www.phoronix-test-suite.com

AMD EPYC Milan Preliminary Test

2 x AMD EPYC 7663 64-Core and 2 x AMD EPYC 7543 32-Core testing with a AMD DAYTONA_X (RYM1001D BIOS) on Ubuntu 20.10 via the Phoronix Test Suite. Details: https://servernews.ru/1034705/

Automated Executive Summary

2 x AMD EPYC 7543 had the most wins, coming in first place for 70% of the tests.

Based on the geometric mean of all complete results, the fastest (2 x AMD EPYC 7763) was 1.002x the speed of the slowest (2 x AMD EPYC 7543).

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

LAMMPS Molecular Dynamics Simulator (Model: 20k Atoms) at 4.075x
ACES DGEMM (Sustained Floating-Point Rate) at 2.054x
NAS Parallel Benchmarks (Test / Class: EP.D) at 1.767x
Sysbench (Test: CPU) at 1.738x
Blender (Blend File: Classroom - Compute: CPU-Only) at 1.721x
TensorFlow Lite (Model: Mobilenet Quant) at 1.718x
TensorFlow Lite (Model: Mobilenet Float) at 1.711x
OpenSSL (RSA 4096-bit Performance) at 1.684x
John The Ripper (Test: MD5) at 1.662x

C-Ray (Total Time - 4K, 16 Rays Per Pixel) at 1.654x.

Test Systems:

2 x AMD EPYC 7763

Processor: 2 x AMD EPYC 7763 64-Core @ 2.45GHz (128 Cores / 256 Threads), Motherboard: AMD DAYTONA_X (RYM1001D BIOS), Chipset: AMD Starship/Matisse, Memory: 1008GB, Disk: 3201GB HUSMR7632BDP3M1 + 256GB Micron_1100_MTFD, Graphics: ASPEED, Network: 2 x Mellanox MT27710

OS: Ubuntu 20.10, Kernel: 5.8.0-44-generic (x86_64), Compiler: GCC 10.2.0, File-System: xfs, Screen Resolution: 1024x768

Kernel Notes: Transparent Huge Pages: madvise
Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-gnu-unique-object --enable-languages=c,ada,c++,go,brig,d,fortran,objc,obj-c++,m2 --enable-libphobos-checking=release --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none=/build/gcc-10-JvwpWM/gcc-10-10.2.0/debian/tmp-nvptx/usr,amdgcn-amdhsa=/build/gcc-10-JvwpWM/gcc-10-10.2.0/debian/tmp-gcn/usr,hsa --enable-plugin --enable-shared --enable-threads=posix --host=x86_64-linux-gnu --program-prefix=x86_64-linux-gnu- --target=x86_64-linux-gnu --with-abi=m64 --with-arch-32=i686 --with-default-libstdcxx-abi=new --with-gcc-major-version-only --with-multilib-list=m32,m64,mx32 --with-target-system-zlib=auto --with-tune=generic --without-cuda-driver -v
Processor Notes: Scaling Governor: acpi-cpufreq performance (Boost: Enabled) - CPU Microcode: 0xa001119
Security Notes: itlb_multihit: Not affected + l1tf: Not affected + mds: Not affected + meltdown: Not affected + spec_store_bypass: Mitigation of SSB disabled via prctl and seccomp + spectre_v1: Mitigation of usercopy/swapgs barriers and __user pointer sanitization + spectre_v2: Mitigation of Full AMD retpoline IBPB: conditional IBRS_FW STIBP: always-on RSB filling + srbds: Not affected + tsx_async_abort: Not affected

2 x AMD EPYC 7543

Processor: 2 x AMD EPYC 7543 32-Core @ 2.80GHz (64 Cores / 128 Threads), Motherboard: AMD DAYTONA_X (RYM1001D BIOS), Chipset: AMD Starship/Matisse, Memory: 504GB, Disk: 3201GB HUSMR7632BDP3M1 + 256GB Micron_1100_MTFD, Graphics: ASPEED, Network: 2 x Mellanox MT27710

OS: Ubuntu 20.10, Kernel: 5.8.0-44-generic (x86_64), Compiler: GCC 10.2.0, File-System: xfs, Screen Resolution: 1024x768

Kernel Notes: Transparent Huge Pages: madvise
Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-gnu-unique-object --enable-languages=c,ada,c++,go,brig,d,fortran,objc,obj-c++,m2 --enable-libphobos-checking=release --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none=/build/gcc-10-JvwpWM/gcc-10-10.2.0/debian/tmp-nvptx/usr,amdgcn-amdhsa=/build/gcc-10-JvwpWM/gcc-10-10.2.0/debian/tmp-gcn/usr,hsa --enable-plugin --enable-shared --enable-threads=posix --host=x86_64-linux-gnu --program-prefix=x86_64-linux-gnu- --target=x86_64-linux-gnu --with-abi=m64 --with-arch-32=i686 --with-default-libstdcxx-abi=new --with-gcc-major-version-only --with-multilib-list=m32,m64,mx32 --with-target-system-zlib=auto --with-tune=generic --without-cuda-driver -v
Disk Notes: NONE / attr2,inode64,logbsize=32k,logbufs=8,noquota,relatime,rw / Block Size: 4096
Processor Notes: Scaling Governor: acpi-cpufreq performance (Boost: Enabled) - CPU Microcode: 0xa001119
Java Notes: OpenJDK Runtime Environment (build 11.0.10+9-Ubuntu-0ubuntu1.20.10)
Python Notes: Python 2.7.18 + Python 3.8.6
Security Notes: itlb_multihit: Not affected + l1tf: Not affected + mds: Not affected + meltdown: Not affected + spec_store_bypass: Mitigation of SSB disabled via prctl and seccomp + spectre_v1: Mitigation of usercopy/swapgs barriers and __user pointer sanitization + spectre_v2: Mitigation of Full AMD retpoline IBPB: conditional IBRS_FW STIBP: always-on RSB filling + srbds: Not affected + tsx_async_abort: Not affected

AMD EPYC Milan Preliminary Test

	2 x AMD EPYC 7763	2 x AMD EPYC 7543
High Performance Conjugate Gradient (GFLOP/s)	**28.0783**	**32.7278**
Normalized	85.79%	100%
Standard Deviation	8.5%	0.8%
NAS Parallel Benchmarks - EP.D (Mop/s)	**10363**	**5866**
Normalized	100%	56.6%
Standard Deviation	1.9%	2.9%
Rodinia - OpenMP LavaMD (sec)	**26.213**	**37.575**
Normalized	100%	69.76%
Standard Deviation	2.5%	2.4%
Rodinia - OpenMP HotSpot3D (sec)	**97.471**	**89.083**
Normalized	91.39%	100%
Standard Deviation	6.1%	5.6%
Rodinia - OpenMP Leukocyte (sec)	**54.235**	**49.399**
Normalized	91.08%	100%
Standard Deviation	2.4%	1.4%
Rodinia - OpenMP CFD Solver (sec)	**6.224**	**6.397**
Normalized	100%	97.3%
Standard Deviation	2%	13.4%
NAMD - ATPase Simulation - 327,506 Atoms (days/ns)	**0.22771**	**0.34152**
Normalized	100%	66.68%
Standard Deviation	1.5%	0.1%
Dolfyn - C.F.D (sec)	**18.324**	**17.148**
Normalized	93.58%	100%
Standard Deviation	0.1%	0%
Nebular Empirical Analysis Tool (sec)	**30.563**	**28.237**
Normalized	92.39%	100%
Standard Deviation	5.1%	2.2%
Pennant - leblancbig (Hydro Cycle Time - sec)	**16.95403**	**12.68979**
Normalized	74.85%	100%
Standard Deviation	0.9%	2.2%
Timed MAFFT Alignment - M.S.A - LSU RNA (sec)	**10.426**	**9.311**
Normalized	89.31%	100%
Standard Deviation	4.4%	1.9%
OpenFOAM - Motorbike 60M (sec)	**765.47**	**377.23**
Normalized	49.28%	100%
Standard Deviation	19.9%	1%
Quantum ESPRESSO - AUSURF112 (sec)	**1089**	**1025**
Normalized	94.04%	100%
Standard Deviation	0.6%	2%
LAMMPS Molecular Dynamics Simulator - 20k Atoms (ns/day)	**0.871**	**3.549**
Normalized	24.54%	100%
Standard Deviation	0.5%	0.2%
ACES DGEMM - S.F.P.R (GFLOP/s)	**37.604790**	**18.311647**
Normalized	100%	48.69%
Standard Deviation	2.3%	2.1%
Himeno Benchmark - P.P.S (MFLOPS)	**3703**	**3709**
Normalized	99.82%	100%
Standard Deviation	5.6%	1.8%
Numpy Benchmark (Score)	**363.22**	**391.75**
Normalized	92.72%	100%
Standard Deviation	0.7%	0.4%
Ngspice - C2670 (sec)	**145.824**	**136.144**
Normalized	93.36%	100%

AMD EPYC Milan Preliminary Test

Standard Deviation	0.9%	0.8%
Ngspice - C7552 (sec)	**113.354**	**103.659**
Normalized	91.45%	100%
Standard Deviation	1.1%	2.1%
Kripke (Throughput FoM)	**119412673**	**132528867**
Normalized	90.1%	100%
Standard Deviation	5.8%	1.1%
OSBench - Create Files (us/Event)	**24.004262**	**21.967675**
Normalized	91.52%	100%
Standard Deviation	1%	0.7%
OSBench - Create Threads (us/Event)	**28.843085**	**23.477674**
Normalized	81.4%	100%
Standard Deviation	2.4%	2.4%
OSBench - Launch Programs (us/Event)	**69.567045**	**62.649250**
Normalized	90.06%	100%
Standard Deviation	4.9%	1.9%
OSBench - Create Processes (us/Event)	**48.923492**	**47.276338**
Normalized	96.63%	100%
Standard Deviation	1.5%	3.9%
OSBench - Memory Allocations (Ns/Event)	**77.320893**	**68.823973**
Normalized	89.01%	100%
Standard Deviation	0.3%	0.5%
BYTE Unix Benchmark - Dhrystone 2 (LPS)	**40277917**	**43248926**
Normalized	93.13%	100%
Standard Deviation	1%	0.2%
CacheBench - Read (MB/s)	**2601**	**2782**
Normalized	93.49%	100%
Standard Deviation	0%	0%
CacheBench - Write (MB/s)	**24981**	**26691**
Normalized	93.6%	100%
Standard Deviation	0%	0%
CacheBench - R.M.W (MB/s)	**49620**	**53030**
Normalized	93.57%	100%
Standard Deviation	0%	0%
Coremark - CoreMark Size 666 - I.P.S (Iterations/Sec)	**3733027**	**2633539**
Normalized	100%	70.55%
Standard Deviation	2.4%	0.2%
ctx_clock - C.S.T (Clocks)	**147**	**140**
Normalized	95.24%	100%
Sysbench - Memory (Events/sec)	**7458386**	**6007638**
Normalized	100%	80.55%
Standard Deviation	0.7%	0.7%
Sysbench - CPU (Events/sec)	**477380**	**274610**
Normalized	100%	57.52%
Standard Deviation	0.2%	0.8%
FinanceBench - Repo OpenMP (ms)	**40846**	**37281**
Normalized	91.27%	100%
Standard Deviation	1.5%	1.1%
FinanceBench - Bonds OpenMP (ms)	**55531**	**52390**
Normalized	94.34%	100%
Standard Deviation	0.5%	0.5%
MariaDB - 128 (Queries/sec)	**384**	**378**
Normalized	100%	98.44%
Standard Deviation	5.3%	0.2%
MariaDB - 256 (Queries/sec)	**287**	**324**

Normalized	88.58%	100%
Standard Deviation	2.5%	0.9%
MariaDB - 512 (Queries/sec)	**314**	**325**
Normalized	96.62%	100%
Standard Deviation	10%	0.4%
PostgreSQL pgbench - 100 - 250 - Read Only (TPS)	**704577**	**716556**
Normalized	98.33%	100%
Standard Deviation	9.7%	8%
PostgreSQL pgbench - 100 - 250 - Read Only - Average Latency (ms)	**0.360**	**0.352**
Normalized	97.78%	100%
Standard Deviation	10.5%	9.2%
PostgreSQL pgbench - 100 - 250 - Read Write (TPS)	**51183**	**35338**
Normalized	100%	69.04%
Standard Deviation	4.8%	2.2%
PostgreSQL pgbench - 100 - 250 - Read Write - Average Latency (ms)	**4.918**	**7.094**
Normalized	100%	69.33%
Standard Deviation	5.3%	2.2%
SQLite Speedtest - Timed Time - Size 1,000 (sec)	**59.337**	**55.777**
Normalized	94%	100%
Standard Deviation	0.4%	0.7%
Redis - LPOP (Reqs/sec)	**2359254**	**2410419**
Normalized	97.88%	100%
Standard Deviation	8.4%	2.4%
Redis - SADD (Reqs/sec)	**2037944**	**1985172**
Normalized	100%	97.41%
Standard Deviation	7.9%	0.9%
Redis - LPUSH (Reqs/sec)	**1560259**	**1569646**
Normalized	99.4%	100%
Standard Deviation	6.9%	1.4%
Redis - GET (Reqs/sec)	**2319619**	**2382131**
Normalized	97.38%	100%
Standard Deviation	4.4%	1.6%
Redis - SET (Reqs/sec)	**1772195**	**1782419**
Normalized	99.43%	100%
Standard Deviation	6.8%	1.6%
Apache Cassandra - Mixed 1:3 (Op/s)	**15671**	**13407**
Normalized	100%	85.55%
Standard Deviation	171.9%	148.4%
FLAC Audio Encoding - WAV To FLAC (sec)	**8.874**	**8.565**
Normalized	96.52%	100%
Standard Deviation	0.2%	0.6%
LAME MP3 Encoding - WAV To MP3 (sec)	**8.089**	**7.590**
Normalized	93.83%	100%
Standard Deviation	0.1%	0.3%
Zstd Compression - 8 - Compression Speed (MB/s)	**2580**	**3116**
Normalized	82.78%	100%
Standard Deviation	7.1%	5.5%
Zstd Compression - 8 - D.S (MB/s)	**3433**	**3650**
Normalized	94.06%	100%
Standard Deviation	2.7%	2.2%
John The Ripper - Blowfish (Real C/S)	**177138**	**121560**
Normalized	100%	68.62%
Standard Deviation	0.2%	0.4%

AMD EPYC Milan Preliminary Test

John The Ripper - MD5 (Real C/S)	**11282667**	**6787000**
Normalized	100%	60.15%
Standard Deviation	0.2%	0.7%
dav1d - Chimera 1080p (FPS)	**1438**	**1179**
Normalized	100%	82.02%
Standard Deviation	4.9%	2.7%
dav1d - C.1.1.b (FPS)	**339.89**	**275.05**
Normalized	100%	80.92%
Standard Deviation	2.3%	0.8%
OSPray - M.R - SciVis (FPS)	**66.67**	**52.63**
Normalized	100%	78.94%
Standard Deviation	0%	0%
OSPray - M.R - Path Tracer (FPS)	500	500
Kvazaar - Bosphorus 1080p - Medium (FPS)	**74.72**	**82.65**
Normalized	90.41%	100%
Standard Deviation	0.1%	1.1%
SVT-VP9 - P.S.O - Bosphorus 1080p (FPS)	**403.66**	**386.94**
Normalized	100%	95.86%
Standard Deviation	9.5%	14.9%
x264 - H.2.V.E (FPS)	**212.80**	**230.85**
Normalized	92.18%	100%
Standard Deviation	4.2%	10%
x265 - Bosphorus 1080p (FPS)	**69.73**	**70.40**
Normalized	99.05%	100%
Standard Deviation	2.5%	4.1%
7-Zip Compression - C.S.T (MIPS)	**428677**	**306883**
Normalized	100%	71.59%
Standard Deviation	3.4%	2%
Timed GCC Compilation - Time To Compile (sec)	**668.311**	**641.125**
Normalized	95.93%	100%
Standard Deviation	0.3%	0.3%
Timed Linux Kernel Compilation - Time To Compile	**19.526**	**24.134**
Normalized	100%	80.91%
Standard Deviation	2.7%	3.2%
Timed LLVM Compilation - Time To Compile (sec)	**187.095**	**190.060**
Normalized	100%	98.44%
Standard Deviation	0.2%	1.1%
C-Ray - Total Time - 4.1.R.P.P (sec)	**6.095**	**10.079**
Normalized	100%	60.47%
Standard Deviation	1%	0.9%
POV-Ray - Trace Time (sec)	**7.691**	**9.211**
Normalized	100%	83.5%
Standard Deviation	2.2%	1.3%
Gzip Compression - L.S.T.A.T.t.g (sec)	**41.393**	**38.798**
Normalized	93.73%	100%
Standard Deviation	0.1%	0.2%
OpenSSL - R.4.b.P (Signs/sec)	**26545**	**15764**
Normalized	100%	59.39%
Standard Deviation	0.1%	0.1%
Cpuminer-Opt - Magi (kH/s)	**5185**	**2331**
Normalized	100%	44.97%
Standard Deviation	3.3%	7.4%
Cpuminer-Opt - x25x (kH/s)	**4207**	**1805**
Normalized	100%	42.91%
Standard Deviation	5.9%	8.9%

AMD EPYC Milan Preliminary Test

Cpuminer-Opt - Deepcoin (kH/s)	**67078**	**41401**
Normalized	100%	61.72%
Standard Deviation	33.6%	6%
Cpuminer-Opt - Ringcoin (kH/s)	**23200**	**9712**
Normalized	100%	41.86%
Standard Deviation	1.9%	6.2%
Cpuminer-Opt - Blake-2 S (kH/s)	**1595925**	**895838**
Normalized	100%	56.13%
Standard Deviation	83.6%	47.3%
Cpuminer-Opt - Garlicoin (kH/s)	**17761**	**8473**
Normalized	100%	47.71%
Standard Deviation	13.4%	2.1%
Cpuminer-Opt - Skeincoin (kH/s)	**328605**	**181871**
Normalized	100%	55.35%
Standard Deviation	79.5%	46.1%
Cpuminer-Opt - Myriad-Groestl (kH/s)	**103090**	**91730**
Normalized	100%	88.98%
Standard Deviation	68.1%	17.6%
Cpuminer-Opt - LBC, LBRY Credits (kH/s)	**114072**	**74295**
Normalized	100%	65.13%
Standard Deviation	75.2%	53.1%
Cpuminer-Opt - Q.S.2.P (kH/s)	178498	
Standard Deviation	103.5%	
Cpuminer-Opt - T.S.2.O (kH/s)	**241722**	**170887**
Normalized	100%	70.7%
Standard Deviation	87.3%	55.2%
Blender - BMW27 - CPU-Only (sec)	**21.37**	**29.30**
Normalized	100%	72.94%
Standard Deviation	1.5%	0.9%
Blender - Classroom - CPU-Only (sec)	**42.14**	**72.52**
Normalized	100%	58.11%
Standard Deviation	0.1%	0.7%
GnuPG - 2.7.S.F.E (sec)	**76.436**	**71.486**
Normalized	93.52%	100%
Standard Deviation	1.2%	1.1%
Java SciMark - Composite (Mflops)	**2587**	**2785**
Normalized	92.89%	100%
Standard Deviation	0.8%	0.7%
Java SciMark - Monte Carlo (Mflops)	**1377**	**1472**
Normalized	93.55%	100%
Standard Deviation	0.4%	0.5%
Java SciMark - F.F.T (Mflops)	**1952**	**2098**
Normalized	93.07%	100%
Standard Deviation	0.7%	0.9%
Java SciMark - S.M.M (Mflops)	**2281**	**2449**
Normalized	93.14%	100%
Standard Deviation	0.6%	0.1%
Java SciMark - D.L.M.F (Mflops)	**5715**	**6183**
Normalized	92.42%	100%
Standard Deviation	1.7%	1.6%
Java SciMark - J.S.O.R (Mflops)	**1612**	**1725**
Normalized	93.44%	100%
Standard Deviation	0%	0.1%
Renaissance - Scala Dotty (ms)	**1572**	**1498**
Normalized	95.34%	100%

AMD EPYC Milan Preliminary Test

Standard Deviation	2.4%	2.4%
Renaissance - Rand Forest (ms)	**1687**	**1616**
Normalized	95.79%	100%
Standard Deviation	3%	4.5%
Renaissance - Apache Spark ALS (ms)	**2072**	**1915**
Normalized	92.4%	100%
Standard Deviation	5.4%	1.8%
Renaissance - Apache Spark Bayes (ms)	**97.114**	**98.685**
Normalized	100%	98.41%
Standard Deviation	25.9%	33.6%
Renaissance - Savina Reactors.IO (ms)	**19448**	**15477**
Normalized	79.58%	100%
Standard Deviation	11.5%	12.4%
Renaissance - A.S.P (ms)	**4601**	**4082**
Normalized	88.72%	100%
Standard Deviation	9.8%	8.5%
Renaissance - T.H.R (ms)	**5558**	**3447**
Normalized	62.02%	100%
Standard Deviation	4.4%	0.9%
Renaissance - I.M.D.S (ms)	**6419**	**6234**
Normalized	97.13%	100%
Standard Deviation	7.2%	7.1%
Renaissance - A.U.C.T (ms)	**31103**	**26851**
Normalized	86.33%	100%
Standard Deviation	3.1%	2.8%
Renaissance - G.A.U.J.F (ms)	**1742**	**1619**
Normalized	92.96%	100%
Standard Deviation	10.7%	14%
PostMark - D.T.P (TPS)	**8524**	**8928**
Normalized	95.47%	100%
Standard Deviation	1.9%	
Go Benchmarks - http (ns/op)	**1756126**	**1037611**
Normalized	59.09%	100%
Standard Deviation	38.9%	0.3%
Go Benchmarks - json (ns/op)	**1430231**	**1409180**
Normalized	98.53%	100%
Standard Deviation	3.4%	2%
Go Benchmarks - build (ns/op)	**22679779928**	**19867833291**
Normalized	87.6%	100%
Standard Deviation	1%	1.6%
Go Benchmarks - garbage (ns/op)	**847371**	**815016**
Normalized	96.18%	100%
Standard Deviation	1.1%	0.7%
oneDNN - C.B.S.A - f32 - CPU (ms)	**0.618082**	**0.746819**
Normalized	100%	82.76%
Standard Deviation	0.3%	1.6%
oneDNN - D.B.s - f32 - CPU (ms)	**2.53956**	**1.88246**
Normalized	74.13%	100%
Standard Deviation	2.2%	2.1%
oneDNN - C.B.S.A - u8s8f32 - CPU (ms)	**1.040769**	**1.015001**
Normalized	97.52%	100%
Standard Deviation	11.3%	11%
oneDNN - D.B.s - u8s8f32 - CPU (ms)	**1.65651**	**1.42739**
Normalized	86.17%	100%
Standard Deviation	1.9%	2.4%

AMD EPYC Milan Preliminary Test

oneDNN - R.N.N.T - f32 - CPU (ms)	**1850**	**1400**
Normalized	75.67%	100%
Standard Deviation	4.6%	4.8%
oneDNN - R.N.N.I - f32 - CPU (ms)	**1718**	**1117**
Normalized	65.04%	100%
Standard Deviation	6.4%	8.2%
oneDNN - R.N.N.T - u8s8f32 - CPU (ms)	**1817**	**1413**
Normalized	77.78%	100%
Standard Deviation	7.1%	5.8%
oneDNN - R.N.N.I - u8s8f32 - CPU (ms)	**1723**	**1115**
Normalized	64.74%	100%
Standard Deviation	8.8%	5.8%
oneDNN - M.M.B.S.T - f32 - CPU (ms)	**0.498212**	**0.435059**
Normalized	87.32%	100%
Standard Deviation	1.3%	4.1%
oneDNN - R.N.N.T - bf16bf16bf16 - CPU (ms)	**1757**	**1375**
Normalized	78.22%	100%
Standard Deviation	5%	1.6%
oneDNN - R.N.N.I - bf16bf16bf16 - CPU (ms)	**1707**	**1234**
Normalized	72.27%	100%
Standard Deviation	9.4%	0.8%
oneDNN - M.M.B.S.T - u8s8f32 - CPU (ms)	**0.701525**	**0.689266**
Normalized	98.25%	100%
Standard Deviation	1.3%	0.8%
TensorFlow Lite - SqueezeNet (us)	**68821**	**52139**
Normalized	75.76%	100%
Standard Deviation	1.4%	3.7%
TensorFlow Lite - Inception V4 (us)	**659401**	**844623**
Normalized	100%	78.07%
Standard Deviation	5.2%	2.3%
TensorFlow Lite - NASNet Mobile (us)	**166094**	**193408**
Normalized	100%	85.88%
Standard Deviation	1.1%	11.4%
TensorFlow Lite - Mobilenet Float (us)	**56184**	**32834**
Normalized	58.44%	100%
Standard Deviation	1.1%	3.2%
TensorFlow Lite - Mobilenet Quant (us)	**56291**	**32765**
Normalized	58.21%	100%
Standard Deviation	1.8%	2.2%
TensorFlow Lite - I.R.V (us)	**695459**	**756430**
Normalized	100%	91.94%
Standard Deviation	2.5%	1.7%
TNN - CPU - MobileNet v2 (ms)	**345.543**	**288.849**
Normalized	83.59%	100%
Standard Deviation	0.4%	1.4%
TNN - CPU - SqueezeNet v1.1 (ms)	**295.740**	**276.862**
Normalized	93.62%	100%
Standard Deviation	0%	0.1%
PlaidML - No - Inference - VGG19 - CPU (FPS)	**24.99**	**26.62**
Normalized	93.88%	100%
Standard Deviation	2%	4.6%
PlaidML - No - Inference - ResNet 50 - CPU (FPS)	**5.91**	**7.80**
Normalized	75.77%	100%
Standard Deviation	0.8%	0.5%
ONNX Runtime - yolov4 - OpenMP CPU (Inferences/min)	**190**	**249**

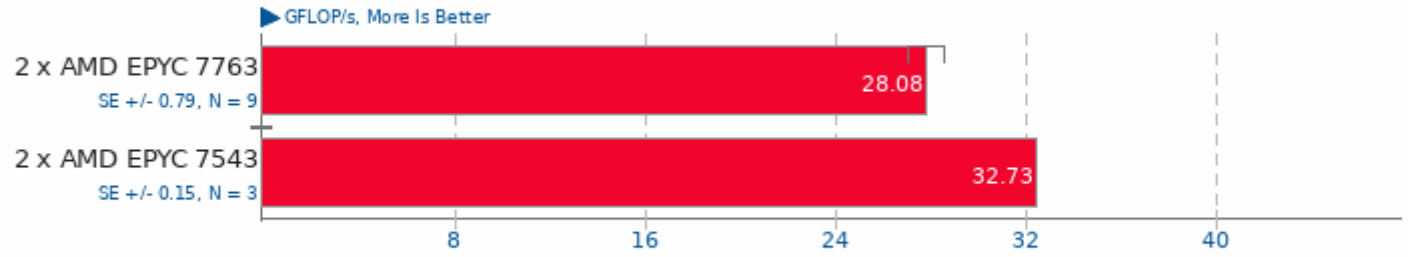
AMD EPYC Milan Preliminary Test

Normalized	76.31%	100%
Standard Deviation	7.6%	5.1%
ONNX Runtime - fcn-resnet101-11 - OpenMP CPU (Inferences/min)	**72**	**90**
Normalized	80%	100%
Standard Deviation	7.7%	4.8%
ONNX Runtime - shufflenet-v2-10 - OpenMP CPU (Inferences/min)	**4621**	**6198**
Normalized	74.56%	100%
Standard Deviation	14.6%	8.7%
ONNX Runtime - super-resolution-10 - OpenMP CPU (Inferences/min)	**3580**	**5352**
Normalized	66.89%	100%
Standard Deviation	11.8%	8.7%
PyBench - T.F.A.T.T (Milliseconds)	**972**	**917**
Normalized	94.34%	100%
Standard Deviation	0.5%	0.5%
PyPerformance - go (Milliseconds)	**256**	**238**
Normalized	92.97%	100%
Standard Deviation		0.2%
PyPerformance - 2to3 (Milliseconds)	**321**	**301**
Normalized	93.77%	100%
Standard Deviation	0.2%	
PyPerformance - chaos (Milliseconds)	**111**	**104**
Normalized	93.69%	100%
Standard Deviation	1%	0.6%
PyPerformance - float (Milliseconds)	**115**	**107**
Normalized	93.04%	100%
PyPerformance - nbody (Milliseconds)	**119**	**111**
Normalized	93.28%	100%
Standard Deviation		0.5%
PyPerformance - pathlib (Milliseconds)	**18.1**	**17.3**
Normalized	95.58%	100%
Standard Deviation	0%	0%
PyPerformance - raytrace (Milliseconds)	**478**	**447**
Normalized	93.51%	100%
Standard Deviation	0.2%	0.2%
PyPerformance - json_loads (Milliseconds)	**23.8**	**22.3**
Normalized	93.7%	100%
Standard Deviation	0.2%	0.3%
PyPerformance - crypto_pyaes (Milliseconds)	**106**	**99.5**
Normalized	93.87%	100%
Standard Deviation		0.3%
PyPerformance - regex_compile (Milliseconds)	**171**	**159**
Normalized	92.98%	100%
PyPerformance - python_startup (Milliseconds)	**8.17**	**7.68**
Normalized	94%	100%
Standard Deviation	0.3%	0.5%
PyPerformance - django_template (Milliseconds)	**49.2**	**45.2**
Normalized	91.87%	100%
Standard Deviation	0.1%	0.1%
PyPerformance - pickle_pure_python (Milliseconds)	**447**	**404**
Normalized	90.38%	100%
Standard Deviation	0.4%	0.4%

AMD EPYC Milan Preliminary Test

NGINX Benchmark - S.W.P.S (Reqs/sec)	**33827**	**24918**
Normalized	100%	73.66%
Standard Deviation	2.5%	14.8%
Apache Benchmark - S.W.P.S (Reqs/sec)	**22343**	**23701**
Normalized	94.27%	100%
Standard Deviation	8.6%	1.3%
PHPBench - P.B.S (Score)	**592611**	**639114**
Normalized	92.72%	100%
Standard Deviation	0.9%	0.5%
WireGuard + Linux Networking Stack Stress Test	**457.877**	**415.246**
Normalized	90.69%	100%
Standard Deviation	1.7%	1.9%

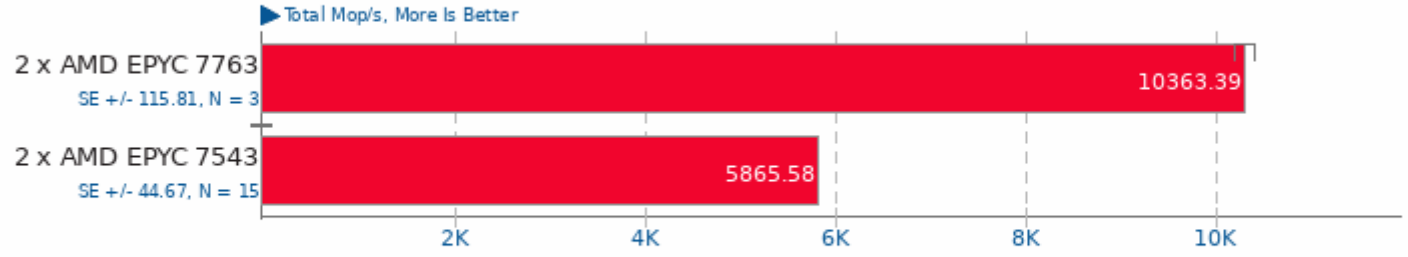
High Performance Conjugate Gradient 3.1



1. (CXX) g++ options: -O3 -ffast-math -ftree-vectorize -pthread -lmpi_cxx -lmpi

NAS Parallel Benchmarks 3.4

Test / Class: EP.D

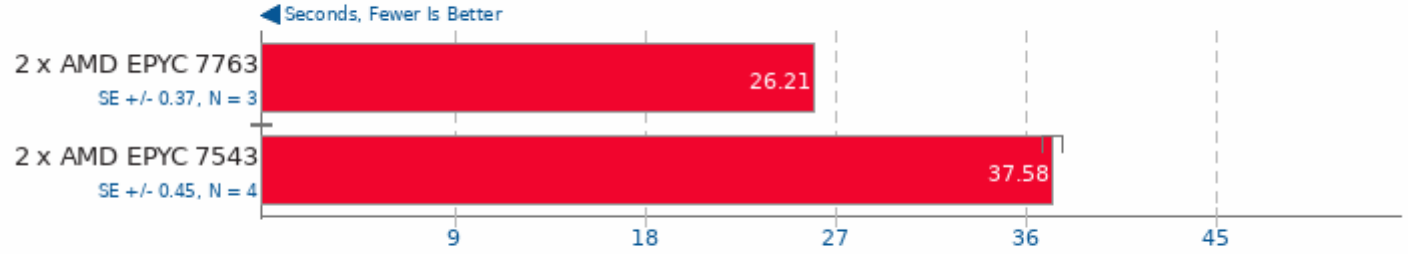


1. (F9X) gfortran options: -O3 -march=native -pthread -lmpi_usempif08 -lmpi_mpifh -lmpi -lopen-rte -lopen-pal -lhwloc -ldl -levent -levent_pthreads -lutil -lm -lrt -lz

2. Open MPI 4.0.3

Rodinia 3.1

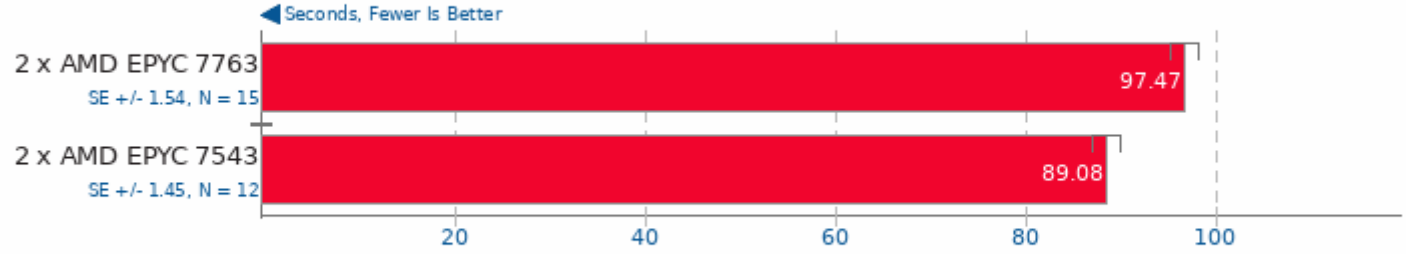
Test: OpenMP LavaMD



1. (CXX) g++ options: -O2 -lOpenCL

Rodinia 3.1

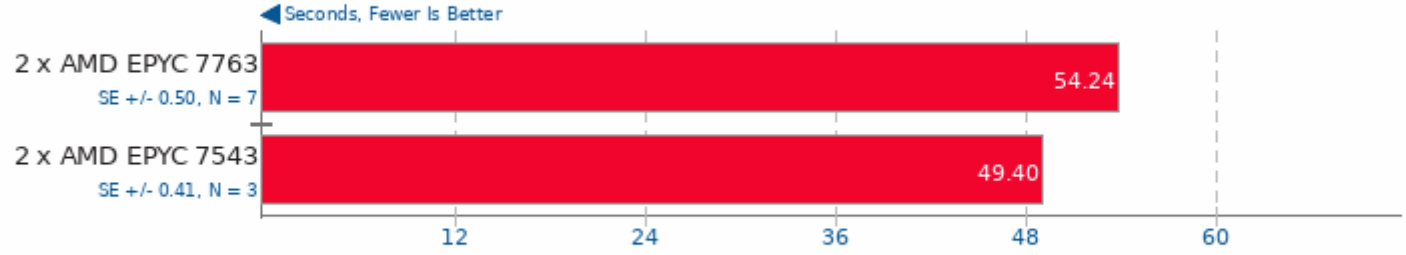
Test: OpenMP HotSpot3D



1. (CXX) g++ options: -O2 -lOpenCL

Rodinia 3.1

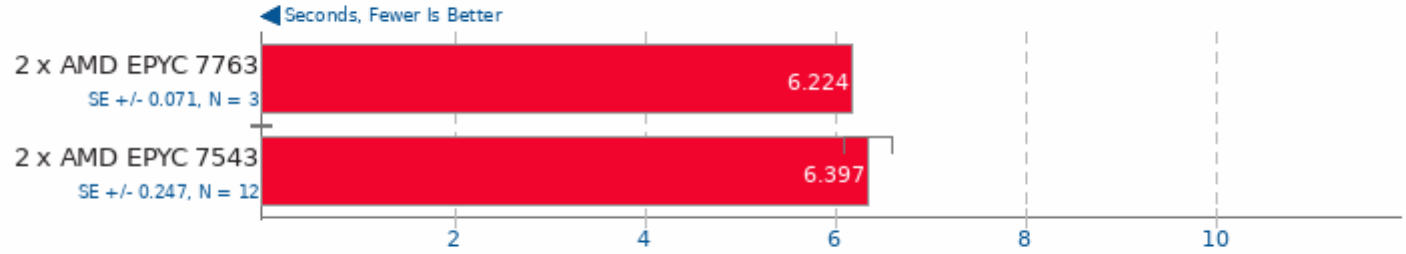
Test: OpenMP Leukocyte



1. (CXX) g++ options: -O2 -lOpenCL

Rodinia 3.1

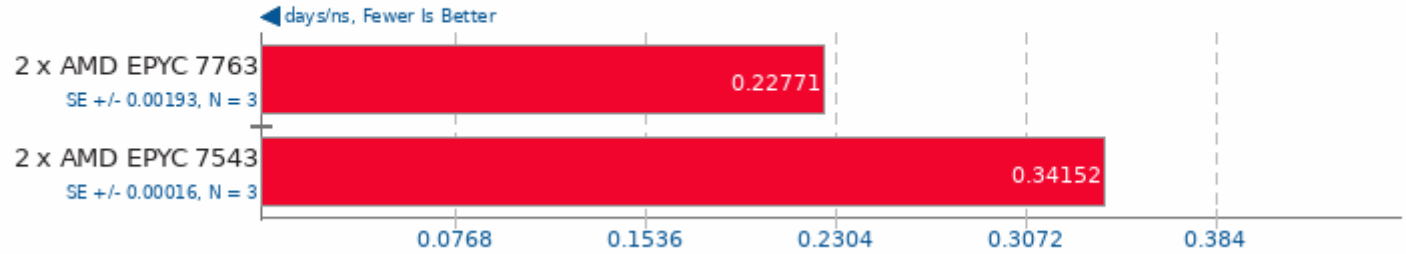
Test: OpenMP CFD Solver



1. (CXX) g++ options: -O2 -lOpenCL

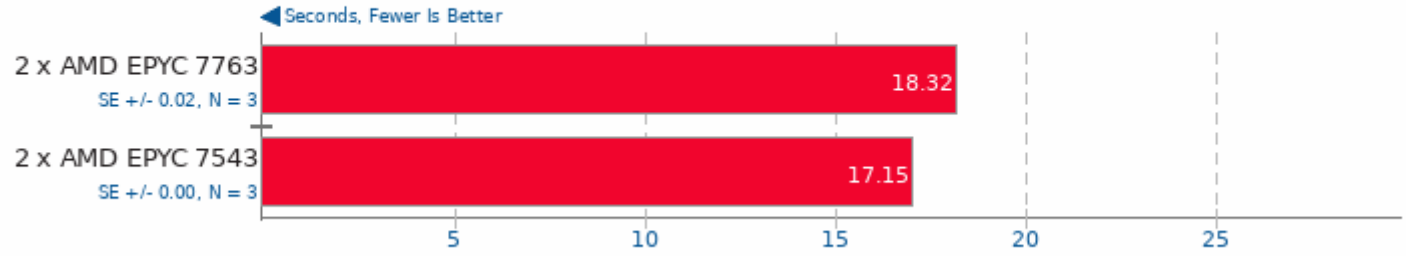
NAMD 2.14

ATPase Simulation - 327,506 Atoms

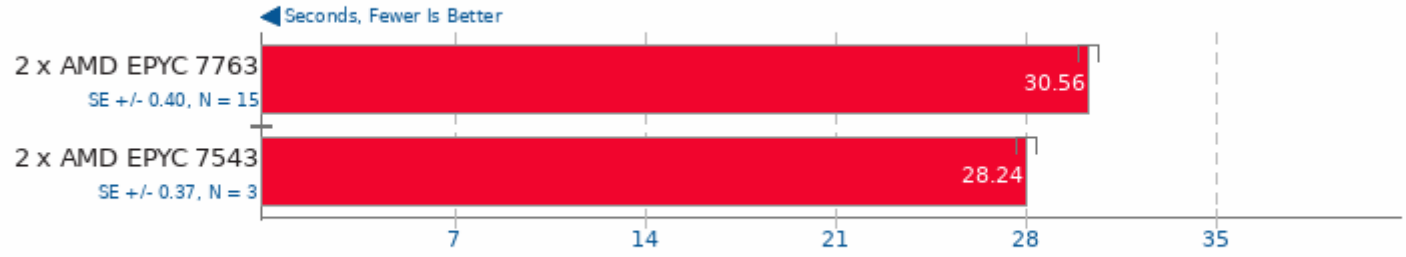


Dolfyn 0.527

Computational Fluid Dynamics



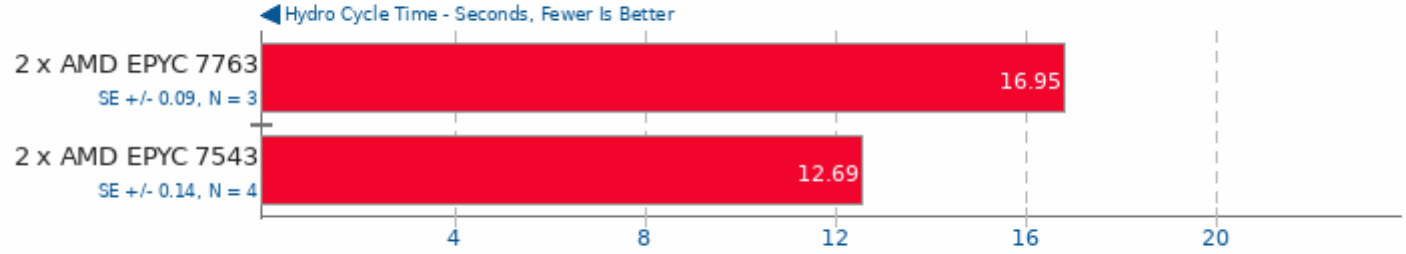
Nebular Empirical Analysis Tool 2020-02-29



1. (F9X) gfortran options: -cpp -ffree-line-length-0 -Jsource/ -fopenmp -O3 -fno-backtrace

Pennant 1.0.1

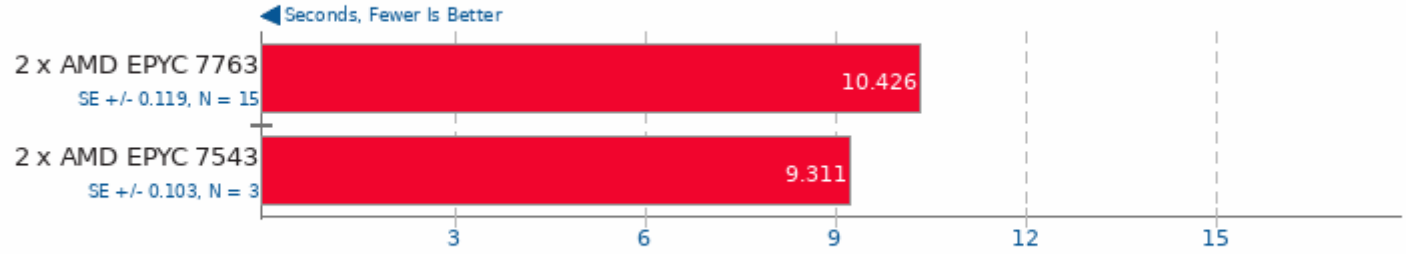
Test: leblancbig



1. (CXX) g++ options: -fopenmp -pthread -lmpi_cxx -lmpi

Timed MAFFT Alignment 7.471

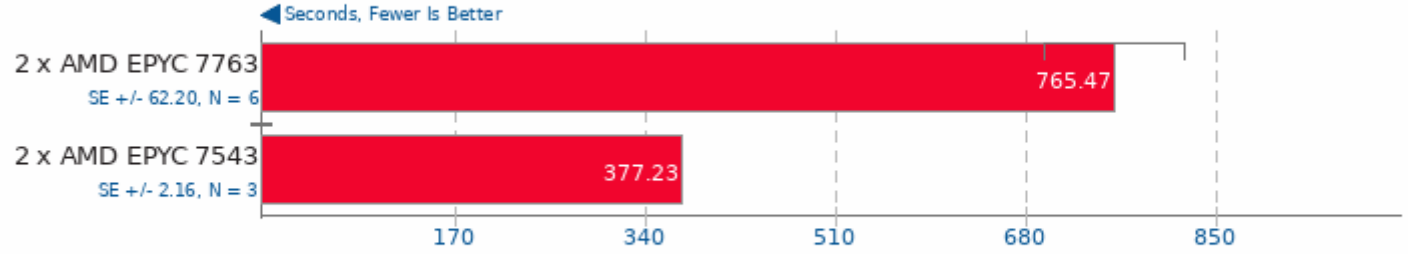
Multiple Sequence Alignment - LSU RNA



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

OpenFOAM 8

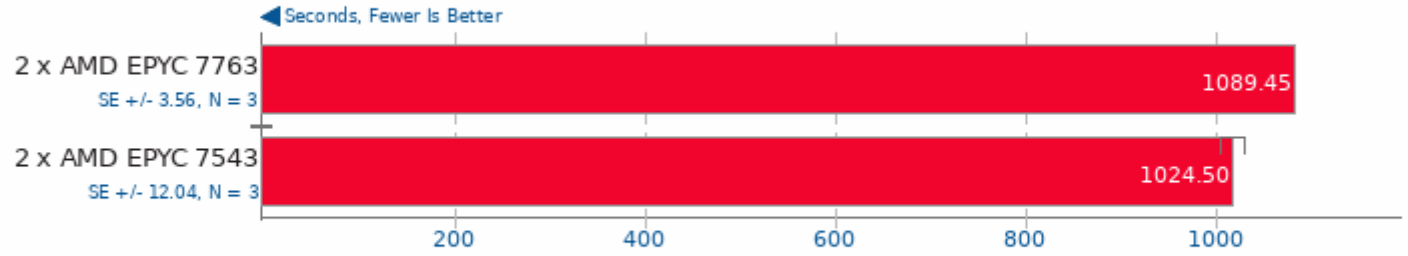
Input: Motorbike 60M



1. (CXX) g++ options: -std=c++11 -m64 -O3 -ftemplate-depth-100 -fPIC -fuse-ld=bfd -Xlinker --add-needed --no-as-needed -ldynamicMesh -ldecompose -lgenericPat

Quantum ESPRESSO 6.7

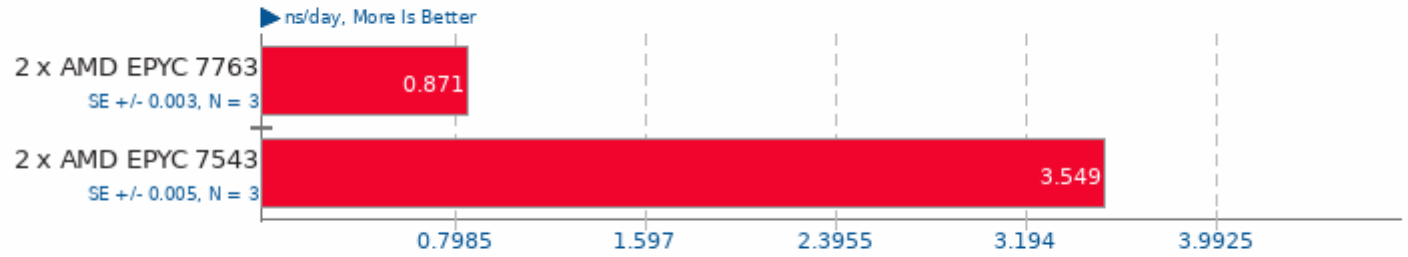
Input: AUSURF112



1. (F9X) gfortran options: -lopenblas -lFoX_dom -lFoX_sax -lFoX_wxml -lFoX_common -lFoX_utils -lFoX_fsys -lfftw3 -pthread -lmpi_usempif08 -lmpi_mpifh -lmpi -lopen-

LAMMPS Molecular Dynamics Simulator 29Oct2020

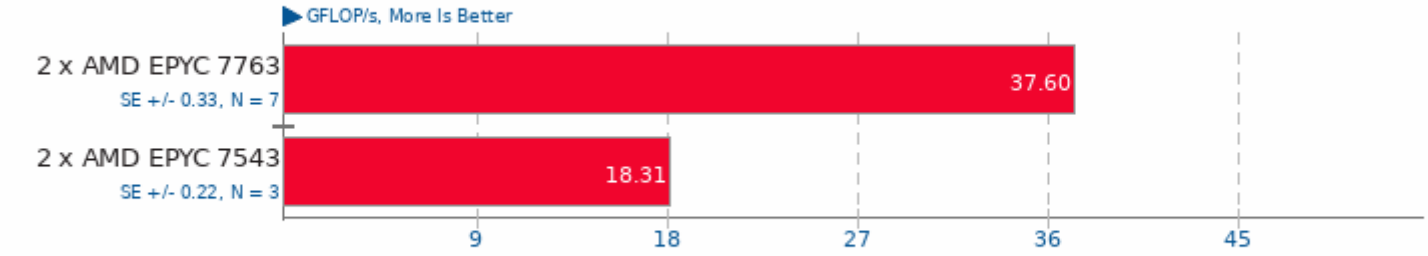
Model: 20k Atoms



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

ACES DGEMM 1.0

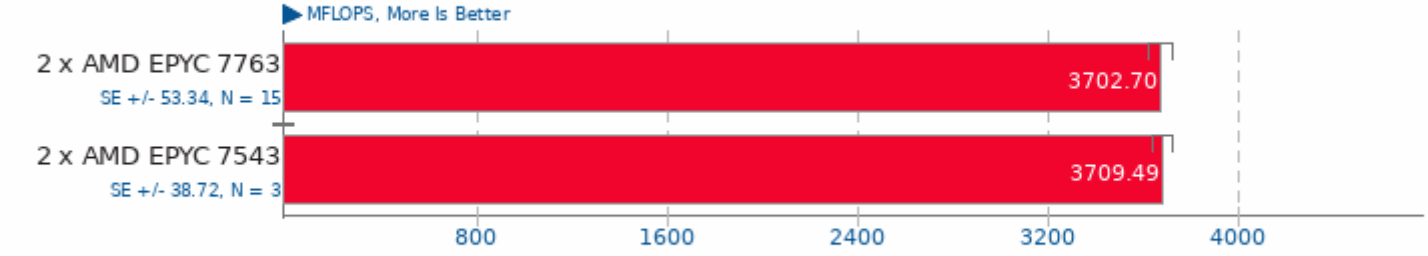
Sustained Floating-Point Rate



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

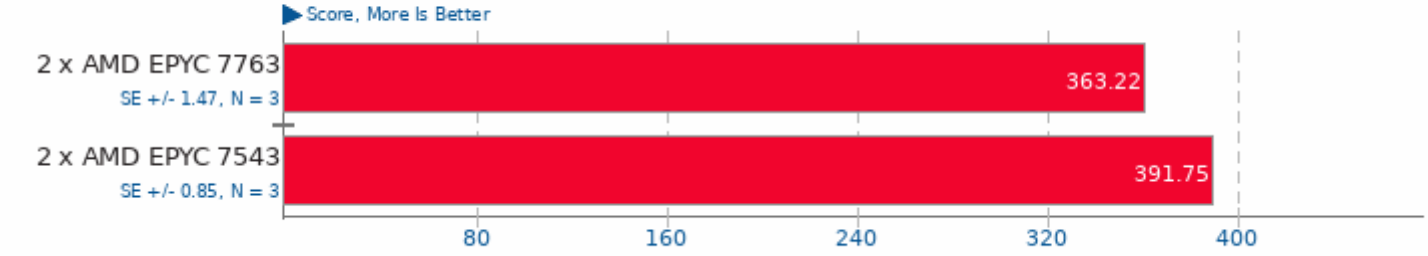
Himeno Benchmark 3.0

Poisson Pressure Solver



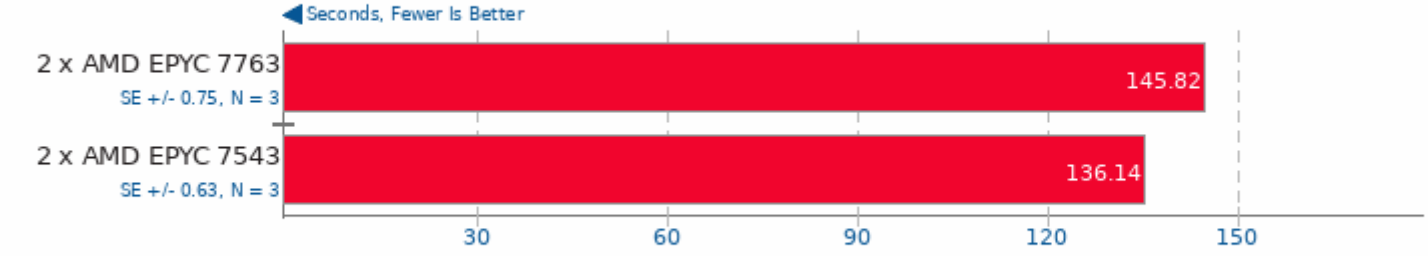
1. (CC) gcc options: -O3 -mavx2

Numpy Benchmark



Ngspice 34

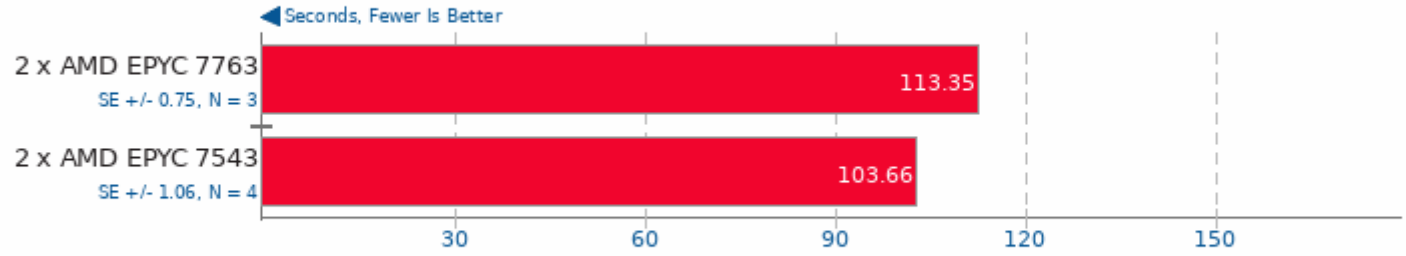
Circuit: C2670



1. (CC) gcc options: -O0 -fopenmp -lm -lstdc++ -lfftw3 -lXaw -lXmu -lXt -lXext -lX11 -lSM -lICE

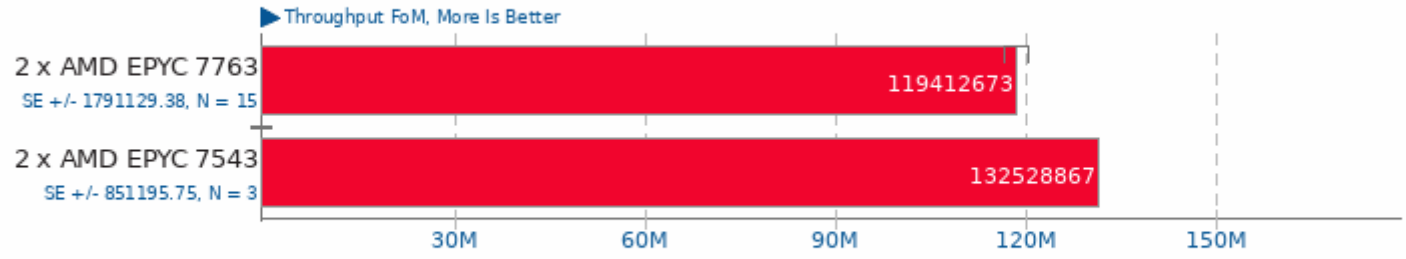
Ngspice 34

Circuit: C7552



1. (CC) gcc options: -O0 -fopenmp -lm -lstdc++ -lfftw3 -lXaw -lXmu -lXt -lXext -lX11 -lSM -lICE

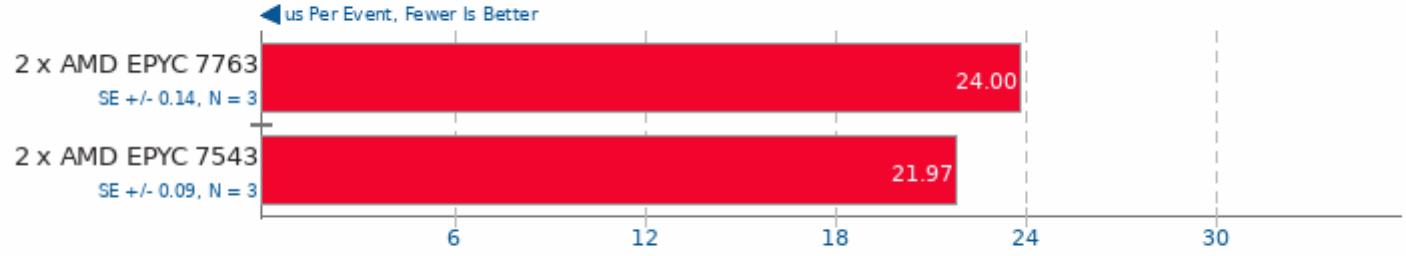
Kripke 1.2.4



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

OSBench

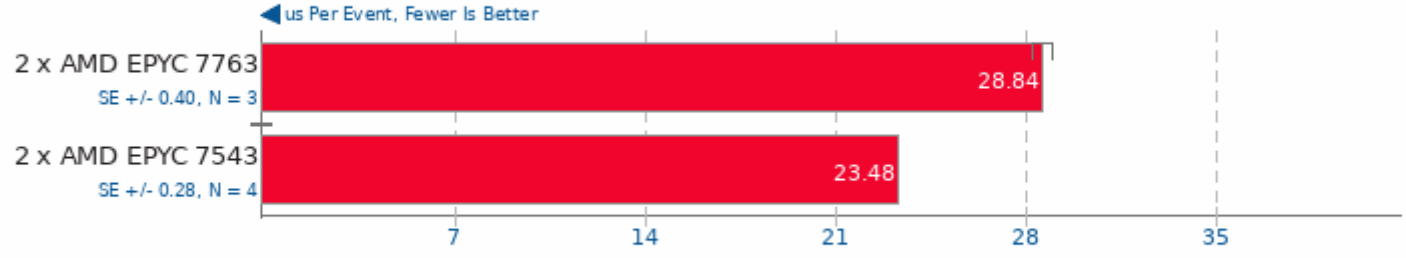
Test: Create Files



1. (CC) gcc options: -lm

OSBench

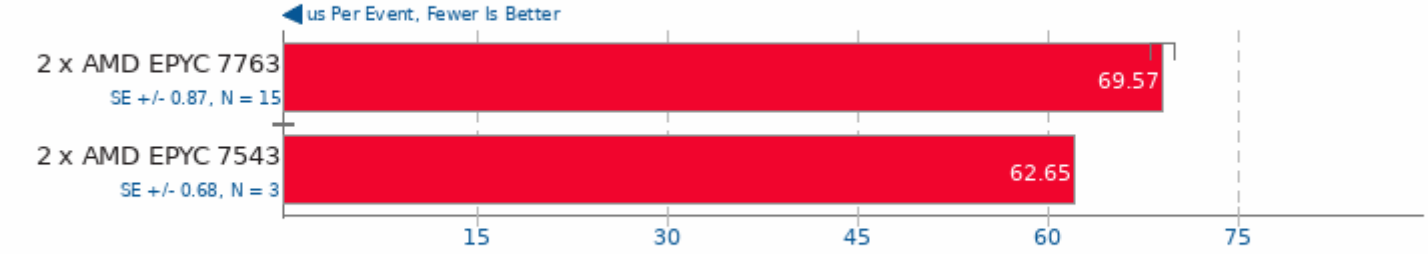
Test: Create Threads



1. (CC) gcc options: -lm

OSBench

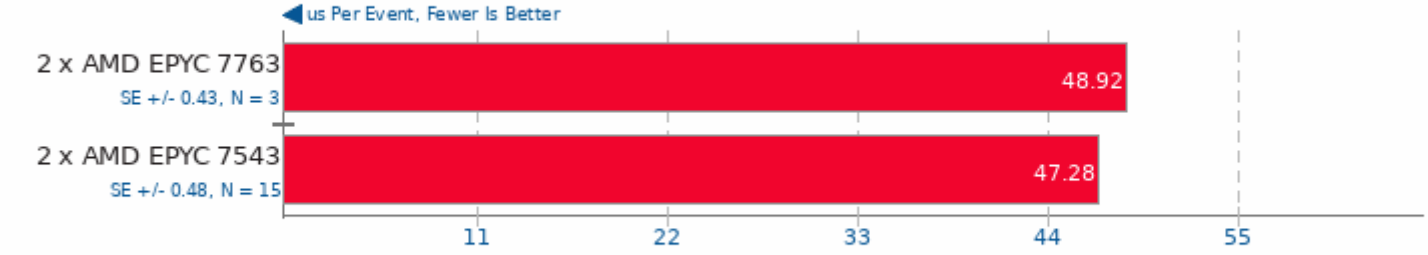
Test: Launch Programs



1. (CC) gcc options: -lm

OSBench

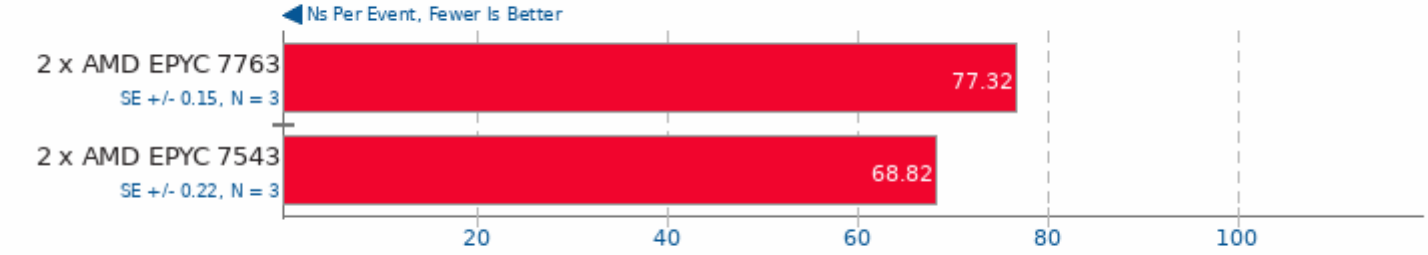
Test: Create Processes



1. (CC) gcc options: -lm

OSBench

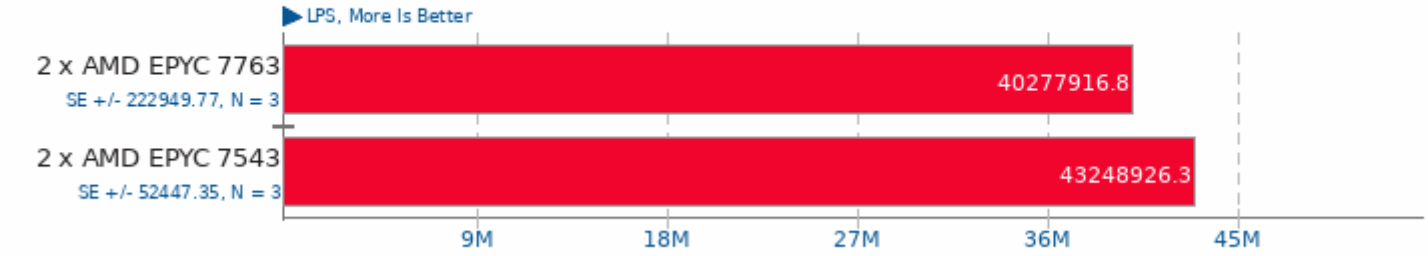
Test: Memory Allocations



1. (CC) gcc options: -lm

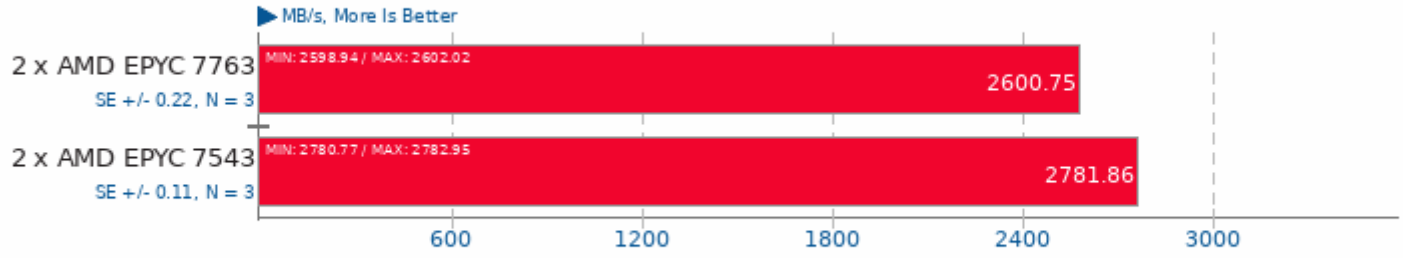
BYTE Unix Benchmark 3.6

Computational Test: Dhrystone 2



CacheBench

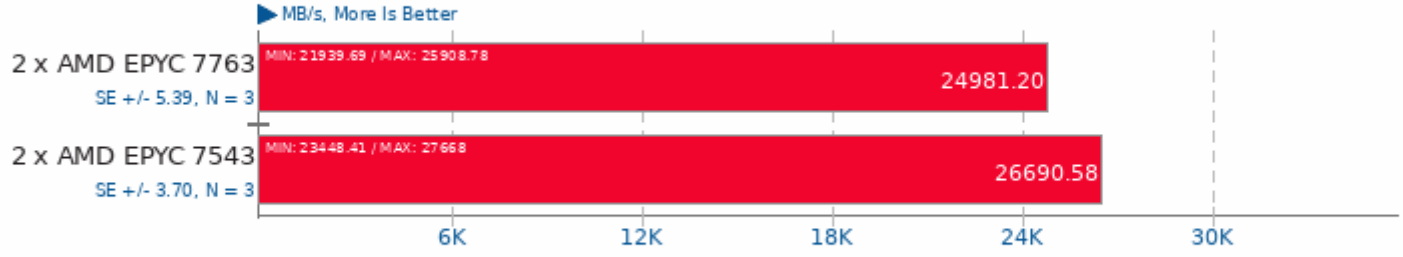
Test: Read



1. (CC) gcc options: -lrt

CacheBench

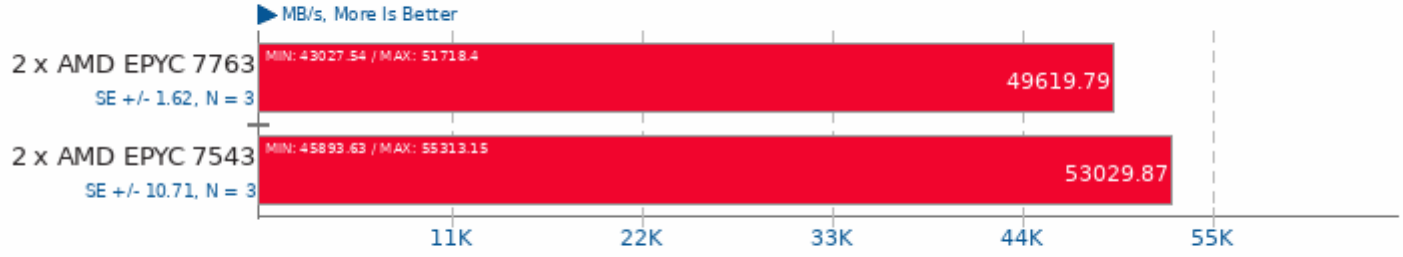
Test: Write



1. (CC) gcc options: -lrt

CacheBench

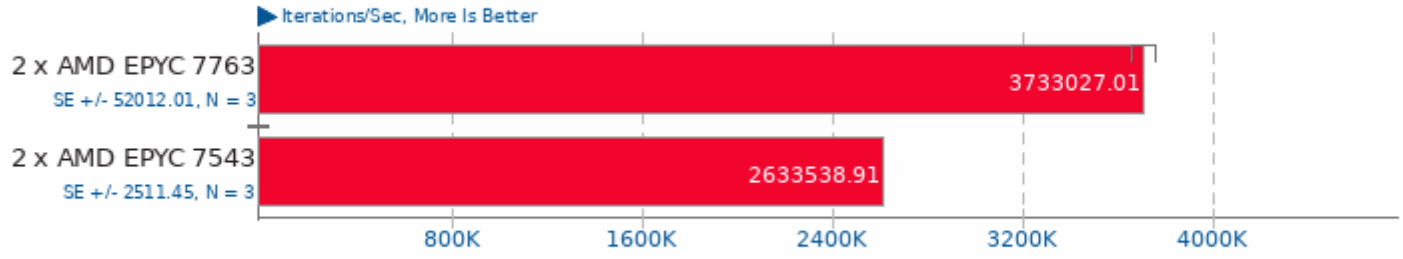
Test: Read / Modify / Write



1. (CC) gcc options: -lrt

Coremark 1.0

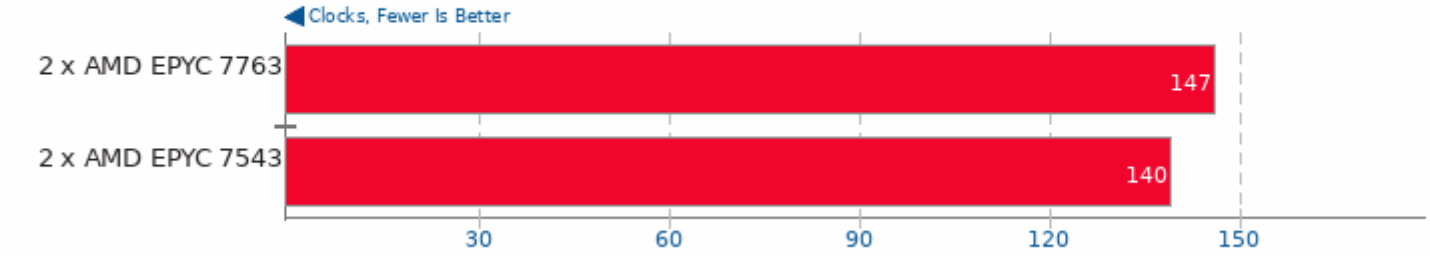
CoreMark Size 666 - Iterations Per Second



1. (CC) gcc options: -O2 -lrt" -lrt

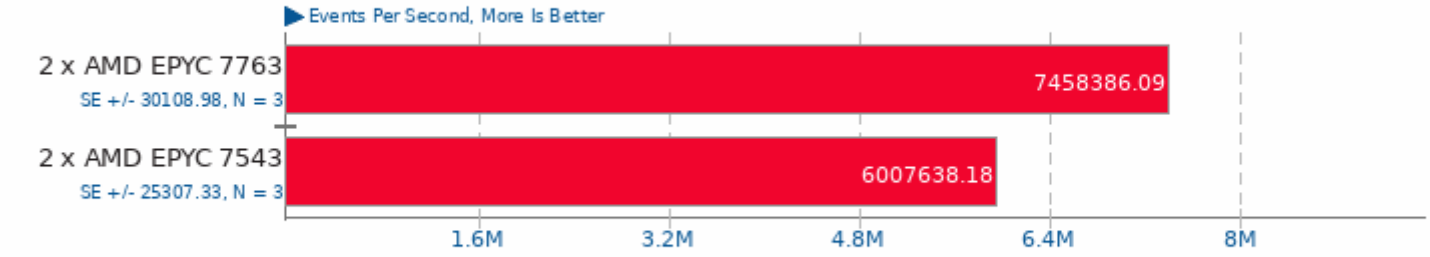
ctx_clock

Context Switch Time



Sysbench 2018-07-28

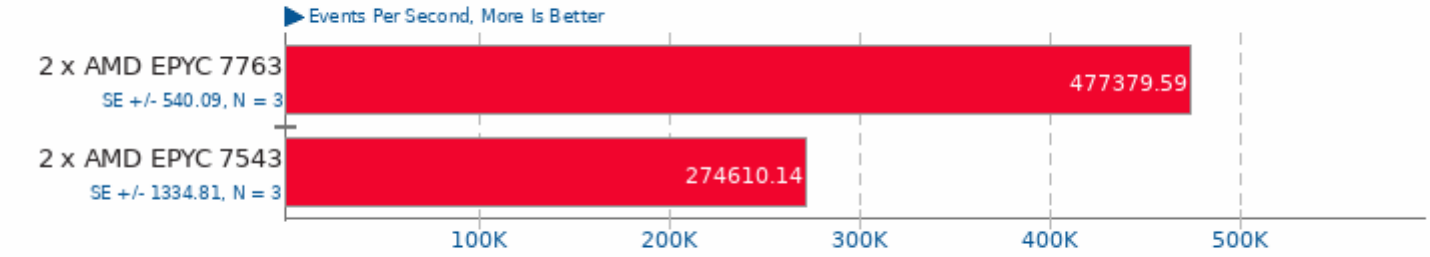
Test: Memory



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

Sysbench 2018-07-28

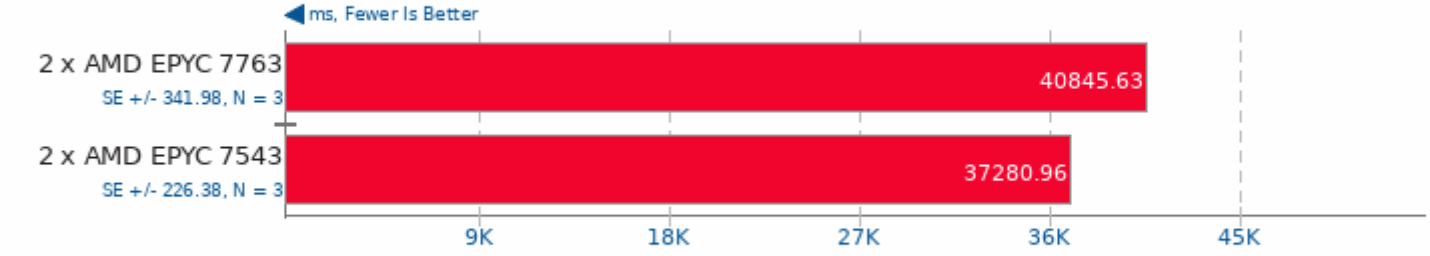
Test: CPU



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

FinanceBench 2016-07-25

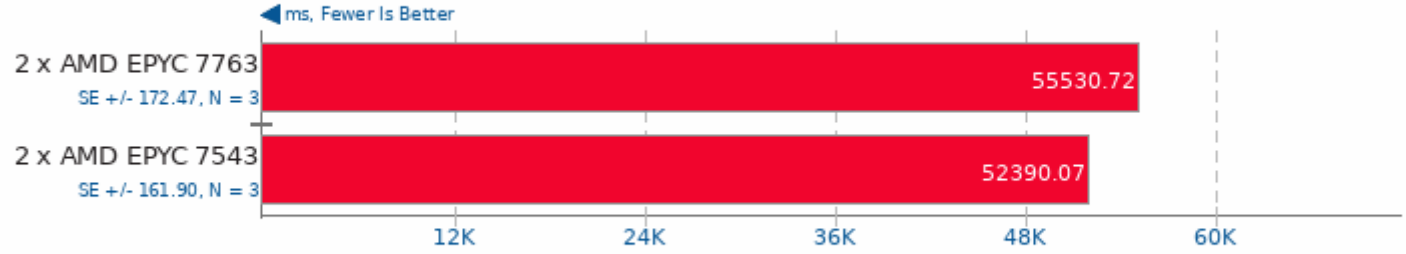
Benchmark: Repo OpenMP



1. (CXX) g++ options: -O3 -march=native -fopenmp

FinanceBench 2016-07-25

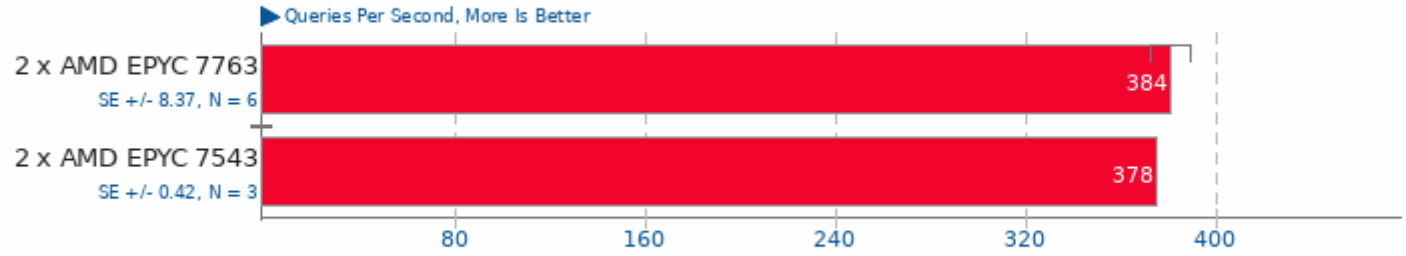
Benchmark: Bonds OpenMP



1. (CXX) g++ options: -O3 -march=native -fopenmp

MariaDB 10.5.2

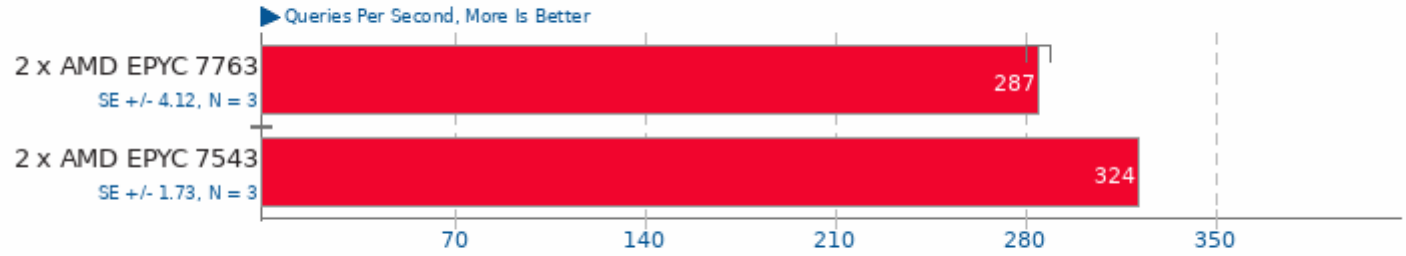
Clients: 128



1. (CXX) g++ options: -fPIC -pie -fstack-protector -O2 -shared -lpthread -lsnappy -ldl -lz -lrt

MariaDB 10.5.2

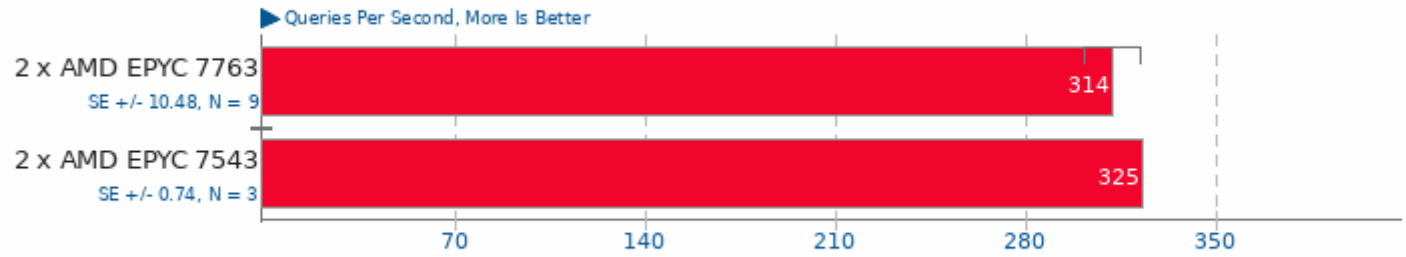
Clients: 256



1. (CXX) g++ options: -fPIC -pie -fstack-protector -O2 -shared -lpthread -lsnappy -ldl -lz -lrt

MariaDB 10.5.2

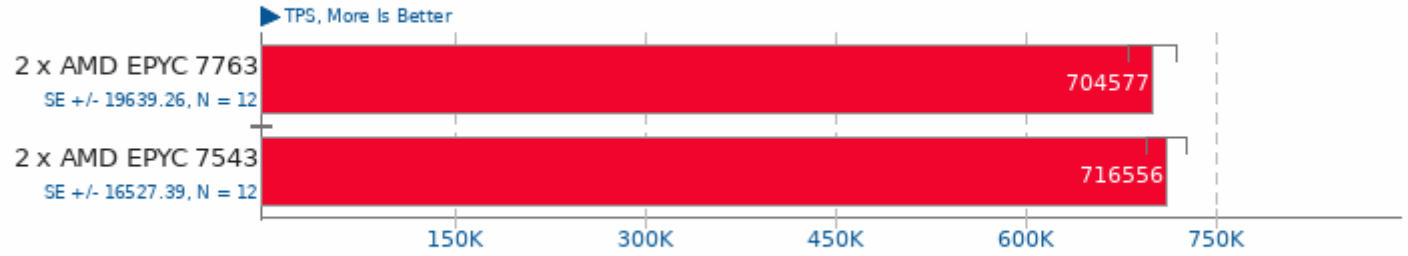
Clients: 512



1. (CXX) g++ options: -fPIC -pie -fstack-protector -O2 -shared -lpthread -lsnappy -ldl -lz -lrt

PostgreSQL pgbench 13.0

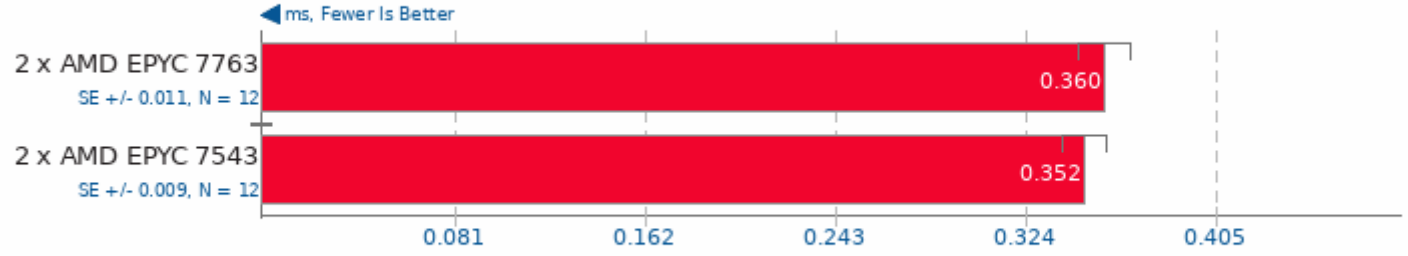
Scaling Factor: 100 - Clients: 250 - Mode: Read Only



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

PostgreSQL pgbench 13.0

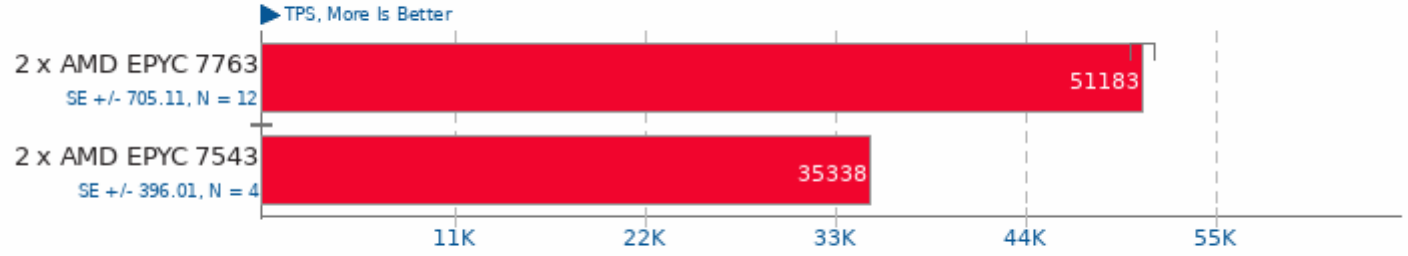
Scaling Factor: 100 - Clients: 250 - Mode: Read Only - Average Latency



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

PostgreSQL pgbench 13.0

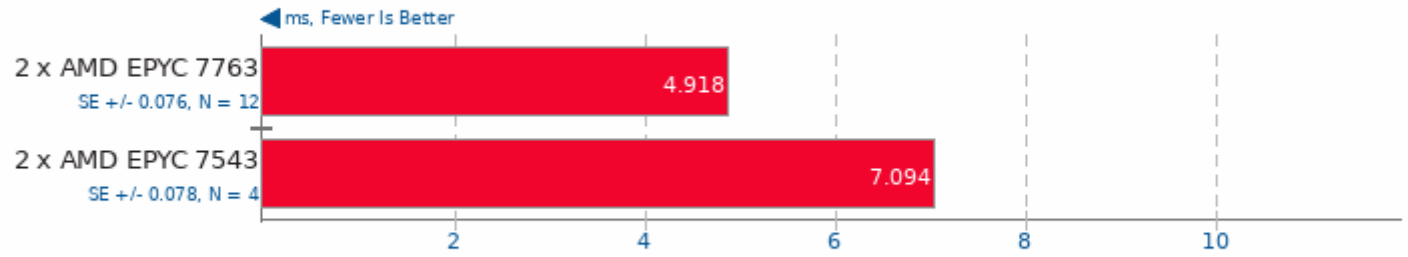
Scaling Factor: 100 - Clients: 250 - Mode: Read Write



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

PostgreSQL pgbench 13.0

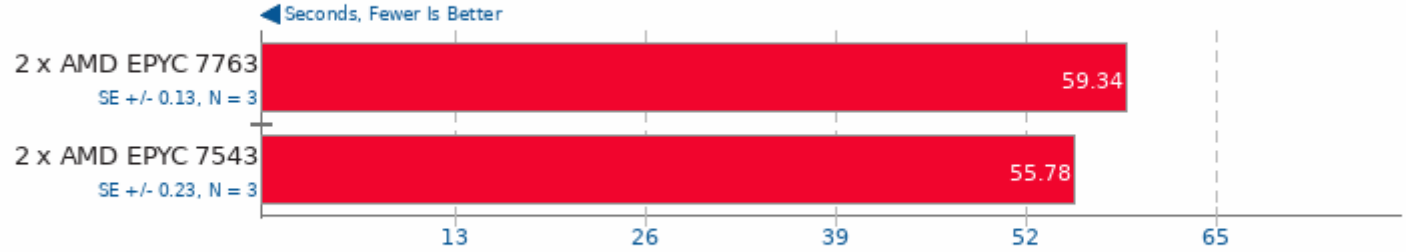
Scaling Factor: 100 - Clients: 250 - Mode: Read Write - Average Latency



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

SQLite Speedtest 3.30

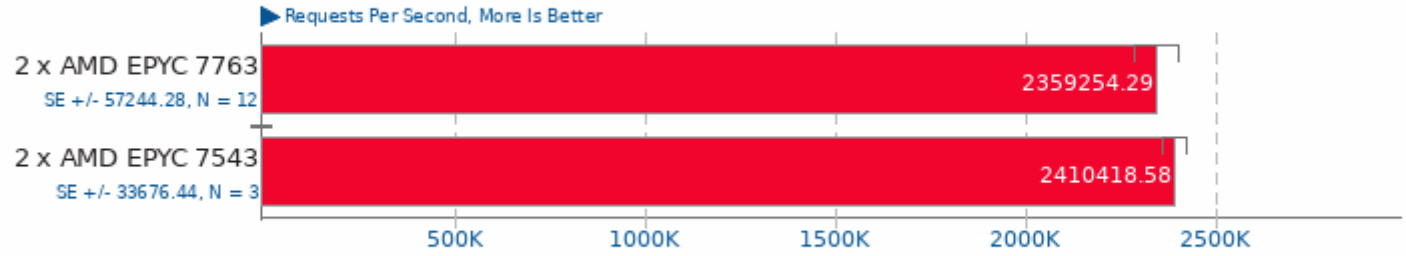
Timed Time - Size 1,000



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

Redis 6.0.9

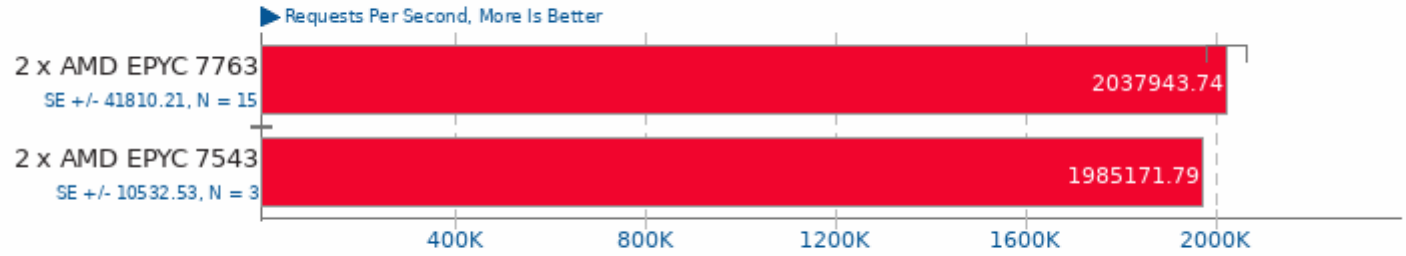
Test: LPOP



1. (CXX) g++ options: -MM -MT -g3 -fvisibility=hidden -O3

Redis 6.0.9

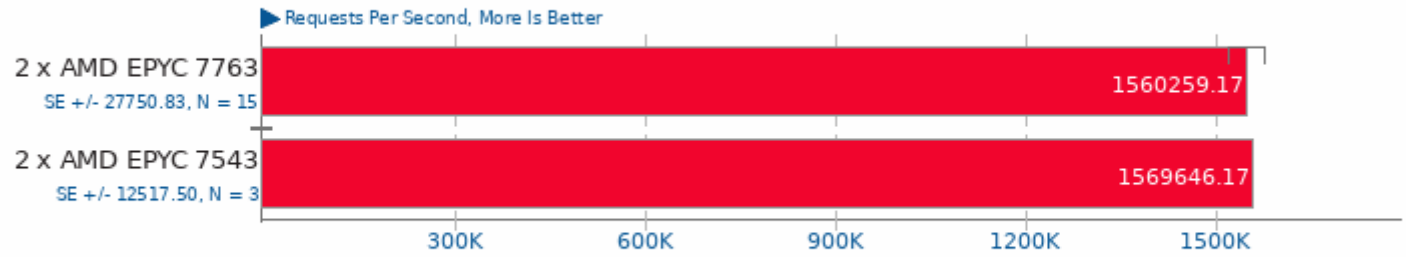
Test: SADD



1. (CXX) g++ options: -MM -MT -g3 -fvisibility=hidden -O3

Redis 6.0.9

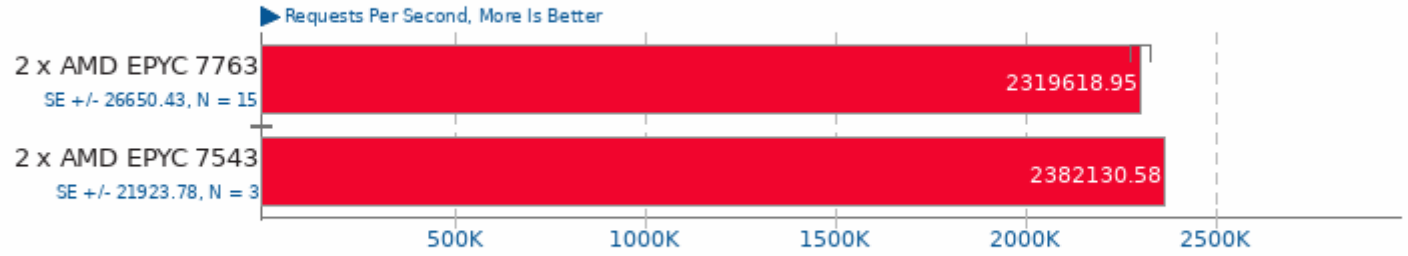
Test: LPUSH



1. (CXX) g++ options: -MM -MT -g3 -fvisibility=hidden -O3

Redis 6.0.9

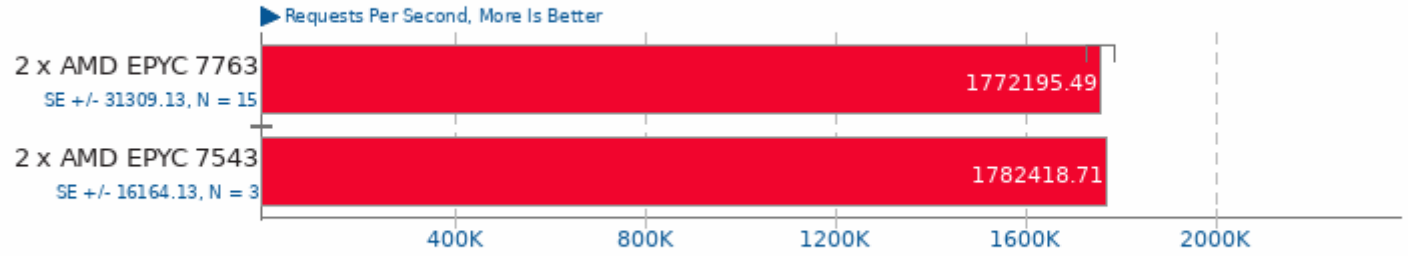
Test: GET



1. (CXX) g++ options: -MM -MT -g3 -fvisibility=hidden -O3

Redis 6.0.9

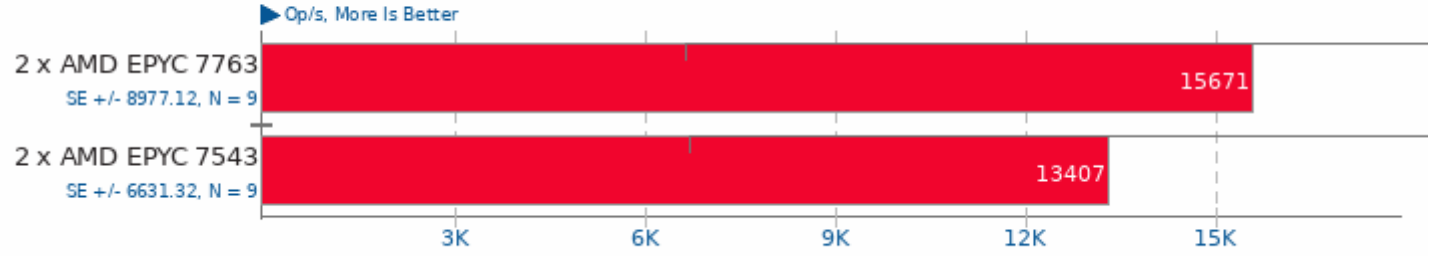
Test: SET



1. (CXX) g++ options: -MM -MT -g3 -fvisibility=hidden -O3

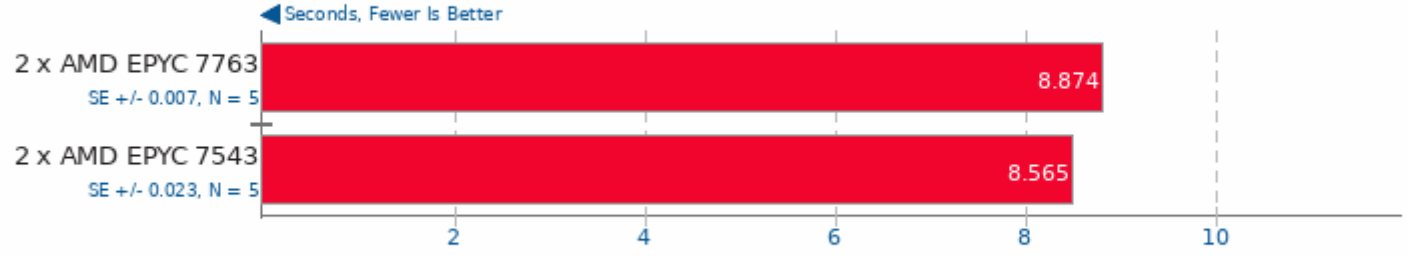
Apache Cassandra 3.11.4

Test: Mixed 1:3



FLAC Audio Encoding 1.3.2

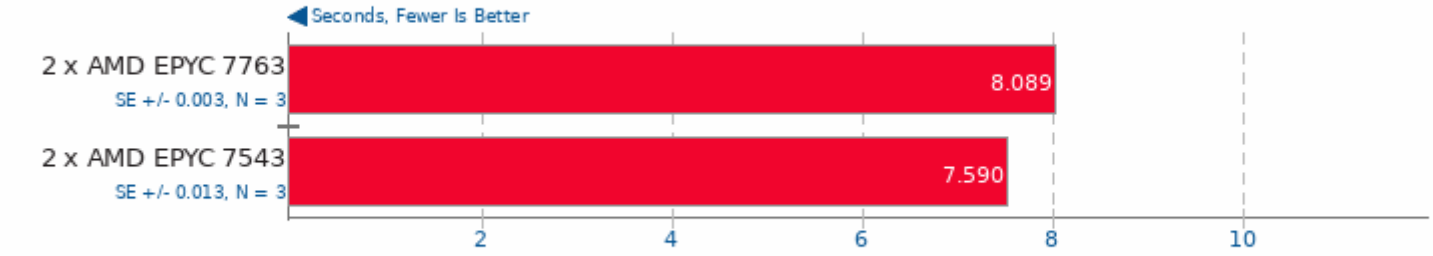
WAV To FLAC



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

LAME MP3 Encoding 3.100

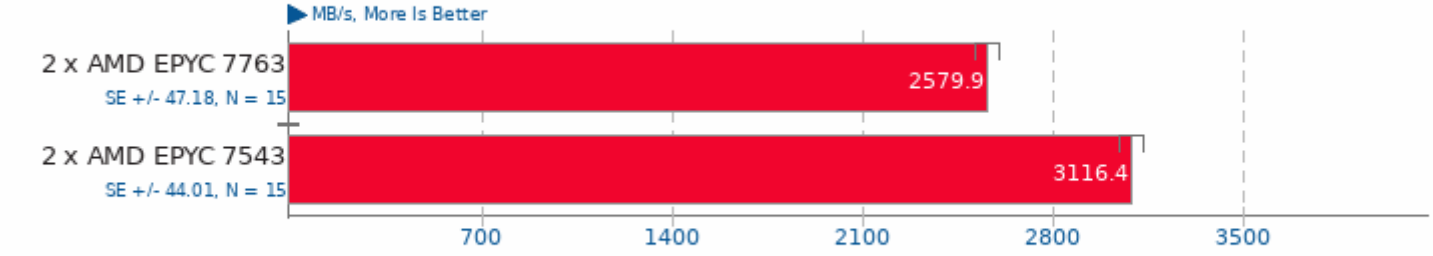
WAV To MP3



1. (CC) gcc options: -O3 -ffast-math -funroll-loops -fschedule-insns2 -fbranch-count-reg -fforce-addr -pipe -lncurses -lm

Zstd Compression 1.4.9

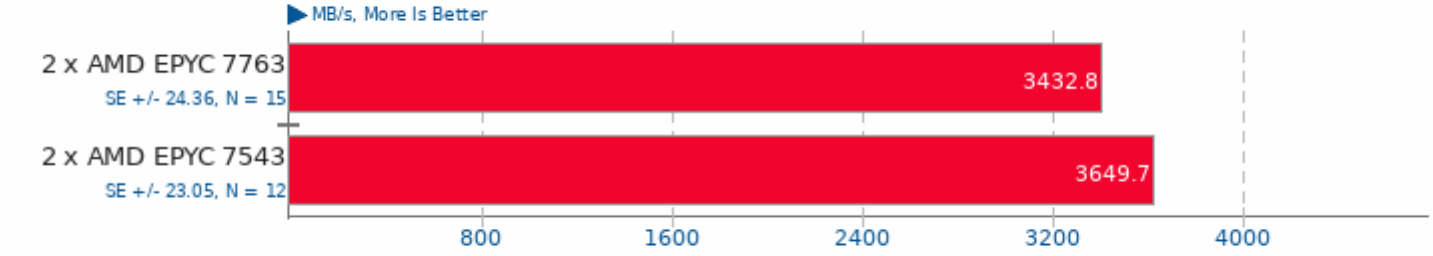
Compression Level: 8 - Compression Speed



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

Zstd Compression 1.4.9

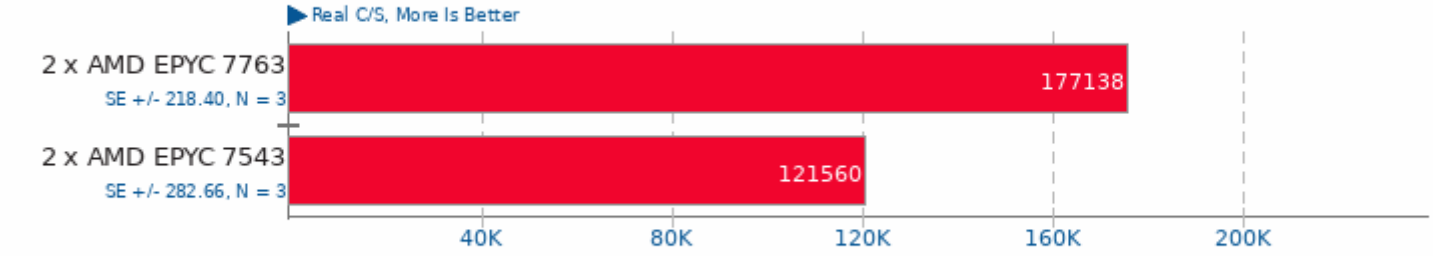
Compression Level: 8 - Decompression Speed



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

John The Ripper 1.9.0-jumbo-1

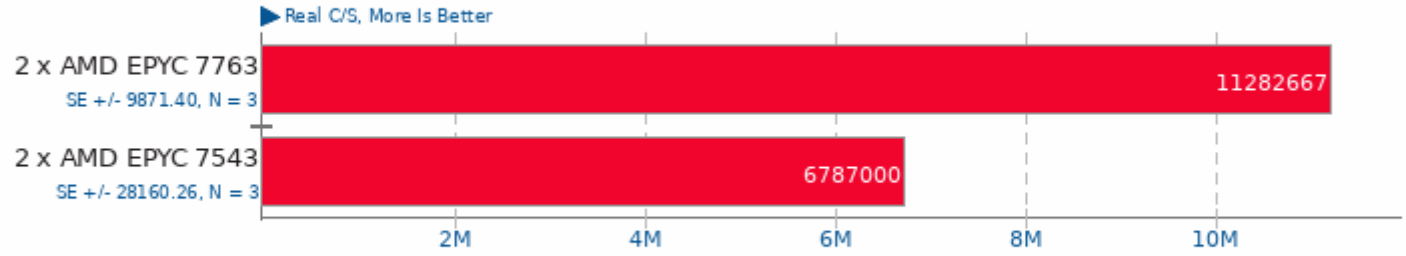
Test: Blowfish



1. (CC) gcc options: -m64 -lssl -lcrypto -fopenmp -lgmp -pthread -lm -lz -ldl -lcrypt -lbz2

John The Ripper 1.9.0-jumbo-1

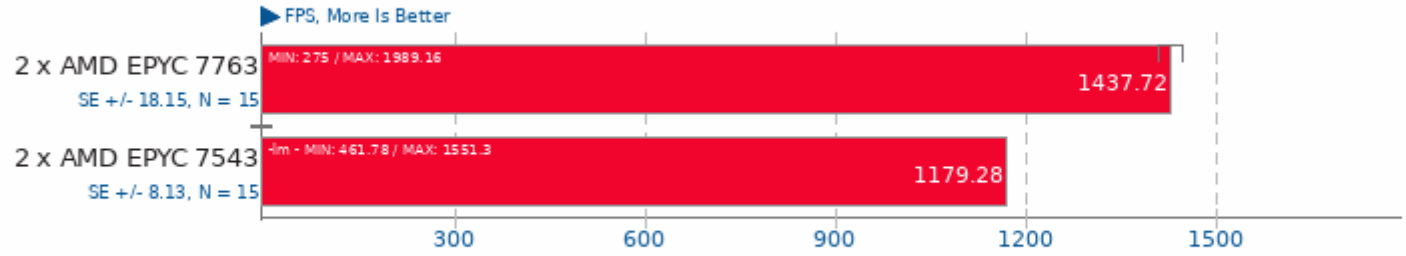
Test: MD5



1. (CC) gcc options: -m64 -lssl -lcrypto -fopenmp -lgmp -pthread -lm -lz -ldl -lcrypt -lbz2

dav1d 0.8.2

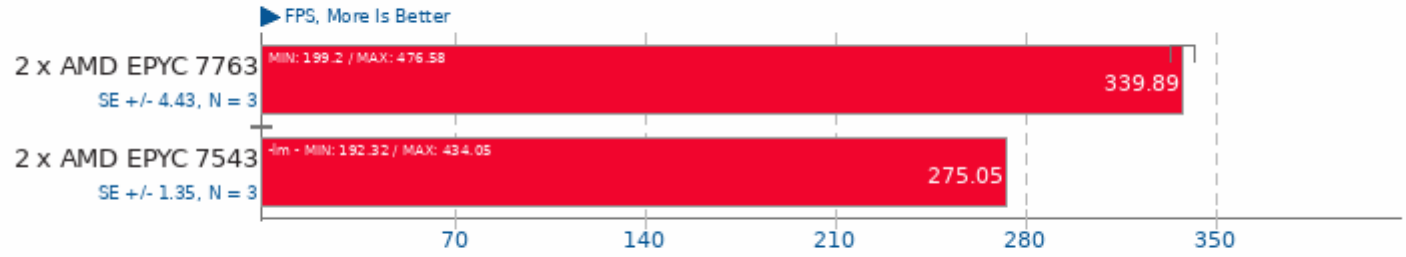
Video Input: Chimera 1080p



1. (CC) gcc options: -pthread

dav1d 0.8.2

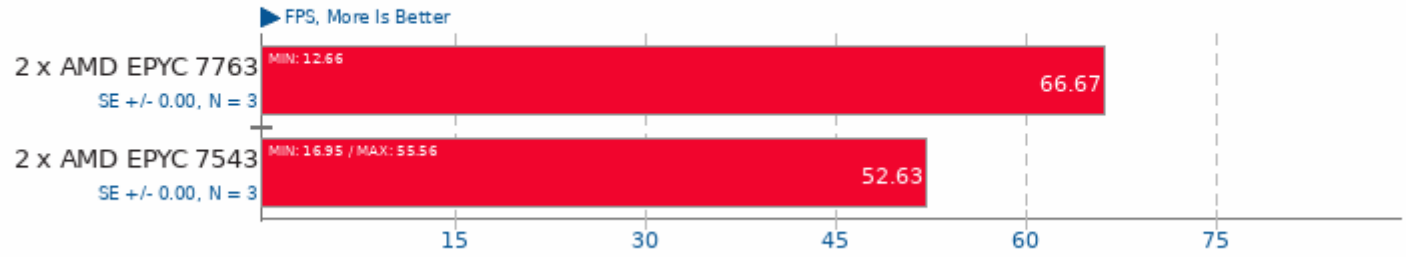
Video Input: Chimera 1080p 10-bit



1. (CC) gcc options: -pthread

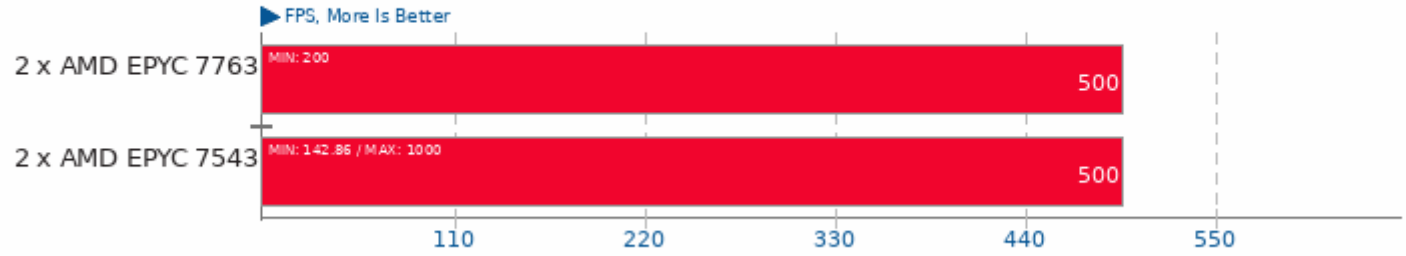
OSPray 1.8.5

Demo: Magnetic Reconnection - Renderer: SciVis



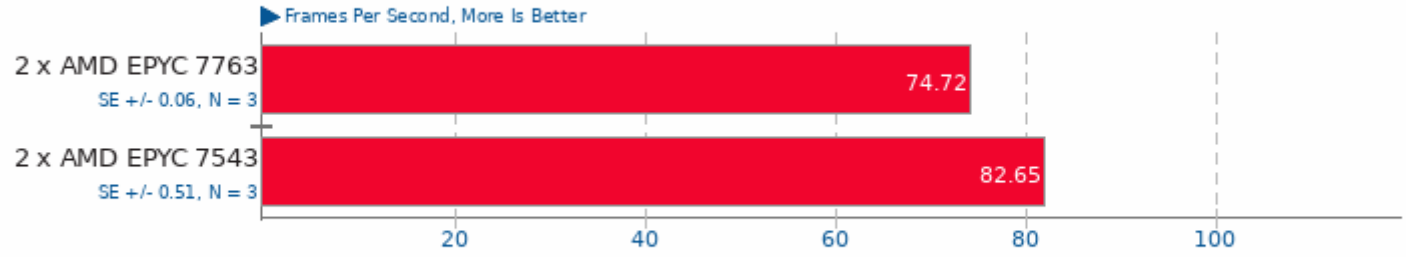
OSPray 1.8.5

Demo: Magnetic Reconnection - Renderer: Path Tracer



Kvazaar 2.0

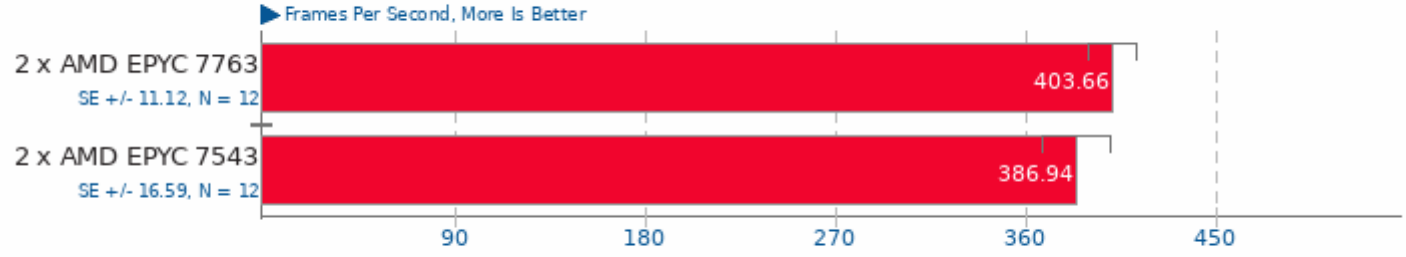
Video Input: Bosphorus 1080p - Video Preset: Medium



1. (CC) gcc options: -pthread -ftree-vectorize -fvisibility=hidden -O2 -lpthread -lm -lrt

SVT-VP9 0.1

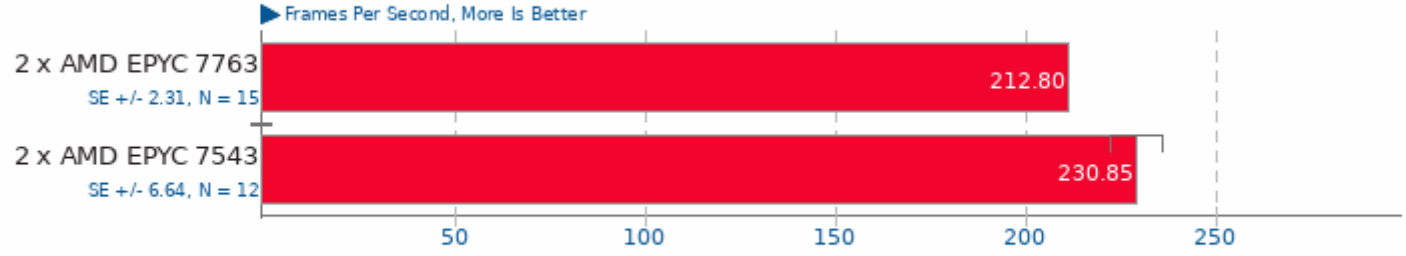
Tuning: PSNR/SSIM Optimized - Input: Bosphorus 1080p



1. (CC) gcc options: -O3 -fcommon -fPIE -fPIC -fvisibility=hidden -pie -rdynamic -lpthread -lrt -lm

x264 2019-12-17

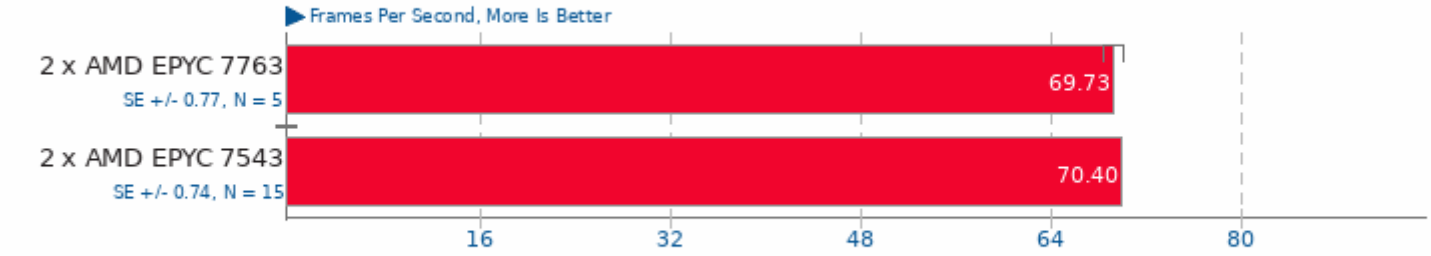
H.264 Video Encoding



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

x265 3.4

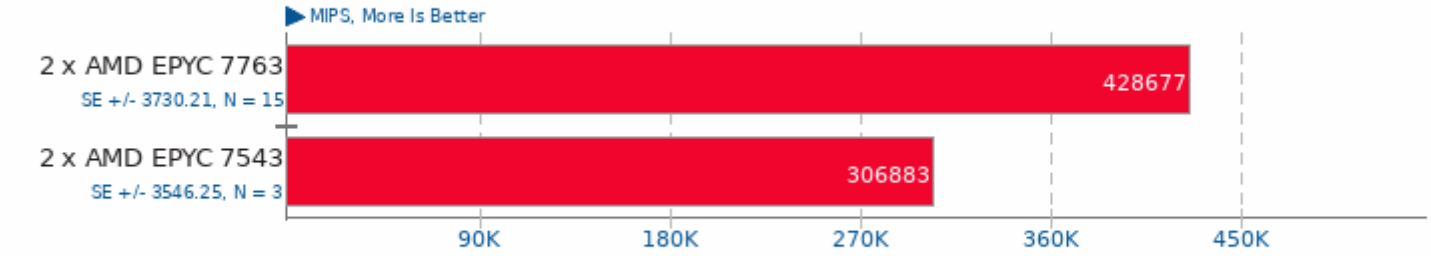
Video Input: Bosphorus 1080p



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

7-Zip Compression 16.02

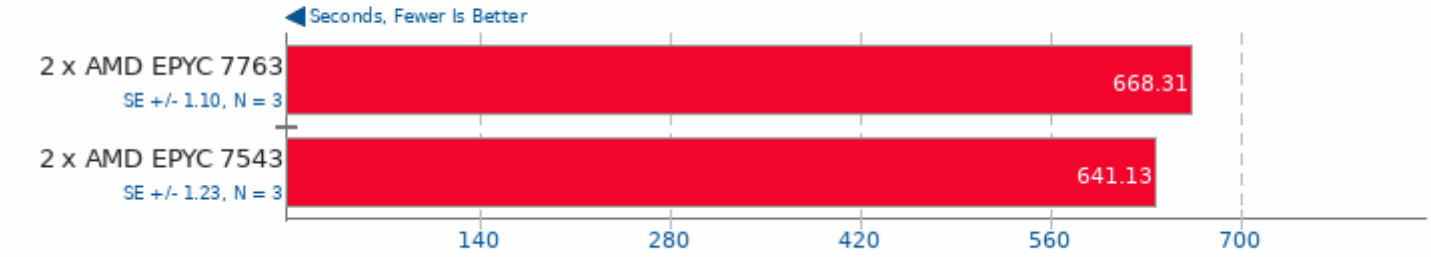
Compress Speed Test



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

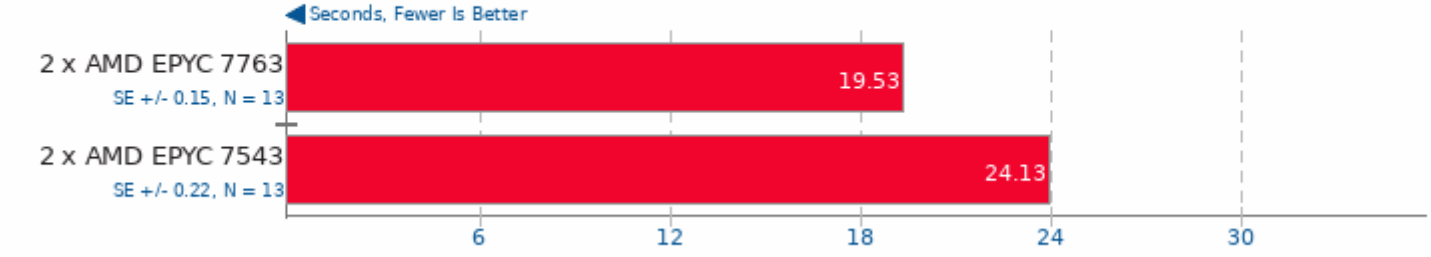
Timed GCC Compilation 9.3.0

Time To Compile



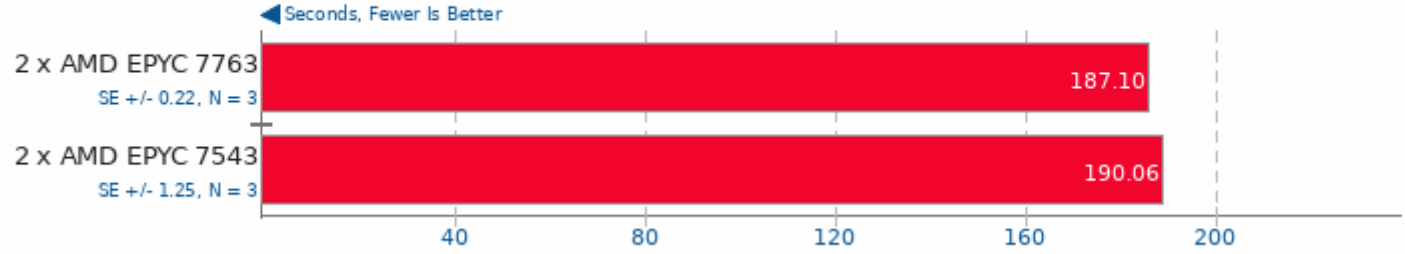
Timed Linux Kernel Compilation 5.10.20

Time To Compile



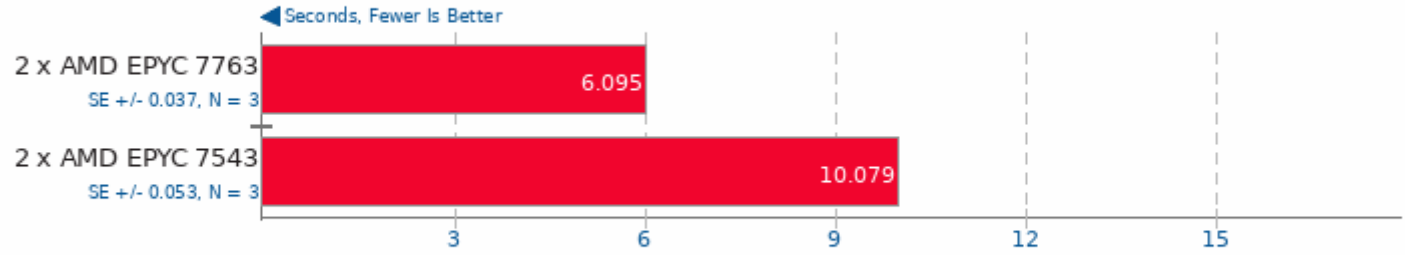
Timed LLVM Compilation 10.0

Time To Compile



C-Ray 1.1

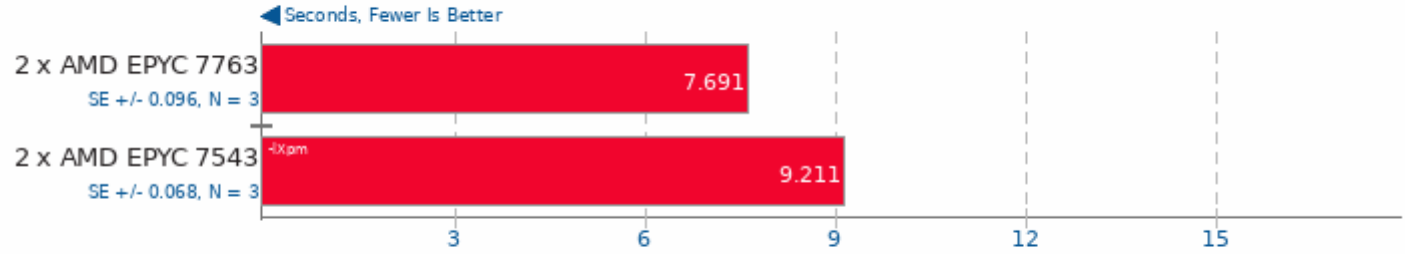
Total Time - 4K, 16 Rays Per Pixel



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

POV-Ray 3.7.0.7

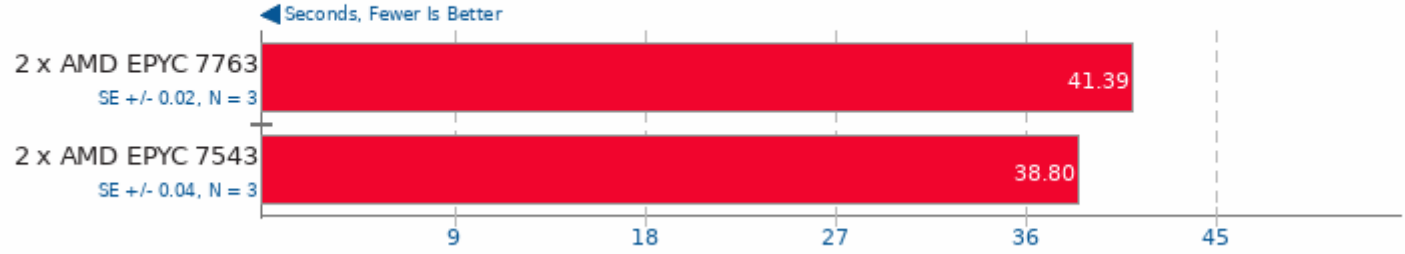
Trace Time



1. (CXX) g++ options: -pipe -O3 -ffast-math -march=native -pthread -lSM -lICE -lX11 -lIlmImf -lIlmImf-2_5 -lImath-2_5 -lHalf-2_5 -lIex-2_5 -lIexMath-2_5 -lIlmThread-2_

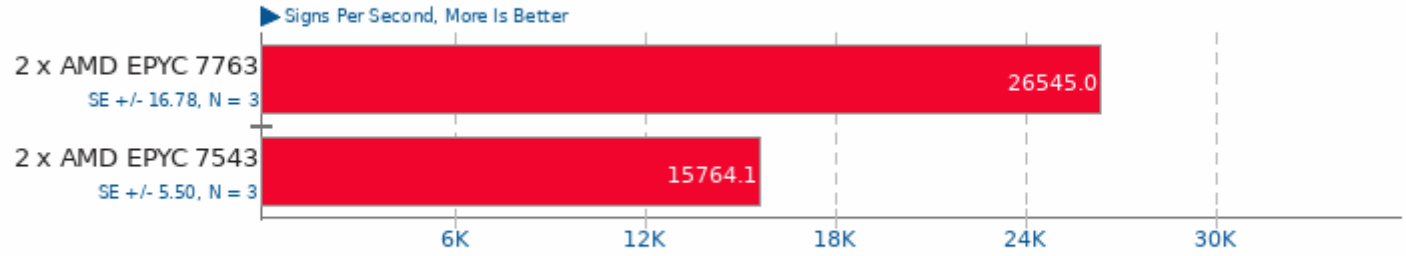
Gzip Compression

Linux Source Tree Archiving To .tar.gz



OpenSSL 1.1.1

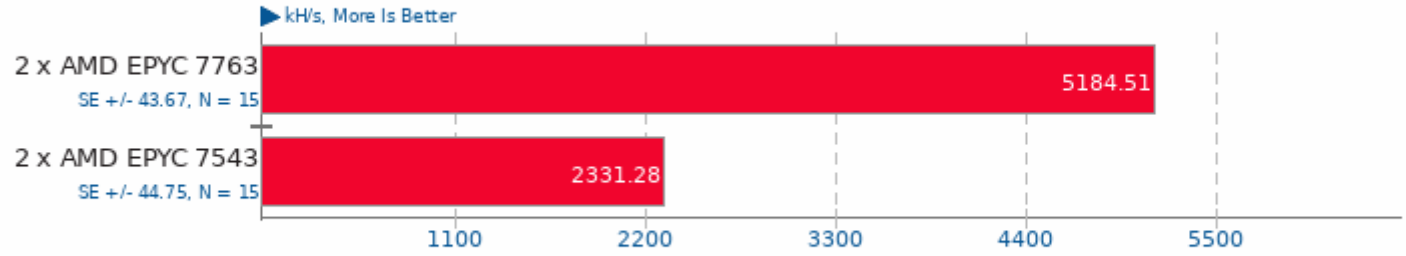
RSA 4096-bit Performance



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

Cpuminer-Opt 3.15.5

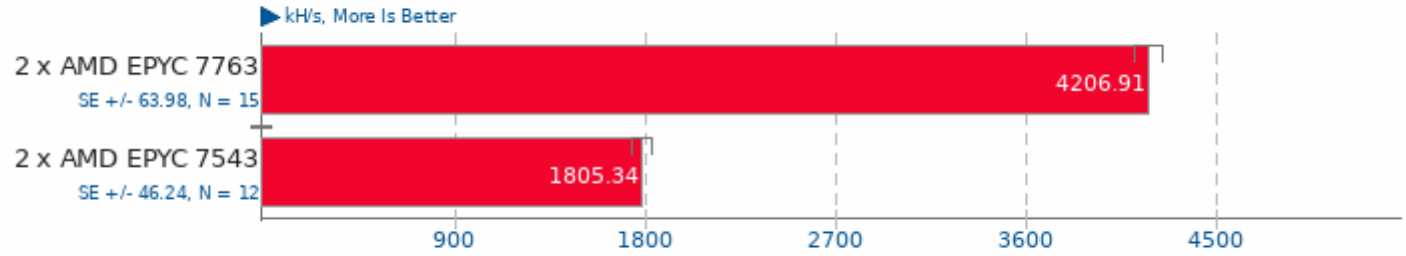
Algorithm: Magi



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

Cpuminer-Opt 3.15.5

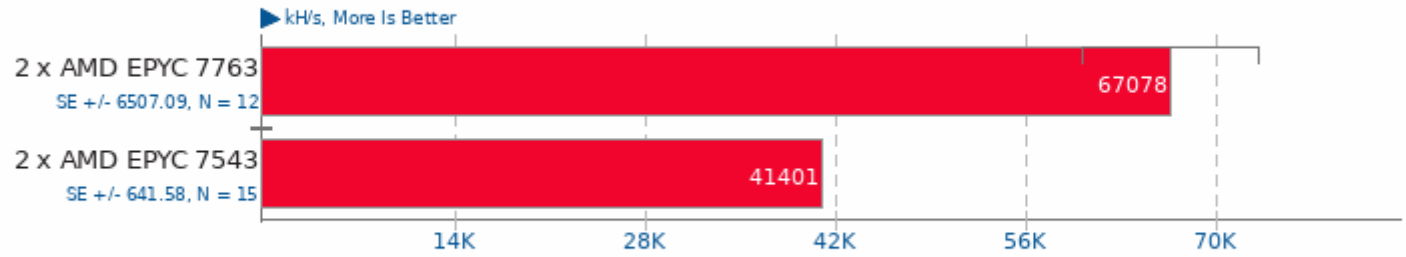
Algorithm: x25x



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

Cpuminer-Opt 3.15.5

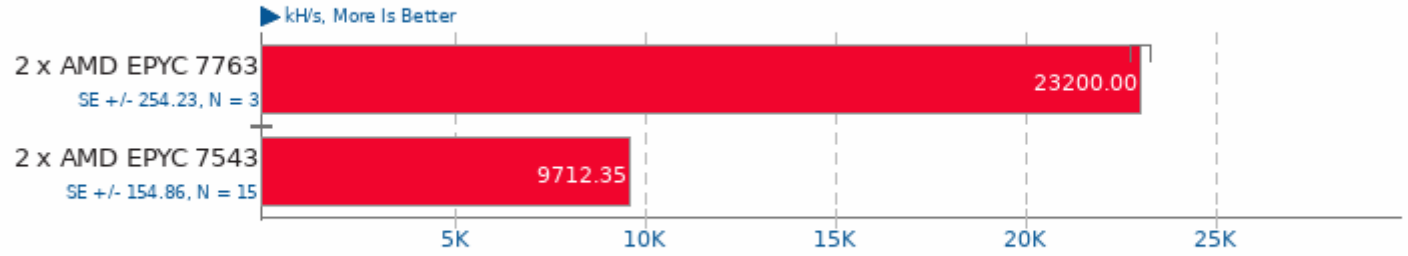
Algorithm: Deepcoin



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

Cpuminer-Opt 3.15.5

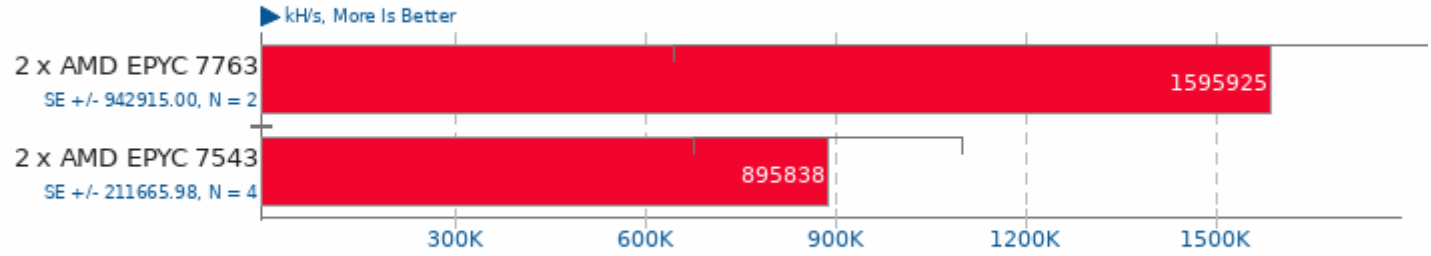
Algorithm: Ringcoin



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

Cpuminer-Opt 3.15.5

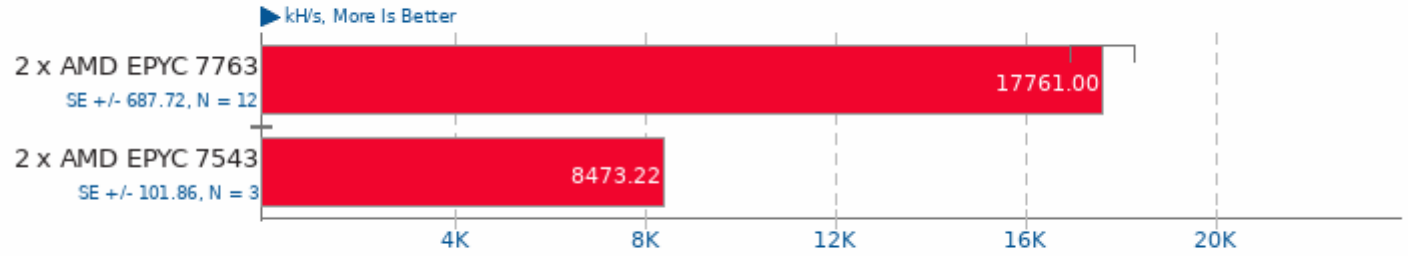
Algorithm: Blake-2 S



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

Cpuminer-Opt 3.15.5

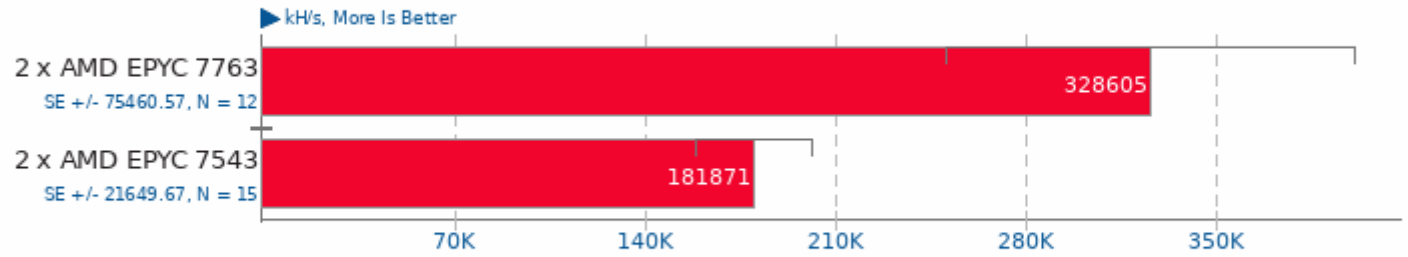
Algorithm: Garlicoin



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

Cpuminer-Opt 3.15.5

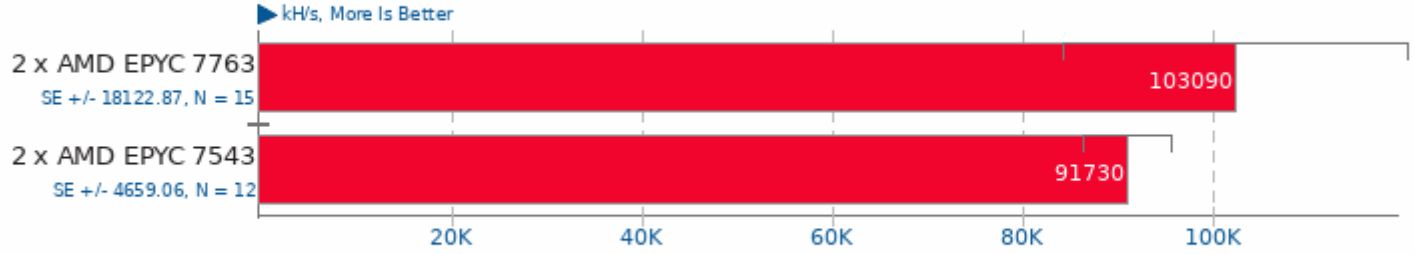
Algorithm: Skeincoin



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

Cpuminer-Opt 3.15.5

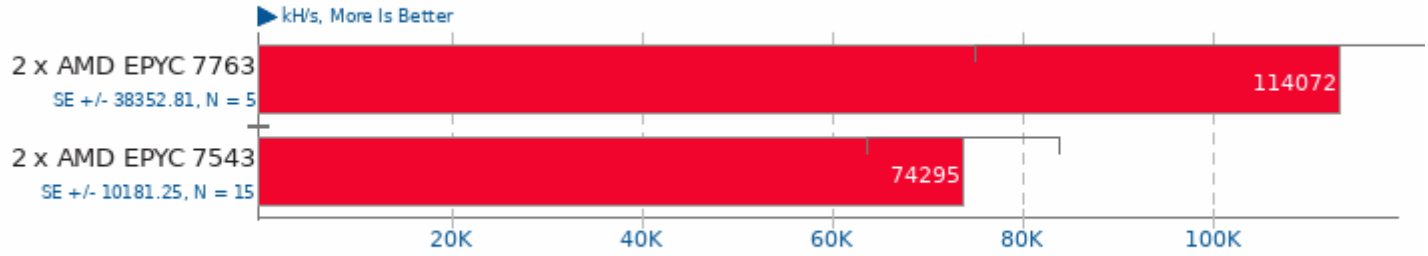
Algorithm: Myriad-Groestl



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

Cpuminer-Opt 3.15.5

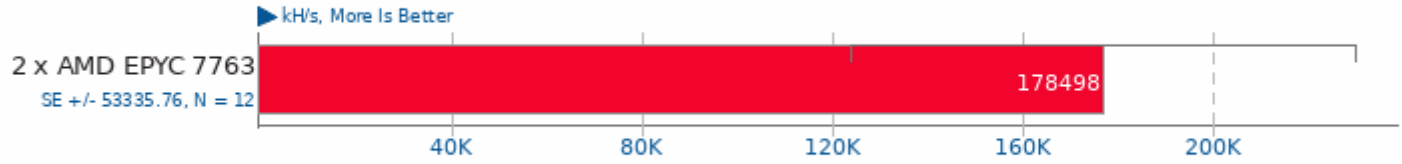
Algorithm: LBC, LBRY Credits



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

Cpuminer-Opt 3.15.5

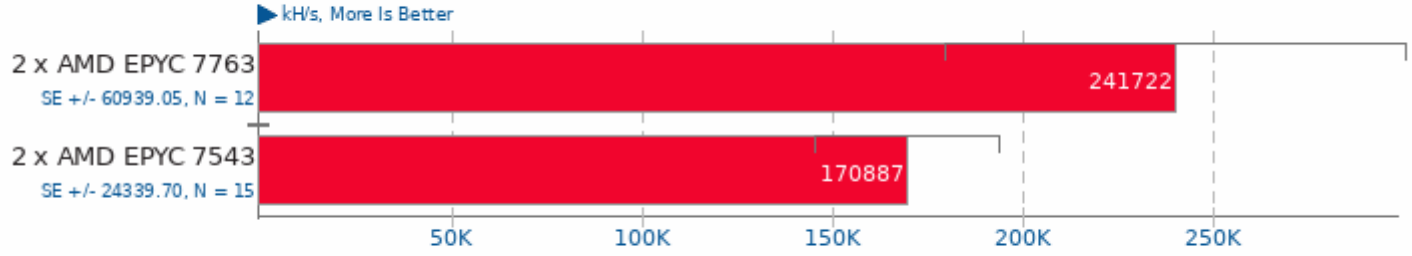
Algorithm: Quad SHA-256, Pyrite



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

Cpuminer-Opt 3.15.5

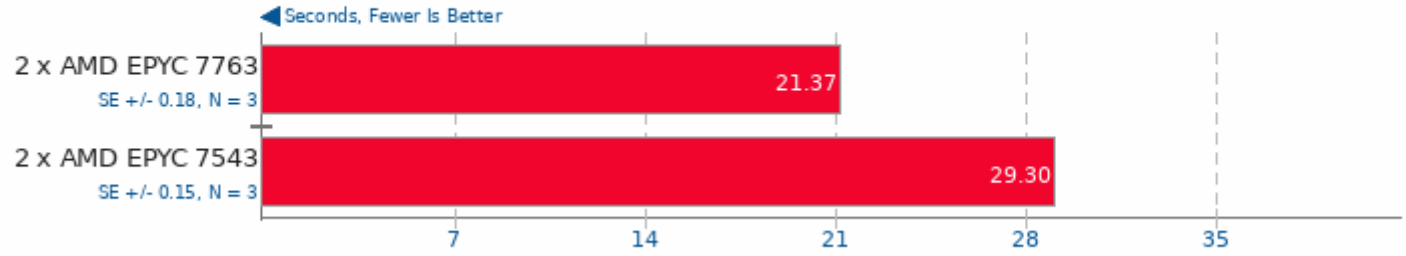
Algorithm: Triple SHA-256, Onecoin



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

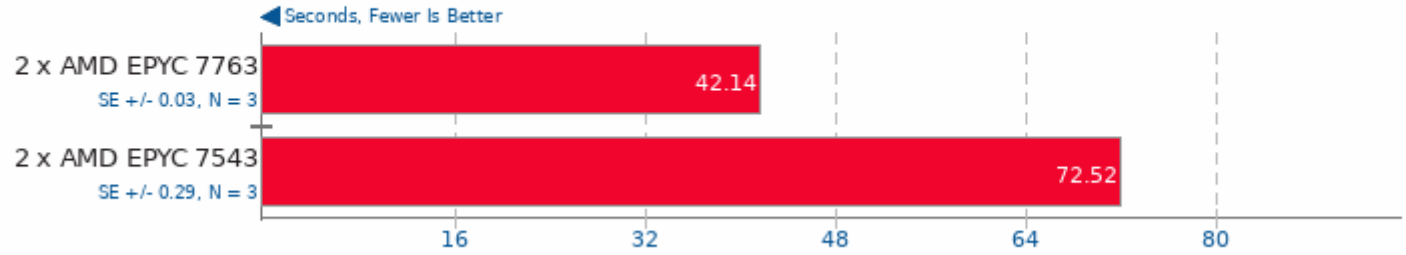
Blender 2.92

Blend File: BMW27 - Compute: CPU-Only



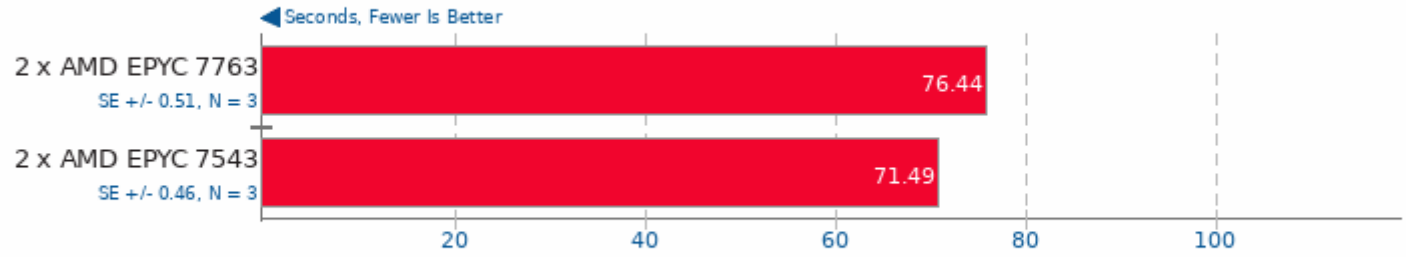
Blender 2.92

Blend File: Classroom - Compute: CPU-Only



GnuPG 2.2.27

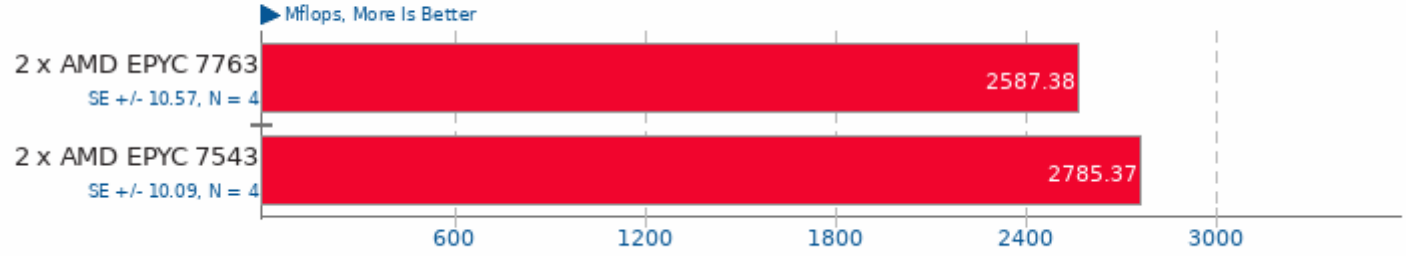
2.7GB Sample File Encryption



1. (CC) gcc options: -O2

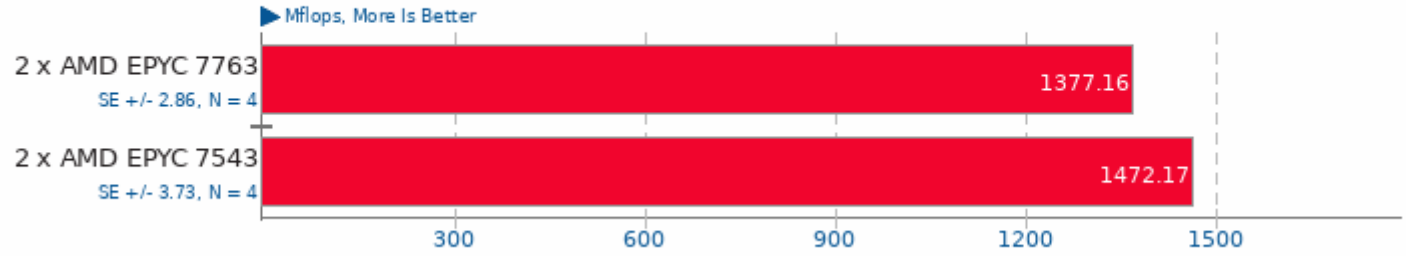
Java SciMark 2.0

Computational Test: Composite



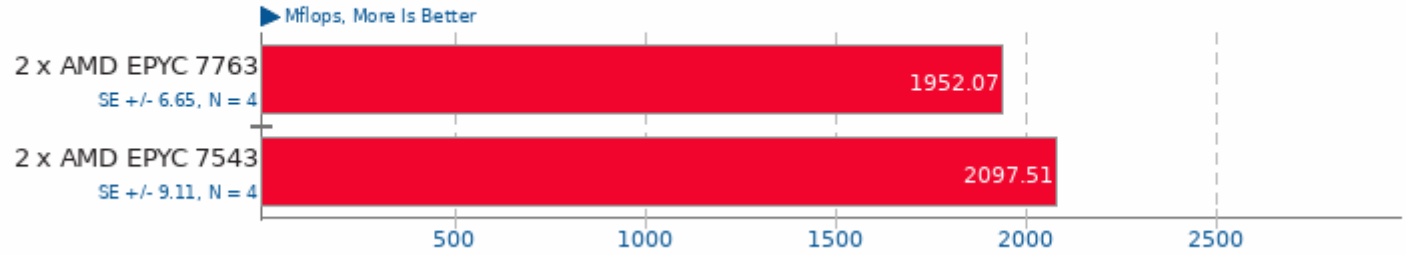
Java SciMark 2.0

Computational Test: Monte Carlo



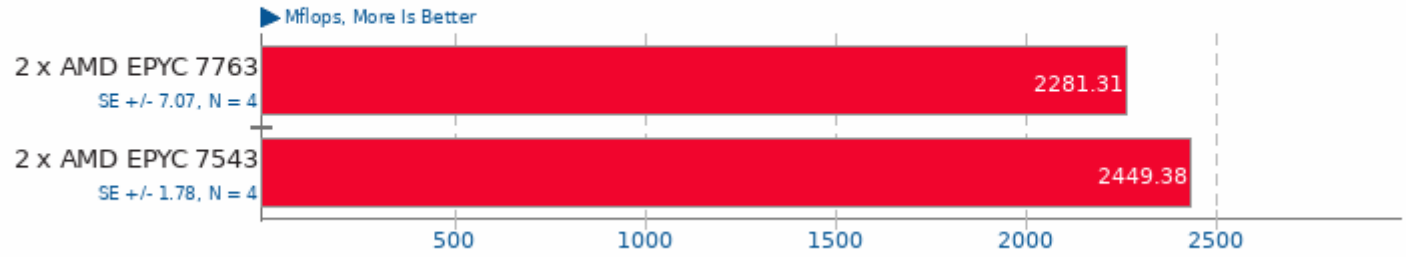
Java SciMark 2.0

Computational Test: Fast Fourier Transform



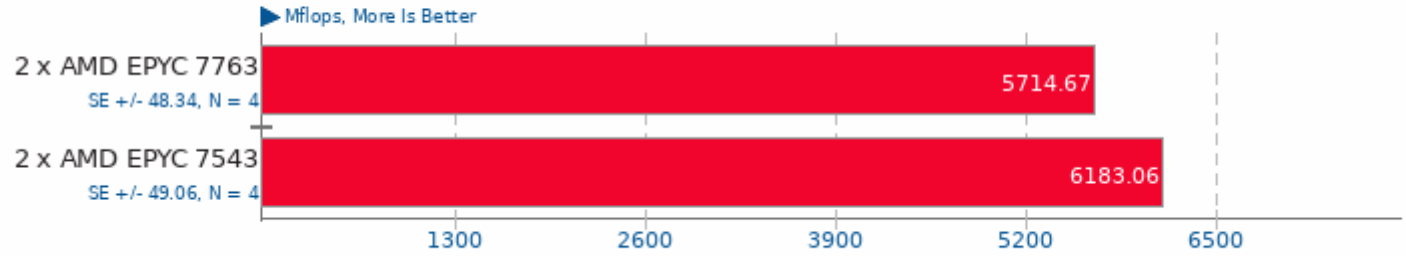
Java SciMark 2.0

Computational Test: Sparse Matrix Multiply



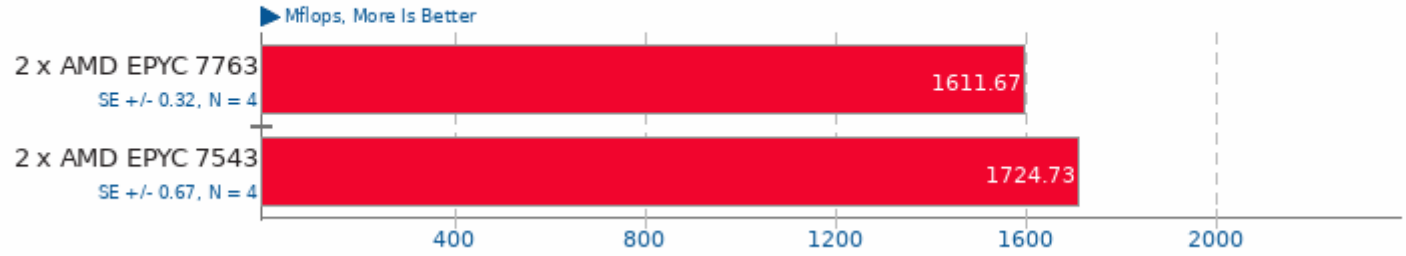
Java SciMark 2.0

Computational Test: Dense LU Matrix Factorization



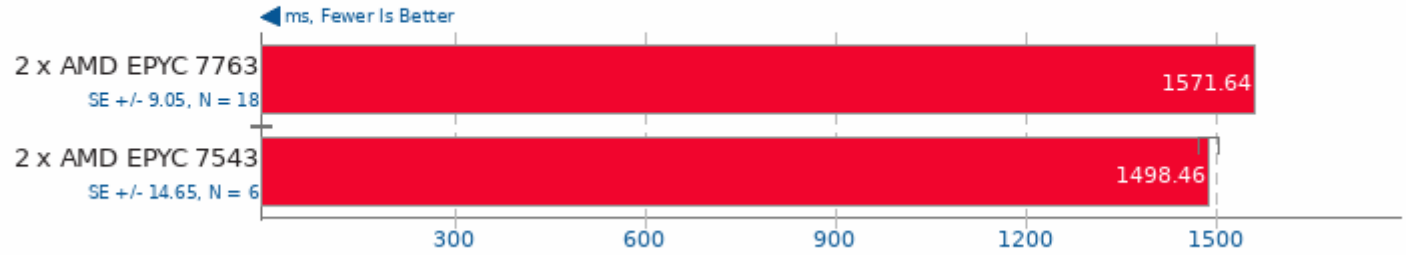
Java SciMark 2.0

Computational Test: Jacobi Successive Over-Relaxation



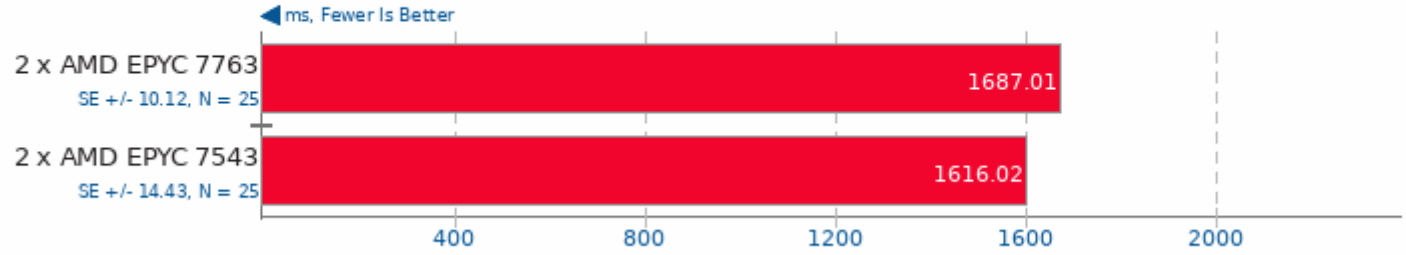
Renaissance 0.10.0

Test: Scala Dotty



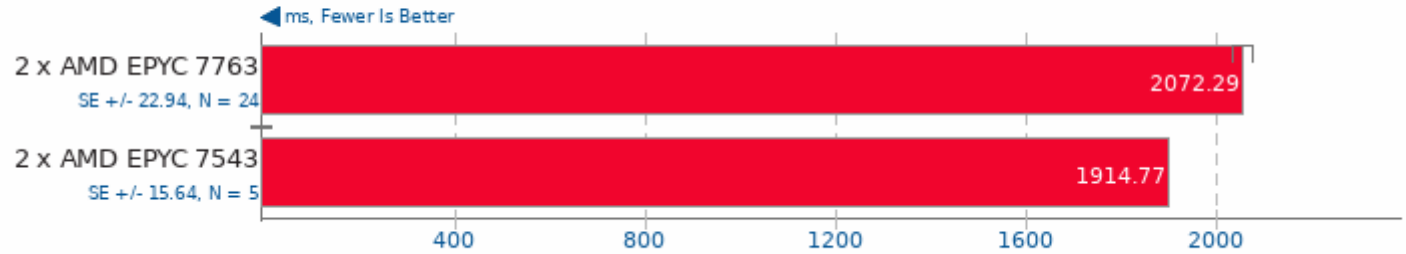
Renaissance 0.10.0

Test: Random Forest



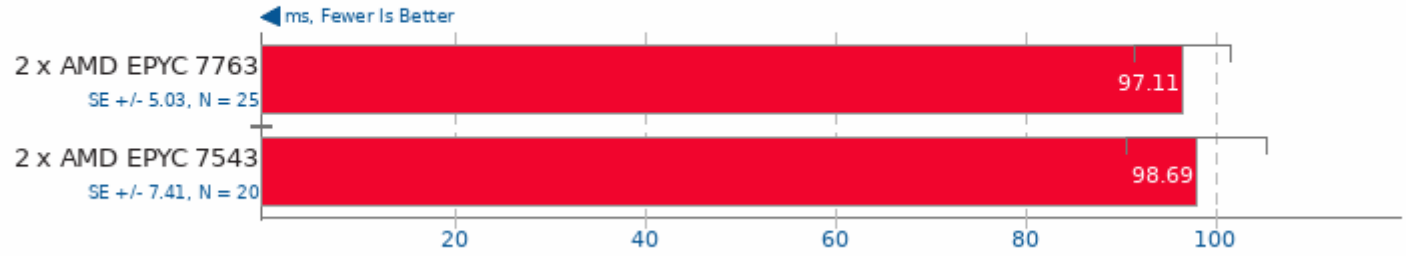
Renaissance 0.10.0

Test: Apache Spark ALS



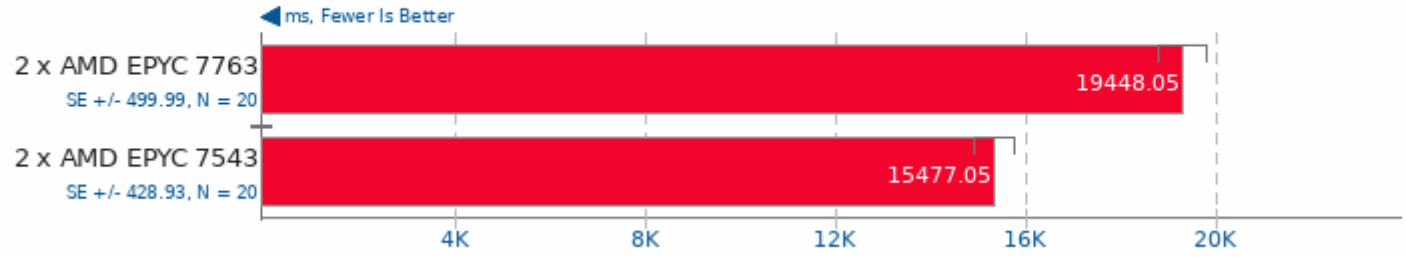
Renaissance 0.10.0

Test: Apache Spark Bayes



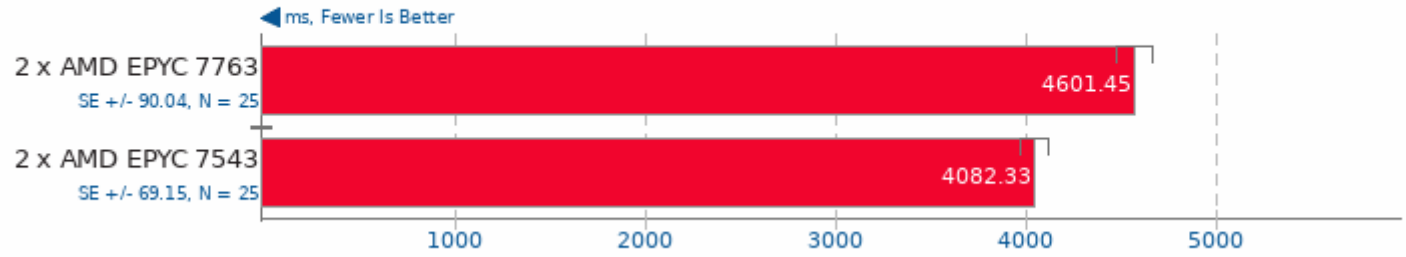
Renaissance 0.10.0

Test: Savina Reactors.IO



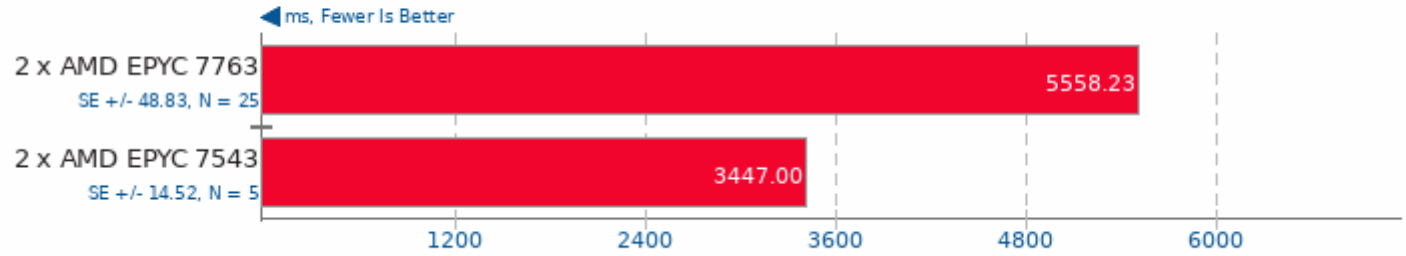
Renaissance 0.10.0

Test: Apache Spark PageRank



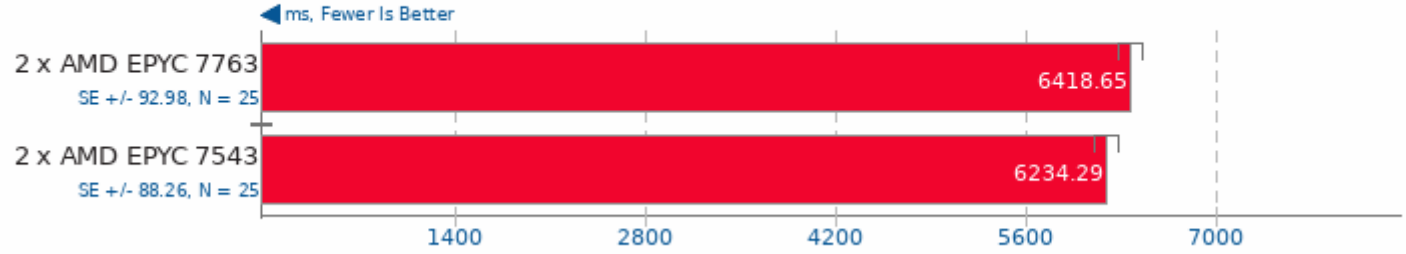
Renaissance 0.10.0

Test: Twitter HTTP Requests



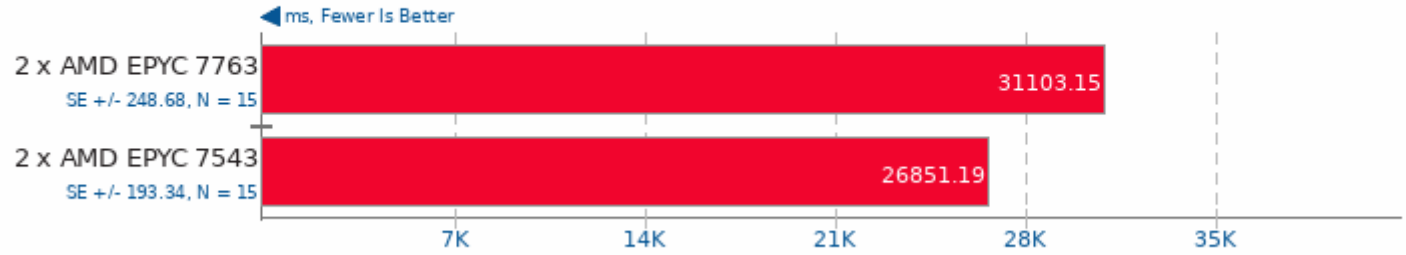
Renaissance 0.10.0

Test: In-Memory Database Shootout



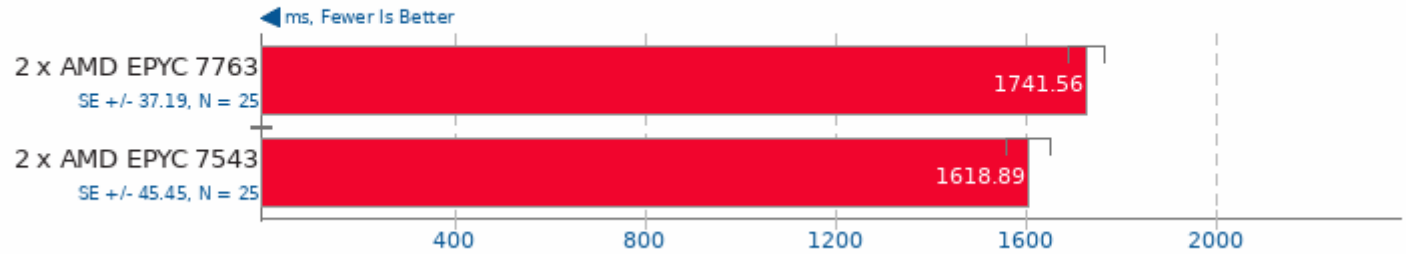
Renaissance 0.10.0

Test: Akka Unbalanced Cobwebbed Tree



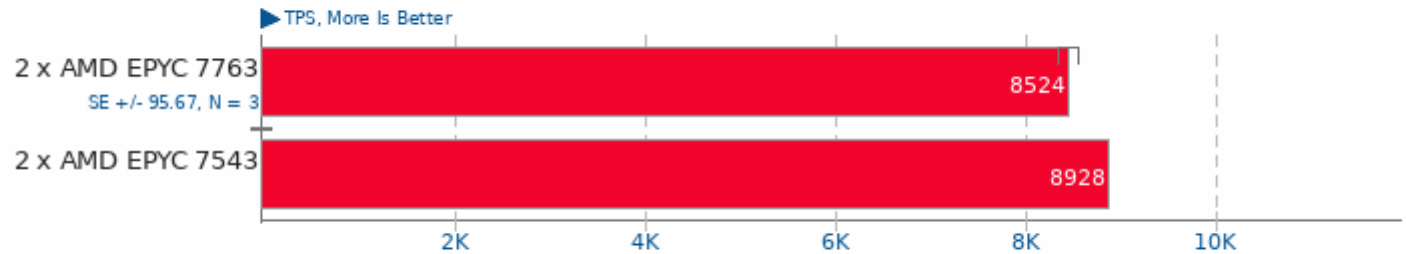
Renaissance 0.10.0

Test: Genetic Algorithm Using Jenetics + Futures



PostMark 1.51

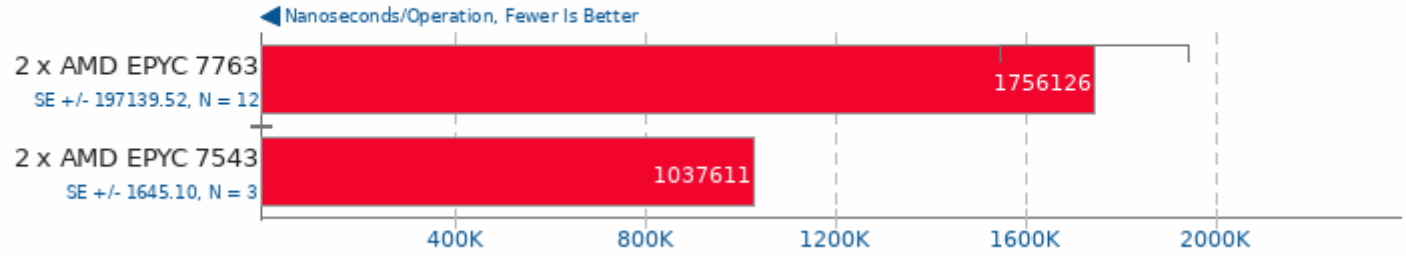
Disk Transaction Performance



1. (CC) gcc options: -O3

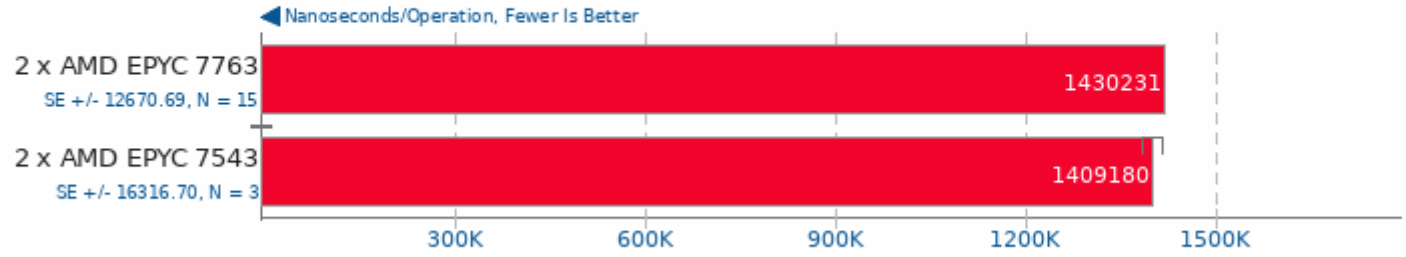
Go Benchmarks

Test: http



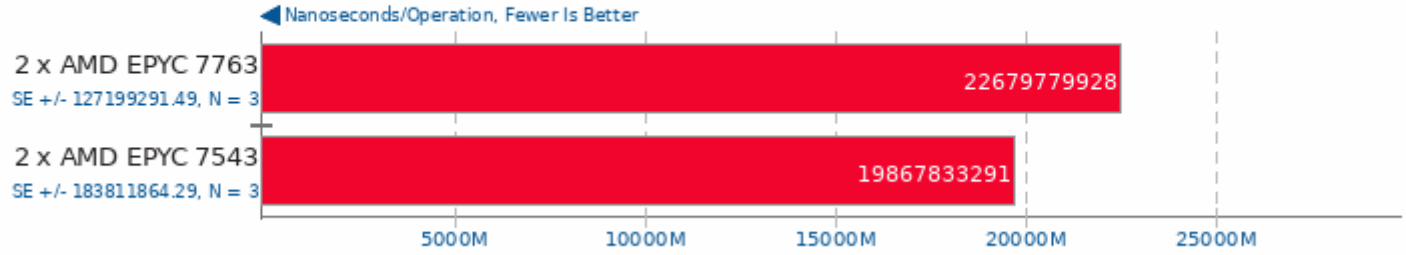
Go Benchmarks

Test: json



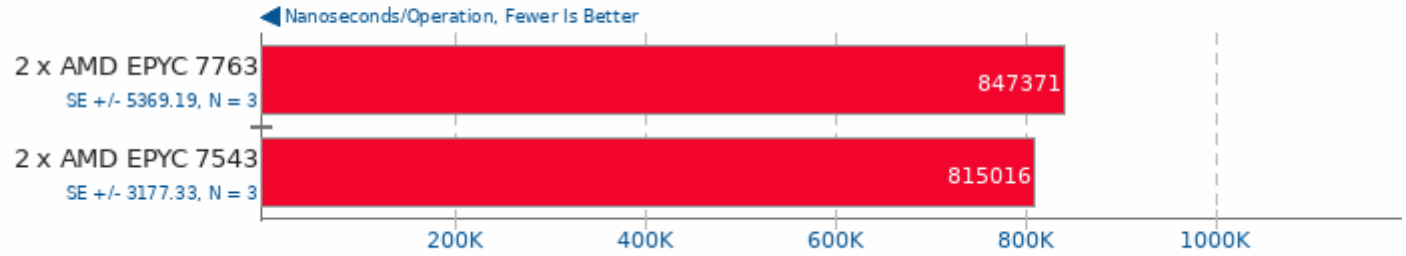
Go Benchmarks

Test: build



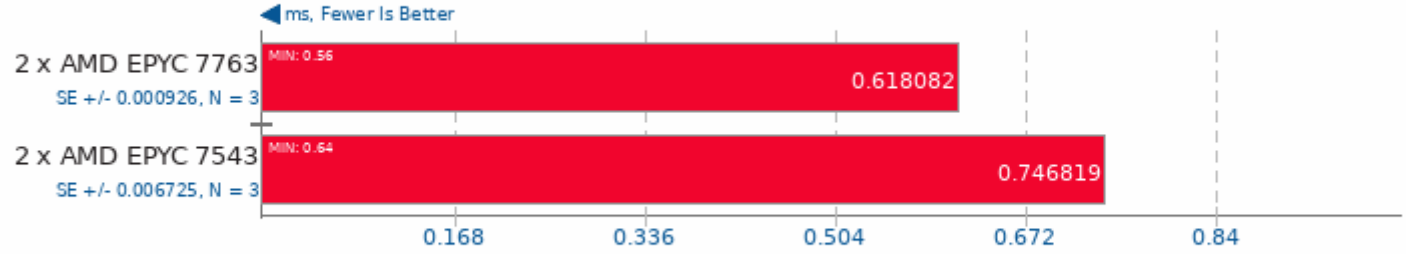
Go Benchmarks

Test: garbage



oneDNN 2.0

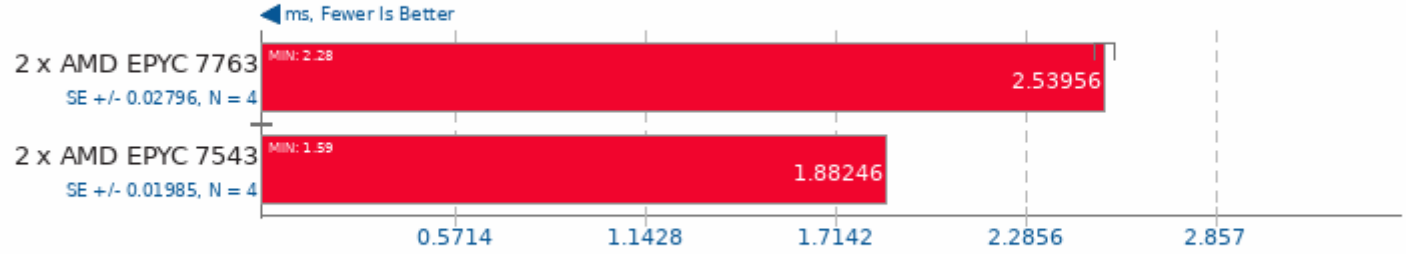
Harness: Convolution Batch Shapes Auto - Data Type: f32 - Engine: CPU



1. (CXX) g++ options: -O3 -std=c++11 -fopenmp -msse4.1 -fPIC -pie -lpthread

oneDNN 2.0

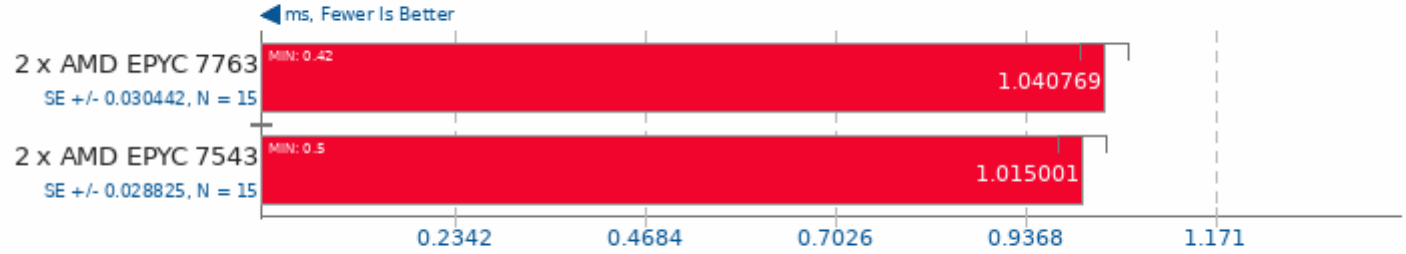
Harness: Deconvolution Batch shapes_1d - Data Type: f32 - Engine: CPU



1. (CXX) g++ options: -O3 -std=c++11 -fopenmp -msse4.1 -fPIC -pie -lpthread

oneDNN 2.0

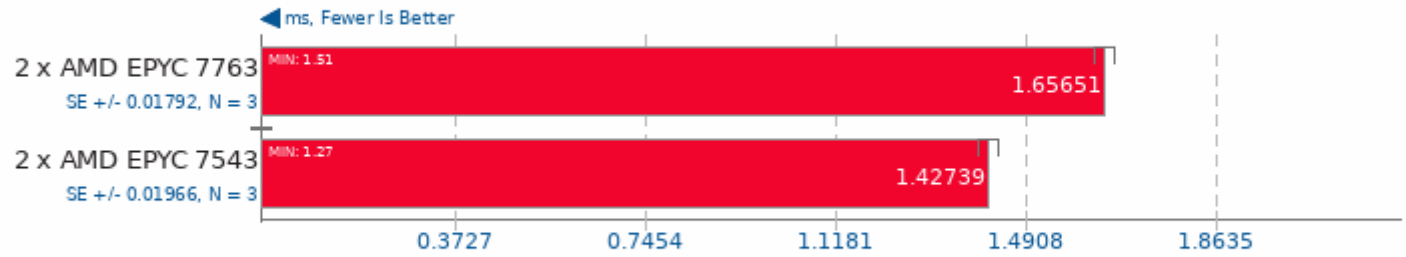
Harness: Convolution Batch Shapes Auto - Data Type: u8s8f32 - Engine: CPU



1. (CXX) g++ options: -O3 -std=c++11 -fopenmp -msse4.1 -fPIC -pie -lpthread

oneDNN 2.0

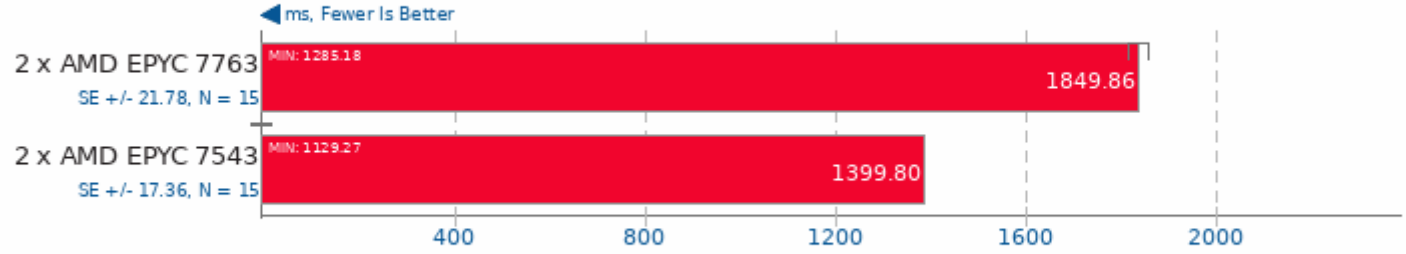
Harness: Deconvolution Batch shapes_1d - Data Type: u8s8f32 - Engine: CPU



1. (CXX) g++ options: -O3 -std=c++11 -fopenmp -msse4.1 -fPIC -pie -lpthread

oneDNN 2.0

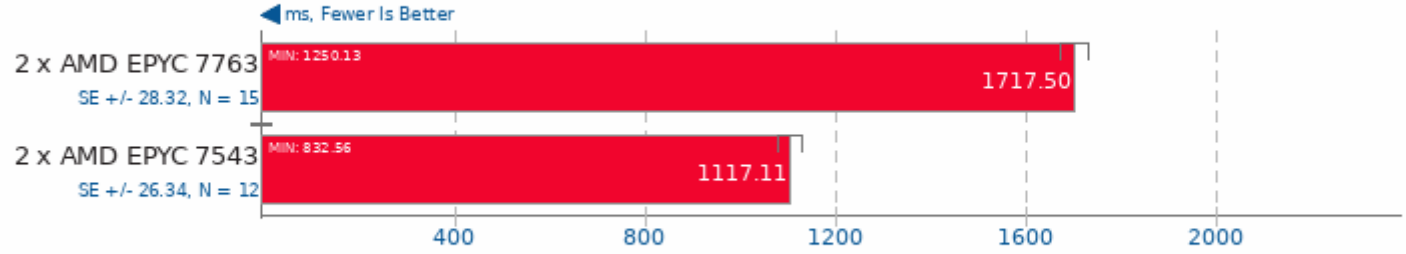
Harness: Recurrent Neural Network Training - Data Type: f32 - Engine: CPU



1. (CXX) g++ options: -O3 -std=c++11 -fopenmp -msse4.1 -fPIC -pie -lpthread

oneDNN 2.0

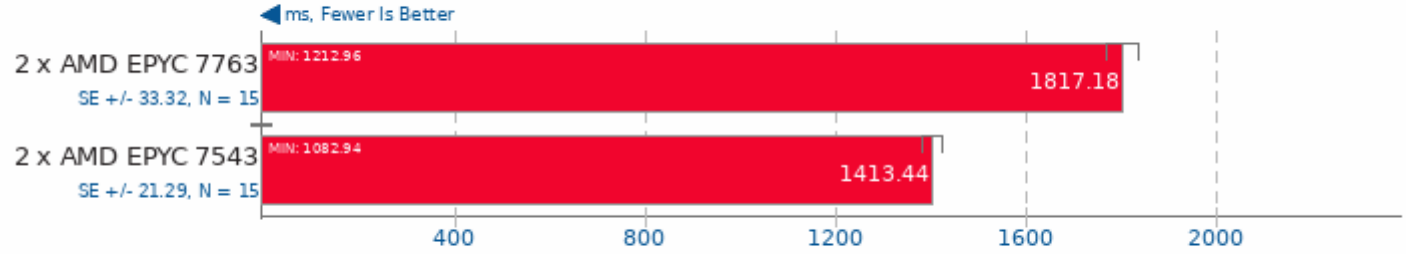
Harness: Recurrent Neural Network Inference - Data Type: f32 - Engine: CPU



1. (CXX) g++ options: -O3 -std=c++11 -fopenmp -msse4.1 -fPIC -pie -lpthread

oneDNN 2.0

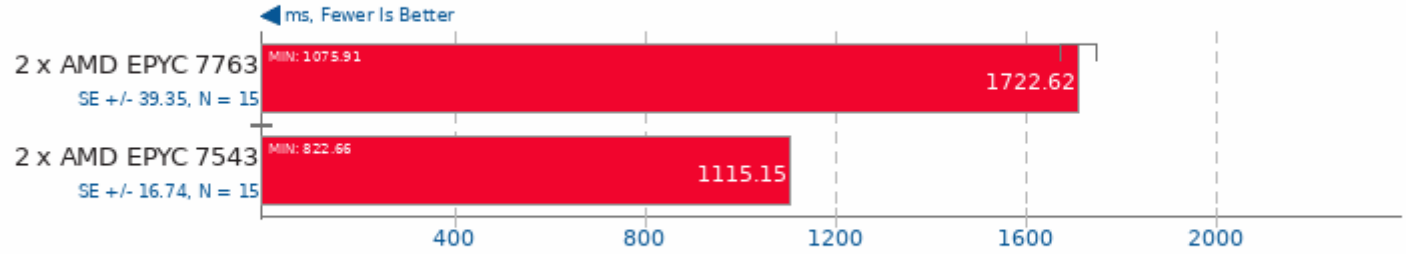
Harness: Recurrent Neural Network Training - Data Type: u8s8f32 - Engine: CPU



1. (CXX) g++ options: -O3 -std=c++11 -fopenmp -msse4.1 -fPIC -pie -lpthread

oneDNN 2.0

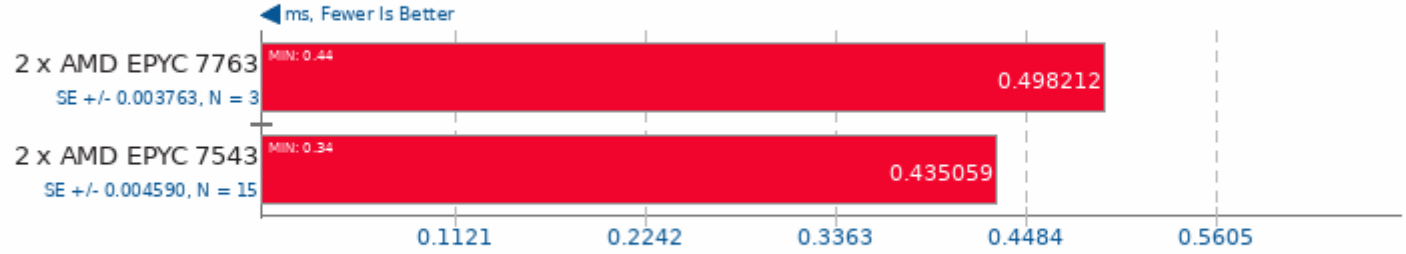
Harness: Recurrent Neural Network Inference - Data Type: u8s8f32 - Engine: CPU



1. (CXX) g++ options: -O3 -std=c++11 -fopenmp -msse4.1 -fPIC -pie -lpthread

oneDNN 2.0

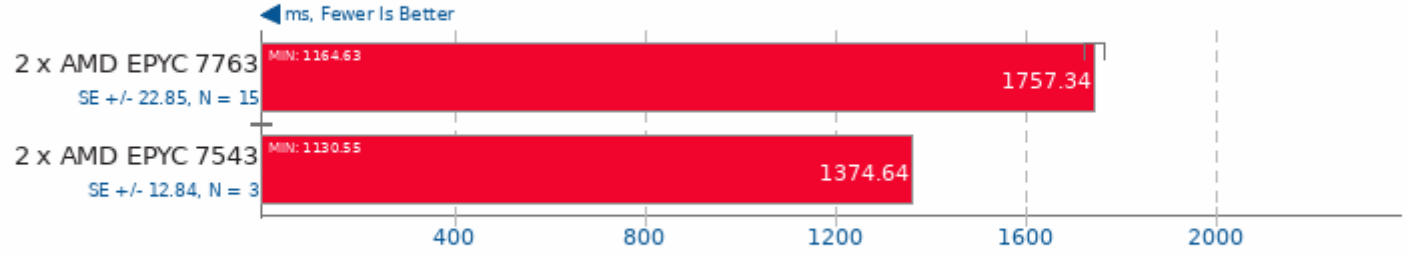
Harness: Matrix Multiply Batch Shapes Transformer - Data Type: f32 - Engine: CPU



1. (CXX) g++ options: -O3 -std=c++11 -fopenmp -msse4.1 -fPIC -pie -lpthread

oneDNN 2.0

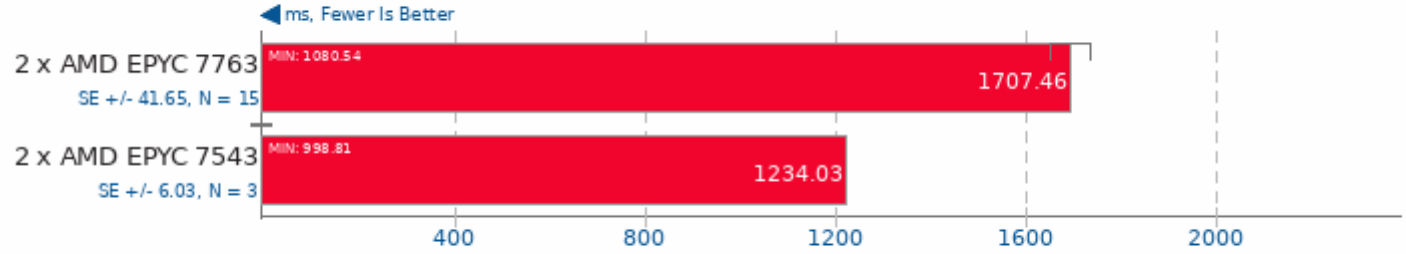
Harness: Recurrent Neural Network Training - Data Type: bf16bf16bf16 - Engine: CPU



1. (CXX) g++ options: -O3 -std=c++11 -fopenmp -msse4.1 -fPIC -pie -lpthread

oneDNN 2.0

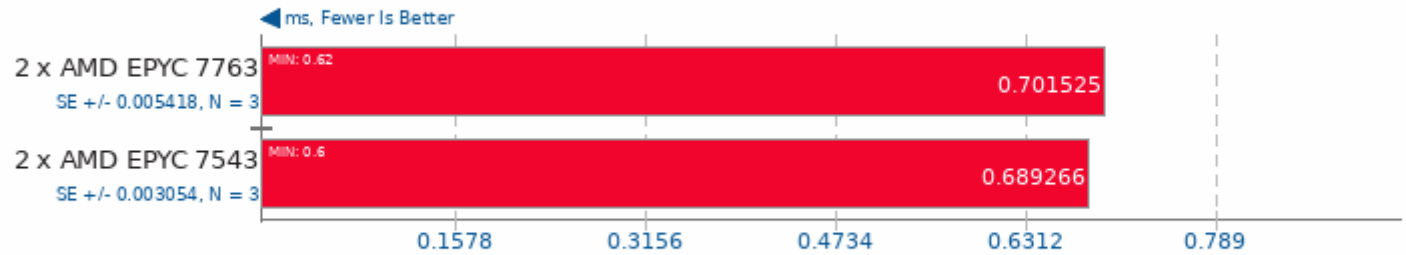
Harness: Recurrent Neural Network Inference - Data Type: bf16bf16bf16 - Engine: CPU



1. (CXX) g++ options: -O3 -std=c++11 -fopenmp -msse4.1 -fPIC -pie -lpthread

oneDNN 2.0

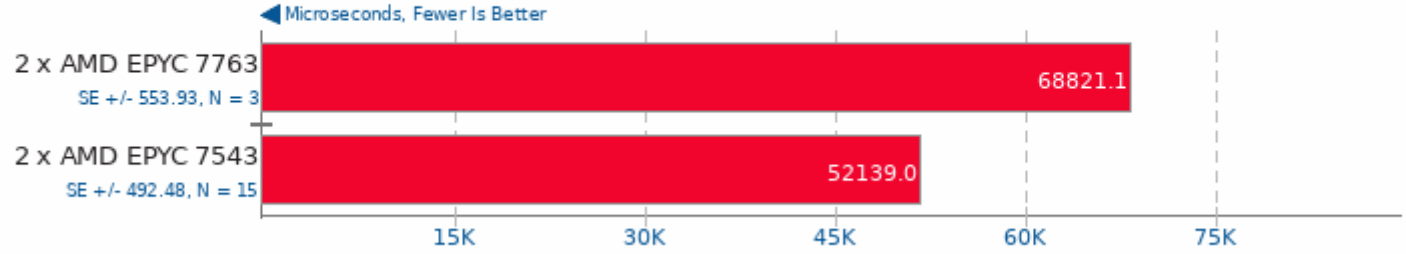
Harness: Matrix Multiply Batch Shapes Transformer - Data Type: u8s8f32 - Engine: CPU



1. (CXX) g++ options: -O3 -std=c++11 -fopenmp -msse4.1 -fPIC -pie -lpthread

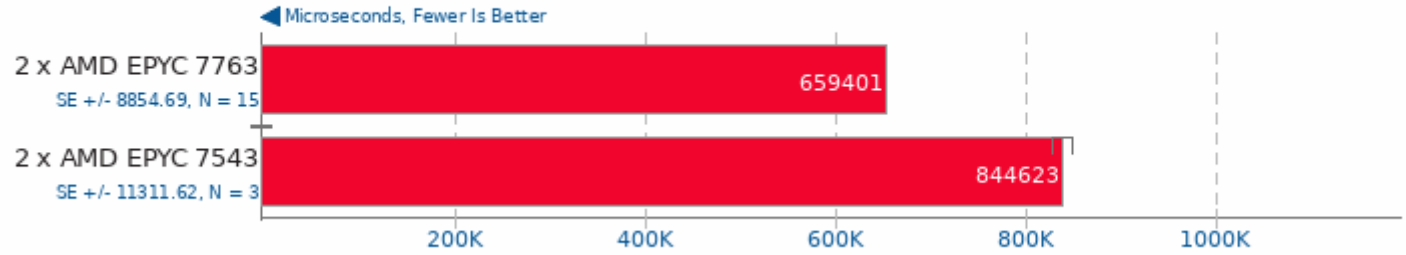
TensorFlow Lite 2020-08-23

Model: SqueezeNet



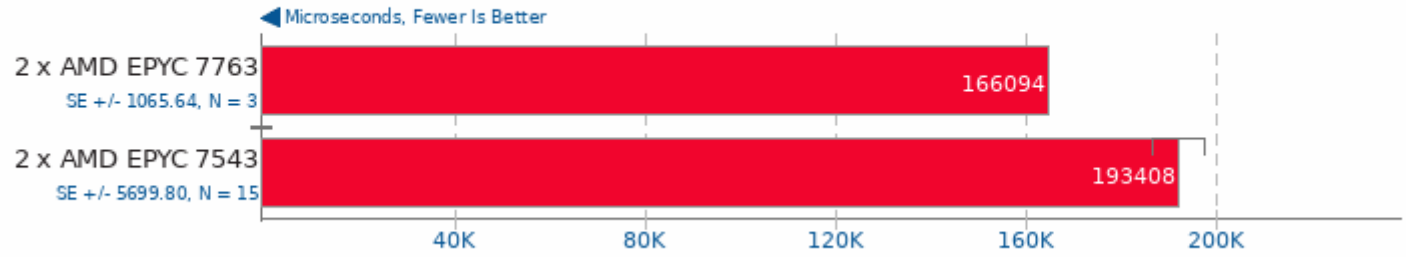
TensorFlow Lite 2020-08-23

Model: Inception V4



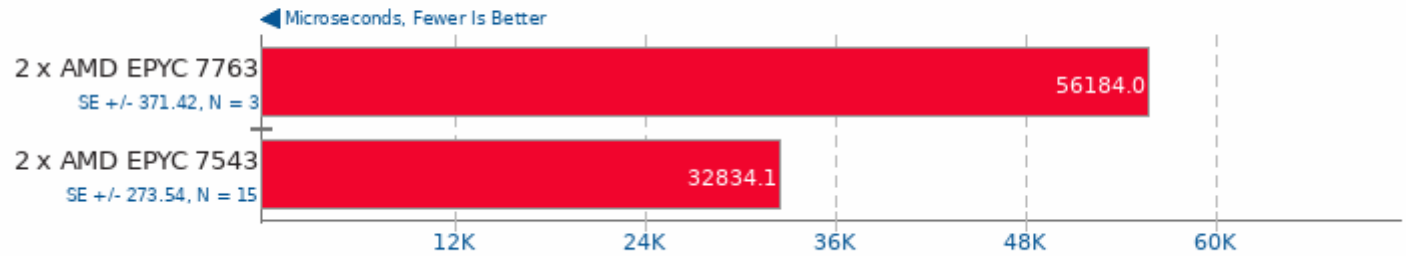
TensorFlow Lite 2020-08-23

Model: NASNet Mobile



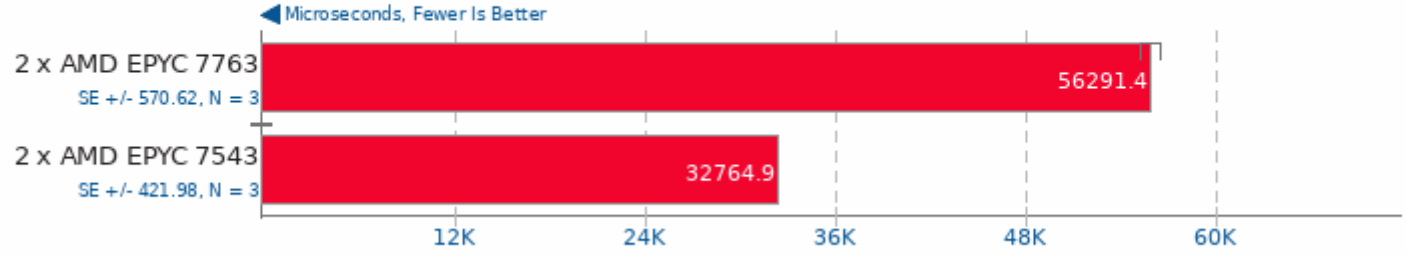
TensorFlow Lite 2020-08-23

Model: Mobilenet Float



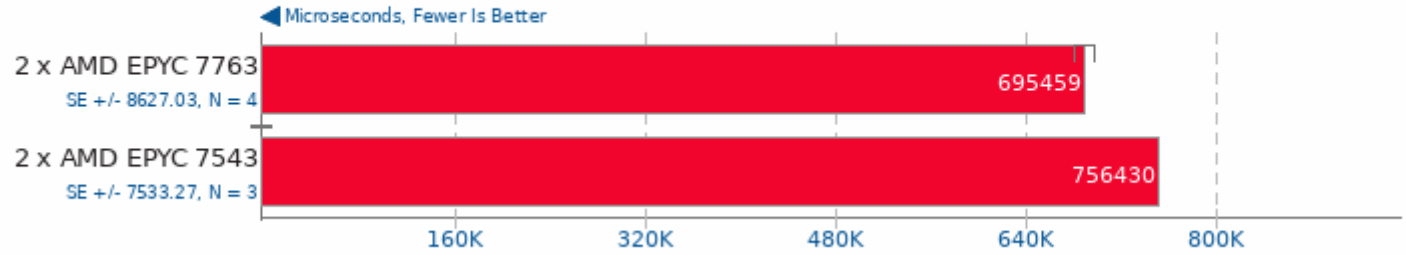
TensorFlow Lite 2020-08-23

Model: Mobilenet Quant



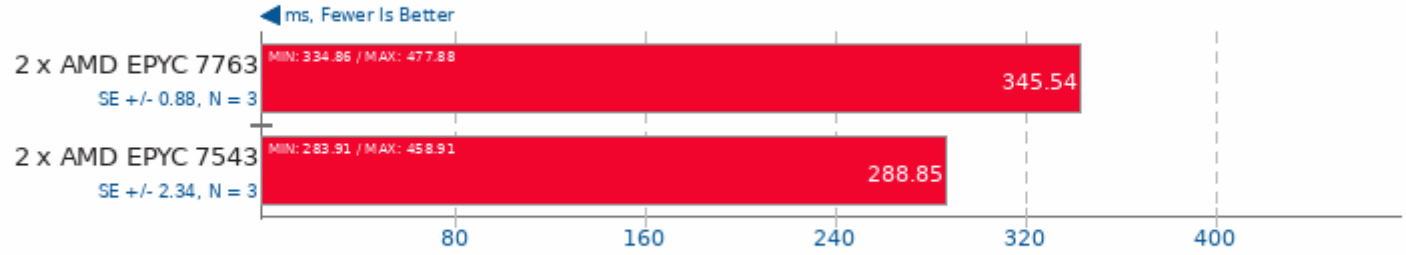
TensorFlow Lite 2020-08-23

Model: Inception ResNet V2



TNN 0.2.3

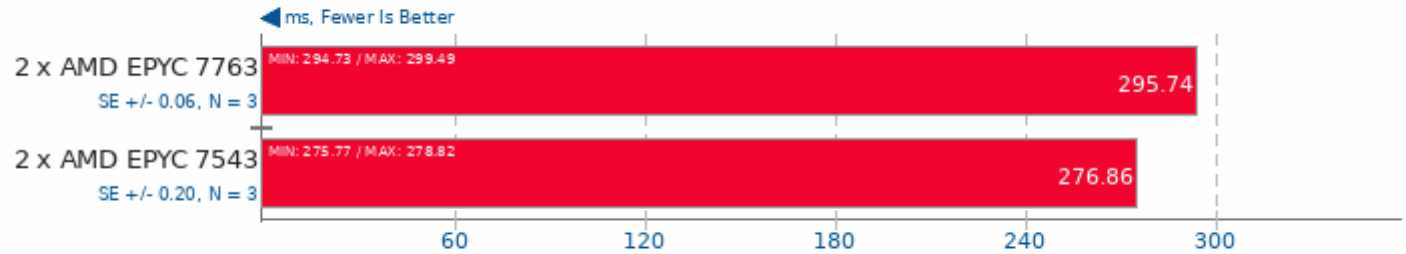
Target: CPU - Model: MobileNet v2



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

TNN 0.2.3

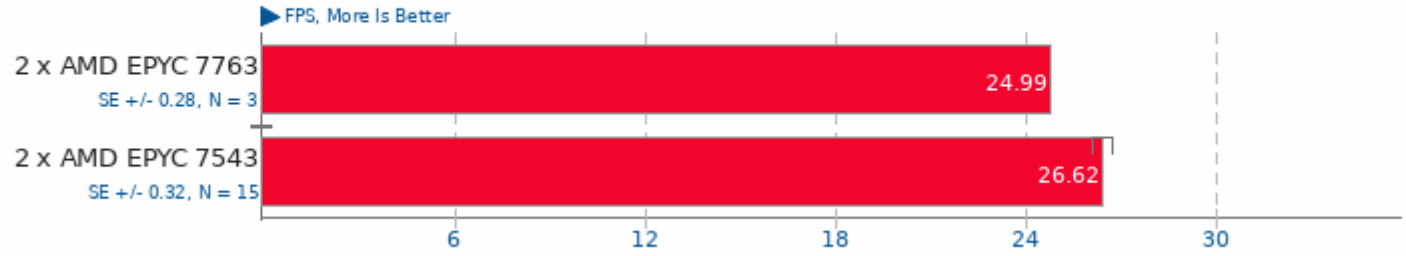
Target: CPU - Model: SqueezeNet v1.1



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

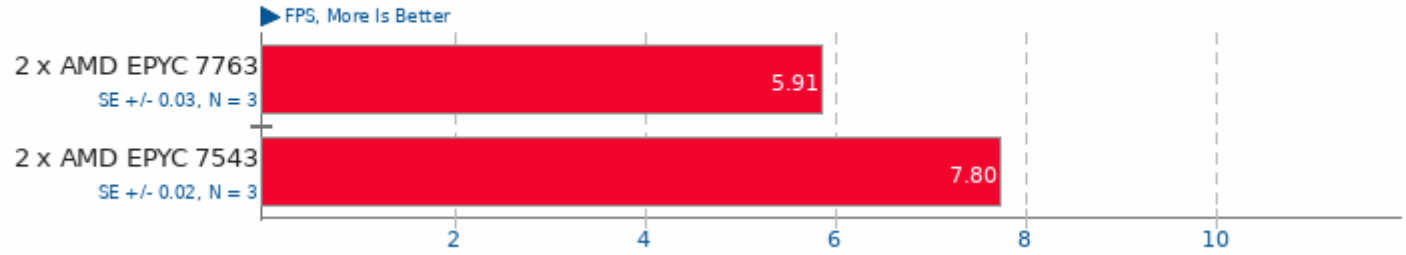
PlaidML

FP16: No - Mode: Inference - Network: VGG19 - Device: CPU



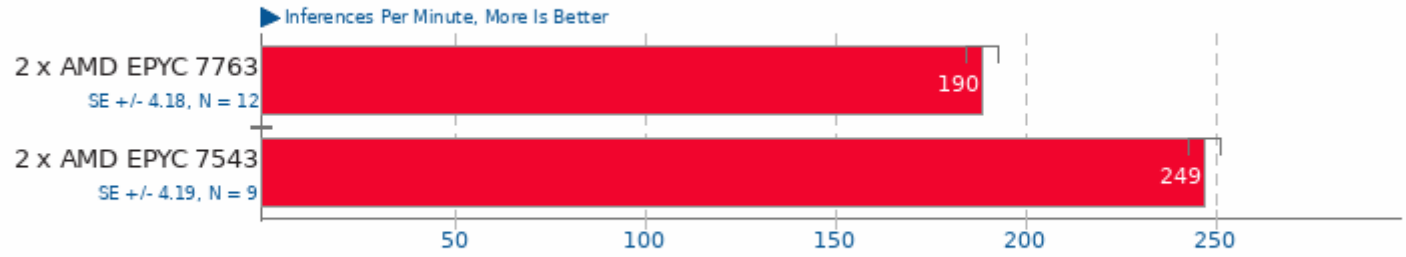
PlaidML

FP16: No - Mode: Inference - Network: ResNet 50 - Device: CPU



ONNX Runtime 1.6

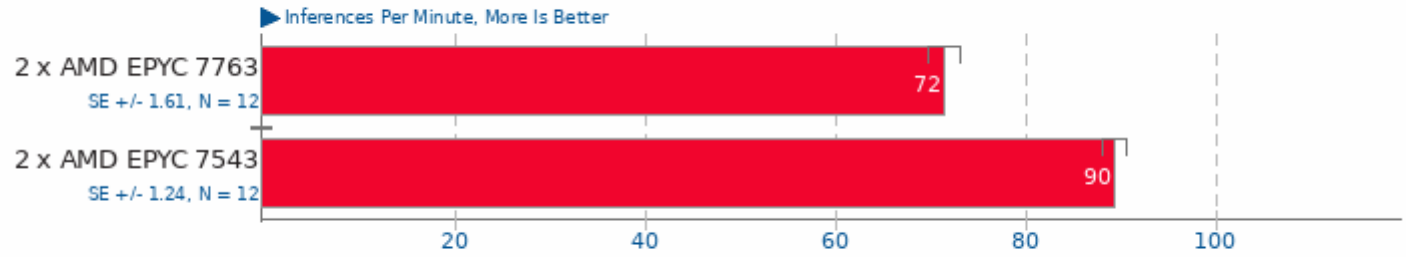
Model: yolov4 - Device: OpenMP CPU



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

ONNX Runtime 1.6

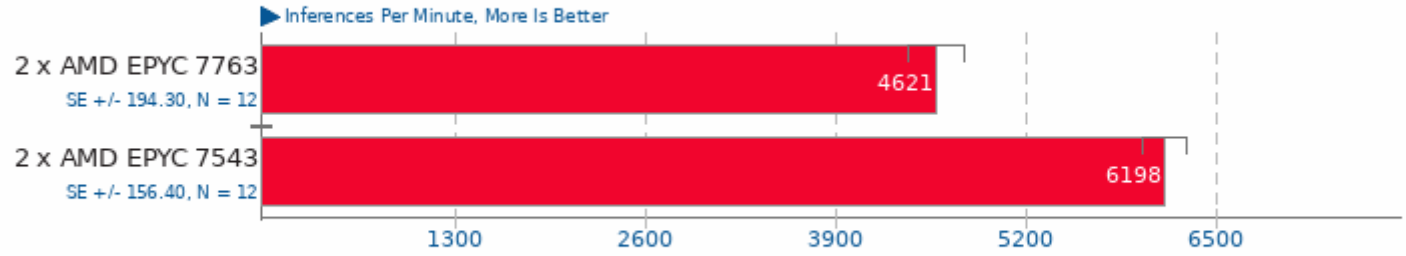
Model: fcn-resnet101-11 - Device: OpenMP CPU



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

ONNX Runtime 1.6

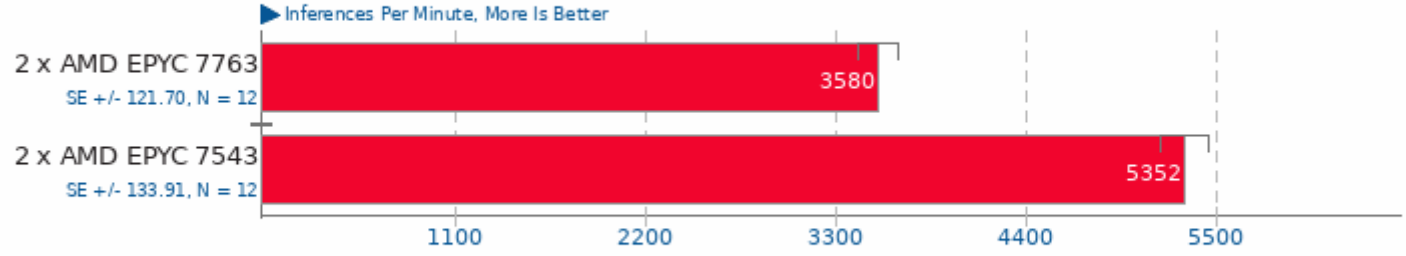
Model: shufflenet-v2-10 - Device: OpenMP CPU



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

ONNX Runtime 1.6

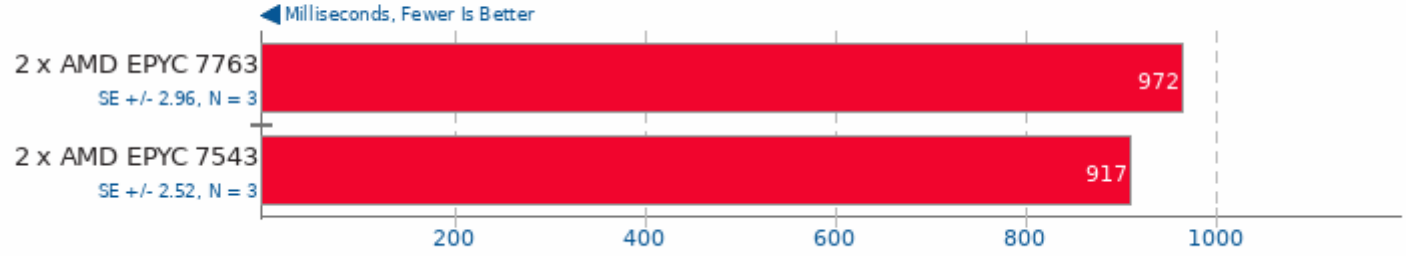
Model: super-resolution-10 - Device: OpenMP CPU



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

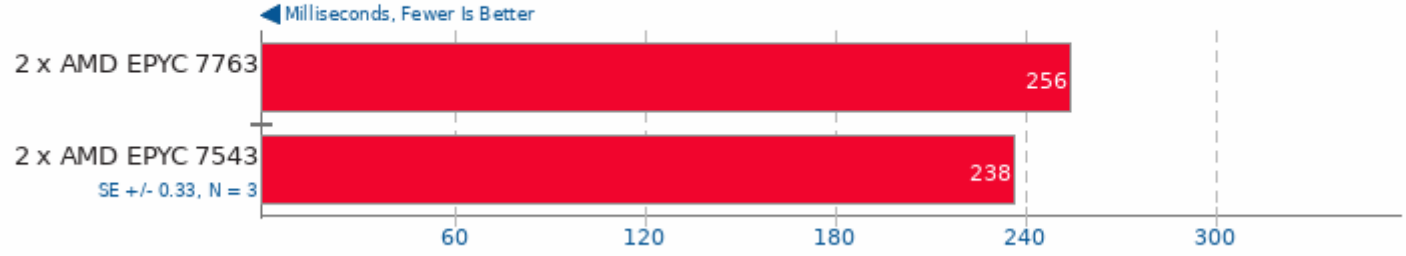
PyBench 2018-02-16

Total For Average Test Times



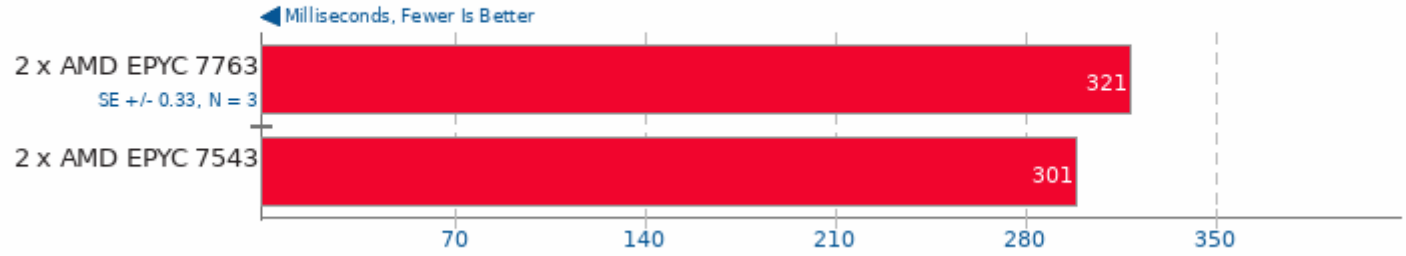
PyPerformance 1.0.0

Benchmark: go



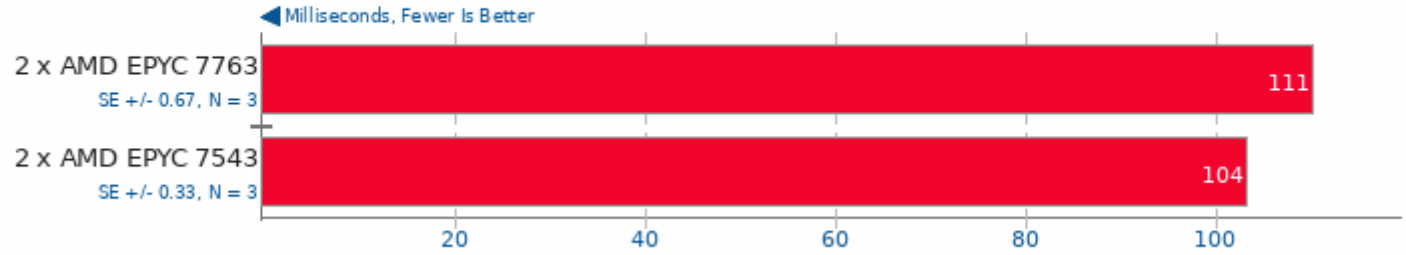
PyPerformance 1.0.0

Benchmark: 2to3



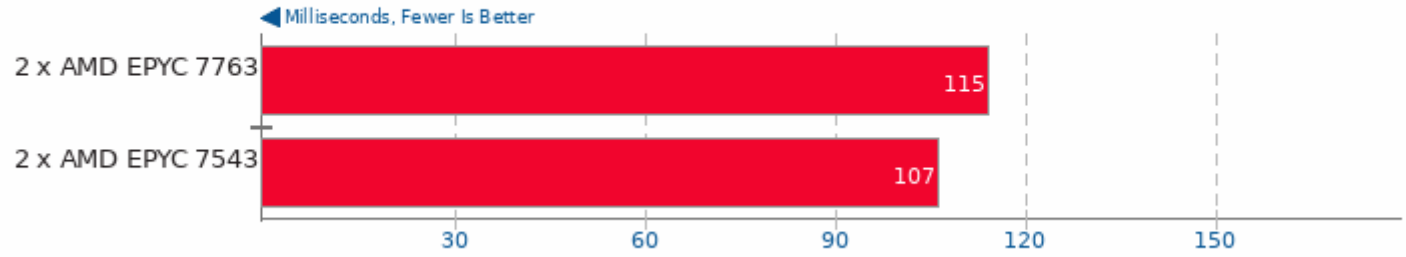
PyPerformance 1.0.0

Benchmark: chaos



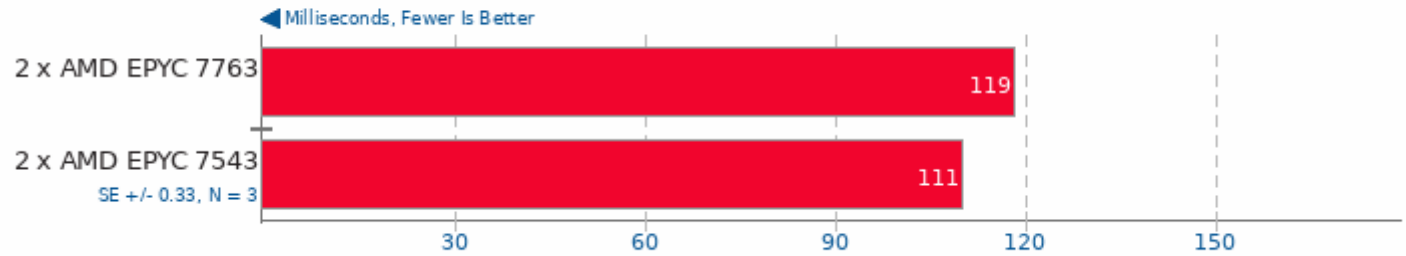
PyPerformance 1.0.0

Benchmark: float



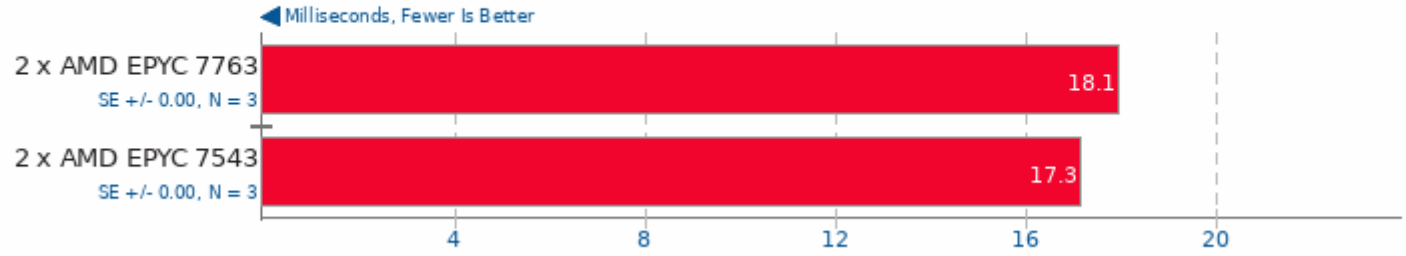
PyPerformance 1.0.0

Benchmark: nbody



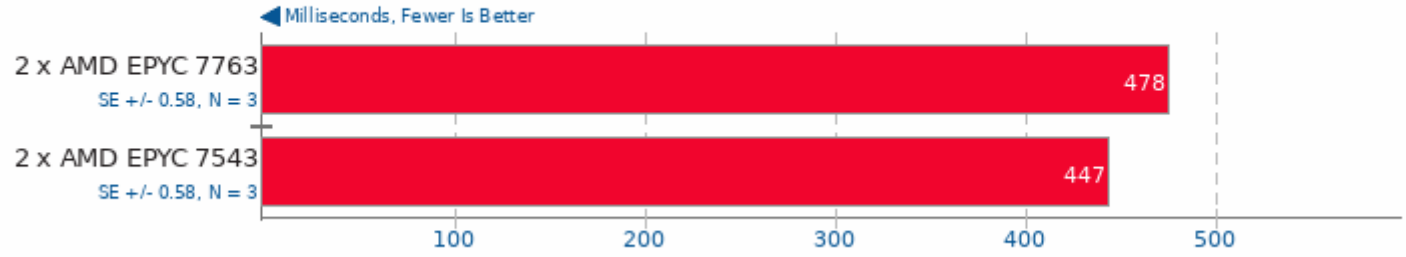
PyPerformance 1.0.0

Benchmark: pathlib



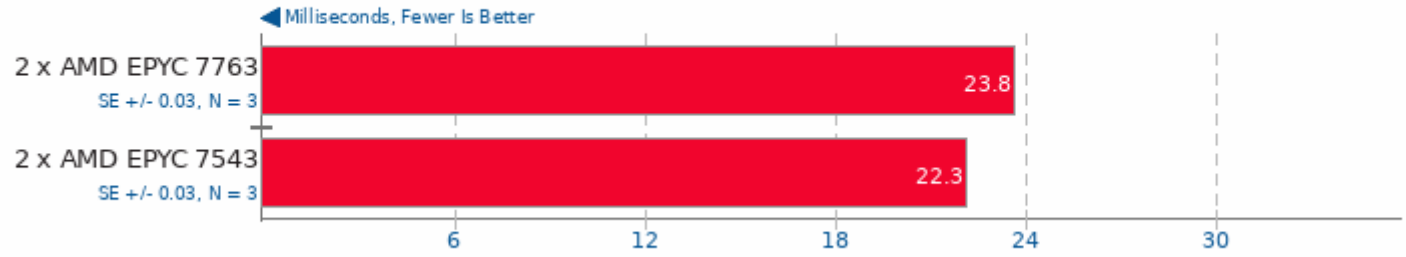
PyPerformance 1.0.0

Benchmark: raytrace



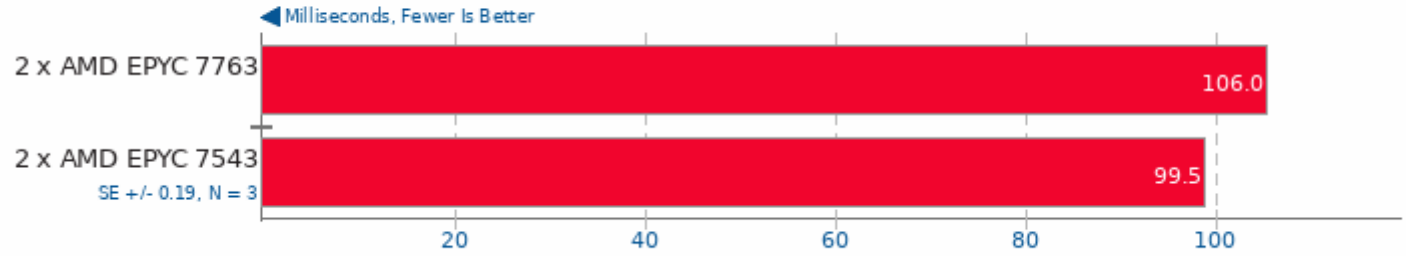
PyPerformance 1.0.0

Benchmark: json_loads



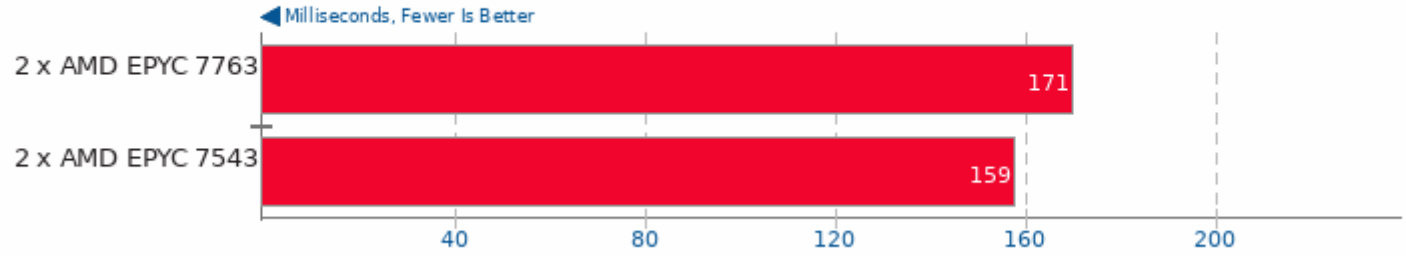
PyPerformance 1.0.0

Benchmark: crypto_pyaes



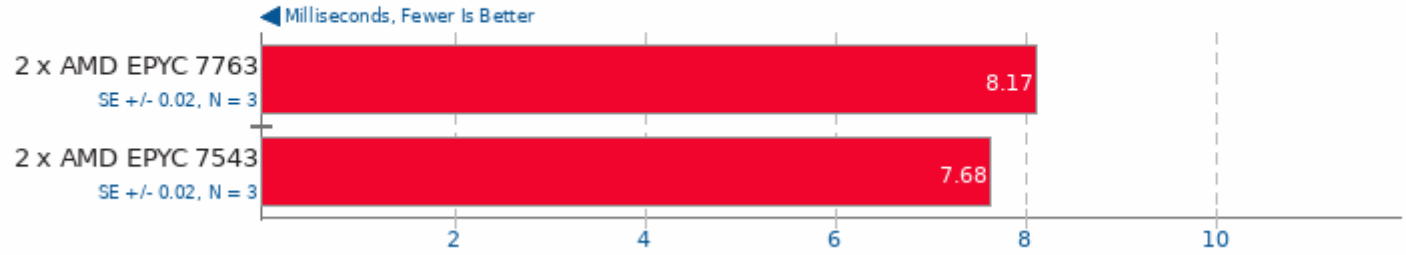
PyPerformance 1.0.0

Benchmark: regex_compile



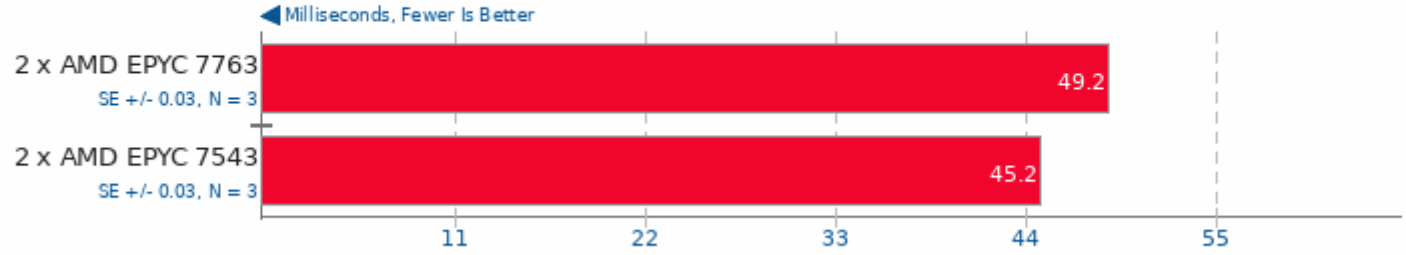
PyPerformance 1.0.0

Benchmark: python_startup



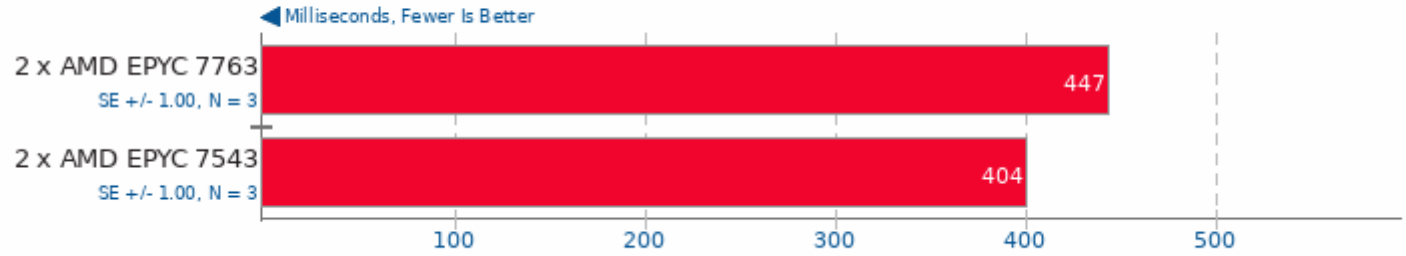
PyPerformance 1.0.0

Benchmark: django_template



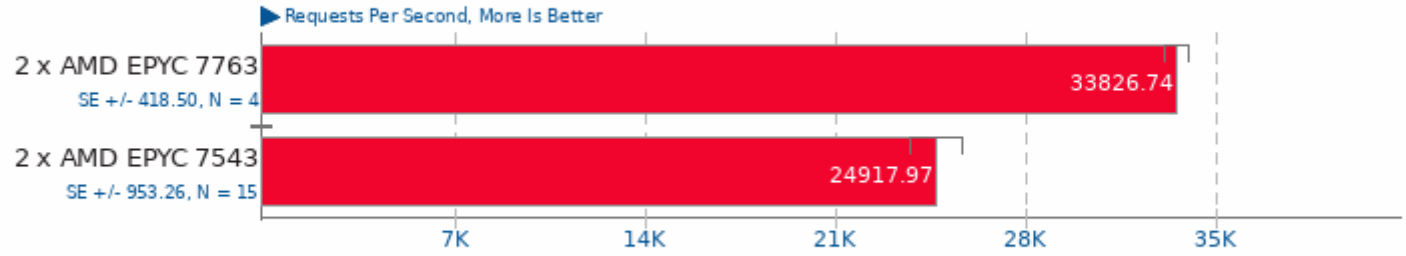
PyPerformance 1.0.0

Benchmark: pickle_pure_python



NGINX Benchmark 1.9.9

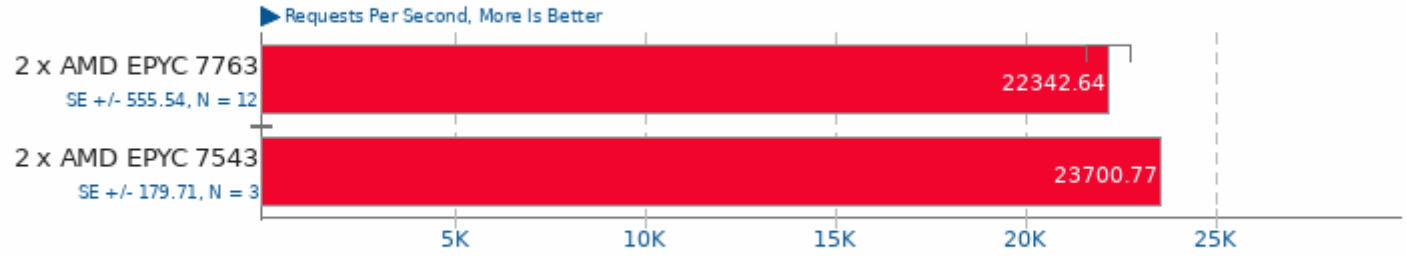
Static Web Page Serving



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

Apache Benchmark 2.4.29

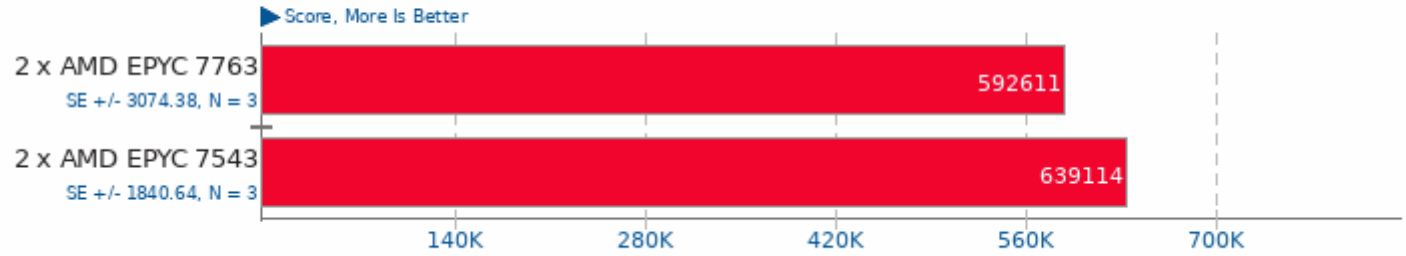
Static Web Page Serving



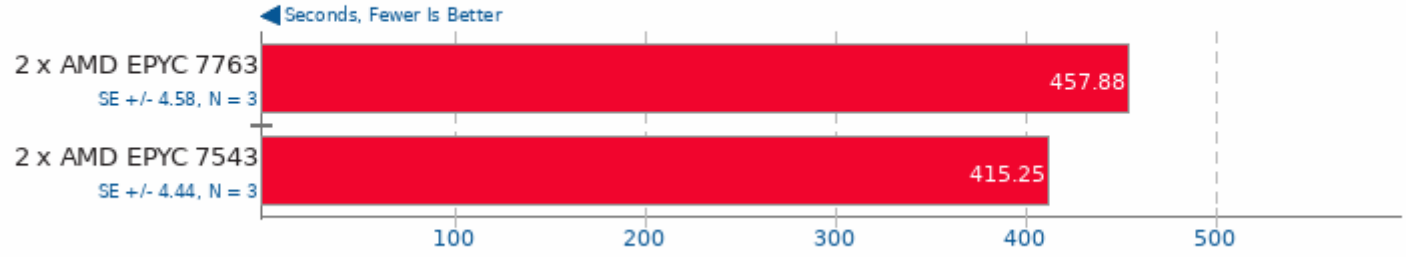
1. (CC) gcc options: -shared -fPIC -O2 -pthread

PHPBench 0.8.1

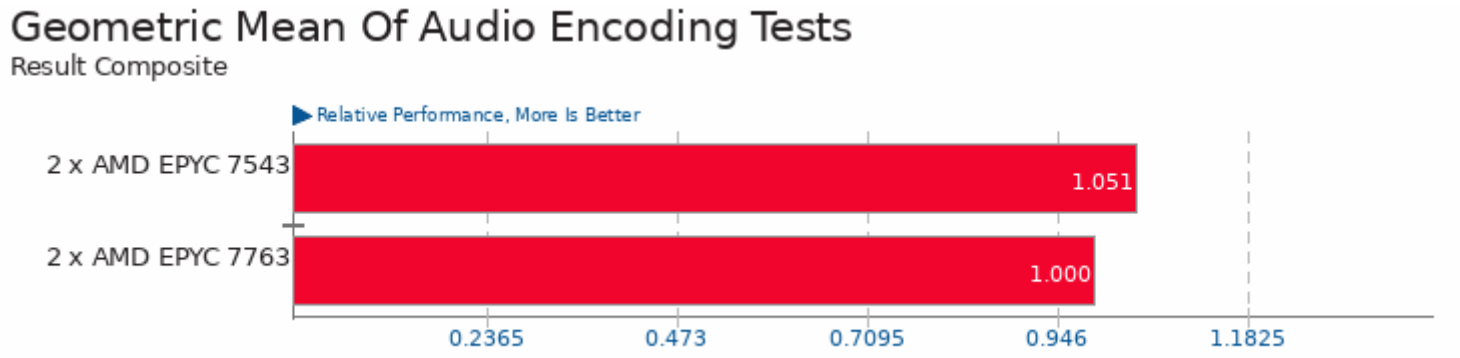
PHP Benchmark Suite



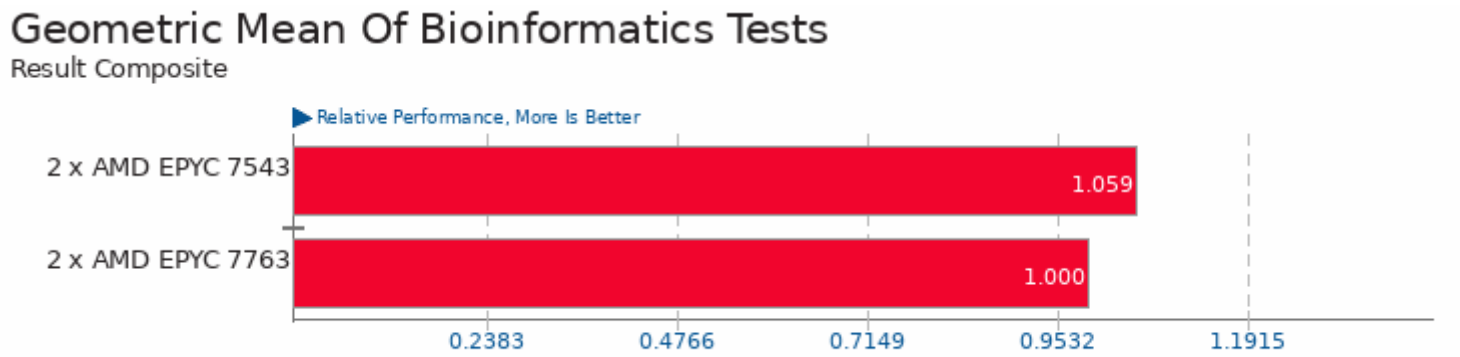
WireGuard + Linux Networking Stack Test



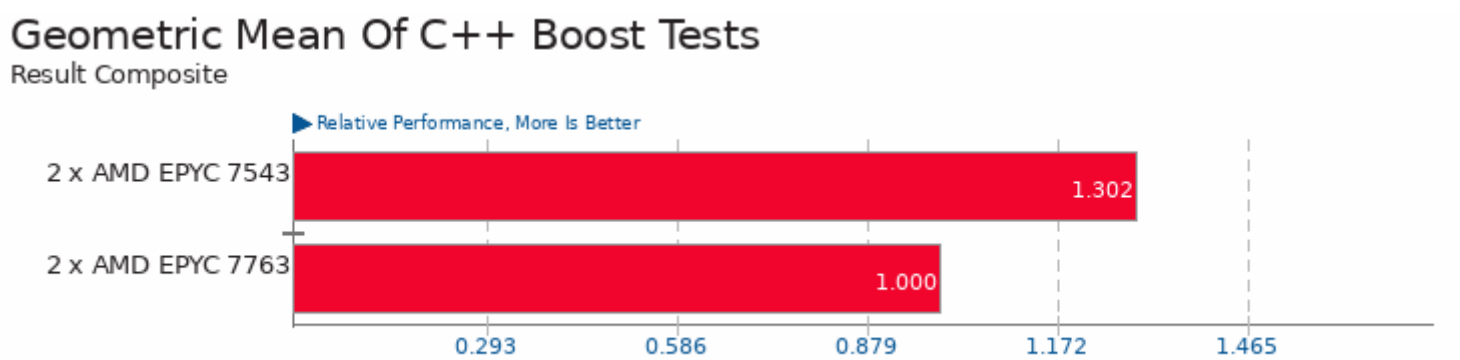
These geometric means are based upon test groupings / test suites for this result file.



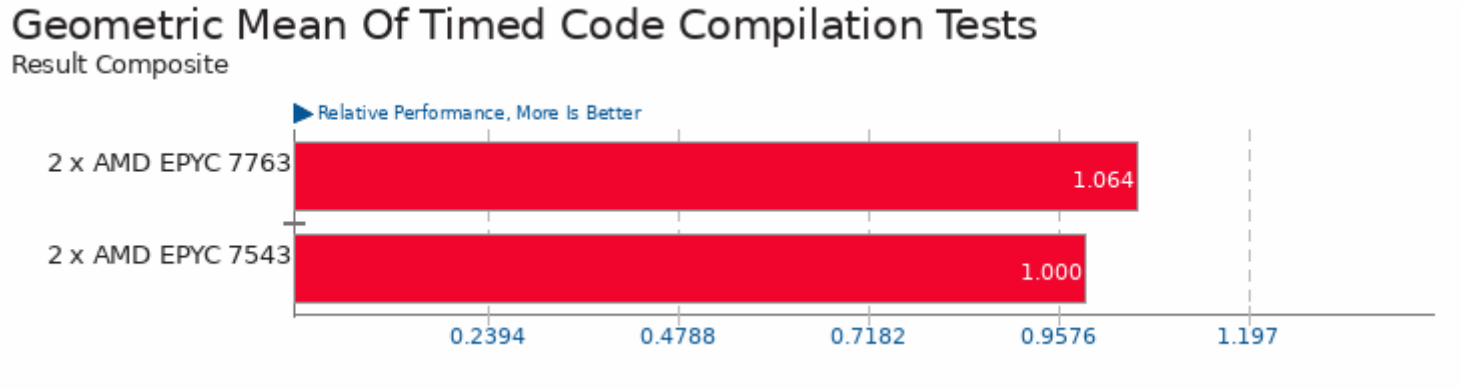
Geometric mean based upon tests: pts/encode-mp3 and pts/encode-flac



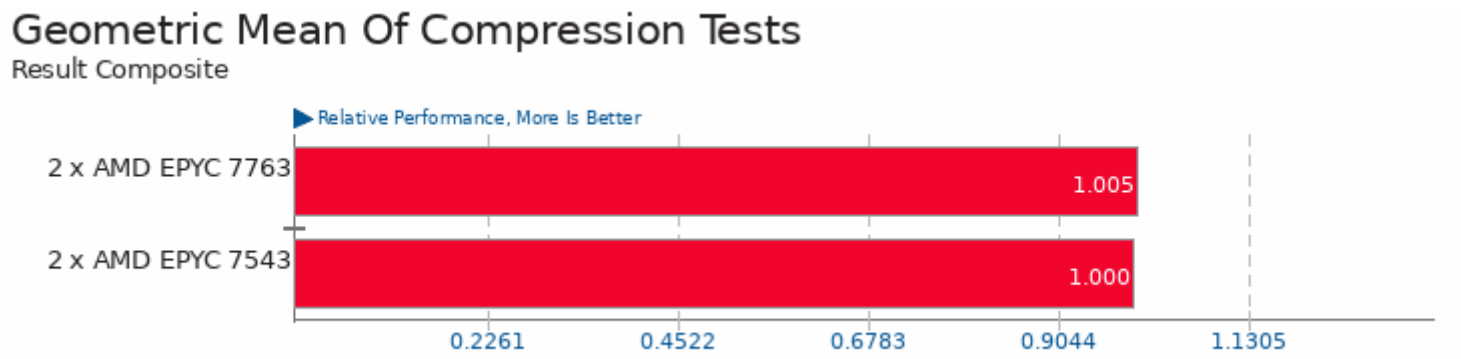
Geometric mean based upon tests: pts/himeno and pts/mafft



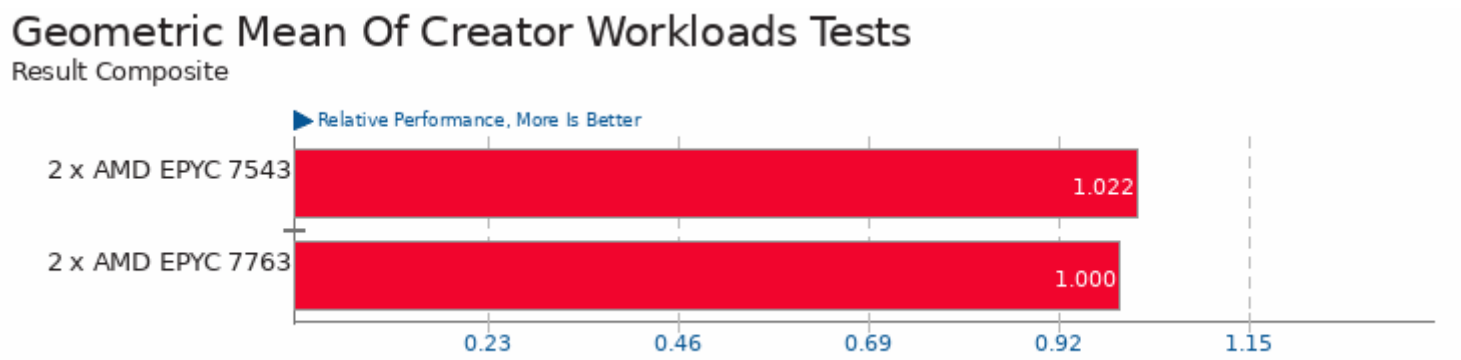
Geometric mean based upon tests: pts/openfoam and pts/povray



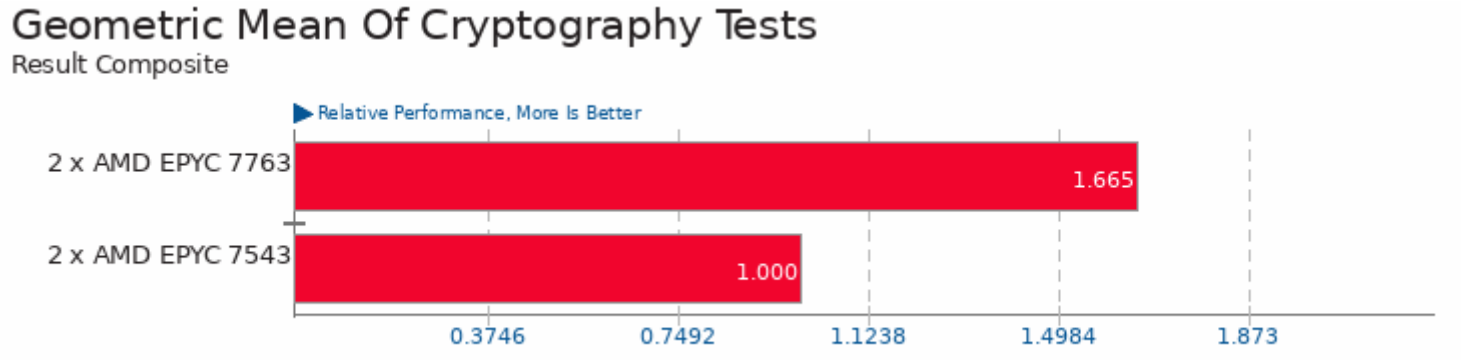
Geometric mean based upon tests: pts/build-linux-kernel, pts/build-gcc and pts/build-llvm



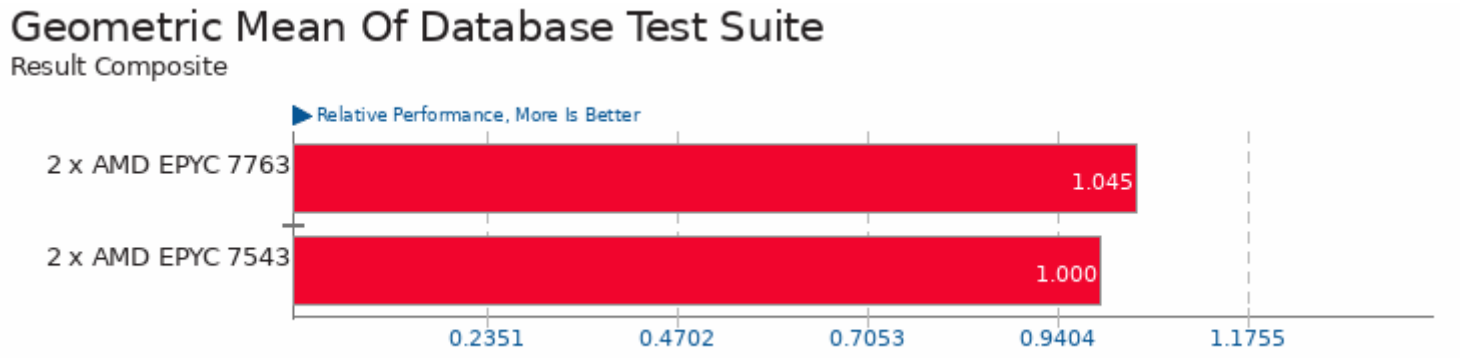
Geometric mean based upon tests: pts/compress-7zip, pts/compress-gzip and pts/compress-zstd



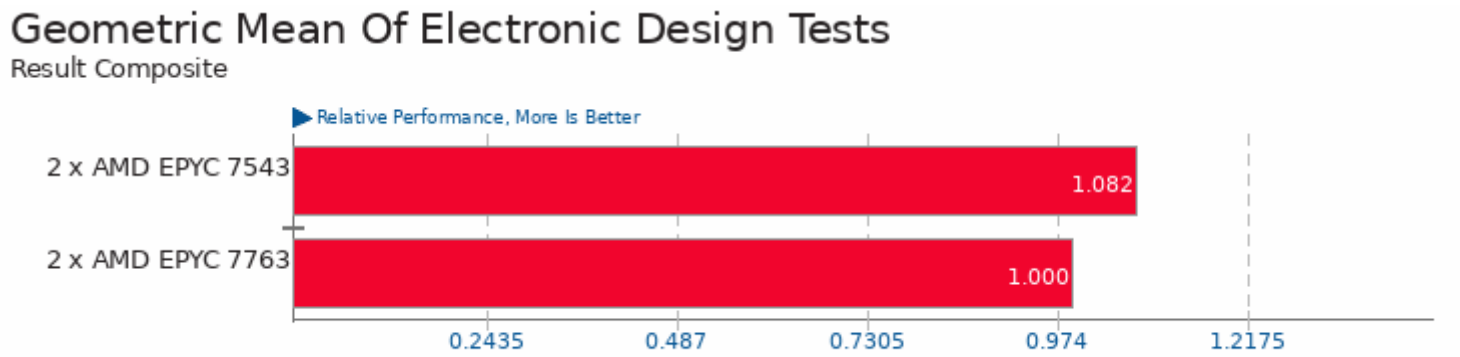
Geometric mean based upon tests: pts/ospray, pts/c-ray, pts/povray, pts/blender, pts/svt-vp9, pts/x264, pts/x265, pts/kvazaar, pts/dav1d, pts/encode-mp3, pts/encode-flac, pts/onednn and pts/ngspice



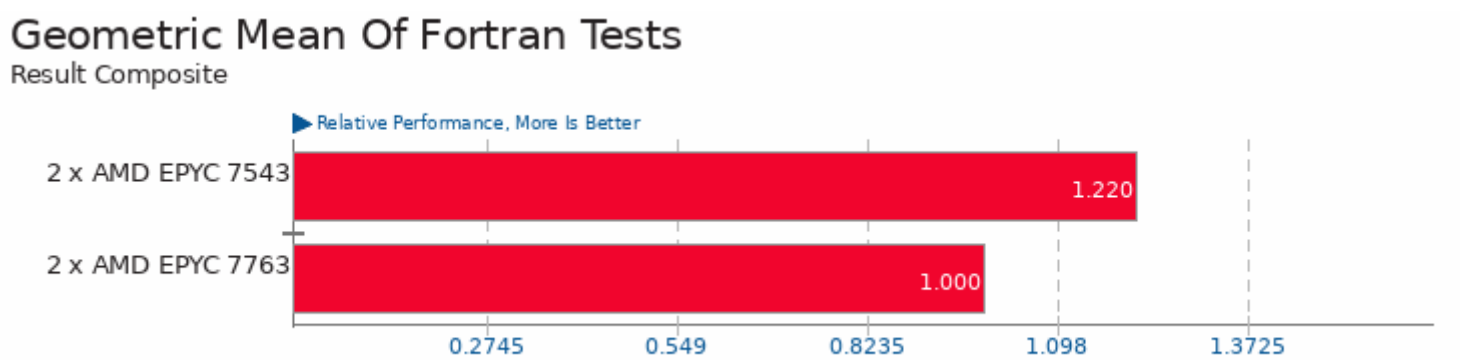
Geometric mean based upon tests: pts/gnupg, pts/openssl, pts/john-the-ripper and pts/cpuminer-opt



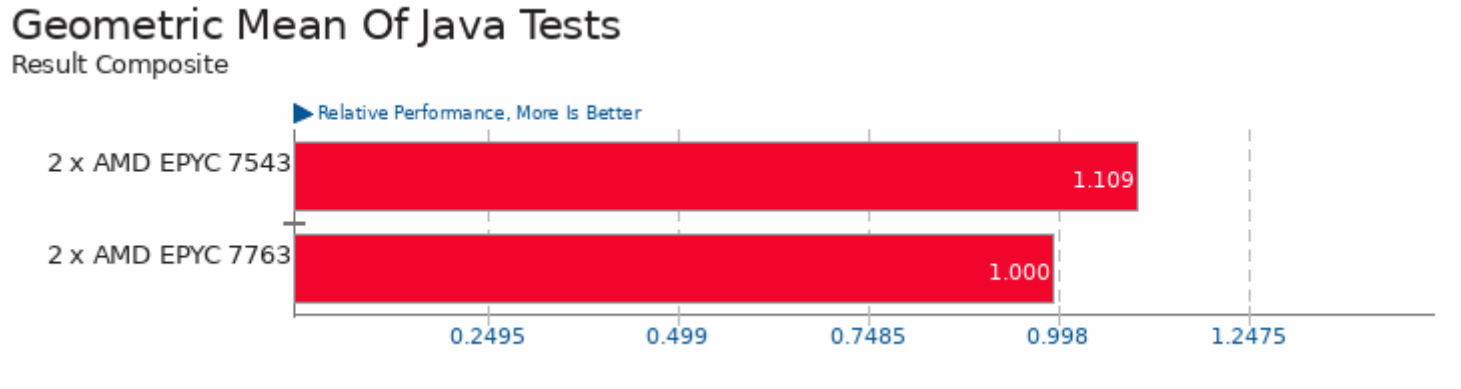
Geometric mean based upon tests: pts/sqlite-speedtest, pts/redis, pts/cassandra, pts/pgbench and pts/mysqlslap



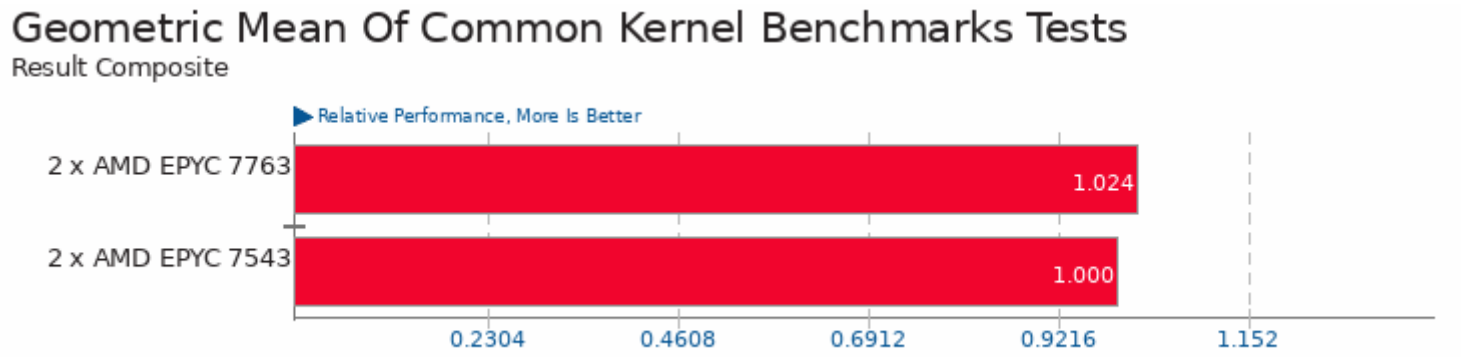
Geometric mean based upon tests: pts/ngspice



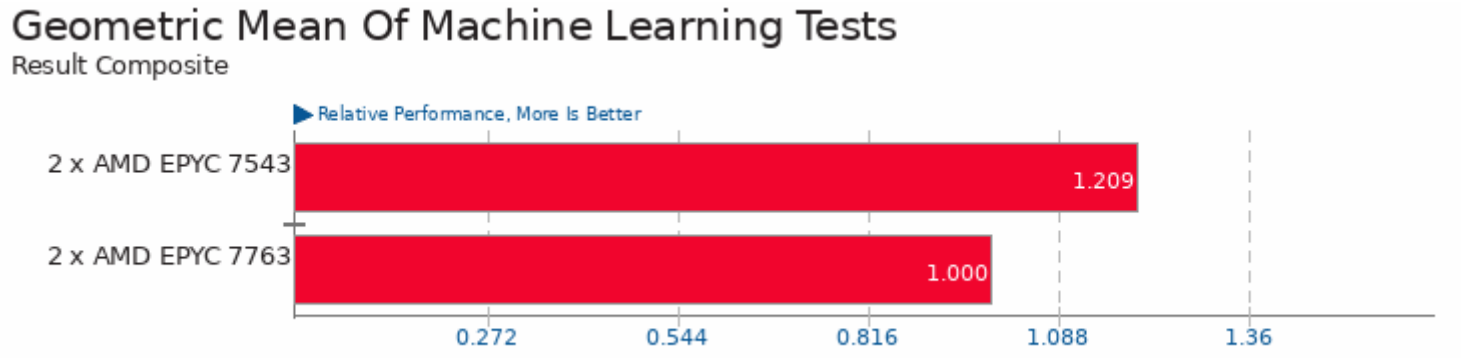
Geometric mean based upon tests: pts/hpcg, pts/npb, pts/dolfyn, pts/neat, pts/qe and pts/lammps



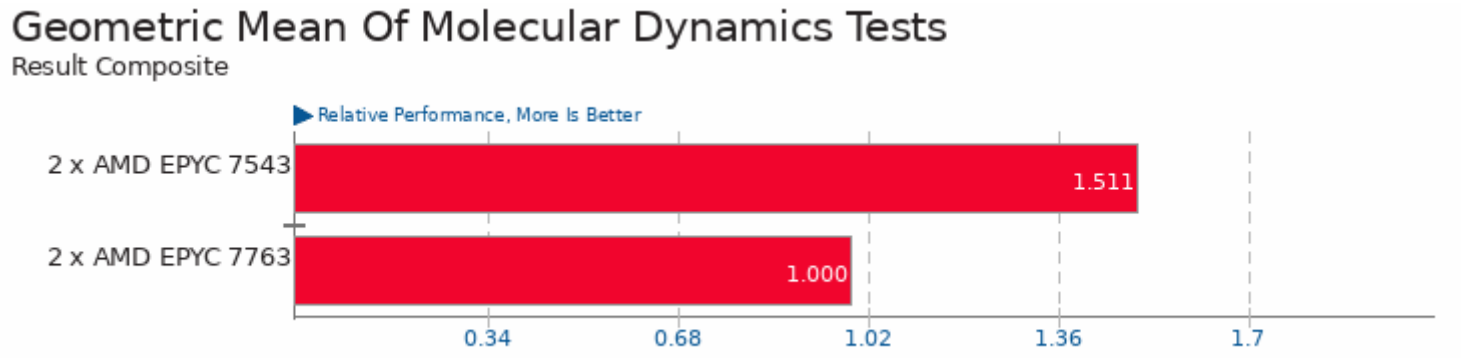
Geometric mean based upon tests: pts/java-scimark2 and pts/renaissance



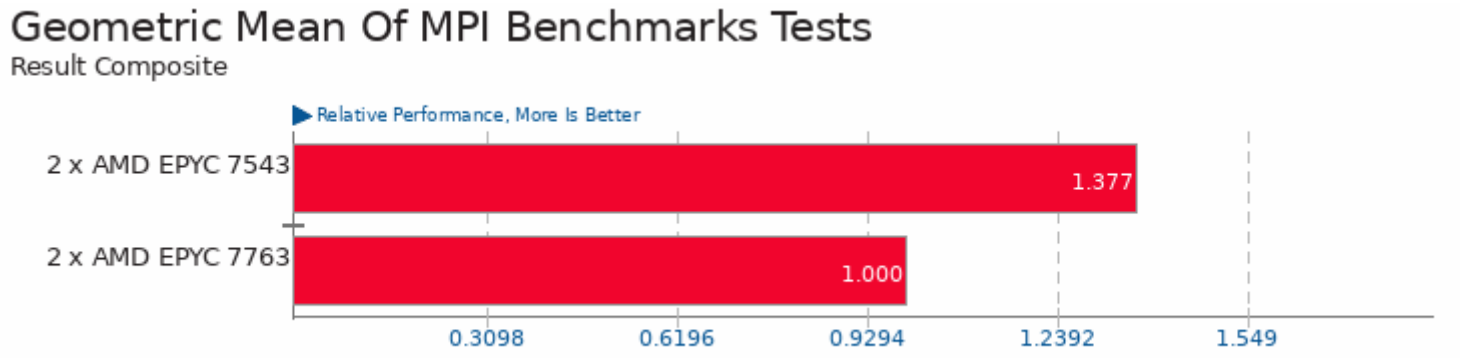
Geometric mean based upon tests: pts/apache, system/wireguard, pts/postmark, pts/sqlite-speedtest, pts/pgbench, pts/openssl, pts/ctx-clock and pts/osbench



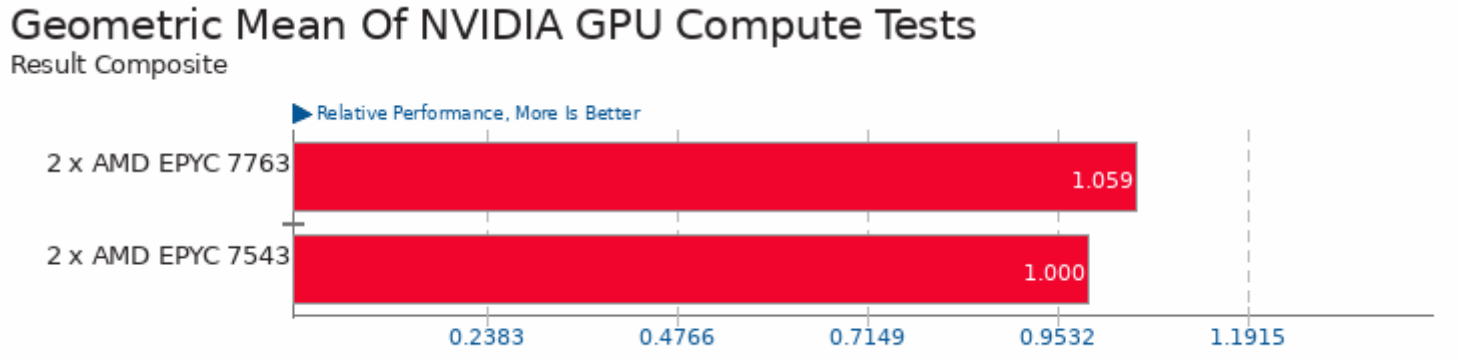
Geometric mean based upon tests: pts/tnn, pts/numpy, pts/tensorflow-lite, pts/onednn, pts/onnx and pts/plaidml



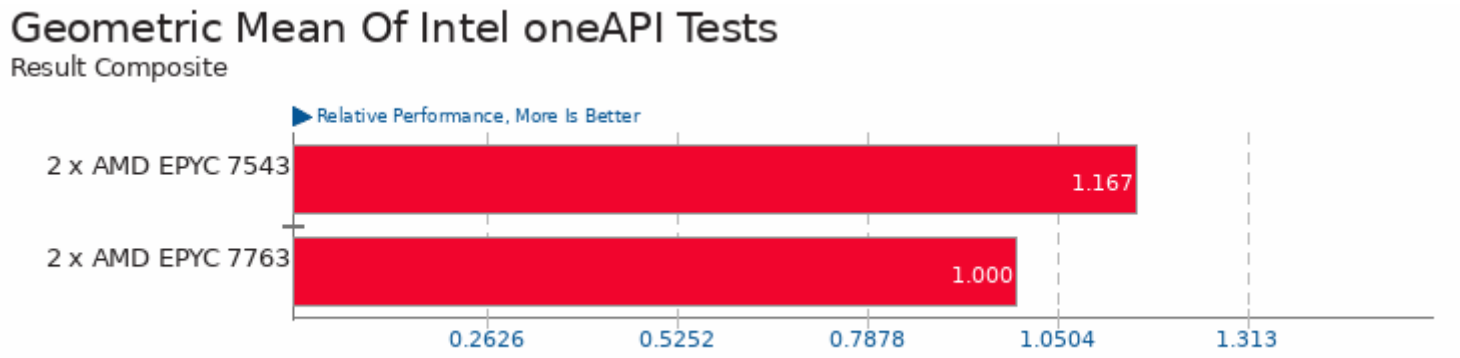
Geometric mean based upon tests: pts/namd, pts/dolfyn, pts/lammps, pts/pennant and pts/openfoam



Geometric mean based upon tests: pts/lammps, pts/pennant, pts/hpcg and pts/npb



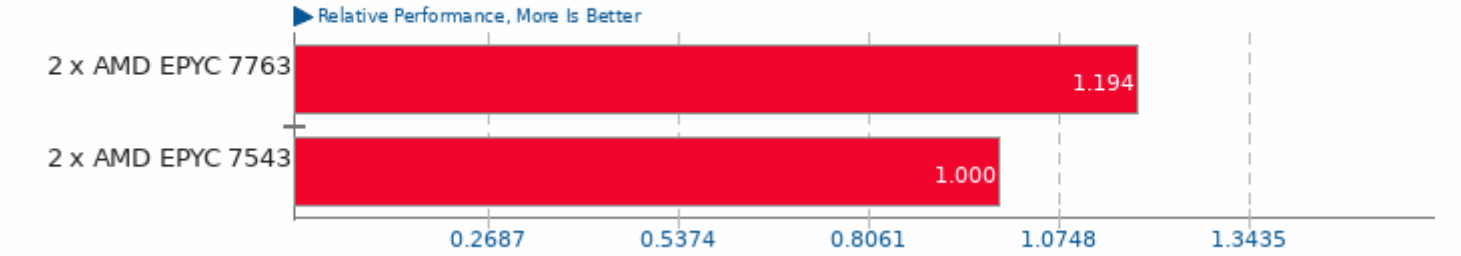
Geometric mean based upon tests: pts/rodinia, pts/financebench, pts/plaidml and pts/blender



Geometric mean based upon tests: pts/onednn and pts/ospray

Geometric Mean Of OpenCL Tests

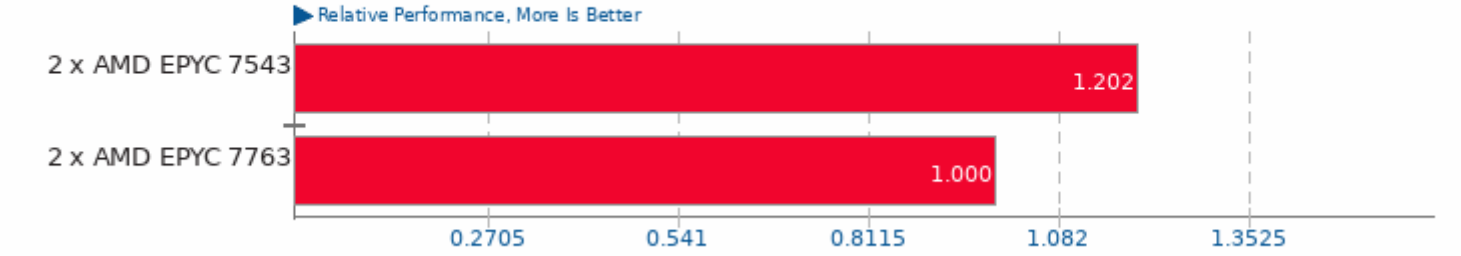
Result Composite



Geometric mean based upon tests: pts/rodinia and pts/blender

Geometric Mean Of OpenMPI Tests

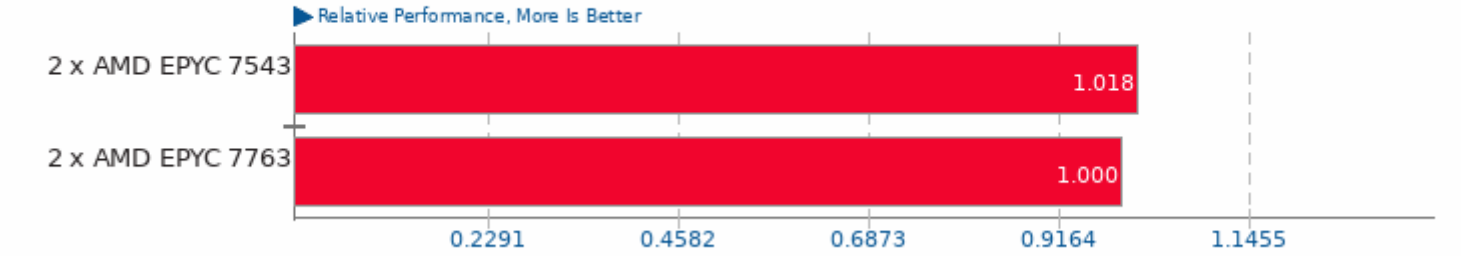
Result Composite



Geometric mean based upon tests: pts/hpcg, pts/npb, pts/rodinia, pts/pennant, pts/openfoam, pts/qe and pts/lammps

Geometric Mean Of Programmer / Developer System Benchmarks Tests

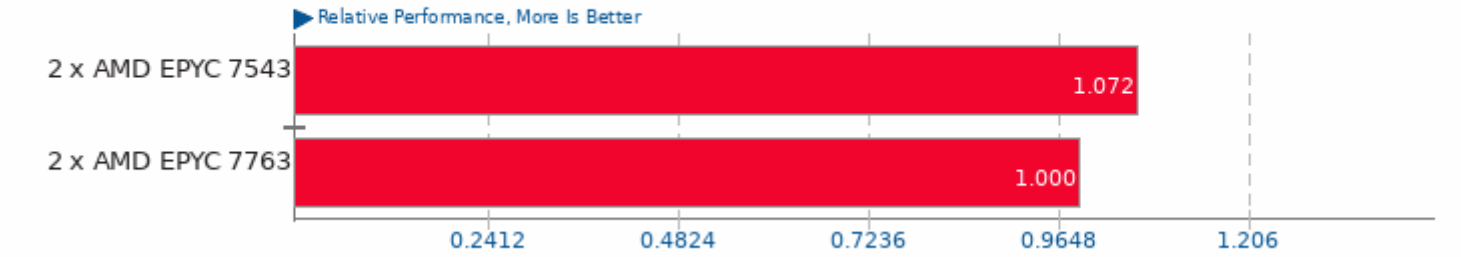
Result Composite



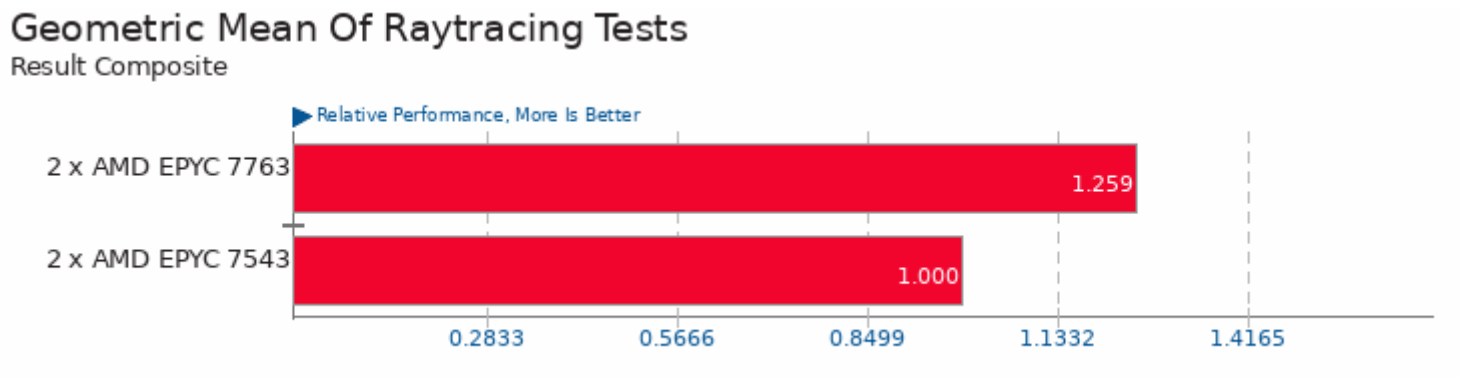
Geometric mean based upon tests: pts/sqlite-speedtest, pts/compress-zstd, pts/pyperformance, pts/pybench, pts/build-linux-kernel, pts/build-gcc, pts/build-llvm and pts/mt-dgemm

Geometric Mean Of Python Tests

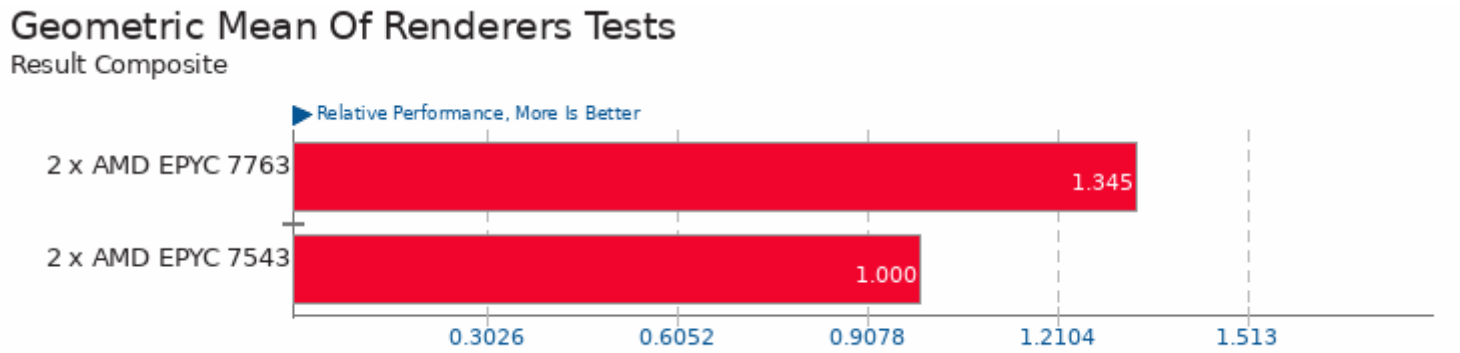
Result Composite



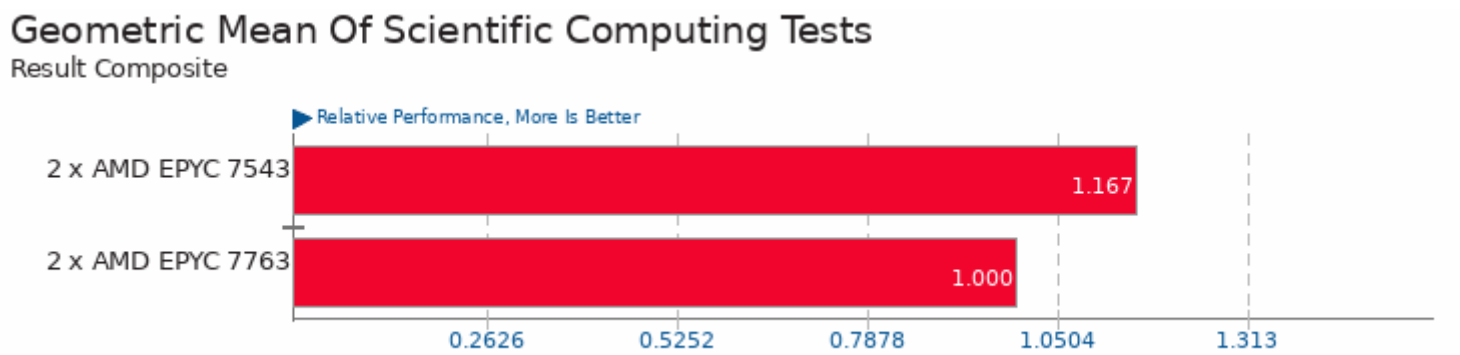
Geometric mean based upon tests: pts/pybench, pts/numpy and pts/pyperformance



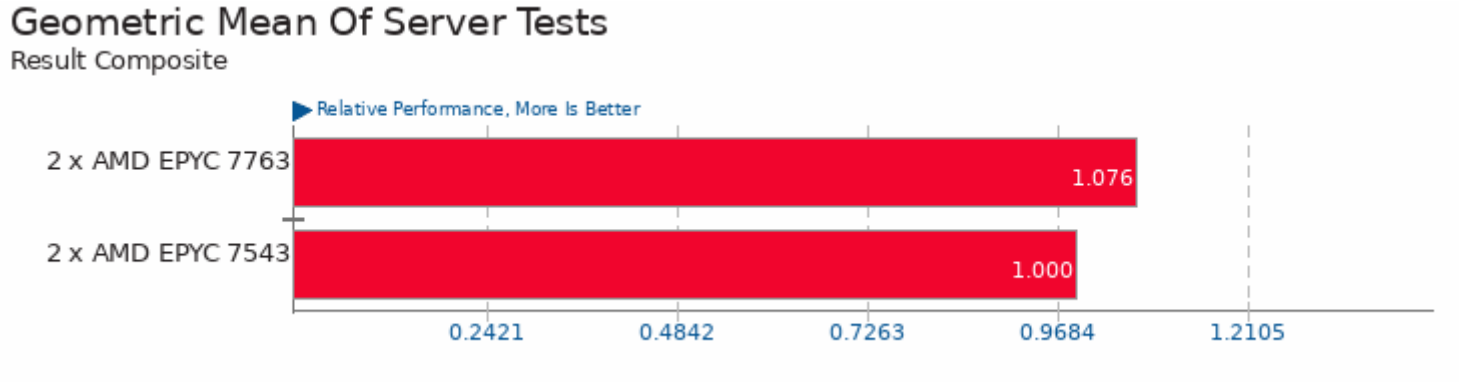
Geometric mean based upon tests: pts/ospray, pts/c-ray and pts/povray



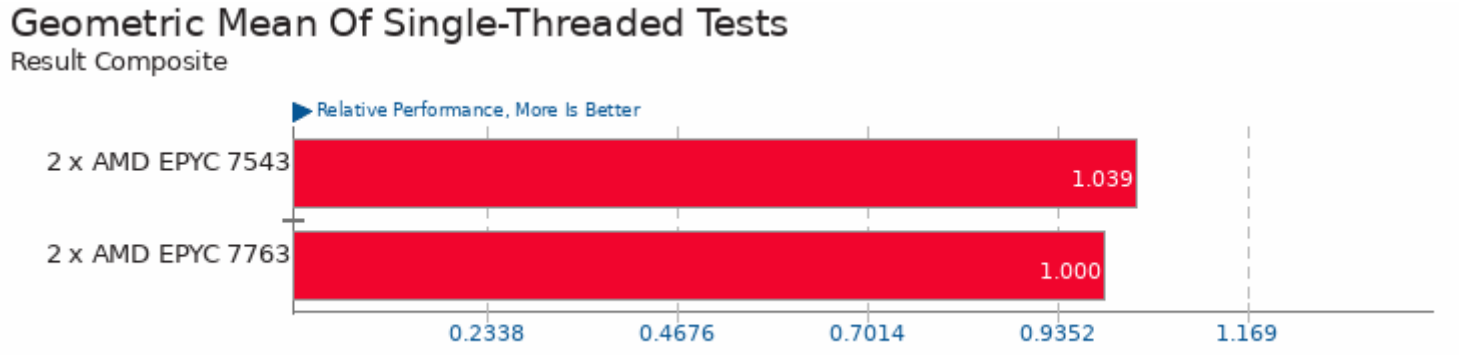
Geometric mean based upon tests: pts/ospray, pts/c-ray, pts/povray and pts/blender



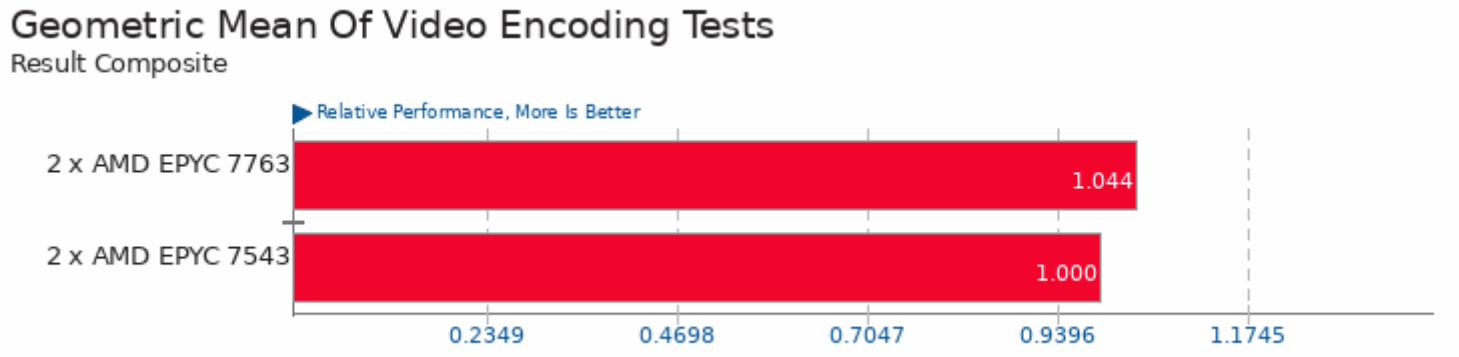
Geometric mean based upon tests: pts/neat, pts/mt-dgemm, pts/namd, pts/dolfyn, pts/lammps, pts/pennant, pts/openfoam, pts/himeno, pts/mafft, pts/qe and pts/kripke



Geometric mean based upon tests: pts/apache, pts/nginx, pts/mysqlslap, pts/pgbench, pts/redis, pts/cassandra, pts/phpbench, pts/openssl and pts/sqlite-speedtest



Geometric mean based upon tests: pts/java-scimark2, pts/byte, pts/cachebench, pts/numpy, pts/compress-gzip, pts/encode-flac, pts/encode-mp3, pts/gnupg, pts/redis, pts/pybench, pts/phpbench and pts/nginx



Geometric mean based upon tests: pts/svt-vp9, pts/x264, pts/x265, pts/kvazaar and pts/dav1d

This file was automatically generated via the Phoronix Test Suite benchmarking software on Saturday, 13 March 2021 23:03.