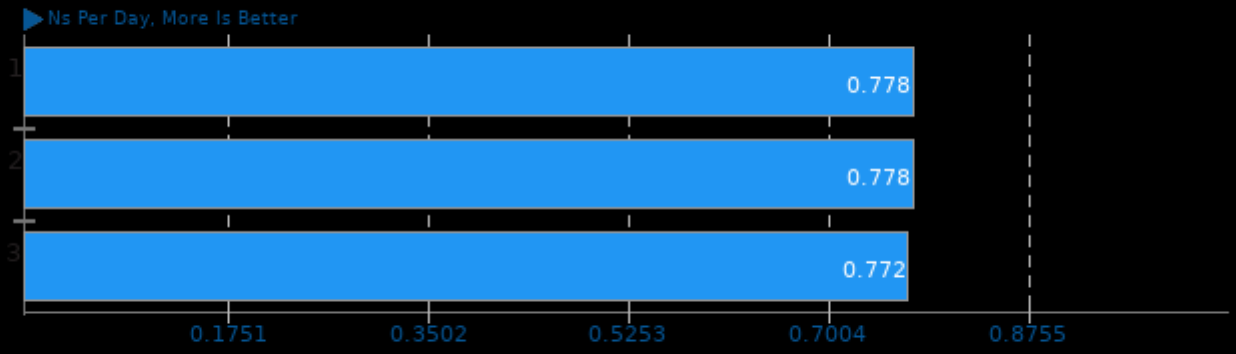
Model: mobilenetV3



1. (CXX) g++ options: -std=c++11 -O3 -fvisibility=hidden -fomit-frame-pointer -fstrict-aliasing -ffunction-sections -fdata-sections -ffast-math -fno-rtti -fn

GROMACS 2021.2

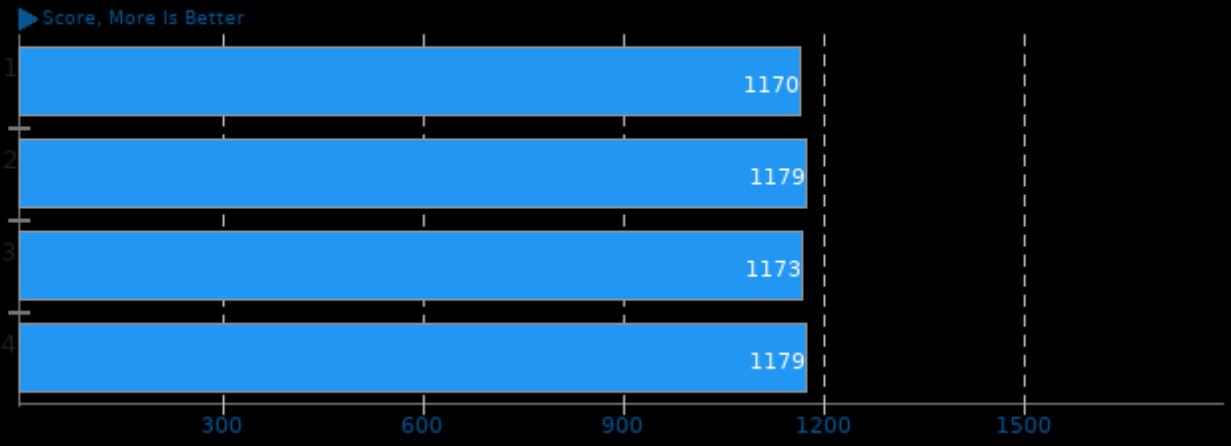
Implementation: MPI CPU - Input: water_GMX50_bare



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

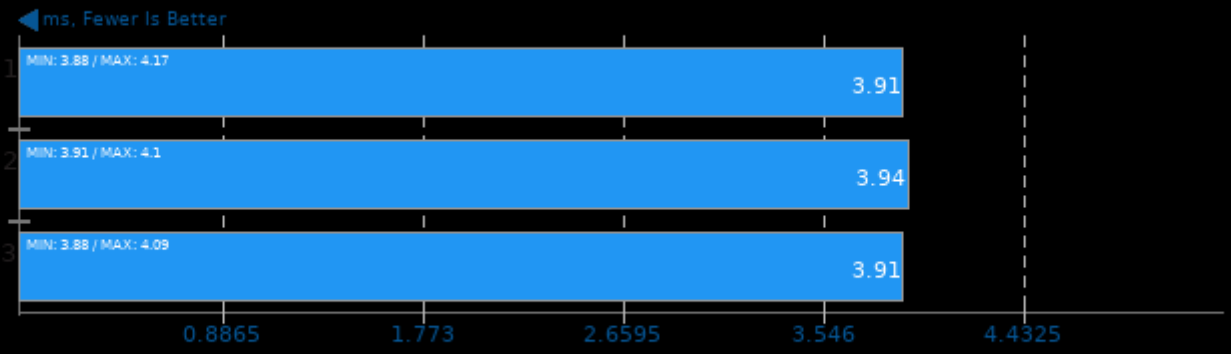
GLmark2 2021.08.30

Resolution: 1280 x 1024



NCNN 20210720

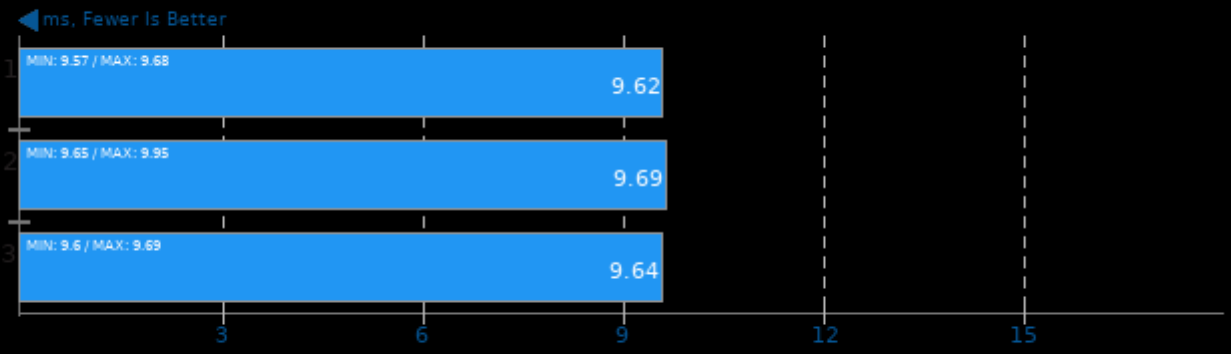
Target: CPU - Model: mnasnet



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

NCNN 20210720

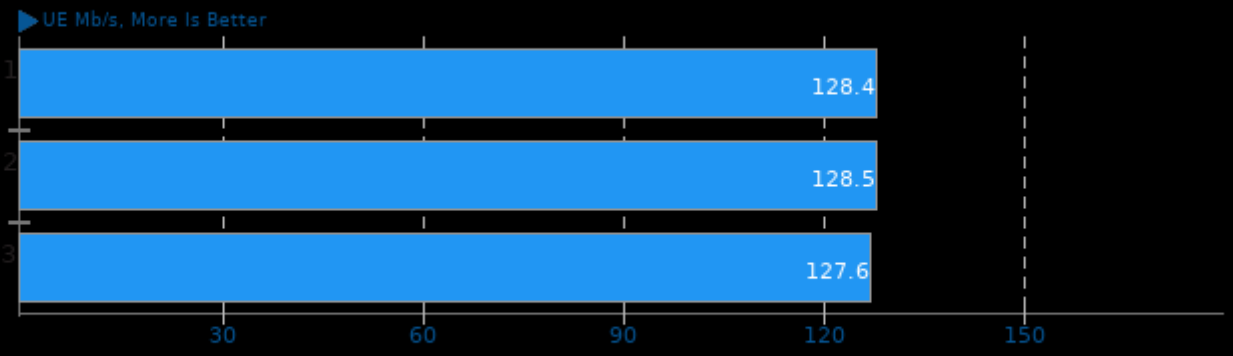
Target: CPU - Model: regnety_400m



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

srsRAN 21.04

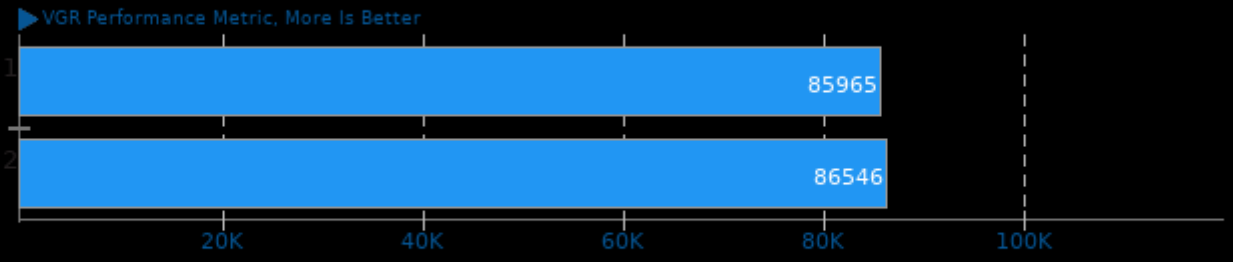
Test: 4G PHY_DL_Test 100 PRB MIMO 64-QAM



1. (CXX) g++ options: -std=c++11 -fno-strict-aliasing -march=native -mfpmath=sse -mavx2 -fvisibility=hidden -O3 -fno-trapping-math -fno-math-errno

BRL-CAD 7.32.2

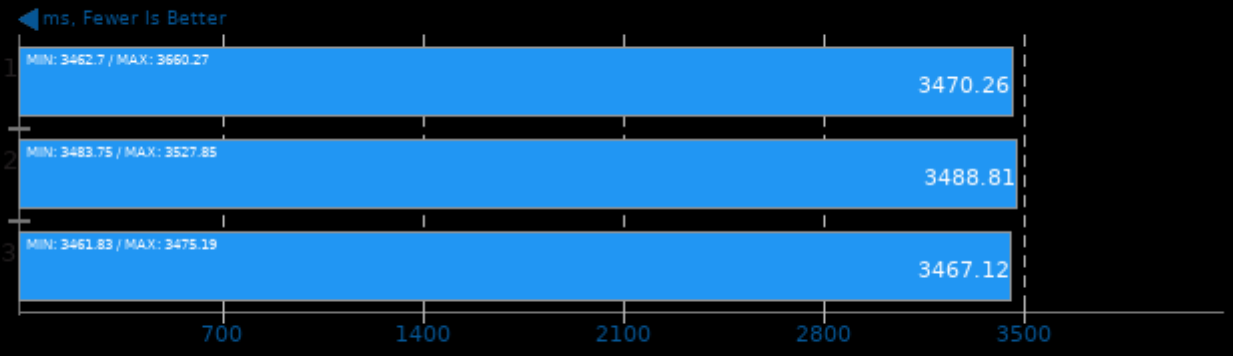
VGR Performance Metric



1. (CXX) g++ options: -std=c++11 -pipe -fvisibility=hidden -fno-strict-aliasing -fno-common -fexceptions -ftemplate-depth-128 -m64 -ggdb3 -O3 -fipa-pt

TNN 0.3

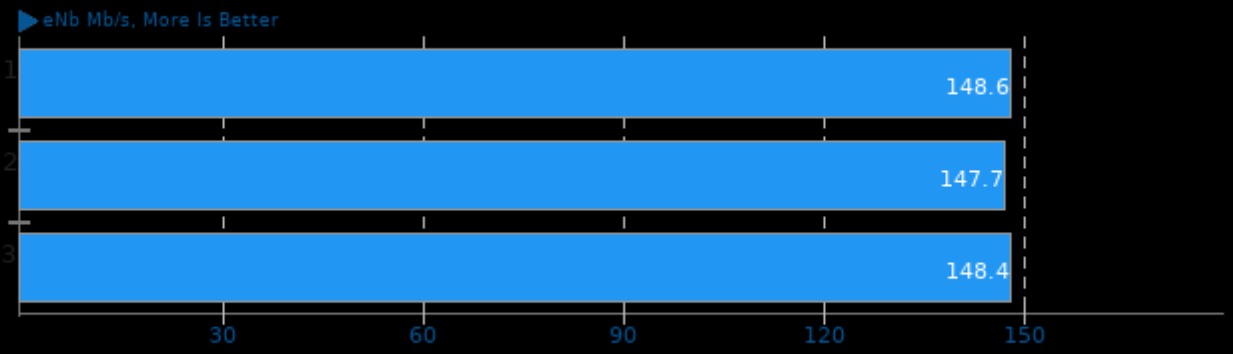
Target: CPU - Model: DenseNet



1. (CXX) g++ options: -fopenmp -pthread -fvisibility=hidden -fvisibility=default -O3 -rdynamic -ldl

srsRAN 21.04

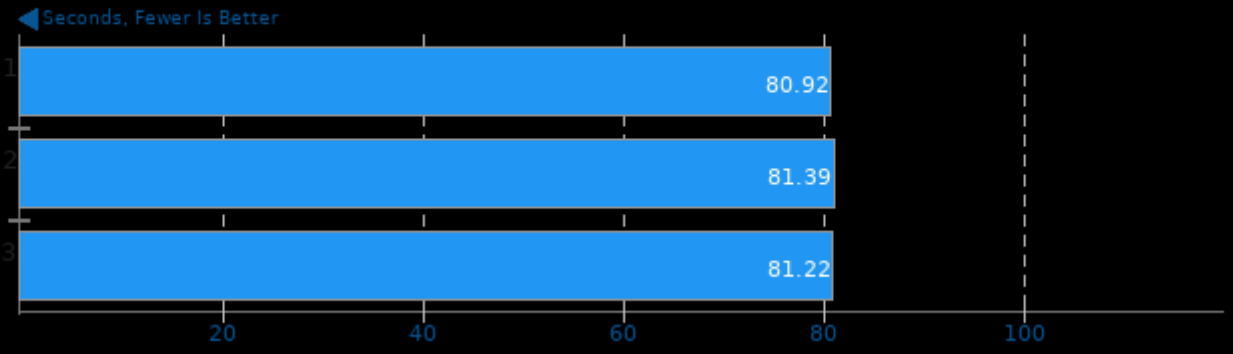
Test: 5G PHY_DL_NR Test 270 PRB SISO 256-QAM



1. (CXX) g++ options: -std=c++11 -fno-strict-aliasing -march=native -mfpmath=sse -mavx2 -fvisibility=hidden -O3 -fno-trapping-math -fno-math-errno

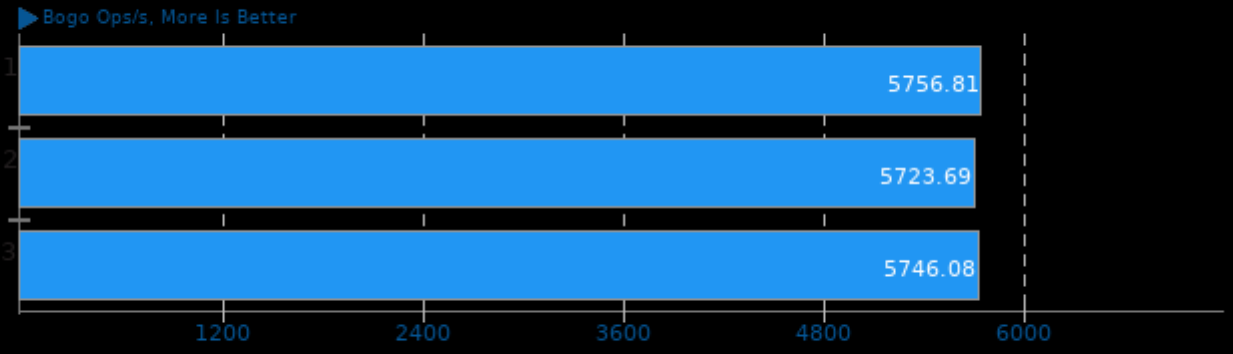
Timed FFmpeg Compilation 4.4

Time To Compile



Stress-NG 0.13.02

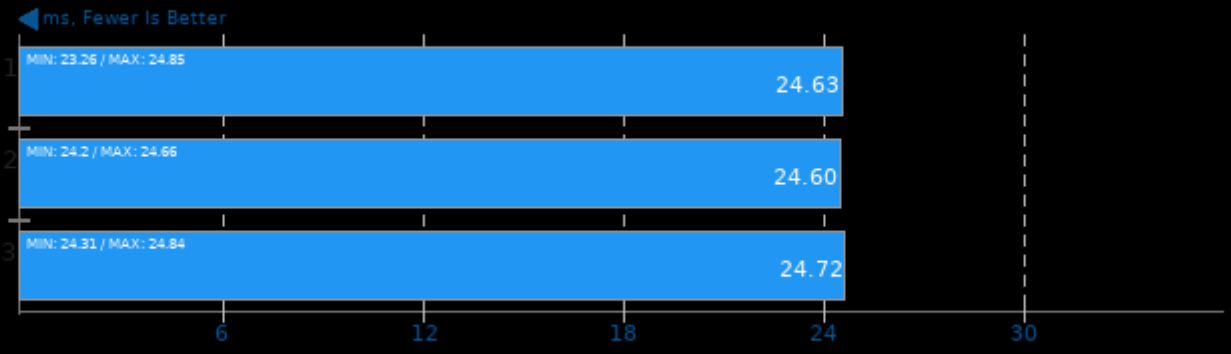
Test: RdRand



1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lcrypt -lrt -lsctp -lz -ldl -pthread -lc -latomic

NCNN 20210720

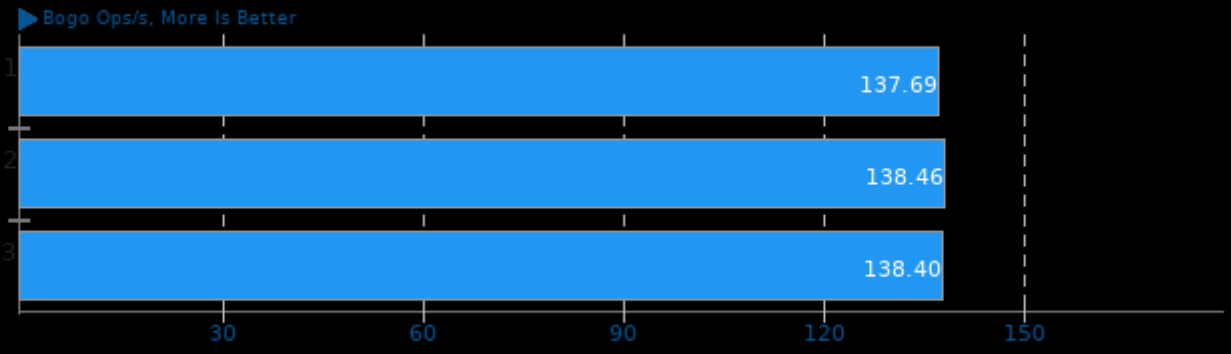
Target: Vulkan GPU - Model: efficientnet-b0



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

Stress-NG 0.13.02

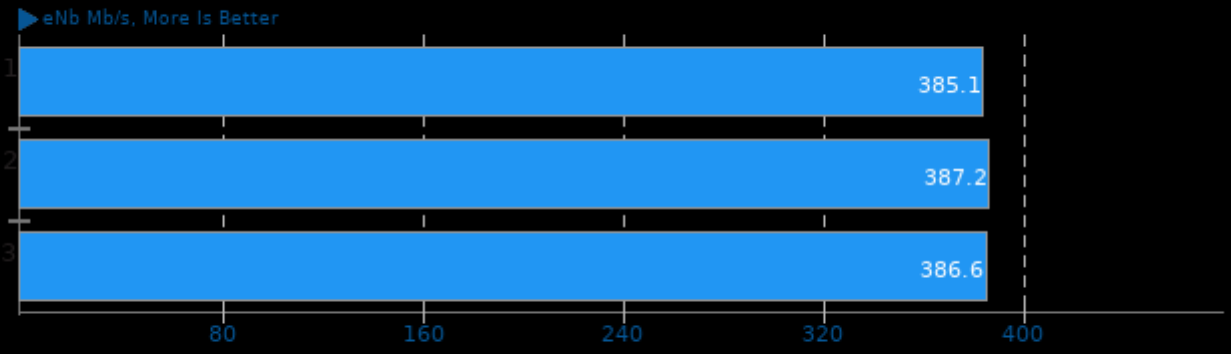
Test: NUMA



1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lcrypt -lrt -lsctp -lz -ldl -pthread -lc -latomic

srsRAN 21.04

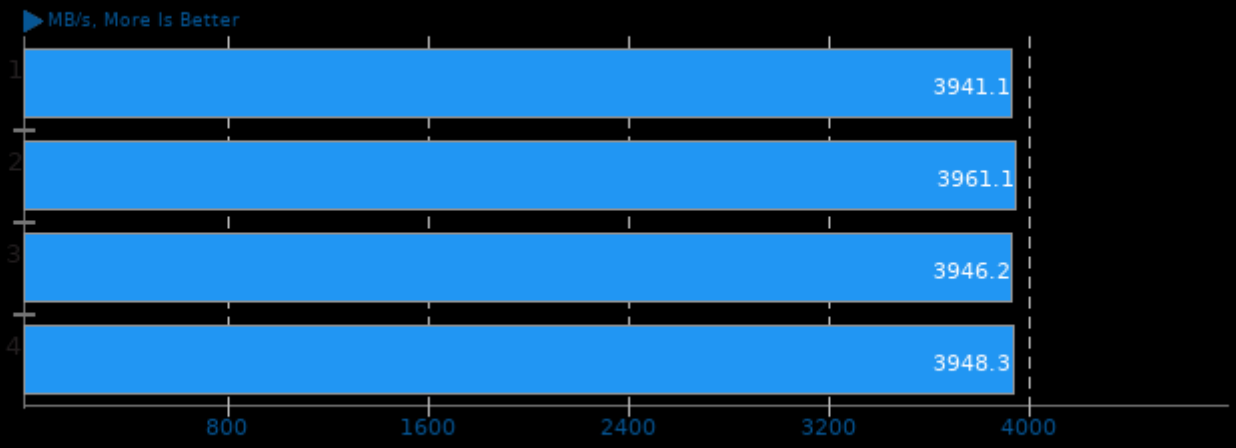
Test: 4G PHY_DL_Test 100 PRB MIMO 64-QAM



1. (CXX) g++ options: -std=c++11 -fno-strict-aliasing -march=native -mfpmath=sse -mavx2 -fvisibility=hidden -O3 -fno-trapping-math -fno-math-errno

Zstd Compression 1.5.0

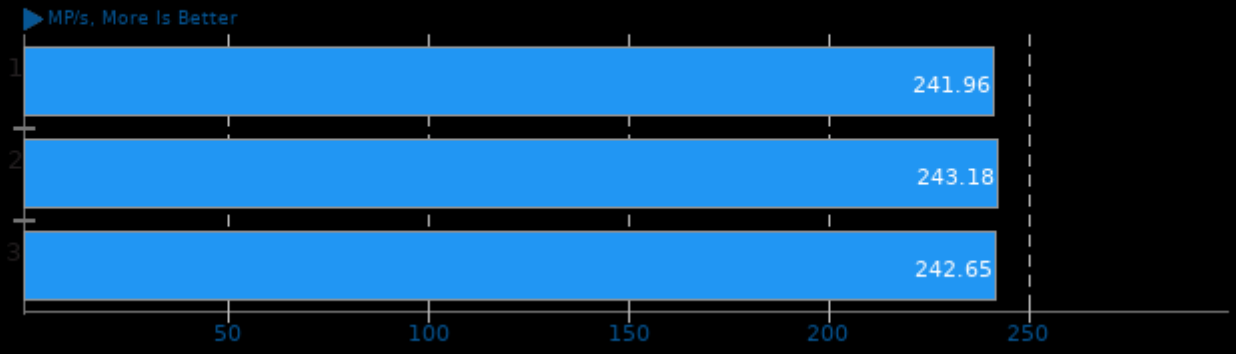
Compression Level: 8 - Decompression Speed



1. (CC) gcc options: -O3 -pthread -lz -llzma

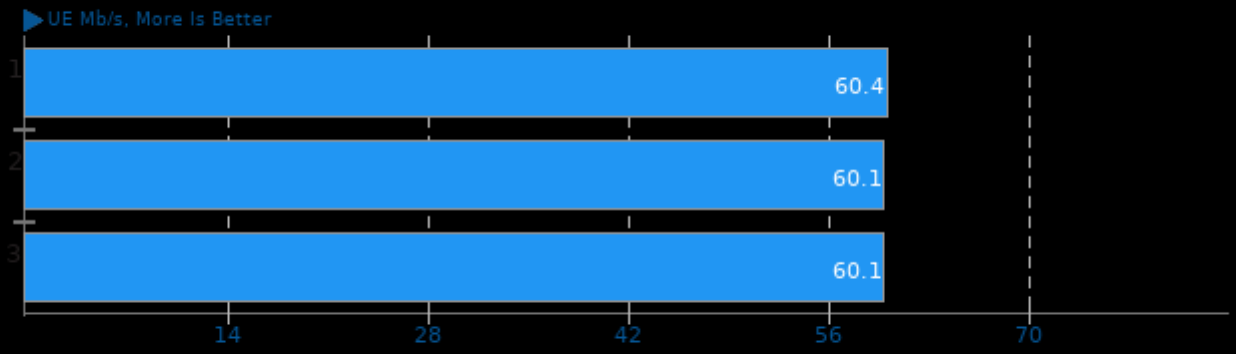
JPEG XL Decoding libjxl 0.5

CPU Threads: All



srsRAN 21.04

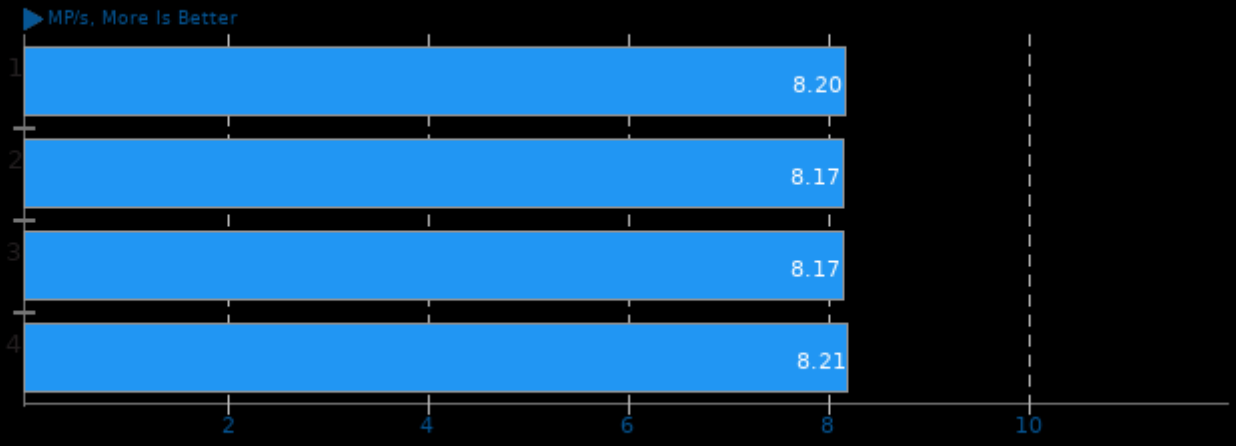
Test: 5G PHY_DL_NR Test 52 PRB SISO 64-QAM



1. (CXX) g++ options: -std=c++11 -fno-strict-aliasing -march=native -mfpmath=sse -mavx2 -fvisibility=hidden -O3 -fno-trapping-math -fno-math-errno

JPEG XL libjxl 0.5

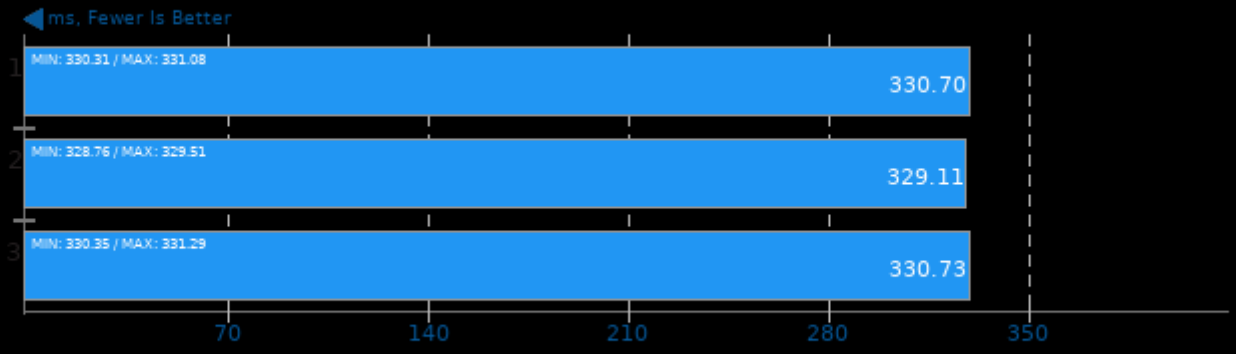
Input: PNG - Encode Speed: 7



1. (CXX) g++ options: -funwind-tables -O3 -O2 -fPIE -pie -pthread

TNN 0.3

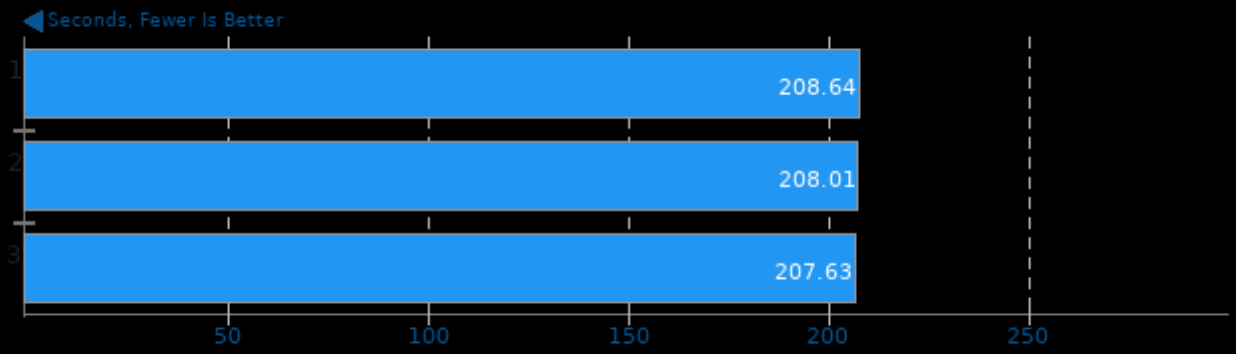
Target: CPU - Model: MobileNet v2



1. (CXX) g++ options: -fopenmp -pthread -fvisibility=hidden -fvisibility=default -O3 -rdynamic -ldl

YafaRay 3.5.1

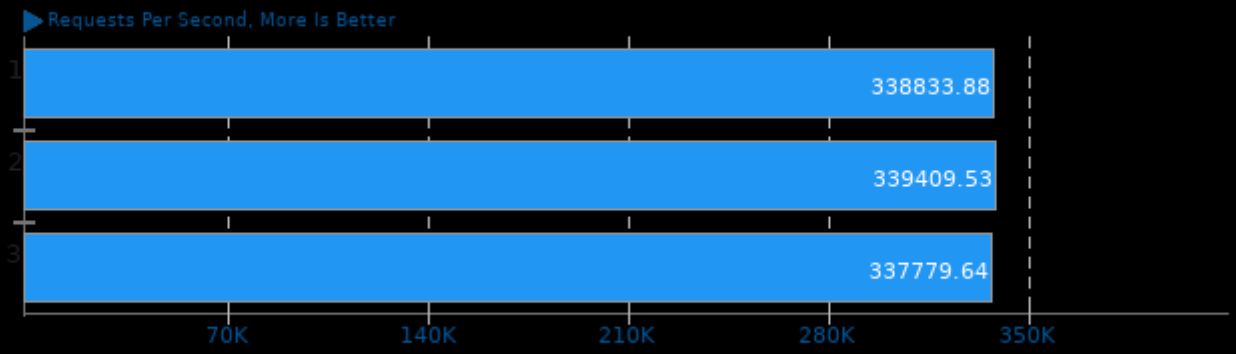
Total Time For Sample Scene



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

nginx 1.21.1

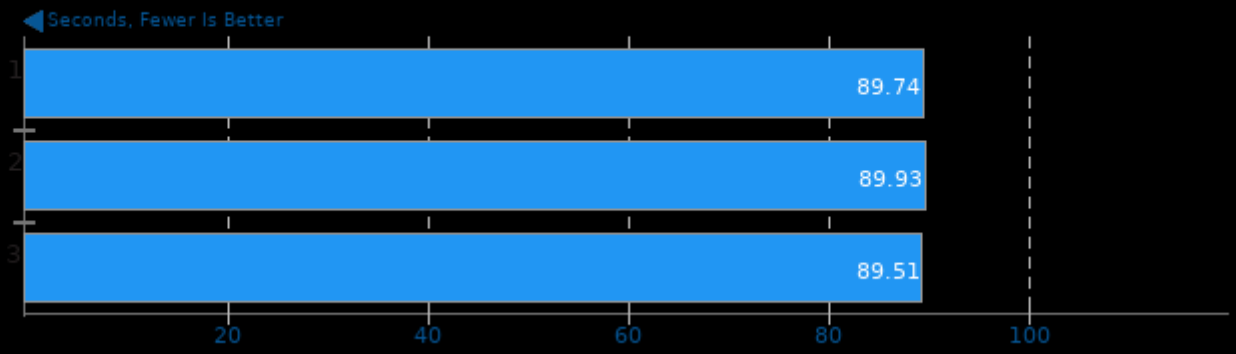
Concurrent Requests: 500



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

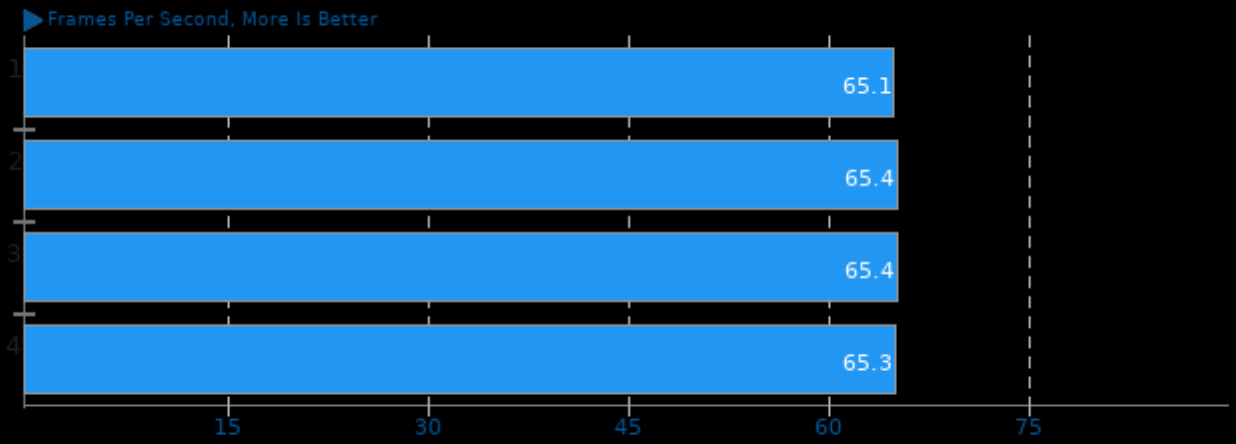
Timed GDB GNU Debugger Compilation 10.2

Time To Compile



yquake2 8.0

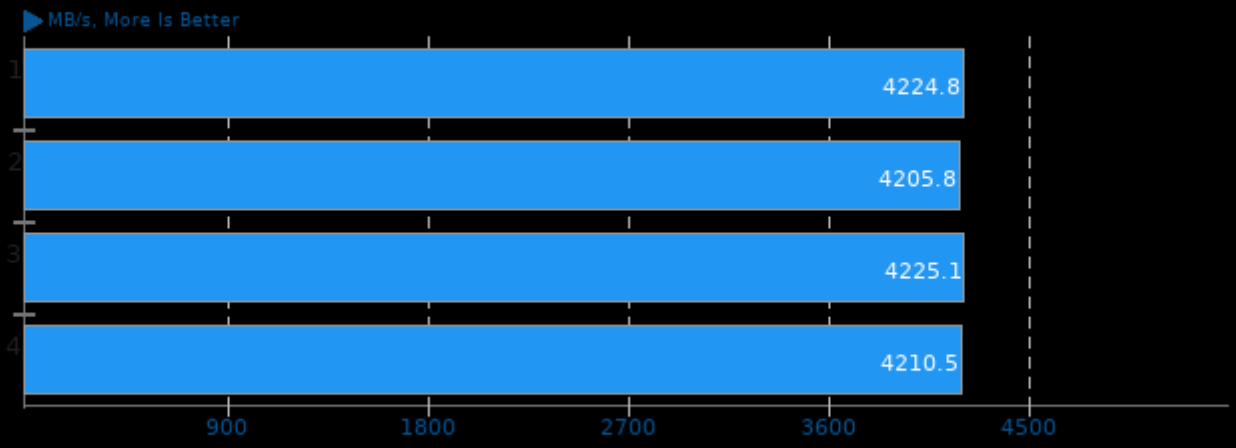
Renderer: Vulkan - Resolution: 1920 x 1080



1. (CC) gcc options: -lm -ldl -rdynamic -shared -lSDL2 -O2 -pipe -fomit-frame-pointer -std=gnu99 -fno-strict-aliasing -fwrapv -fvisibility=hidden -MMD -mf

Zstd Compression 1.5.0

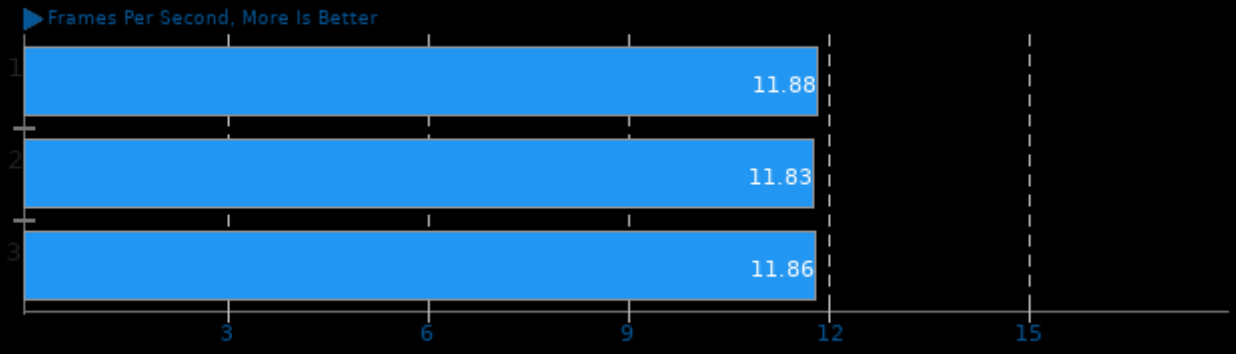
Compression Level: 8, Long Mode - Decompression Speed



1. (CC) gcc options: -O3 -pthread -lz -llzma

SVT-AV1 0.8.7

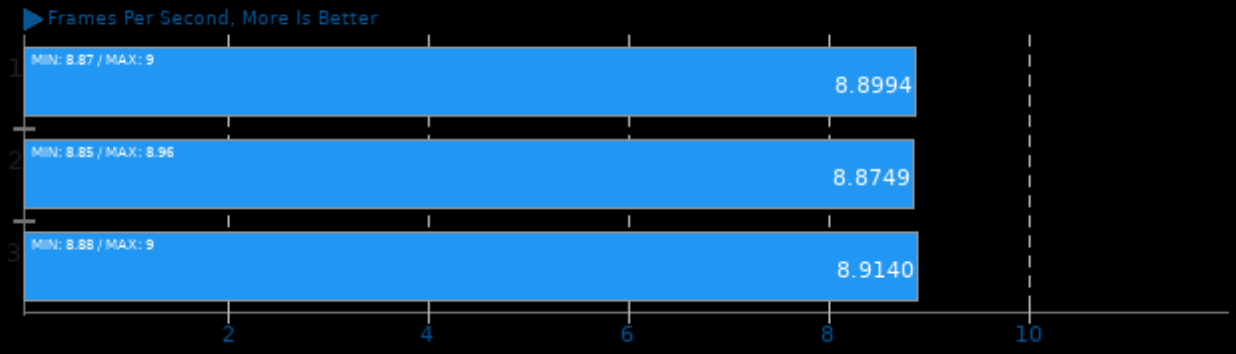
Encoder Mode: Preset 8 - Input: Bosphorus 4K



1. (CXX) g++ options: -mno-avx -mavx2 -mavx512f -mavx512bw -mavx512dq -pie

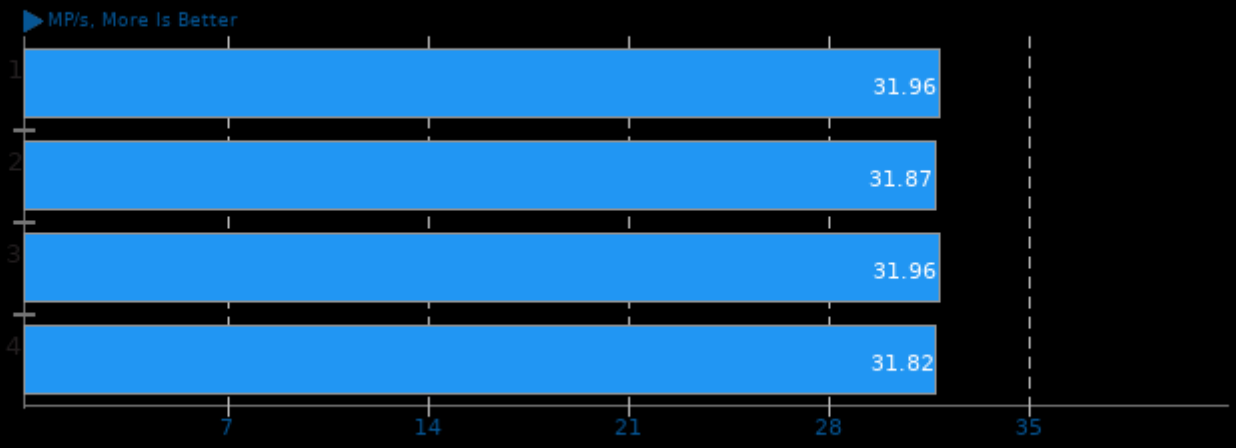
Embree 3.13

Binary: Pathtracer - Model: Asian Dragon



JPEG XL libjxl 0.5

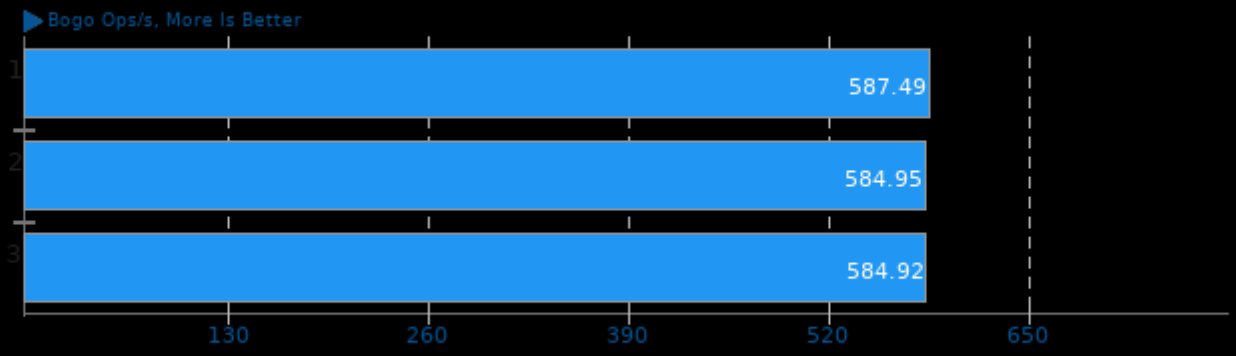
Input: PNG - Encode Speed: 5



1. (CXX) g++ options: -funwind-tables -O3 -O2 -fPIE -pie -pthread

Stress-NG 0.13.02

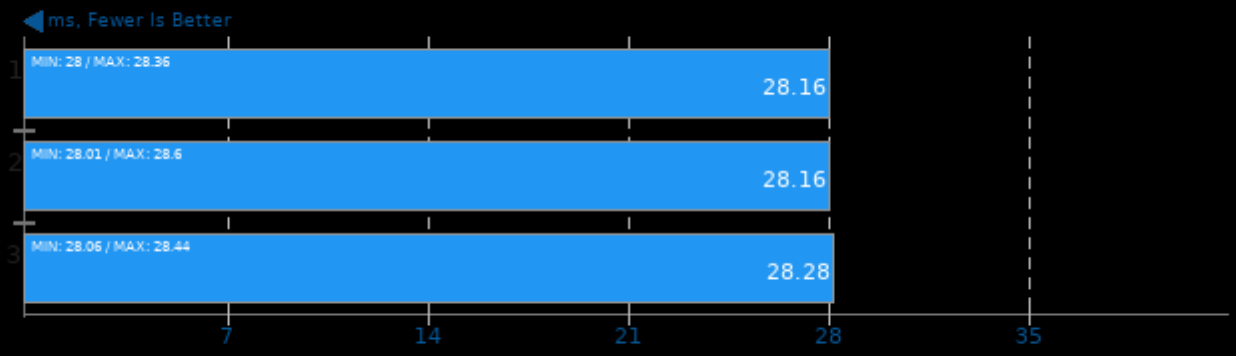
Test: MEMFD



1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lcrypt -lrt -lsctp -lz -ldl -pthread -lc -latomic

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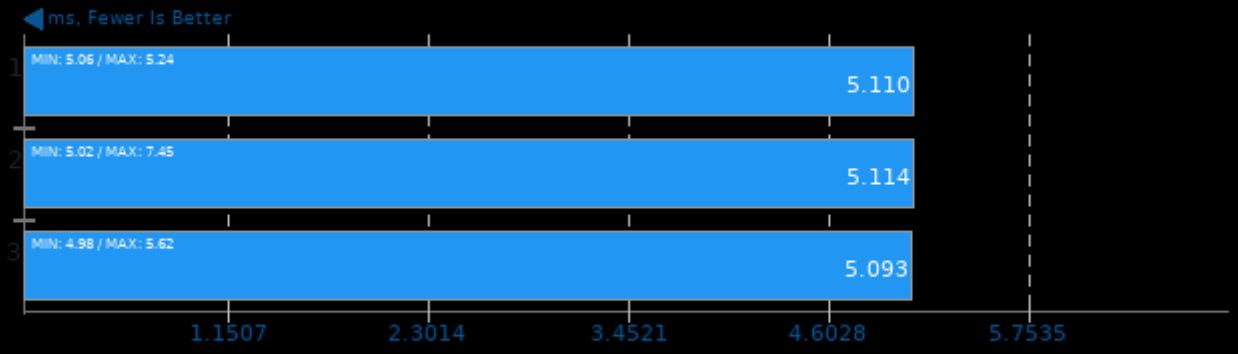
Target: CPU - Model: resnet50



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

Mobile Neural Network 1.2

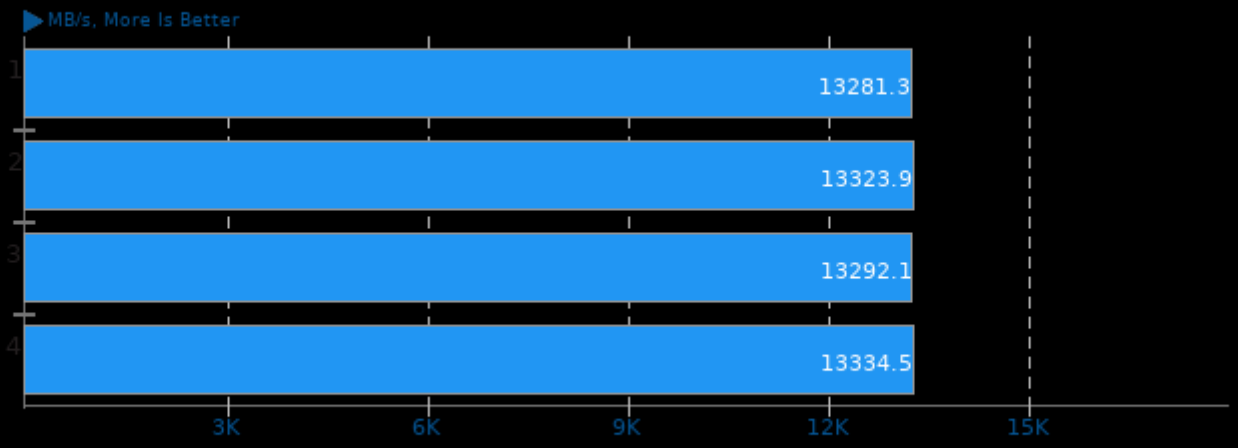
Model: SqueezeNetV1.0



1. (CXX) g++ options: -std=c++11 -O3 -fvisibility=hidden -fomit-frame-pointer -fstrict-aliasing -ffunction-sections -fdata-sections -ffast-math -fno-rtti -fv

C-Blosc 2.0

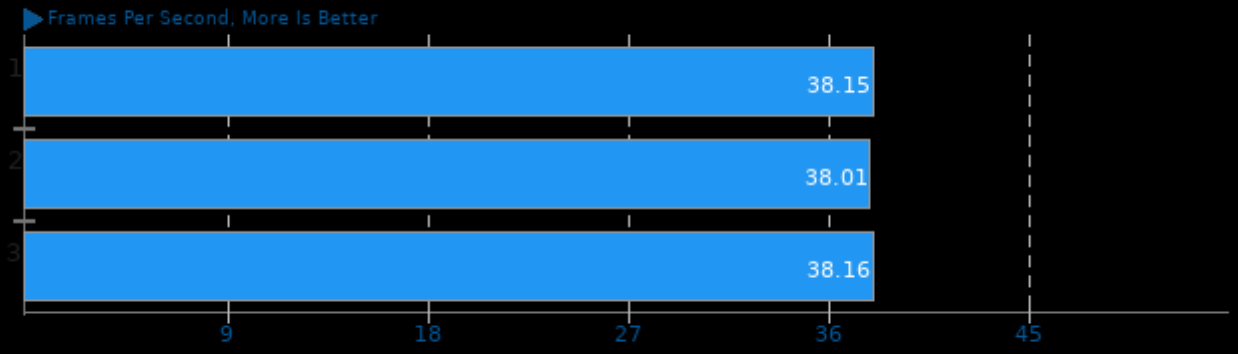
Compressor: blosclz



1. (CC) gcc options: -std=gnu99 -O3 -pthread -lrt -lm

SVT-AV1 0.8.7

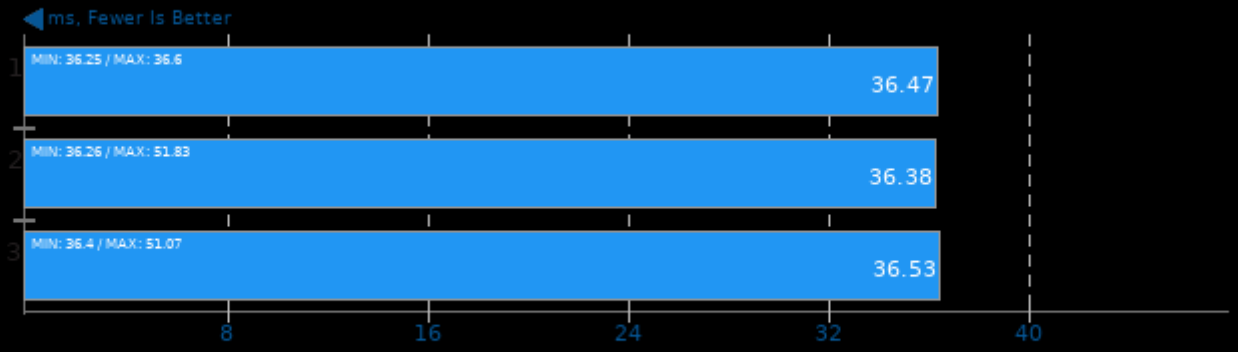
Encoder Mode: Preset 8 - Input: Bosphorus 1080p



1. (CXX) g++ options: -mno-avx -mavx2 -mavx512f -mavx512bw -mavx512dq -pie

Mobile Neural Network 1.2

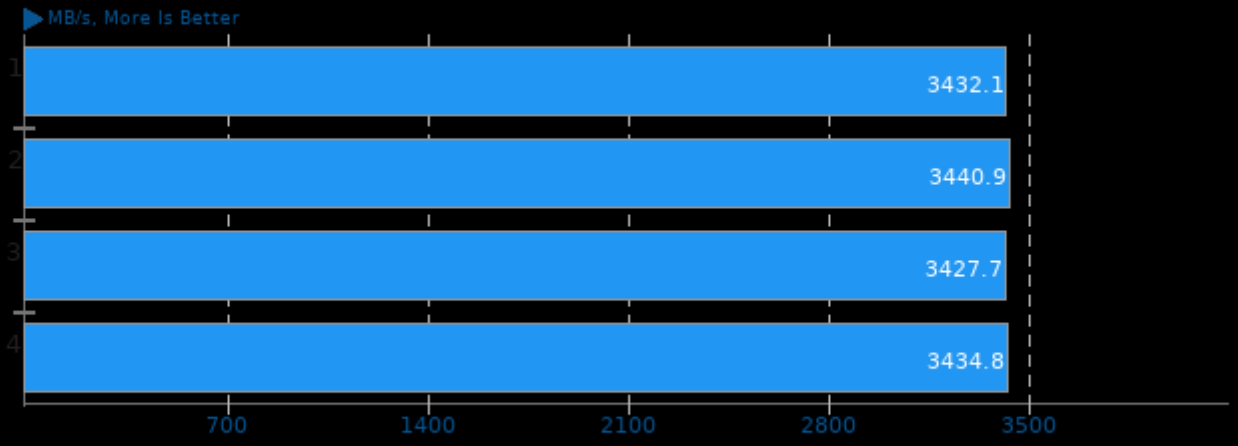
Model: resnet-v2-50



1. (CXX) g++ options: -std=c++11 -O3 -fvisibility=hidden -fomit-frame-pointer -fstrict-aliasing -ffunction-sections -fdata-sections -ffast-math -fno-rtti -fv

Zstd Compression 1.5.0

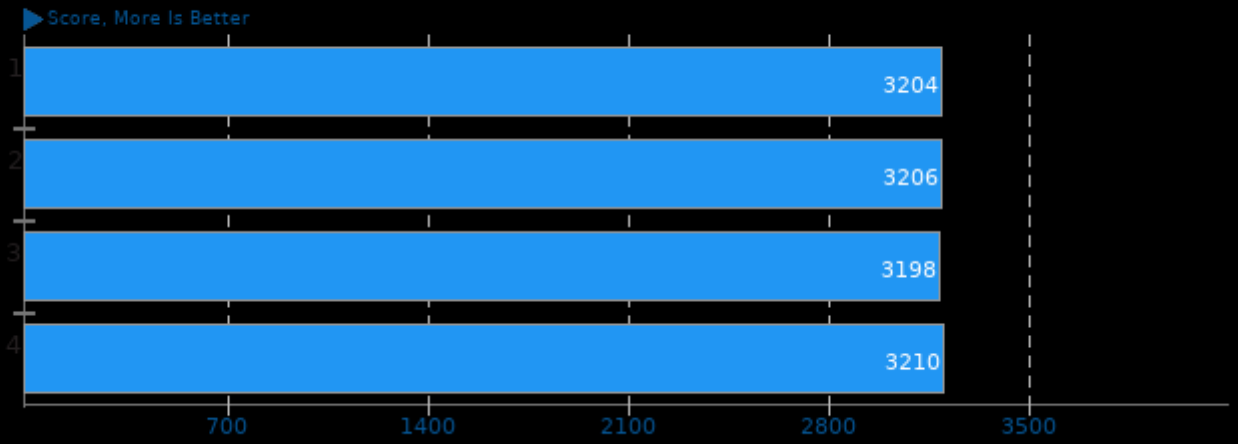
Compression Level: 19 - Decompression Speed



1. (CC) gcc options: -O3 -pthread -lz -llzma

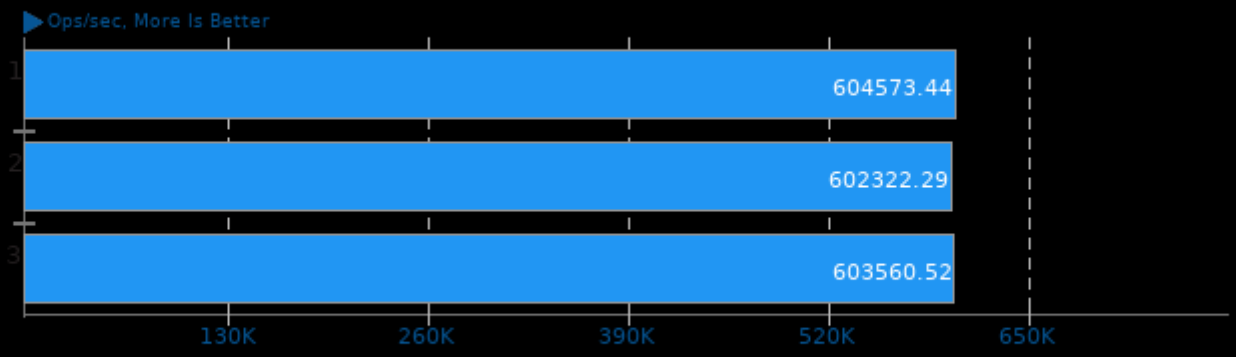
GLmark2 2021.08.30

Resolution: 800 x 600



8700k september

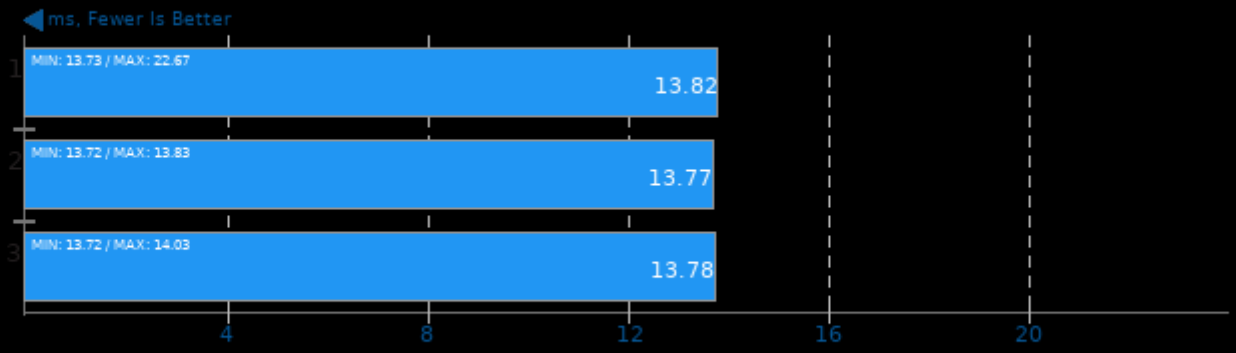
KeyDB 6.2.0



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

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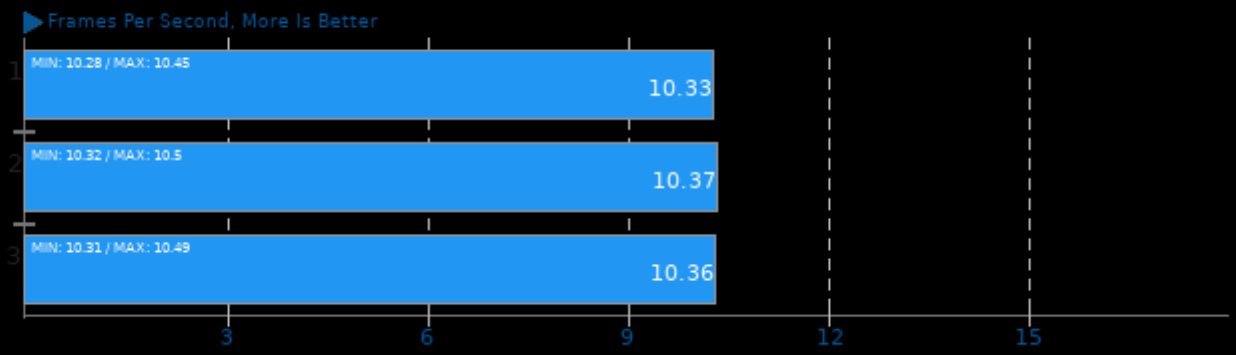
Target: CPU - Model: alexnet



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

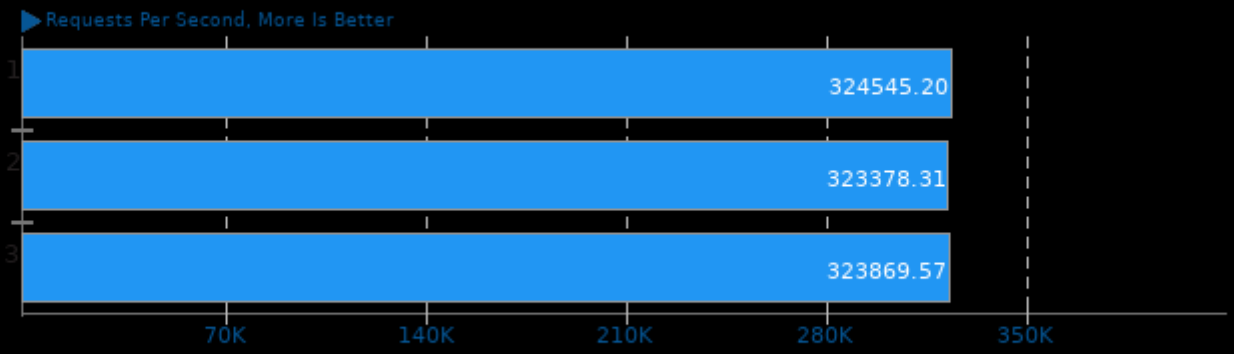
Embree 3.13

Binary: Pathtracer ISPC - Model: Asian Dragon



nginx 1.21.1

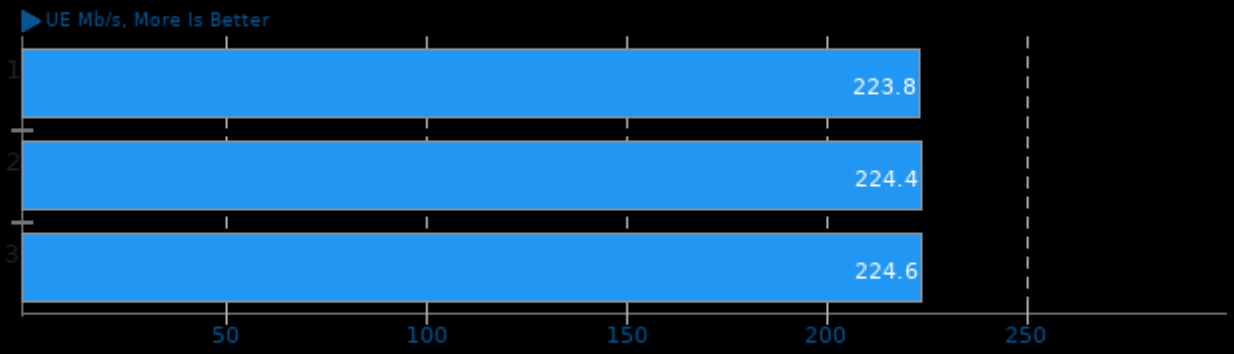
Concurrent Requests: 1000



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

srsRAN 21.04

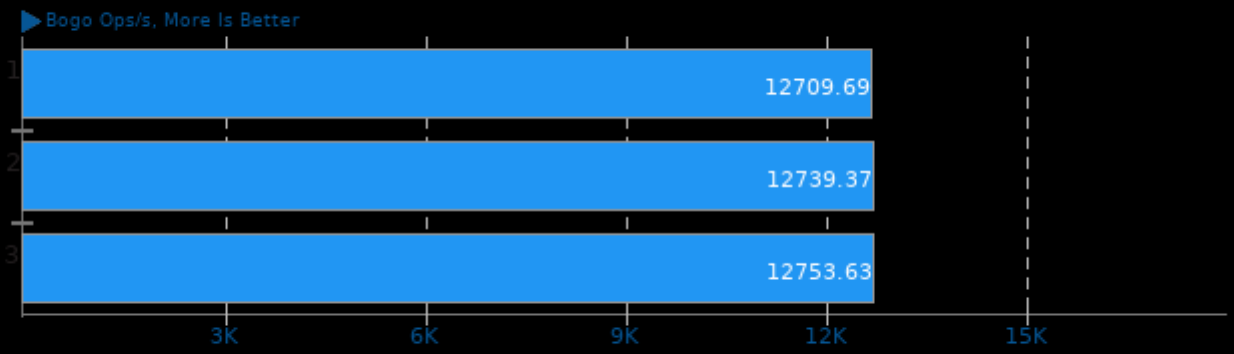
Test: 4G PHY_DL_Test 100 PRB SISO 64-QAM



1. (CXX) g++ options: -std=c++11 -fno-strict-aliasing -march=native -mfpmath=sse -mavx2 -fvisibility=hidden -O3 -fno-trapping-math -fno-math-errno

Stress-NG 0.13.02

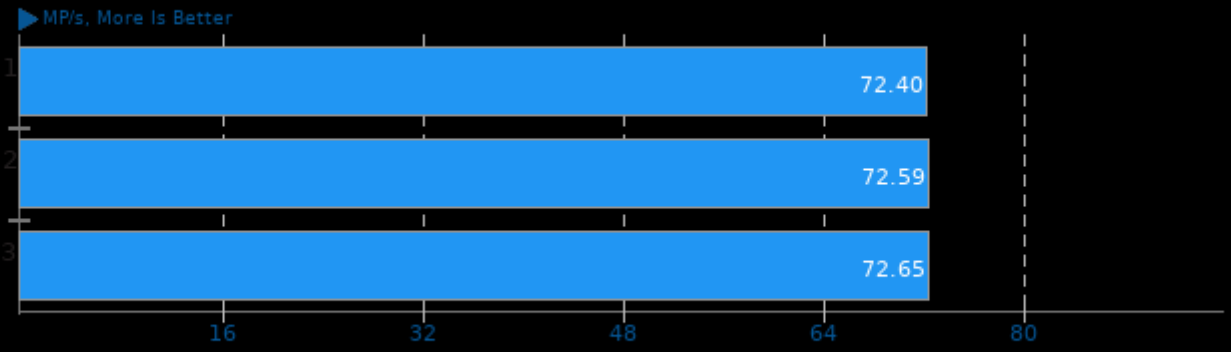
Test: CPU Stress



1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lcrypt -lrt -lsctp -lz -ldl -pthread -lc -latomic

JPEG XL libjxl 0.5

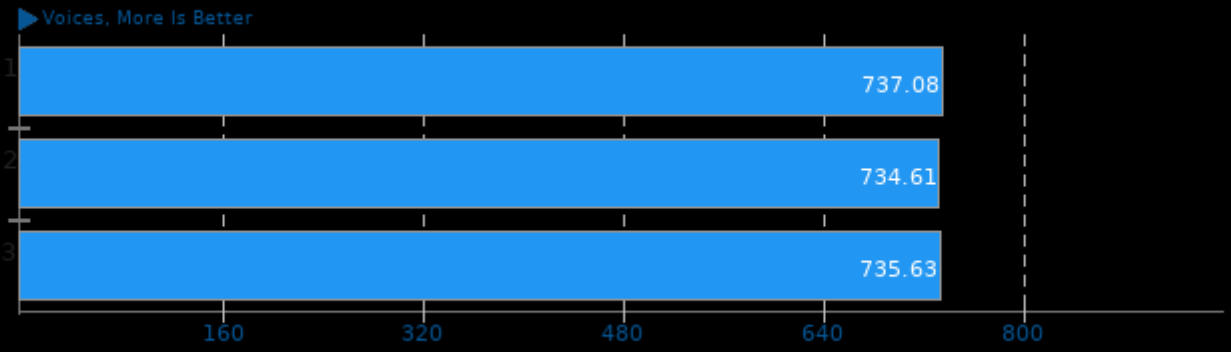
Input: JPEG - Encode Speed: 7



1. (CXX) g++ options: -funwind-tables -O3 -O2 -fPIE -pie -pthread

Google SynthMark 20201109

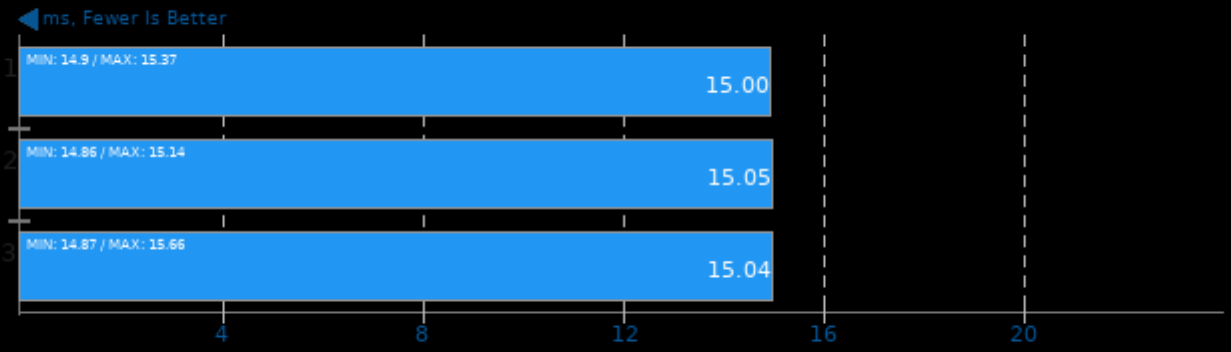
Test: VoiceMark_100



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

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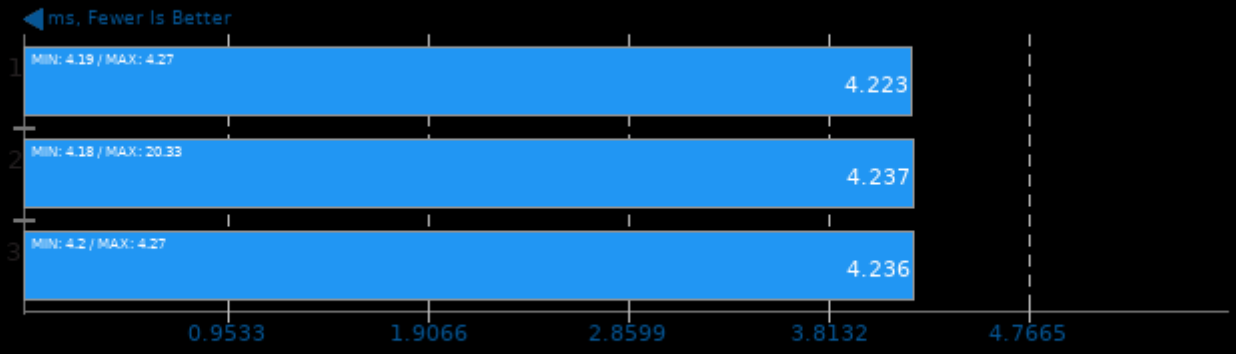
Target: CPU - Model: googlenet



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

Mobile Neural Network 1.2

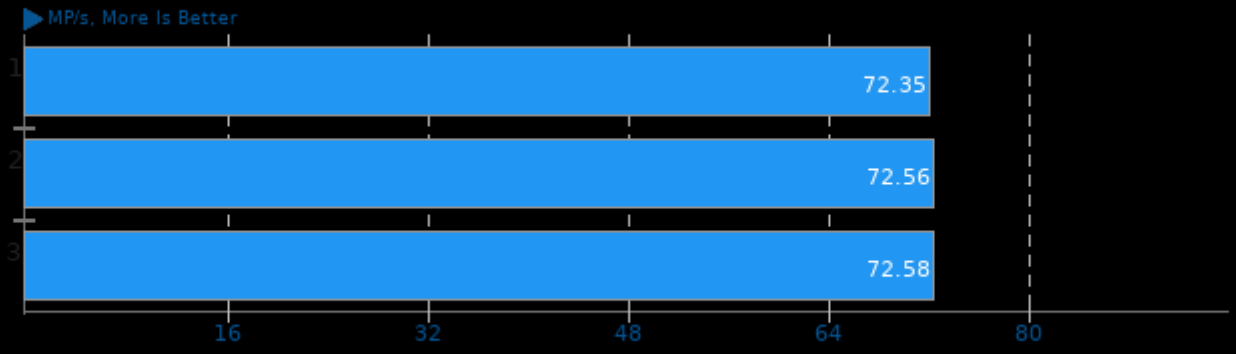
Model: mobilenet-v1-1.0



1. (CXX) g++ options: -std=c++11 -O3 -fvisibility=hidden -fomit-frame-pointer -fstrict-aliasing -ffunction-sections -fdata-sections -ffast-math -fno-rtti -fv

JPEG XL libjxl 0.5

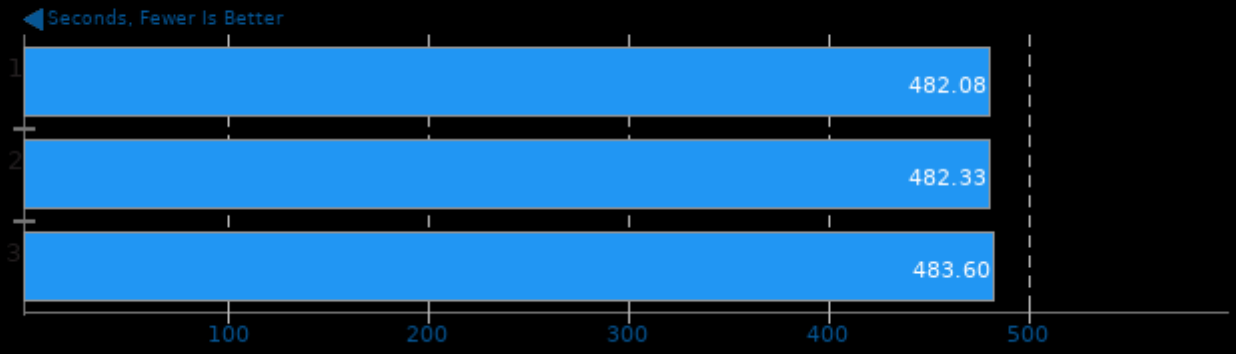
Input: JPEG - Encode Speed: 5



1. (CXX) g++ options: -funwind-tables -O3 -O2 -fPIE -pie -pthread

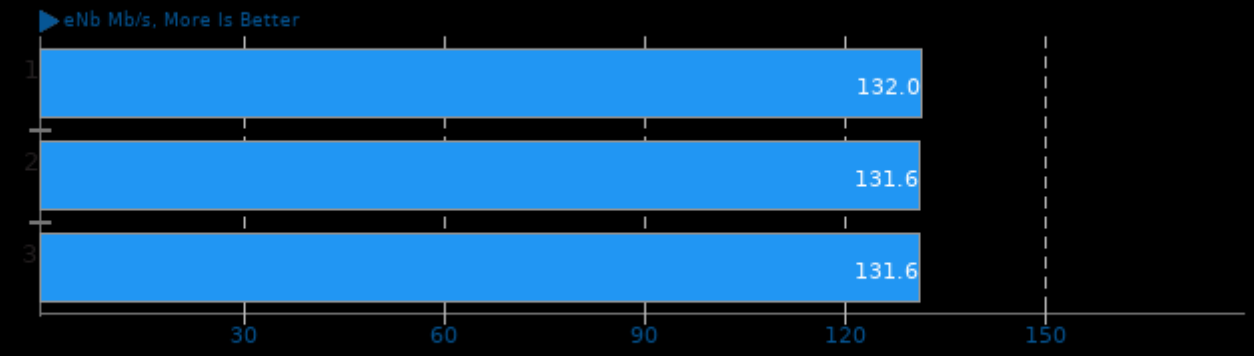
ECP-CANDLE 0.4

Benchmark: P3B2



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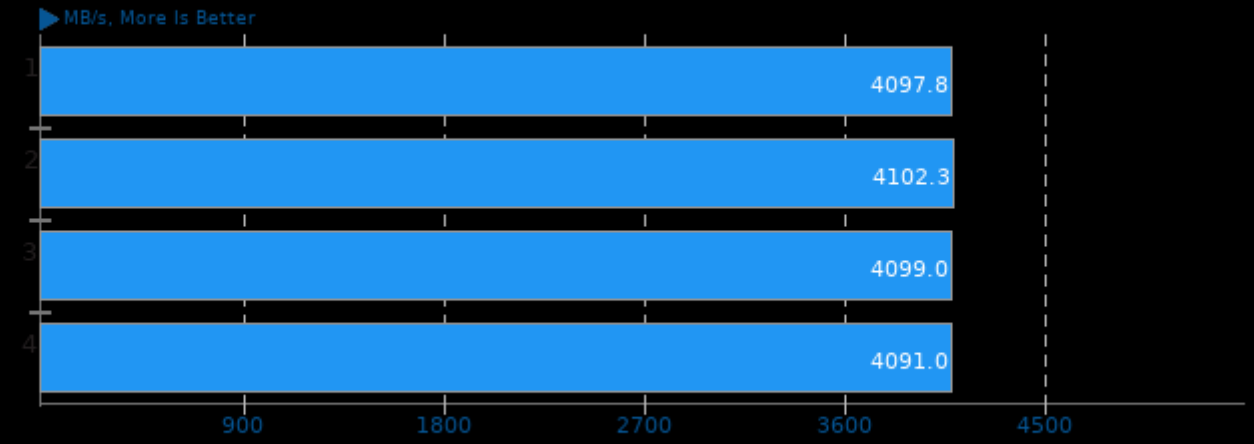
Test: 5G PHY_DL_NR Test 52 PRB SISO 64-QAM



1. (CXX) g++ options: -std=c++11 -fno-strict-aliasing -march=native -mfpmath=sse -mavx2 -fvisibility=hidden -O3 -fno-trapping-math -fno-math-errno

Zstd Compression 1.5.0

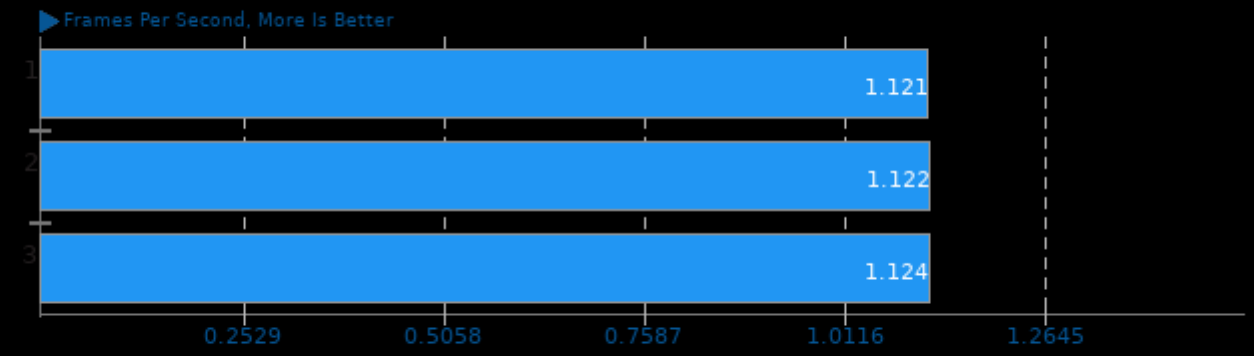
Compression Level: 3, Long Mode - Decompression Speed



1. (CC) gcc options: -O3 -pthread -lz -llzma

SVT-AV1 0.8.7

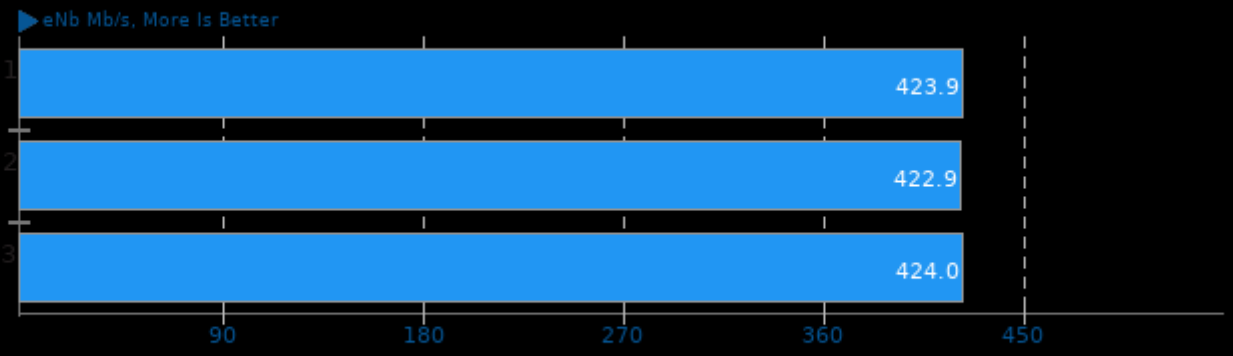
Encoder Mode: Preset 4 - Input: Bosphorus 4K



1. (CXX) g++ options: -mno-avx -mavx2 -mavx512f -mavx512bw -mavx512dq -pie

srsRAN 21.04

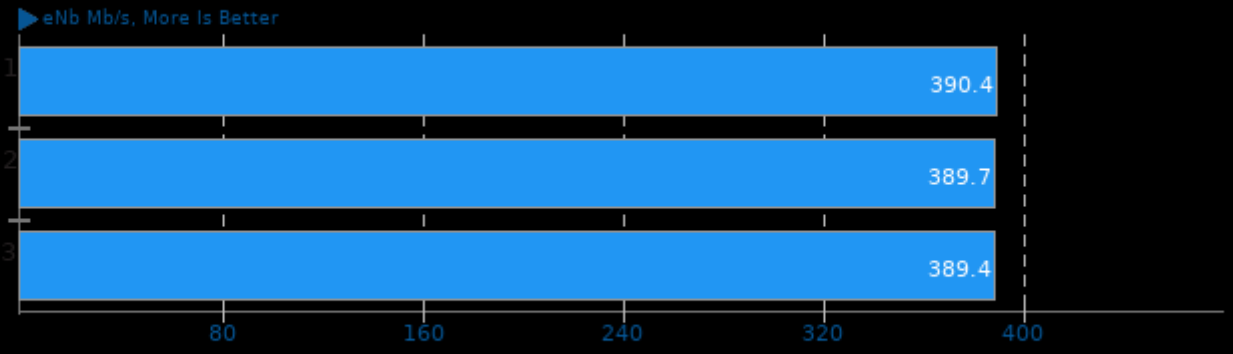
Test: 4G PHY_DL_Test 100 PRB MIMO 256-QAM



1. (CXX) g++ options: -std=c++11 -fno-strict-aliasing -march=native -mfpmath=sse -mavx2 -fvisibility=hidden -O3 -fno-trapping-math -fno-math-errno

srsRAN 21.04

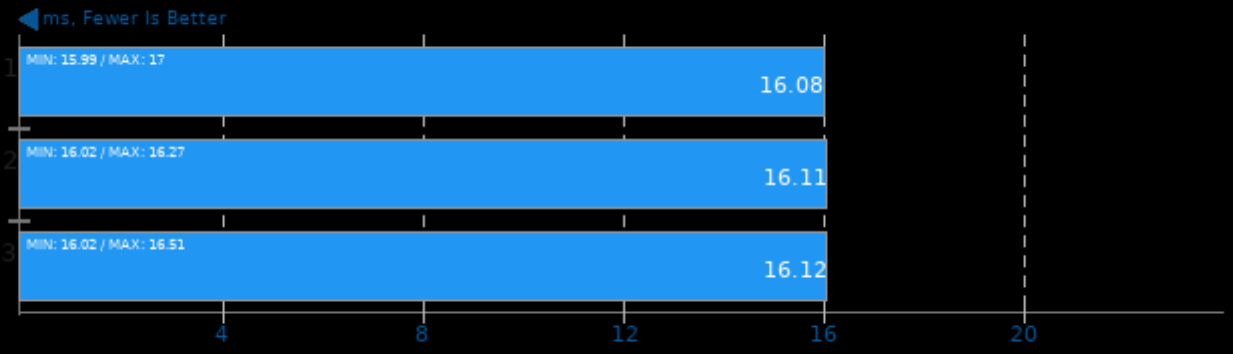
Test: 4G PHY_DL_Test 100 PRB SISO 64-QAM



1. (CXX) g++ options: -std=c++11 -fno-strict-aliasing -march=native -mfpmath=sse -mavx2 -fvisibility=hidden -O3 -fno-trapping-math -fno-math-errno

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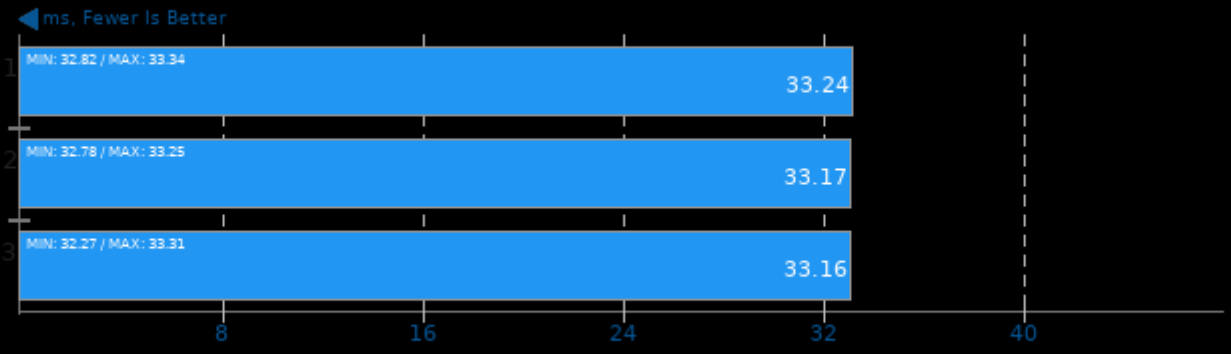
Target: CPU - Model: resnet18



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

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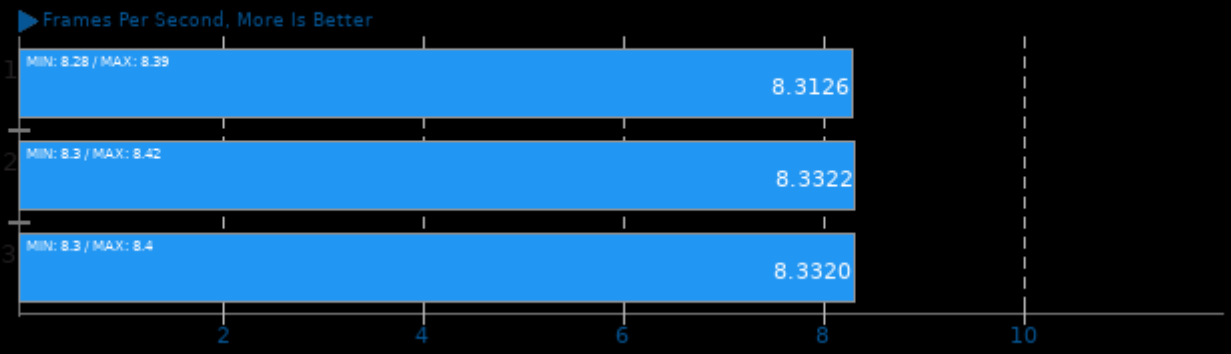
Target: Vulkan GPU - Model: googlenet



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

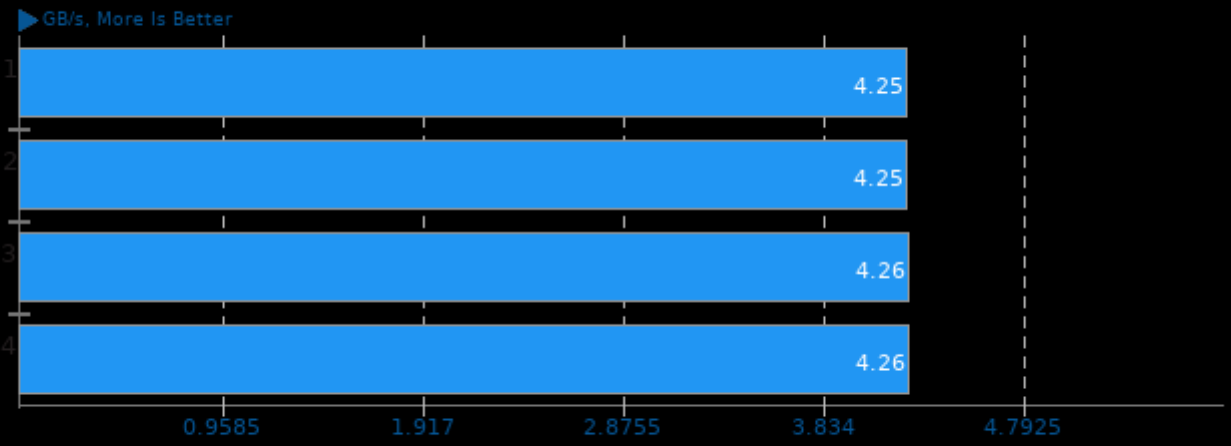
Embree 3.13

Binary: Pathtracer - Model: Asian Dragon Obj



simdjson 1.0

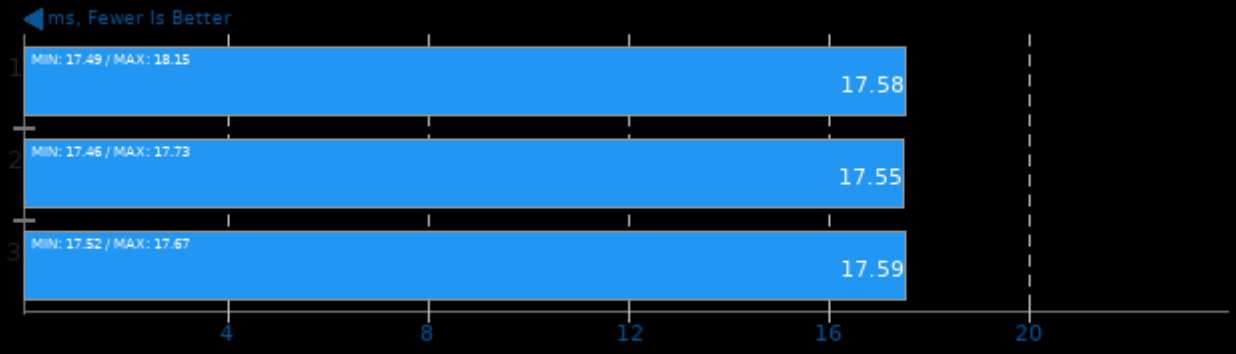
Throughput Test: PartialTweets



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

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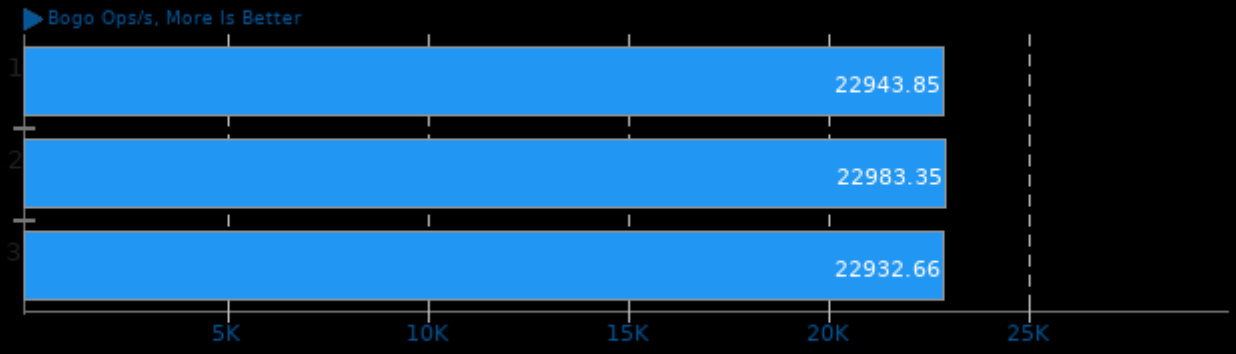
Target: CPU - Model: mobilenet



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

Stress-NG 0.13.02

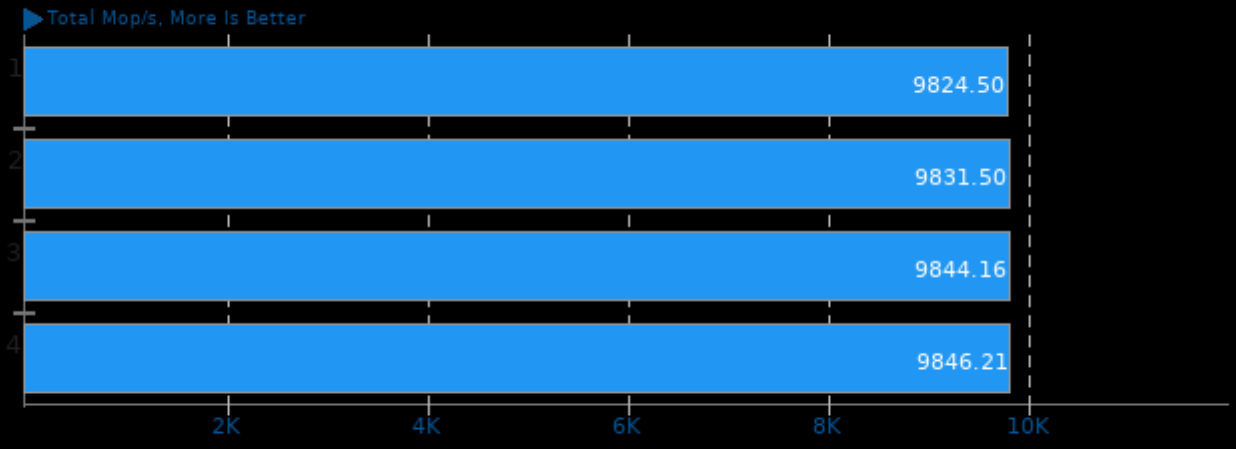
Test: Vector Math



1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lcrypt -lrt -lsctp -lz -ldl -pthread -lc -latomic

NAS Parallel Benchmarks 3.4

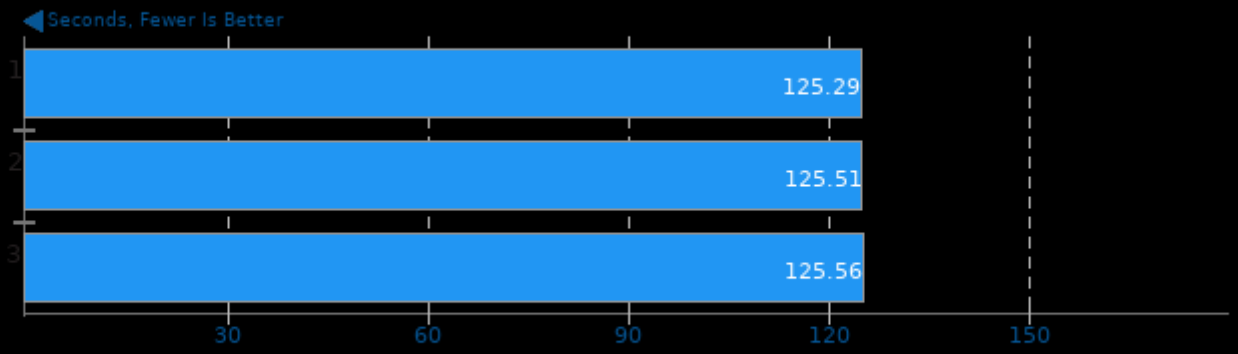
Test / Class: MG.C



1. (F9X) gfortran options: -O3 -march=native -pthread -lmpi_usempif08 -lmpi_mpifh -lmpi
2. Open MPI 4.0.3

Tachyon 0.99b6

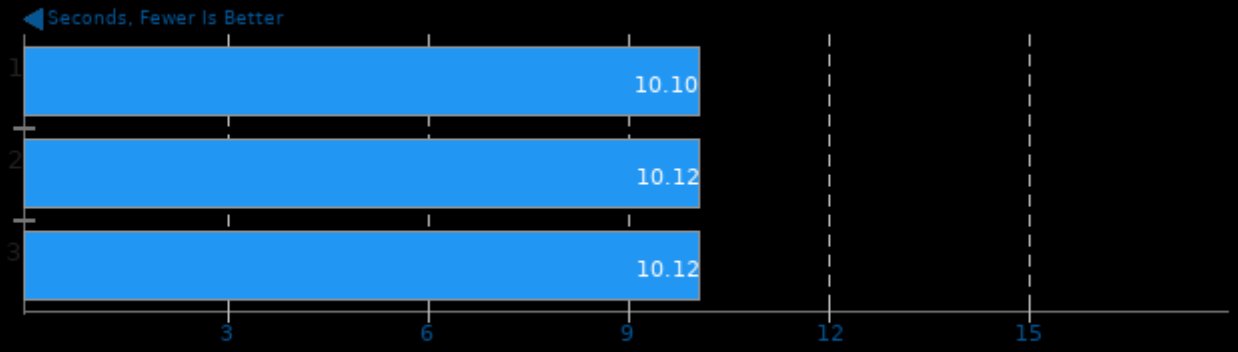
Total Time



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

ASTC Encoder 3.0

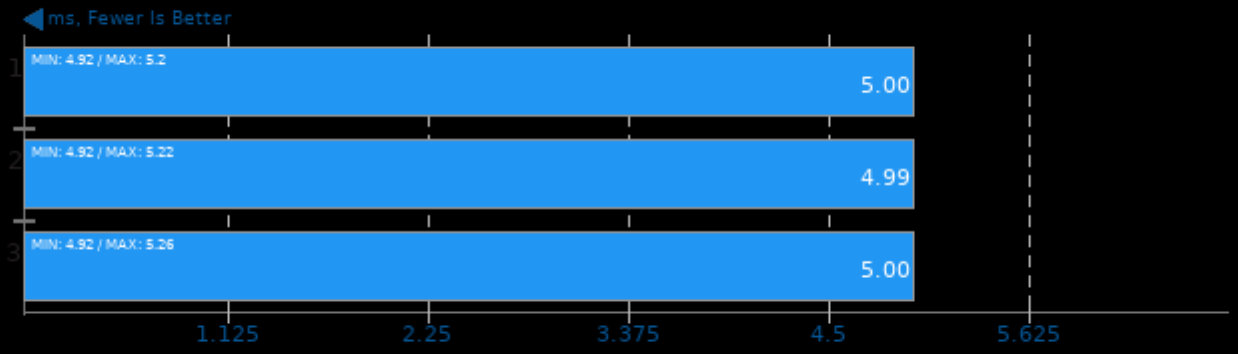
Preset: Thorough



1. (CXX) g++ options: -O3 -flto -pthread

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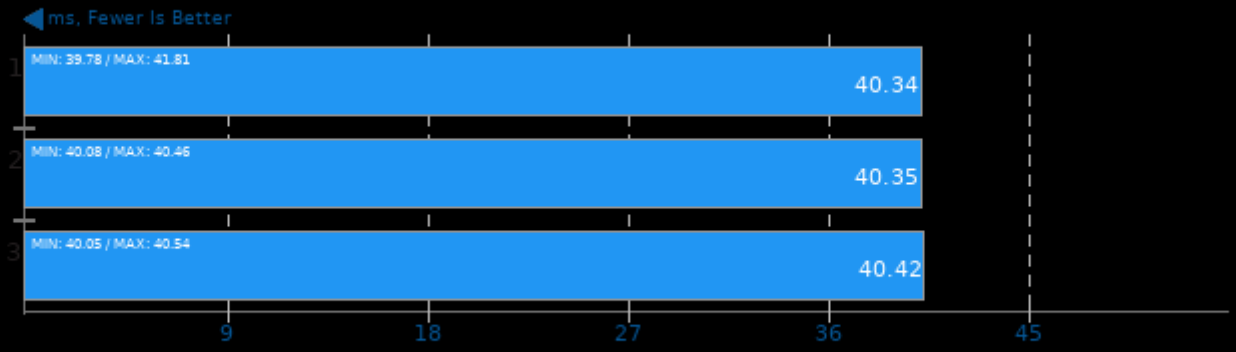
Target: CPU-v2-v2 - Model: mobilenet-v2



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

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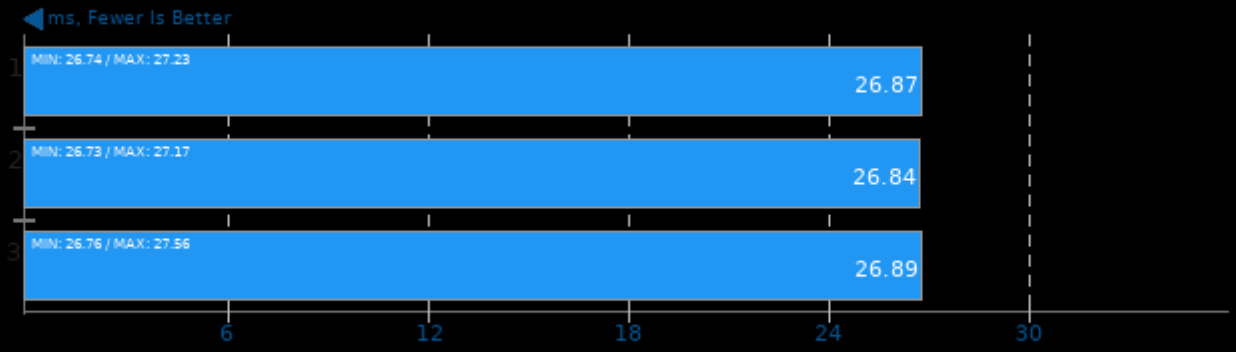
Target: Vulkan GPU - Model: squeezenet_ssd



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

NCNN 20210720

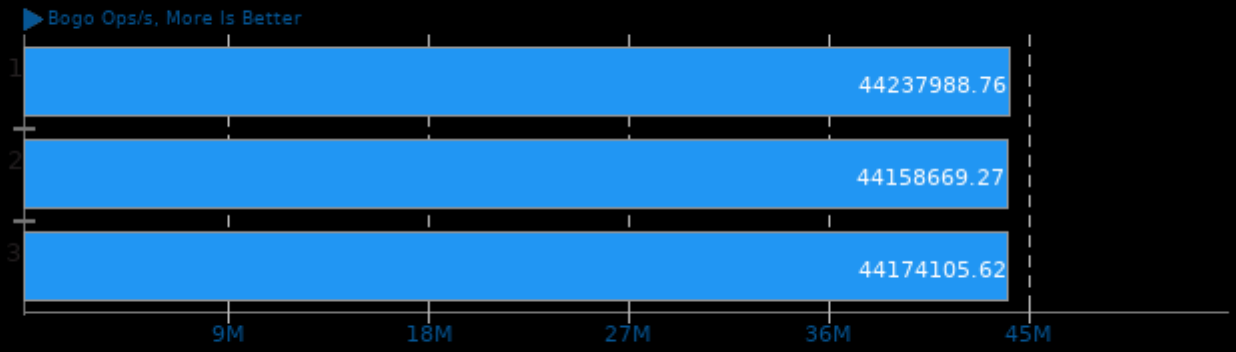
Target: CPU - Model: yolov4-tiny



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

Stress-NG 0.13.02

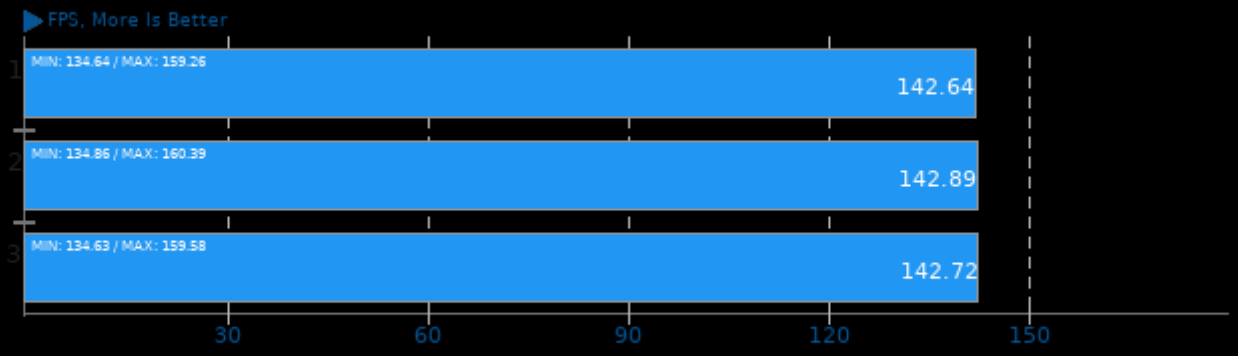
Test: Malloc



1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lcrypt -lrt -lsctp -lz -ldl -pthread -lc -latomic

dav1d 0.9.2

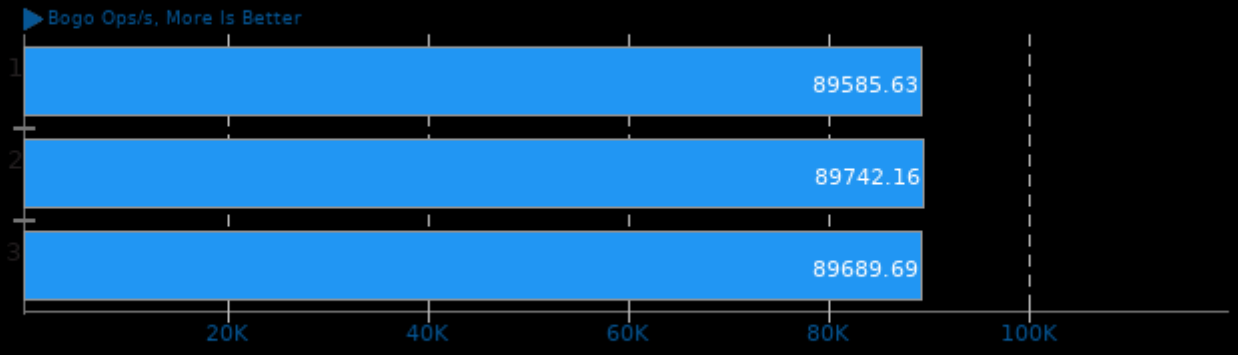
Video Input: Summer Nature 4K



1. (CC) gcc options: -pthread -lm

Stress-NG 0.13.02

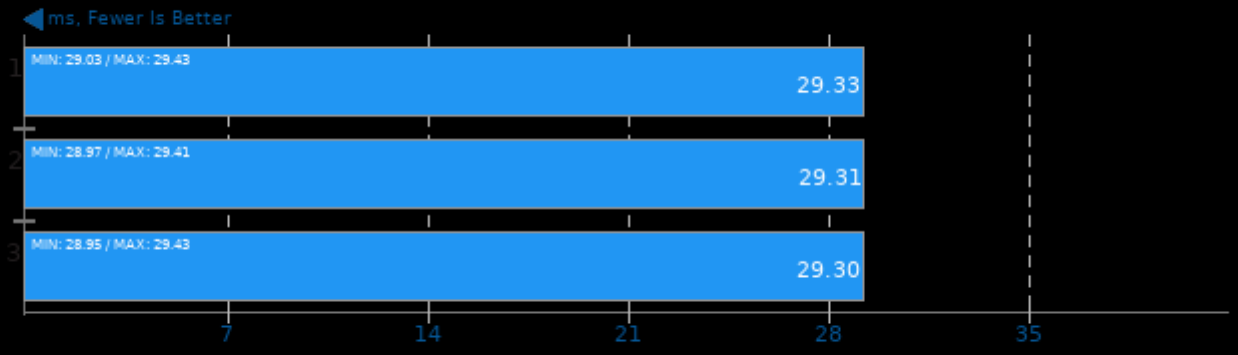
Test: SENDFILE



1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lcrypt -lrt -lsctp -lz -ldl -pthread -lc -latomic

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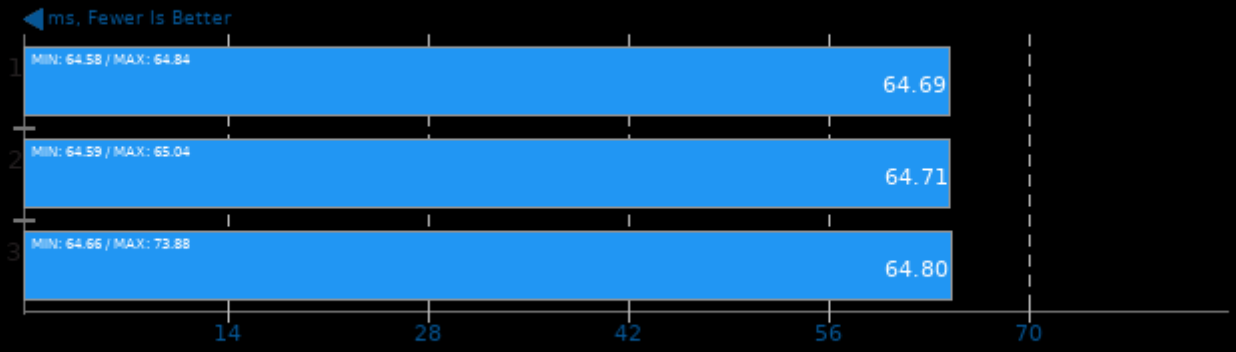
Target: Vulkan GPU - Model: resnet18



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

NCNN 20210720

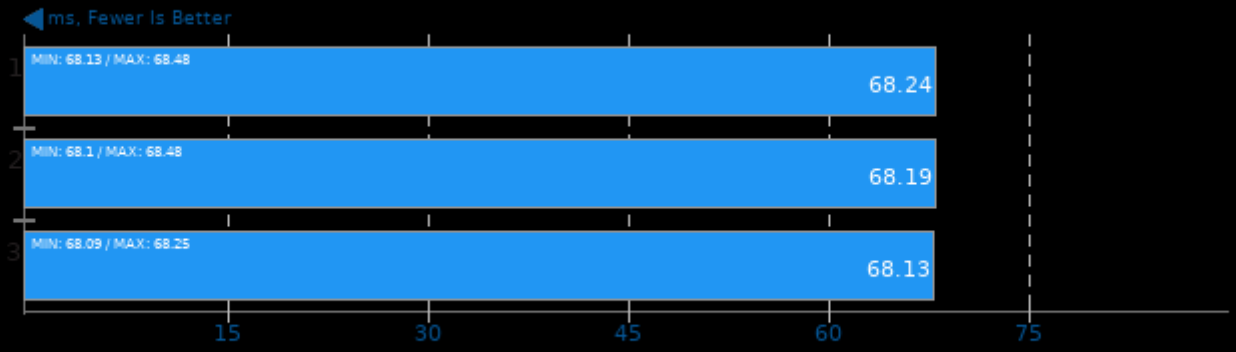
Target: CPU - Model: vgg16



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

TNN 0.3

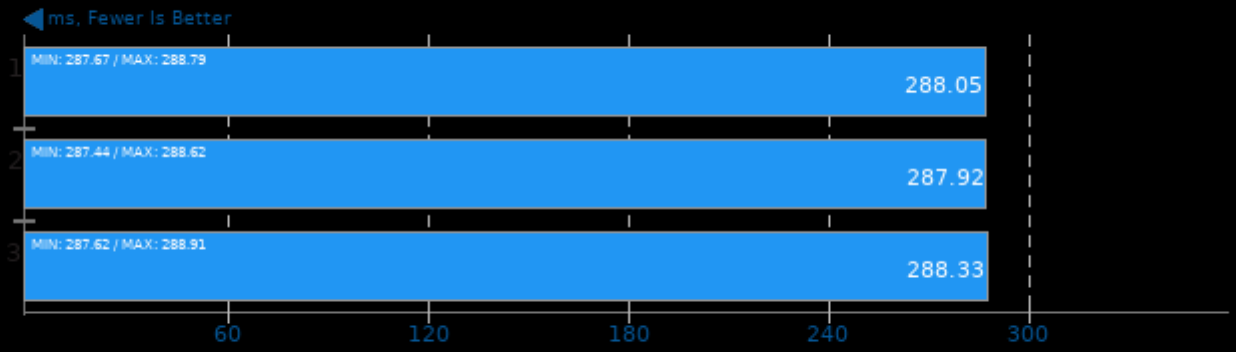
Target: CPU - Model: SqueezeNet v2



1. (CXX) g++ options: -fopenmp -pthread -fvisibility=hidden -fvisibility=default -O3 -rdynamic -ldl

TNN 0.3

Target: CPU - Model: SqueezeNet v1.1

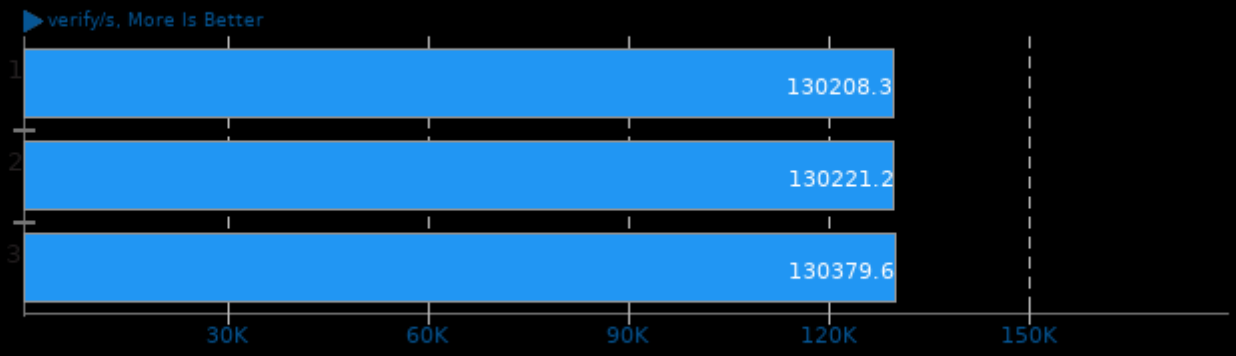


1. (CXX) g++ options: -fopenmp -pthread -fvisibility=hidden -fvisibility=default -O3 -rdynamic -ldl

8700k september

OpenSSL 3.0

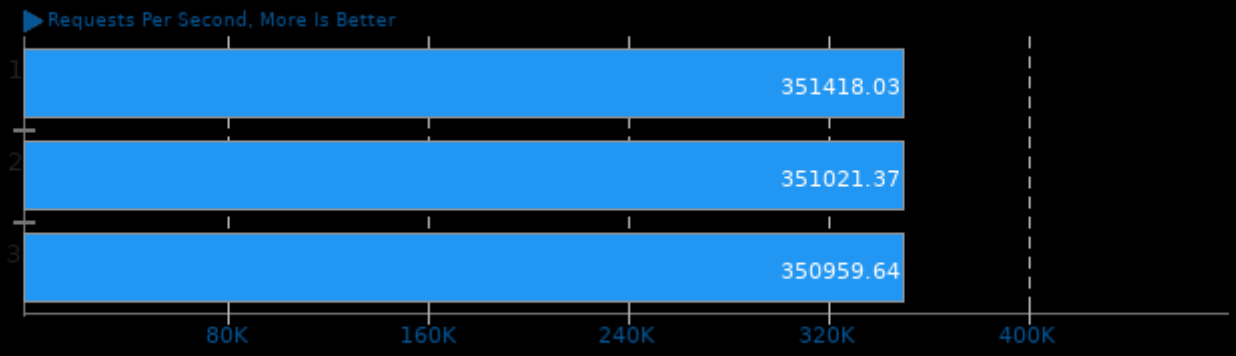
Algorithm: RSA4096



1. (CC) gcc options: -pthread -m64 -O3 -lssl -lcrypto -ldl

nginx 1.21.1

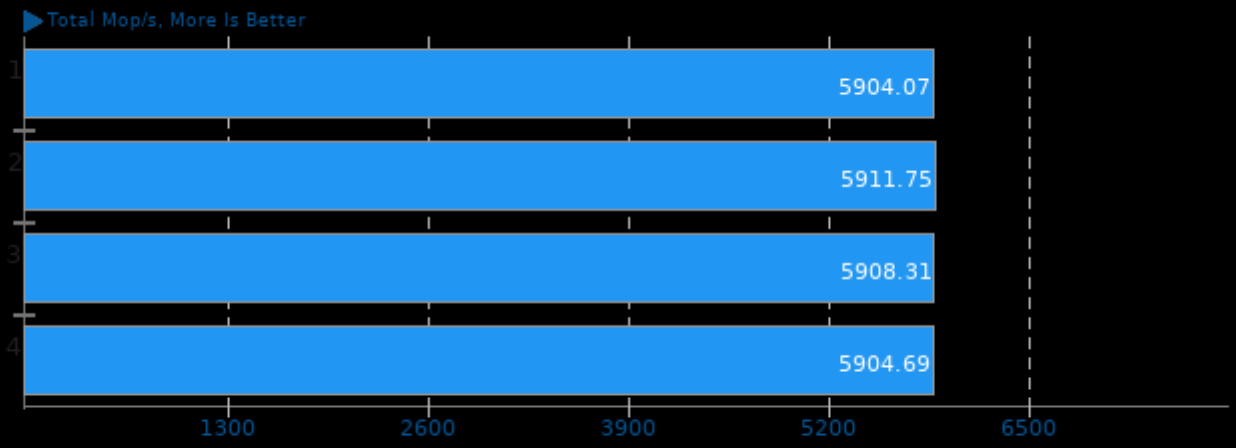
Concurrent Requests: 20



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

NAS Parallel Benchmarks 3.4

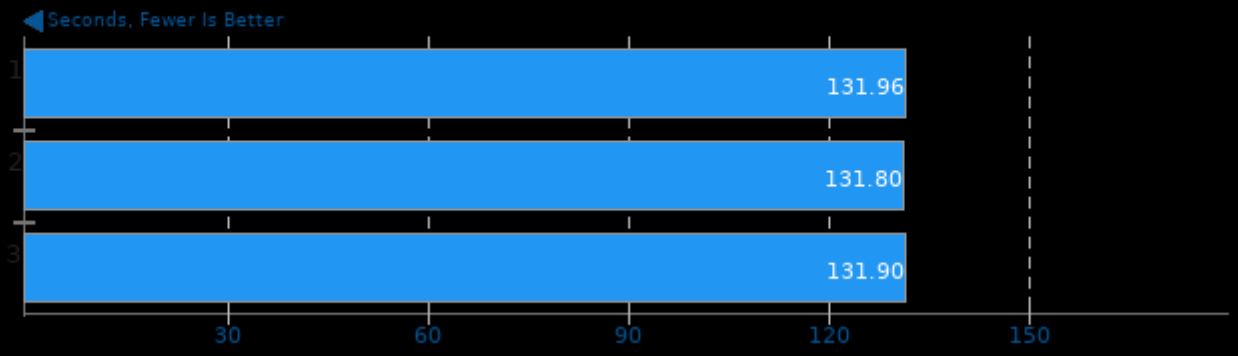
Test / Class: SP.B



1. (F9X) gfortran options: -O3 -march=native -pthread -lmpi_usempif08 -lmpi_mpifh -lmpi
2. Open MPI 4.0.3

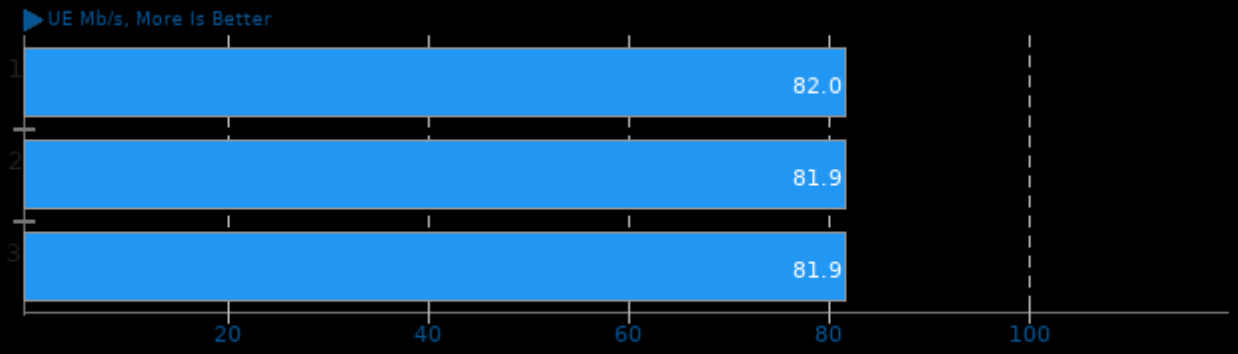
Timed Linux Kernel Compilation 5.14

Time To Compile



srsRAN 21.04

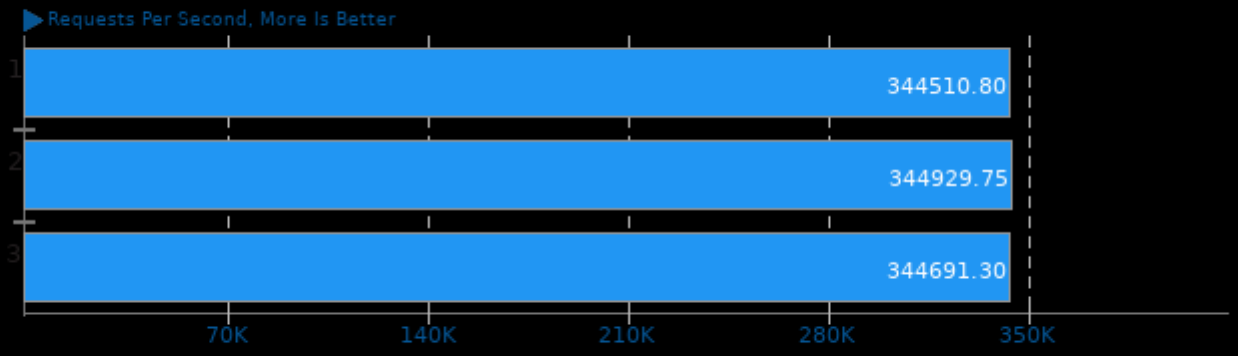
Test: 5G PHY_DL_NR Test 270 PRB SISO 256-QAM



1. (CXX) g++ options: -std=c++11 -fno-strict-aliasing -march=native -mfpmath=sse -mavx2 -fvisibility=hidden -O3 -fno-trapping-math -fno-math-errno

nginx 1.21.1

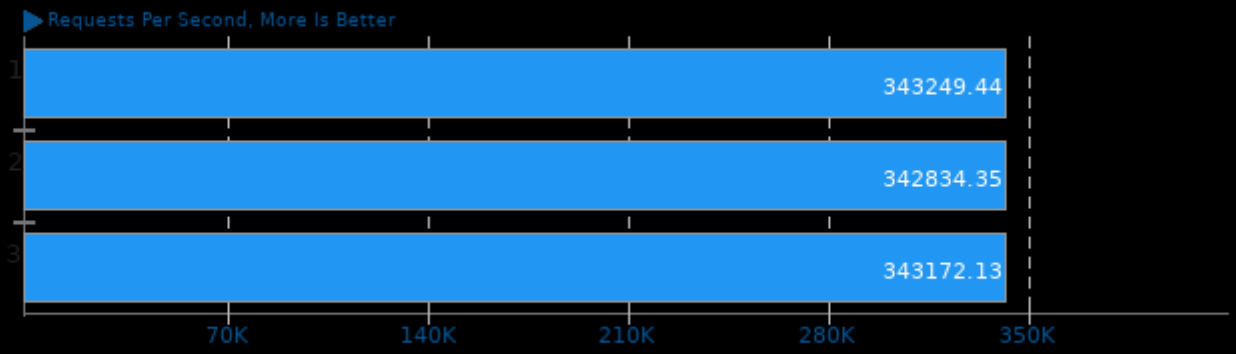
Concurrent Requests: 200



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

nginx 1.21.1

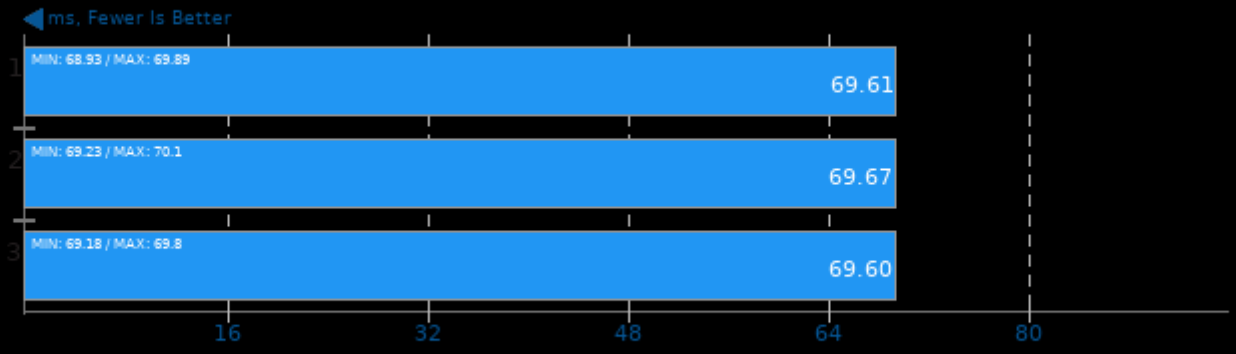
Concurrent Requests: 100



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

NCNN 20210720

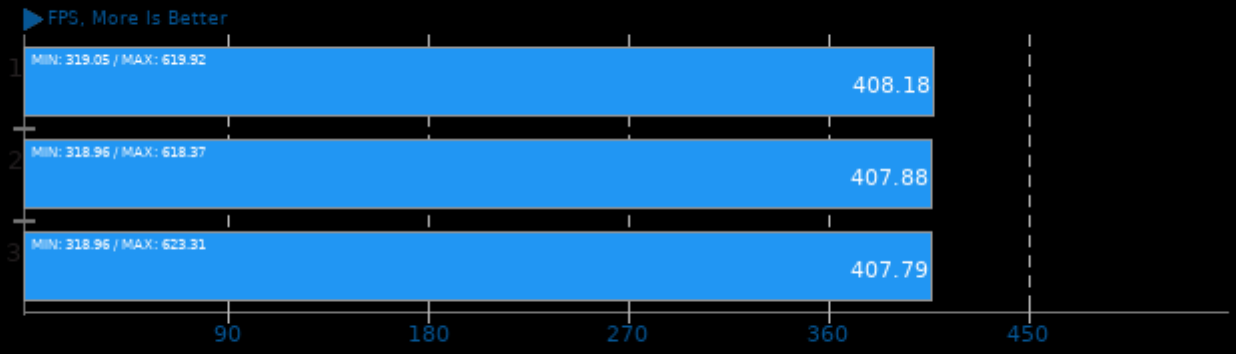
Target: Vulkan GPU - Model: resnet50



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

dav1d 0.9.2

Video Input: Chimera 1080p 10-bit

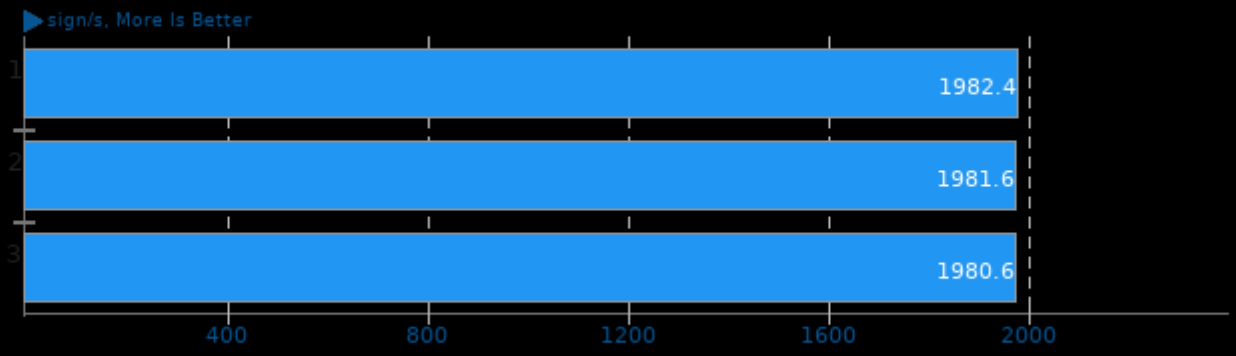


1. (CC) gcc options: -pthread -lm

8700k september

OpenSSL 3.0

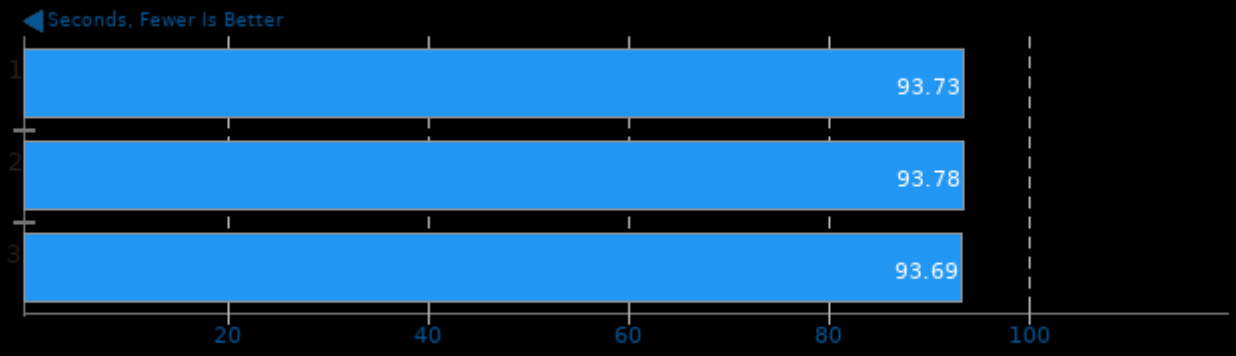
Algorithm: RSA4096



1. (CC) gcc options: -pthread -m64 -O3 -lssl -lcrypto -ldl

ASTC Encoder 3.0

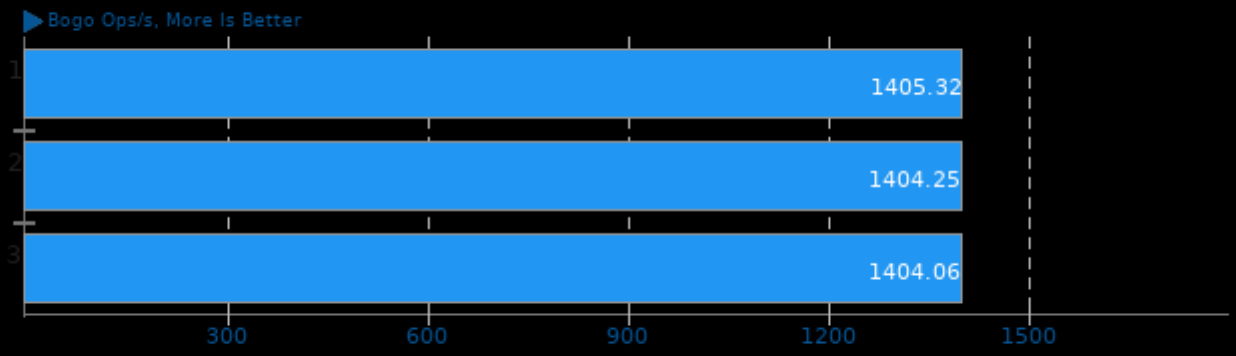
Preset: Exhaustive



1. (CXX) g++ options: -O3 -flto -pthread

Stress-NG 0.13.02

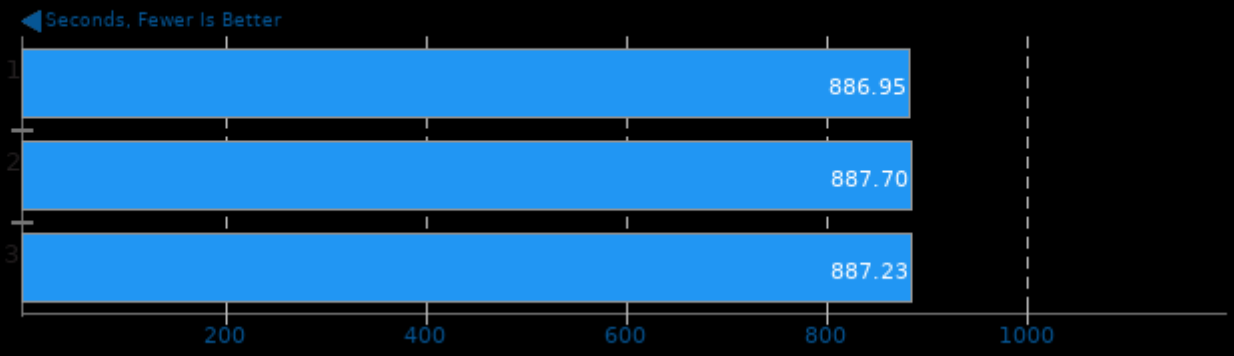
Test: Crypto



1. (CC) gcc options: -O2 -std=gnu99 -lm -laio -lcrypt -lrt -lsctp -lz -ldl -pthread -lc -latomic

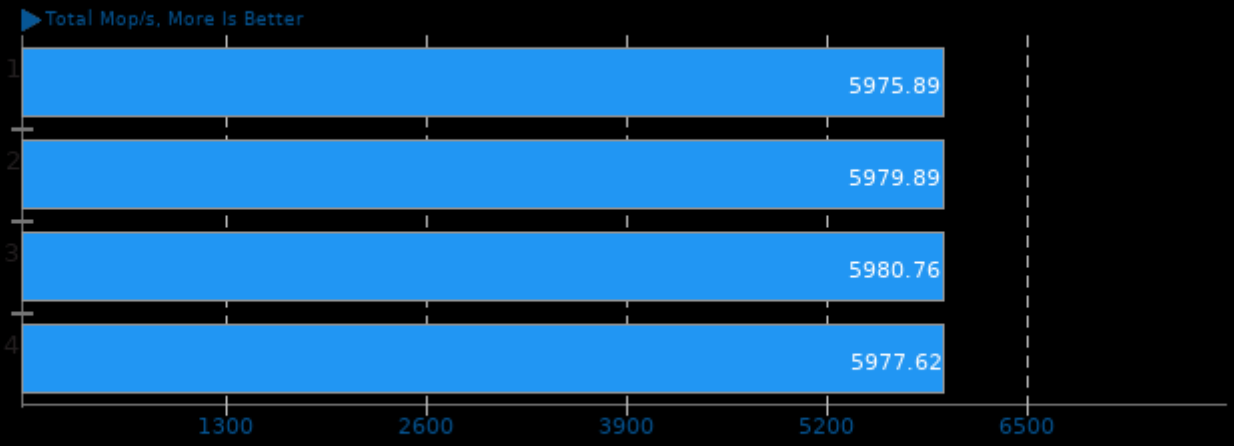
ECP-CANDLE 0.4

Benchmark: P3B1



NAS Parallel Benchmarks 3.4

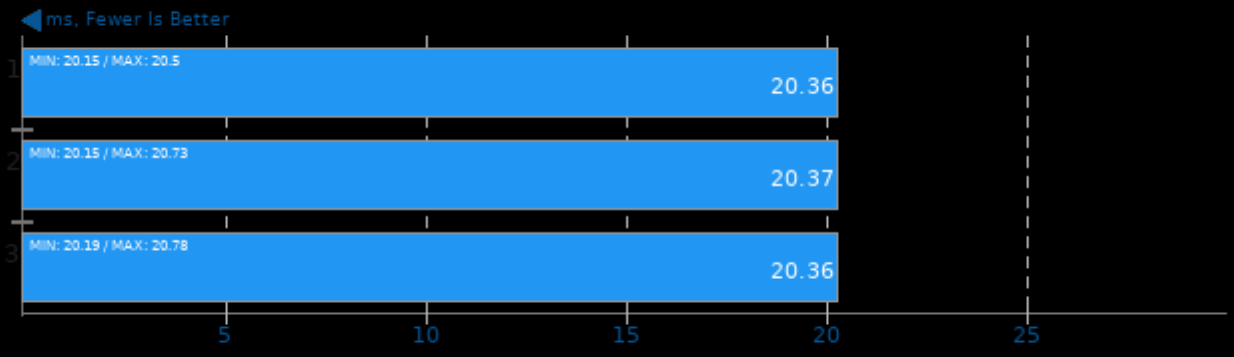
Test / Class: SP.C



1. (F9X) gfortran options: -O3 -march=native -pthread -lmpi_usempif08 -lmpi_mpifh -lmpi
2. Open MPI 4.0.3

NCNN 20210720

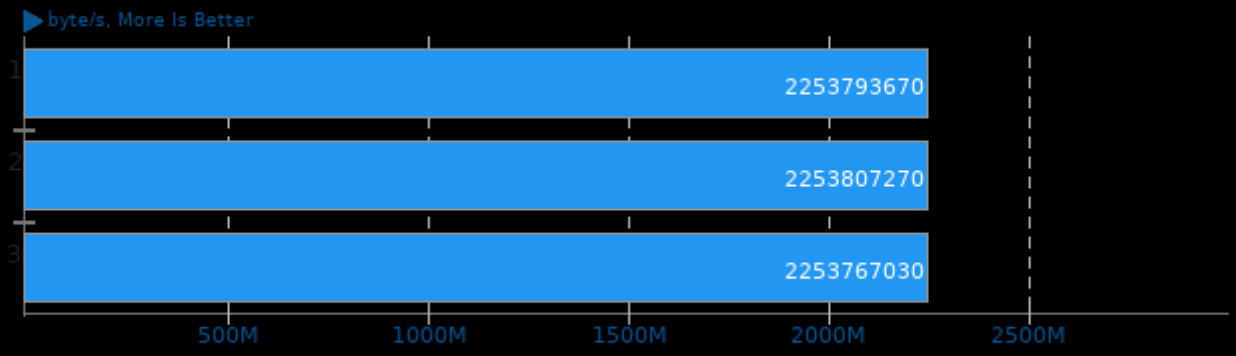
Target: CPU - Model: squeezenet_ssd



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

OpenSSL 3.0

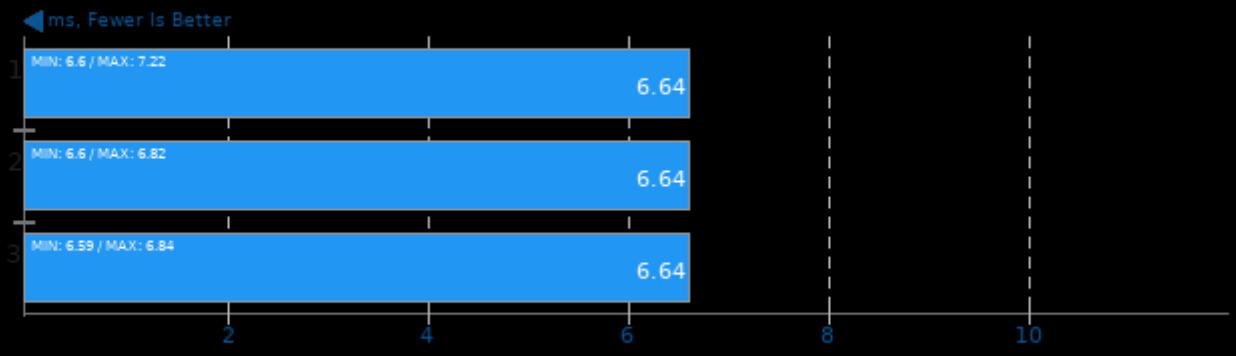
Algorithm: SHA256



1. (CC) gcc options: -pthread -m64 -O3 -lssl -lcrypto -ldl

NCNN 20210720

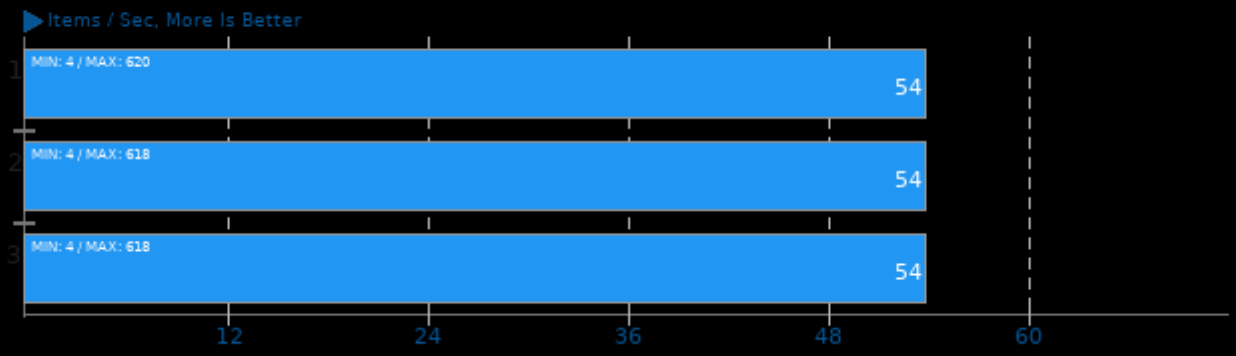
Target: CPU - Model: efficientnet-b0

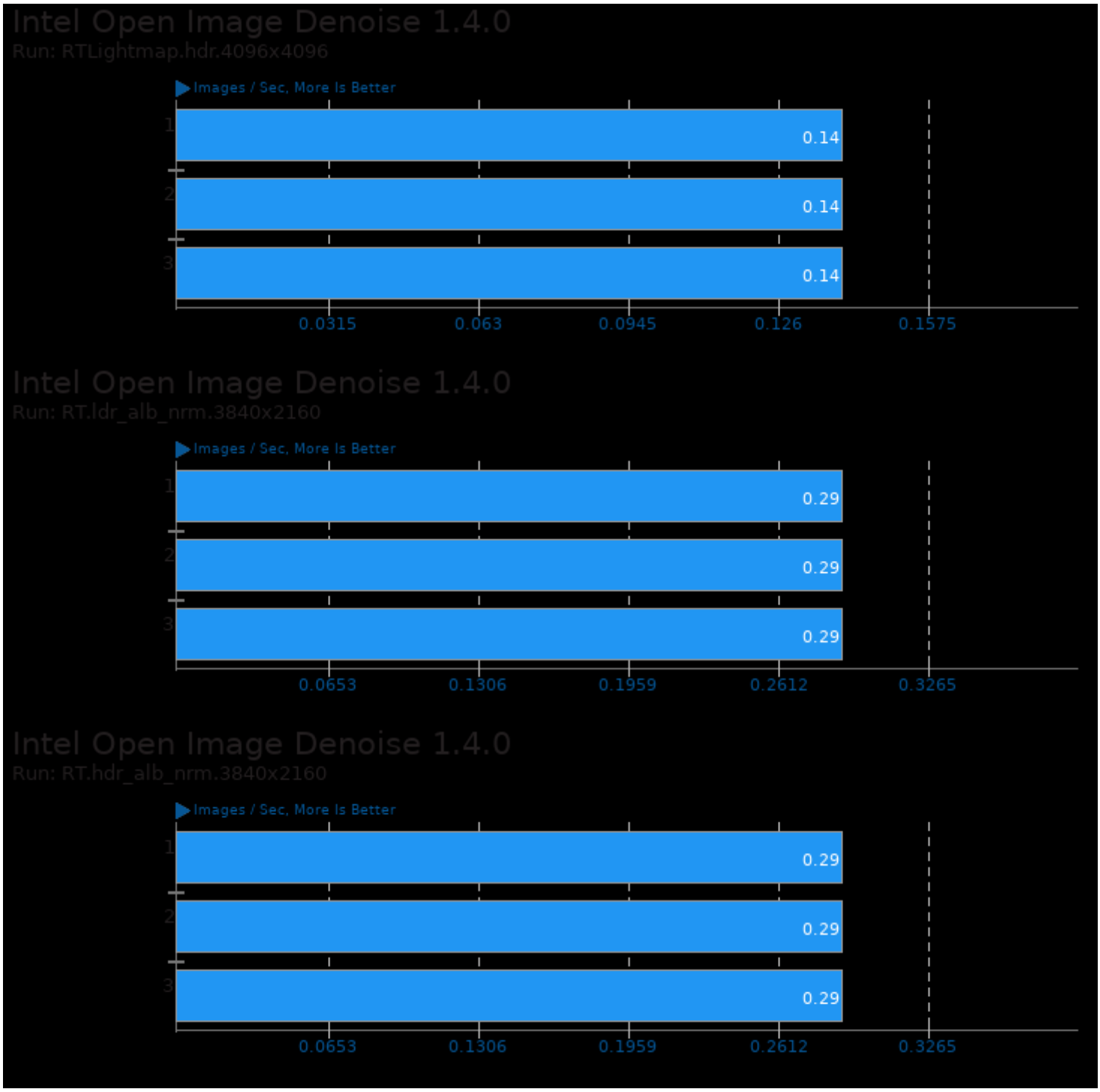


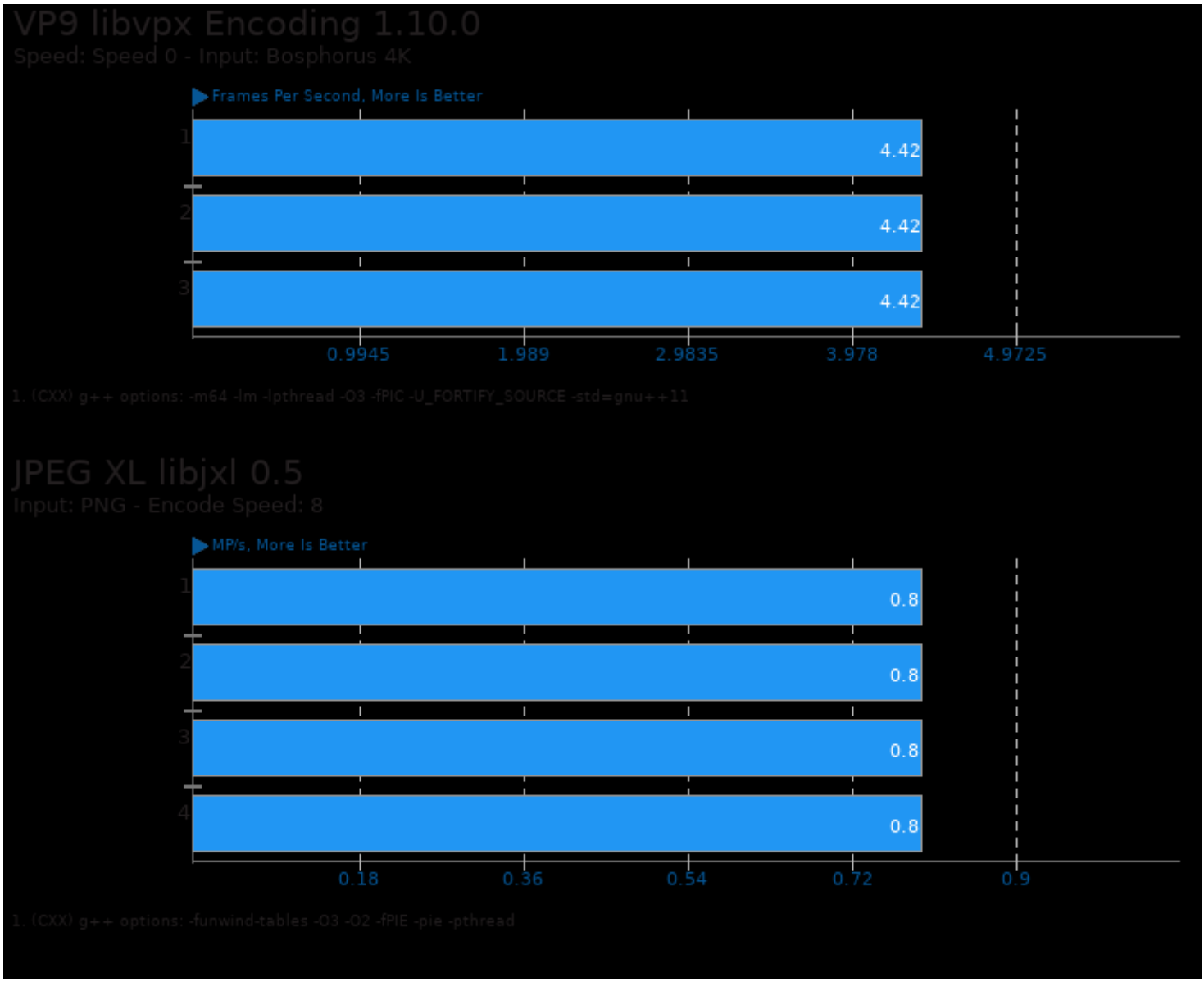
1. (CXX) g++ options: -O3 -rdynamic -lgomp -lpthread -pthread

OpenVKL 1.0

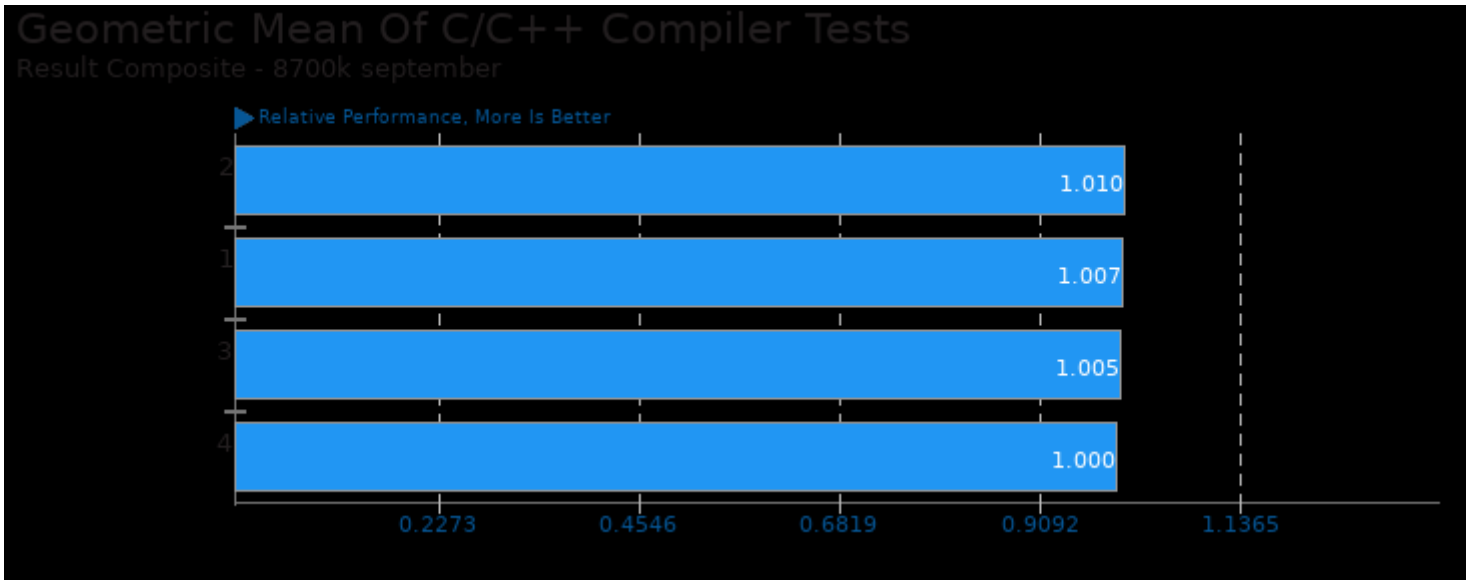
Benchmark: vklBenchmark ISPC



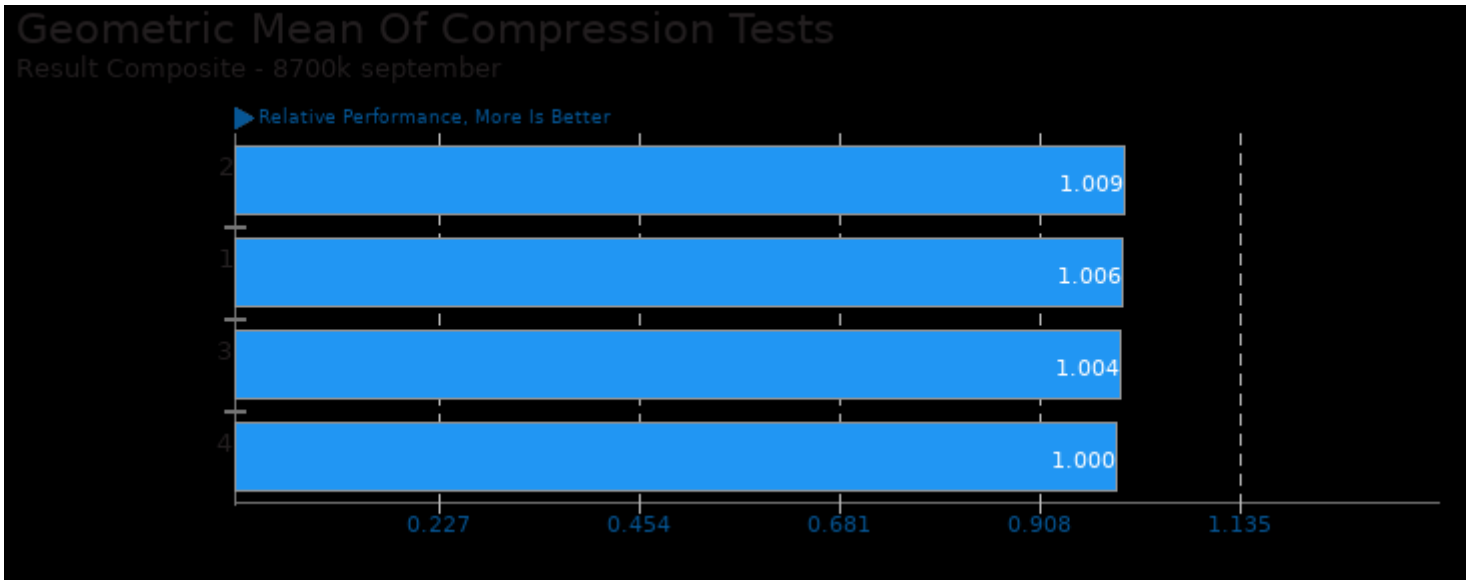

Intel Open Image Denoise 1.4.0
Run: RTLightmap.hdr.4096x4096
Images / Sec, More Is Better
1
2
3
0.14
0.14
0.14
0.0315
0.063
0.0945
0.126
0.1575
Intel Open Image Denoise 1.4.0
Run: RT.ldr_alb_nrm.3840x2160
Images / Sec, More Is Better
1
2
3
0.29
0.29
0.29
0.0653
0.1306
0.1959
0.2612
0.3265
Intel Open Image Denoise 1.4.0
Run: RT.hdr_alb_nrm.3840x2160
Images / Sec, More Is Better
1
2
3
0.29
0.29
0.29
0.0653
0.1306
0.1959
0.2612
0.3265


VP9 libvpx Encoding 1.10.0
Speed: Speed 0 - Input: Bosphorus 4K
Frames Per Second, More Is Better
1
2
3
4.42
4.42
4.42
0.9945
1.989
2.9835
3.978
4.9725
1. (CXX) g++ options: -m64 -lm -lpthread -O3 -fPIC -U_FORTIFY_SOURCE -std=gnu++11
JPEG XL libjxl 0.5
Input: PNG - Encode Speed: 8
MP/s, More Is Better
1
2
3
4
0.8
0.8
0.8
0.8
0.18
0.36
0.54
0.72
0.9
1. (CXX) g++ options: -funwind-tables -O3 -O2 -fPIE -pie -pthread

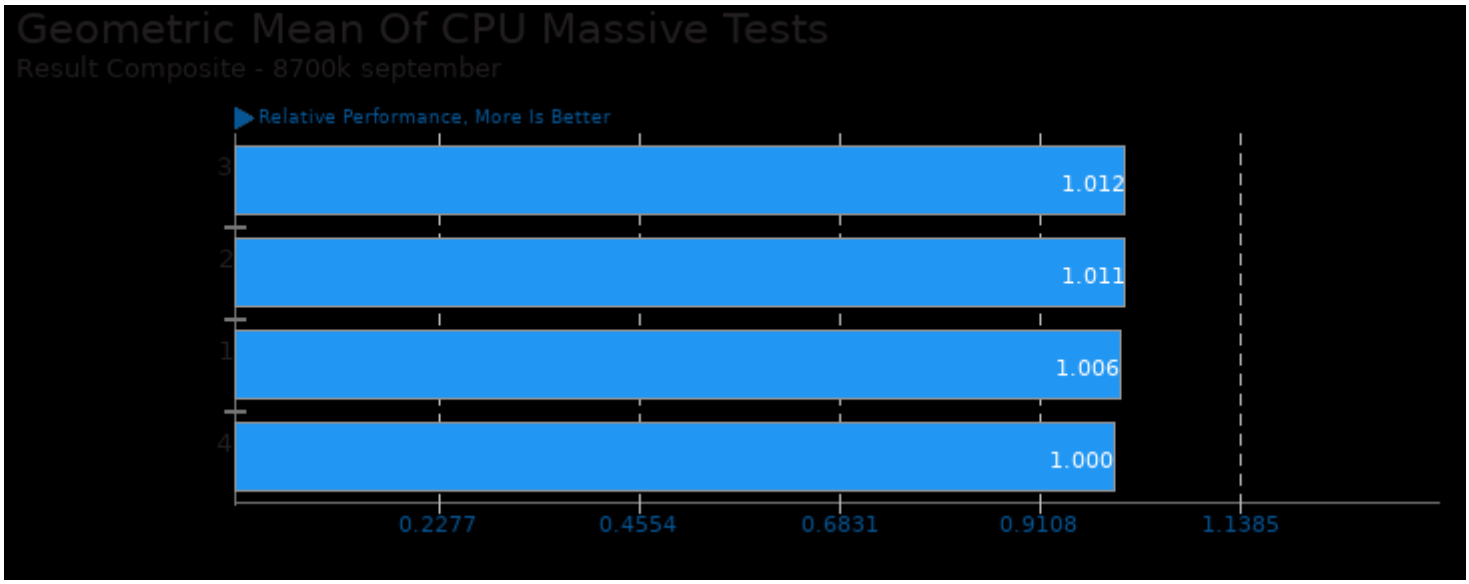
These geometric means are based upon test groupings / test suites for this result file.



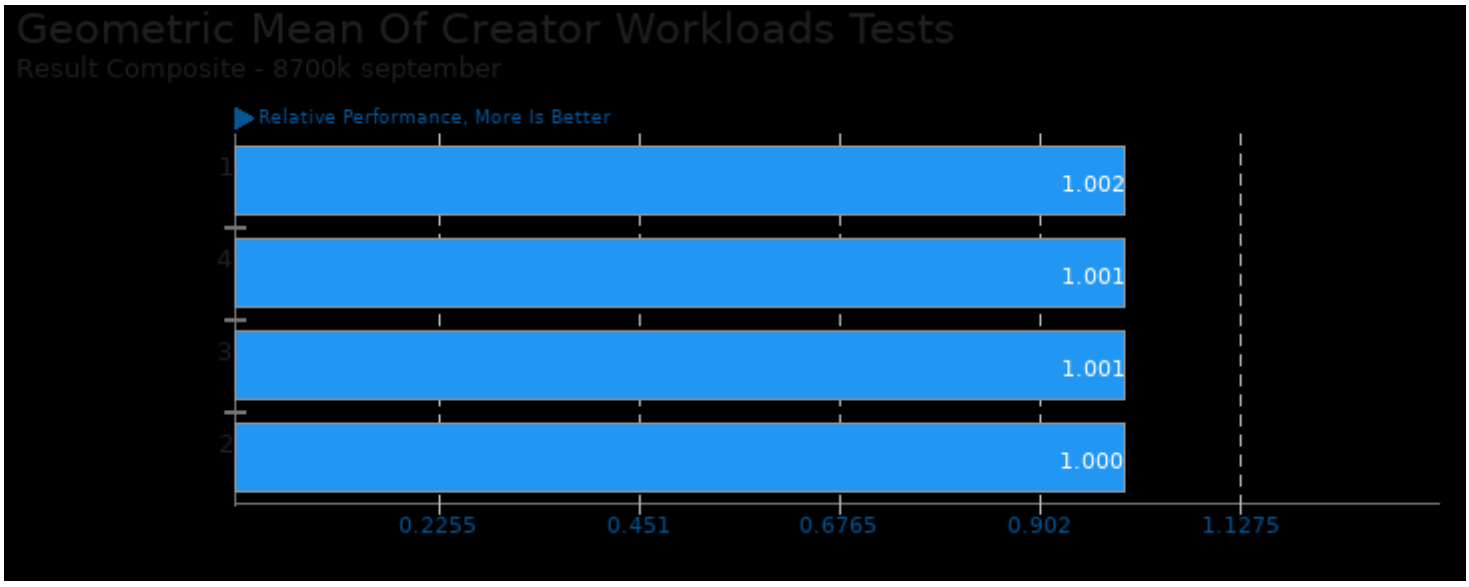
Geometric mean based upon tests: pts/vpxenc, pts/apache, pts/dav1d, pts/compress-zstd, pts/openssl, pts/nginx, pts/svt-av1, pts/gromacs, pts/build-gdb, pts/build-ffmpeg, pts/tachyon and pts/keydb



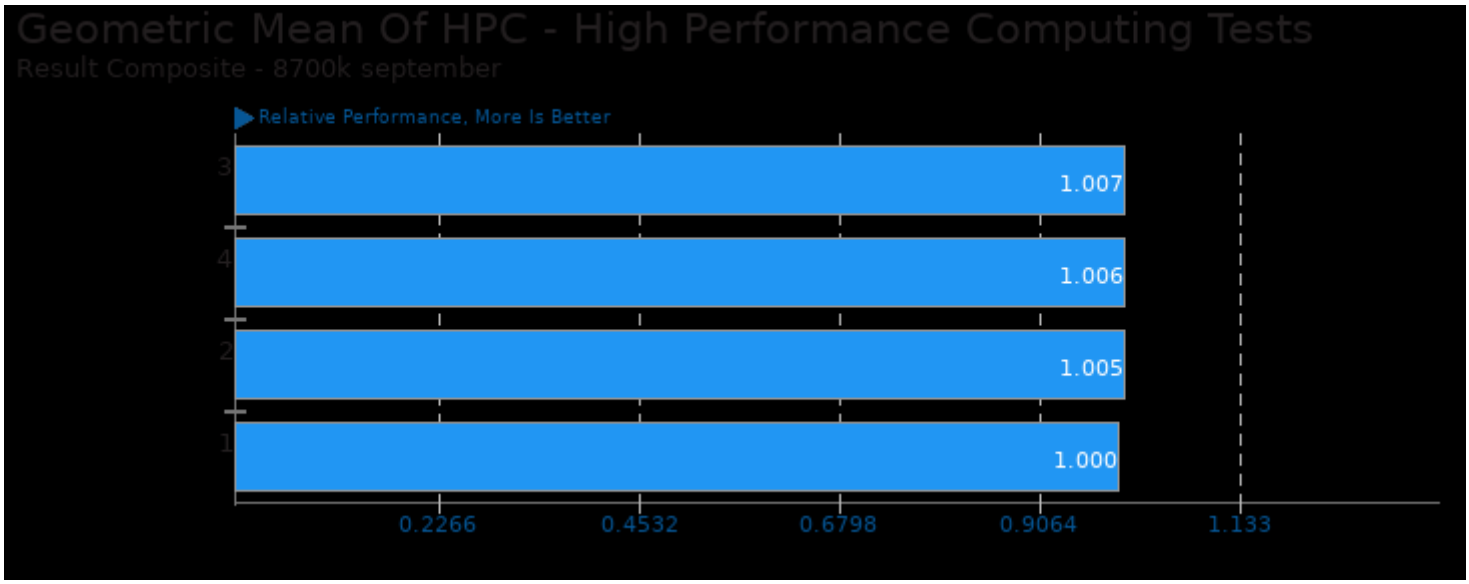
Geometric mean based upon tests: pts/compress-zstd and pts/blosc



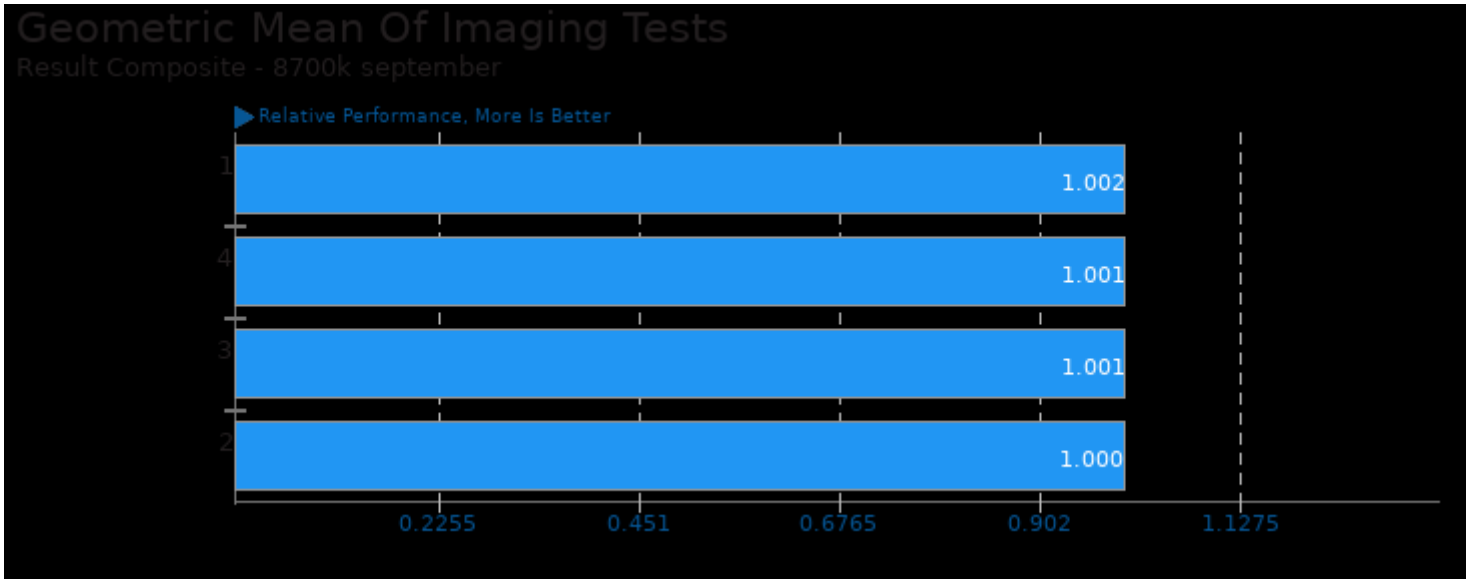
Geometric mean based upon tests: pts/apache, pts/brl-cad, pts/build-gcc, pts/build-linux-kernel, pts/compress-zstd, pts/dav1d, pts/svt-av1, pts/vpxenc, pts/openssl, pts/lczero, pts/nginx, pts/npb, pts/stress-ng, pts/tachyon and pts/renaissance



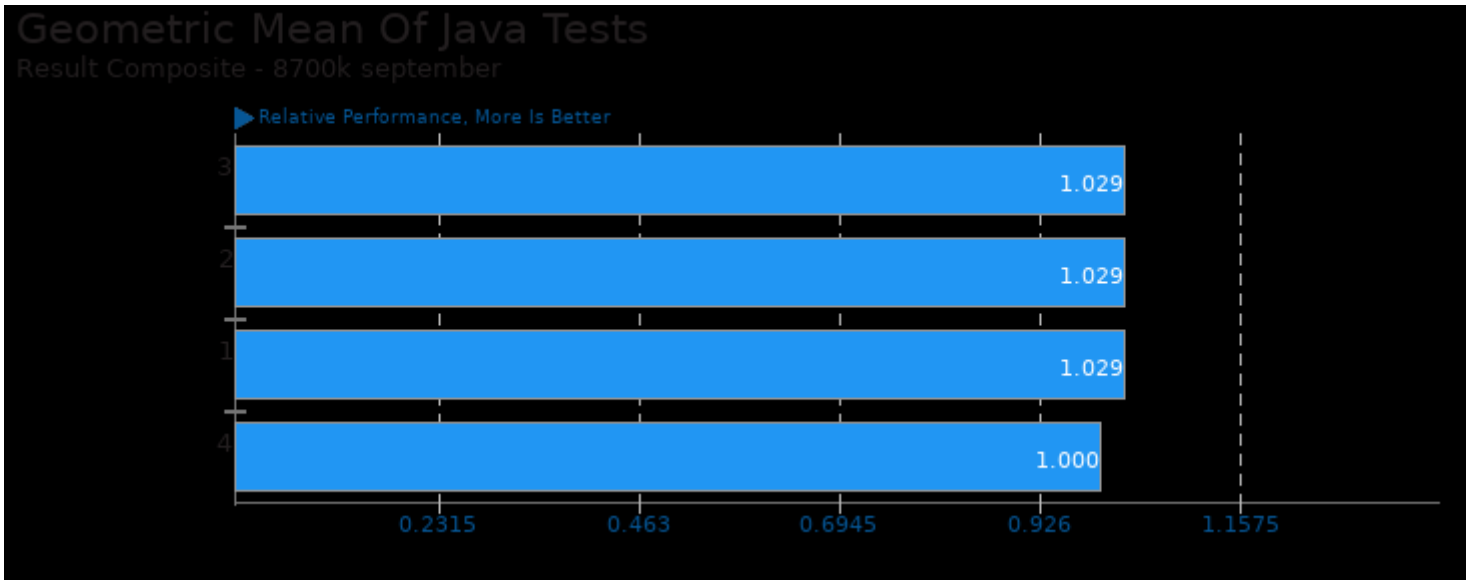
Geometric mean based upon tests: pts/tachyon, pts/yafaray, pts/natron, pts/vpxenc, pts/dav1d, pts/svt-av1, pts/jpegxl, pts/jpegxl-decode, pts/embree, pts/oidn, pts/openvkl, pts/astcenc, pts/synthmark and pts/brl-cad



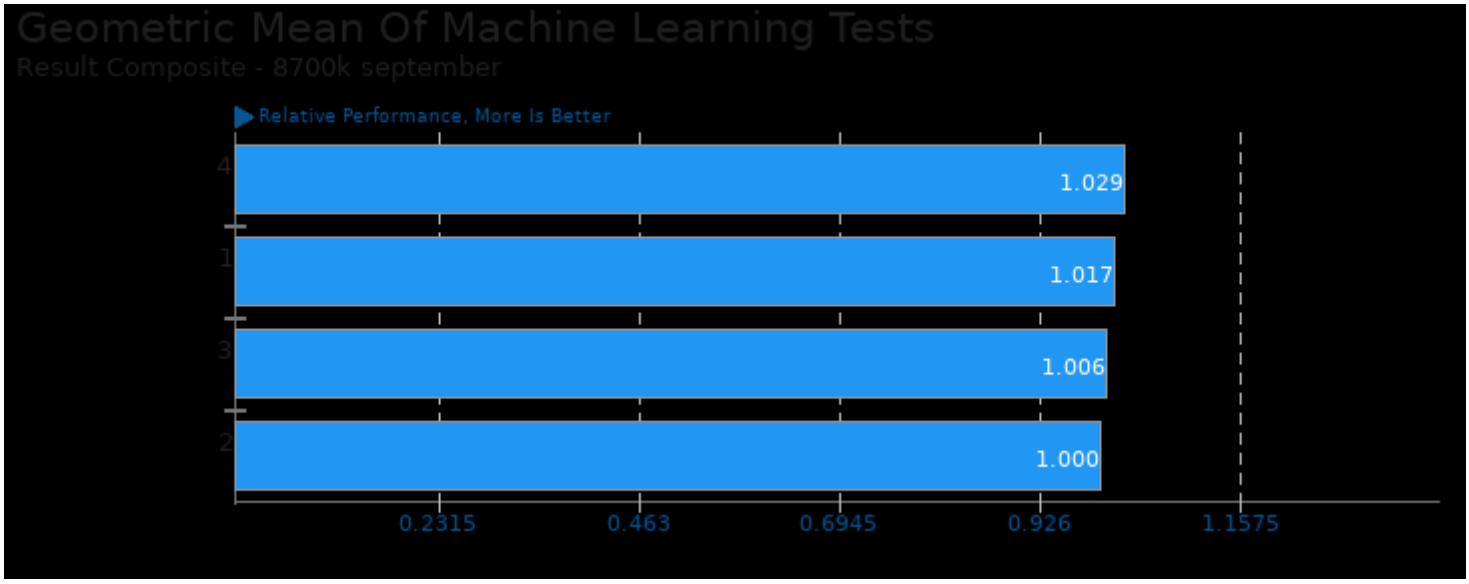
Geometric mean based upon tests: pts/npb, pts/gromacs, pts/mnn, pts/ncnn, pts/tnn, pts/ecp-candle and pts/lczero



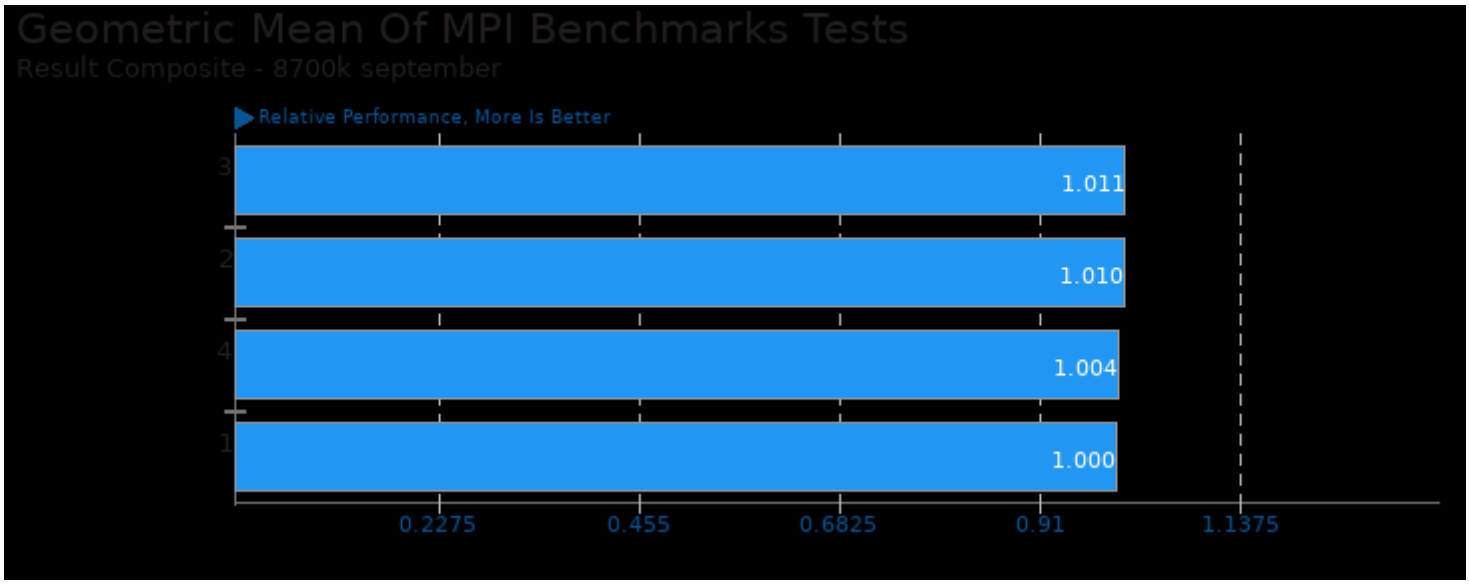
Geometric mean based upon tests: pts/jpegxl and pts/jpegxl-decode



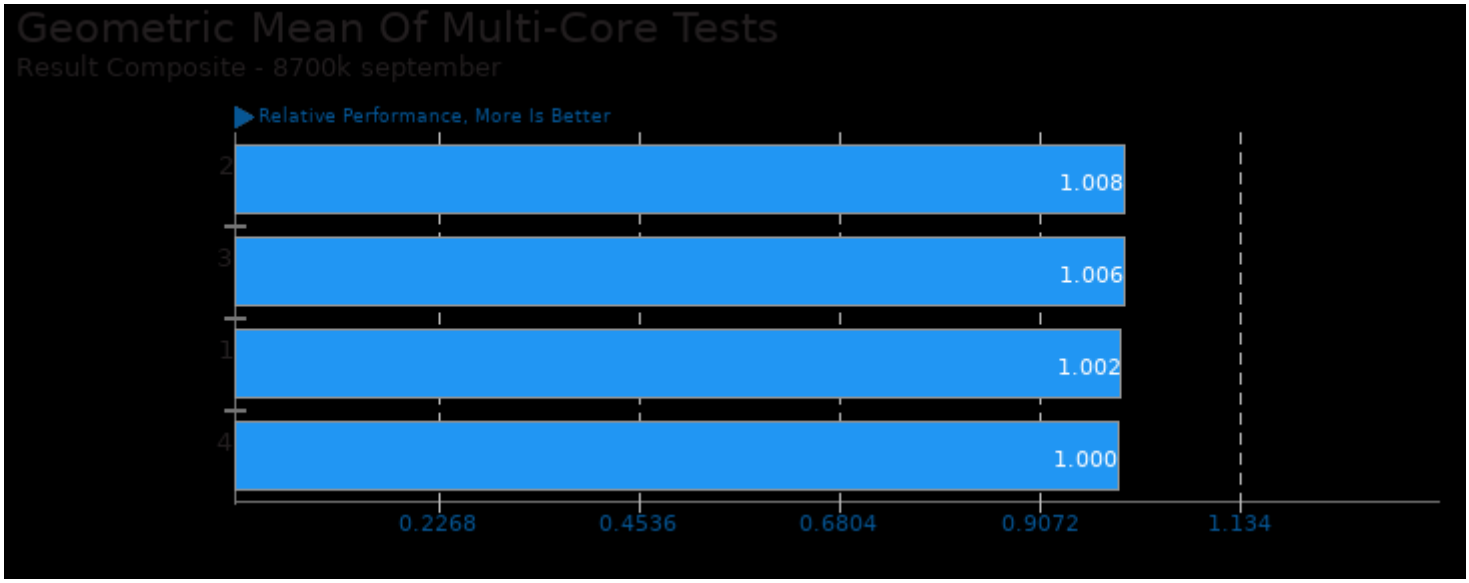
Geometric mean based upon tests: pts/renaissance and pts/cassandra



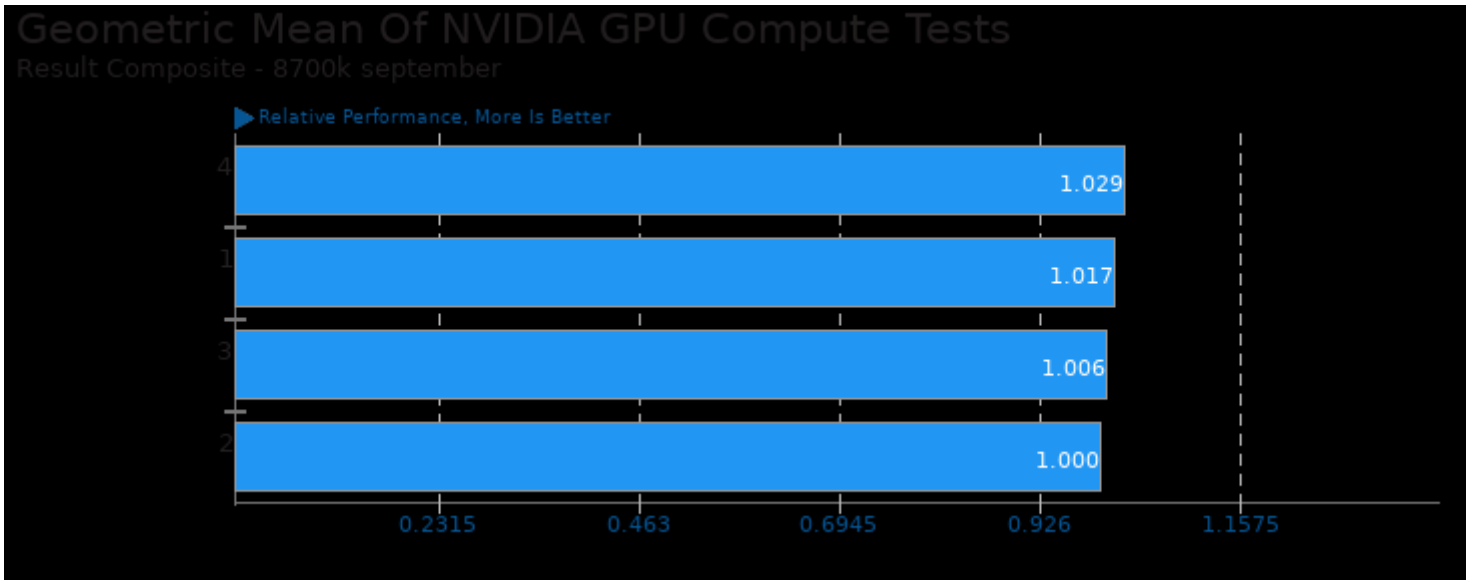
Geometric mean based upon tests: pts/mnn, pts/ncnn, pts/tnn, pts/ecp-candle and pts/lczero



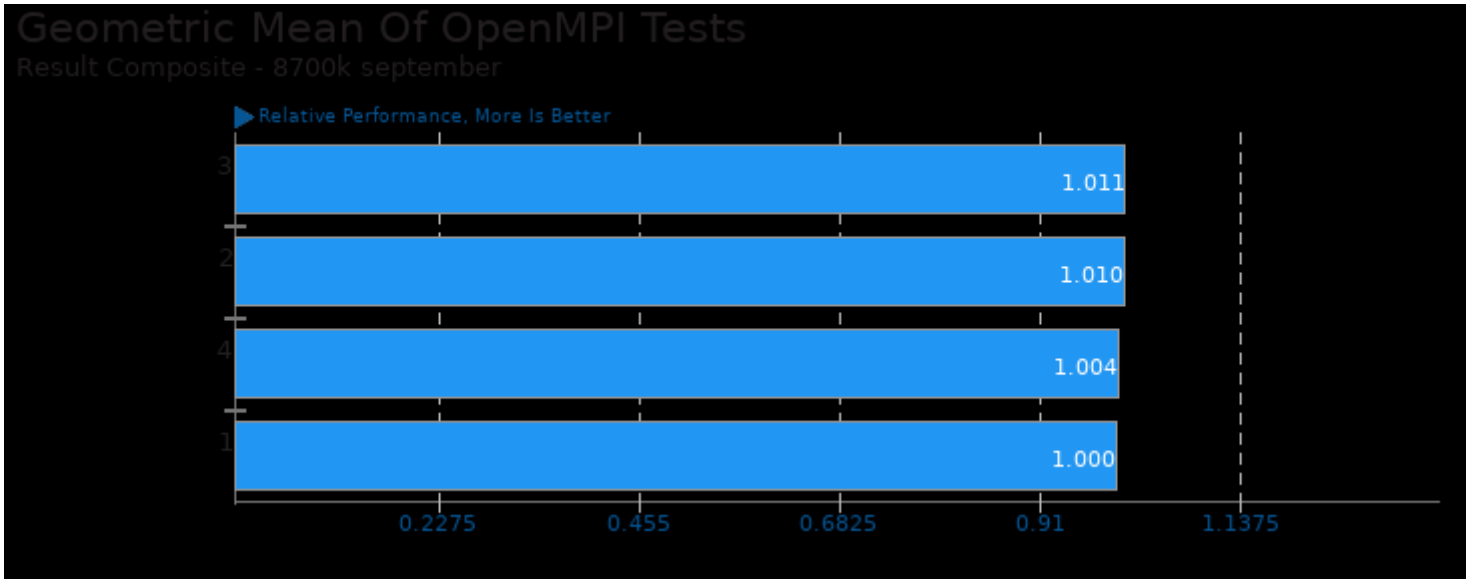
Geometric mean based upon tests: pts/gromacs and pts/npb



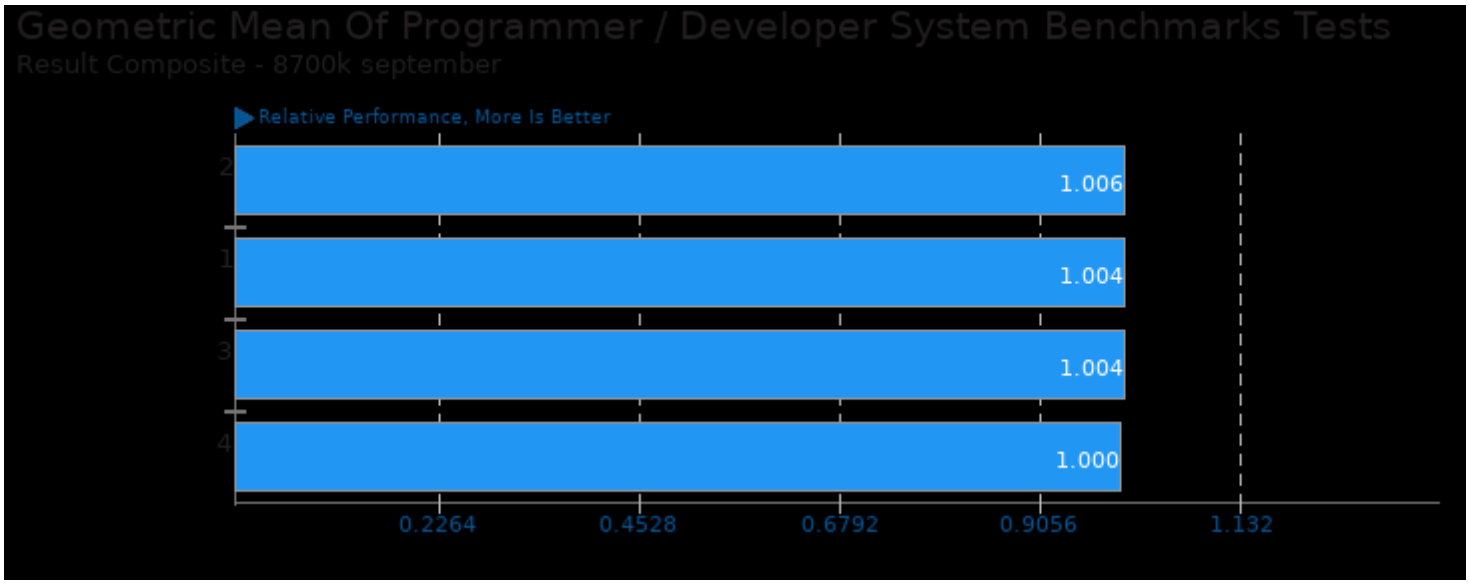
Geometric mean based upon tests: pts/tachyon, pts/yafaray, pts/vpxenc, pts/dav1d, pts/svt-av1, pts/npb, pts/gromacs, pts/compress-zstd, pts/build-linux-kernel, pts/build-gcc, pts/build-gdb, pts/build-ffmpeg, pts/natron, pts/embree, pts/oidn, pts/openvkl and pts/cassandra



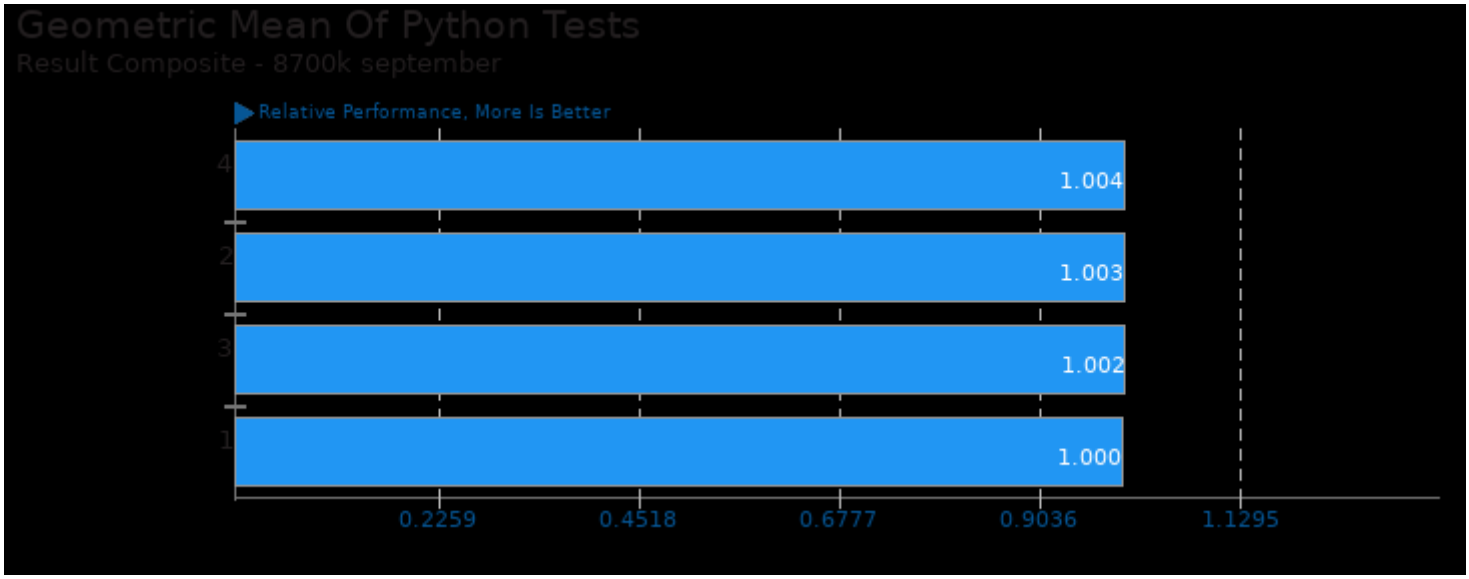
Geometric mean based upon tests: pts/gromacs, pts/lczero and pts/ncnn



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

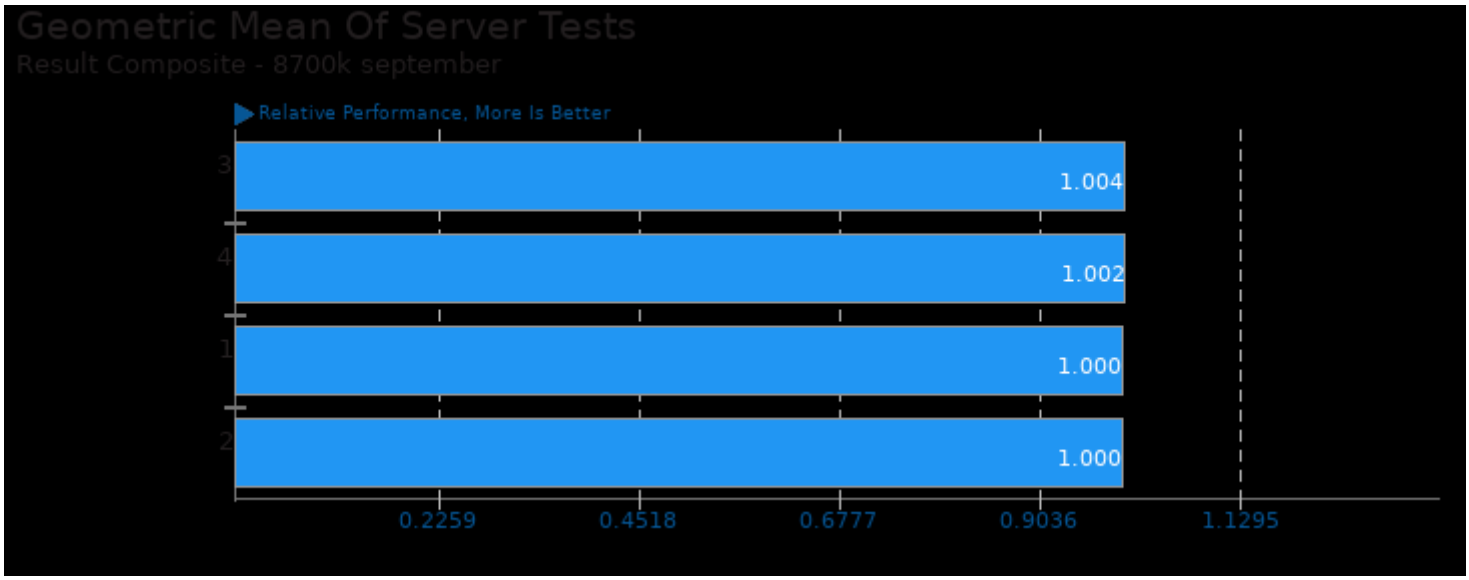


Geometric mean based upon tests: pts/simdjson, pts/blosc, pts/compress-zstd, pts/build-linux-kernel, pts/build-gcc, pts/build-gdb and pts/build-ffmpeg

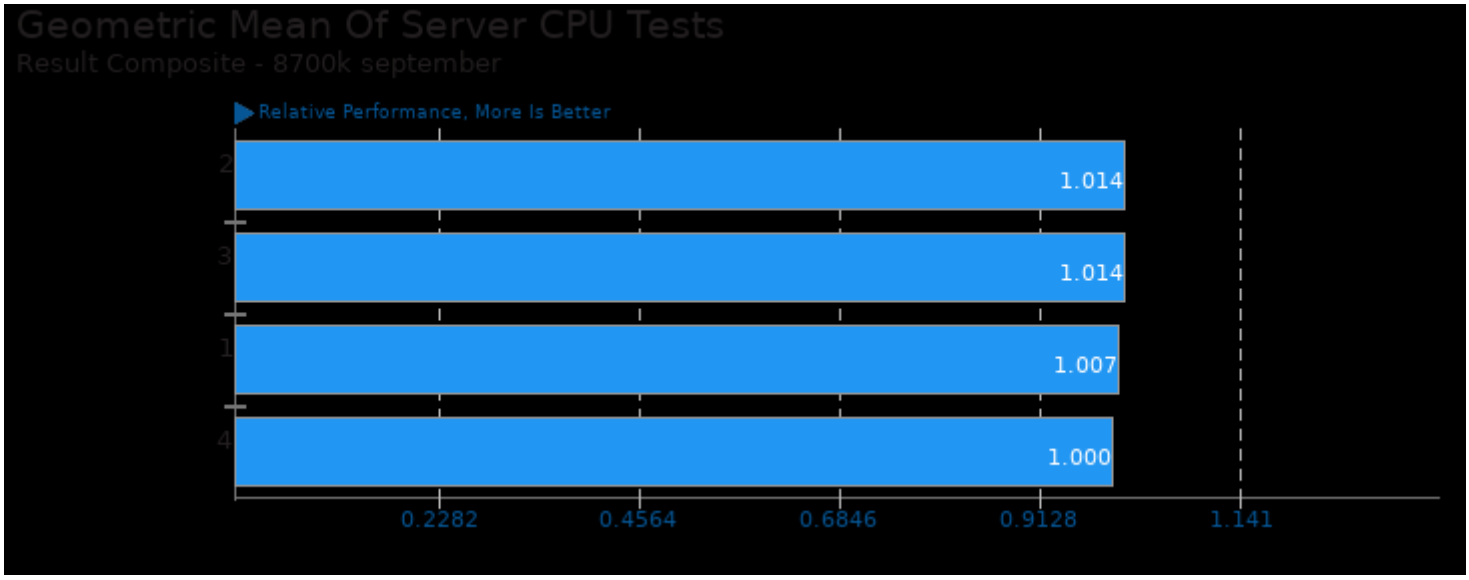


Geometric mean based upon tests: pts/ecp-candle, pts/glmark2 and pts/yafaray

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Geometric mean based upon tests: pts/apache, pts/nginx, pts/keydb, pts/cassandra, pts/rocksdb, pts/openssl and pts/simdjson



Geometric mean based upon tests: pts/npb, pts/renaissance, pts/svt-av1, pts/dav1d, pts/build-gcc, pts/build-linux-kernel, pts/compress-zstd, pts/openssl and pts/stress-ng

This file was automatically generated via the Phoronix Test Suite benchmarking software on Thursday, 28 March 2024 12:59.