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AMD Ryzen 7 3700X Linux Benchmarks

AMD Ryzen 7 3700X 8-Core testing with a MSI MEG X570 GODLIKE (MS-7C34) v1.0 (1.0I41 BIOS). Linux Benchmarks by Michael Larabel.

Automated Executive Summary

Ryzen 7 3700X had the most wins, coming in first place for 55% of the tests.

Based on the geometric mean of all complete results, the fastest (01082020-ptscpu) was 1.019x the speed of the slowest (Ryzen 7 3700X).

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

glibc bench (Benchmark: sin) at 819.202x
glibc bench (Benchmark: cos) at 808.99x
PostgreSQL pgbench (Scaling: Buffer Test - Test: Normal Load - Mode: Read Write) at 21.932x
ebizzy at 13.95x
NAS Parallel Benchmarks (Test / Class: SP.A) at 7.931x
NAS Parallel Benchmarks (Test / Class: BT.A) at 5.571x
BlogBench (Test: Read) at 5.236x
NAS Parallel Benchmarks (Test / Class: LU.A) at 4.021x
NAS Parallel Benchmarks (Test / Class: LU.C) at 2.778x

Rodinia (Test: OpenMP LavaMD) at 2.707x.

Test Systems:

Ryzen 7 3700X

Processor: AMD Ryzen 7 3700X 8-Core @ 3.60GHz (8 Cores / 16 Threads), Motherboard: MSI MEG X570 GODLIKE (MS-7C34) v1.0 (1.0I41 BIOS), Chipset: AMD Device 1480, Memory: 16384MB, Disk: Samsung SSD 970 EVO Plus 250GB, Graphics: Gigabyte AMD Radeon RX 470/480/570/570X/580/580X 4GB (1244/1750MHz), Audio: AMD Ellesmere, Monitor: ASUS PB278, Network: Realtek Device 2600 + Realtek Device 3000 + Intel Device 2723

OS: Ubuntu 18.04, Kernel: 5.2.0-999-generic (x86_64) 20190630, Desktop: GNOME Shell 3.28.4, Display Server: X Server 1.20.1, Display Driver: modesetting 1.20.1, OpenGL: 4.5 Mesa 18.2.8 (LLVM 7.0.0), Compiler: GCC 7.4.0, File-System: ext4, Screen Resolution: 2560x1440

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++ --enable-libmpx --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none --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 --with-tune=generic --without-cuda-driver -v
Disk Notes: NONE / errors=remount-ro,relatime,rw
Processor Notes: Scaling Governor: acpi-cpufreq ondemand
Graphics Notes: GLAMOR
Java Notes: OpenJDK Runtime Environment (build 11.0.3+7-Ubuntu-1ubuntu218.04.1)
Python Notes: Python 2.7.15+ + Python 3.6.8
Security Notes: l1tf: Not affected + mds: Not affected + meltdown: Not affected + spec_store_bypass: Mitigation of SSB disabled via prctl and seccomp + spectre_v1: Mitigation of __user pointer sanitization + spectre_v2: Mitigation of Full AMD retpoline IBPB: conditional STIBP: always-on RSB filling

01082020-ptscpu

Processor: AMD Ryzen 7 3800X 8-Core (8 Cores / 16 Threads), Motherboard: MSI MPG X570 GAMING PLUS (MS-7C37) v2.0 (A.60 BIOS), Chipset: AMD Starship/Matisse, Memory: 64512MB, Disk: PNY CS1311 480GB + 1000GB Hitachi HDS72101 + 4001GB Seagate ST4000DM005-2DP1 + 4001GB Seagate ST4000DM000-1F21 + 4001GB Seagate ST4000LM016-1N21, Graphics: Sapphire AMD Navi 10 8GB (2100/900MHz), Audio: AMD Navi 10 HDMI Audio, Monitor: E24 + LG HDR 4K, Network: Realtek RTL8111/8168/8411

OS: Ubuntu 19.10, Kernel: 5.3.0-26-generic (x86_64), Desktop: Cinnamon 4.0.10, Display Server: X Server 1.20.5, Display Driver: modesetting 1.20.5, OpenGL: 4.6 Mesa 20.0.0-devel (git-3bd4bcd 2020-01-07 eoan-oibaf-ppa) (LLVM 9.0.1), Compiler: GCC 9.2.1 20191008, File-System: ext4, Screen Resolution: 5760x2160

Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --enable-bootstrap --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-gnu-unique-object --enable-languages=c,ada,c++,go,brig,d,fortran,objc,obj-c++,gm2 --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-nls --enable-offload-targets=nvptx-none,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
Disk Notes: MQ-DEADLINE / errors=remount-ro,relatime,rw
Processor Notes: CPU Microcode: 0x8701013
Java Notes: OpenJDK Runtime Environment (build 11.0.5+10-post-Ubuntu-0ubuntu1.1)
Python Notes: Python 2.7.17 + Python 3.7.5
Security Notes: itlb_multihit: Not affected + l1tf: Not affected + mds: Not affected + meltdown: Not affected + spec_store_bypass: Mitigation of SSB disabled via prctl and seccomp + spectre_v1: Mitigation of usercopy/swapgs barriers and __user pointer sanitization + spectre_v2: Mitigation of Full AMD retpoline IBPB: conditional STIBP: conditional RSB filling + tsx_async_abort: Not affected

AMD Ryzen 7 3700X Linux Benchmarks

	Ryzen 7 3700X	01082020-ptscpu
BlogBench - Read (Final Score)	378883	1983656
Normalized	19.1%	100%
Standard Deviation	2.8%	1.4%
BlogBench - Write (Final Score)	18824	3807
Normalized	100%	20.22%
Standard Deviation	6.9%	1.2%
Compile Bench - Compile (MB/s)	1275	2389
Normalized	53.35%	100%
Standard Deviation	6.5%	0.3%
Compile Bench - Initial Create (MB/s)	721.82	610.15
Normalized	100%	84.53%
Standard Deviation	1%	1.4%
Compile Bench - Read Compiled Tree (MB/s)	3785	3521
Normalized	100%	93.01%
Standard Deviation	0.8%	0.1%
RAMspeed SMP - Add - Integer (MB/s)	27771	21218
Normalized	100%	76.4%
RAMspeed SMP - Copy - Integer (MB/s)	24701	18984
Normalized	100%	76.86%
RAMspeed SMP - Scale - Integer (MB/s)	24644	18597
Normalized	100%	75.46%
RAMspeed SMP - Triad - Integer (MB/s)	27693	20896
Normalized	100%	75.45%
RAMspeed SMP - Average - Integer (MB/s)	26214	19977
Normalized	100%	76.21%
RAMspeed SMP - Add - Floating Point (MB/s)	27848	20922
Normalized	100%	75.13%
RAMspeed SMP - Copy - Floating Point (MB/s)	24733	18896
Normalized	100%	76.4%
RAMspeed SMP - Scale - Floating Point (MB/s)	24459	18738
Normalized	100%	76.61%
RAMspeed SMP - Triad - Floating Point (MB/s)	27799	21149
Normalized	100%	76.08%
RAMspeed SMP - Average - Floating Point (MB/s)	26198	19894
Normalized	100%	75.94%
Stream - Copy (MB/s)	36043	17533
Normalized	100%	48.64%
Standard Deviation	0.1%	0%
Stream - Scale (MB/s)	17040	17535
Normalized	97.18%	100%
Standard Deviation	0.2%	0%
Stream - Triad (MB/s)	19278	19521
Normalized	98.75%	100%
Standard Deviation	0.1%	0%
Stream - Add (MB/s)	19375	19516
Normalized	99.27%	100%
Standard Deviation	0.2%	0.1%
Tinymembench - Standard Memcpy (MB/s)	18915	8114
Normalized	100%	42.9%
Standard Deviation	0.2%	2.3%
Tinymembench - Standard Memset (MB/s)	14033	12600
Normalized	100%	89.79%
Standard Deviation	0.3%	2.3%

AMD Ryzen 7 3700X Linux Benchmarks

MBW - Memory Copy - 128 MiB (MiB/s)	**17833**	**13693**
Normalized	100%	76.78%
Standard Deviation	0.4%	0.2%
MBW - Memory Copy - 1024 MiB (MiB/s)	**18260**	**13908**
Normalized	100%	76.17%
Standard Deviation	0%	0.2%
MBW - Memory Copy - 4096 MiB (MiB/s)	**18573**	**14044**
Normalized	100%	75.61%
Standard Deviation	0.7%	0.1%
MBW - M.C.F.B.S - 128 MiB (MiB/s)	**9253**	**7866**
Normalized	100%	85.02%
Standard Deviation	0.9%	0.1%
MBW - M.C.F.B.S - 1024 MiB (MiB/s)	**9770**	**8168**
Normalized	100%	83.6%
Standard Deviation	1.7%	0.1%
MBW - M.C.F.B.S - 4096 MiB (MiB/s)	**9380**	**8074**
Normalized	100%	86.08%
Standard Deviation	0.7%	0.7%
t-test1 - 1 (sec)	**21.58**	**15.390**
Normalized	71.32%	100%
Standard Deviation	1.1%	2%
t-test1 - 2 (sec)	**7.10**	**5.267**
Normalized	74.18%	100%
Standard Deviation	0.9%	1%
Sockperf - Throughput (Messages/sec)	**572627**	**603706**
Normalized	94.85%	100%
Standard Deviation	2.9%	4.6%
Sockperf - Latency Ping Pong (usec)	**3.18**	**3.101**
Normalized	97.52%	100%
Standard Deviation	3.8%	0.7%
Sockperf - Latency Under Load (usec)	**77.03**	**5.154**
Normalized	6.69%	100%
Standard Deviation	57.1%	20%
NAS Parallel Benchmarks - BT.A (Mop/s)	**6594**	**1184**
Normalized	100%	17.95%
Standard Deviation	0.2%	0.4%
NAS Parallel Benchmarks - EP.C (Mop/s)	**333.43**	**387.59**
Normalized	86.03%	100%
Standard Deviation	0.2%	1%
NAS Parallel Benchmarks - FT.A (Mop/s)	**6588**	**4125**
Normalized	100%	62.61%
Standard Deviation	2.2%	0.4%
NAS Parallel Benchmarks - FT.B (Mop/s)	**7531**	**4420**
Normalized	100%	58.69%
Standard Deviation	0.1%	0.9%
NAS Parallel Benchmarks - LU.A (Mop/s)	**24064**	**5985**
Normalized	100%	24.87%
Standard Deviation	3.7%	2.1%
NAS Parallel Benchmarks - LU.C (Mop/s)	**16849**	**6065**
Normalized	100%	35.99%
Standard Deviation	0.6%	1.9%
NAS Parallel Benchmarks - SP.A (Mop/s)	**4404**	**555.38**
Normalized	100%	12.61%
Standard Deviation	0.3%	0.8%
HPC Challenge - G-HPL (GFLOPS)	158.10033	

AMD Ryzen 7 3700X Linux Benchmarks

Standard Deviation	0.5%	
HPC Challenge - G-Ffte (GFLOPS)	6.11317	
Standard Deviation	0.7%	
HPC Challenge - G-Ffte (GFLOP/s)	6.11317	
Standard Deviation	0.7%	
HPC Challenge - EP-DGEMM (GFLOPS)	17.84027	
Standard Deviation	3.2%	
HPC Challenge - G-Ptrans (GB/s)	1.23863	
Standard Deviation	1.8%	
HPC Challenge - EP-STREAM Triad (GB/s)	1.27172	
Standard Deviation	0.6%	
HPC Challenge - G-Rand Access (GUP/s)	0.03680	
Standard Deviation	0.3%	
HPC Challenge - R.R.L (usecs)	0.44787	
Standard Deviation	0.3%	
HPC Challenge - R.R.B (GB/s)	0.75370	
Standard Deviation	2.3%	
HPC Challenge - M.P.P.B (MB/s)	17293	
Standard Deviation	0.3%	
Parboil - OpenMP LBM (sec)	**150.31**	**145.872976**
Normalized	97.05%	100%
Standard Deviation	0.2%	1.2%
Parboil - OpenMP CUTCP (sec)	**2.53**	**2.420873**
Normalized	95.69%	100%
Standard Deviation	0.8%	3.1%
Parboil - OpenMP Stencil (sec)	**15.07**	**14.987889**
Normalized	99.46%	100%
Standard Deviation	0.5%	2.8%
Parboil - O.M.G (sec)	**24.24**	**26.119654**
Normalized	100%	92.8%
Standard Deviation	0.1%	1.5%
CloverLeaf - L.E.H (sec)	**5.11**	**6.50**
Normalized	100%	78.62%
Standard Deviation	0.3%	13.6%
Rodinia - OpenMP LavaMD (sec)	**76.05**	**28.092**
Normalized	36.94%	100%
Standard Deviation	0.3%	1.1%
Rodinia - OpenMP CFD Solver (sec)	**22.60**	**26.375**
Normalized	100%	85.69%
Standard Deviation	0.2%	1.3%
Rodinia - O.S (sec)	**43.10**	**44.339**
Normalized	100%	97.21%
Standard Deviation	0%	2.1%
High Performance Conjugate Gradient (GFLOP/s)	1.07	
Standard Deviation	0.1%	
CLOMP - Static OMP Speedup (Speedup)	**3.05**	**2.21**
Normalized	100%	72.46%
Standard Deviation	5.4%	3.1%
NAMD - ATPase Simulation - 327,506 Atoms (days/ns)	**2.10326**	**2.05340**
Normalized	97.63%	100%
Standard Deviation	0.2%	1.4%
lzbench - XZ 0 - Compression (MB/s)	37	37
lzbench - XZ 0 - Decompression (MB/s)	**114**	**112**
Normalized	100%	98.25%

AMD Ryzen 7 3700X Linux Benchmarks

lzbench - Zstd 1 - Compression (MB/s)	**473**	**469**
Normalized	100%	99.15%
lzbench - Zstd 1 - Decompression (MB/s)	**1285**	**1246**
Normalized	100%	96.96%
Standard Deviation	0.7%	0.2%
lzbench - Brotli 0 - Compression (MB/s)	**501**	**471**
Normalized	100%	94.01%
Standard Deviation	0.3%	
lzbench - Brotli 0 - Decompression (MB/s)	**558**	**563**
Normalized	99.11%	100%
Standard Deviation	0.4%	
lzbench - Libdeflate 1 - Compression (MB/s)	**239**	**244**
Normalized	97.95%	100%
Standard Deviation	1.6%	0.2%
lzbench - Libdeflate 1 - Decompression (MB/s)	1114	1114
Standard Deviation	0.8%	
FFTW - Stock - 1D FFT Size 4096 (Mflops)	**9341**	**8598**
Normalized	100%	92.04%
Standard Deviation	0.1%	0.5%
FFTW - Stock - 2D FFT Size 4096 (Mflops)	**6667**	**6153**
Normalized	100%	92.29%
Standard Deviation	1.3%	0.4%
FFTW - Float + SSE - 1D FFT Size 4096 (Mflops)	**54227**	**57672**
Normalized	94.03%	100%
Standard Deviation	0.9%	1.8%
FFTW - Float + SSE - 2D FFT Size 4096 (Mflops)	**19397**	**19140**
Normalized	100%	98.68%
Standard Deviation	0.4%	2.8%
Timed HMMer Search - P.D.S (sec)	**8.07**	**5.489**
Normalized	68.02%	100%
Standard Deviation	1.5%	7.1%
Timed MAFFT Alignment - M.S.A (sec)	2.51	
Standard Deviation	5.8%	
Timed MrBayes Analysis - P.P.A (sec)	123.06	
Standard Deviation	0%	
BLAKE2 (Cycles/Byte)	**8.30**	**9.97**
Normalized	100%	83.25%
Standard Deviation	1.1%	0.1%
Go Benchmarks - http (ns/op)	5177	
Standard Deviation	0.2%	
Go Benchmarks - json (ns/op)	5919402	
Standard Deviation	0.3%	
Go Benchmarks - build (ns/op)	13792098356	
Standard Deviation	1.7%	
Go Benchmarks - garbage (ns/op)	1206160	
Standard Deviation	0.3%	
Java SciMark - Composite (Mflops)	**3080**	**2982**
Normalized	100%	96.83%
Standard Deviation	0.7%	2%
Java SciMark - Monte Carlo (Mflops)	**1693**	**1689**
Normalized	100%	99.79%
Standard Deviation	0.5%	0.2%
Java SciMark - F.F.T (Mflops)	**2036**	**2054**
Normalized	99.16%	100%
Standard Deviation	1%	0.8%

AMD Ryzen 7 3700X Linux Benchmarks

Java SciMark - S.M.M (Mflops)	**2828**	**2639**
Normalized	100%	93.31%
Standard Deviation	0.3%	0.4%
Java SciMark - D.L.M.F (Mflops)	**6874**	**6614**
Normalized	100%	96.21%
Standard Deviation	1.5%	4.7%
Java SciMark - J.S.O.R (Mflops)	**1969**	**1917**
Normalized	100%	97.37%
Standard Deviation	0.6%	0%
DaCapo Benchmark - H2 (msec)	3065	
Standard Deviation	4.6%	
DaCapo Benchmark - Jython (msec)	4260	
Standard Deviation	2.7%	
Renaissance - Scala Dotty (ms)	**5872**	**6202**
Normalized	100%	94.67%
Standard Deviation	2.6%	3.9%
Renaissance - Twitter Finagle (ms)	**5590**	**5237**
Normalized	93.68%	100%
Standard Deviation	2.8%	3.4%
Renaissance - Apache Spark ALS (ms)	**4594**	**4658**
Normalized	100%	98.62%
Standard Deviation	3%	3.4%
Renaissance - Apache Spark Bayes (ms)	**5281**	**5625**
Normalized	100%	93.9%
Standard Deviation	1.6%	2.3%
Renaissance - Savina Reactors.IO (ms)	**14673**	**15932**
Normalized	100%	92.1%
Standard Deviation	7.4%	8.4%
Renaissance - A.S.P (ms)	**17999**	**18728**
Normalized	100%	96.11%
Standard Deviation	2.3%	1.7%
Renaissance - I.M.D.S (ms)	**5730**	**8354**
Normalized	100%	68.58%
Standard Deviation	2.3%	2.4%
Renaissance - A.U.C.T (ms)	**10453**	**11943**
Normalized	100%	87.52%
Standard Deviation	4.4%	3%
CacheBench - Read (MB/s)	**3034**	**2949**
Normalized	100%	97.21%
Standard Deviation	0.6%	0%
CacheBench - Write (MB/s)	**31463**	**30934**
Normalized	100%	98.32%
Standard Deviation	0.7%	0.2%
CacheBench - R.M.W (MB/s)	**32272**	**60105**
Normalized	53.69%	100%
Standard Deviation	0.2%	0.2%
Botan - KASUMI - Encrypt (MiB/s)	**100.65**	**99.119**
Normalized	100%	98.48%
Standard Deviation	0.1%	0.1%
Botan - KASUMI - Decrypt (MiB/s)	**97.28**	**94.884**
Normalized	100%	97.54%
Standard Deviation	0.2%	0.1%
Botan - AES-256 - Encrypt (MiB/s)	**5937**	**5805**
Normalized	100%	97.78%
Standard Deviation	0.3%	0.2%

AMD Ryzen 7 3700X Linux Benchmarks

Botan - AES-256 - Decrypt (MiB/s)	**5840**	**5837**
Normalized	100%	99.95%
Standard Deviation	0.3%	0.1%
Botan - Twofish - Encrypt (MiB/s)	**379.09**	**386.209**
Normalized	98.16%	100%
Standard Deviation	0.1%	0.1%
Botan - Twofish - Decrypt (MiB/s)	**381.51**	**385.222**
Normalized	99.04%	100%
Standard Deviation	0%	0%
Botan - Blowfish - Encrypt (MiB/s)	**295.02**	**287.711**
Normalized	100%	97.52%
Standard Deviation	0.4%	0.4%
Botan - Blowfish - Decrypt (MiB/s)	**294.24**	**286.487**
Normalized	100%	97.37%
Standard Deviation	0.4%	0.2%
Botan - CAST-256 - Encrypt (MiB/s)	**156.42**	**151.564**
Normalized	100%	96.9%
Standard Deviation	0.1%	0.3%
Botan - CAST-256 - Decrypt (MiB/s)	**156.57**	**151.761**
Normalized	100%	96.93%
Standard Deviation	0.1%	0.2%
Numpy Benchmark (Nanoseconds)	**5646201**	**5647594**
Normalized	100%	99.98%
Crafty - Elapsed Time (Nodes/s)	**8791413**	**8630818**
Normalized	100%	98.17%
Standard Deviation	1.4%	0.5%
John The Ripper - Blowfish (Real C/S)	**19425**	**13974**
Normalized	100%	71.94%
Standard Deviation	0.3%	0.1%
John The Ripper - MD5 (Real C/S)	**956706**	**893389**
Normalized	100%	93.38%
Standard Deviation	0.6%	1.3%
Open FMM Nero2D - Total Time (sec)	63.65	
Standard Deviation	1.1%	
MKL-DNN - IP Batch 1D - f32 (ms)	**22.77**	**21.8241**
Normalized	95.85%	100%
Standard Deviation	2.4%	3.4%
MKL-DNN - D.B.d - f32 (ms)	**31.68**	**31.7193**
Normalized	100%	99.88%
Standard Deviation	0.2%	1.8%
MKL-DNN - D.B.d - f32 (ms)	**6.73**	**6.33448**
Normalized	94.12%	100%
Standard Deviation	0.1%	3.3%
MKL-DNN - C.B.c - f32 (ms)	**366.88**	**338.863**
Normalized	92.36%	100%
Standard Deviation	0.1%	5.3%
MKL-DNN - C.B.c - f32 (ms)	**164.49**	**157.842**
Normalized	95.96%	100%
Standard Deviation	0.3%	3.4%
TTSIOD 3D Renderer - P.R.W.S.S.M (FPS)	**508.97**	**476.863**
Normalized	100%	93.69%
Standard Deviation	0.2%	4.7%
SVT-AV1 - 1.8.b.Y.T.A.V.E (FPS)	**34.58**	**36.652**
Normalized	94.35%	100%
Standard Deviation	0.2%	11.9%

AMD Ryzen 7 3700X Linux Benchmarks

SVT-HEVC - 1.8.b.Y.T.H.V.E (FPS)	**188.75**	**181.51**
Normalized	100%	96.16%
Standard Deviation	1%	25.8%
SVT-VP9 - 1.8.b.Y.T.V.V.E (FPS)	**60.33**	**63.14**
Normalized	95.55%	100%
Standard Deviation	0.1%	0.6%
VP9 libvpx Encoding - v.V.1.V.E (FPS)	**135.48**	**199.12**
Normalized	68.04%	100%
Standard Deviation	0.8%	0.6%
x264 - H.2.V.E (FPS)	**93.19**	**103.55**
Normalized	90%	100%
Standard Deviation	1.6%	0.3%
x265 - H.2.1.V.E (FPS)	**41.97**	**45.59**
Normalized	92.06%	100%
Standard Deviation	1%	0.1%
GraphicsMagick - Rotate (Iterations/min)	**258**	**261**
Normalized	98.85%	100%
Standard Deviation	0.4%	
GraphicsMagick - Sharpen (Iterations/min)	**149**	**160**
Normalized	93.13%	100%
GraphicsMagick - Enhanced (Iterations/min)	**185**	**193**
Normalized	95.85%	100%
GraphicsMagick - Resizing (Iterations/min)	**264**	**277**
Normalized	95.31%	100%
Standard Deviation	0.2%	
Himeno Benchmark - P.P.S (MFLOPS)	**1317**	**1289**
Normalized	100%	97.9%
Standard Deviation	0.5%	0.3%
7-Zip Compression - C.S.T (MIPS)	**55288**	**55563**
Normalized	99.51%	100%
Standard Deviation	0.2%	0.5%
Stockfish - Total Time (Nodes/s)	**26461042**	**26894463**
Normalized	98.39%	100%
Standard Deviation	0.8%	0.2%
asmFish - 1.H.M.2.D (Nodes/s)	**27896973**	**27739222**
Normalized	100%	99.43%
Standard Deviation	2.4%	0.3%
Swet - Average (Operations/sec)	827870909	
Standard Deviation	0.7%	
ebizzy (Records/s)	**53733**	**749588**
Normalized	7.17%	100%
Standard Deviation	3%	0.4%
Timed GCC Compilation - Time To Compile (sec)	**788.97**	**760.404**
Normalized	96.38%	100%
Timed Linux Kernel Compilation - Time To Compile	67.90	
Standard Deviation	1.8%	
Timed LLVM Compilation - Time To Compile (sec)	**414.22**	**359.876**
Normalized	86.88%	100%
Timed PHP Compilation - Time To Compile (sec)	**46.83**	**49.256**
Normalized	100%	95.07%
Standard Deviation	0.4%	0.6%
C-Ray - Total Time - 4.1.R.P.P (sec)	**78.02**	**59.886**
Normalized	76.76%	100%
Standard Deviation	0%	0%

AMD Ryzen 7 3700X Linux Benchmarks

Parallel BZIP2 Compression - 2.F.C (sec)	**3.33**	**3.210**
Normalized	96.4%	100%
Standard Deviation	0.9%	0.6%
POV-Ray - Trace Time (sec)	**46.21**	**42.183**
Normalized	91.29%	100%
Standard Deviation	0.1%	0.2%
Primesieve - 1.P.N.G (sec)	**23.28**	**21.825**
Normalized	93.75%	100%
Standard Deviation	0.2%	1.3%
Rust Mandelbrot - T.T.C.S.P.M (sec)	**40.75**	**41.105**
Normalized	100%	99.14%
Standard Deviation	0.5%	0.1%
Rust Prime Benchmark - P.N.T.T.2.0.0 (sec)	**39.78**	**39.511**
Normalized	99.32%	100%
Standard Deviation	0.1%	0.1%
XZ Compression - C.u.1.0.3.s.i.i.C.L.9 (sec)	**31.56**	**33.301**
Normalized	100%	94.77%
Standard Deviation	0.1%	0.6%
Zstd Compression - C.u.1.0.3.s.i.i.C.L.1 (sec)	**22.78**	**23.777**
Normalized	100%	95.81%
Standard Deviation	0.6%	0.3%
Cython benchmark (sec)	21.81	
Standard Deviation	0.2%	
FLAC Audio Encoding - WAV To FLAC (sec)	**7.91**	**10.453**
Normalized	100%	75.67%
Standard Deviation	0.5%	3.3%
LAME MP3 Encoding - WAV To MP3 (sec)	**26.20**	**26.056**
Normalized	99.45%	100%
Standard Deviation	0.1%	0%
Hackbench - 32 - Process (sec)	**66.36**	**97.561**
Normalized	100%	68.02%
Standard Deviation	2.7%	5.2%
m-queens - Time To Solve (sec)	**69.01**	**65.968**
Normalized	95.59%	100%
Standard Deviation	0.1%	0.4%
Minion - Graceful (sec)	**42.45**	**41.974580**
Normalized	98.88%	100%
Standard Deviation	0.8%	0.4%
Minion - Solitaire (sec)	**59.61**	**60.883212**
Normalized	100%	97.91%
Standard Deviation	0.6%	0.7%
Minion - Quasigroup (sec)	**110.34**	**108.737137**
Normalized	98.55%	100%
Standard Deviation	2.9%	0.5%
Radiance Benchmark - Serial (sec)	**594.08**	**571.022**
Normalized	96.12%	100%
Radiance Benchmark - SMP Parallel (sec)	**197.68**	**173.242**
Normalized	87.64%	100%
R Benchmark (sec)	0.1654	
Standard Deviation	1.7%	
Tachyon - Total Time (sec)	4.91	
Standard Deviation	0%	
OpenSSL - R.4.b.P (Signs/sec)	**2401**	**2455**
Normalized	97.79%	100%
Standard Deviation	0.3%	0.8%

AMD Ryzen 7 3700X Linux Benchmarks

Cpuminer-Opt - m7m (kH/s - Hash Speed)	398.26	
Standard Deviation	0.1%	
Cpuminer-Opt - deep (kH/s - Hash Speed)	7629	
Standard Deviation	0.1%	
Cpuminer-Opt - skein (kH/s - Hash Speed)	27223	
Standard Deviation	0%	
Cpuminer-Opt - sha256t (kH/s - Hash Speed)	58620	
Standard Deviation	0%	
glibc bench - cos (nanoseconds)	**34797**	**43.0129**
Normalized	0.12%	100%
Standard Deviation	0.5%	0.2%
glibc bench - ffs (nanoseconds)	**1.77**	**1.79449**
Normalized	100%	98.64%
Standard Deviation	0.2%	0.2%
glibc bench - sin (nanoseconds)	**35024**	**42.7533**
Normalized	0.12%	100%
Standard Deviation	0.2%	0.1%
glibc bench - sqrt (nanoseconds)	**2.21**	**2.25912**
Normalized	100%	97.83%
Standard Deviation	0%	0.1%
glibc bench - tanh (nanoseconds)	**11.32**	**10.8618**
Normalized	95.95%	100%
Standard Deviation	0.1%	0.4%
glibc bench - ffsll (nanoseconds)	**1.76**	**1.79382**
Normalized	100%	98.11%
Standard Deviation	0.1%	0%
glibc bench - pthread_once (nanoseconds)	**1.76**	**1.79301**
Normalized	100%	98.16%
Standard Deviation	0%	0.1%
Multichase Pointer Chaser - 4.A.6.B.S (ns)	**4.93**	**5.103**
Normalized	100%	96.61%
Standard Deviation	0.2%	0.3%
Multichase Pointer Chaser - 1.A.2.B.S (ns)	**66.01**	**91.741**
Normalized	100%	71.95%
Standard Deviation	3%	0.2%
Multichase Pointer Chaser - 2.A.2.B.S (ns)	**65.29**	**91.853**
Normalized	100%	71.08%
Standard Deviation	2.8%	0.2%
Multichase Pointer Chaser - 1.A.2.B.S.2.T (ns)	**67.99**	**92.866**
Normalized	100%	73.21%
Standard Deviation	0%	0.2%
Multichase Pointer Chaser - 1.A.2.B.S.4.T (ns)	**70.46**	**95.091**
Normalized	100%	74.1%
Standard Deviation	0%	0.2%
libjpeg-turbo tjbench - D.T (Megapixels/sec)	**199.68**	**189.119580**
Normalized	100%	94.71%
Standard Deviation	0.5%	0.1%
MariaDB - 1 (Queries/sec)	375	
Standard Deviation	2.9%	
MariaDB - 16 (Queries/sec)	159	
Standard Deviation	0.9%	
MariaDB - 64 (Queries/sec)	135	
Standard Deviation	0.2%	
MariaDB - 256 (Queries/sec)	111	
Standard Deviation	0.2%	

AMD Ryzen 7 3700X Linux Benchmarks

Tensorflow - Cifar10 (sec)	**28.05**	**28.59**
Normalized	100%	98.11%
Standard Deviation	0.4%	2.1%
PostgreSQL pgbench - Buffer Test - Normal Load - Read Only (TPS)	**202051**	**232062**
Normalized	87.07%	100%
Standard Deviation	0.2%	1.6%
PostgreSQL pgbench - Buffer Test - Normal Load - Read Write (TPS)	**6015**	**274.272719**
Normalized	100%	4.56%
Standard Deviation	0.1%	4.3%
PostgreSQL pgbench - Buffer Test - Heavy Contention - Read Only (TPS)	**204512**	**248352**
Normalized	82.35%	100%
Standard Deviation	0.4%	0.1%
PostgreSQL pgbench - Buffer Test - Heavy Contention - Read Write (TPS)	**6357**	**331.824513**
Normalized	100%	5.22%
Standard Deviation	0.6%	6.7%
CppPerformanceBenchmarks - Atol (sec)	**63.25**	**57.898**
Normalized	91.54%	100%
Standard Deviation	0.1%	0.5%
CppPerformanceBenchmarks - Ctype (sec)	**33.43**	**32.605**
Normalized	97.53%	100%
Standard Deviation	0.6%	0.1%
CppPerformanceBenchmarks - Math Library (sec)	**315.41**	**278.449**
Normalized	88.28%	100%
Standard Deviation	0.2%	0.1%
CppPerformanceBenchmarks - Function Objects (sec)	**14.98**	**15.268**
Normalized	100%	98.11%
Standard Deviation	0.6%	0.4%
Darktable - Boat - CPU-only (sec)	11.56	
Standard Deviation	0.4%	
Darktable - Masskrug - CPU-only (sec)	5.59	
Standard Deviation	0.7%	
Darktable - Server Rack - CPU-only (sec)	0.19	
Standard Deviation	0.3%	
Darktable - Server Room - CPU-only (sec)	3.99	
Standard Deviation	0.1%	
GNU Octave Benchmark (sec)	7.57	
Standard Deviation	1%	
Redis - LPOP (Reqs/sec)	**2640849**	**2270315**
Normalized	100%	85.97%
Standard Deviation	0.2%	8%
Redis - SADD (Reqs/sec)	**2103976**	**1830483**
Normalized	100%	87%
Standard Deviation	1.2%	0.9%
Redis - LPUSH (Reqs/sec)	**1573783**	**1428608**
Normalized	100%	90.78%
Standard Deviation	2.5%	0.6%
Redis - GET (Reqs/sec)	**2519093**	**2218995**
Normalized	100%	88.09%
Standard Deviation	1.1%	0.6%
Redis - SET (Reqs/sec)	**1779642**	**1720451**

AMD Ryzen 7 3700X Linux Benchmarks

Normalized	100%	96.67%
Standard Deviation	1.5%	6.8%
Stress-NG - Crypto (Bogo Ops/s)	**2313**	**2449**
Normalized	94.45%	100%
Standard Deviation	0.4%	0.1%
Stress-NG - Forking (Bogo Ops/s)	**67284**	**59661**
Normalized	100%	88.67%
Standard Deviation	0.2%	0.3%
Stress-NG - CPU Stress (Bogo Ops/s)	**2942**	**3290**
Normalized	89.42%	100%
Standard Deviation	0.1%	0.5%
Stress-NG - Semaphores (Bogo Ops/s)	**6741777**	**5652799**
Normalized	100%	83.85%
Standard Deviation	0.7%	0.2%
Stress-NG - Memory Copying (Bogo Ops/s)	**1919**	**3465**
Normalized	55.38%	100%
Standard Deviation	0.2%	2.5%
Stress-NG - Socket Activity (Bogo Ops/s)	**8185**	**7435**
Normalized	100%	90.84%
Standard Deviation	1.6%	3.1%
Stress-NG - Context Switching (Bogo Ops/s)	**3688634**	**5006475**
Normalized	73.68%	100%
Standard Deviation	5.5%	19.3%
Stress-NG - S.V.M.P (Bogo Ops/s)	**12510849**	**14663619**
Normalized	85.32%	100%
Standard Deviation	2.8%	2.1%
ctx_clock - C.S.T (Clocks)	**168**	**212**
Normalized	100%	79.25%
Standard Deviation	10.5%	
Sysbench - Memory (Events/sec)	**11071170**	**10095579**
Normalized	100%	91.19%
Standard Deviation	0%	1.3%
Sysbench - CPU (Events/sec)	**17624**	**17835**
Normalized	98.81%	100%
Standard Deviation	0%	0.1%
Chaos Group V-RAY - CPU (Ksamples)	13966	
Standard Deviation	0.7%	
Blender - BMW27 - CPU-Only (sec)	**205.27**	**192.92**
Normalized	93.98%	100%
Blender - Classroom - CPU-Only (sec)	**480.75**	**426.41**
Normalized	88.7%	100%
Blender - Fishy Cat - CPU-Only (sec)	**290.31**	**270.17**
Normalized	93.06%	100%
Blender - Barbershop - CPU-Only (sec)	**1033**	**991.51**
Normalized	96.03%	100%
Blender - Pabellon Barcelona - CPU-Only (sec)	**561.33**	**517.36**
Normalized	92.17%	100%
Xsbench (Lookups/s)	**2301199**	**2287098**
Normalized	100%	99.39%
Standard Deviation	0.1%	0.4%
Memcached mcperf - Add (Operations/sec)	62120	
Standard Deviation	20.9%	
Memcached mcperf - Get (Operations/sec)	99292	
Standard Deviation	8.6%	

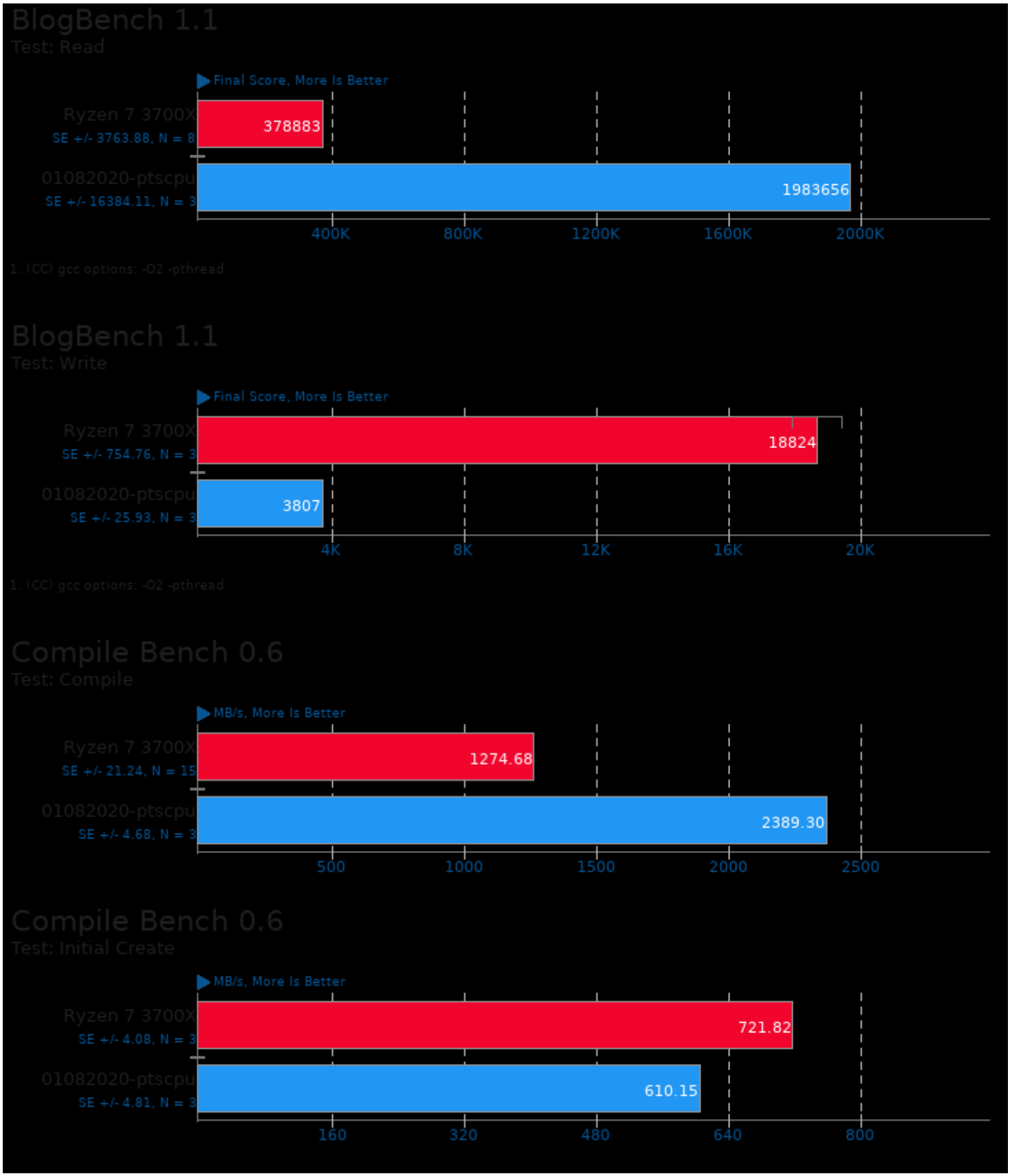
AMD Ryzen 7 3700X Linux Benchmarks

Memcached mcperf - Set (Operations/sec)	54894	
Standard Deviation	0.2%	
Memcached mcperf - Append (Operations/sec)	57466	
Standard Deviation	2.3%	
Memcached mcperf - Delete (Operations/sec)	96164	
Standard Deviation	2.7%	
Memcached mcperf - Prepend (Operations/sec)	77518	
Standard Deviation	27%	
Memcached mcperf - Replace (Operations/sec)	78278	
Standard Deviation	27.7%	
Numenta Anomaly Benchmark - Time To Completion (sec)	**236.35**	**252.863**
Normalized	100%	93.47%
Standard Deviation	0.2%	0.7%
Hierarchical INTegration - FLOAT (QUIPs)	**370288443**	**370992054**
Normalized	99.81%	100%
Standard Deviation	0.6%	0%
Hierarchical INTegration - DOUBLE (QUIPs)	**872326518**	**852565553**
Normalized	100%	97.73%
Standard Deviation	3.7%	2.2%
NGINX Benchmark - S.W.P.S (Reqs/sec)	**40401**	**40917**
Normalized	98.74%	100%
Standard Deviation	0.5%	0.2%
Apache Benchmark - S.W.P.S (Reqs/sec)	**38507**	**38649**
Normalized	99.63%	100%
Standard Deviation	0.7%	2.4%
Apache Siege - 200 (Transactions/sec)	34169	
Standard Deviation	14.6%	
Apache Siege - 250 (Transactions/sec)	**35182**	**91668**
Normalized	38.38%	100%
Standard Deviation	14%	0.7%
PHPBench - P.B.S (Score)	**628874**	**648454**
Normalized	96.98%	100%
Standard Deviation	0.8%	0.4%
Scikit-Learn (sec)	11.35	
Standard Deviation	0.7%	
Tesseract OCR - T.T.O.7.I (sec)	24.41	
Standard Deviation	0.1%	
BRL-CAD - V.P.M (VGR Performance Metric)	**120497**	**130921**
Normalized	92.04%	100%
SPECjbb 2015 - S.C.m.j (jOPS)	15308	
SPECjbb 2015 - S.C.c.j (jOPS)	4700	
Cryptsetup - PBKDF2-sha512 (Iterations/sec)	1621535	
Standard Deviation	0.5%	
Cryptsetup - PBKDF2-whirlpool (Iterations/sec)	896732	
Standard Deviation	0.2%	
Geekbench - Multi Core (Score)	37299	
Standard Deviation	0.4%	
Geekbench - Single Core (Score)	6268	
Standard Deviation	0.1%	
Novabench - CPU (CPU Score)	1675	
Standard Deviation	0.2%	
Novabench - RAM (RAM Score)	326	
Standard Deviation	1.1%	

AMD Ryzen 7 3700X Linux Benchmarks

Novabench - RAM (MB/s)	42916	
Standard Deviation	2.2%	
Selenium - ARES-6 - Firefox (ms)	**53.19**	**48.74**
Normalized	91.63%	100%
Standard Deviation	1.1%	0.8%
Selenium - Octane - Firefox (Geometric Mean)	**36640**	**35862**
Normalized	100%	97.88%
Standard Deviation	0.7%	0.3%
Selenium - WebXPRT - Firefox (Score)	**255**	**285**
Normalized	89.47%	100%
Standard Deviation	0.7%	
Selenium - Basemark - Firefox (Overall Score)	**723.76**	**953.91**
Normalized	75.87%	100%
Standard Deviation	4.8%	6.6%
Selenium - Jetstream - Firefox (Score)	**215.06**	**221.83**
Normalized	96.95%	100%
Standard Deviation	0.7%	0.4%
Selenium - CanvasMark - Firefox (Score)	**14105**	**15766**
Normalized	89.46%	100%
Standard Deviation	2.8%	2.1%
Selenium - MotionMark - Firefox (Score)	**85.45**	**235.96**
Normalized	36.21%	100%
Standard Deviation	14.2%	13.8%
Selenium - Speedometer - Firefox (Runs/min)	**95.00**	**97.0**
Normalized	97.94%	100%
Standard Deviation	0.5%	0.5%
Selenium - ARES-6 - Google Chrome (ms)	19.94	
Standard Deviation	0.3%	
Selenium - Octane - Google Chrome (Geometric	48658	
Standard Deviation	0.1%	
Selenium - WebXPRT - Google Chrome (Score)	271	
Standard Deviation	1%	
Selenium - Basemark - Google Chrome (Overall	1134	
Standard Deviation	4.3%	
Selenium - Jetstream - Google Chrome (Score)	219.37	
Standard Deviation	1%	
Selenium - CanvasMark - Google Chrome (Score)	19188	
Standard Deviation	2.9%	
Selenium - MotionMark - Google Chrome (Score)	671.21	
Standard Deviation	2.9%	
Selenium - Jetstream 2 - Google Chrome (Score)	133.88	
Standard Deviation	0.2%	
Selenium - Speedometer - Google Chrome (Runs/min)	133	
Standard Deviation	0.4%	

AMD Ryzen 7 3700X Linux Benchmarks



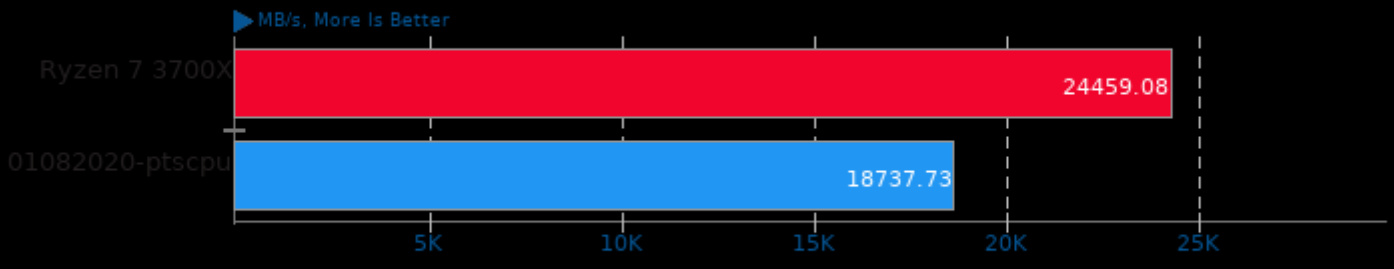

Compile Bench 0.6
Test: Read Compiled Tree
MB/s, More Is Better
Ryzen 7 3700X
SE +/- 18.18, N = 3
3785.08
01082020-ptscpu
SE +/- 1.14, N = 3
3520.56
800
1600
2400
3200
4000
RAMspeed SMP 3.5.0
Type: Add - Benchmark: Integer
MB/s, More Is Better
Ryzen 7 3700X
27770.66
01082020-ptscpu
21217.67
6K
12K
18K
24K
30K
1. (CC) gcc options: -O3 -march=native
RAMspeed SMP 3.5.0
Type: Copy - Benchmark: Integer
MB/s, More Is Better
Ryzen 7 3700X
24700.88
01082020-ptscpu
18984.00
5K
10K
15K
20K
25K
1. (CC) gcc options: -O3 -march=native
RAMspeed SMP 3.5.0
Type: Scale - Benchmark: Integer
MB/s, More Is Better
Ryzen 7 3700X
24643.89
01082020-ptscpu
18596.77
5K
10K
15K
20K
25K
1. (CC) gcc options: -O3 -march=native


RAMspeed SMP 3.5.0
Type: Triad - Benchmark: Integer
MB/s, More Is Better
Ryzen 7 3700X
27693.39
01082020-ptscpu
20895.95
6K
12K
18K
24K
30K
1. (CC) gcc options: -O3 -march=native
RAMspeed SMP 3.5.0
Type: Average - Benchmark: Integer
MB/s, More Is Better
Ryzen 7 3700X
26213.61
01082020-ptscpu
19976.61
6K
12K
18K
24K
30K
1. (CC) gcc options: -O3 -march=native
RAMspeed SMP 3.5.0
Type: Add - Benchmark: Floating Point
MB/s, More Is Better
Ryzen 7 3700X
27848.40
01082020-ptscpu
20921.86
6K
12K
18K
24K
30K
1. (CC) gcc options: -O3 -march=native
RAMspeed SMP 3.5.0
Type: Copy - Benchmark: Floating Point
MB/s, More Is Better
Ryzen 7 3700X
24733.21
01082020-ptscpu
18895.64
5K
10K
15K
20K
25K
1. (CC) gcc options: -O3 -march=native

AMD Ryzen 7 3700X Linux Benchmarks

RAMspeed SMP 3.5.0

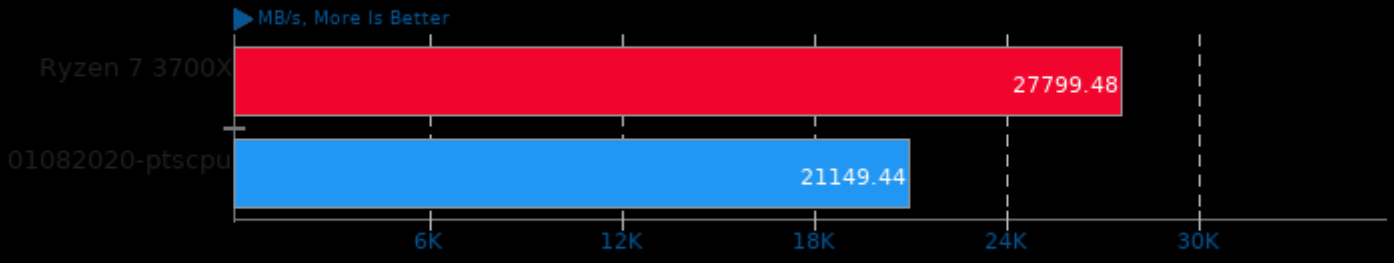
Type: Scale - Benchmark: Floating Point



1. (CC) gcc options: -O3 -march=native

RAMspeed SMP 3.5.0

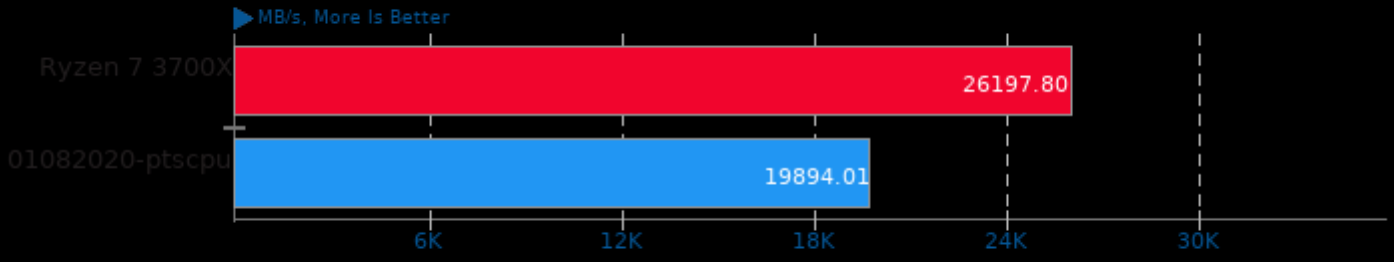
Type: Triad - Benchmark: Floating Point



1. (CC) gcc options: -O3 -march=native

RAMspeed SMP 3.5.0

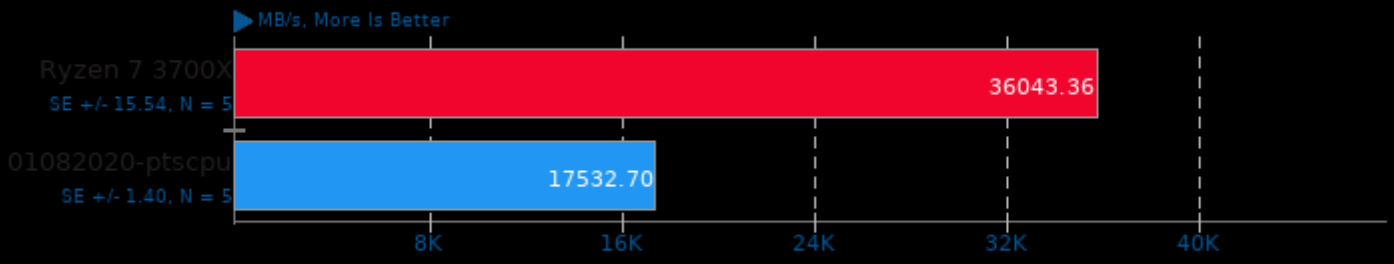
Type: Average - Benchmark: Floating Point



1. (CC) gcc options: -O3 -march=native

Stream 2013-01-17

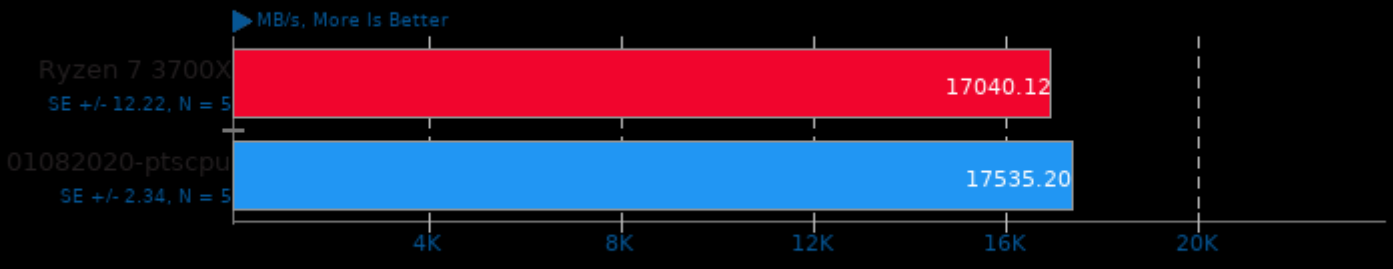
Type: Copy



1. (CC) gcc options: -O3 -march=native -fopenmp

Stream 2013-01-17

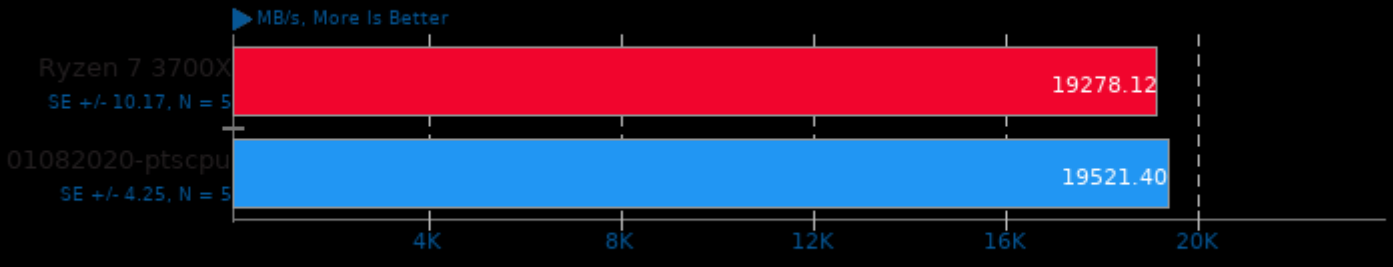
Type: Scale



1. (CC) gcc options: -O3 -march=native -fopenmp

Stream 2013-01-17

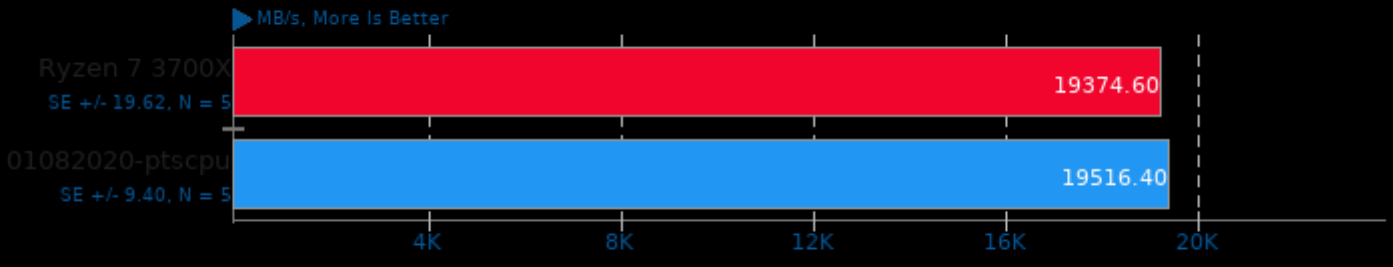
Type: Triad



1. (CC) gcc options: -O3 -march=native -fopenmp

Stream 2013-01-17

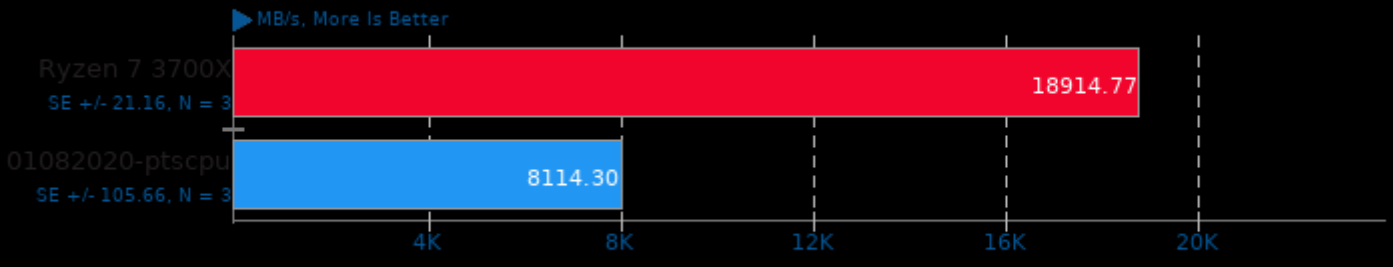
Type: Add



1. (CC) gcc options: -O3 -march=native -fopenmp

Tinymembench 2018-05-28

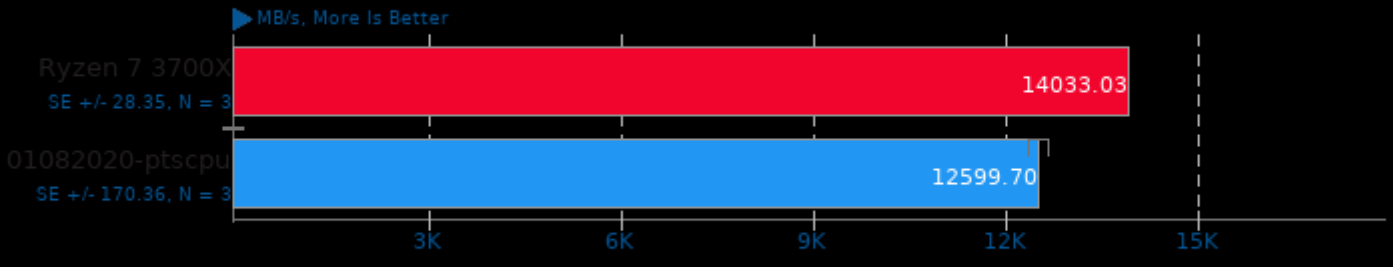
Standard Memcpy



1. (CC) gcc options: -O2 -lm

Tinymembench 2018-05-28

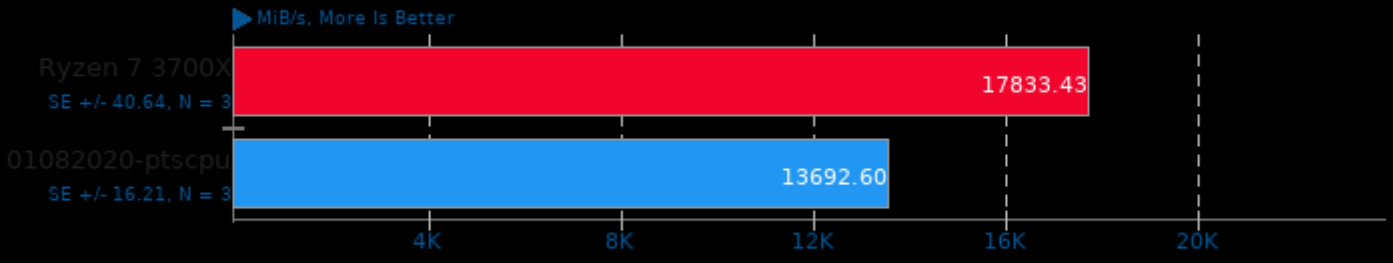
Standard Memset



1. (CC) gcc options: -O2 -lm

MBW 2018-09-08

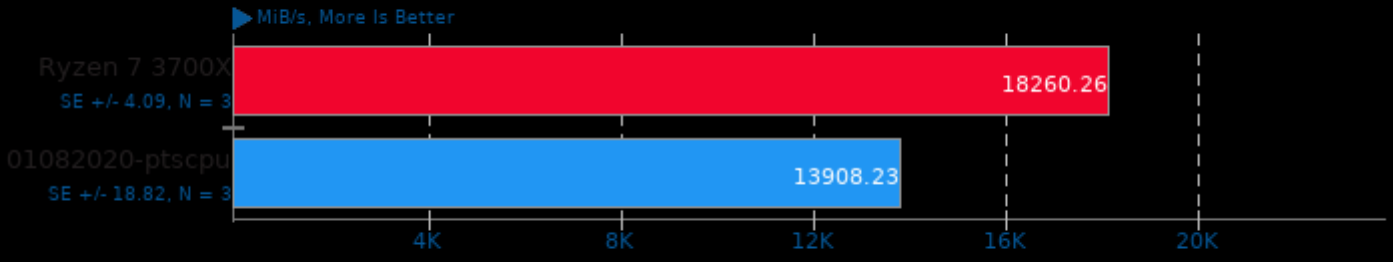
Test: Memory Copy - Array Size: 128 MiB



1. (CC) gcc options: -O3 -march=native

MBW 2018-09-08

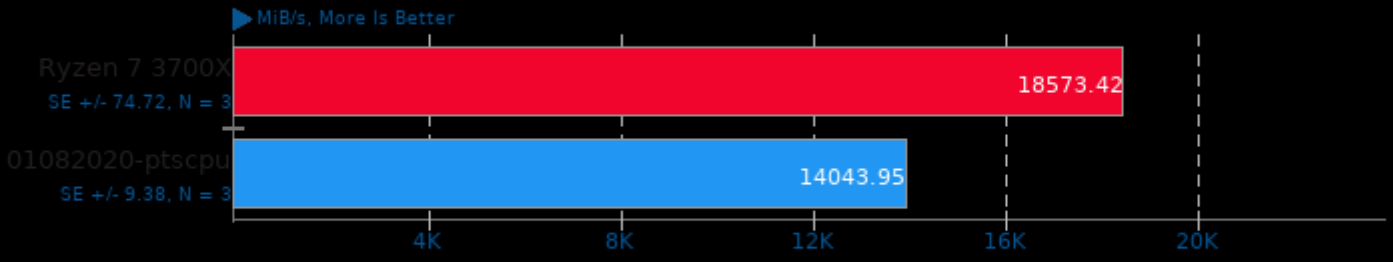
Test: Memory Copy - Array Size: 1024 MiB



1. (CC) gcc options: -O3 -march=native

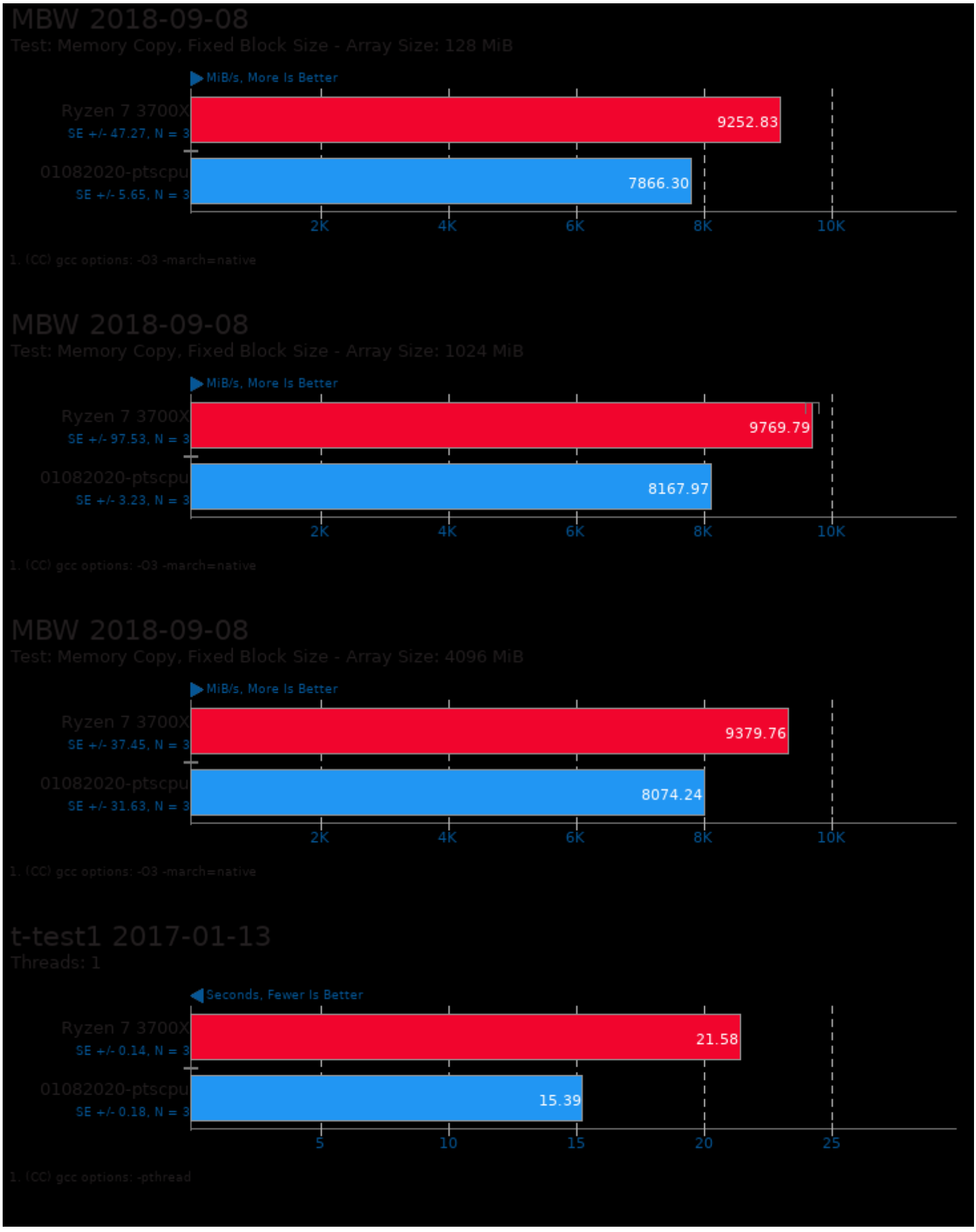
MBW 2018-09-08

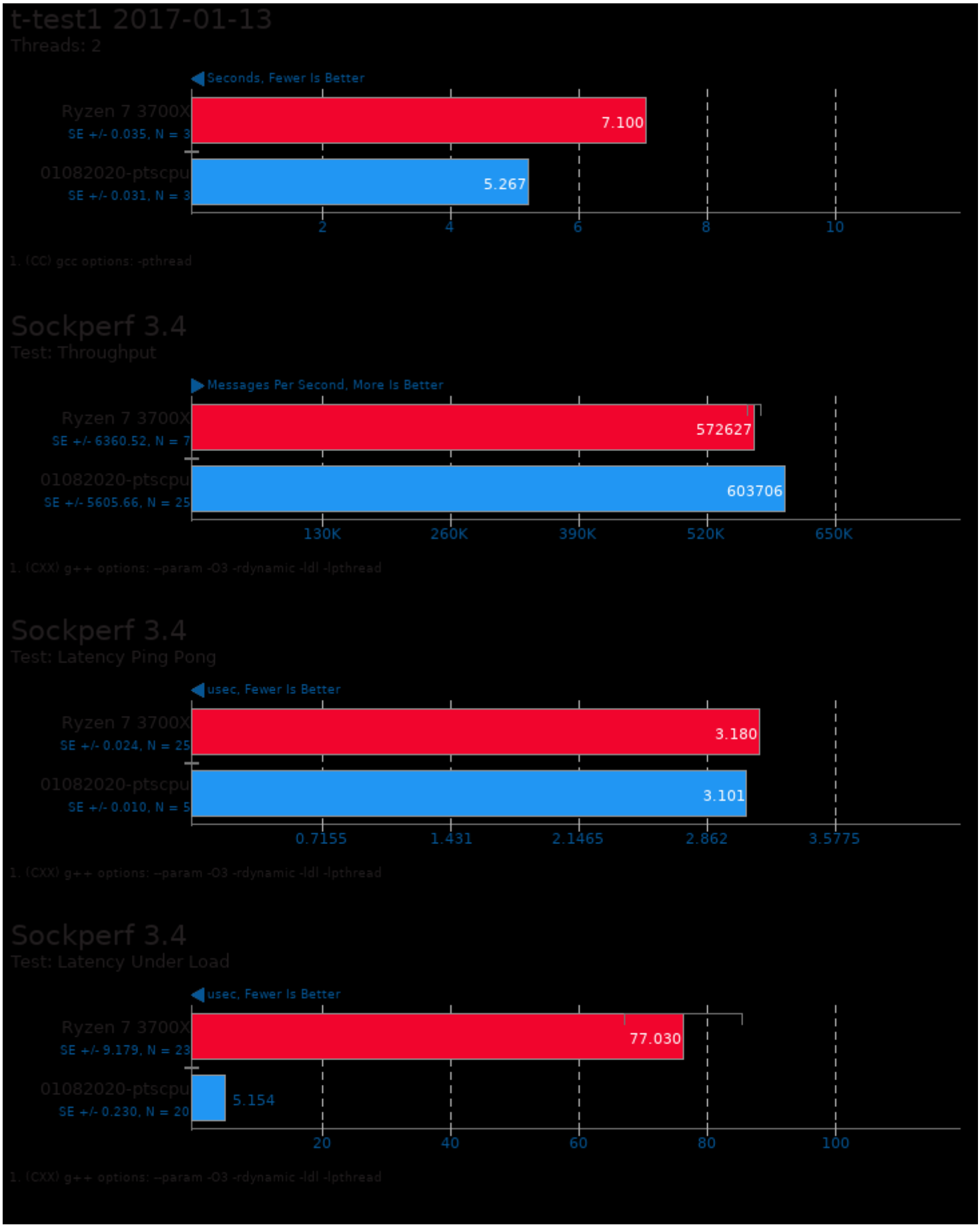
Test: Memory Copy - Array Size: 4096 MiB



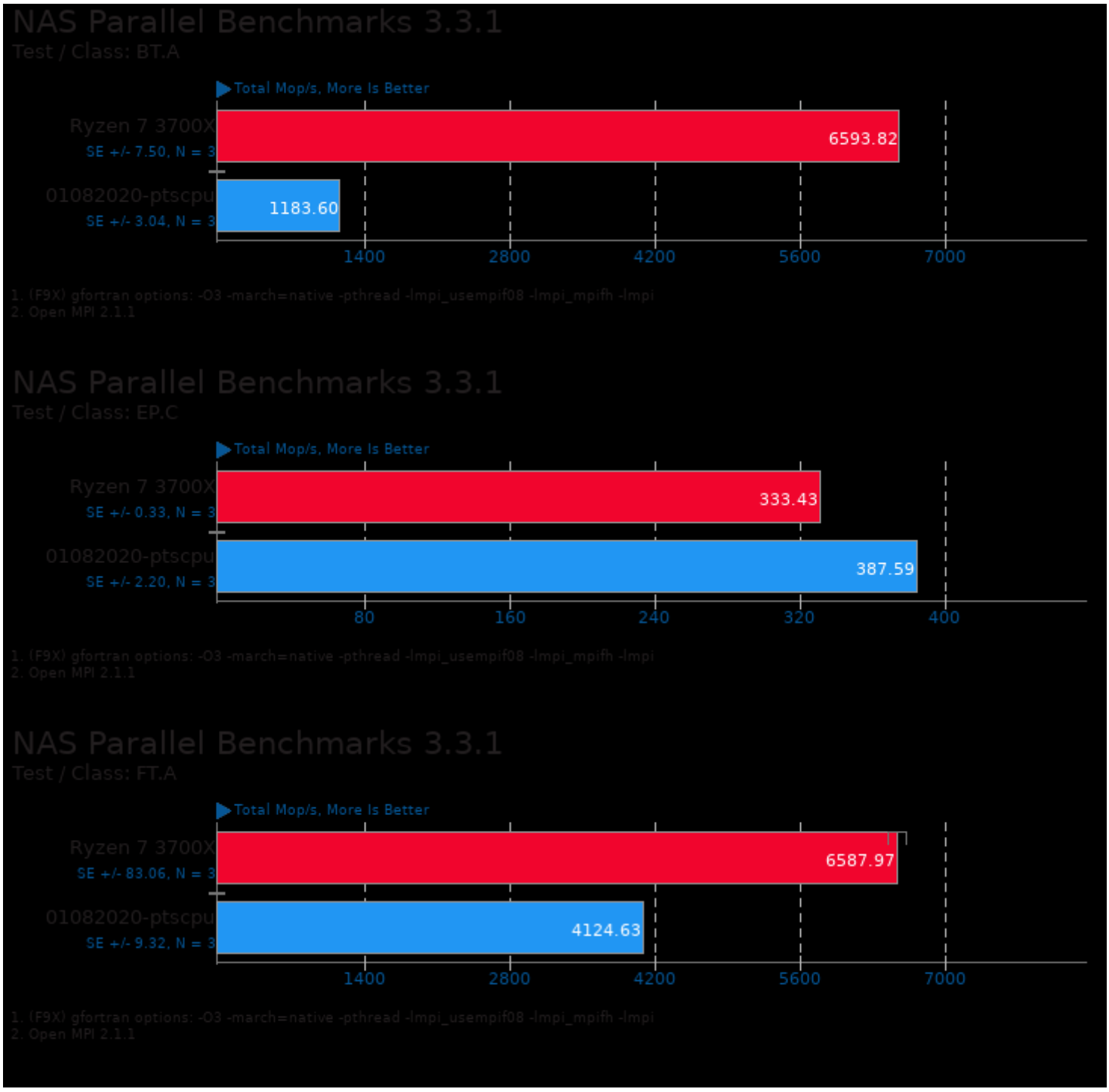
1. (CC) gcc options: -O3 -march=native

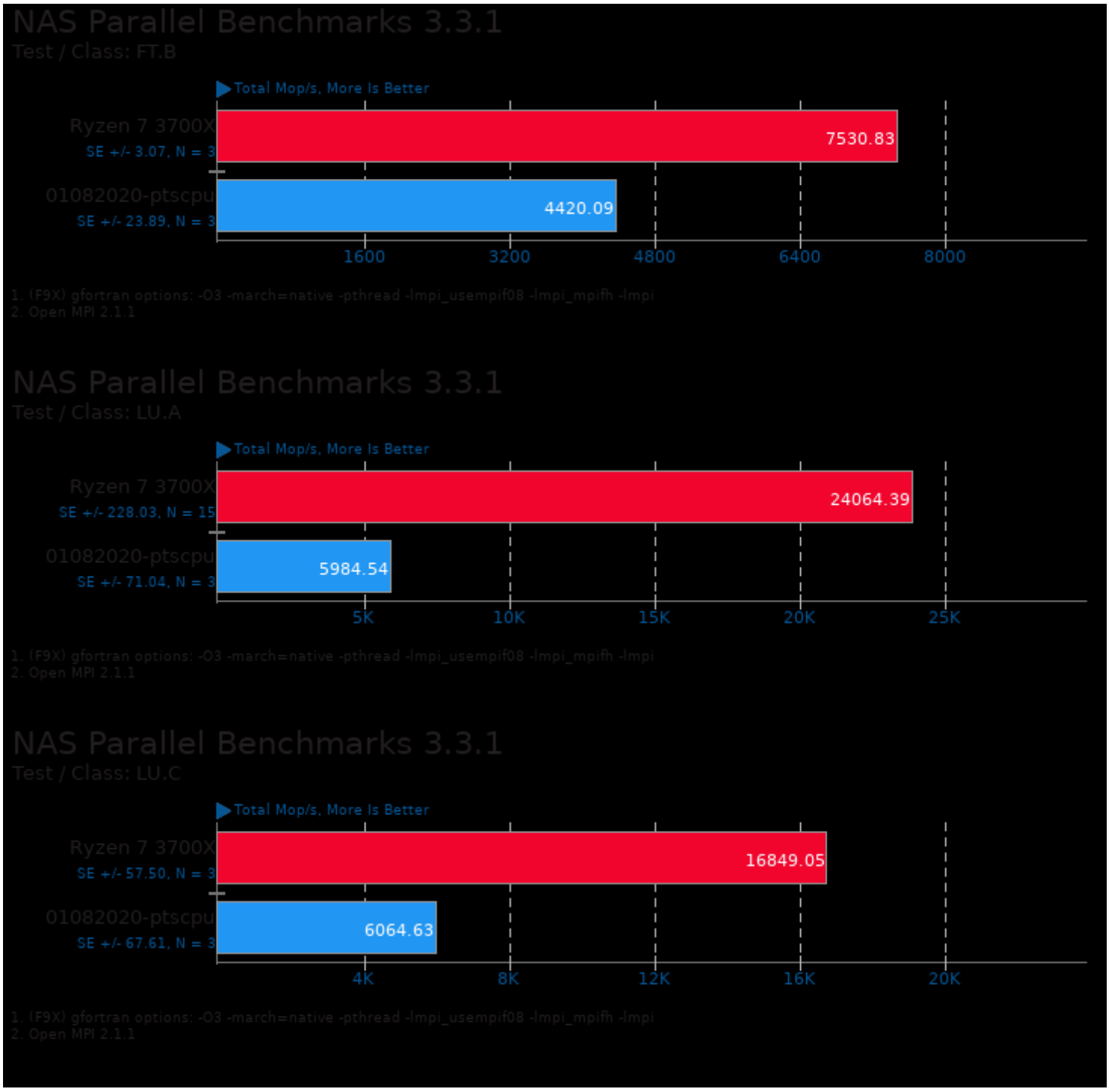
AMD Ryzen 7 3700X Linux Benchmarks




t-test1 2017-01-13
Threads: 2
Seconds, Fewer Is Better
Ryzen 7 3700X
SE +/- 0.035, N = 3
7.100
01082020-ptscpu
SE +/- 0.031, N = 3
5.267
2
4
6
8
10
1. (CC) gcc options: -pthread
Sockperf 3.4
Test: Throughput
Messages Per Second, More Is Better
Ryzen 7 3700X
SE +/- 6360.52, N = 7
572627
01082020-ptscpu
SE +/- 5605.66, N = 25
603706
130K
260K
390K
520K
650K
1. (CXX) g++ options: --param -O3 -rdynamic -ldl -lpthread
Sockperf 3.4
Test: Latency Ping Pong
usec, Fewer Is Better
Ryzen 7 3700X
SE +/- 0.024, N = 25
3.180
01082020-ptscpu
SE +/- 0.010, N = 5
3.101
0.7155
1.431
2.1465
2.862
3.5775
1. (CXX) g++ options: --param -O3 -rdynamic -ldl -lpthread
Sockperf 3.4
Test: Latency Under Load
usec, Fewer Is Better
Ryzen 7 3700X
SE +/- 9.179, N = 23
77.030
01082020-ptscpu
SE +/- 0.230, N = 20
5.154
20
40
60
80
100
1. (CXX) g++ options: --param -O3 -rdynamic -ldl -lpthread

AMD Ryzen 7 3700X Linux Benchmarks

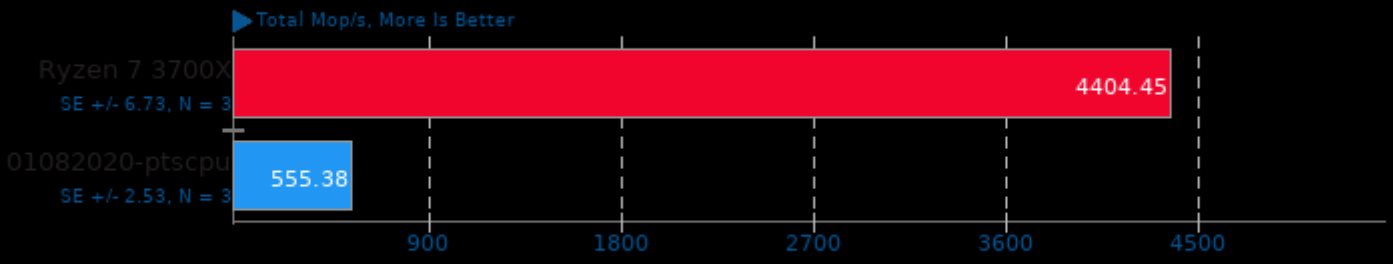



NAS Parallel Benchmarks 3.3.1
Test / Class: FT.B
Total Mop/s, More Is Better
Ryzen 7 3700X
SE +/- 3.07, N = 3
7530.83
01082020-ptscpu
SE +/- 23.89, N = 3
4420.09
1600
3200
4800
6400
8000
1. (F9X) gfortran options: -O3 -march=native -pthread -lmpi_usempif08 -lmpi_mpifh -lmpi
2. Open MPI 2.1.1
NAS Parallel Benchmarks 3.3.1
Test / Class: LU.A
Total Mop/s, More Is Better
Ryzen 7 3700X
SE +/- 228.03, N = 15
24064.39
01082020-ptscpu
SE +/- 71.04, N = 3
5984.54
5K
10K
15K
20K
25K
1. (F9X) gfortran options: -O3 -march=native -pthread -lmpi_usempif08 -lmpi_mpifh -lmpi
2. Open MPI 2.1.1
NAS Parallel Benchmarks 3.3.1
Test / Class: LU.C
Total Mop/s, More Is Better
Ryzen 7 3700X
SE +/- 57.50, N = 3
16849.05
01082020-ptscpu
SE +/- 67.61, N = 3
6064.63
4K
8K
12K
16K
20K
1. (F9X) gfortran options: -O3 -march=native -pthread -lmpi_usempif08 -lmpi_mpifh -lmpi
2. Open MPI 2.1.1

AMD Ryzen 7 3700X Linux Benchmarks

NAS Parallel Benchmarks 3.3.1

Test / Class: SP.A



1. (F9X) gfortran options: -O3 -march=native -pthread -lmpi_usempif08 -lmpi_mpifh -lmpi
2. Open MPI 2.1.1

HPC Challenge 1.5.0

Test / Class: G-HPL

1. (CC) gcc options: -lblas -lm -pthread -lmpi -fomit-frame-pointer -O3 -march=native -funroll-loops
2. OpenBLAS + Open MPI 2.1.1

HPC Challenge 1.5.0

Test / Class: G-Ffte

1. (CC) gcc options: -lblas -lm -pthread -lmpi -fomit-frame-pointer -O3 -march=native -funroll-loops
2. OpenBLAS + Open MPI 2.1.1

HPC Challenge 1.5.0

Test / Class: G-Ffte

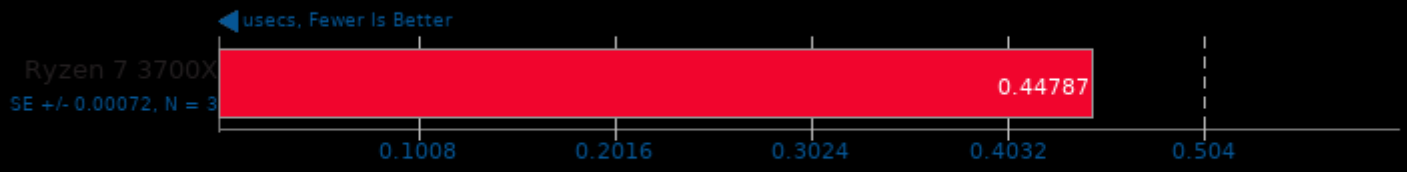
1. (CC) gcc options: -lblas -lm -pthread -lmpi -fomit-frame-pointer -O3 -march=native -funroll-loops
2. OpenBLAS + Open MPI 2.1.1

AMD Ryzen 7 3700X Linux Benchmarks

AMD Ryzen 7 3700X Linux Benchmarks

HPC Challenge 1.5.0

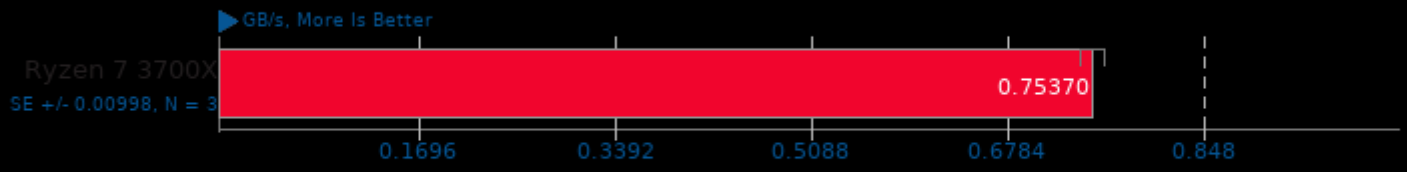
Test / Class: Random Ring Latency



1. (CC) gcc options: -lblas -lm -pthread -lmpi -fomit-frame-pointer -O3 -march=native -funroll-loops
2. OpenBLAS + Open MPI 2.1.1

HPC Challenge 1.5.0

Test / Class: Random Ring Bandwidth



1. (CC) gcc options: -lblas -lm -pthread -lmpi -fomit-frame-pointer -O3 -march=native -funroll-loops
2. OpenBLAS + Open MPI 2.1.1

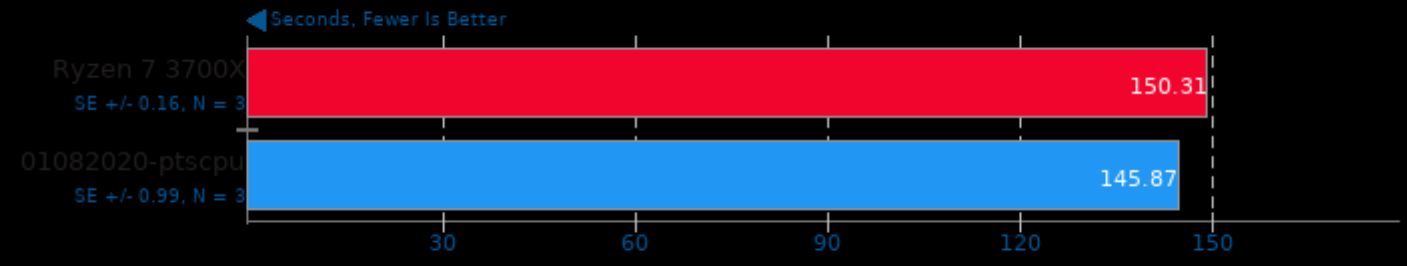
HPC Challenge 1.5.0

Test / Class: Max Ping Pong Bandwidth

1. (CC) gcc options: -lblas -lm -pthread -lmpi -fomit-frame-pointer -O3 -march=native -funroll-loops
2. OpenBLAS + Open MPI 2.1.1

Parboil 2.5

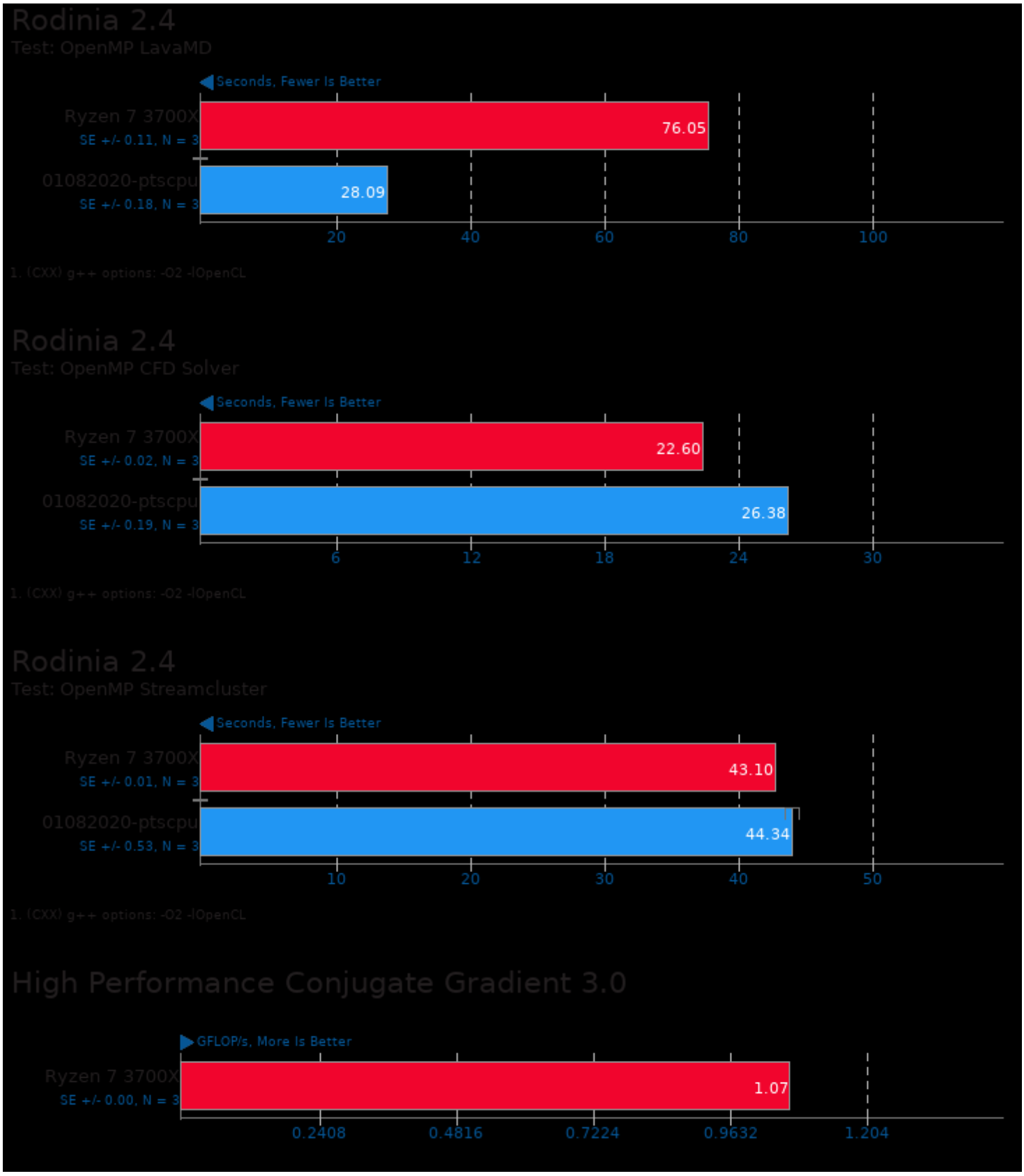
Test: OpenMP LBM



1. (CXX) g++ options: -lm -lpthread -lgomp -O3 -ffast-math -fopenmp

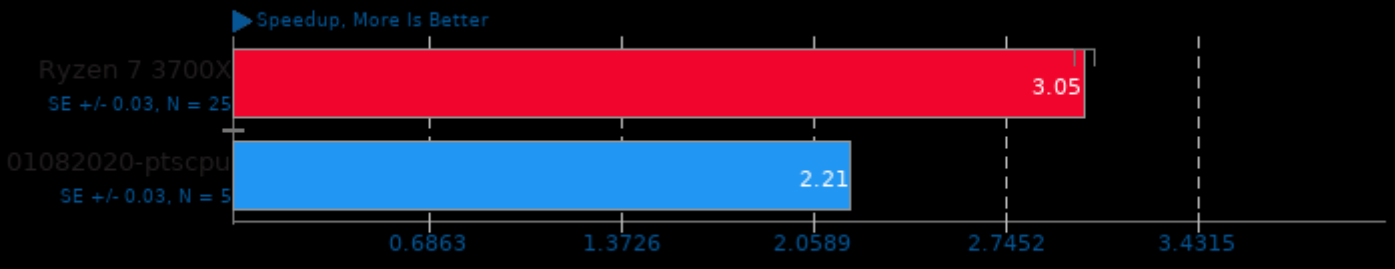

Parboil 2.5
Test: OpenMP CUTCP
Seconds, Fewer Is Better
Ryzen 7 3700X
SE +/- 0.012345, N = 3
2.530000
01082020-ptscpu
SE +/- 0.043688, N = 3
2.420873
0.5693
1.1386
1.7079
2.2772
2.8465
1. (CXX) g++ options: -lm -lpthread -lgomp -O3 -ffast-math -fopenmp
Parboil 2.5
Test: OpenMP Stencil
Seconds, Fewer Is Better
Ryzen 7 3700X
SE +/- 0.04, N = 3
15.07
01082020-ptscpu
SE +/- 0.24, N = 3
14.99
4
8
12
16
20
1. (CXX) g++ options: -lm -lpthread -lgomp -O3 -ffast-math -fopenmp
Parboil 2.5
Test: OpenMP MRI Gridding
Seconds, Fewer Is Better
Ryzen 7 3700X
SE +/- 0.02, N = 3
24.24
01082020-ptscpu
SE +/- 0.22, N = 3
26.12
6
12
18
24
30
1. (CXX) g++ options: -lm -lpthread -lgomp -O3 -ffast-math -fopenmp
CloverLeaf
Lagrangian-Eulerian Hydrodynamics
Seconds, Fewer Is Better
Ryzen 7 3700X
SE +/- 0.01, N = 3
5.11
01082020-ptscpu
SE +/- 0.23, N = 15
6.50
2
4
6
8
10
1. (F9X) gfortran options: -O3 -march=native -funroll-loops -fopenmp

AMD Ryzen 7 3700X Linux Benchmarks



CLOMP 3.3

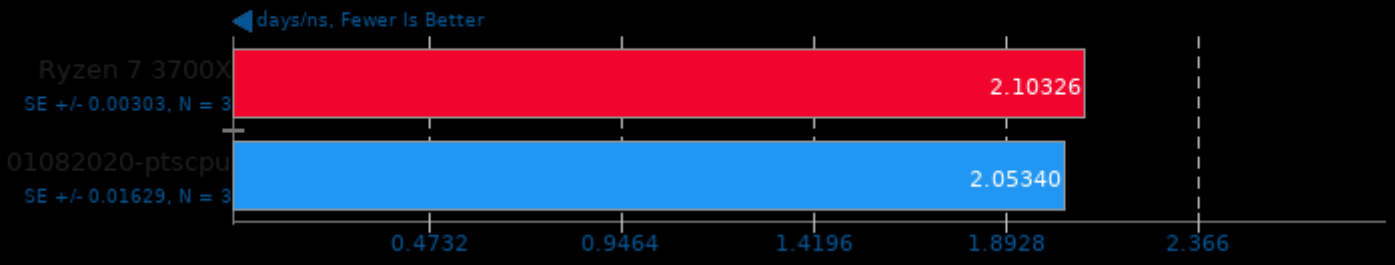
Static OMP Speedup



1. (CC) gcc options: -openmp -O3 -lm

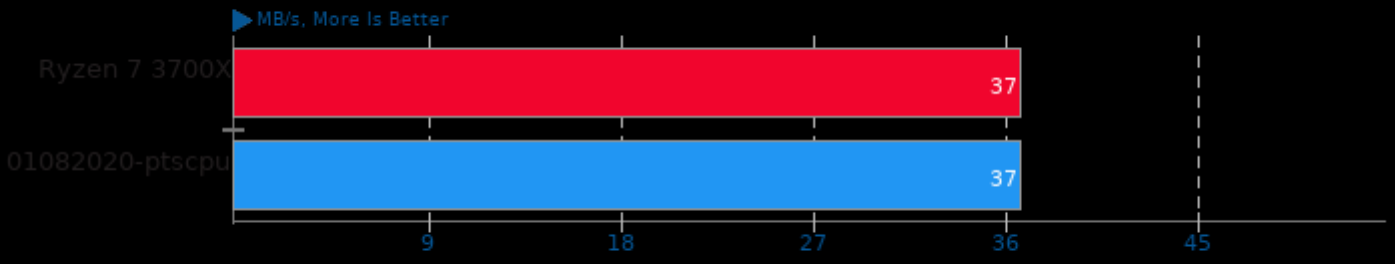
NAMD 2.13b1

ATPase Simulation - 327,506 Atoms



lzbench 2017-08-08

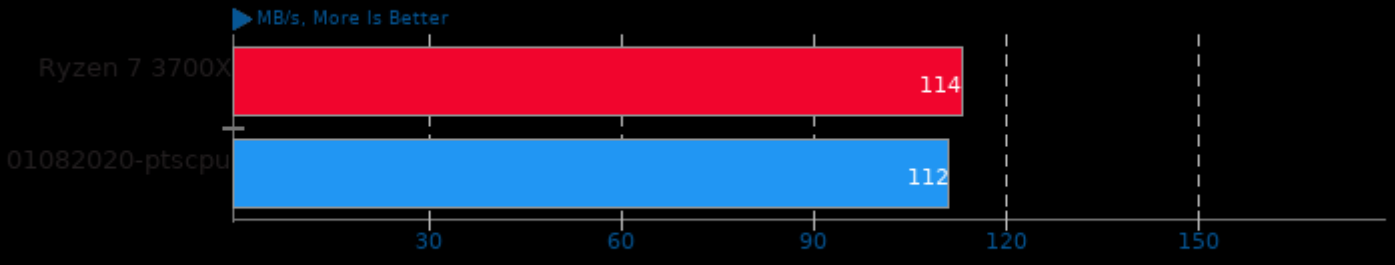
Test: XZ 0 - Process: Compression



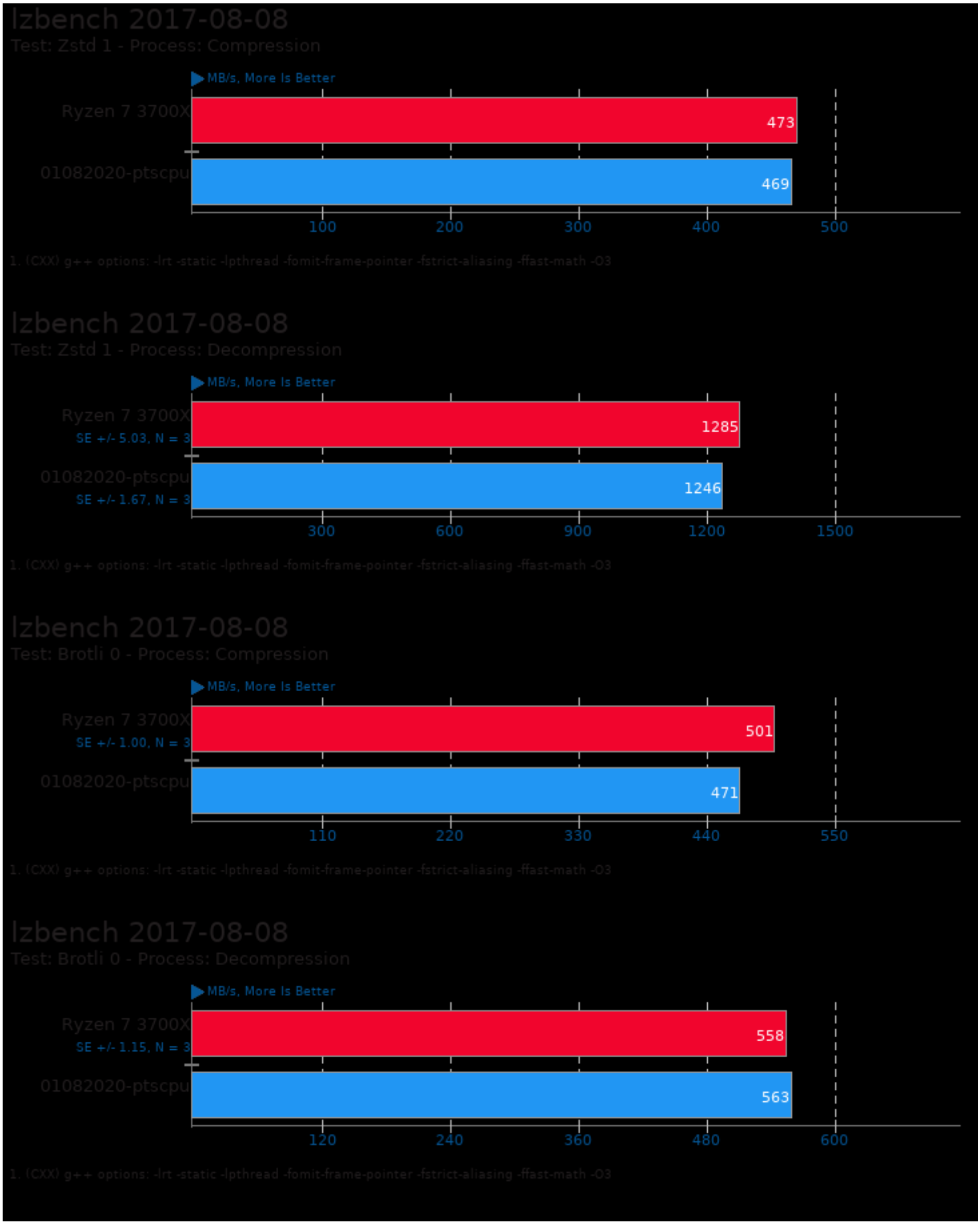
1. (CXX) g++ options: -lrt -static -lpthread -fomit-frame-pointer -fstrict-aliasing -ffast-math -O3

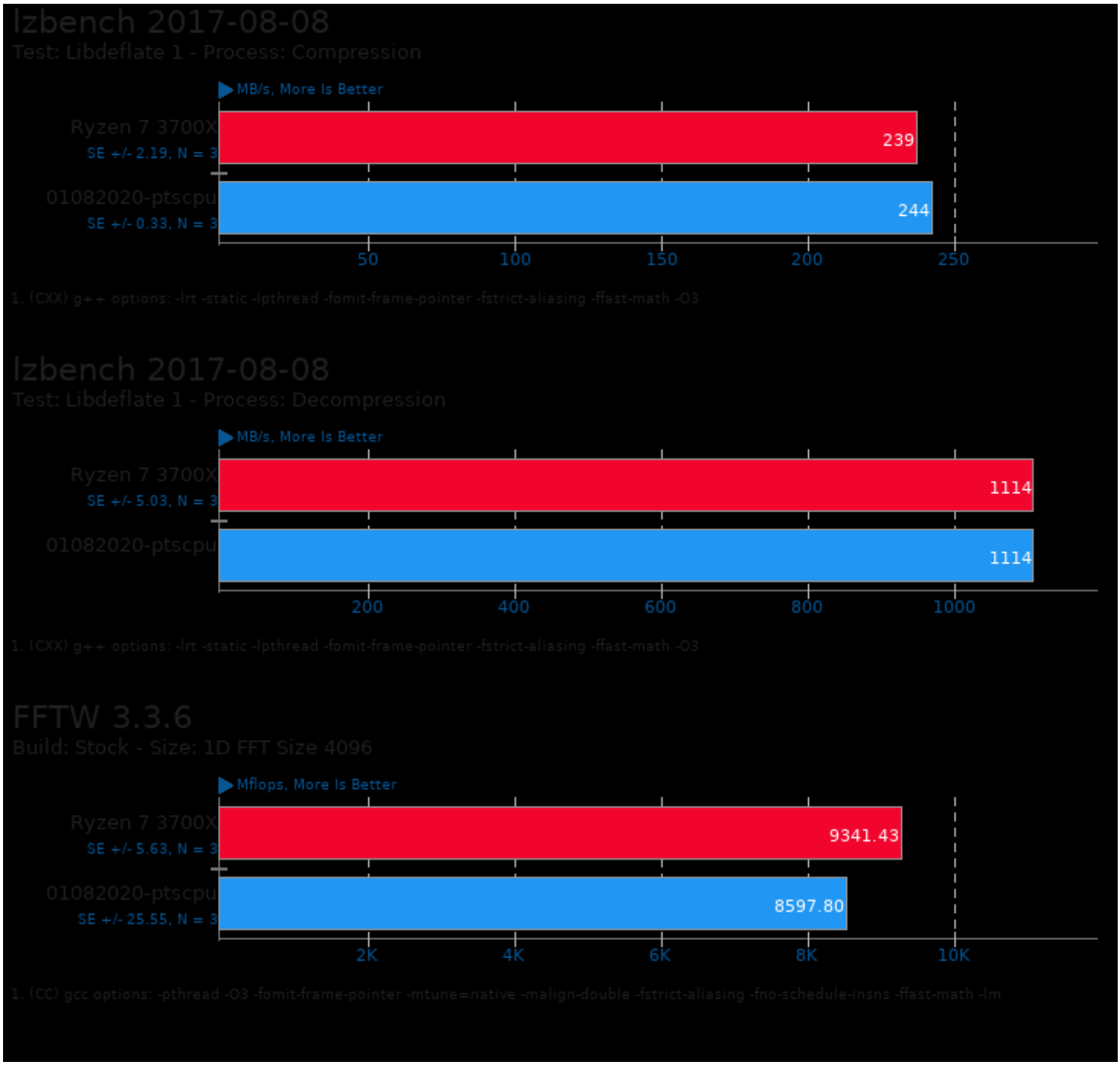
lzbench 2017-08-08

Test: XZ 0 - Process: Decompression

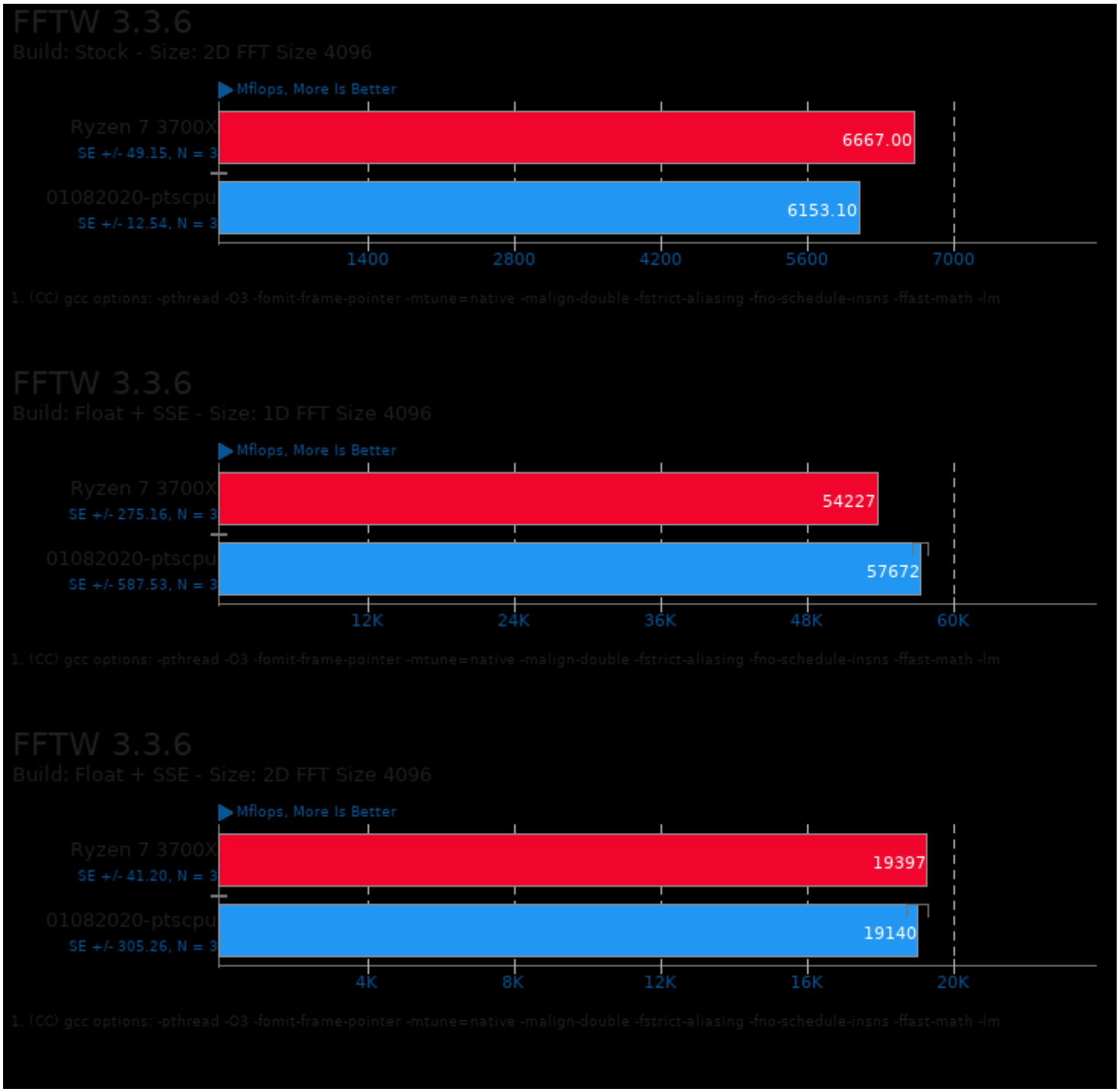


1. (CXX) g++ options: -lrt -static -lpthread -fomit-frame-pointer -fstrict-aliasing -ffast-math -O3


lzbench 2017-08-08
Test: Zstd 1 - Process: Compression
MB/s, More Is Better
Ryzen 7 3700X
01082020-ptscpu
473
469
100
200
300
400
500
1. (CXX) g++ options: -lrt -static -lpthread -fomit-frame-pointer -fstrict-aliasing -ffast-math -O3
lzbench 2017-08-08
Test: Zstd 1 - Process: Decompression
MB/s, More Is Better
Ryzen 7 3700X
SE +/- 5.03, N = 3
01082020-ptscpu
SE +/- 1.67, N = 3
1285
1246
300
600
900
1200
1500
1. (CXX) g++ options: -lrt -static -lpthread -fomit-frame-pointer -fstrict-aliasing -ffast-math -O3
lzbench 2017-08-08
Test: Brotli 0 - Process: Compression
MB/s, More Is Better
Ryzen 7 3700X
SE +/- 1.00, N = 3
01082020-ptscpu
501
471
110
220
330
440
550
1. (CXX) g++ options: -lrt -static -lpthread -fomit-frame-pointer -fstrict-aliasing -ffast-math -O3
lzbench 2017-08-08
Test: Brotli 0 - Process: Decompression
MB/s, More Is Better
Ryzen 7 3700X
SE +/- 1.15, N = 3
01082020-ptscpu
558
563
120
240
360
480
600
1. (CXX) g++ options: -lrt -static -lpthread -fomit-frame-pointer -fstrict-aliasing -ffast-math -O3


lzbench 2017-08-08
Test: Libdeflate 1 - Process: Compression
MB/s, More Is Better
Ryzen 7 3700X
SE +/- 2.19, N = 3
239
01082020-ptscpu
SE +/- 0.33, N = 3
244
50
100
150
200
250
1. (CXX) g++ options: -lrt -static -lpthread -fomit-frame-pointer -fstrict-aliasing -ffast-math -O3
lzbench 2017-08-08
Test: Libdeflate 1 - Process: Decompression
MB/s, More Is Better
Ryzen 7 3700X
SE +/- 5.03, N = 3
1114
01082020-ptscpu
1114
200
400
600
800
1000
1. (CXX) g++ options: -lrt -static -lpthread -fomit-frame-pointer -fstrict-aliasing -ffast-math -O3
FFTW 3.3.6
Build: Stock - Size: 1D FFT Size 4096
Mflops, More Is Better
Ryzen 7 3700X
SE +/- 5.63, N = 3
9341.43
01082020-ptscpu
SE +/- 25.55, N = 3
8597.80
2K
4K
6K
8K
10K
1. (CC) gcc options: -pthread -O3 -fomit-frame-pointer -mtune=native -malign-double -fstrict-aliasing -fno-schedule-insns -ffast-math -lm

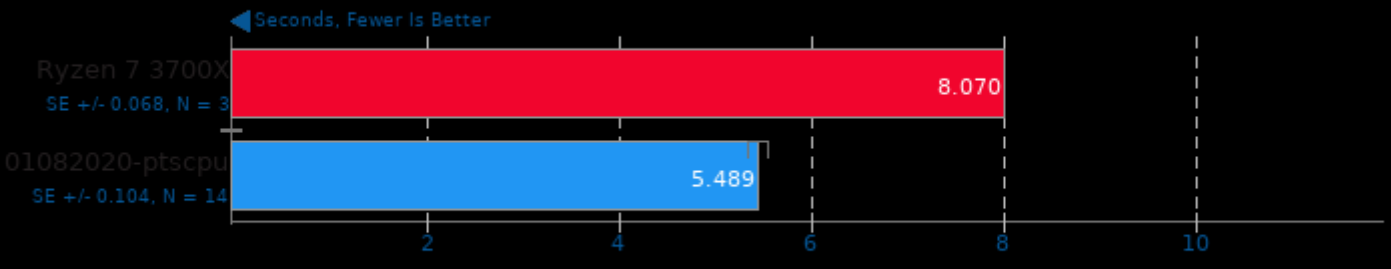
AMD Ryzen 7 3700X Linux Benchmarks



AMD Ryzen 7 3700X Linux Benchmarks

Timed HMMer Search 2.3.2

Pfam Database Search



1. (CC) gcc options: -O2 -pthread -lhmmer -lsquid -lm

Timed MAFFT Alignment 7.392

Multiple Sequence Alignment

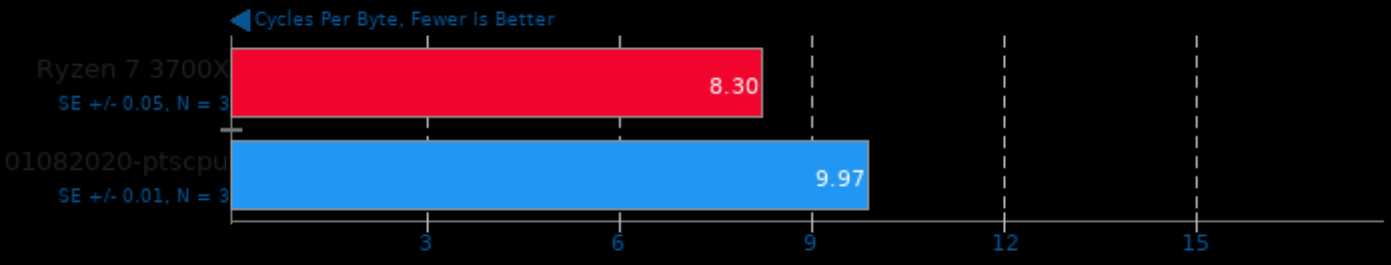
1. (CC) gcc options: -std=c99 -O3 -lm -lpthread

Timed MrBayes Analysis 3.1.2

Primate Phylogeny Analysis

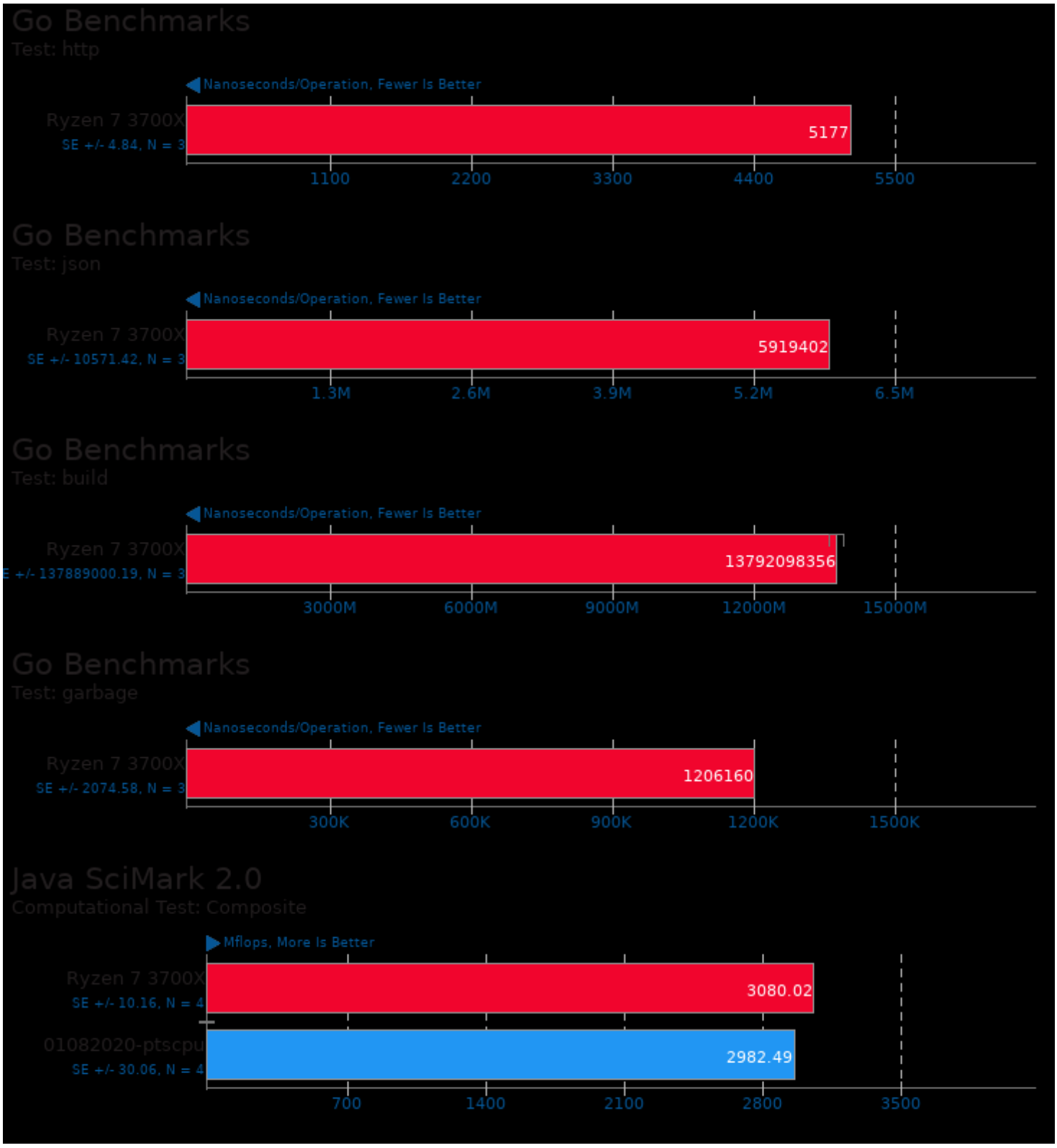
1. (CC) gcc options: -O3 -msse -mfpmath=sse -march=native -lm -pthread -lmpi

BLAKE2 20170307

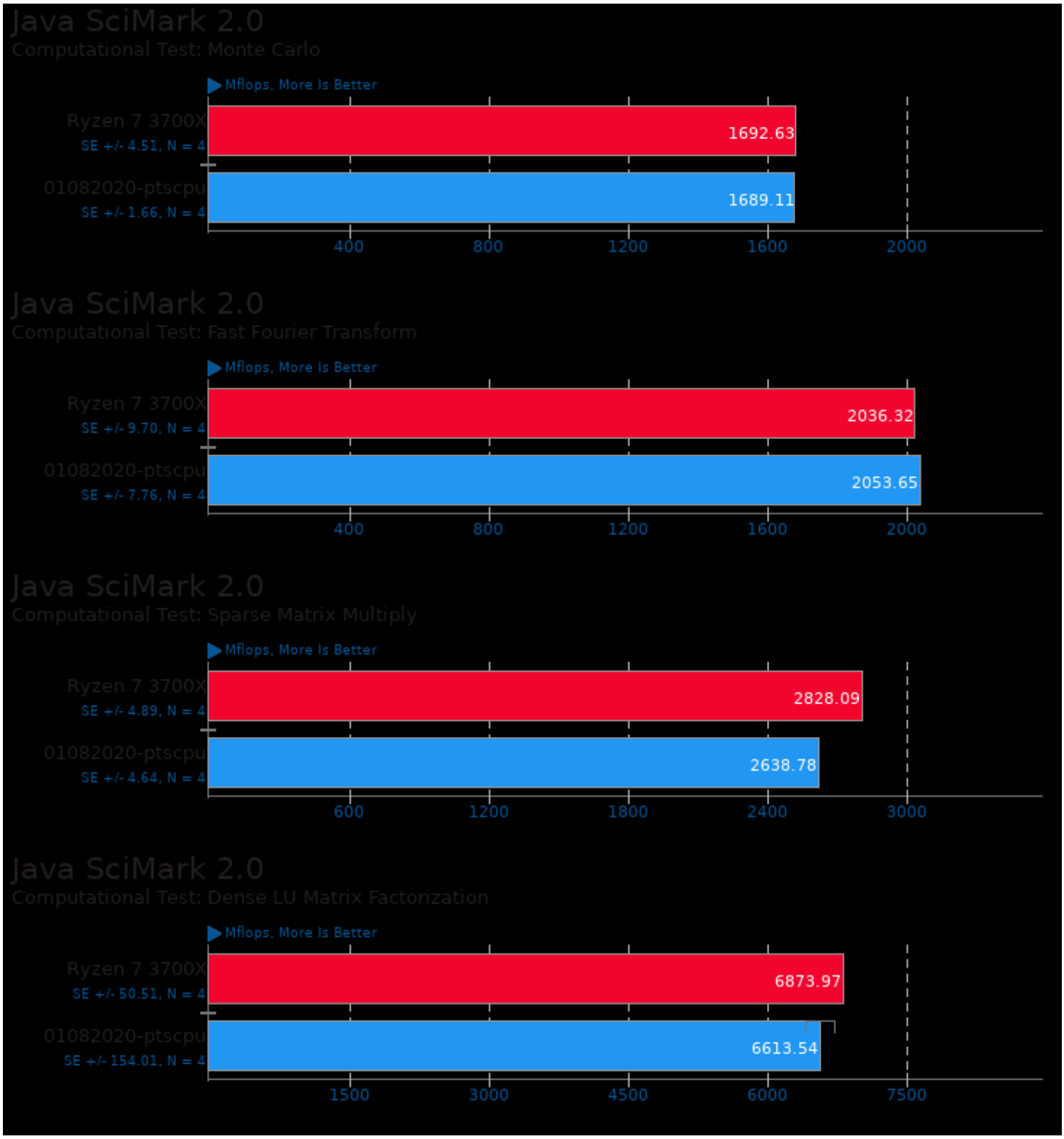


1. (CC) gcc options: -O3 -march=native -lcrypto -lz

AMD Ryzen 7 3700X Linux Benchmarks

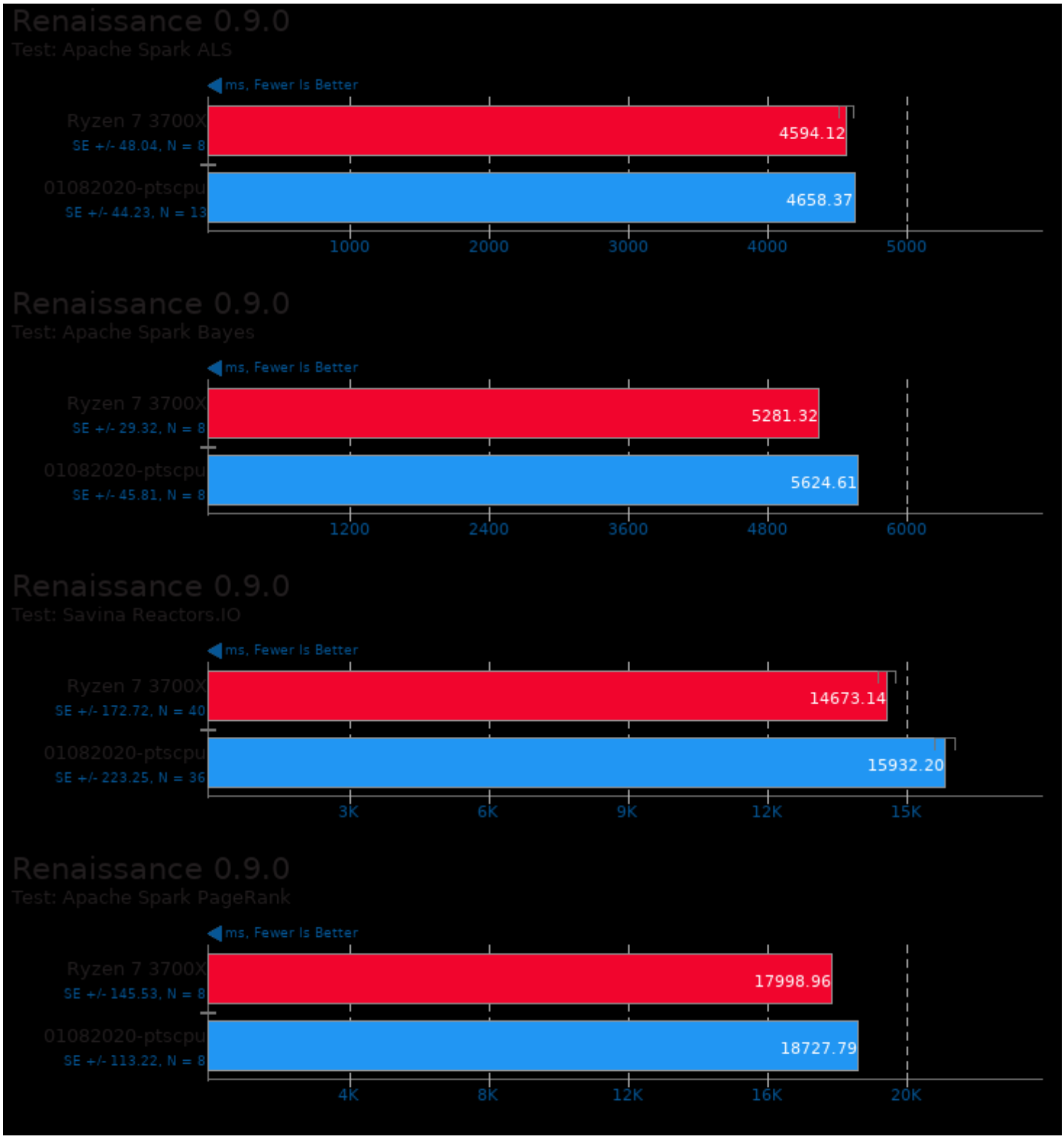


AMD Ryzen 7 3700X Linux Benchmarks



AMD Ryzen 7 3700X Linux Benchmarks

AMD Ryzen 7 3700X Linux Benchmarks

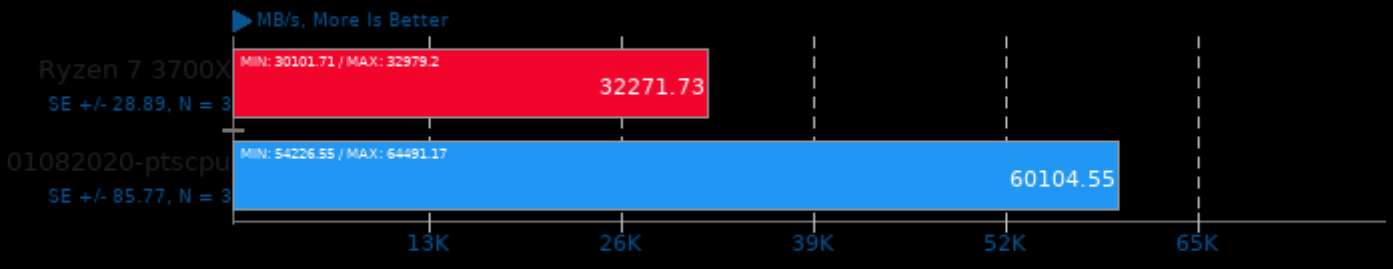


AMD Ryzen 7 3700X Linux Benchmarks

AMD Ryzen 7 3700X Linux Benchmarks

CacheBench

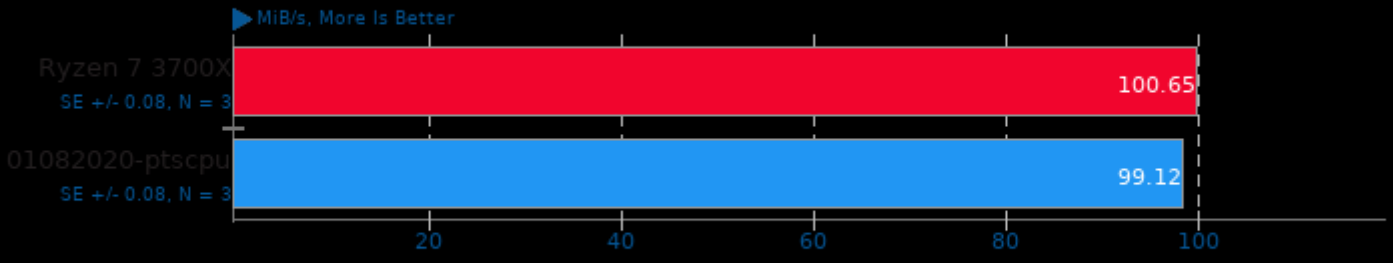
Test: Read / Modify / Write



1. (CC) gcc options: -lrt

Botan 2.8.0

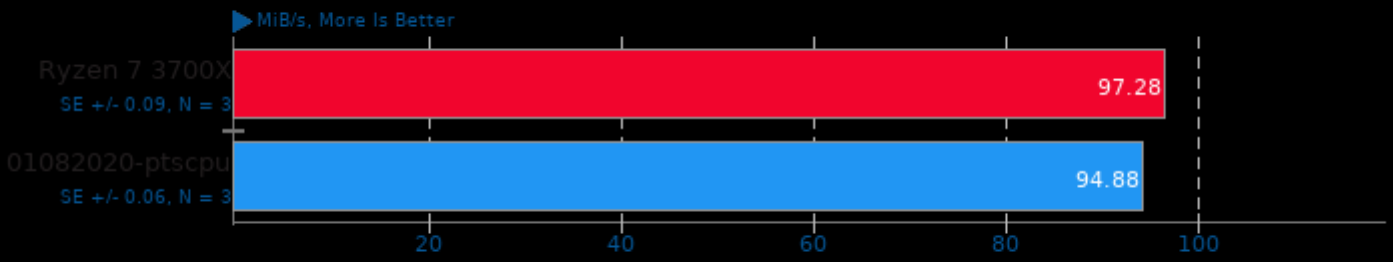
Test: KASUMI - Encrypt



1. (CXX) g++ options: -fstack-protector -m64 -pthread -lbotan-2 -ldl -lrt

Botan 2.8.0

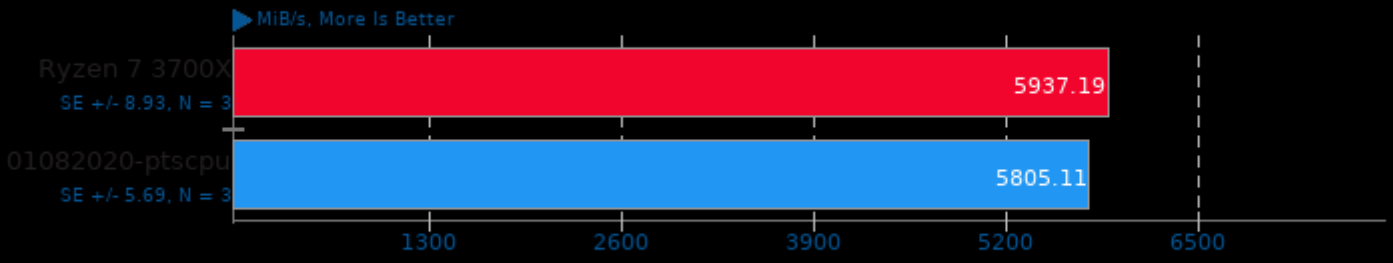
Test: KASUMI - Decrypt



1. (CXX) g++ options: -fstack-protector -m64 -pthread -lbotan-2 -ldl -lrt

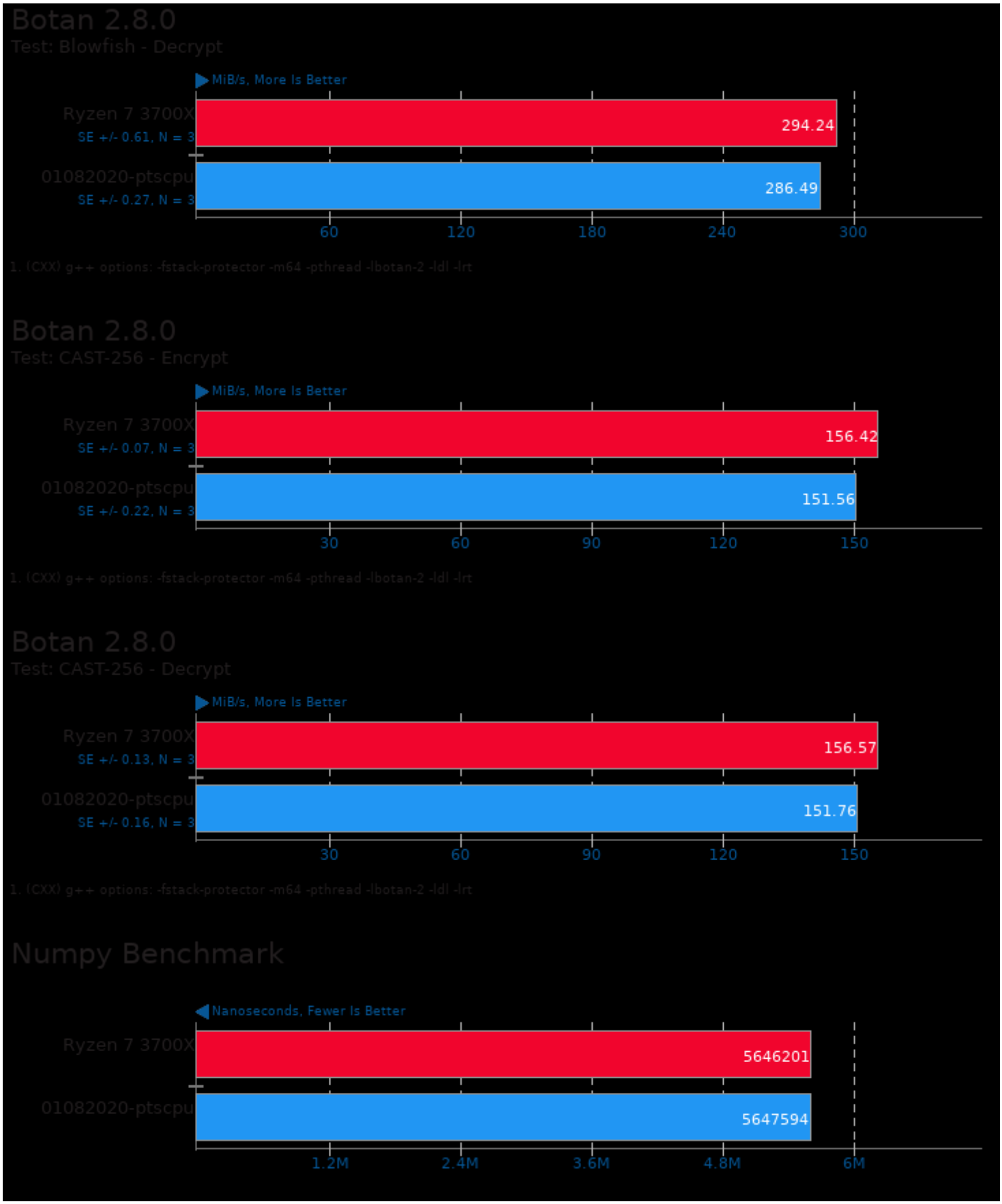
Botan 2.8.0

Test: AES-256 - Encrypt

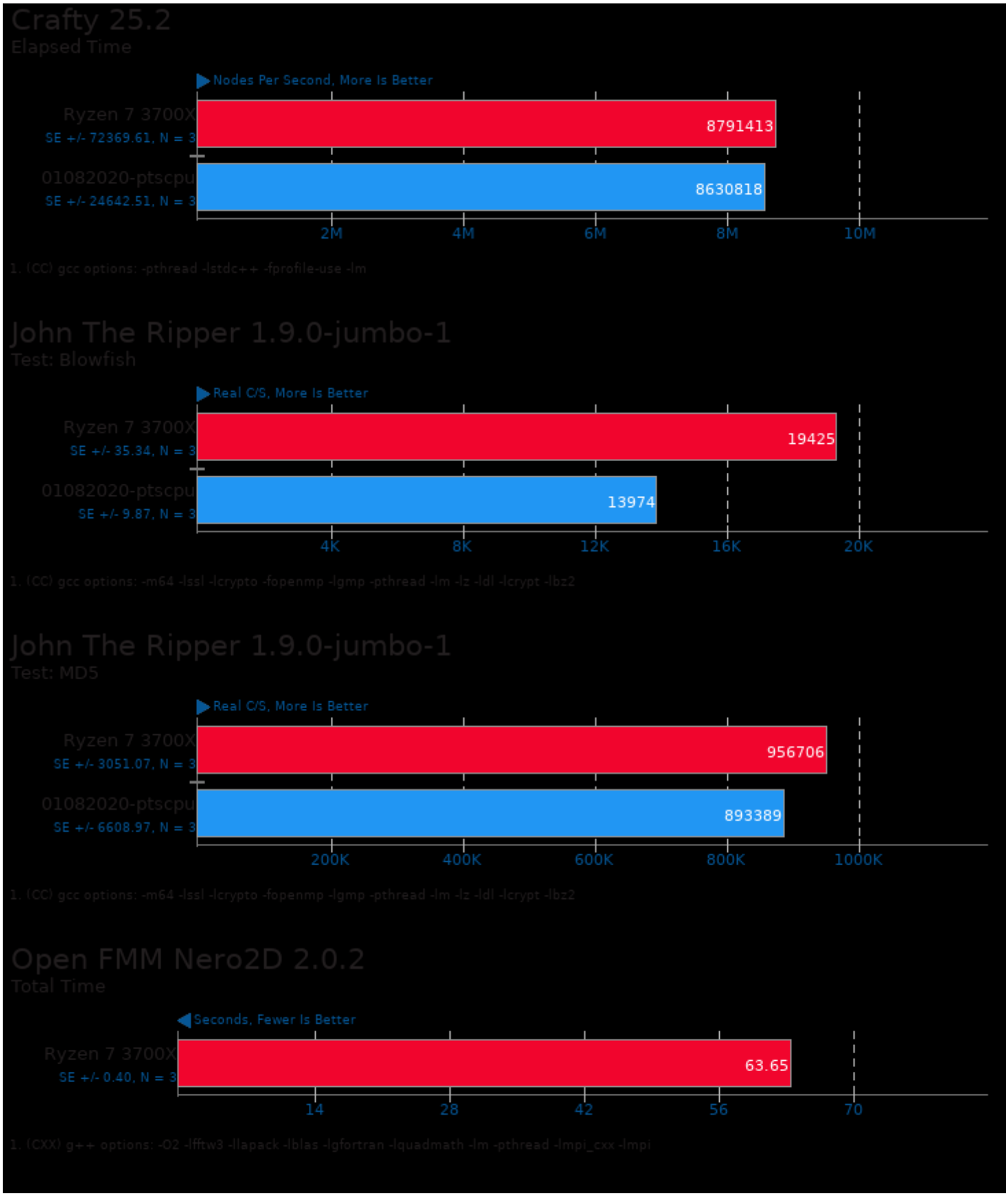


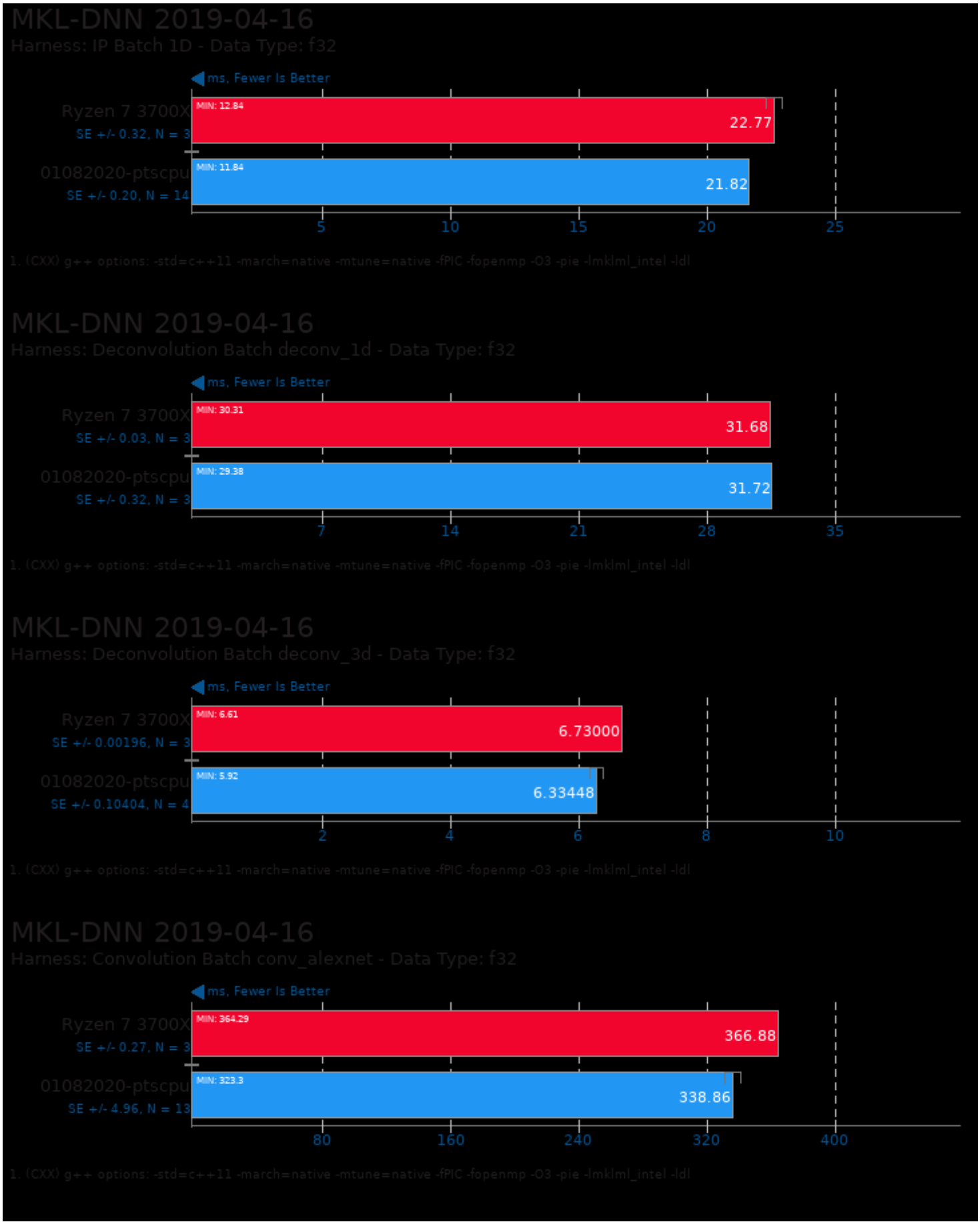
1. (CXX) g++ options: -fstack-protector -m64 -pthread -lbotan-2 -ldl -lrt


Botan 2.8.0
Test: AES-256 - Decrypt
MiB/s, More Is Better
Ryzen 7 3700X
SE +/- 10.19, N = 3
5840.29
01082020-ptscpu
SE +/- 3.25, N = 3
5837.39
1300
2600
3900
5200
6500
1. (CXX) g++ options: -fstack-protector -m64 -pthread -lbotan-2 -ldl -lrt
Botan 2.8.0
Test: Twofish - Encrypt
MiB/s, More Is Better
Ryzen 7 3700X
SE +/- 0.12, N = 3
379.09
01082020-ptscpu
SE +/- 0.24, N = 3
386.21
80
160
240
320
400
1. (CXX) g++ options: -fstack-protector -m64 -pthread -lbotan-2 -ldl -lrt
Botan 2.8.0
Test: Twofish - Decrypt
MiB/s, More Is Better
Ryzen 7 3700X
SE +/- 0.06, N = 3
381.51
01082020-ptscpu
SE +/- 0.05, N = 3
385.22
80
160
240
320
400
1. (CXX) g++ options: -fstack-protector -m64 -pthread -lbotan-2 -ldl -lrt
Botan 2.8.0
Test: Blowfish - Encrypt
MiB/s, More Is Better
Ryzen 7 3700X
SE +/- 0.60, N = 3
295.02
01082020-ptscpu
SE +/- 0.62, N = 3
287.71
60
120
180
240
300
1. (CXX) g++ options: -fstack-protector -m64 -pthread -lbotan-2 -ldl -lrt


Botan 2.8.0
Test: Blowfish - Decrypt
MiB/s, More Is Better
Ryzen 7 3700X
SE +/- 0.61, N = 3
294.24
01082020-ptscpu
SE +/- 0.27, N = 3
286.49
60
120
180
240
300
1. (CXX) g++ options: -fstack-protector -m64 -pthread -lbotan-2 -ldl -lrt
Botan 2.8.0
Test: CAST-256 - Encrypt
MiB/s, More Is Better
Ryzen 7 3700X
SE +/- 0.07, N = 3
156.42
01082020-ptscpu
SE +/- 0.22, N = 3
151.56
30
60
90
120
150
1. (CXX) g++ options: -fstack-protector -m64 -pthread -lbotan-2 -ldl -lrt
Botan 2.8.0
Test: CAST-256 - Decrypt
MiB/s, More Is Better
Ryzen 7 3700X
SE +/- 0.13, N = 3
156.57
01082020-ptscpu
SE +/- 0.16, N = 3
151.76
30
60
90
120
150
1. (CXX) g++ options: -fstack-protector -m64 -pthread -lbotan-2 -ldl -lrt
Numpy Benchmark
Nanoseconds, Fewer Is Better
Ryzen 7 3700X
5646201
01082020-ptscpu
5647594
1.2M
2.4M
3.6M
4.8M
6M

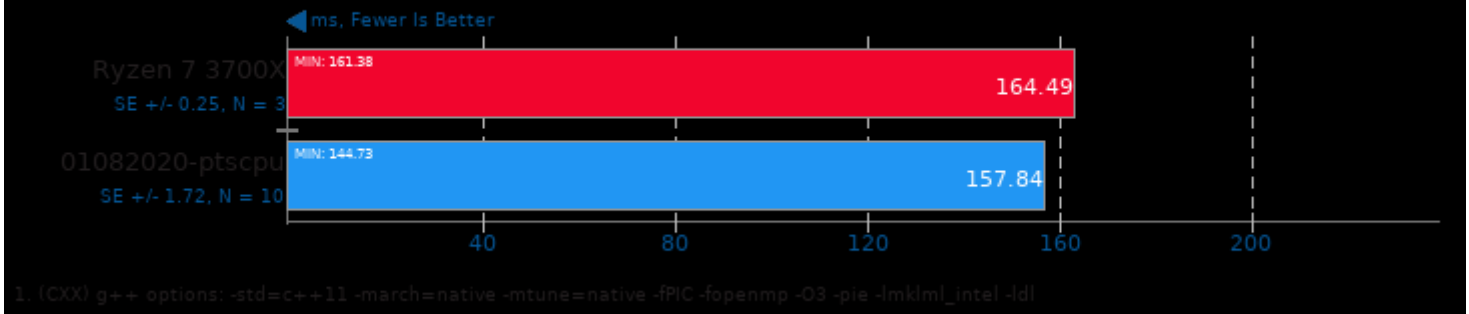
AMD Ryzen 7 3700X Linux Benchmarks




MKL-DNN 2019-04-16
Harness: IP Batch 1D - Data Type: f32
ms, Fewer Is Better
Ryzen 7 3700X
SE +/- 0.32, N = 3
MIN: 12.84
22.77
01082020-ptscpu
SE +/- 0.20, N = 14
MIN: 11.84
21.82
5
10
15
20
25
1. (CXX) g++ options: -std=c++11 -march=native -mtune=native -fPIC -fopenmp -O3 -pie -lmklml_intel -ldl
MKL-DNN 2019-04-16
Harness: Deconvolution Batch deconv_1d - Data Type: f32
ms, Fewer Is Better
Ryzen 7 3700X
SE +/- 0.03, N = 3
MIN: 30.31
31.68
01082020-ptscpu
SE +/- 0.32, N = 3
MIN: 29.38
31.72
7
14
21
28
35
1. (CXX) g++ options: -std=c++11 -march=native -mtune=native -fPIC -fopenmp -O3 -pie -lmklml_intel -ldl
MKL-DNN 2019-04-16
Harness: Deconvolution Batch deconv_3d - Data Type: f32
ms, Fewer Is Better
Ryzen 7 3700X
SE +/- 0.00196, N = 3
MIN: 6.61
6.73000
01082020-ptscpu
SE +/- 0.10404, N = 4
MIN: 5.92
6.33448
2
4
6
8
10
1. (CXX) g++ options: -std=c++11 -march=native -mtune=native -fPIC -fopenmp -O3 -pie -lmklml_intel -ldl
MKL-DNN 2019-04-16
Harness: Convolution Batch conv_alexnet - Data Type: f32
ms, Fewer Is Better
Ryzen 7 3700X
SE +/- 0.27, N = 3
MIN: 364.29
366.88
01082020-ptscpu
SE +/- 4.96, N = 13
MIN: 323.3
338.86
80
160
240
320
400
1. (CXX) g++ options: -std=c++11 -march=native -mtune=native -fPIC -fopenmp -O3 -pie -lmklml_intel -ldl

MKL-DNN 2019-04-16

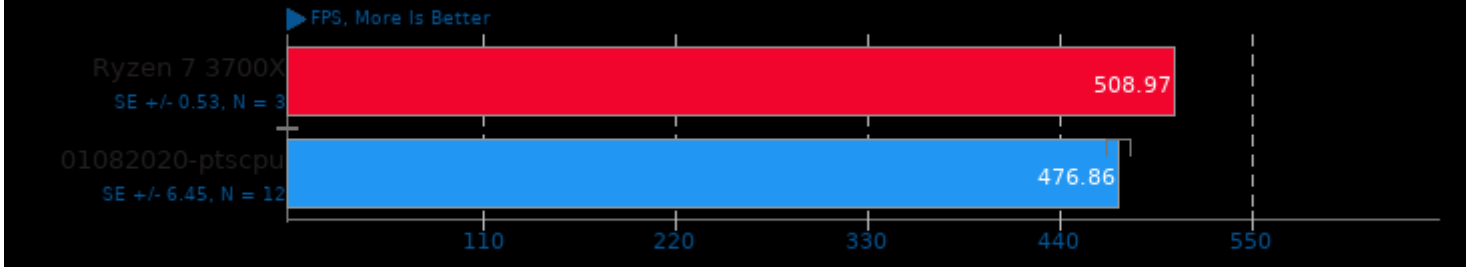
Harness: Convolution Batch conv_googlenet_v3 - Data Type: f32



1. (CXX) g++ options: -std=c++11 -march=native -mtune=native -fPIC -fopenmp -O3 -pie -lmklml_intel -ldl

TTSIOD 3D Renderer 2.3b

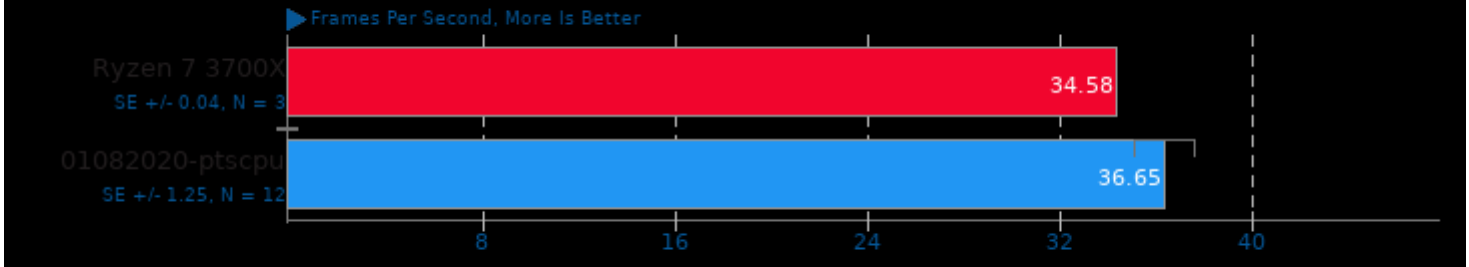
Phong Rendering With Soft-Shadow Mapping



1. (CXX) g++ options: -O3 -fomit-frame-pointer -ffast-math -mtune=native -flto -msse -mrecip -mfpmath=sse -msse2 -mssse3 -lSDL -fopenmp -fwhole-pr

SVT-AV1 0.5

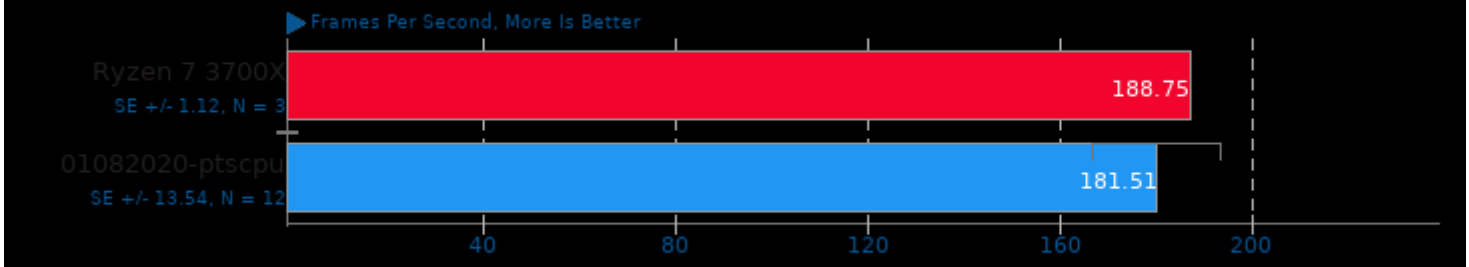
1080p 8-bit YUV To AV1 Video Encode



1. (CXX) g++ options: -O3 -pie -lpthread -lm

SVT-HEVC 2019-02-03

1080p 8-bit YUV To HEVC Video Encode

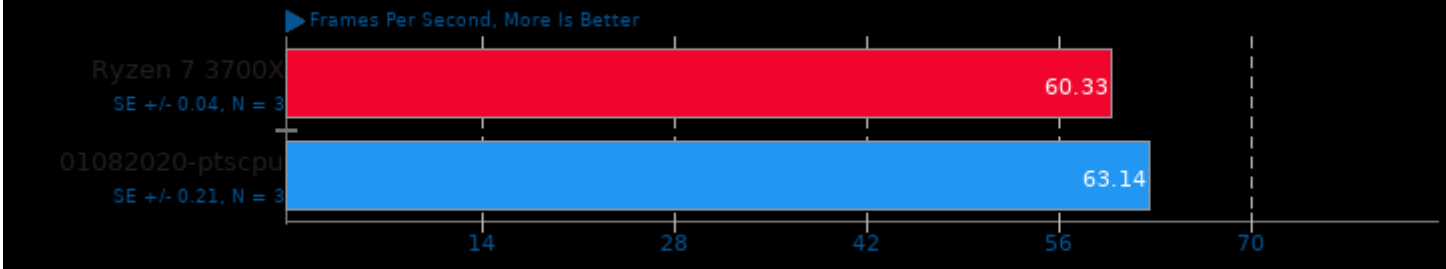


1. (CC) gcc options: -fPIE -fPIC -O2 -flto -fvisibility=hidden -march=native -pie -rdynamic -lpthread -lrt

AMD Ryzen 7 3700X Linux Benchmarks

SVT-VP9 2019-02-17

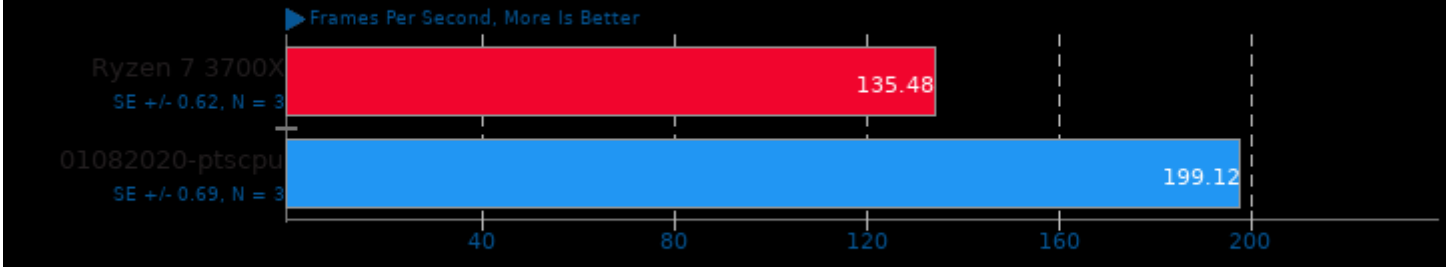
1080p 8-bit YUV To VP9 Video Encode



1. (CC) gcc options: -fPIE -fPIC -O2 -flto -fvisibility=hidden -mavx -pie -rdynamic -lpthread -lrt -lm

VP9 libvpx Encoding 1.8.0

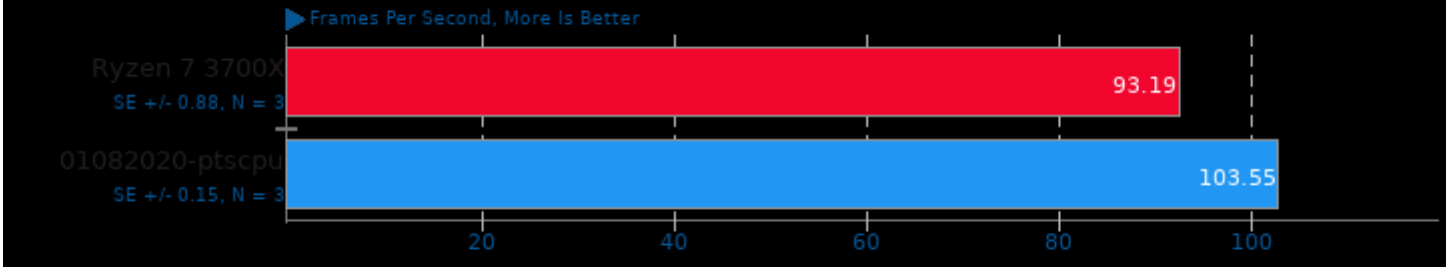
vpxenc VP9 1080p Video Encode



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

x264 2018-09-25

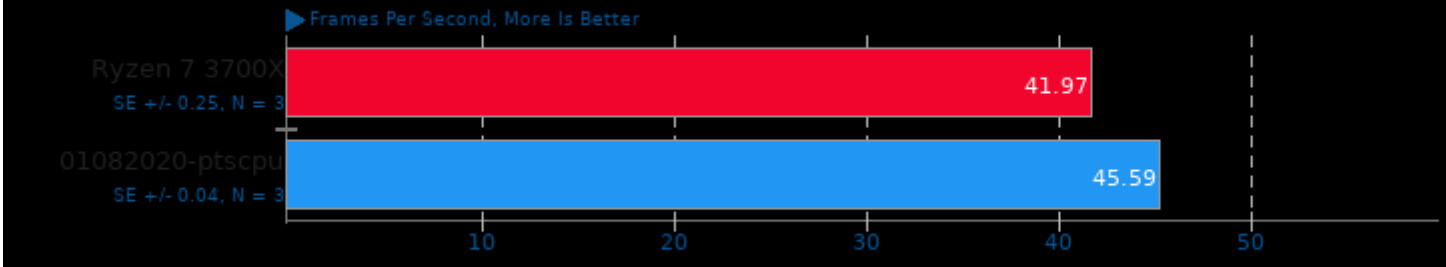
H.264 Video Encoding



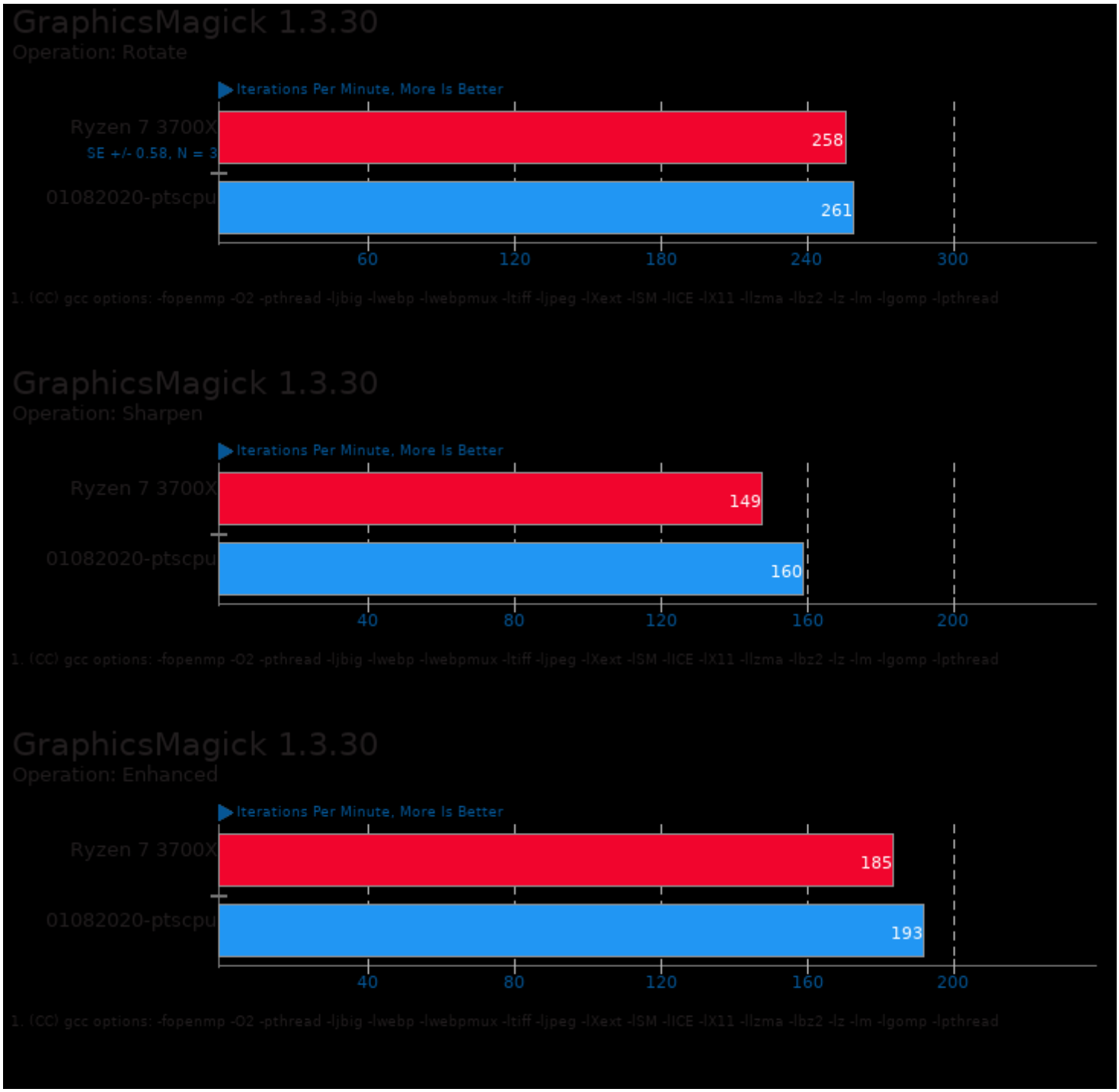
1. (CC) gcc options: -ldl -m64 -lm -lpthread -O3 -ffast-math -std=gnu99 -fPIC -fomit-frame-pointer -fno-tree-vectorize

x265 3.0

H.265 1080p Video Encoding

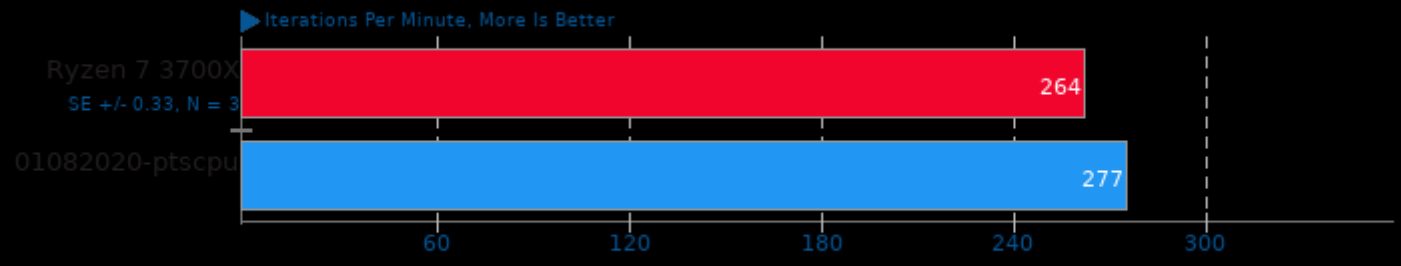


1. (CXX) g++ options: -O3 -rdynamic -lpthread -lrt -ldl -lnuma


GraphicsMagick 1.3.30
Operation: Rotate
Iterations Per Minute, More Is Better
Ryzen 7 3700X
SE +/- 0.58, N = 3
01082020-ptscpu
258
261
60
120
180
240
300
1. (CC) gcc options: -fopenmp -O2 -pthread -ljbig -lwebp -lwebpmux -ltiff -ljpeg -lXext -lSM -lICE -lX11 -llzma -lbz2 -lz -lm -lgomp -lpthread
GraphicsMagick 1.3.30
Operation: Sharpen
Iterations Per Minute, More Is Better
Ryzen 7 3700X
01082020-ptscpu
149
160
40
80
120
160
200
1. (CC) gcc options: -fopenmp -O2 -pthread -ljbig -lwebp -lwebpmux -ltiff -ljpeg -lXext -lSM -lICE -lX11 -llzma -lbz2 -lz -lm -lgomp -lpthread
GraphicsMagick 1.3.30
Operation: Enhanced
Iterations Per Minute, More Is Better
Ryzen 7 3700X
01082020-ptscpu
185
193
40
80
120
160
200
1. (CC) gcc options: -fopenmp -O2 -pthread -ljbig -lwebp -lwebpmux -ltiff -ljpeg -lXext -lSM -lICE -lX11 -llzma -lbz2 -lz -lm -lgomp -lpthread

GraphicsMagick 1.3.30

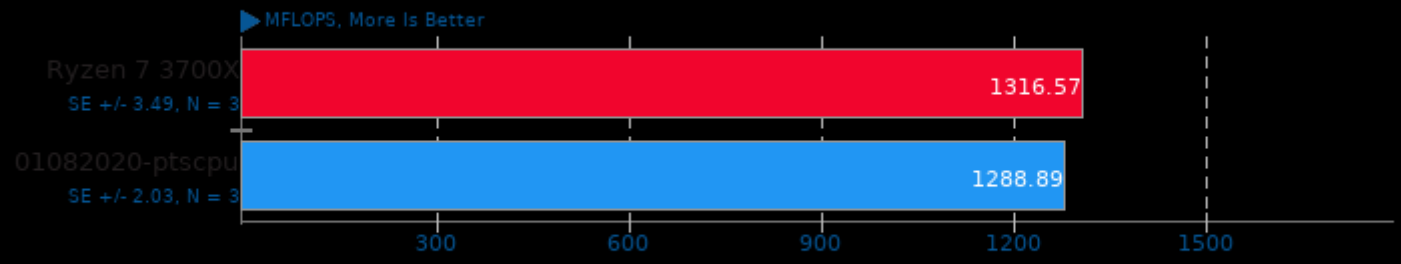
Operation: Resizing



1. (CC) gcc options: -fopenmp -O2 -pthread -ljbig -lwebp -lwebpmux -ltiff -ljpeg -lXext -lSM -lICE -lX11 -llzma -lbz2 -lz -lm -lgomp -lpthread

Himeno Benchmark 3.0

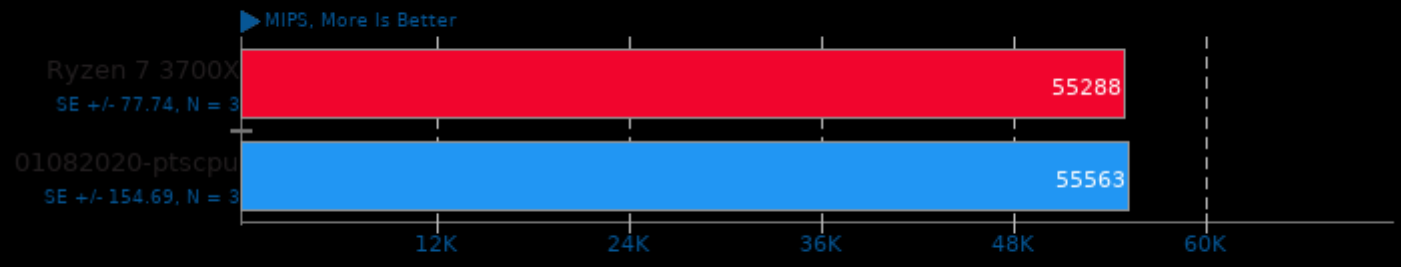
Poisson Pressure Solver



1. (CC) gcc options: -O3 -mavx2

7-Zip Compression 16.02

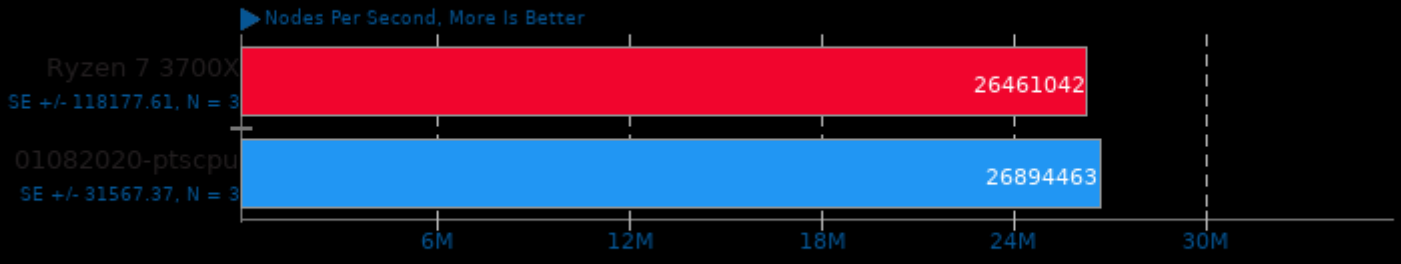
Compress Speed Test



1. (CXX) g++ options: -pipe -lpthread

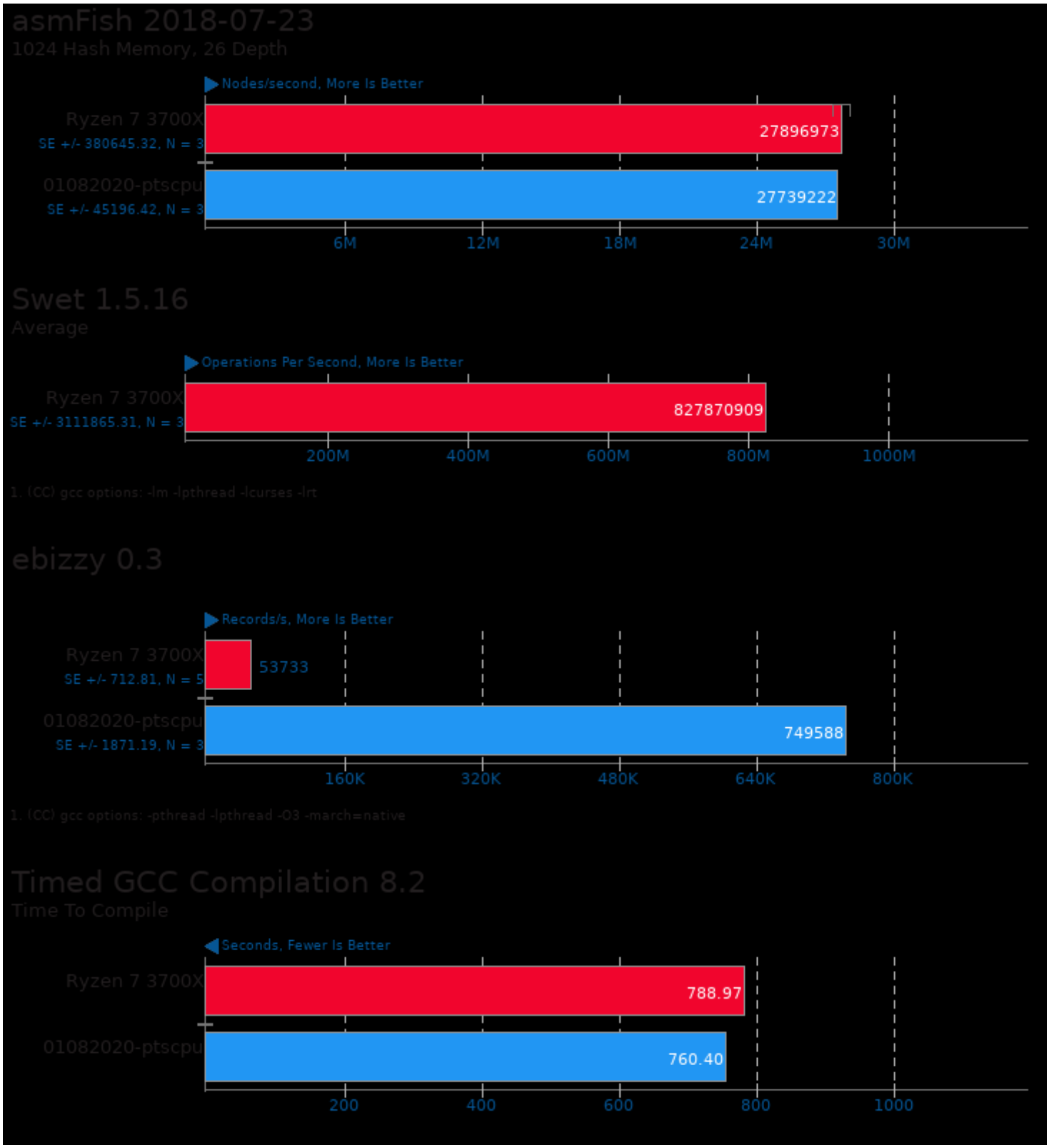
Stockfish 9

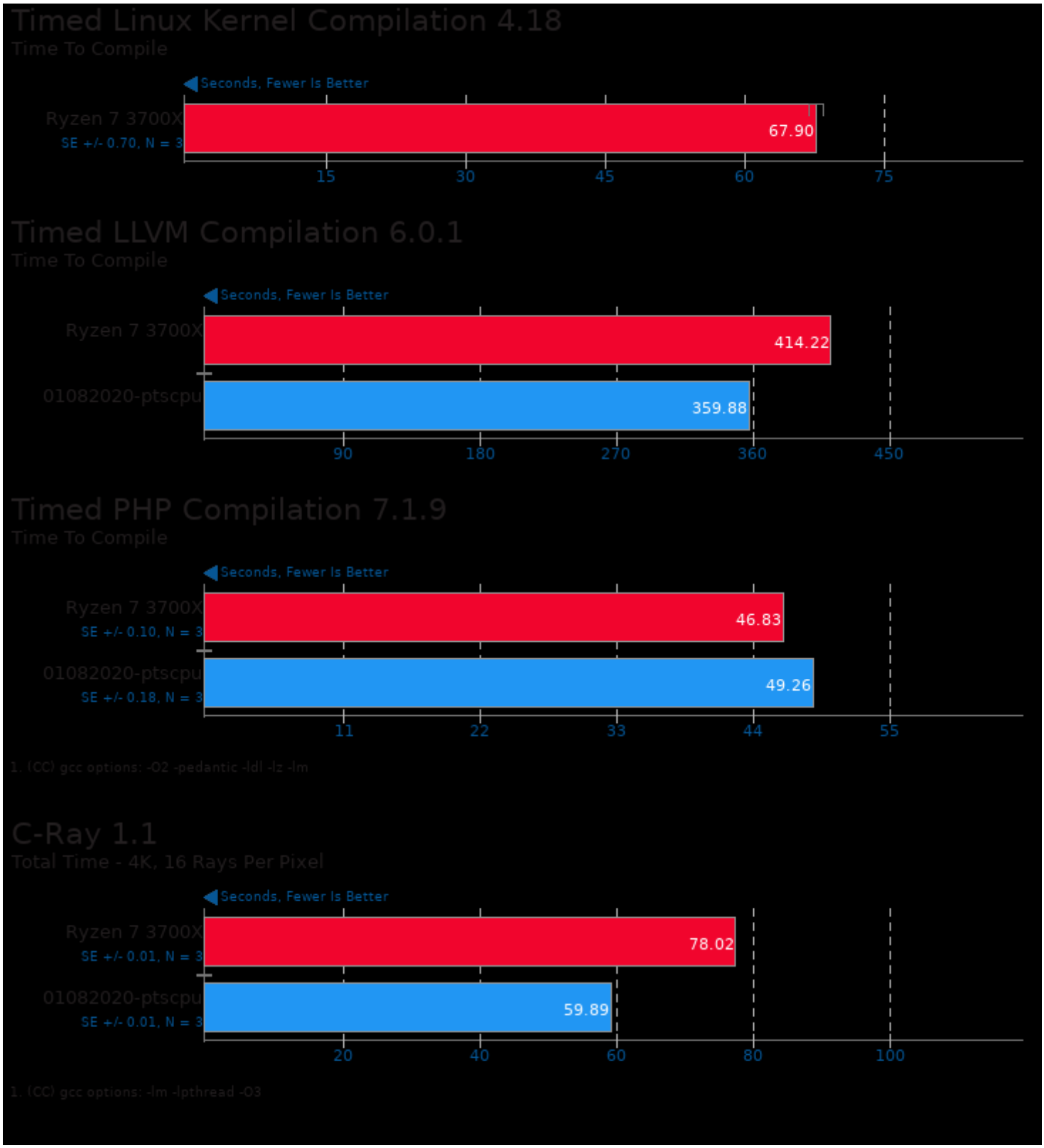
Total Time



1. (CXX) g++ options: -m64 -lpthread -fno-exceptions -std=c++11 -pedantic -O3 -msse -msse3 -mpopcnt -flto

AMD Ryzen 7 3700X Linux Benchmarks

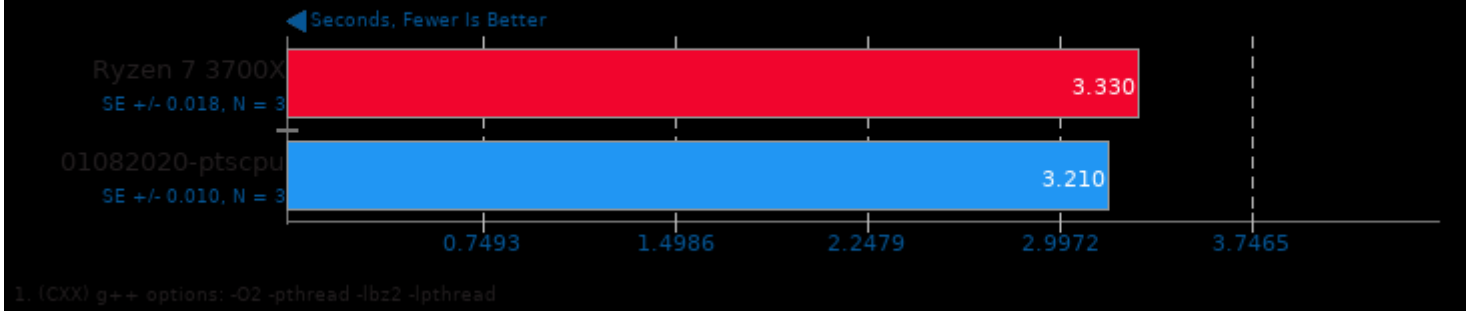



Timed Linux Kernel Compilation 4.18
Time To Compile
Seconds, Fewer Is Better
Ryzen 7 3700X
SE +/- 0.70, N = 3
67.90
15
30
45
60
75
Timed LLVM Compilation 6.0.1
Time To Compile
Seconds, Fewer Is Better
Ryzen 7 3700X
414.22
01082020-ptscpu
359.88
90
180
270
360
450
Timed PHP Compilation 7.1.9
Time To Compile
Seconds, Fewer Is Better
Ryzen 7 3700X
SE +/- 0.10, N = 3
46.83
01082020-ptscpu
SE +/- 0.18, N = 3
49.26
11
22
33
44
55
1. (CC) gcc options: -O2 -pedantic -ldl -lz -lm
C-Ray 1.1
Total Time - 4K, 16 Rays Per Pixel
Seconds, Fewer Is Better
Ryzen 7 3700X
SE +/- 0.01, N = 3
78.02
01082020-ptscpu
SE +/- 0.01, N = 3
59.89
20
40
60
80
100
1. (CC) gcc options: -lm -lpthread -O3

AMD Ryzen 7 3700X Linux Benchmarks

Parallel BZIP2 Compression 1.1.12

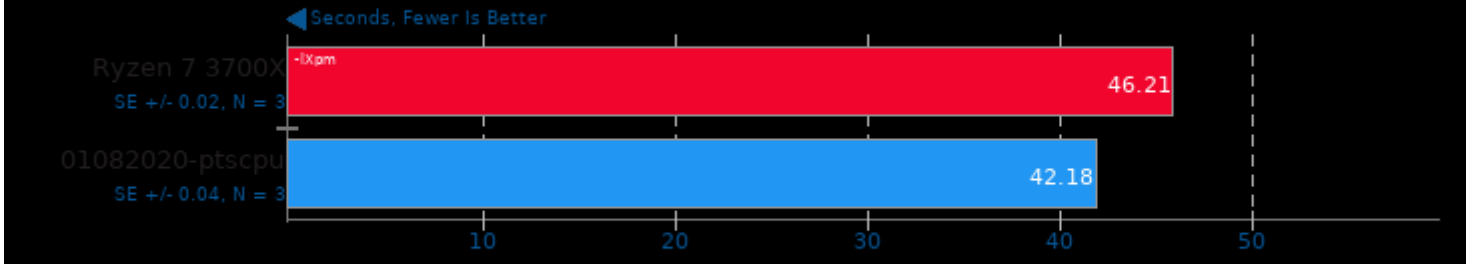
256MB File Compression



1. (CXX) g++ options: -O2 -pthread -lbz2 -lpthread

POV-Ray 3.7.0.7

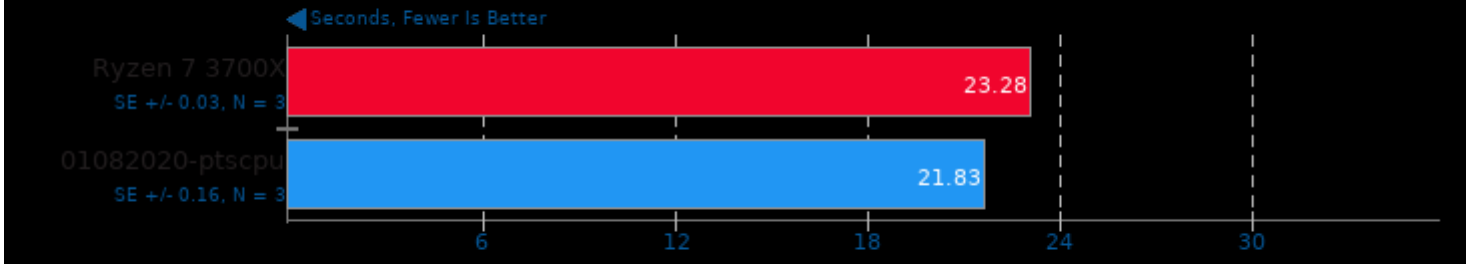
Trace Time



1. (CXX) g++ options: -pipe -O3 -ffast-math -march=native -pthread -lSDL -lSM -lICE -lX11 -ltiff -ljpeg -lpng -lz -lrt -lm -lboost_thread -lboost_system

Primesieve 7.4

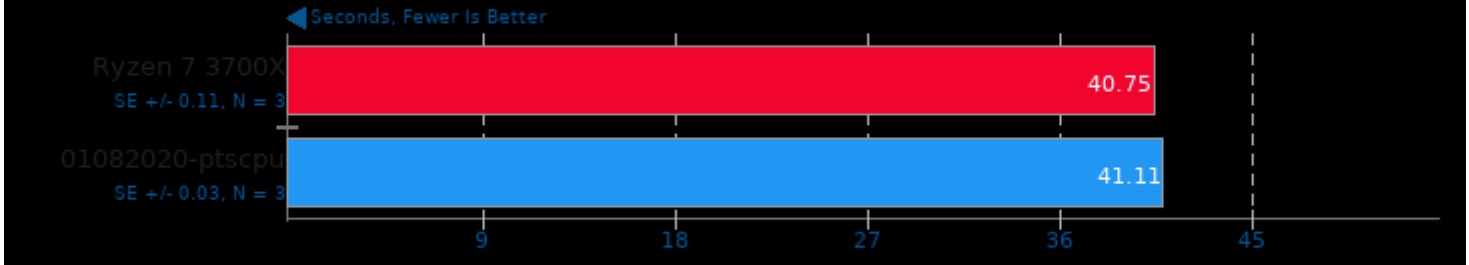
1e12 Prime Number Generation



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

Rust Mandelbrot

Time To Complete Serial/Parallel Mandelbrot

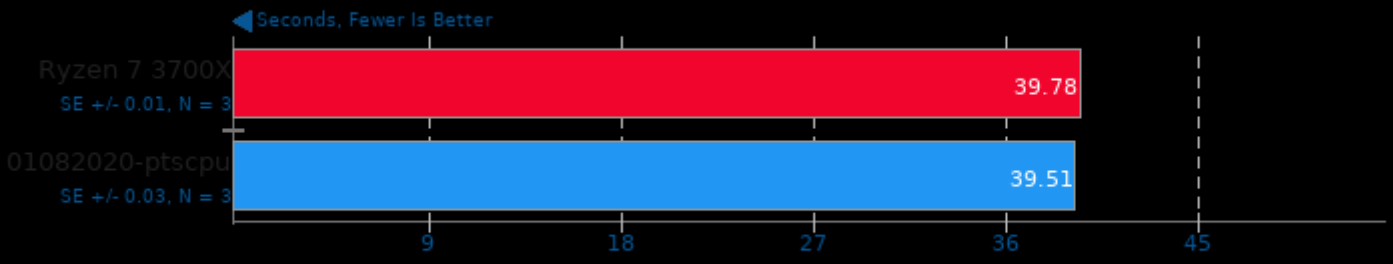


1. (CC) gcc options: -m64 -pie -nodefaultlibs -lutil -ldl -lrt -lpthread -lgcc_s -lc -lm

AMD Ryzen 7 3700X Linux Benchmarks

Rust Prime Benchmark

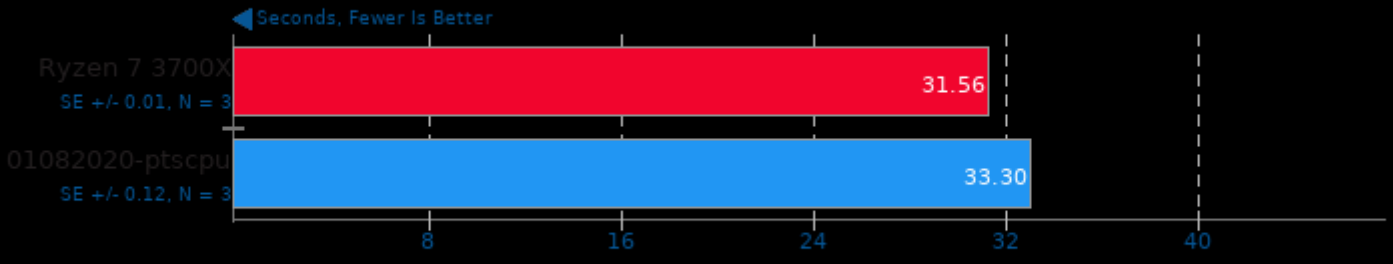
Prime Number Test To 200,000,000



1. (CC) gcc options: -m64 -pie -nodefaultlibs -ldl -lrt -lpthread -lgcc_s -lc -lm -lutil

XZ Compression 5.2.4

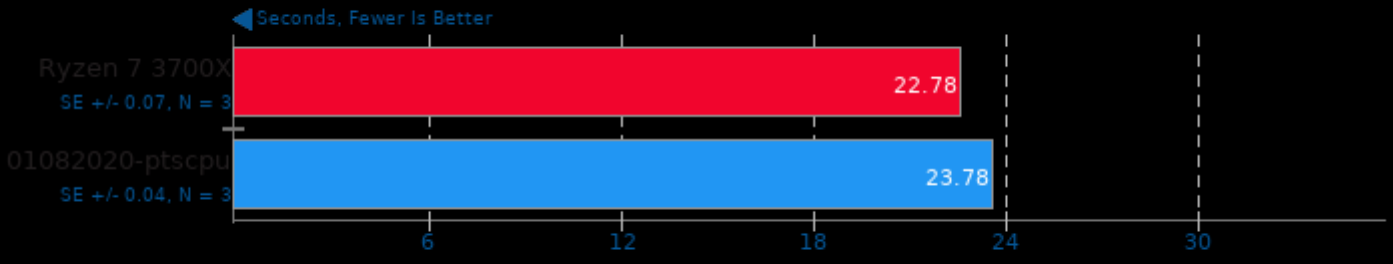
Compressing ubuntu-16.04.3-server-i386.img, Compression Level 9



1. (CC) gcc options: -pthread -fvisibility=hidden -O2

Zstd Compression 1.3.4

Compressing ubuntu-16.04.3-server-i386.img, Compression Level 19



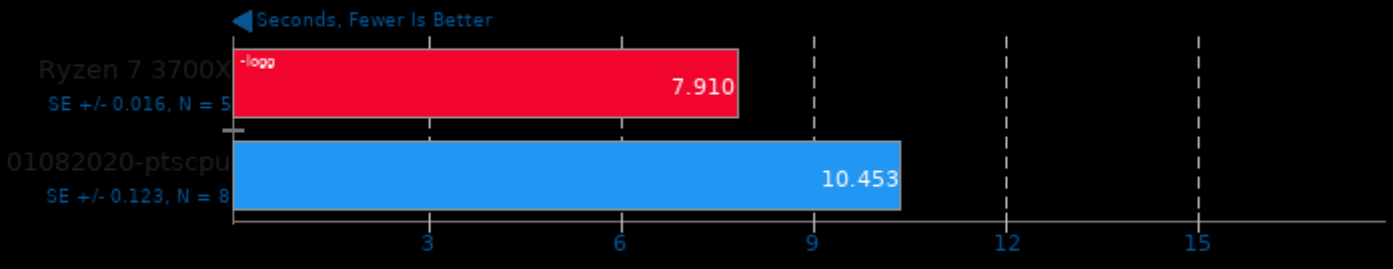
1. (CC) gcc options: -O3 -pthread -lz -llzma

Cython benchmark 0.27

AMD Ryzen 7 3700X Linux Benchmarks

FLAC Audio Encoding 1.3.2

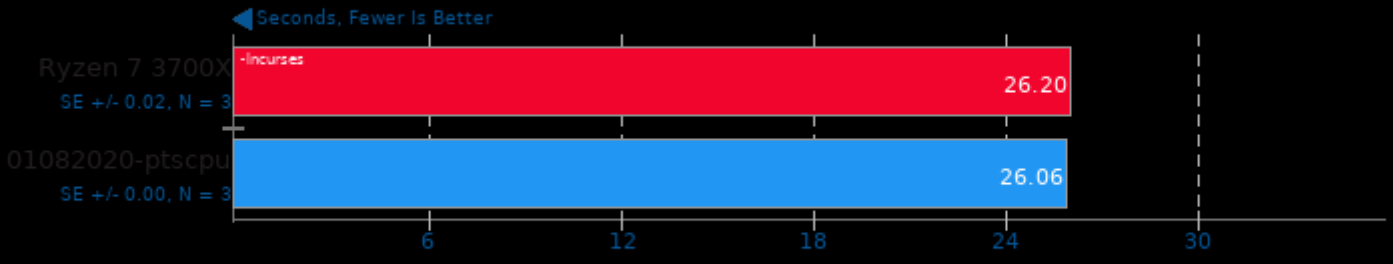
WAV To FLAC



1. (CXX) g++ options: -O2 -fvisibility=hidden -lm

LAME MP3 Encoding 3.100

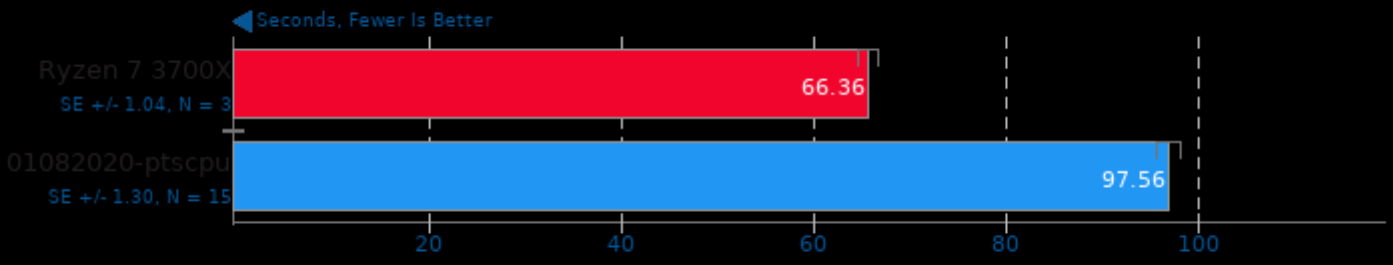
WAV To MP3



1. (CC) gcc options: -lm

Hackbench

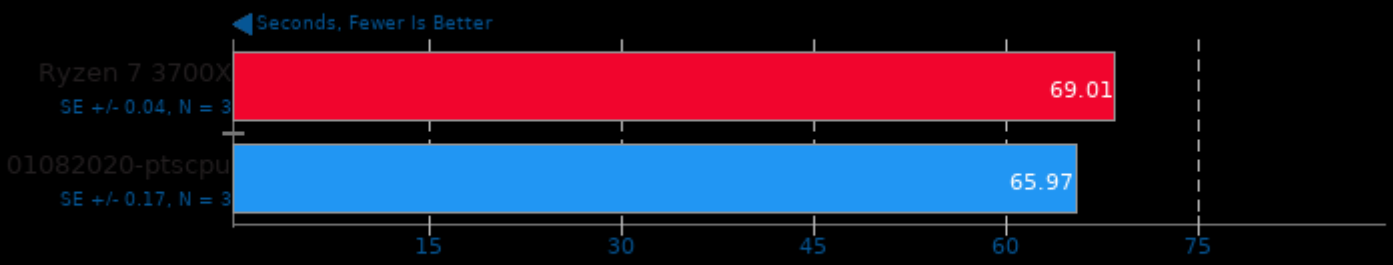
Count: 32 - Type: Process



1. (CC) gcc options: -lpthread

m-queens 1.2

Time To Solve

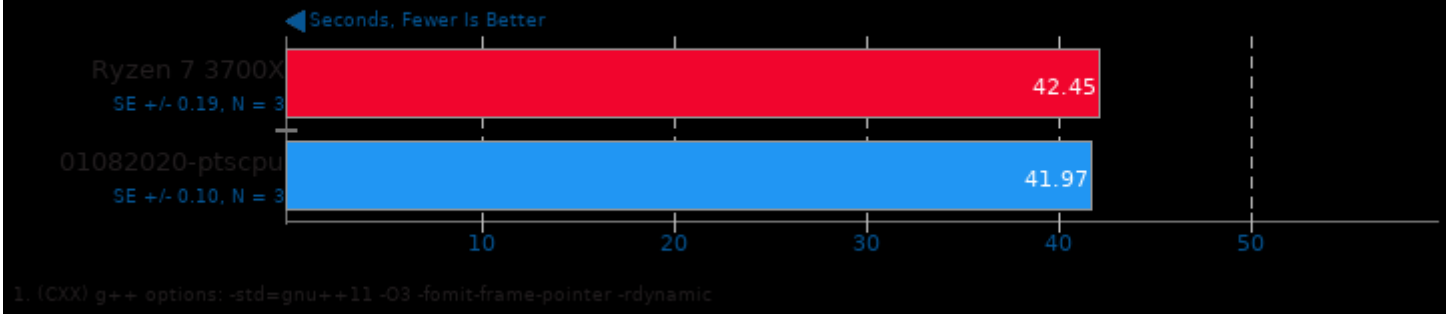


1. (CXX) g++ options: -fopenmp -O2 -march=native

AMD Ryzen 7 3700X Linux Benchmarks

Minion 1.8

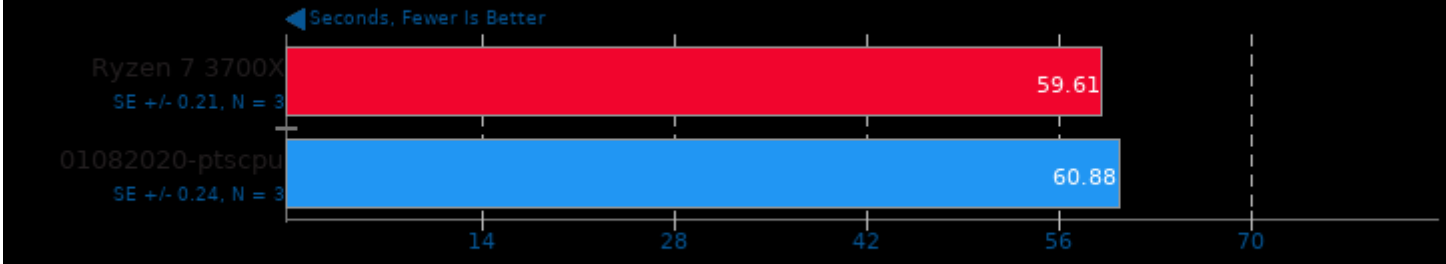
Benchmark: Graceful



1. (CXX) g++ options: -std=gnu++11 -O3 -fomit-frame-pointer -rdynamic

Minion 1.8

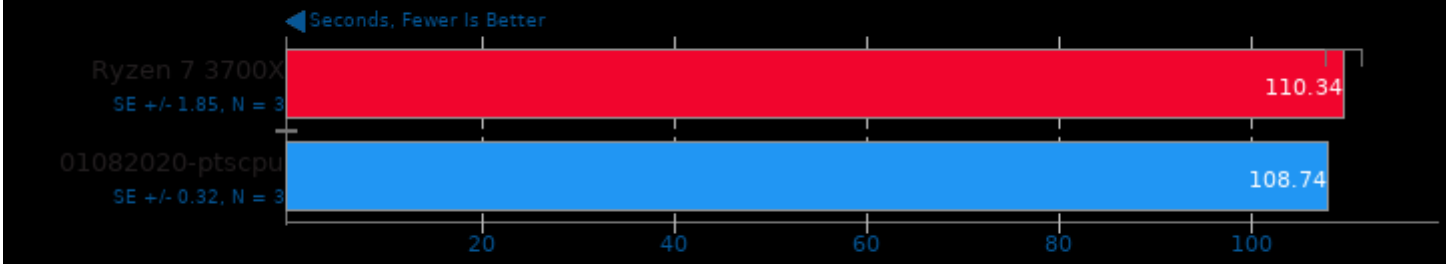
Benchmark: Solitaire



1. (CXX) g++ options: -std=gnu++11 -O3 -fomit-frame-pointer -rdynamic

Minion 1.8

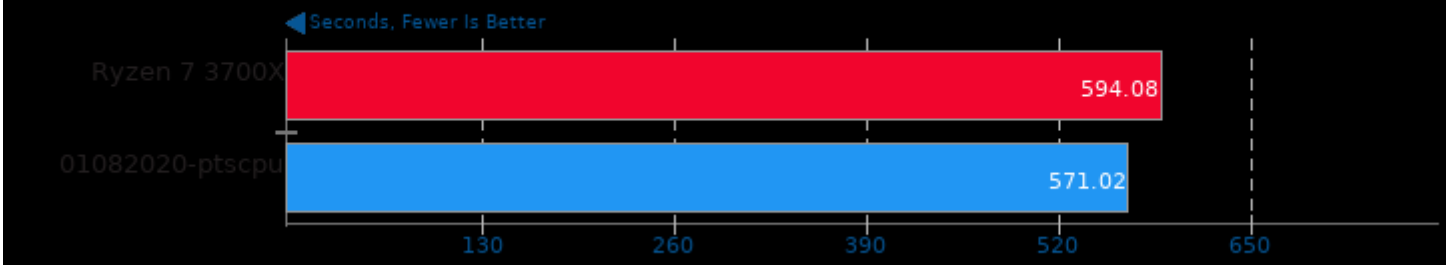
Benchmark: Quasigroup



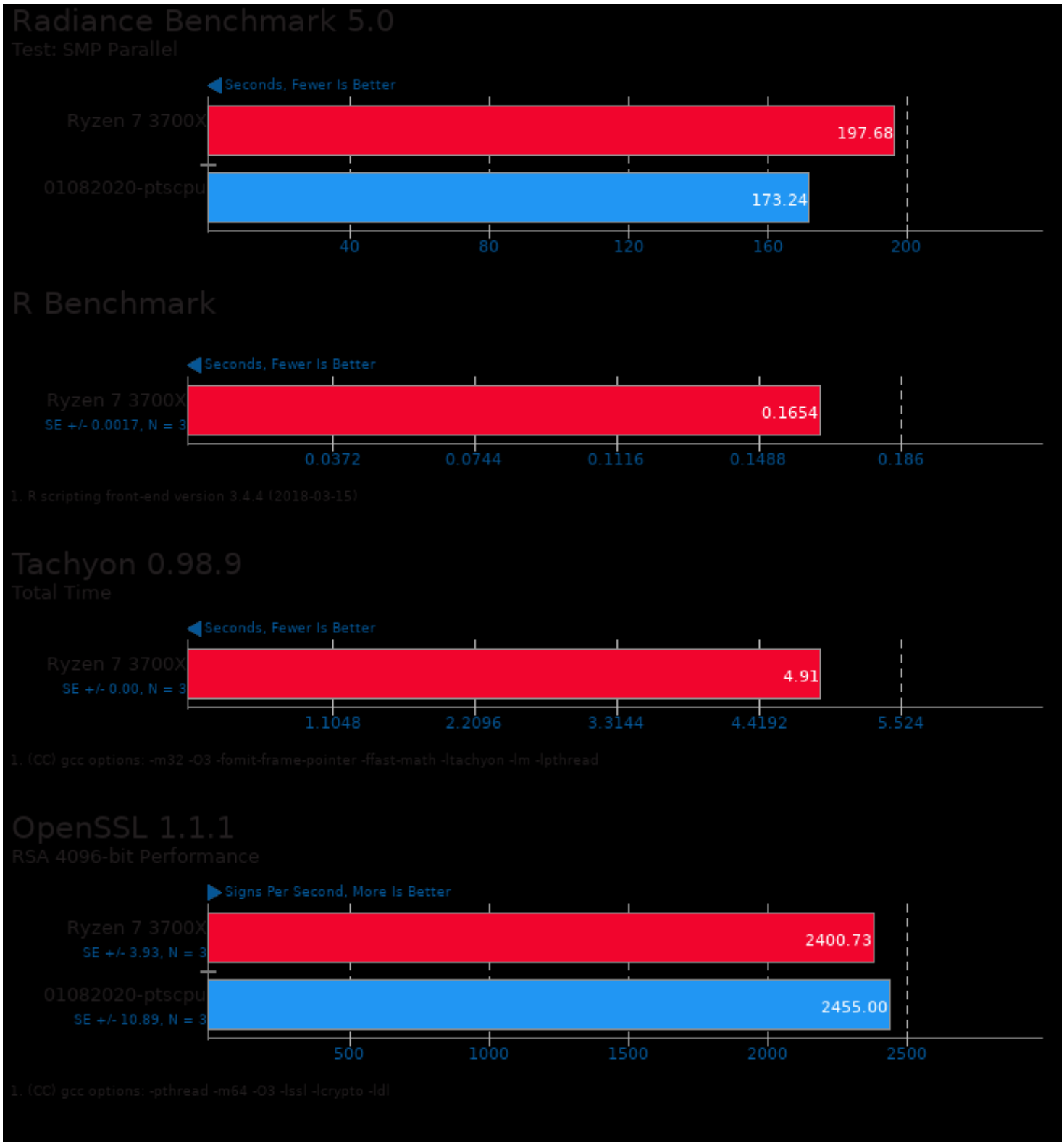
1. (CXX) g++ options: -std=gnu++11 -O3 -fomit-frame-pointer -rdynamic

Radiance Benchmark 5.0

Test: Serial

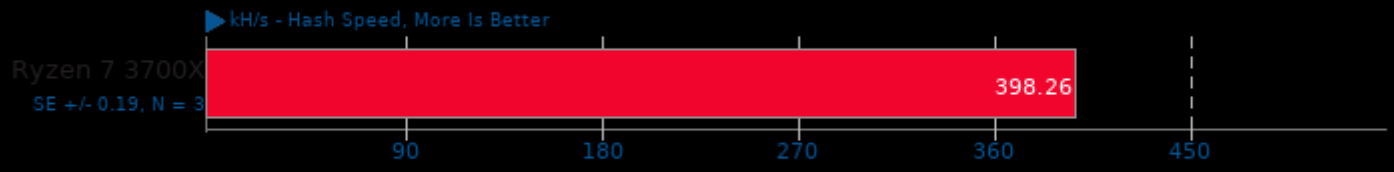


AMD Ryzen 7 3700X Linux Benchmarks



AMD Ryzen 7 3700X Linux Benchmarks

Cpuminer-Opt 3.8.8.1
Algorithm: m7m



1. (CXX) g++ options: -O2 -lcurl -lz -lpthread -lssl -lcrypto -lgmp

Cpuminer-Opt 3.8.8.1
Algorithm: deep

1. (CXX) g++ options: -O2 -lcurl -lz -lpthread -lssl -lcrypto -lgmp

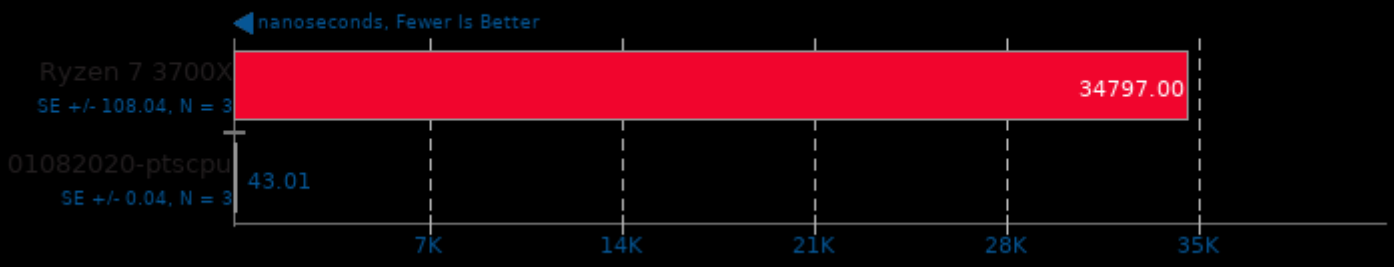
Cpuminer-Opt 3.8.8.1
Algorithm: skein

1. (CXX) g++ options: -O2 -lcurl -lz -lpthread -lssl -lcrypto -lgmp

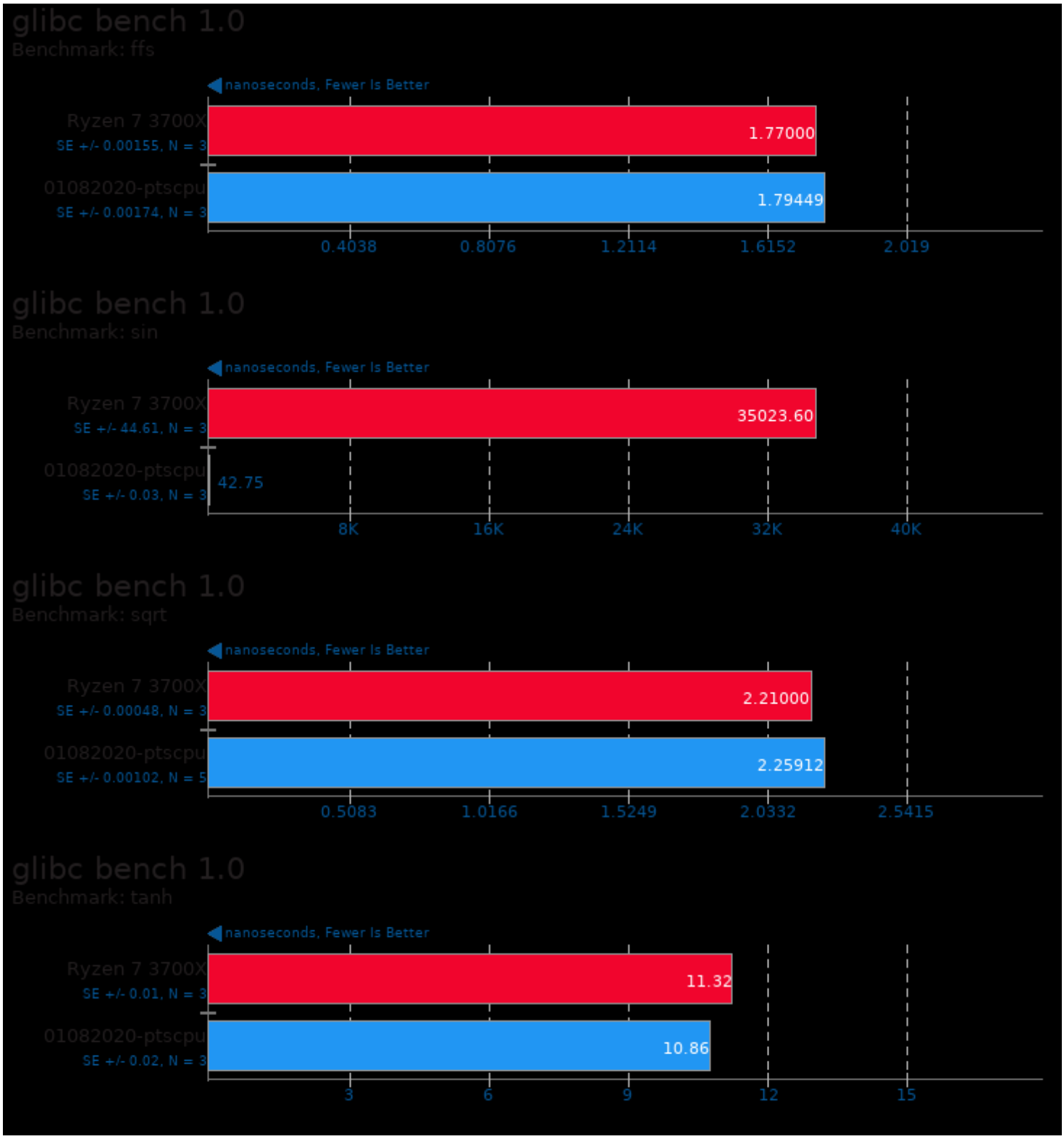
Cpuminer-Opt 3.8.8.1
Algorithm: sha256t

1. (CXX) g++ options: -O2 -lcurl -lz -lpthread -lssl -lcrypto -lgmp

glibc bench 1.0
Benchmark: cos



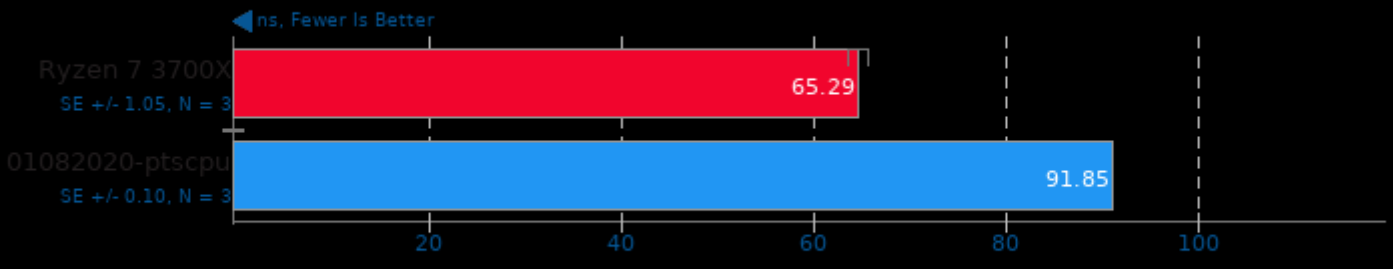
AMD Ryzen 7 3700X Linux Benchmarks



AMD Ryzen 7 3700X Linux Benchmarks

Multichase Pointer Chaser

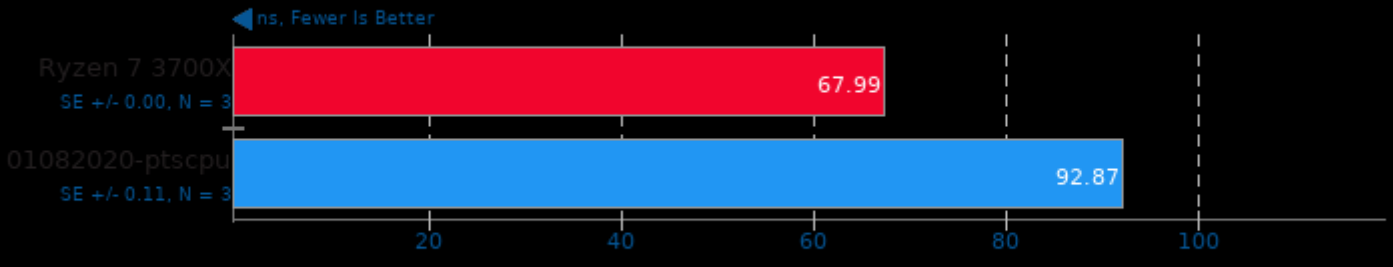
Test: 256MB Array, 256 Byte Stride



1. (CC) gcc options: -O2 -static -pthread -lrt

Multichase Pointer Chaser

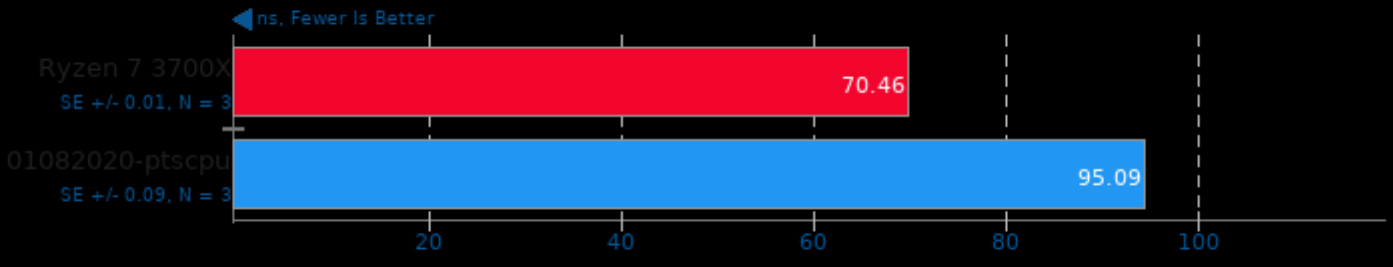
Test: 1GB Array, 256 Byte Stride, 2 Threads



1. (CC) gcc options: -O2 -static -pthread -lrt

Multichase Pointer Chaser

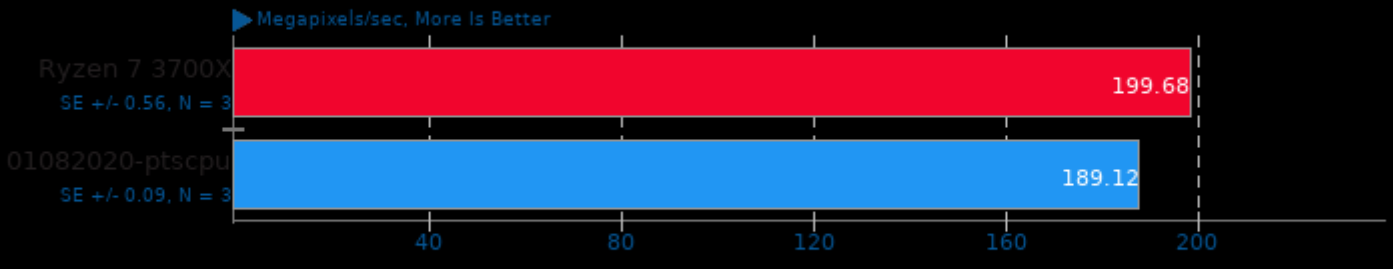
Test: 1GB Array, 256 Byte Stride, 4 Threads



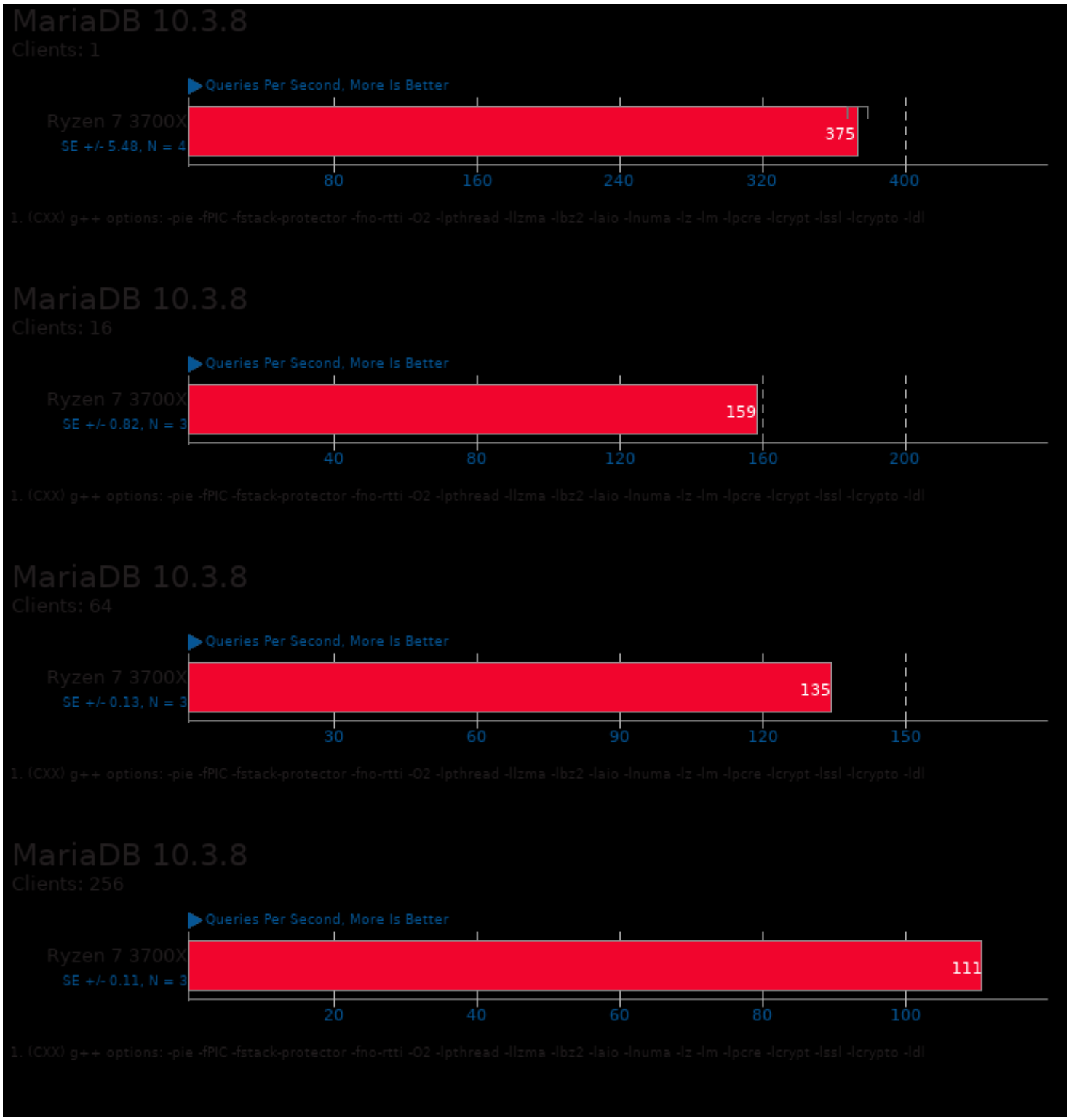
1. (CC) gcc options: -O2 -static -pthread -lrt

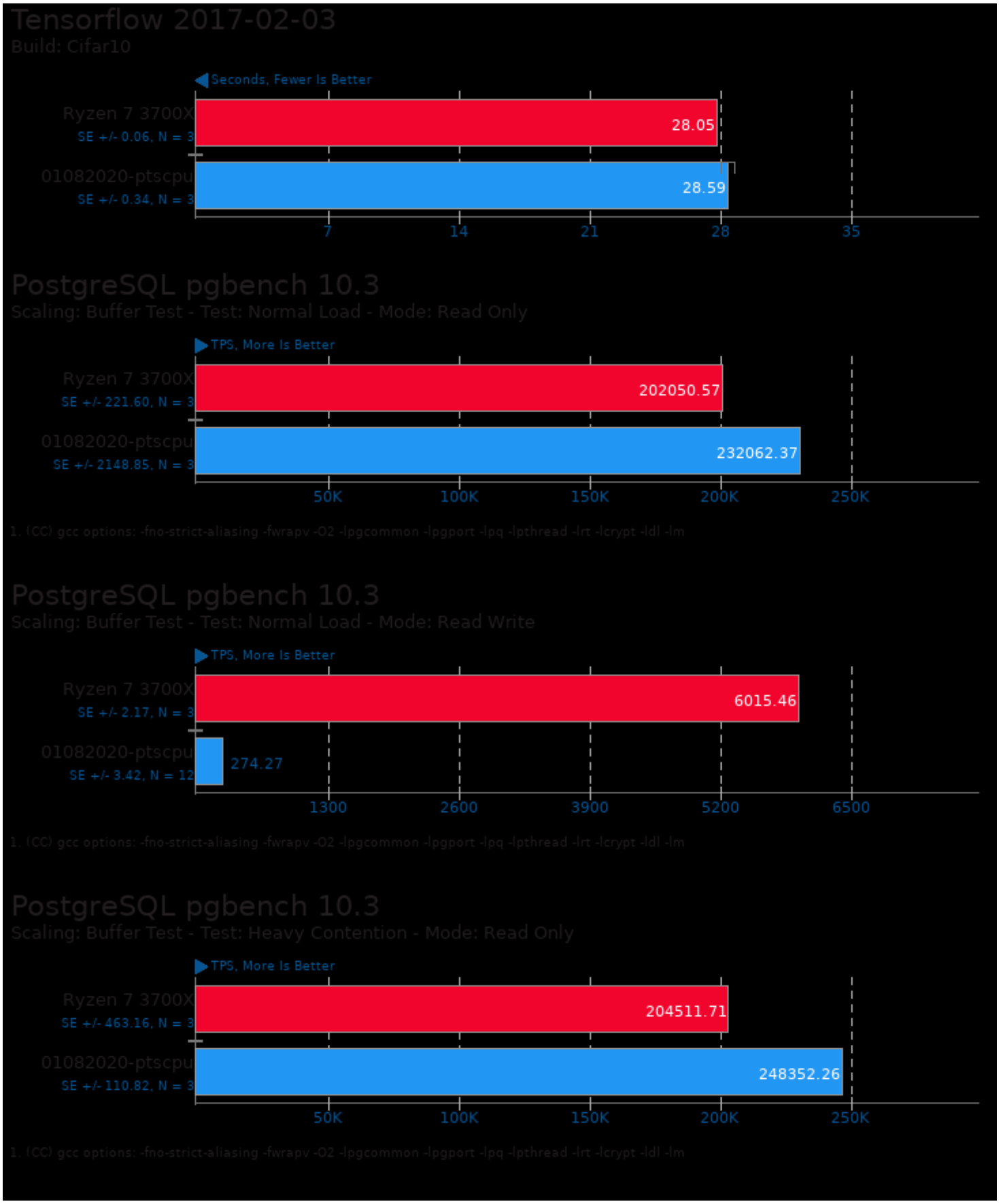
libjpeg-turbo tjbench 1.5.3

Test: Decompression Throughput



1. (CC) gcc options: -O3 -lm

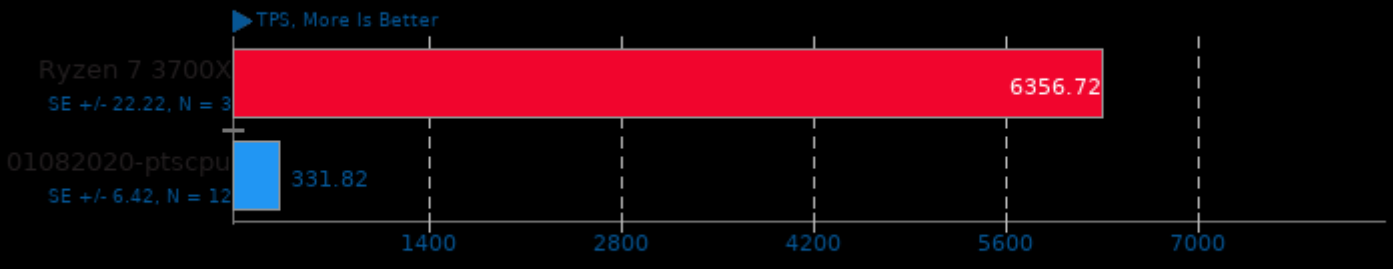

MariaDB 10.3.8
Clients: 1
Queries Per Second, More Is Better
Ryzen 7 3700X
SE +/- 5.48, N = 4
375
80
160
240
320
400
1. (CXX) g++ options: -pie -fPIC -fstack-protector -fno-rtti -O2 -lpthread -llzma -lbz2 -laio -lnuma -lz -lm -lpcre -lcrypt -lssl -lcrypto -ldl
MariaDB 10.3.8
Clients: 16
Queries Per Second, More Is Better
Ryzen 7 3700X
SE +/- 0.82, N = 3
159
40
80
120
160
200
1. (CXX) g++ options: -pie -fPIC -fstack-protector -fno-rtti -O2 -lpthread -llzma -lbz2 -laio -lnuma -lz -lm -lpcre -lcrypt -lssl -lcrypto -ldl
MariaDB 10.3.8
Clients: 64
Queries Per Second, More Is Better
Ryzen 7 3700X
SE +/- 0.13, N = 3
135
30
60
90
120
150
1. (CXX) g++ options: -pie -fPIC -fstack-protector -fno-rtti -O2 -lpthread -llzma -lbz2 -laio -lnuma -lz -lm -lpcre -lcrypt -lssl -lcrypto -ldl
MariaDB 10.3.8
Clients: 256
Queries Per Second, More Is Better
Ryzen 7 3700X
SE +/- 0.11, N = 3
111
20
40
60
80
100
1. (CXX) g++ options: -pie -fPIC -fstack-protector -fno-rtti -O2 -lpthread -llzma -lbz2 -laio -lnuma -lz -lm -lpcre -lcrypt -lssl -lcrypto -ldl


Tensorflow 2017-02-03
Build: Cifar10
Seconds, Fewer Is Better
Ryzen 7 3700X
SE +/- 0.06, N = 3
28.05
01082020-ptscpu
SE +/- 0.34, N = 3
28.59
7
14
21
28
35
PostgreSQL pgbench 10.3
Scaling: Buffer Test - Test: Normal Load - Mode: Read Only
TPS, More Is Better
Ryzen 7 3700X
SE +/- 221.60, N = 3
202050.57
01082020-ptscpu
SE +/- 2148.85, N = 3
232062.37
50K
100K
150K
200K
250K
1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lpgcommon -lpgport -lpq -lpthread -lrt -lcrypt -ldl -lm
PostgreSQL pgbench 10.3
Scaling: Buffer Test - Test: Normal Load - Mode: Read Write
TPS, More Is Better
Ryzen 7 3700X
SE +/- 2.17, N = 3
6015.46
01082020-ptscpu
SE +/- 3.42, N = 12
274.27
1300
2600
3900
5200
6500
1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lpgcommon -lpgport -lpq -lpthread -lrt -lcrypt -ldl -lm
PostgreSQL pgbench 10.3
Scaling: Buffer Test - Test: Heavy Contention - Mode: Read Only
TPS, More Is Better
Ryzen 7 3700X
SE +/- 463.16, N = 3
204511.71
01082020-ptscpu
SE +/- 110.82, N = 3
248352.26
50K
100K
150K
200K
250K
1. (CC) gcc options: -fno-strict-aliasing -fwrapv -O2 -lpgcommon -lpgport -lpq -lpthread -lrt -lcrypt -ldl -lm

AMD Ryzen 7 3700X Linux Benchmarks

PostgreSQL pgbench 10.3

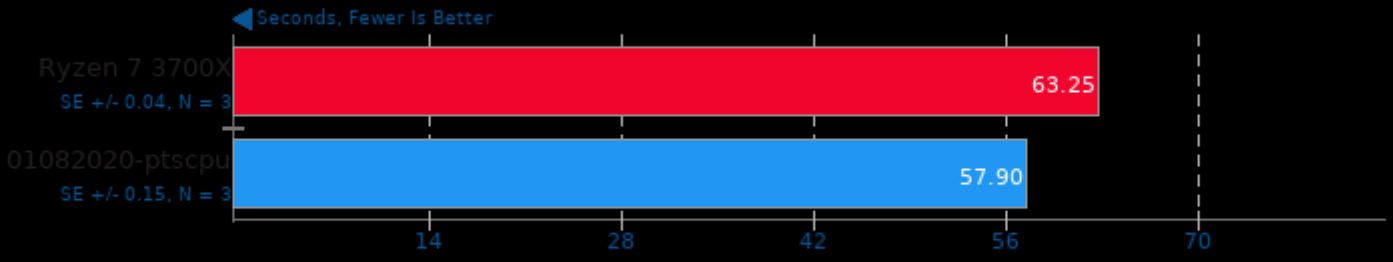
Scaling: Buffer Test - Test: Heavy Contention - Mode: Read Write



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

CppPerformanceBenchmarks 9

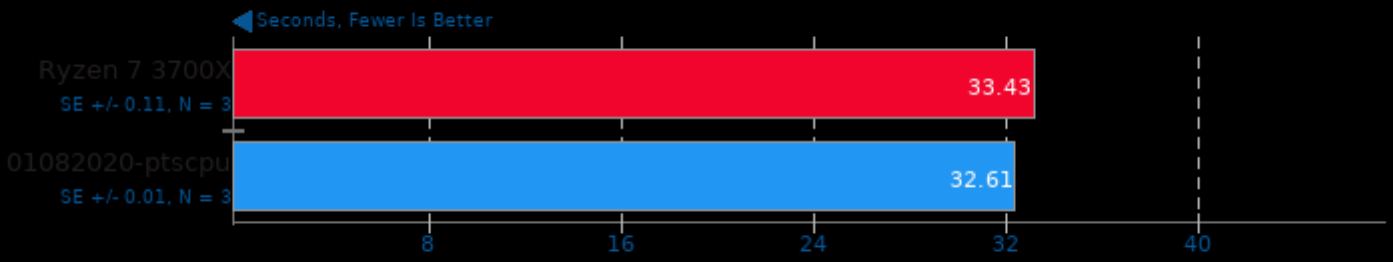
Test: Atol



1. (CXX) g++ options: -std=c++11 -O3

CppPerformanceBenchmarks 9

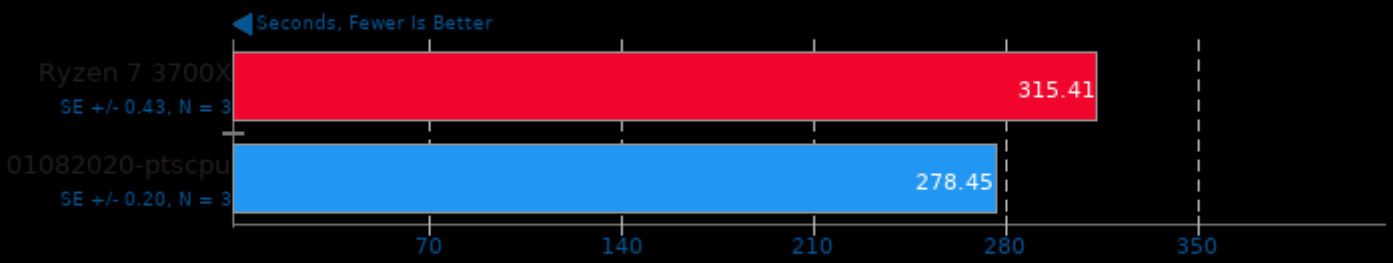
Test: Ctype



1. (CXX) g++ options: -std=c++11 -O3

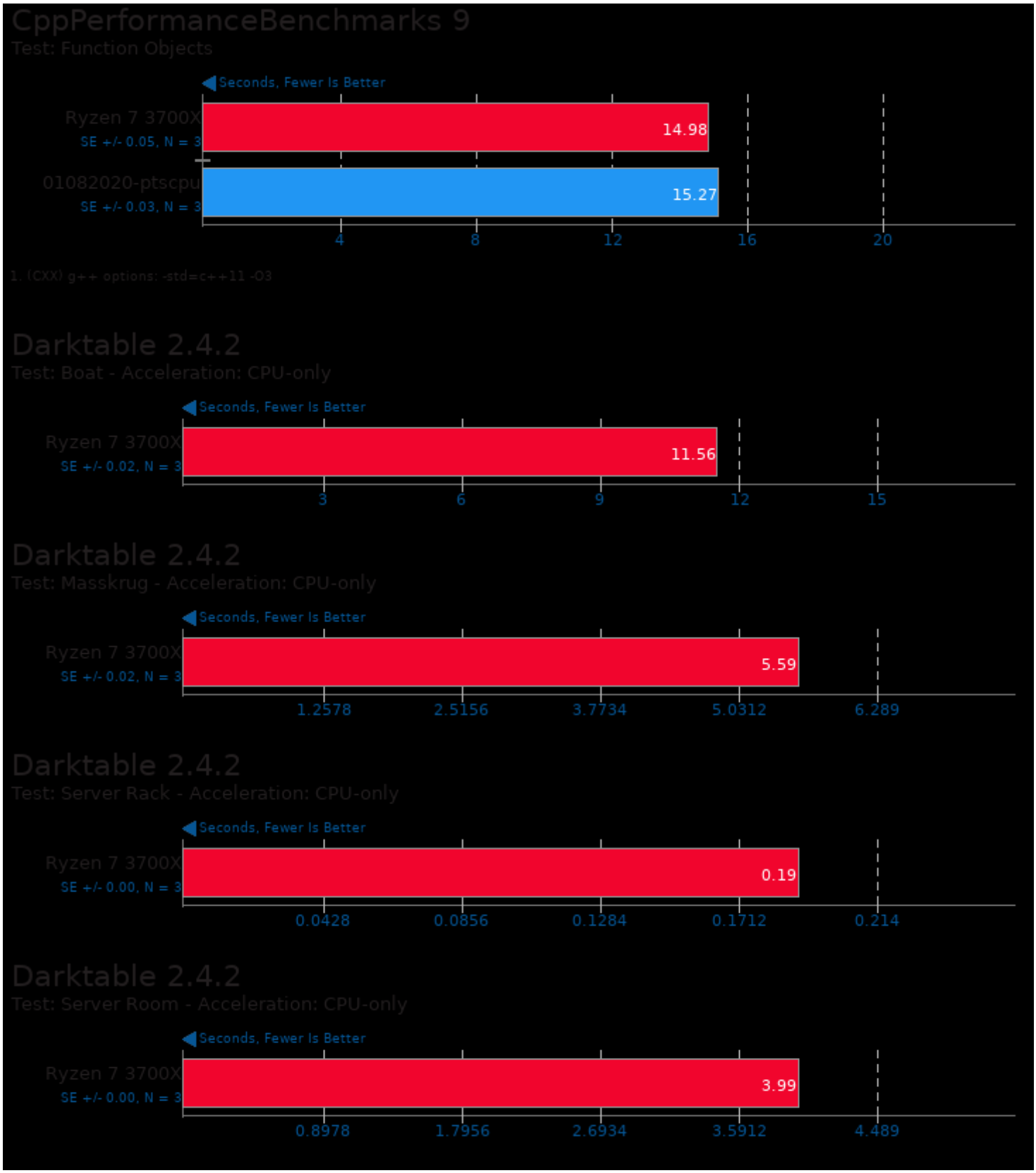
CppPerformanceBenchmarks 9

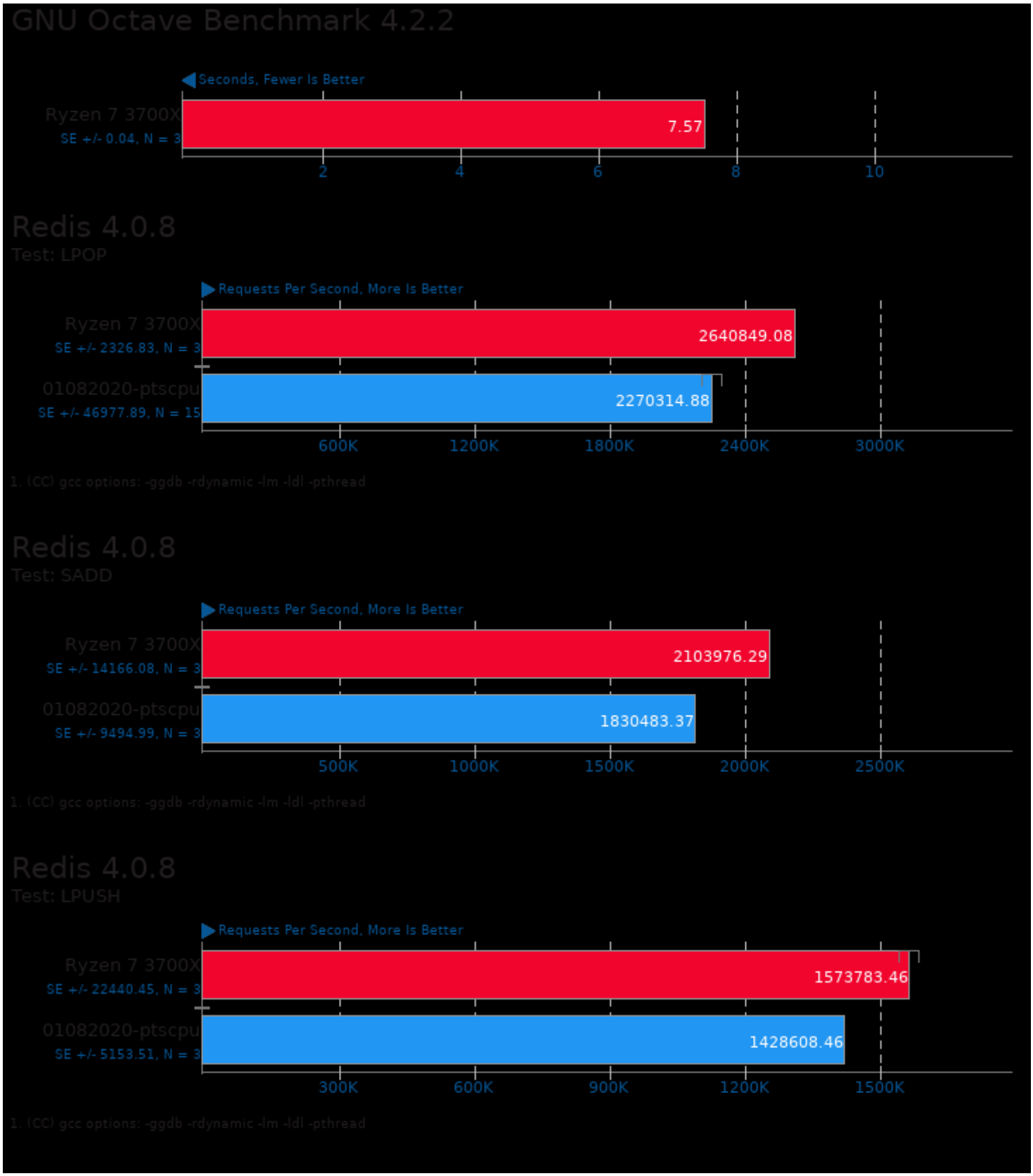
Test: Math Library



1. (CXX) g++ options: -std=c++11 -O3

AMD Ryzen 7 3700X Linux Benchmarks

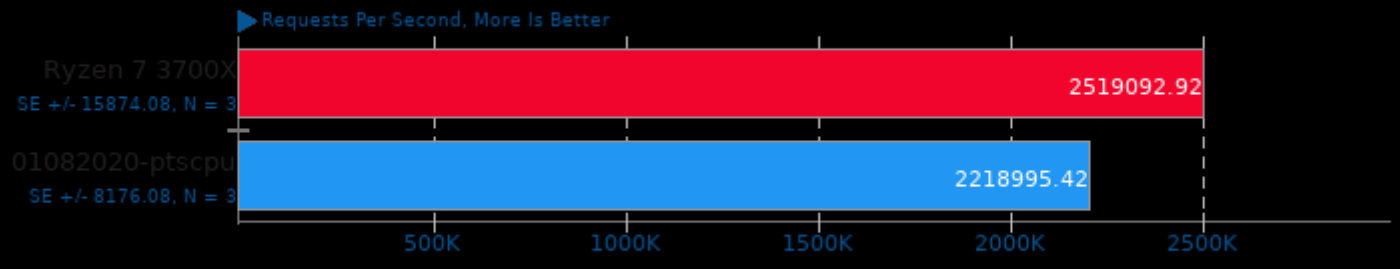



GNU Octave Benchmark 4.2.2
Seconds, Fewer Is Better
Ryzen 7 3700X
SE +/- 0.04, N = 3
7.57
2
4
6
8
10
Redis 4.0.8
Test: LPOP
Requests Per Second, More Is Better
Ryzen 7 3700X
SE +/- 2326.83, N = 3
2640849.08
01082020-ptscpu
SE +/- 46977.89, N = 15
2270314.88
600K
1200K
1800K
2400K
3000K
1. (CC) gcc options: -ggdb -rdynamic -lm -ldl -pthread
Redis 4.0.8
Test: SADD
Requests Per Second, More Is Better
Ryzen 7 3700X
SE +/- 14166.08, N = 3
2103976.29
01082020-ptscpu
SE +/- 9494.99, N = 3
1830483.37
500K
1000K
1500K
2000K
2500K
1. (CC) gcc options: -ggdb -rdynamic -lm -ldl -pthread
Redis 4.0.8
Test: LPUSH
Requests Per Second, More Is Better
Ryzen 7 3700X
SE +/- 22440.45, N = 3
1573783.46
01082020-ptscpu
SE +/- 5153.51, N = 3
1428608.46
300K
600K
900K
1200K
1500K
1. (CC) gcc options: -ggdb -rdynamic -lm -ldl -pthread

AMD Ryzen 7 3700X Linux Benchmarks

Redis 4.0.8

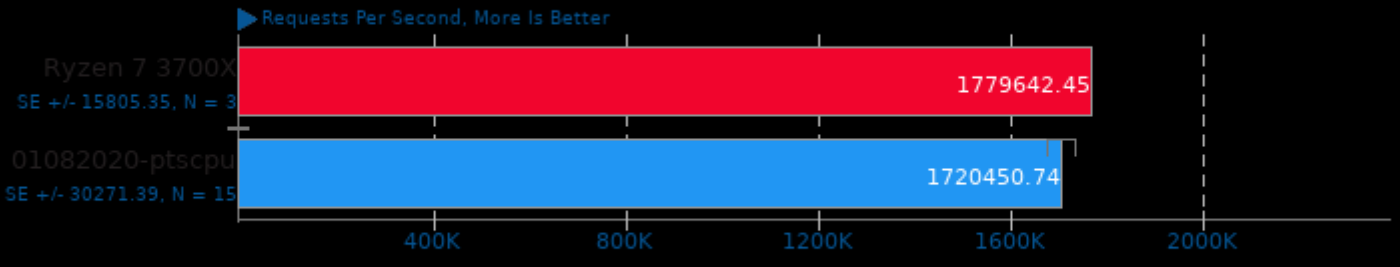
Test: GET



1. (CC) gcc options: -ggdb -rdynamic -lm -ldl -pthread

Redis 4.0.8

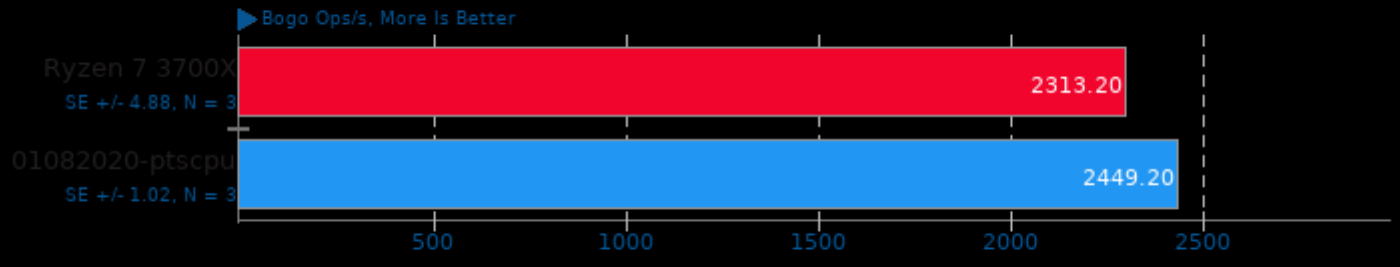
Test: SET



1. (CC) gcc options: -ggdb -rdynamic -lm -ldl -pthread

Stress-NG 0.07.26

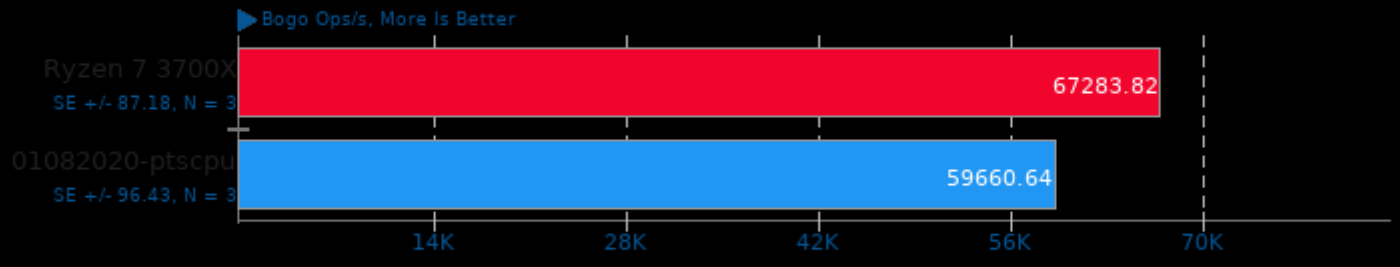
Test: Crypto



1. (CC) gcc options: -O2 -std=gnu99 -lm -lz -lcrypt -lrt -lpthread -laio -lc

Stress-NG 0.07.26

Test: Forking



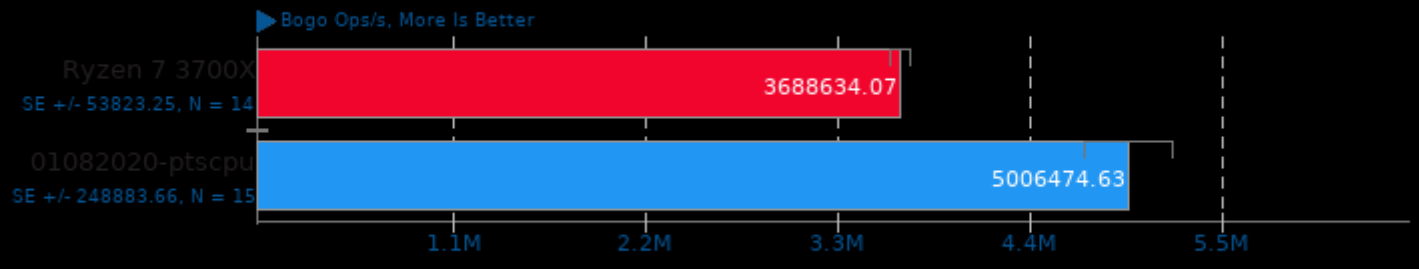
1. (CC) gcc options: -O2 -std=gnu99 -lm -lz -lcrypt -lrt -lpthread -laio -lc


Stress-NG 0.07.26
Test: CPU Stress
Bogo Ops/s, More Is Better
Ryzen 7 3700X
SE +/- 2.25, N = 3
2941.95
01082020-ptscpu
SE +/- 9.72, N = 3
3290.00
700
1400
2100
2800
3500
1. (CC) gcc options: -O2 -std=gnu99 -lm -lz -lcrypt -lrt -lpthread -laio -lc
Stress-NG 0.07.26
Test: Semaphores
Bogo Ops/s, More Is Better
Ryzen 7 3700X
SE +/- 26694.90, N = 3
6741776.61
01082020-ptscpu
SE +/- 7111.01, N = 3
5652799.26
1.4M
2.8M
4.2M
5.6M
7M
1. (CC) gcc options: -O2 -std=gnu99 -lm -lz -lcrypt -lrt -lpthread -laio -lc
Stress-NG 0.07.26
Test: Memory Copying
Bogo Ops/s, More Is Better
Ryzen 7 3700X
SE +/- 1.96, N = 3
1918.80
01082020-ptscpu
SE +/- 49.86, N = 3
3464.88
700
1400
2100
2800
3500
1. (CC) gcc options: -O2 -std=gnu99 -lm -lz -lcrypt -lrt -lpthread -laio -lc
Stress-NG 0.07.26
Test: Socket Activity
Bogo Ops/s, More Is Better
Ryzen 7 3700X
SE +/- 75.81, N = 3
8184.64
01082020-ptscpu
SE +/- 134.46, N = 3
7435.13
2K
4K
6K
8K
10K
1. (CC) gcc options: -O2 -std=gnu99 -lm -lz -lcrypt -lrt -lpthread -laio -lc

AMD Ryzen 7 3700X Linux Benchmarks

Stress-NG 0.07.26

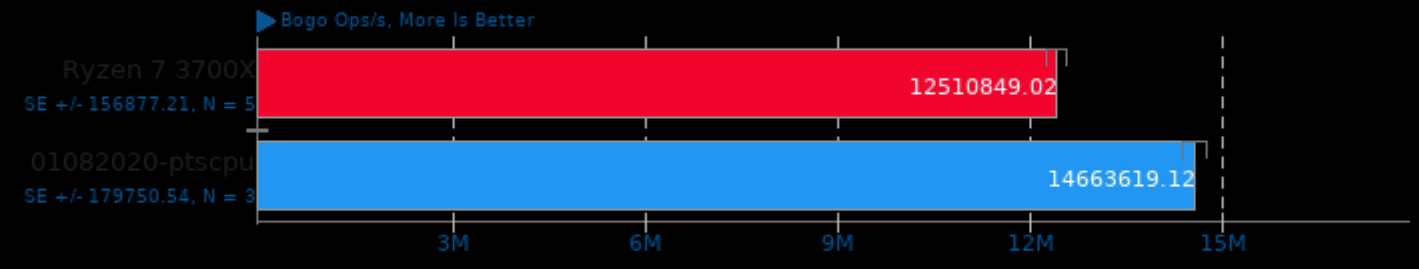
Test: Context Switching



1. (CC) gcc options: -O2 -std=gnu99 -lm -lz -lcrypt -lrt -lpthread -laio -lc

Stress-NG 0.07.26

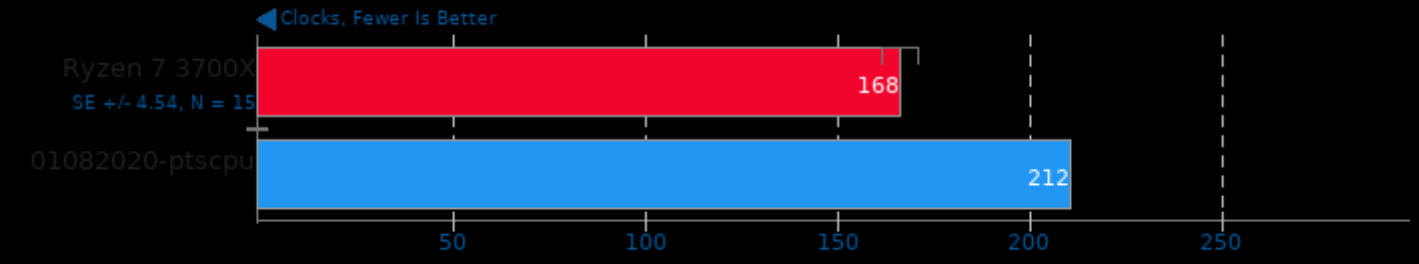
Test: System V Message Passing



1. (CC) gcc options: -O2 -std=gnu99 -lm -lz -lcrypt -lrt -lpthread -laio -lc

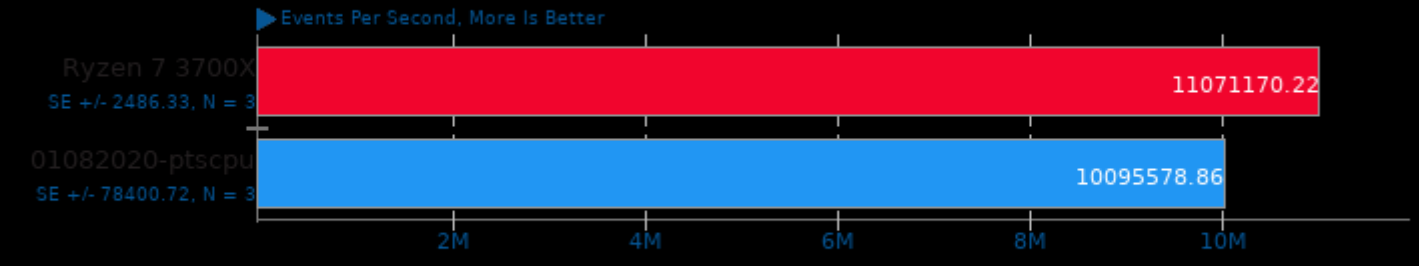
ctx_clock

Context Switch Time



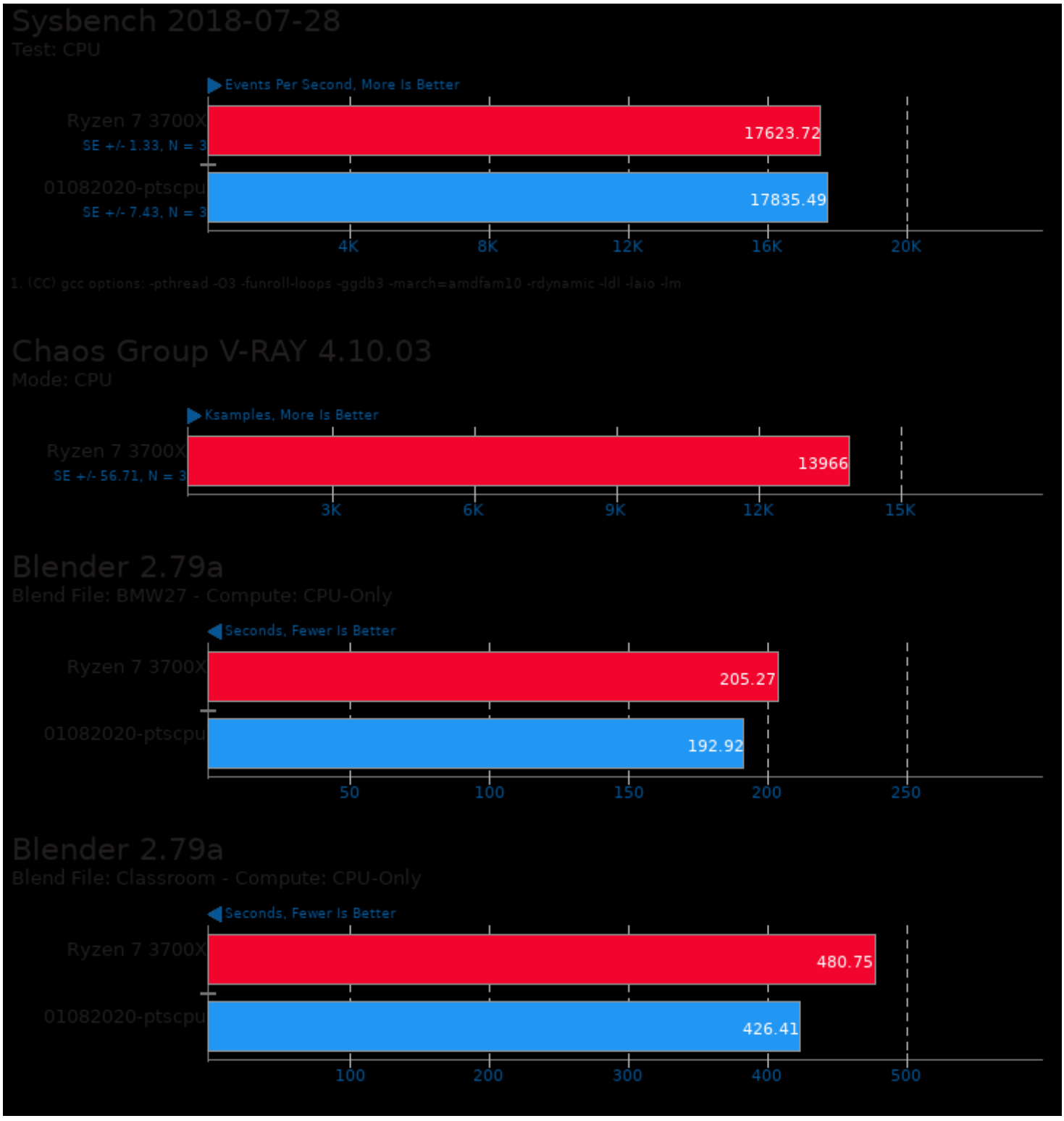
Sysbench 2018-07-28

Test: Memory

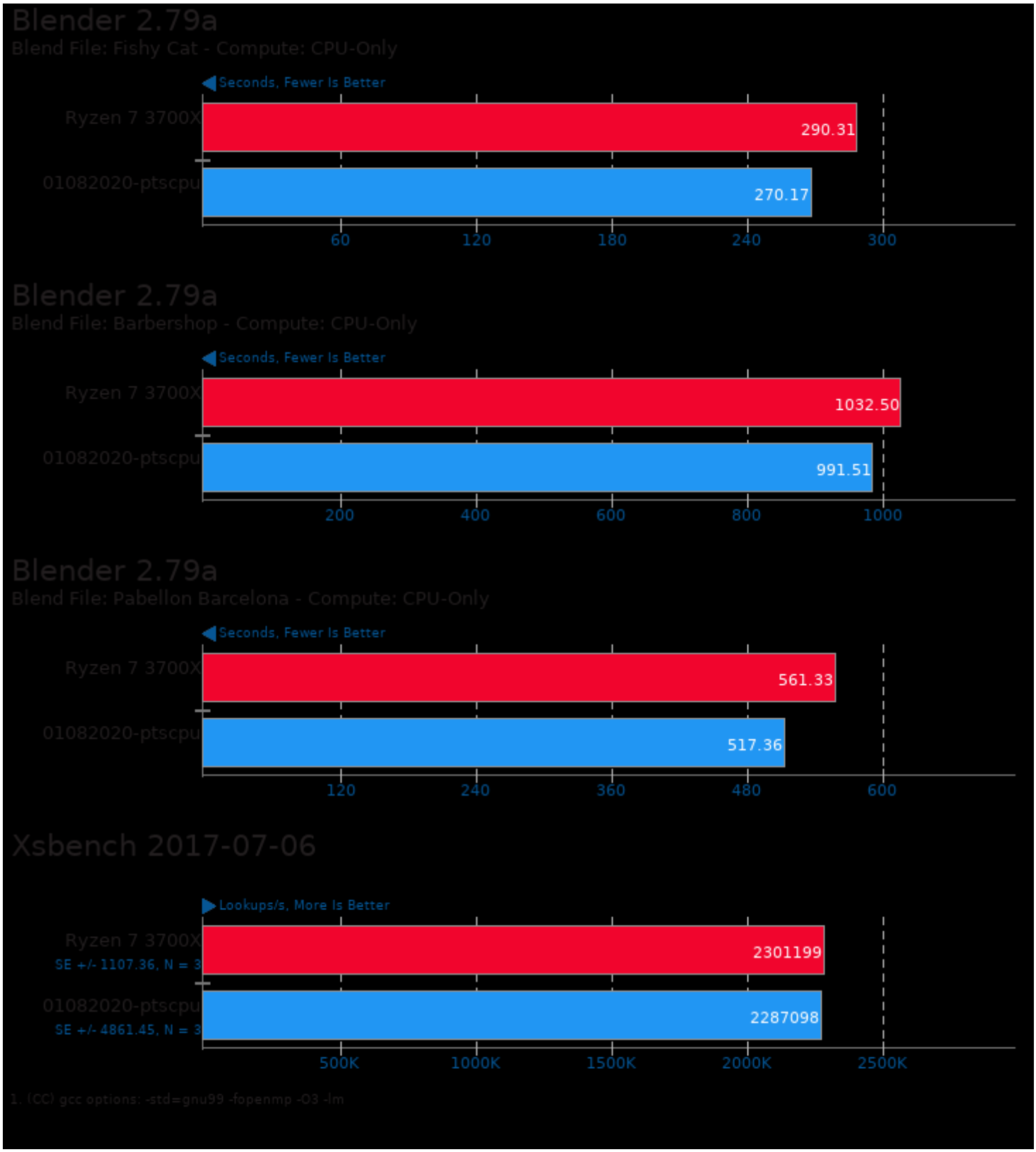


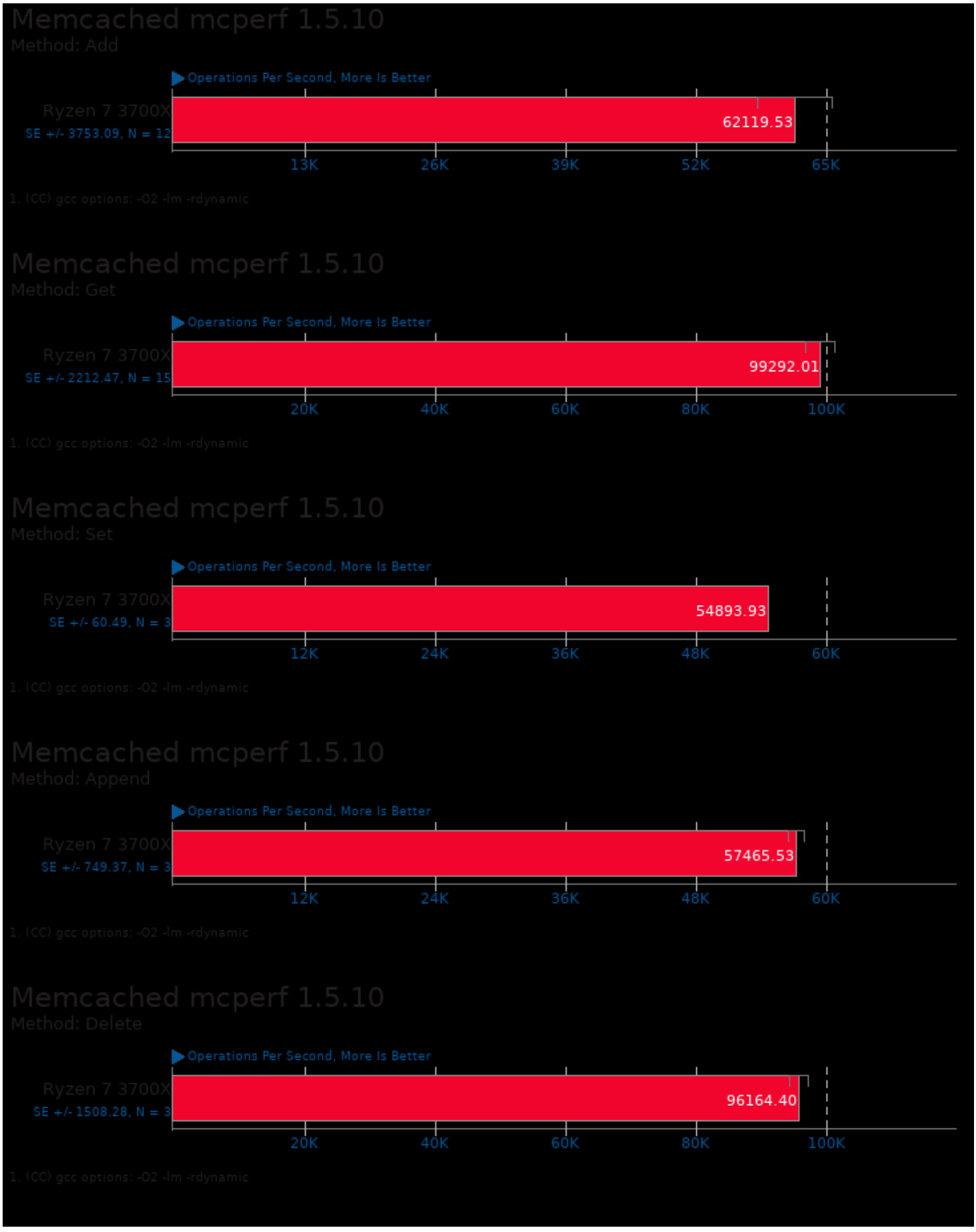
1. (CC) gcc options: -pthread -O3 -funroll-loops -ggdb3 -march=amdfam10 -rdynamic -ldl -laio -lm

AMD Ryzen 7 3700X Linux Benchmarks

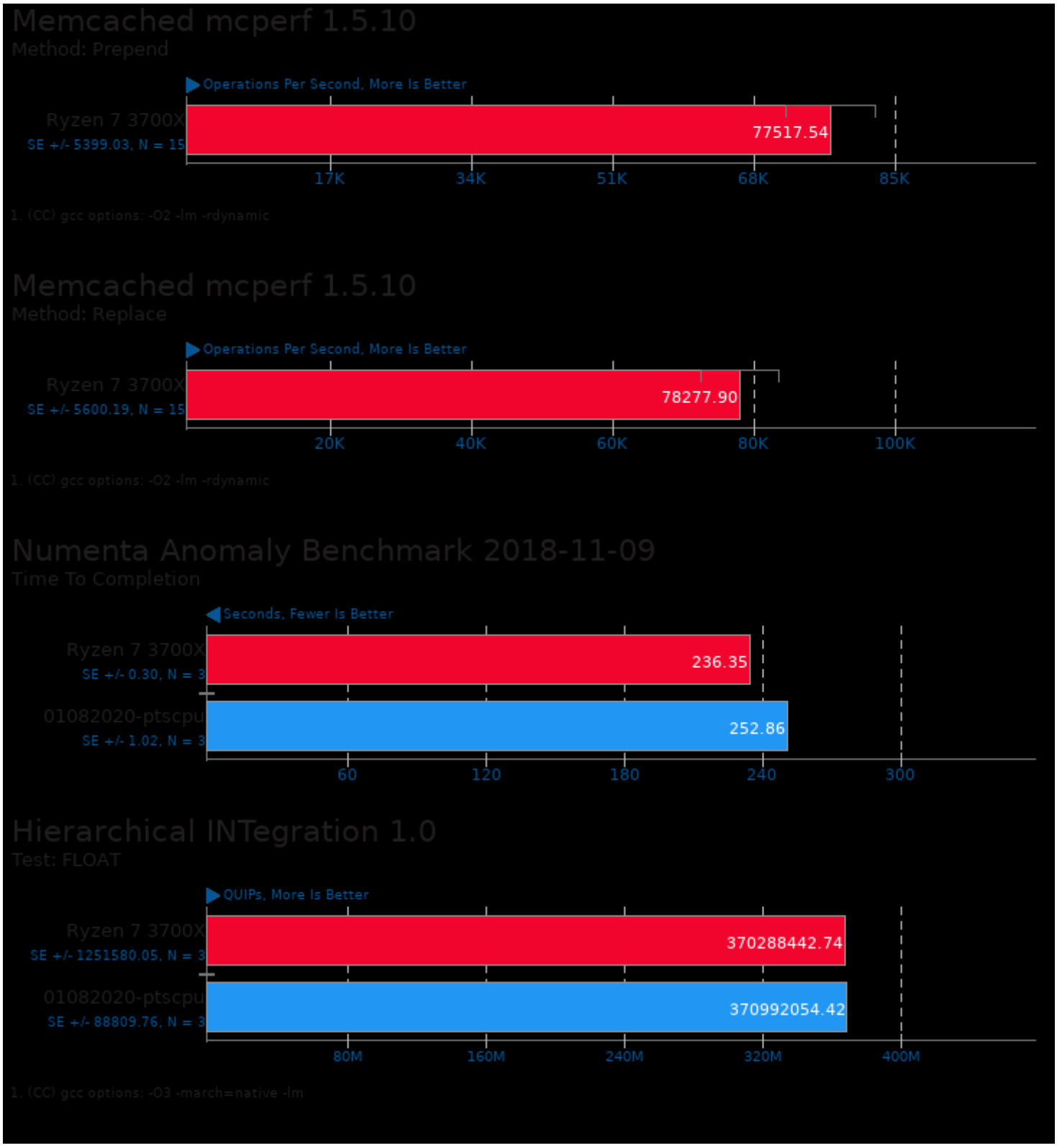


AMD Ryzen 7 3700X Linux Benchmarks




Memcached mcperf 1.5.10
Method: Add
Operations Per Second, More Is Better
Ryzen 7 3700X
SE +/- 3753.09, N = 12
62119.53
13K
26K
39K
52K
65K
1. (CC) gcc options: -O2 -lm -rdynamic
Memcached mcperf 1.5.10
Method: Get
Operations Per Second, More Is Better
Ryzen 7 3700X
SE +/- 2212.47, N = 15
99292.01
20K
40K
60K
80K
100K
1. (CC) gcc options: -O2 -lm -rdynamic
Memcached mcperf 1.5.10
Method: Set
Operations Per Second, More Is Better
Ryzen 7 3700X
SE +/- 60.49, N = 3
54893.93
12K
24K
36K
48K
60K
1. (CC) gcc options: -O2 -lm -rdynamic
Memcached mcperf 1.5.10
Method: Append
Operations Per Second, More Is Better
Ryzen 7 3700X
SE +/- 749.37, N = 3
57465.53
12K
24K
36K
48K
60K
1. (CC) gcc options: -O2 -lm -rdynamic
Memcached mcperf 1.5.10
Method: Delete
Operations Per Second, More Is Better
Ryzen 7 3700X
SE +/- 1508.28, N = 3
96164.40
20K
40K
60K
80K
100K
1. (CC) gcc options: -O2 -lm -rdynamic

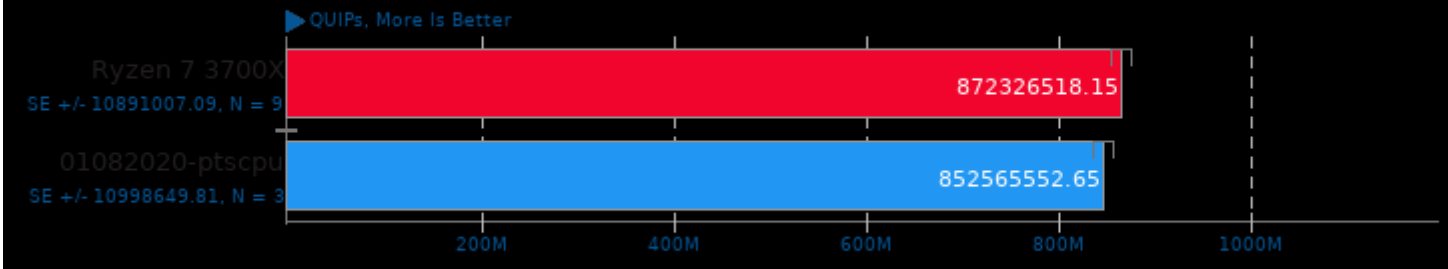
AMD Ryzen 7 3700X Linux Benchmarks



AMD Ryzen 7 3700X Linux Benchmarks

Hierarchical INTegration 1.0

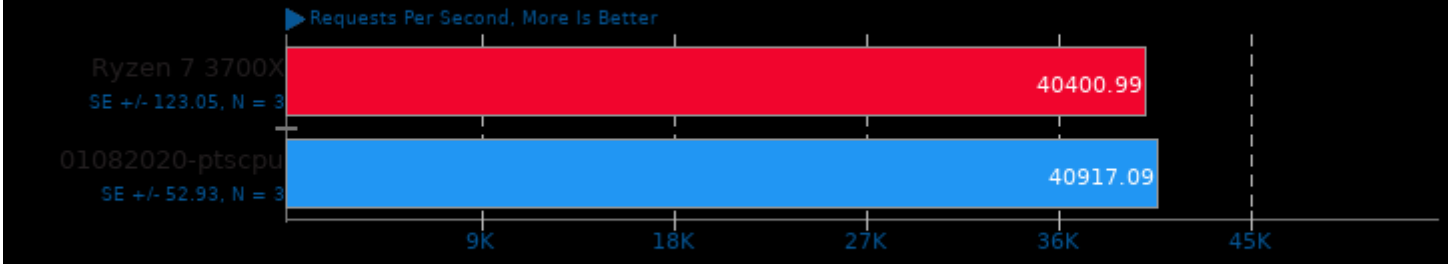
Test: DOUBLE



1. (CC) gcc options: -O3 -march=native -lm

NGINX Benchmark 1.9.9

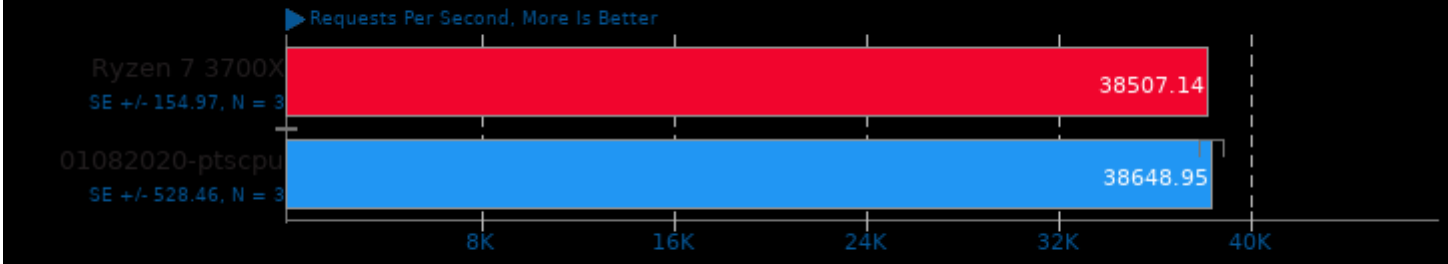
Static Web Page Serving



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

Apache Benchmark 2.4.29

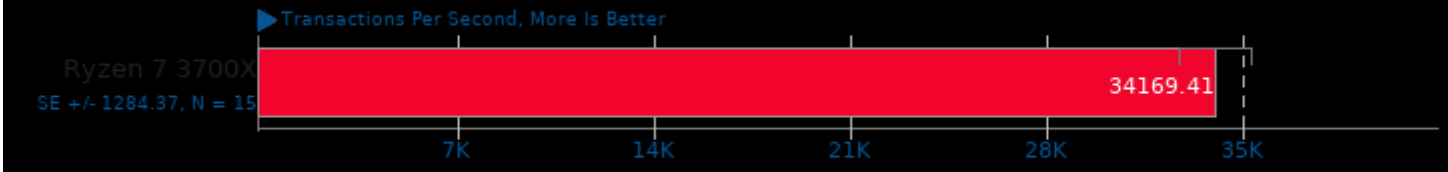
Static Web Page Serving



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

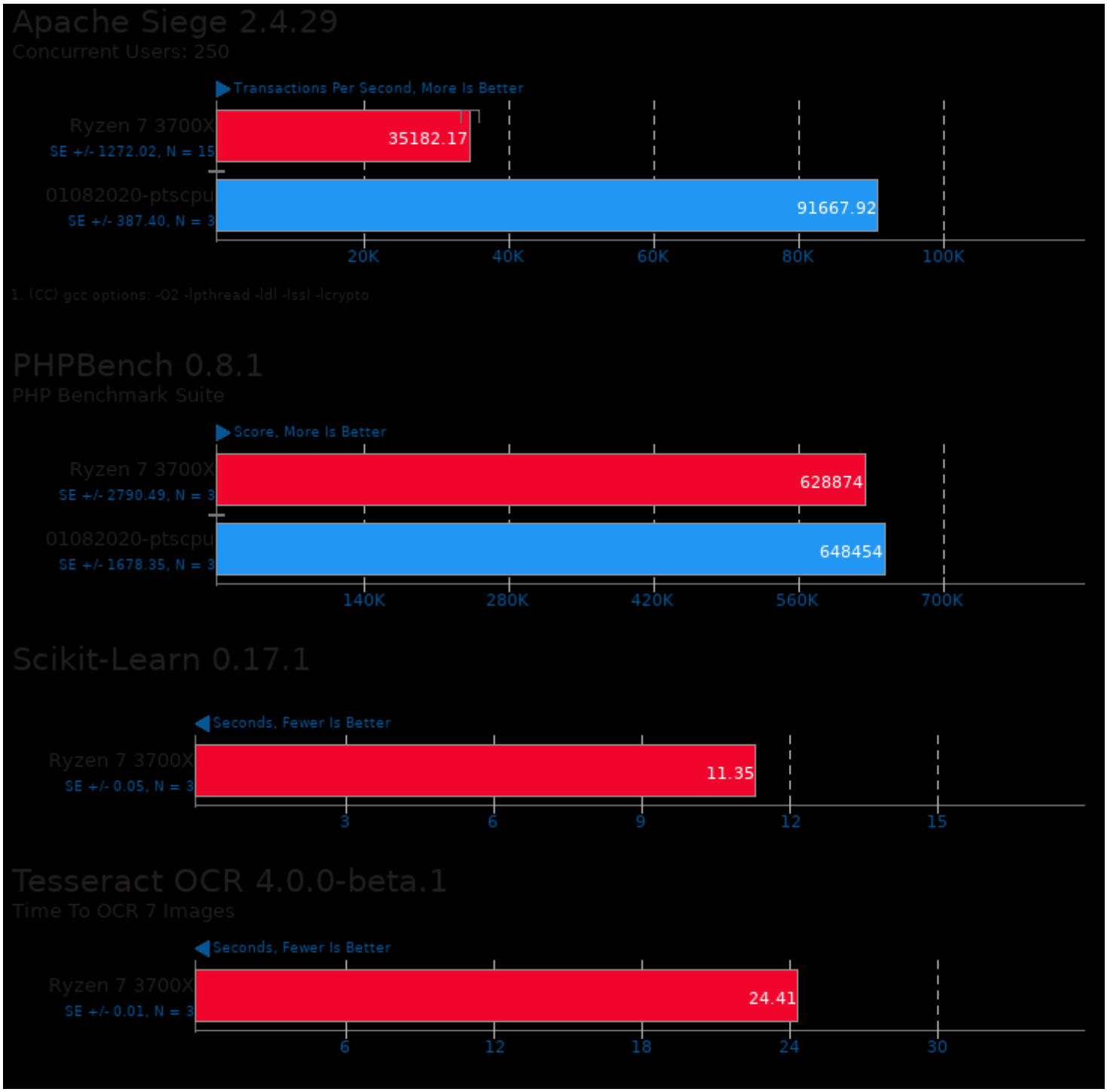
Apache Siege 2.4.29

Concurrent Users: 200

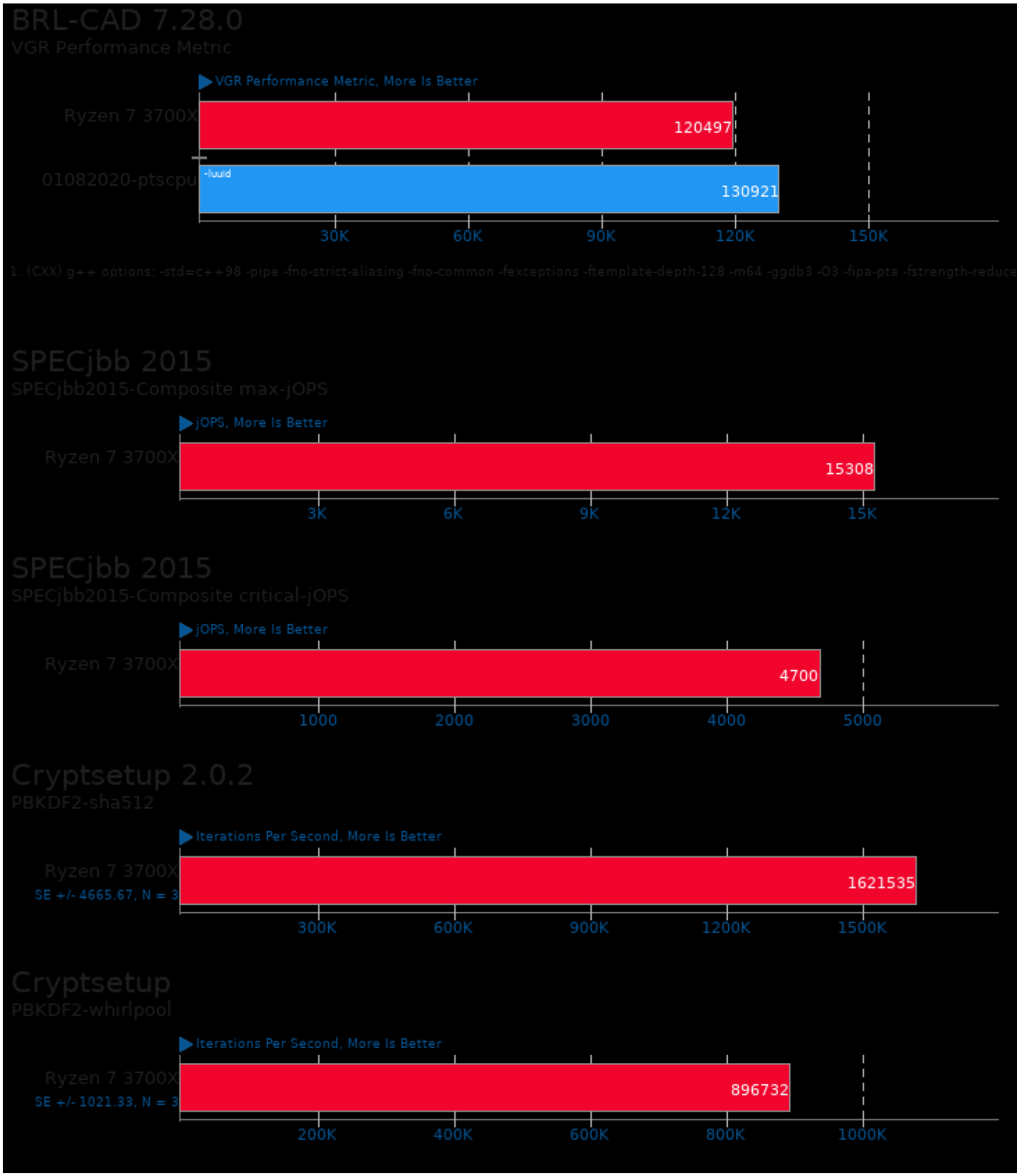


1. (CC) gcc options: -O2 -lpthread -ldl -lssl -lcrypto

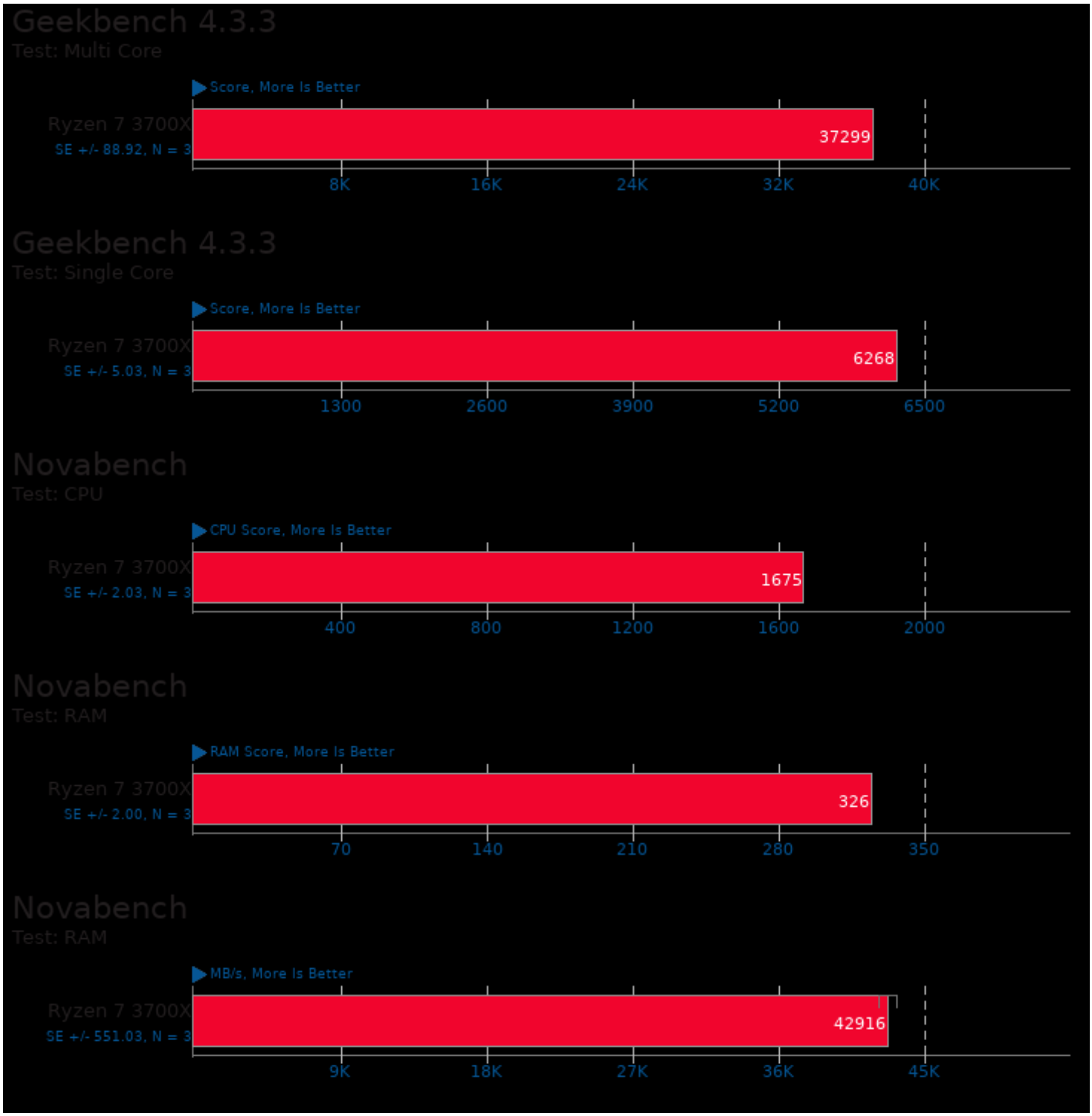
AMD Ryzen 7 3700X Linux Benchmarks

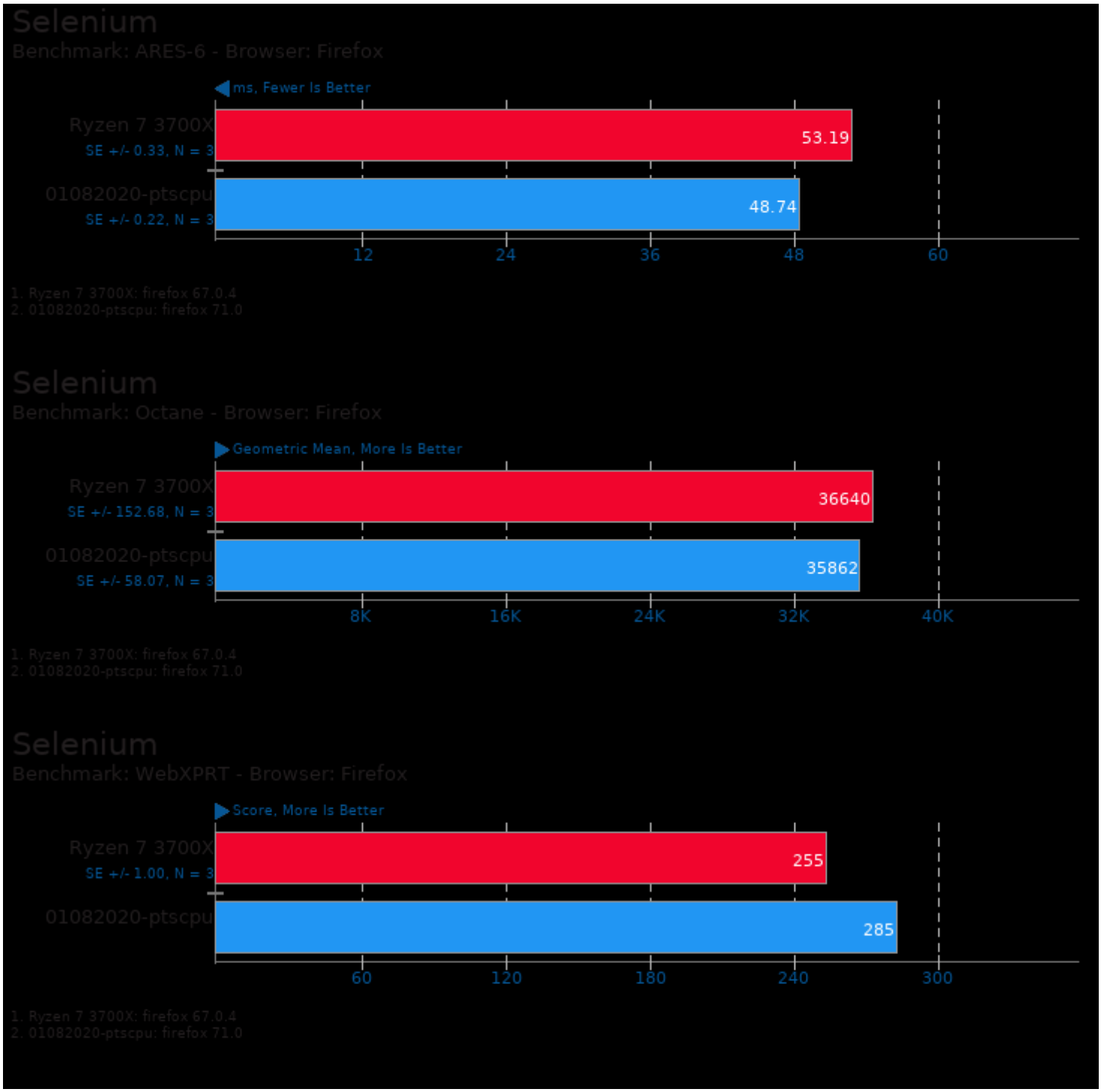


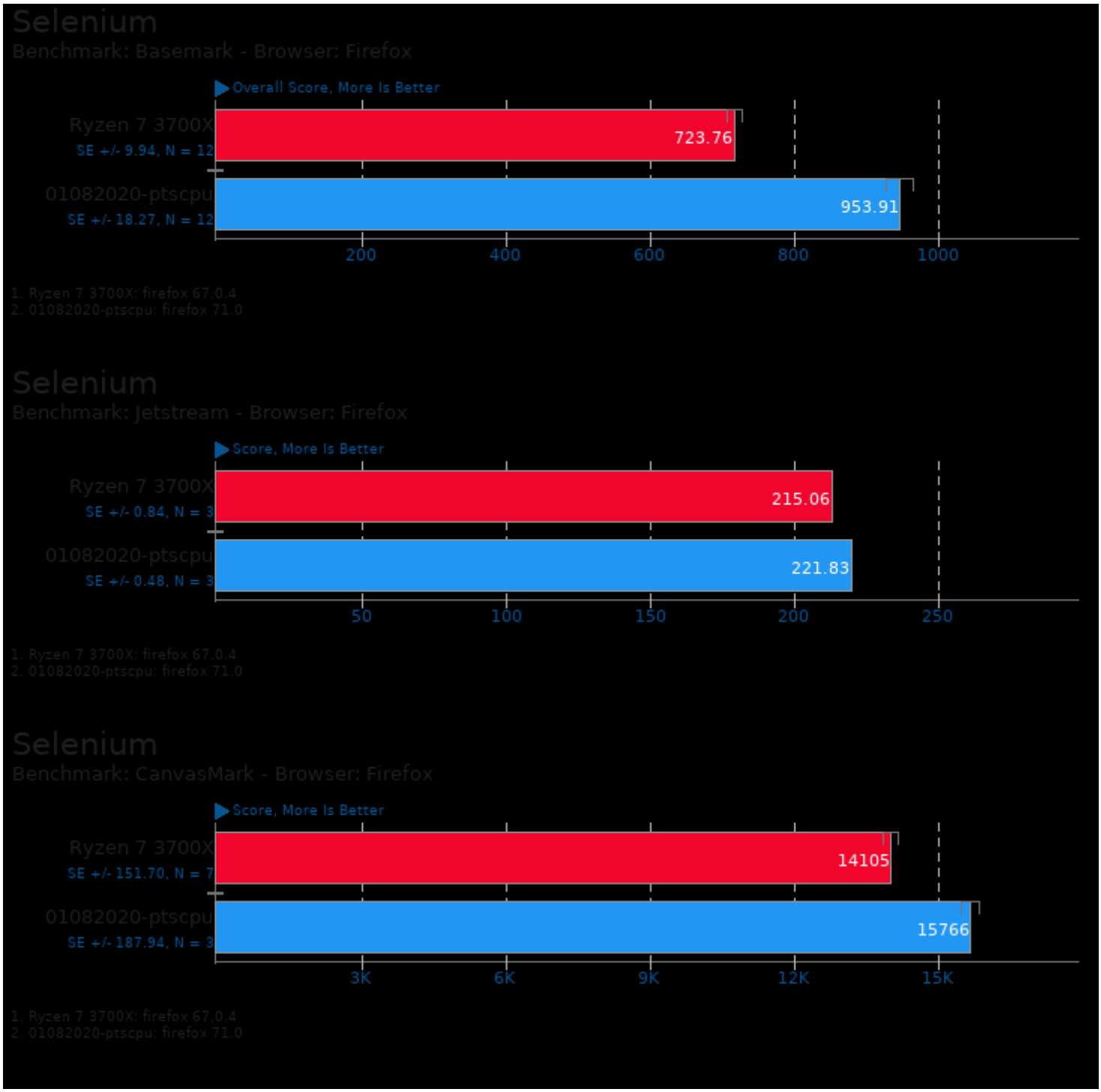
AMD Ryzen 7 3700X Linux Benchmarks



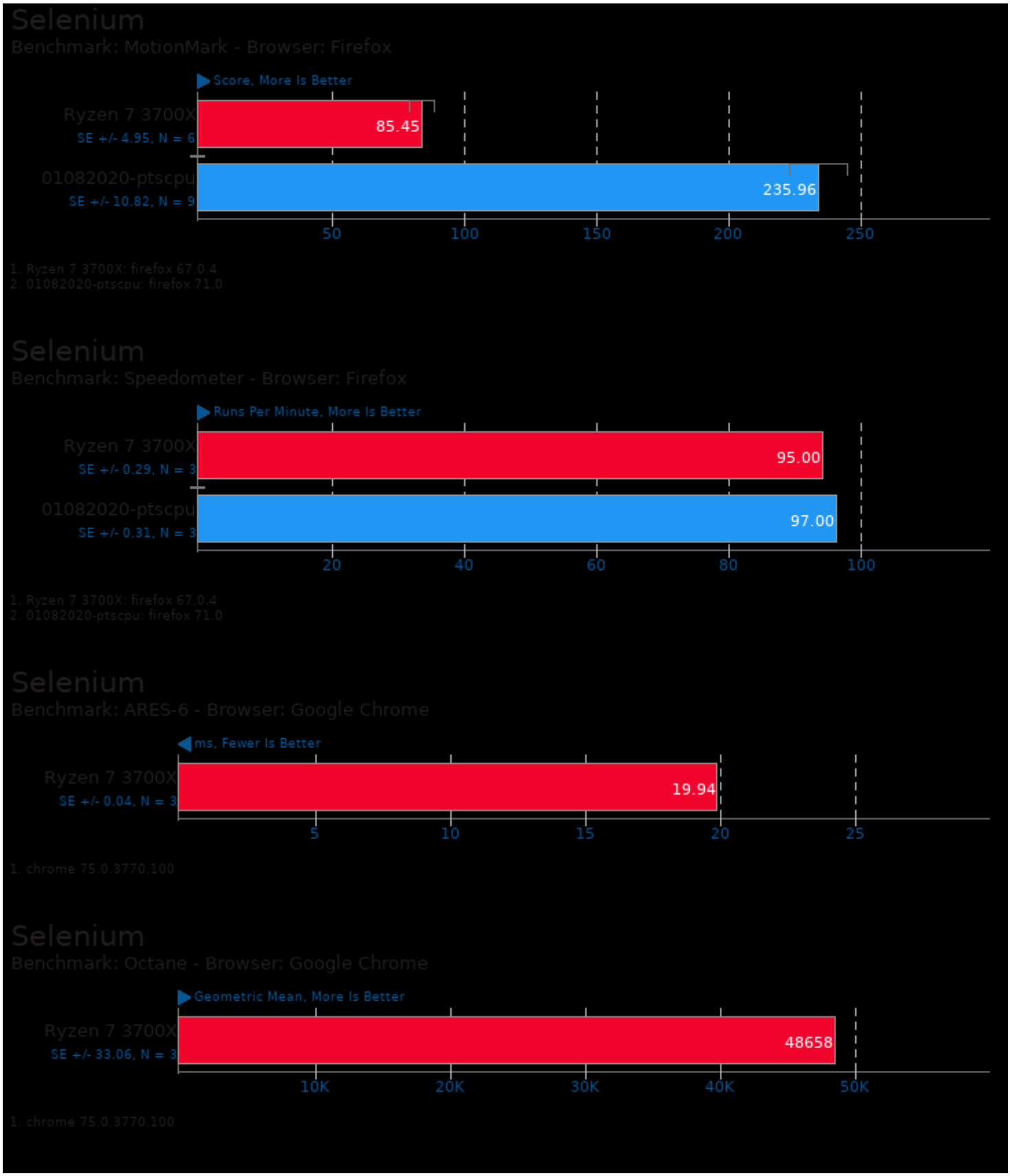
AMD Ryzen 7 3700X Linux Benchmarks




Selenium
Benchmark: ARES-6 - Browser: Firefox
ms, Fewer Is Better
Ryzen 7 3700X
SE +/- 0.33, N = 3
53.19
01082020-ptscpu
SE +/- 0.22, N = 3
48.74
12
24
36
48
60
1. Ryzen 7 3700X: firefox 67.0.4
2. 01082020-ptscpu: firefox 71.0
Selenium
Benchmark: Octane - Browser: Firefox
Geometric Mean, More Is Better
Ryzen 7 3700X
SE +/- 152.68, N = 3
36640
01082020-ptscpu
SE +/- 58.07, N = 3
35862
8K
16K
24K
32K
40K
1. Ryzen 7 3700X: firefox 67.0.4
2. 01082020-ptscpu: firefox 71.0
Selenium
Benchmark: WebXPRT - Browser: Firefox
Score, More Is Better
Ryzen 7 3700X
SE +/- 1.00, N = 3
255
01082020-ptscpu
285
60
120
180
240
300
1. Ryzen 7 3700X: firefox 67.0.4
2. 01082020-ptscpu: firefox 71.0

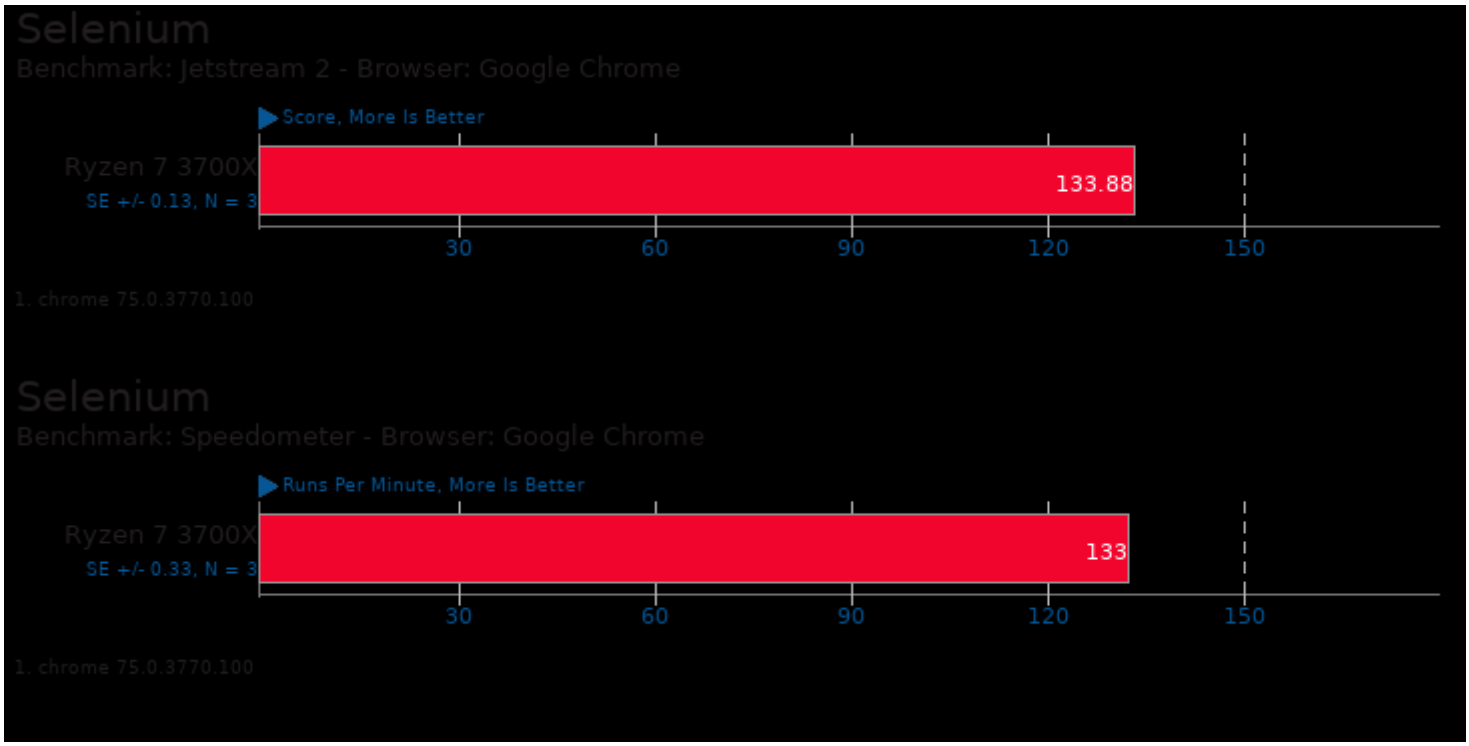

Selenium
Benchmark: Basemark - Browser: Firefox
Overall Score, More Is Better
Ryzen 7 3700X
SE +/- 9.94, N = 12
723.76
01082020-ptscpu
SE +/- 18.27, N = 12
953.91
200
400
600
800
1000
1. Ryzen 7 3700X: firefox 67.0.4
2. 01082020-ptscpu: firefox 71.0
Selenium
Benchmark: Jetstream - Browser: Firefox
Score, More Is Better
Ryzen 7 3700X
SE +/- 0.84, N = 3
215.06
01082020-ptscpu
SE +/- 0.48, N = 3
221.83
50
100
150
200
250
1. Ryzen 7 3700X: firefox 67.0.4
2. 01082020-ptscpu: firefox 71.0
Selenium
Benchmark: CanvasMark - Browser: Firefox
Score, More Is Better
Ryzen 7 3700X
SE +/- 151.70, N = 7
14105
01082020-ptscpu
SE +/- 187.94, N = 3
15766
3K
6K
9K
12K
15K
1. Ryzen 7 3700X: firefox 67.0.4
2. 01082020-ptscpu: firefox 71.0

AMD Ryzen 7 3700X Linux Benchmarks

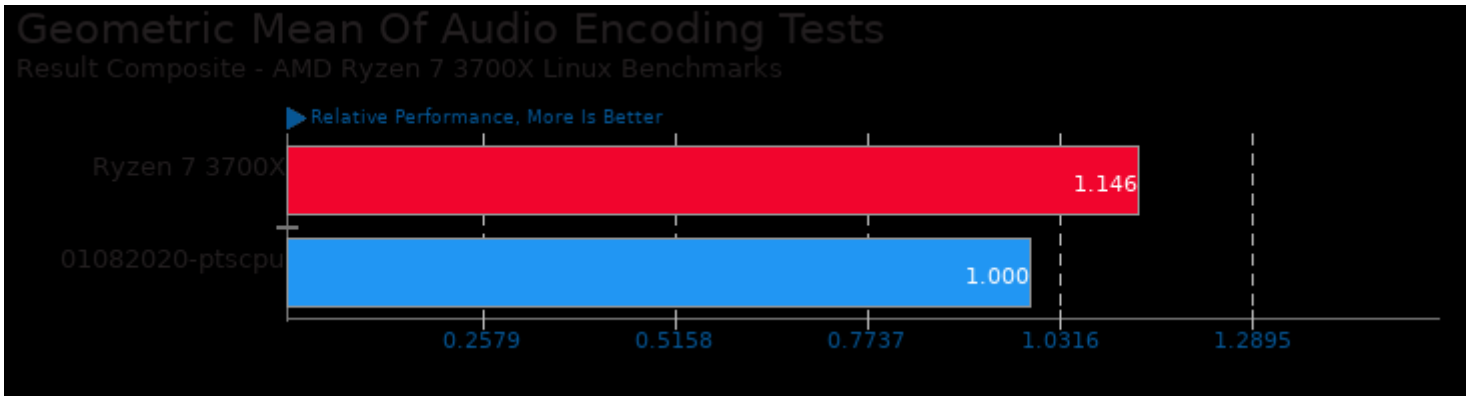


AMD Ryzen 7 3700X Linux Benchmarks

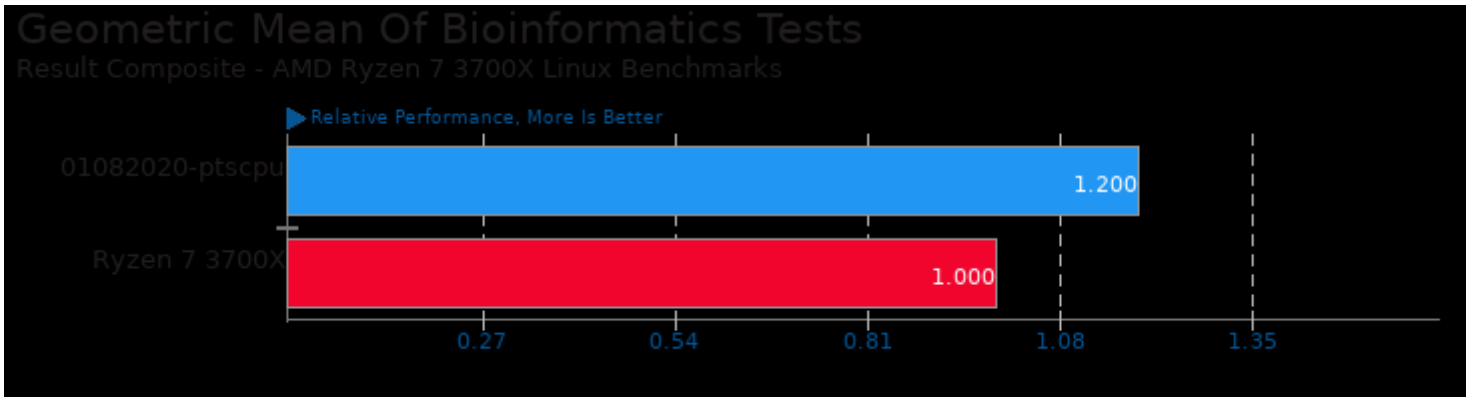
AMD Ryzen 7 3700X Linux Benchmarks



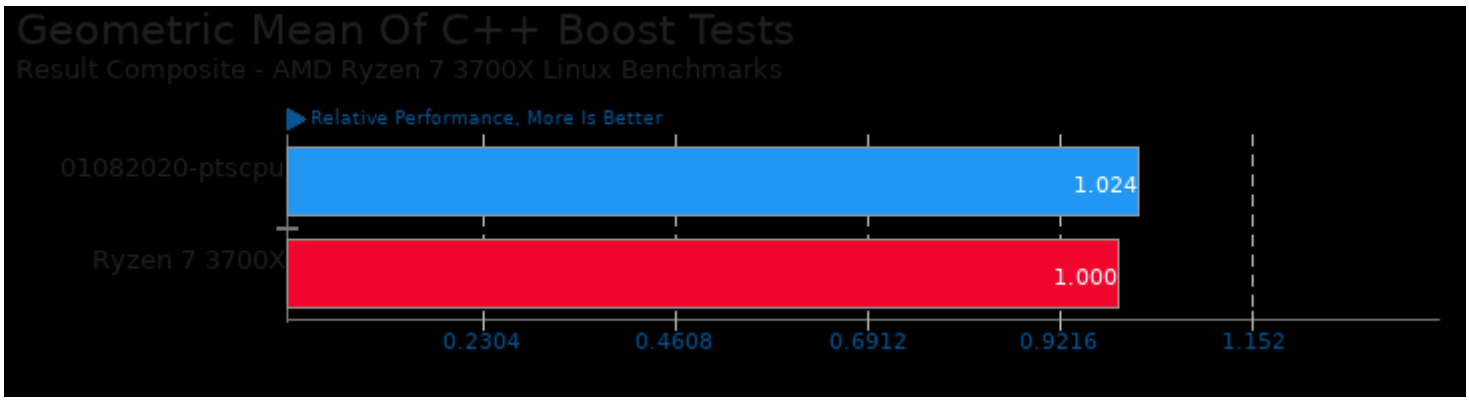
These geometric means are based upon test groupings / test suites for this result file.



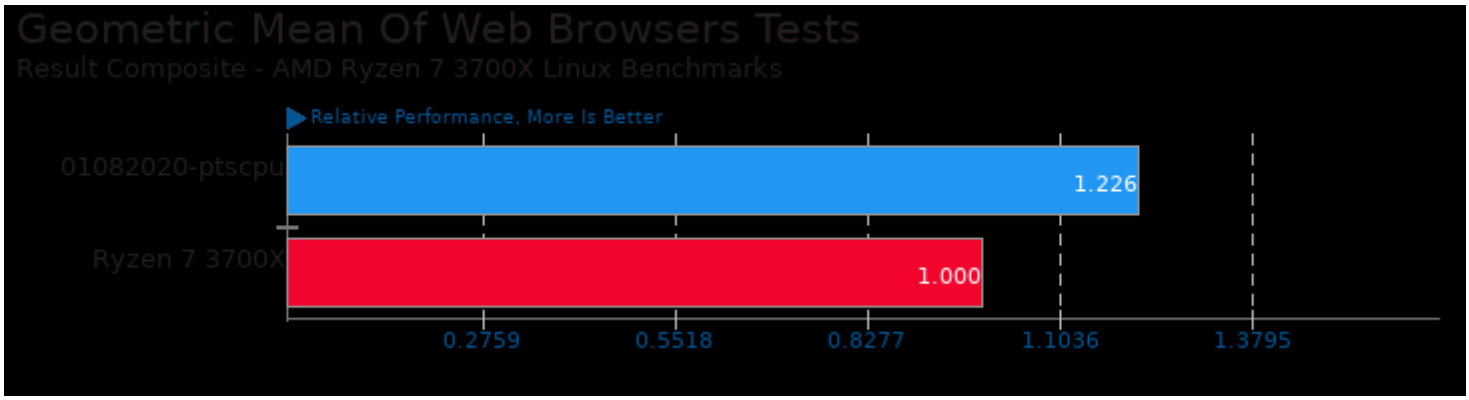
Geometric mean based upon tests: pts/encode-mp3 and pts/encode-flac



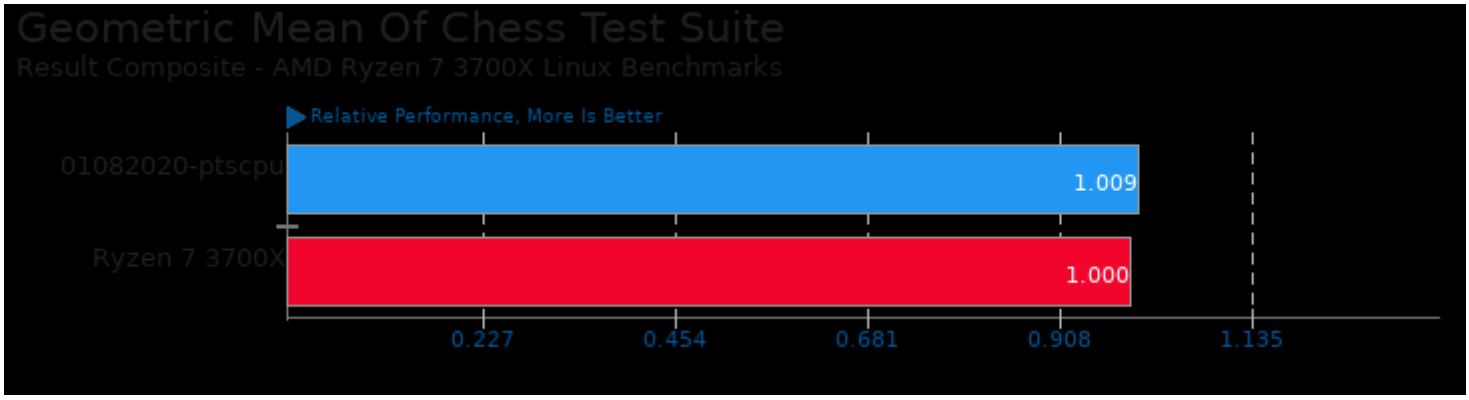
Geometric mean based upon tests: pts/himeno, pts/mrbayes, pts/hmmer and pts/mafft



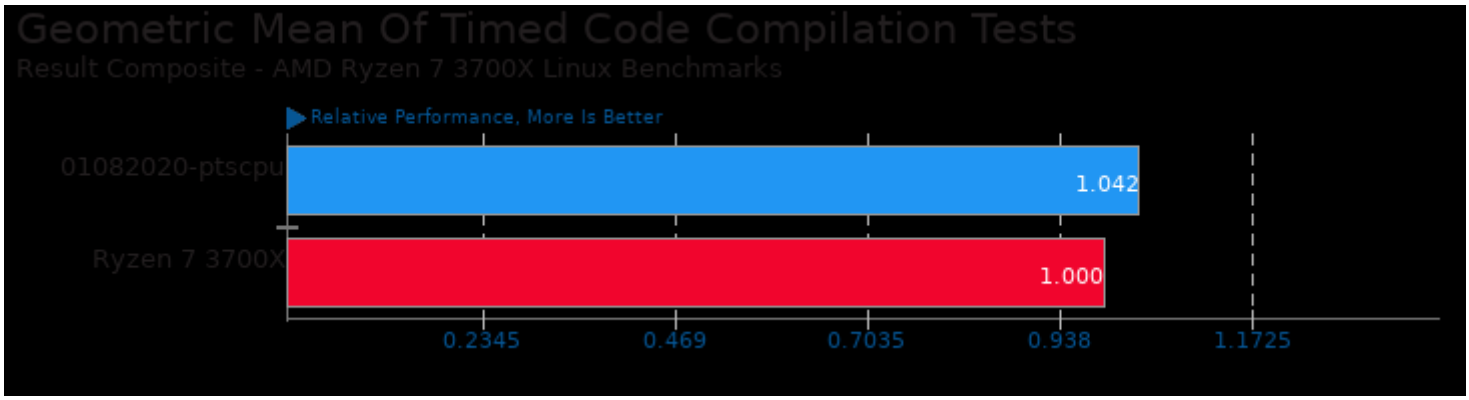
Geometric mean based upon tests: pts/povray and pts/minion



Geometric mean based upon tests: system/selenium



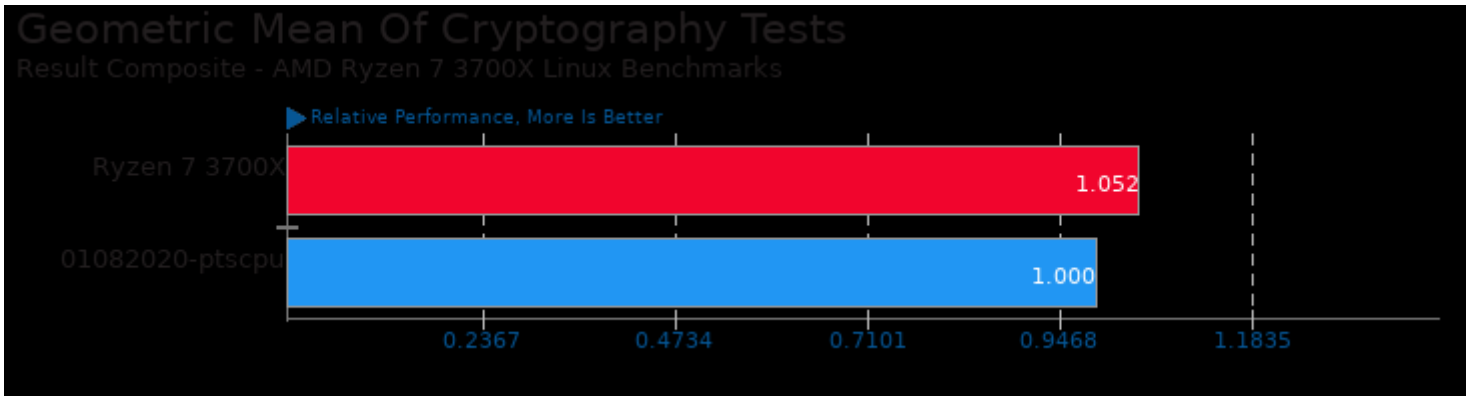
Geometric mean based upon tests: pts/crafty, pts/stockfish, pts/asmfish and pts/m-queens



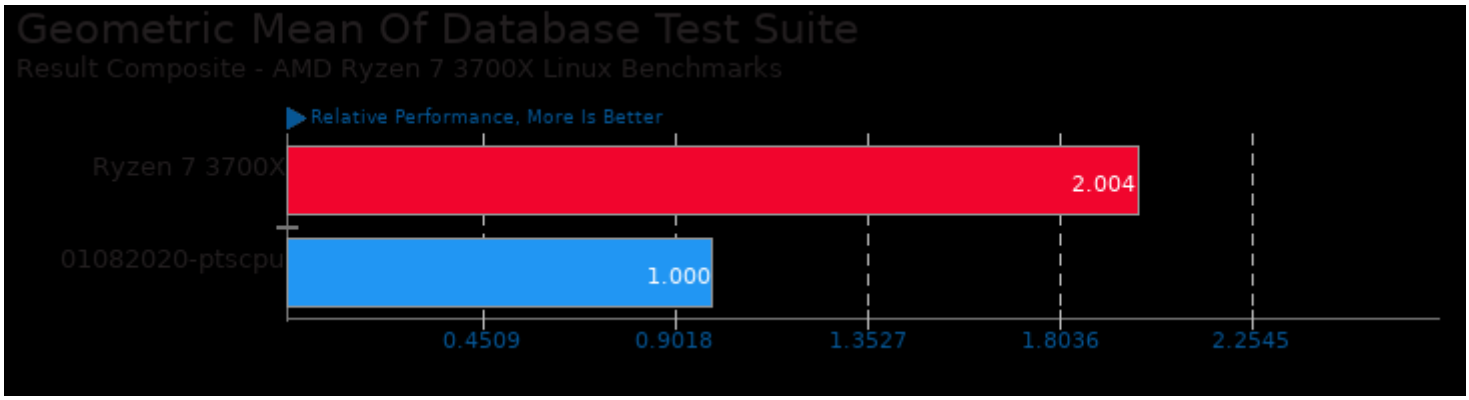
Geometric mean based upon tests: pts/build-php, pts/build-linux-kernel, pts/build-gcc and pts/build-llvm

Geometric mean based upon tests: pts/compress-7zip, pts/compress-pbzip2, pts/compress-zstd, pts/compress-xz and

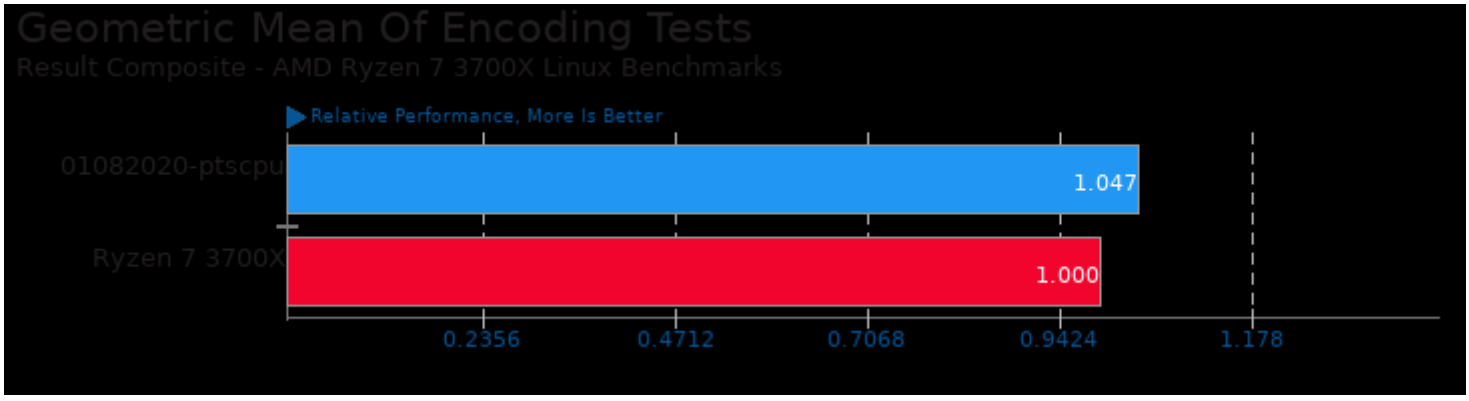
pts/lzbench



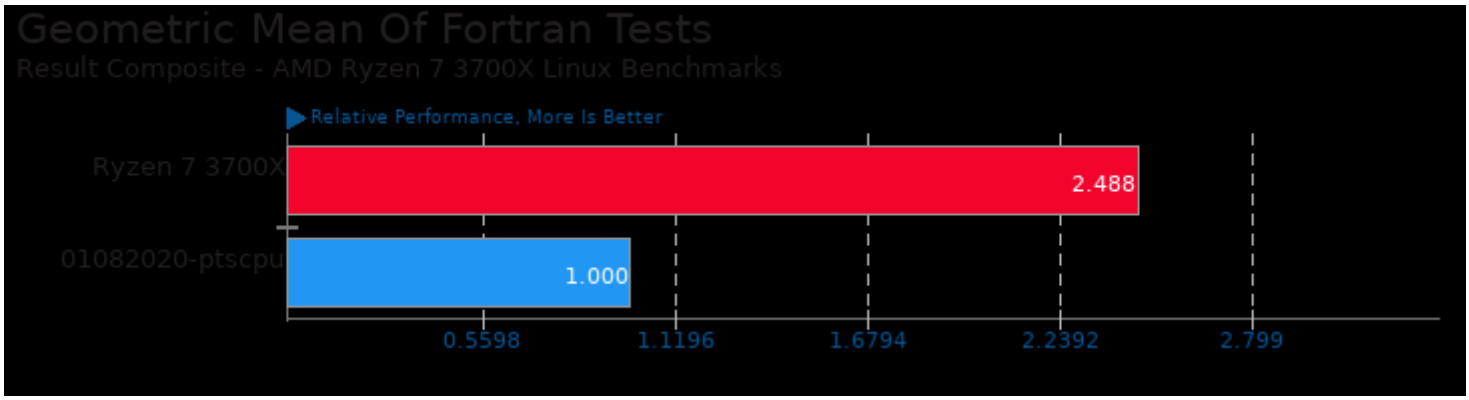
Geometric mean based upon tests: pts/openssl, pts/blake2, pts/john-the-ripper, pts/botan, system/cryptsetup and pts/cpuminer-opt



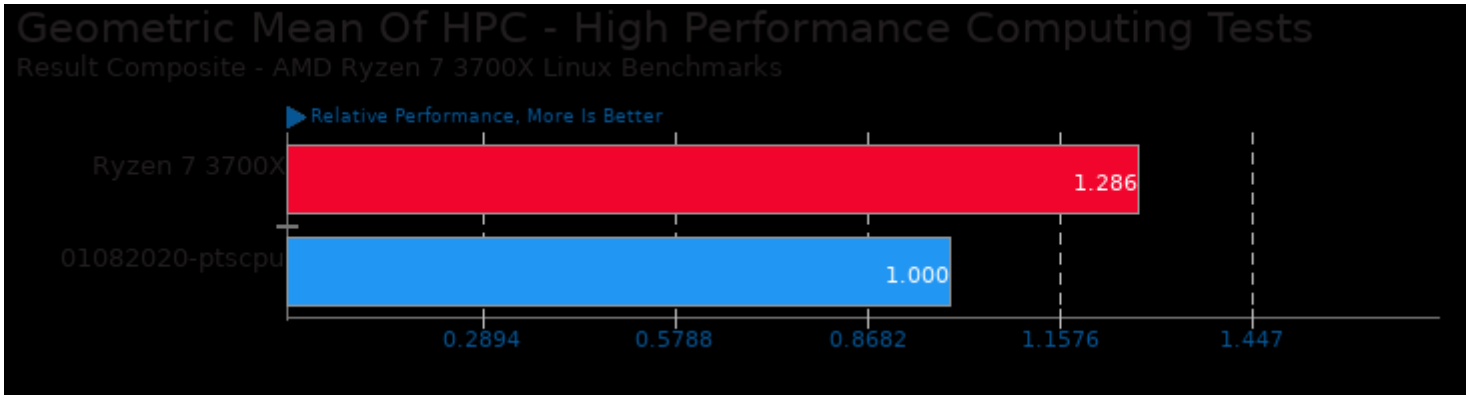
Geometric mean based upon tests: pts/redis, pts/pgbench and pts/mysqlslap



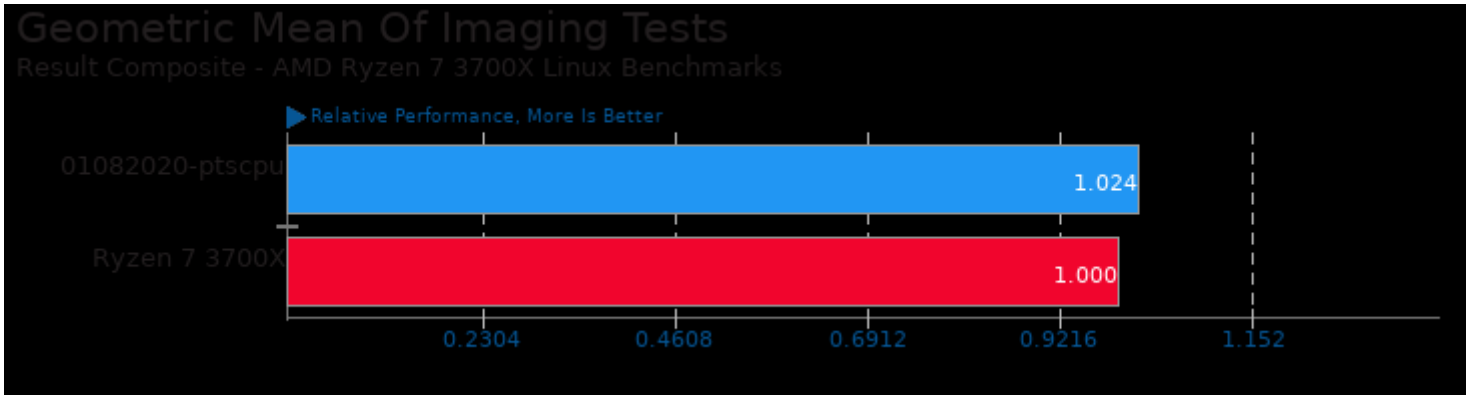
Geometric mean based upon tests: pts/encode-mp3, pts/encode-flac, pts/svt-vp9, pts/svt-hevc, pts/x264, pts/x265, pts/vpxenc and pts/svt-av1



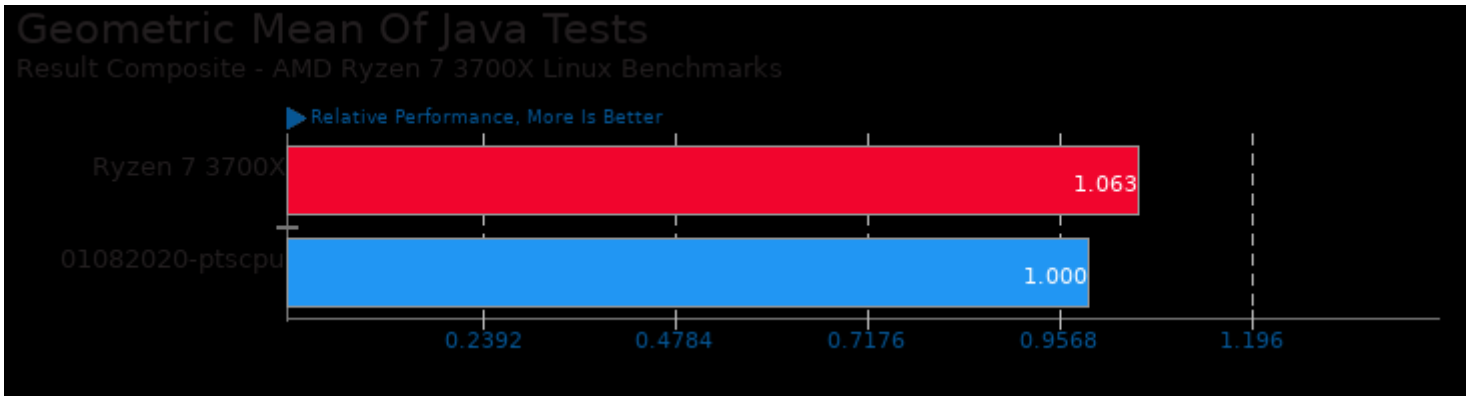
Geometric mean based upon tests: pts/npb, pts/hpcc, pts/cloverleaf, pts/hpcg and pts/nero2d



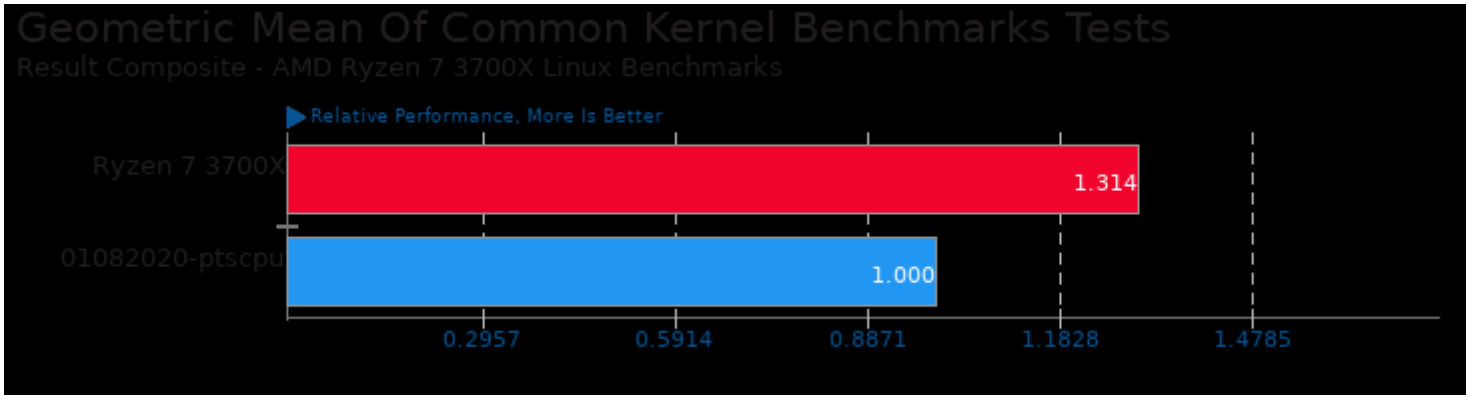
Geometric mean based upon tests: pts/npb, pts/rodinia, pts/parboil, pts/hpcc, pts/hpcg, pts/fftw, system/octave-benchmark, pts/namd, pts/cloverleaf, pts/himeno, pts/mrbayes, pts/hmmer, pts/mafft, pts/rbenchmark, pts/numpy, pts/scikit-learn, pts/numenta-nab and pts/tensorflow



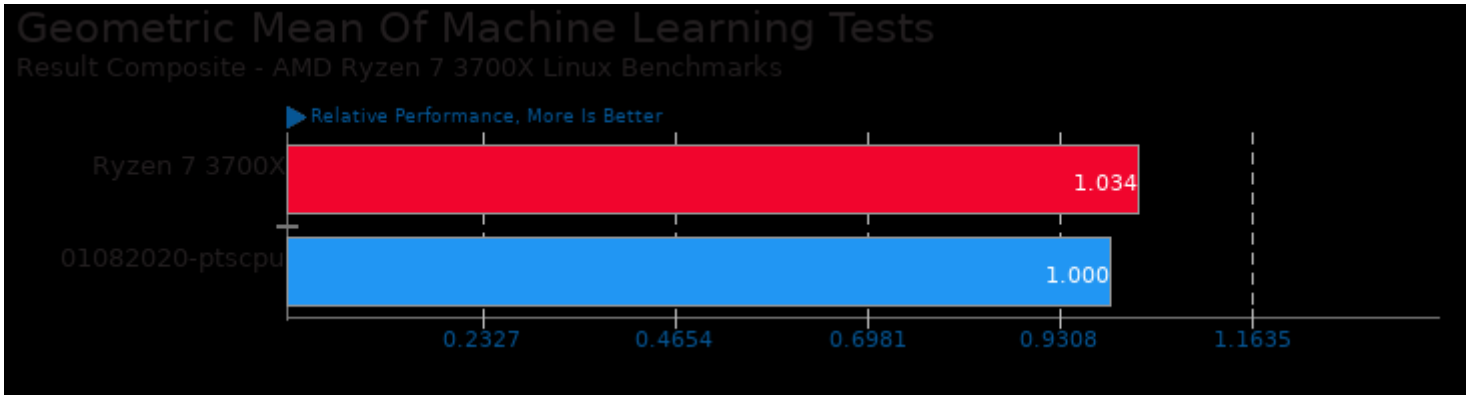
Geometric mean based upon tests: pts/graphics-magick, pts/tjbench and system/darktable



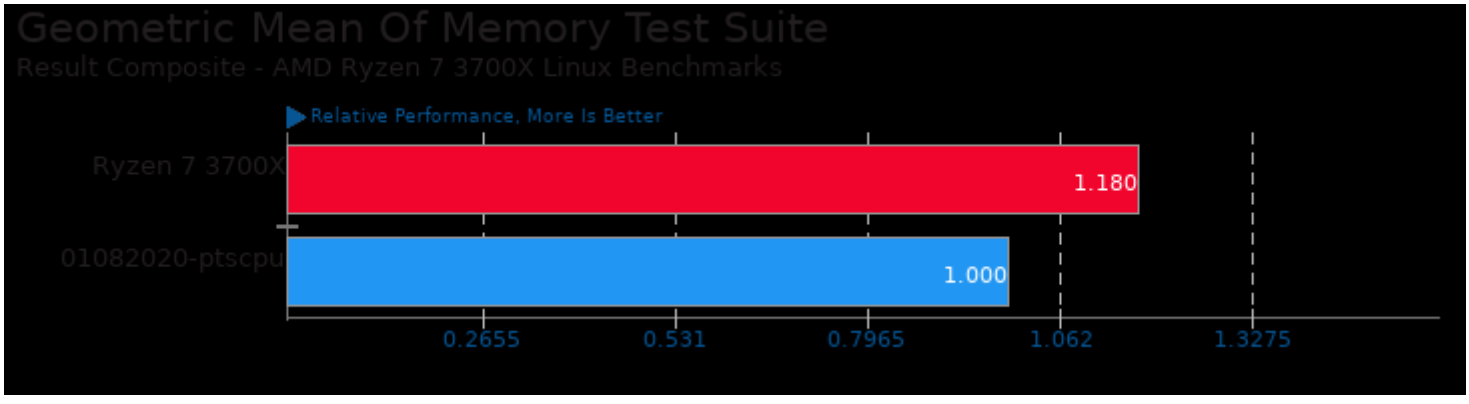
Geometric mean based upon tests: pts/java-scimark2, pts/dacapobench and pts/renaissance



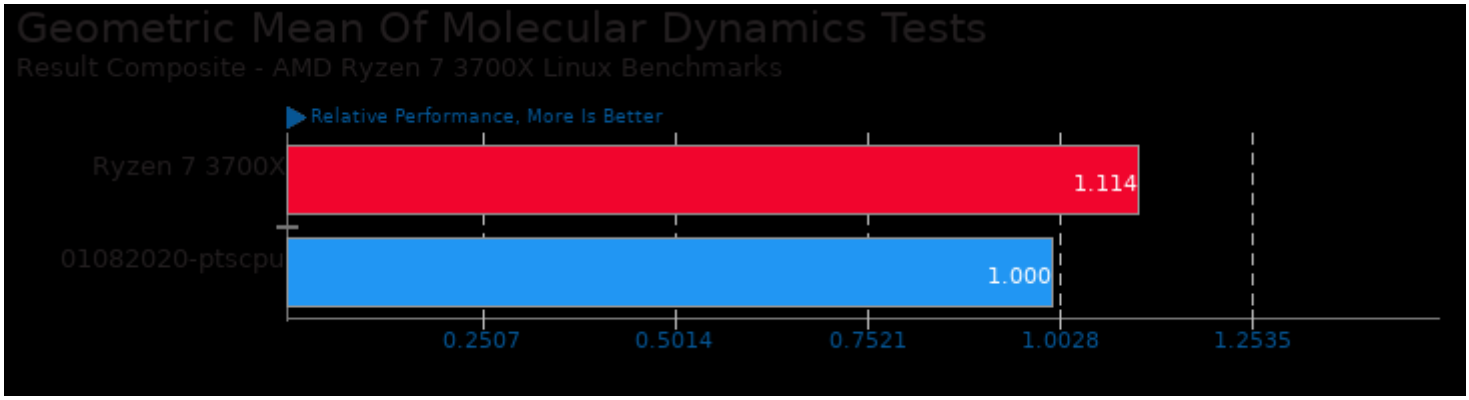
Geometric mean based upon tests: pts/apache, pts/pgbench, pts/tinymembench, pts/mbw, pts/t-test1, pts/openssl, pts/ctx-clock, pts/hackbench and pts/stress-ng



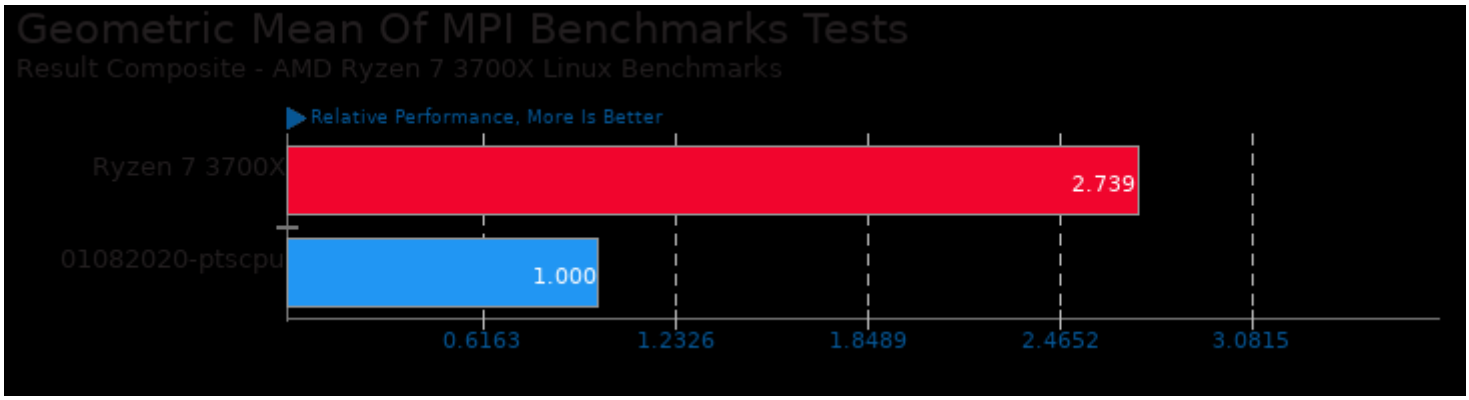
Geometric mean based upon tests: pts/rbenchmark, pts/numpy, pts/scikit-learn, pts/numenta-nab and pts/tensorflow



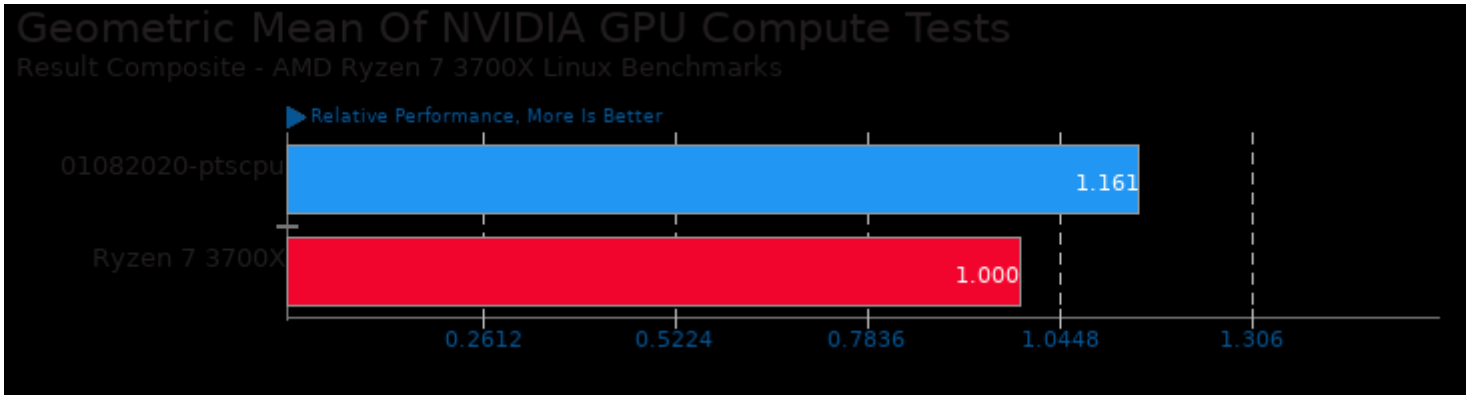
Geometric mean based upon tests: pts/ramspeed, pts/stream, pts/t-test1, pts/cachebench, pts/tinymembench and pts/mbw



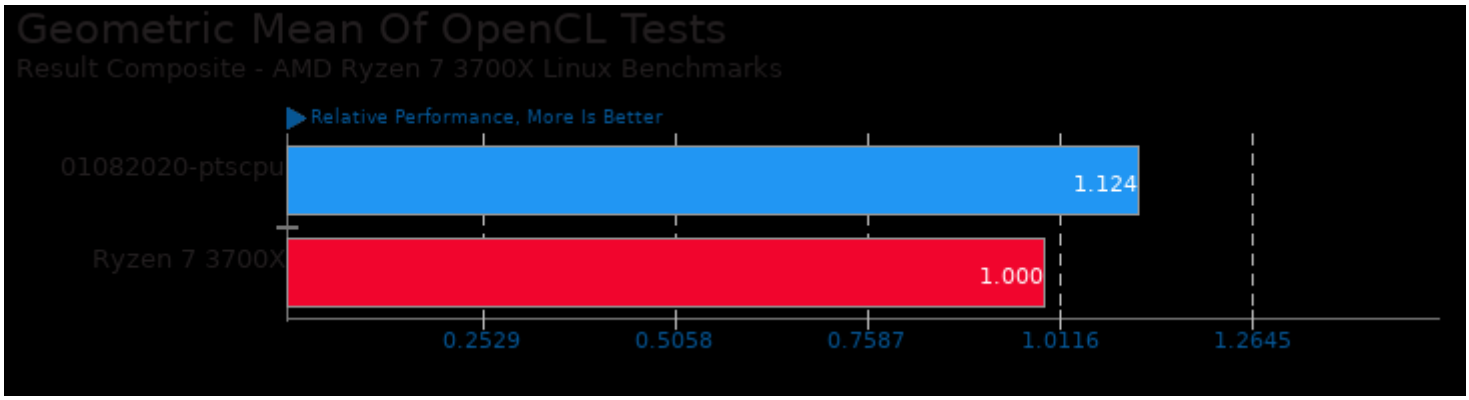
Geometric mean based upon tests: pts/namd and pts/cloverleaf



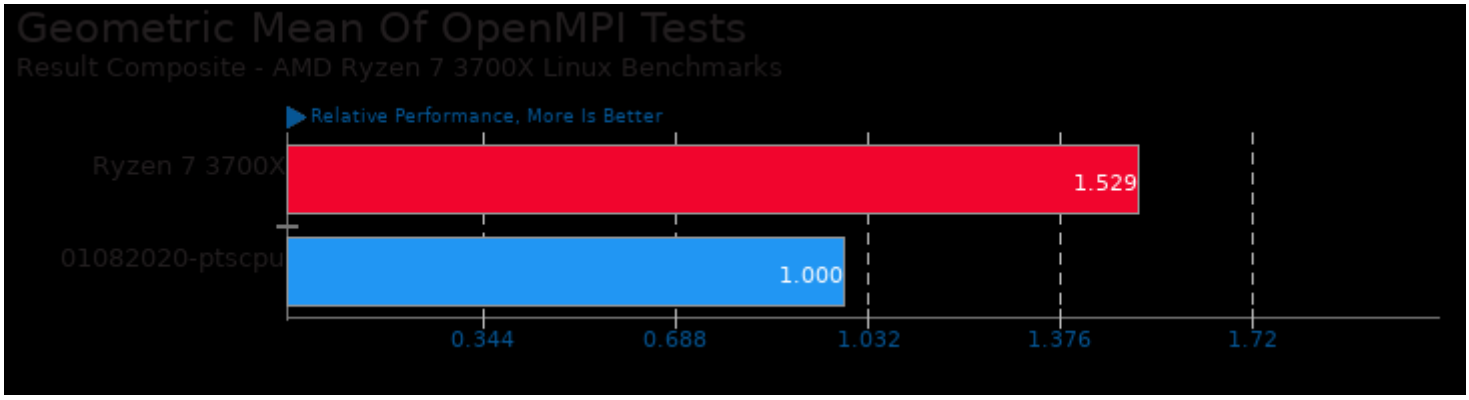
Geometric mean based upon tests: pts/hpcc, pts/nero2d, pts/hpcg, pts/mrbayes and pts/npb



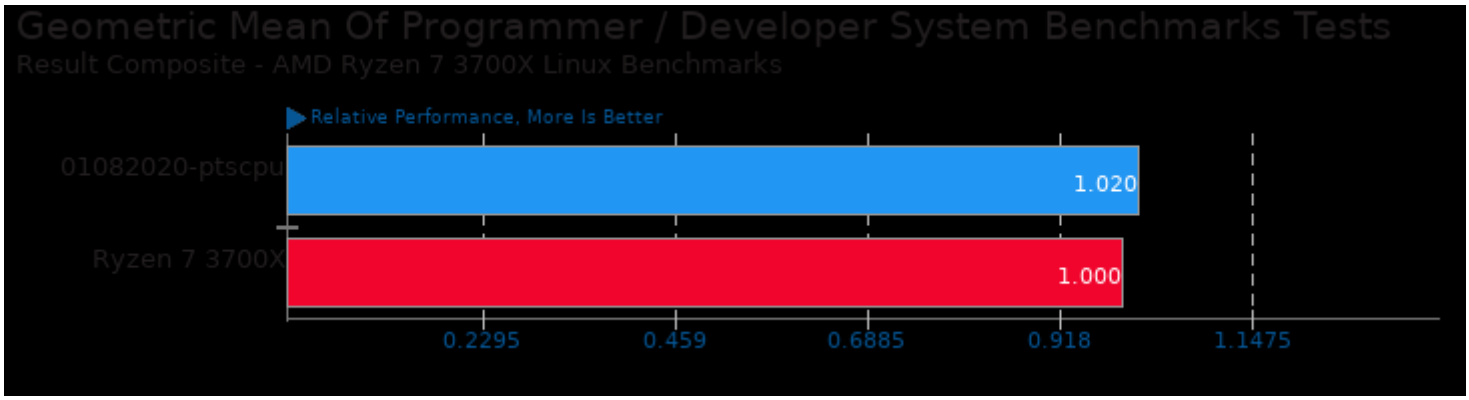
Geometric mean based upon tests: pts/rodinia, pts/v-ray and pts/blender



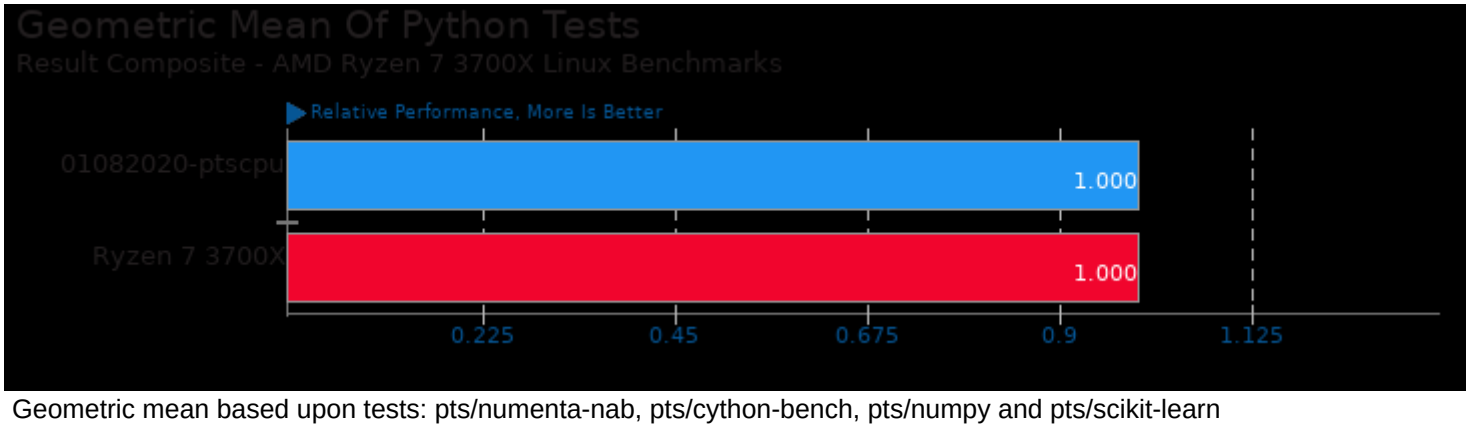
Geometric mean based upon tests: pts/rodinia, pts/parboil and system/darktable



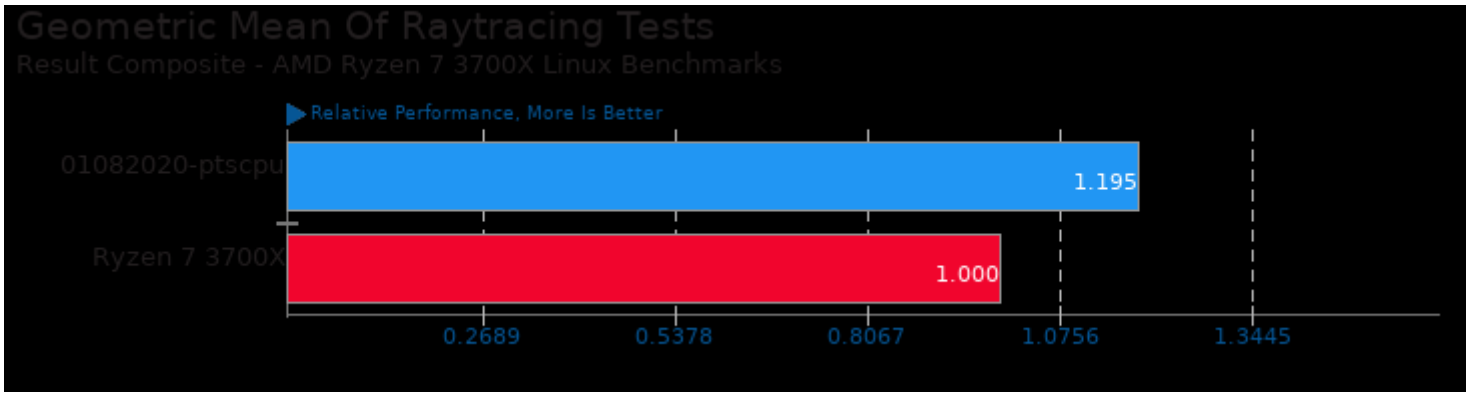
Geometric mean based upon tests: pts/npb, pts/hpcc, pts/parboil, pts/cloverleaf, pts/rodinia, pts/clomp and pts/nero2d



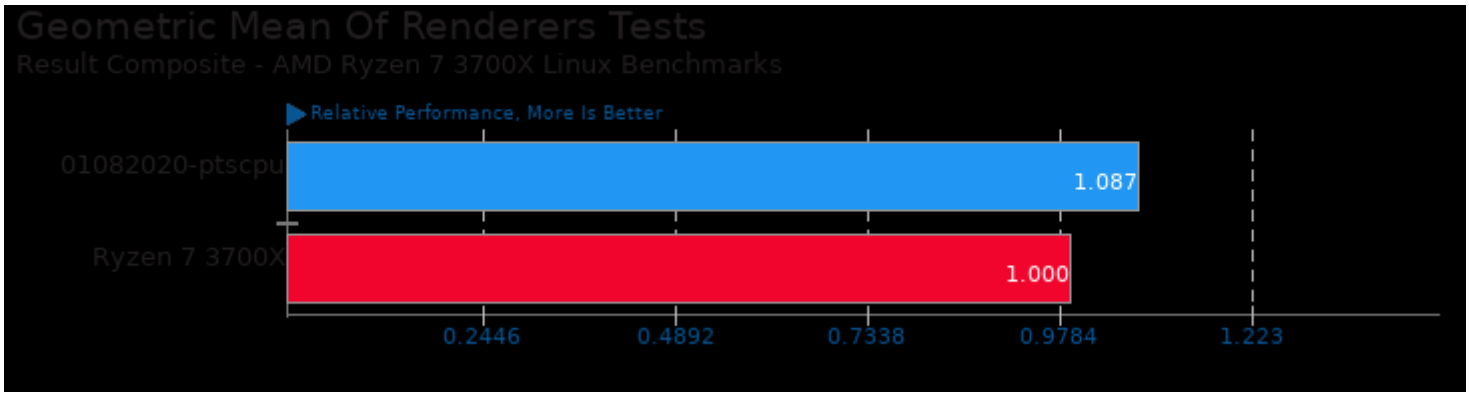
Geometric mean based upon tests: pts/compress-zstd, system/cryptsetup, pts/build-php, pts/build-linux-kernel, pts/build-gcc, pts/build-llvm and pts/hpcc



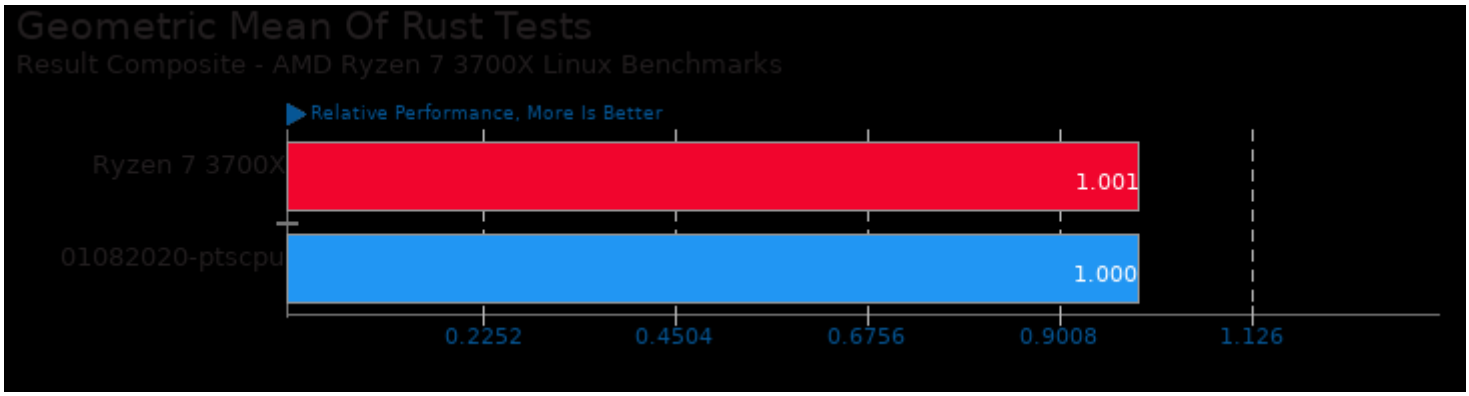
Geometric mean based upon tests: pts/numenta-nab, pts/cython-bench, pts/numpy and pts/scikit-learn



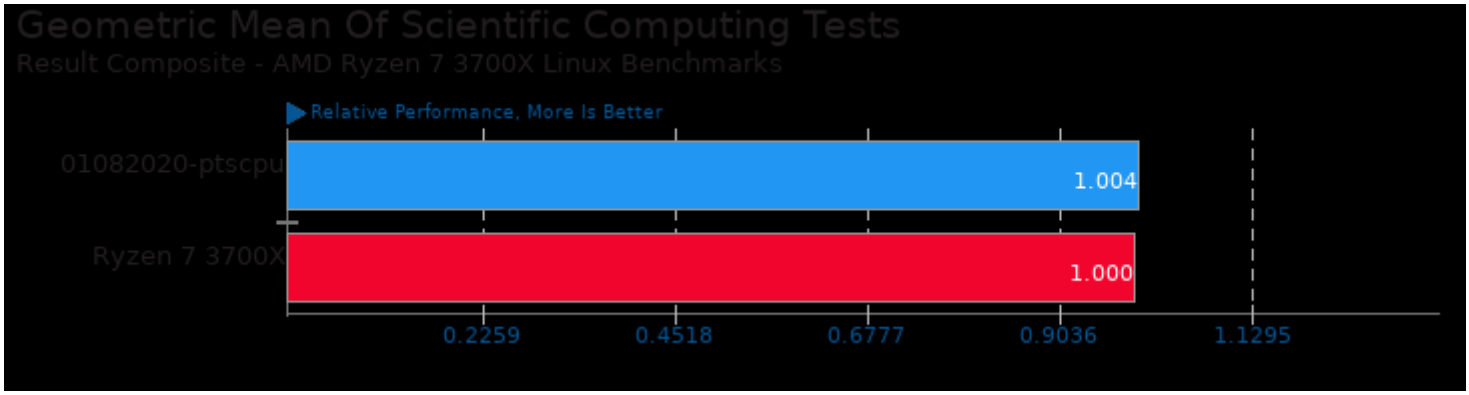
Geometric mean based upon tests: pts/c-ray, pts/tachyon and pts/povray



Geometric mean based upon tests: pts/c-ray, pts/tachyon, pts/povray, pts/blender, pts/radiance, pts/ttsiod-renderer and pts/v-ray

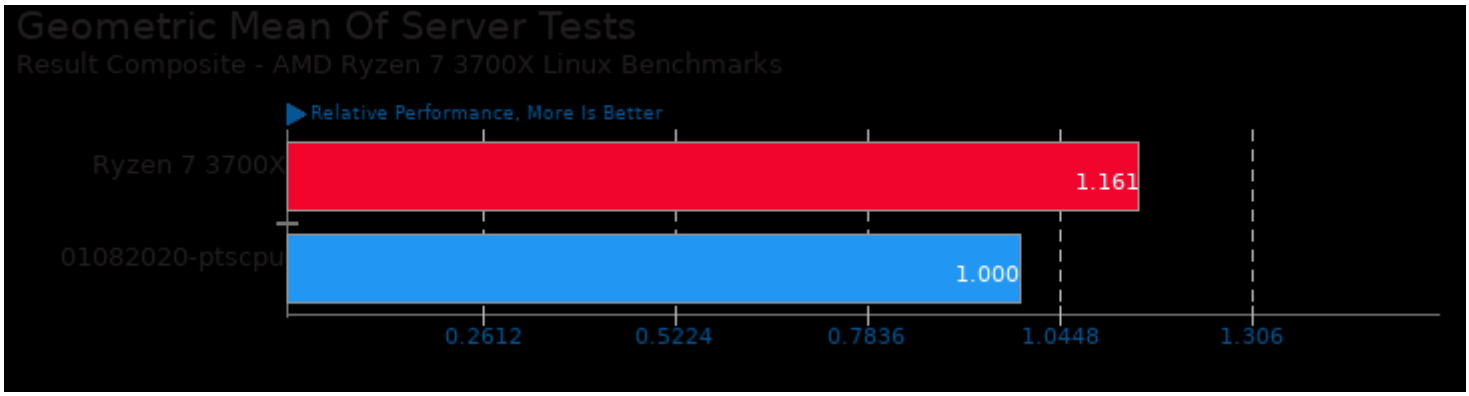


Geometric mean based upon tests: pts/rust-mandel and pts/rust-prime

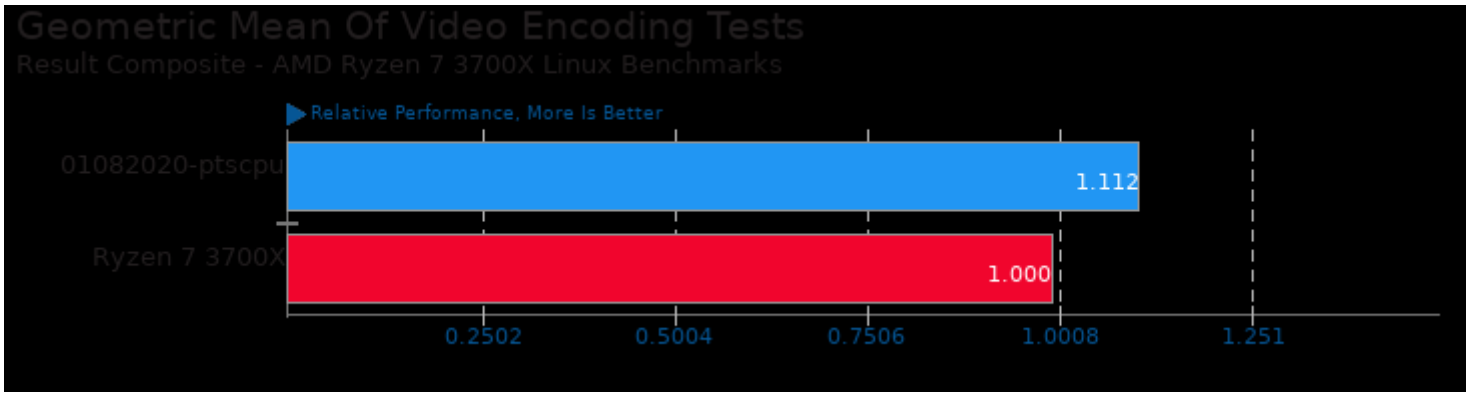


Geometric mean based upon tests: pts/fftw, system/octave-benchmark, pts/hpcc, pts/namd, pts/cloverleaf, pts/himeno,

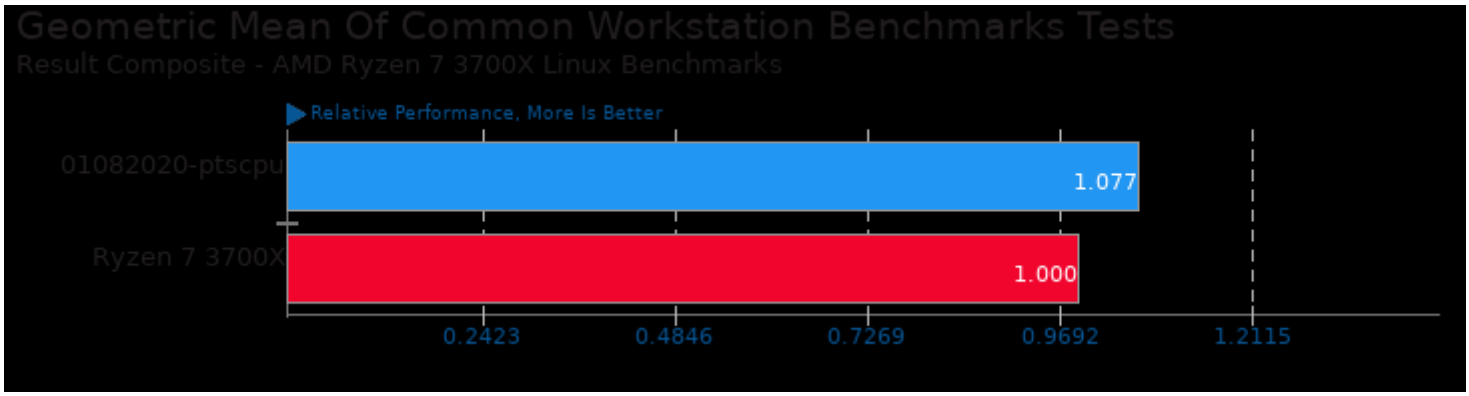
pts/mrbayes, pts/hmmer and pts/mafft



Geometric mean based upon tests: pts/apache, pts/nginx, pts/blogbench, pts/ebizzy, pts/apache-siege, pts/mysqlslap, pts/pgbench, pts/mcperf, pts/redis, pts/phpbench and pts/openssl



Geometric mean based upon tests: pts/svt-vp9, pts/svt-hevc, pts/x264, pts/x265, pts/vpxenc and pts/svt-av1



Geometric mean based upon tests: pts/blender, pts/rodinia, pts/parboil, pts/himeno, pts/brl-cad, pts/x265, pts/swet and pts/sysbench

This file was automatically generated via the Phoronix Test Suite benchmarking software on Thursday, 28 March 2024 09:15.