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Intel / AMD Large Ubuntu Linux CPU Benchmark Comparison

Intel Core i5-7500T testing with a HP 82A5 (P23 Ver. 02.04 BIOS) and Intel HD 630 3GB on Ubuntu 20.04 via the Phoronix Test Suite.

Automated Executive Summary

Core i9 7980XE had the most wins, coming in first place for 38% of the tests.

Based on the geometric mean of all complete results, the fastest (Core i9 7980XE) was 13.681x the speed of the slowest (AMD E-350).

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

Rodinia (Test: OpenMP LavaMD) at 115.366x
OpenSSL (RSA 4096-bit Performance) at 74.791x
Timed Linux Kernel Compilation (Time To Compile) at 66.539x
Stockfish (Total Time) at 61.311x
Rodinia (Test: OpenMP CFD Solver) at 57.423x
asmFish (1024 Hash Memory, 26 Depth) at 49.445x
TTSIOD 3D Renderer (Phong Rendering With Soft-Shadow Mapping) at 44.241x
PolyBench-C (Test: Covariance Computation) at 38.408x
m-queens (Time To Solve) at 37.831x

PolyBench-C (Test: Correlation Computation) at 37.417x.

Test Systems:

Ryzen 7 2700X

Processor: AMD Ryzen 7 2700X Eight-Core @ 3.70GHz (8 Cores / 16 Threads), Motherboard: ASUS ROG CROSSHAIR VII HERO (WI-FI) (0509 BIOS), Chipset: AMD Family 17h, Memory: 16384MB, Disk: 525GB Crucial_CT525MX3 + Samsung SSD 950 PRO 256GB, Graphics: AMD Radeon RX Vega 8192MB, Audio: AMD Device aaf8, Network: Intel I211 Gigabit Connection + Realtek Device b822

OS: Ubuntu 18.04, Kernel: 4.17.0-999-generic (x86_64), Compiler: GCC 8.1.0, File-System: ext4

Ryzen 5 2600X

Processor: AMD Ryzen 5 2600X Six-Core @ 3.60GHz (6 Cores / 12 Threads), Motherboard: ASUS ROG CROSSHAIR VII HERO (WI-FI) (0509 BIOS), Chipset: AMD Family 17h, Memory: 16384MB, Disk: 525GB Crucial_CT525MX3 + Samsung SSD 950 PRO 256GB, Graphics: AMD Radeon RX Vega 8192MB, Audio: AMD Device aaf8, Network: Intel I211 Gigabit Connection + Realtek Device b822

OS: Ubuntu 18.04, Kernel: 4.17.0-999-generic (x86_64), Compiler: GCC 8.1.0, File-System: ext4

Ryzen 7 1800X

Processor: AMD Ryzen 7 1800X Eight-Core @ 3.60GHz (8 Cores / 16 Threads), Motherboard: ASUS ROG CROSSHAIR VII HERO (WI-FI) (0509 BIOS), Chipset: AMD Family 17h, Memory: 16384MB, Disk: 525GB Crucial_CT525MX3 + Samsung SSD 950 PRO 256GB, Graphics: AMD Radeon RX Vega 8192MB, Audio: AMD Device aaf8, Network: Intel I211 Gigabit Connection + Realtek Device b822

OS: Ubuntu 18.04, Kernel: 4.17.0-999-generic (x86_64), Compiler: GCC 8.1.0, File-System: ext4

Ryzen 7 2700

Processor: AMD Ryzen 7 2700 Eight-Core @ 3.20GHz (8 Cores / 16 Threads), Motherboard: ASUS ROG CROSSHAIR VII HERO (WI-FI) (0509 BIOS), Chipset: AMD Family 17h, Memory: 16384MB, Disk: 525GB Crucial_CT525MX3 + Samsung SSD 950 PRO 256GB, Graphics: AMD Radeon RX Vega 8192MB, Audio: AMD Device aaf8, Network: Intel I211 Gigabit Connection + Realtek Device b822

OS: Ubuntu 18.04, Kernel: 4.17.0-999-generic (x86_64), Compiler: GCC 8.1.0, File-System: ext4

Ryzen 5 2600

Processor: AMD Ryzen 5 2600 Six-Core @ 3.40GHz (6 Cores / 12 Threads), Motherboard: ASUS ROG CROSSHAIR VII HERO (WI-FI) (0509 BIOS), Chipset: AMD Family 17h, Memory: 16384MB, Disk: 525GB Crucial_CT525MX3 + Samsung SSD 950 PRO 256GB, Graphics: AMD Radeon RX Vega 8192MB, Audio: AMD Device aaf8, Network: Intel I211 Gigabit Connection + Realtek Device b822

OS: Ubuntu 18.04, Kernel: 4.17.0-999-generic (x86_64), Compiler: GCC 8.1.0, File-System: ext4

Core i7 8700K

Processor: Intel Core i7-8700K @ 4.70GHz (6 Cores / 12 Threads), Motherboard: ASUS PRIME Z370-A (0607 BIOS), Chipset: Intel Device 3ec2, Memory: 16384MB, Disk: 525GB Crucial_CT525MX3 + Samsung SSD 950 PRO 256GB, Graphics: AMD Radeon RX Vega 8192MB, Audio: Realtek ALC1220, Network: Intel Connection

OS: Ubuntu 18.04, Kernel: 4.17.0-999-generic (x86_64), Compiler: GCC 8.1.0, File-System: ext4

Ryzen 5 2400G

Processor: AMD Ryzen 5 2400G @ 3.60GHz (4 Cores / 8 Threads), Motherboard: ASUS PRIME B350M-E (4011 BIOS), Chipset: AMD Device 15d0, Memory: 16384MB, Disk: Samsung SSD 950 PRO 256GB, Graphics: ASUS AMD Radeon Vega 8 Mobile 1024MB, Audio: AMD Device 15de, Network: Realtek RTL8111/8168/8411

OS: Ubuntu 18.04, Kernel: 4.17.0-999-generic (x86_64), Compiler: GCC 8.1.0, File-System: ext4

Core i5 8400

Processor: Intel Core i5-8400 @ 4.00GHz (6 Cores), Motherboard: MSI Z370M MORTAR (MS-7B54) v1.0 (1.20 BIOS), Chipset: Intel Device 3ec2, Memory: 16384MB, Disk: Samsung SSD 950 PRO 256GB, Graphics: Intel UHD 630 3072MB (1050MHz), Audio: Realtek ALC892, Network: Intel Connection

OS: Ubuntu 18.04, Kernel: 4.17.0-999-generic (x86_64), Compiler: GCC 8.1.0, File-System: ext4

Ryzen 7 1700

Processor: AMD Ryzen 7 1700 Eight-Core @ 3.00GHz (8 Cores / 16 Threads), Motherboard: MSI B350 TOMAHAWK (MS-7A34) v1.0 (1.H0 BIOS), Chipset: AMD Family 17h, Memory: 16384MB, Disk: 525GB Crucial_CT525MX3 + Samsung SSD 950 PRO 256GB, Graphics: AMD Radeon RX Vega 8192MB, Audio: AMD Device aaf8, Network: Realtek RTL8111/8168/8411

OS: Ubuntu 18.04, Kernel: 4.17.0-999-generic (x86_64), Compiler: GCC 8.1.0, File-System: ext4

Core i9 7980XE

Processor: Intel Core i9-7980XE @ 4.40GHz (18 Cores / 36 Threads), Motherboard: ASUS PRIME X299-A (1004

BIOS), Chipset: Intel Sky Lake-E DMI3 Registers, Memory: 16384MB, Disk: 256GB INTEL SSDPEKKW256G8, Graphics: NV134 8192MB, Audio: Realtek ALC1220, Network: Intel Connection

OS: Ubuntu 18.04, Kernel: 4.17.0-999-generic (x86_64), Compiler: GCC 8.1.0, File-System: ext4

Core i5 7600K

Processor: Intel Core i5-7600K @ 4.20GHz (4 Cores), Motherboard: Gigabyte Z270M-D3H-CF (F8d BIOS), Chipset: Intel Intel Kaby Lake + Z270, Memory: 8192MB, Disk: 250GB Samsung SSD 850, Graphics: Intel HD 630 (1150MHz), Audio: Realtek ALC892, Network: Intel Connection

OS: Ubuntu 18.04, Kernel: 4.17.0-999-generic (x86_64), Compiler: GCC 8.1.0, File-System: ext4

Core i7 870

Processor: Intel Core 870 @ 2.93GHz (4 Cores / 8 Threads), Motherboard: ECS P55H-A v1.0 (080016 BIOS), Chipset: Intel Core DMI, Memory: 8192MB, Disk: 120GB ADATA SU700, Graphics: HIS AMD Radeon HD 6450/7450/8450 / R5 230 OEM 1024MB, Audio: Realtek ALC1200, Network: Realtek RTL8111/8168/8411

OS: Ubuntu 18.04, Kernel: 4.17.0-999-generic (x86_64), Compiler: GCC 8.1.0, File-System: ext4

Core i7 7740X

Processor: Intel Core i7-7740K @ 4.50GHz (4 Cores / 8 Threads), Motherboard: Gigabyte X299 AORUS Gaming-CF (F2d BIOS), Chipset: Intel Intel Kaby Lake, Memory: 8192MB, Disk: 120GB Force MP500, Graphics: MSI NVIDIA GP108 2048MB, Audio: Realtek ALC1220, Network: Intel Connection

OS: Ubuntu 18.04, Kernel: 4.17.0-999-generic (x86_64), Compiler: GCC 8.1.0, File-System: ext4

Core i9 7900X

Processor: Intel Core i7-7900X @ 4.50GHz (10 Cores / 20 Threads), Motherboard: ASRock X299 Extreme4 (P1.20 BIOS), Chipset: Intel Sky Lake-E DMI3 Registers, Memory: 32768MB, Disk: 120GB Force MP500, Graphics: Zotac NVIDIA GeForce GT 610 1024MB, Audio: Realtek ALC1220, Network: Intel Connection

OS: Ubuntu 18.04, Kernel: 4.17.0-999-generic (x86_64), Compiler: GCC 8.1.0, File-System: ext4

AMD FX-8350

Processor: AMD FX-8350 Eight-Core @ 4.00GHz (4 Cores / 8 Threads), Motherboard: ASUS Crosshair V Formula (1703 BIOS), Chipset: AMD RD9x0/RX980, Memory: 8192MB, Disk: 120GB ADATA SU700, Graphics: HIS AMD Radeon HD 6450/7450/8450 / R5 230 OEM 1024MB, Audio: Realtek ALC889, Network: Intel 82583V Gigabit Connection

OS: Ubuntu 18.04, Kernel: 4.17.0-999-generic (x86_64), Compiler: GCC 8.1.0, File-System: ext4

AMD Athlon II X3 425

Processor: AMD Athlon II X3 425 @ 2.70GHz (3 Cores), Motherboard: ASRock 890FX Deluxe3 (P1.40 BIOS), Chipset: AMD RD890 PCI-e GFX Hydra part, Memory: 4096MB, Disk: 120GB ADATA SU700, Graphics: HIS AMD Radeon HD 6450/7450/8450 / R5 230 OEM 1024MB, Audio: VIA VT2020, Network: Realtek RTL8111/8168/8411

OS: Ubuntu 18.04, Kernel: 4.17.0-999-generic (x86_64), Compiler: GCC 8.1.0, File-System: ext4

Ryzen Threadripper 1950X

Processor: AMD Ryzen Threadripper 1950X 16-Core @ 3.40GHz (16 Cores / 32 Threads), Motherboard: Gigabyte X399 AORUS Gaming 7 (F3g BIOS), Chipset: AMD Family 17h, Memory: 16384MB, Disk: 120GB Force MP500, Graphics: MSI AMD Radeon R7 370 / R9 270/370 OEM 4096MB, Audio: Realtek ALC1220, Network: Qualcomm Atheros Killer E2500 Gigabit + Intel Wireless 8265 / 8275

OS: Ubuntu 18.04, Kernel: 4.17.0-999-generic (x86_64), Compiler: GCC 8.1.0, File-System: ext4

Intel Core 2 Duo E8400

Processor: Intel Core 2 Duo E8400 @ 2.99GHz (2 Cores), Motherboard: Gigabyte EP45T-DS3R (F1 BIOS), Chipset: Intel 4 DRAM + ICH10R, Memory: 4096MB, Disk: 120GB ADATA SU700, Graphics: HIS AMD Radeon HD 6450/7450/8450 / R5 230 OEM 1024MB, Audio: Realtek ALC889A, Network: Realtek RTL8111/8168/8411

OS: Ubuntu 18.04, Kernel: 4.17.0-999-generic (x86_64), Compiler: GCC 8.1.0, File-System: ext4

AMD E-350

Processor: AMD E-350 @ 1.60GHz (2 Cores), Motherboard: ASUS E35M1-M PRO (1602 BIOS), Chipset: AMD Family 14h Root Complex, Memory: 2048MB, Disk: 120GB ADATA SU700, Graphics: HIS AMD Radeon HD 6450/7450/8450 / R5 230 OEM 1024MB, Audio: Realtek ALC887-VD, Network: Realtek RTL8111/8168/8411

OS: Ubuntu 18.04, Kernel: 4.17.0-999-generic (x86_64), Compiler: GCC 8.1.0, File-System: ext4

Core i5 2400S

Processor: Intel Core i5-2400S @ 3.30GHz (4 Cores), Motherboard: ASRock Z68 Pro3 (P2.10 BIOS), Chipset: Intel 2nd Generation Core Family DRAM, Memory: 4096MB, Disk: 120GB ADATA SU700, Graphics: HIS AMD Radeon HD 6450/7450/8450 / R5 230 OEM 1024MB, Audio: Realtek ALC892, Network: Realtek RTL8111/8168/8411

OS: Ubuntu 18.04, Kernel: 4.17.0-999-generic (x86_64), Compiler: GCC 8.1.0, File-System: ext4

AMD A6-7400K

Processor: AMD A6-7400K Radeon R5 6 Compute Cores 2C+4G @ 3.90GHz (1 Core / 2 Threads), Motherboard: ASRock FM2A58M-VG3+ R2.0 (P2.70 BIOS), Chipset: AMD Family 15h, Memory: 16384MB, Disk: 120GB ADATA SU700, Graphics: HIS AMD Radeon HD 6450/7450/8450 / R5 230 OEM 1024MB, Audio: Realtek ALC662 rev1, Network: Realtek RTL8111/8168/8411

OS: Ubuntu 18.04, Kernel: 4.17.0-999-generic (x86_64), Compiler: GCC 8.1.0, File-System: ext4

AMD A10-7800

Processor: AMD A10-7800 Radeon R7 12 Compute Cores 4C+8G @ 3.50GHz (2 Cores / 4 Threads), Motherboard: MSI A78M-E35 (MS-7721) v6.0 (V30.1 BIOS), Chipset: AMD Family 15h, Memory: 7168MB, Disk: 120GB ADATA SU700, Graphics: MSI AMD Radeon R7 1024MB, Audio: AMD Kaveri HDMI/DP, Network: Realtek RTL8111/8168/8411

OS: Ubuntu 18.04, Kernel: 4.17.0-999-generic (x86_64), Compiler: GCC 8.1.0, File-System: ext4

Core i3 2100

Processor: Intel Core i3-2100 @ 3.10GHz (2 Cores / 4 Threads), Motherboard: MSI H61M-P31/W8 (MS-7788) v1.0 (V3.6 BIOS), Chipset: Intel 2nd Generation Core Family DRAM, Memory: 4096MB, Disk: 120GB ADATA SU700, Graphics: HIS AMD Radeon HD 6450/7450/8450 / R5 230 OEM 1024MB, Audio: Realtek ALC887-VD, Network: Realtek RTL8111/8168/8411

OS: Ubuntu 18.04, Kernel: 4.17.0-999-generic (x86_64), Compiler: GCC 8.1.0, File-System: ext4

Core i7 990X

Processor: Intel Core i7 990X @ 3.47GHz (6 Cores / 12 Threads), Motherboard: MSI X58M (MS-7593) v1.0 (V3.8 BIOS), Chipset: Intel 5520/5500/X58 + ICH10R, Memory: 12288MB, Disk: PNY CS1211 120GB, Graphics: Sapphire AMD Radeon HD 5000/6000/7350/8350 512MB, Audio: Realtek ALC889, Network: Realtek RTL8111/8168/8411

OS: Ubuntu 18.04, Kernel: 4.17.0-999-generic (x86_64), Compiler: GCC 8.1.0, File-System: ext4

AMD A10-7870K

Processor: AMD A10-7870K Radeon R7 12 Compute Cores 4C+8G @ 3.90GHz (2 Cores / 4 Threads), Motherboard: ASUS A88XM-E (2001 BIOS), Chipset: AMD Family 15h, Memory: 15360MB, Disk: 250GB Samsung SSD 850, Graphics: ASUS AMD Radeon R7 1024MB, Audio: AMD Kaveri HDMI/DP, Network: Realtek RTL8111/8168/8411

OS: Ubuntu 18.04, Kernel: 4.17.0-999-generic (x86_64), Compiler: GCC 8.1.0, File-System: ext4

AMD A10-5800K

Processor: AMD A10-5800K APU @ 3.80GHz (2 Cores / 4 Threads), Motherboard: Gigabyte F2A68HM-H (FA BIOS),

Chipset: AMD Family 15h, Memory: 4096MB, Disk: 120GB ADATA SU700, Graphics: HIS AMD Radeon HD 6450/7450/8450 / R5 230 OEM 1024MB, Audio: Realtek ALC887-VD, Network: Realtek RTL8111/8168/8411

OS: Ubuntu 18.04, Kernel: 4.17.0-999-generic (x86_64), Compiler: GCC 8.1.0, File-System: ext4

Core i7 5960X

Processor: Intel Core i7-5960X @ 3.50GHz (8 Cores / 16 Threads), Motherboard: ASRock X99 Extreme3 (P3.50 BIOS), Chipset: Intel Xeon E7 v3/Xeon, Memory: 16384MB, Disk: 120GB INTEL SSDSC2BW12, Graphics: AMD FirePro V7900 2048MB, Audio: Realtek ALC1150, Network: Intel Connection

OS: Ubuntu 18.04, Kernel: 4.17.0-999-generic (x86_64), Compiler: GCC 8.1.0, File-System: ext4

Pentium G3258

Processor: Intel Pentium G3258 @ 3.20GHz (2 Cores), Motherboard: Gigabyte H97M-D3H (F2 BIOS), Chipset: Intel 4th Gen Core DRAM, Memory: 8192MB, Disk: 250GB SAMSUNG HD253GJ, Graphics: Intel Haswell Desktop 1536MB (1100MHz), Audio: Intel Xeon E3-1200 v3/4th, Network: Realtek RTL8111/8168/8411

OS: Ubuntu 18.04, Kernel: 4.17.0-999-generic (x86_64), Compiler: GCC 8.1.0, File-System: ext4

Willow6C

Willow16C

Processor: 16 x Intel Core (Haswell IBRS) (16 Cores), Motherboard: Red Hat KVM (0.5.1 BIOS), Memory: 32768MB, Disk: 3938GB, Graphics: qxldrmfb, Audio: QEMU Generic

OS: Clear Linux OS 29390, Kernel: 3.10.0-957.12.2.el7.x86_64 (x86_64), Compiler: GCC 9.1.1 20190512 gcc-9-branch@271104 + Clang 8.0.0 + LLVM 8.0.0, File-System: overlayfs, Screen Resolution: 1024x768, System Layer: container-other

Environment Notes:
CFFLAGS=-g-O3-feliminate-unused-debug-types-pipe-Wall-Wp-D_FORTIFY_SOURCE=2-fexceptions-fstack-protector--param=ssp-buffer-size=32-m64-fasynchronous-unwind-tables-Wp-D_REENTRANT-ftree-loop-distribute-patterns-Wl-z-Wl now-Wl-z-Wl relro-malign-data=abi-fno-semantic-interposition-ftree-vectorize-ftree-loop-vectorize-Wl-sort-common-Wl--enable-new-dtags
FFLAGS=-g-O3-feliminate-unused-debug-types-pipe-Wall-Wp-D_FORTIFY_SOURCE=2-fexceptions-fstack-protector--param=ssp-buffer-size=32-m64-fasynchronous-unwind-tables-Wp-D_REENTRANT-ftree-loop-distribute-patterns-Wl-z-Wl
relro-malign-data=abi-fno-semantic-interposition-ftree-vectorize-ftree-loop-vectorize-Wl--enable-new-dtags
CXXFLAGS=-g-O3-feliminate-unused-debug-types-pipe-Wall-Wp-D_FORTIFY_SOURCE=2-fexceptions-fstack-protector--param=ssp-buffer-size=32-Wformat-Wformat-security-m64-fasynchronous-unwind-tables-Wp-D_REENTRANT-ftree-loop-distribute-patterns-Wl-z-Wl
relro-fno-semantic-interposition-ffat-lto-objects-fno-signed-zeros-fno-trapping-math-fassociative-math-Wl-sort-common-Wl--enable-new-dtags-mtune=skylake-fvisibility-inlines-hidden-Wl--enable-new-dtags
CFLAGS=-g-O3-feliminate-unused-debug-types-pipe-Wall-Wp-D_FORTIFY_SOURCE=2-fexceptions-fstack-protector--param=ssp-buffer-size=32-Wformat-Wformat-security-m64-fasynchronous-unwind-tables-Wp-D_REENTRANT-ftree-loop-distribute-patterns-Wl-z-Wl
relro-fno-semantic-interposition-ffat-lto-objects-fno-signed-zeros-fno-trapping-math-fassociative-math-Wl-sort-common-Wl--enable-new-dtags-mtune=skylake
THEANO_FLAGS=floatX=float32 openmp=true gcc.cxxflags="-ftree-vectorize-mavx"
Compiler Notes: --build=x86_64-generic-linux --disable-libmpx --disable-libunwind-exceptions --disable-multiarch --disable-vtable-verify --disable-werror --enable-__cxa_atexit --enable-bootstrap --enable-cet --enable-clocale=gnu --enable-default-pie --enable-gnu-indirect-function --enable-languages=c,c++,fortran,go --enable-ld=default --enable-libstdcxx-pch --enable-lto --enable-multilib --enable-plugin --enable-shared --enable-threads=posix --exec-prefix=/usr --includedir=/usr/include --target=x86_64-generic-linux --with-arch=westmere --with-gcc-major-version-only --with-glibc-version=2.19 --with-gnu-ld --with-isl --with-ppl=yes --with-tune=haswell
Security Notes: KPTI + Load fences __user pointer sanitization + Full retpoline IBPB + SSB disabled via prctl and seccomp + PTE Inversion

Core i5 8500T

Processor: Intel Core i5-8500T @ 3.50GHz (6 Cores), Motherboard: Dell 03KWTV (1.2.22 BIOS), Memory: 8192MB, Disk: 240GB Western Digital WDS240G2G0A + 3001GB EZRZ-00Z5HB0, Graphics: inteldrmfb (1100MHz), Audio: Realtek ALC3234, Monitor: SAMSUNG

OS: Clear Linux OS 29390, Kernel: 5.0.0-37-generic (x86_64), Compiler: GCC 9.1.1 20190512 gcc-9-branch@271104 + Clang 8.0.0 + LLVM 8.0.0, File-System: overlayfs, Screen Resolution: 1920x1080, System Layer: Docker

Environment Notes:
CFFLAGS=-g-O3-feliminate-unused-debug-types-pipe-Wall-Wp-D_FORTIFY_SOURCE=2-fexceptions-fstack-protector--param=ssp-buffer-size=32-m64-fasynchronous-unwind-tables-Wp-D_REENTRANT-ftree-loop-distribute-patterns-Wl-z-Wl now-Wl-z-Wl relro-malign-data=abi-fno-semantic-interposition-ftree-vectorize-ftree-loop-vectorize-Wl-sort-common-Wl--enable-new-dtags
FFLAGS=-g-O3-feliminate-unused-debug-types-pipe-Wall-Wp-D_FORTIFY_SOURCE=2-fexceptions-fstack-protector--param=ssp-buffer-size=32-m64-fasynchronous-unwind-tables-Wp-D_REENTRANT-ftree-loop-distribute-patterns-Wl-z-Wl relro-malign-data=abi-fno-semantic-interposition-ftree-vectorize-ftree-loop-vectorize-Wl--enable-new-dtags
CXXFLAGS=-g-O3-feliminate-unused-debug-types-pipe-Wall-Wp-D_FORTIFY_SOURCE=2-fexceptions-fstack-protector--param=ssp-buffer-size=32-Wformat-Wformat-security-m64-fasynchronous-unwind-tables-Wp-D_REENTRANT-ftree-loop-distribute-patterns-Wl-z-Wl relro-fno-semantic-interposition-ffat-lto-objects-fno-signed-zeros-fno-trapping-math-fassociative-math-Wl-sort-common-Wl--enable-new-dtags-mtune=skylake-fvisibility-inlines-hidden-Wl--enable-new-dtags
CFLAGS=-g-O3-feliminate-unused-debug-types-pipe-Wall-Wp-D_FORTIFY_SOURCE=2-fexceptions-fstack-protector--param=ssp-buffer-size=32-Wformat-Wformat-security-m64-fasynchronous-unwind-tables-Wp-D_REENTRANT-ftree-loop-distribute-patterns-Wl-z-Wl relro-fno-semantic-interposition-ffat-lto-objects-fno-signed-zeros-fno-trapping-math-fassociative-math-Wl-sort-common-Wl--enable-new-dtags-mtune=skylake THEANO_FLAGS=floatX=float32 openmp=true gcc.cxxflags="-ftree-vectorize-mavx"
Compiler Notes: --build=x86_64-generic-linux --disable-libmpx --disable-libunwind-exceptions --disable-multiarch --disable-vtable-verify --disable-werror --enable-__cxa_atexit --enable-bootstrap --enable-cet --enable-clocale=gnu --enable-default-pie --enable-gnu-indirect-function --enable-languages=c,c++,fortran,go --enable-ld=default --enable-libstdcxx-pch --enable-lto --enable-multilib --enable-plugin --enable-shared --enable-threads=posix --exec-prefix=/usr --includedir=/usr/include --target=x86_64-generic-linux --with-arch=westmere --with-gcc-major-version-only --with-glibc-version=2.19 --with-gnu-ld --with-isl --with-ppl=yes --with-tune=haswell
Processor Notes: Scaling Governor: intel_pstate powersave
Security Notes: KPTI + usercopy/swapgs barriers and __user pointer sanitization + Full generic retpoline IBPB: conditional IBRS_FW STIBP: disabled RSB filling + SSB disabled via prctl and seccomp + PTE Inversion; VMX: conditional cache flushes SMT disabled

Core i5 3470T

Processor: Intel Core i5-3470T @ 3.60GHz (2 Cores / 4 Threads), Motherboard: LENOVO MAHOBAY (9SKT63AUS BIOS), Memory: 4096MB, Disk: 120GB KINGSTON SV300S3 + 31GB Ultra Fit, Graphics: i915drmfb (1100MHz), Audio: Realtek ALC662 rev3, Monitor: SAMSUNG

OS: Clear Linux OS 29390, Kernel: 5.3.0-40-generic (x86_64), Compiler: GCC 9.1.1 20190512 gcc-9-branch@271104 + Clang 8.0.0 + LLVM 8.0.0, File-System: overlayfs, Screen Resolution: 1920x1080, System Layer: Docker

Environment Notes:
CFFLAGS=-g-O3-feliminate-unused-debug-types-pipe-Wall-Wp-D_FORTIFY_SOURCE=2-fexceptions-fstack-protector--param=ssp-buffer-size=32-m64-fasynchronous-unwind-tables-Wp-D_REENTRANT-ftree-loop-distribute-patterns-Wl-z-Wl now-Wl-z-Wl relro-malign-data=abi-fno-semantic-interposition-ftree-vectorize-ftree-loop-vectorize-Wl-sort-common-Wl--enable-new-dtags
FFLAGS=-g-O3-feliminate-unused-debug-types-pipe-Wall-Wp-D_FORTIFY_SOURCE=2-fexceptions-fstack-protector--param=ssp-buffer-size=32-m64-fasynchronous-unwind-tables-Wp-D_REENTRANT-ftree-loop-distribute-patterns-Wl-z-Wl relro-malign-data=abi-fno-semantic-interposition-ftree-vectorize-ftree-loop-vectorize-Wl--enable-new-dtags
CXXFLAGS=-g-O3-feliminate-unused-debug-types-pipe-Wall-Wp-D_FORTIFY_SOURCE=2-fexceptions-fstack-protector--param=ssp-buffer-size=32-Wformat-Wformat-security-m64-fasynchronous-unwind-tables-Wp-D_REENTRANT-ftree-loop-distribute-patterns-Wl-z-Wl relro-fno-semantic-interposition-ffat-lto-objects-fno-signed-zeros-fno-trapping-math-fassociative-math-Wl-sort-common-Wl--enable-new-dtags-mtune=skylake-fvisibility-inlines-hidden-Wl--enable-new-dtags
CFLAGS=-g-O3-feliminate-unused-debug-types-pipe-Wall-Wp-D_FORTIFY_SOURCE=2-fexceptions-fstack-protector--param=ssp-buffer-size=32-Wformat-Wformat-security-m64-fasynchronous-unwind-tables-Wp-D_REENTRANT-ftree-loop-distribute-patterns-Wl-z-Wl relro-fno-semantic-interposition-ffat-lto-objects-fno-signed-zeros-fno-trapping-math-fassociative-math-Wl-sort-common-Wl--enable-new-dtags-mtune=skylake THEANO_FLAGS=floatX=float32 openmp=true gcc.cxxflags="-ftree-vectorize-mavx"
Compiler Notes: --build=x86_64-generic-linux --disable-libmpx --disable-libunwind-exceptions --disable-multiarch --disable-vtable-verify --disable-werror --enable-__cxa_atexit --enable-bootstrap --enable-cet --enable-clocale=gnu --enable-default-pie --enable-gnu-indirect-function --enable-languages=c,c++,fortran,go --enable-ld=default --enable-libstdcxx-pch --enable-lto --enable-multilib --enable-plugin --enable-shared --enable-threads=posix --exec-prefix=/usr --includedir=/usr/include --target=x86_64-generic-linux --with-arch=westmere --with-gcc-major-version-only --with-glibc-version=2.19 --with-gnu-ld --with-isl --with-ppl=yes --with-tune=haswell
Processor Notes: Scaling Governor: intel_pstate powersave
Security Notes: KPTI + usercopy/swapgs barriers and __user pointer sanitization + Full generic retpoline IBPB: conditional IBRS_FW STIBP: conditional RSB filling + SSB disabled via prctl and seccomp + PTE Inversion

i5 3470T 8GB RAM

Processor: Intel Core i5-3470T @ 3.60GHz (2 Cores / 4 Threads), Motherboard: LENOVO MAHOBAY (9SKT63AUS BIOS), Memory: 8192MB, Disk: 120GB KINGSTON SV300S3, Graphics: i915drmfb (1100MHz), Audio: Realtek ALC662 rev3, Monitor: SAMSUNG

OS: Clear Linux OS 29390, Kernel: 5.3.0-40-generic (x86_64), Compiler: GCC 9.1.1 20190512 gcc-9-branch@271104 + Clang 8.0.0 + LLVM 8.0.0, File-System: overlayfs, Screen Resolution: 1920x1080, System Layer: Docker

Environment Notes:
CFFLAGS=-g-O3-feliminate-unused-debug-types-pipe-Wall-Wp-D_FORTIFY_SOURCE=2-fexceptions-fstack-protector--param=ssp-buffer-size=32-m64-fasynchronous-unwind-tables-Wp-D_REENTRANT-ftree-loop-distribute-patterns-Wl-z-Wl now-Wl-z-Wl relro-malign-data=abi-fno-semantic-interposition-ftree-vectorize-ftree-loop-vectorize-Wl-sort-common-Wl--enable-new-dtags
FFLAGS=-g-O3-feliminate-unused-debug-types-pipe-Wall-Wp-D_FORTIFY_SOURCE=2-fexceptions-fstack-protector--param=ssp-buffer-size=32-m64-fasynchronous-unwind-tables-Wp-D_REENTRANT-ftree-loop-distribute-patterns-Wl-z-Wl relro-malign-data=abi-fno-semantic-interposition-ftree-vectorize-ftree-loop-vectorize-Wl--enable-new-dtags
CXXFLAGS=-g-O3-feliminate-unused-debug-types-pipe-Wall-Wp-D_FORTIFY_SOURCE=2-fexceptions-fstack-protector--param=ssp-buffer-size=32-Wformat-Wformat-security-m64-fasynchronous-unwind-tables-Wp-D_REENTRANT-ftree-loop-distribute-patterns-Wl-z-Wl relro-fno-semantic-interposition-ffat-lto-objects-fno-signed-zeros-fno-trapping-math-fassociative-math-Wl-sort-common-Wl--enable-new-dtags-mtune=skylake-fvisibility-inlines-hidden-Wl--enable-new-dtags
CFLAGS=-g-O3-feliminate-unused-debug-types-pipe-Wall-Wp-D_FORTIFY_SOURCE=2-fexceptions-fstack-protector--param=ssp-buffer-size=32-Wformat-Wformat-security-m64-fasynchronous-unwind-tables-Wp-D_REENTRANT-ftree-loop-distribute-patterns-Wl-z-Wl relro-fno-semantic-interposition-ffat-lto-objects-fno-signed-zeros-fno-trapping-math-fassociative-math-Wl-sort-common-Wl--enable-new-dtags-mtune=skylake THEANO_FLAGS=floatX=float32 openmp=true gcc.cxxflags="-ftree-vectorize-mavx"
Compiler Notes: --build=x86_64-generic-linux --disable-libmpx --disable-libunwind-exceptions --disable-multiarch --disable-vtable-verify --disable-werror --enable-__cxa_atexit --enable-bootstrap --enable-cet --enable-clocale=gnu --enable-default-pie --enable-gnu-indirect-function --enable-languages=c,c++,fortran,go --enable-ld=default --enable-libstdcxx-pch --enable-lto --enable-multilib --enable-plugin --enable-shared --enable-threads=posix --exec-prefix=/usr --includedir=/usr/include --target=x86_64-generic-linux --with-arch=westmere --with-gcc-major-version-only --with-glibc-version=2.19 --with-gnu-ld --with-isl --with-ppl=yes --with-tune=haswell
Processor Notes: Scaling Governor: intel_pstate powersave
Security Notes: KPTI + usercopy/swapgs barriers and __user pointer sanitization + Full generic retpoline IBPB: conditional IBRS_FW STIBP: conditional RSB filling + SSB disabled via prctl and seccomp + PTE Inversion

i5 3470T 10GB

Processor: Intel Core i5-3470T @ 3.60GHz (2 Cores / 4 Threads), Motherboard: LENOVO MAHOBAY (9SKT63AUS BIOS), Memory: 10240MB, Disk: 120GB KINGSTON SV300S3, Graphics: i915drmfb (1100MHz), Audio: Realtek ALC662 rev3, Monitor: SAMSUNG

OS: Clear Linux OS 29390, Kernel: 5.3.0-42-generic (x86_64), Compiler: GCC 9.1.1 20190512 gcc-9-branch@271104 + Clang 8.0.0 + LLVM 8.0.0, File-System: overlayfs, Screen Resolution: 1920x1080, System Layer: Docker

Environment Notes:
CFFLAGS=-g-O3-feliminate-unused-debug-types-pipe-Wall-Wp-D_FORTIFY_SOURCE=2-fexceptions-fstack-protector--param=ssp-buffer-size=32-m64-fasynchronous-unwind-tables-Wp-D_REENTRANT-ftree-loop-distribute-patterns-Wl-z-Wl now-Wl-z-Wl relro-malign-data=abi-fno-semantic-interposition-ftree-vectorize-ftree-loop-vectorize-Wl-sort-common-Wl--enable-new-dtags
FFLAGS=-g-O3-feliminate-unused-debug-types-pipe-Wall-Wp-D_FORTIFY_SOURCE=2-fexceptions-fstack-protector--param=ssp-buffer-size=32-m64-fasynchronous-unwind-tables-Wp-D_REENTRANT-ftree-loop-distribute-patterns-Wl-z-Wl relro-malign-data=abi-fno-semantic-interposition-ftree-vectorize-ftree-loop-vectorize-Wl--enable-new-dtags
CXXFLAGS=-g-O3-feliminate-unused-debug-types-pipe-Wall-Wp-D_FORTIFY_SOURCE=2-fexceptions-fstack-protector--param=ssp-buffer-size=32-Wformat-Wformat-security-m64-fasynchronous-unwind-tables-Wp-D_REENTRANT-ftree-loop-distribute-patterns-Wl-z-Wl relro-fno-semantic-interposition-ffat-lto-objects-fno-signed-zeros-fno-trapping-math-fassociative-math-Wl-sort-common-Wl--enable-new-dtags-mtune=skylake-fvisibility-inlines-hidden-Wl--enable-new-dtags
CFLAGS=-g-O3-feliminate-unused-debug-types-pipe-Wall-Wp-D_FORTIFY_SOURCE=2-fexceptions-fstack-protector--param=ssp-buffer-size=32-Wformat-Wformat-security-m64-fasynchronous-unwind-tables-Wp-D_REENTRANT-ftree-loop-distribute-patterns-Wl-z-Wl relro-fno-semantic-interposition-ffat-lto-objects-fno-signed-zeros-fno-trapping-math-fassociative-math-Wl-sort-common-Wl--enable-new-dtags-mtune=skylake THEANO_FLAGS=floatX=float32 openmp=true gcc.cxxflags="-ftree-vectorize-mavx"
Compiler Notes: --build=x86_64-generic-linux --disable-libmpx --disable-libunwind-exceptions --disable-multiarch --disable-vtable-verify --disable-werror --enable-__cxa_atexit --enable-bootstrap --enable-cet --enable-clocale=gnu --enable-default-pie --enable-gnu-indirect-function --enable-languages=c,c++,fortran,go --enable-ld=default --enable-libstdcxx-pch --enable-lto --enable-multilib --enable-plugin --enable-shared --enable-threads=posix --exec-prefix=/usr --includedir=/usr/include --target=x86_64-generic-linux --with-arch=westmere --with-gcc-major-version-only --with-glibc-version=2.19 --with-gnu-ld --with-isl --with-ppl=yes --with-tune=haswell
Processor Notes: Scaling Governor: intel_pstate performance
Security Notes: KPTI + usercopy/swapgs barriers and __user pointer sanitization + Full generic retpoline IBPB: conditional IBRS_FW STIBP: conditional RSB filling + SSB disabled via prctl and seccomp + PTE Inversion

2 x E5-2667v3

Processor: Intel Core (4 Cores / 32 Threads), Motherboard: QEMU Standard PC (Q35 + ICH9 2009) (rel-1.12.0-0-ga698c89-rebuilt.opensuse.org BIOS), Chipset: Intel 82G33/G31/P35/P31 + ICH9, Memory: 18GB, Disk: 59GB, Graphics: llvmpipe 16GB, Audio: QEMU Generic, Network: Red Hat Virtio device

OS: Ubuntu 20.04, Kernel: 5.4.0-18-generic (x86_64), Desktop: GNOME Shell 3.36.0, Display Server: X Server 1.20.7, Display Driver: modesetting 1.20.7, OpenGL: 3.3 Mesa 20.0.2 (LLVM 9.0.1 256 bits), Compiler: GCC 9.3.0, File-System: ext4, Screen Resolution: 1920x1080, System Layer: KVM

Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-gnu-unique-object --enable-languages=c,ada,c++,go,brig,d,fortran,objc,obj-c++,gm2 --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none,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: CPU Microcode: 0x1
Security Notes: itlb_multihit: KVM: Vulnerable + l1tf: Mitigation of PTE Inversion + mds: Mitigation of Clear buffers; SMT Host state unknown + meltdown: Mitigation of PTI + spec_store_bypass: Mitigation of SSB disabled via prctl and seccomp + spectre_v1: Mitigation of usercopy/swapgs barriers and __user pointer sanitization + spectre_v2: Mitigation of Full generic retpoline IBPB: conditional IBRS_FW STIBP: conditional RSB filling + tsx_async_abort: Not affected

i5 6500 8GB RAM

Processor: Intel Core i5-6500 @ 3.60GHz (4 Cores), Motherboard: HP 8056 (N21 Ver. 02.21 BIOS), Memory: 8192MB, Disk: 120GB KINGSTON SV300S3, Graphics: i915drmfb (1050MHz), Audio: Realtek ALC221, Monitor: SAMSUNG

OS: Clear Linux OS 29390, Kernel: 5.3.0-45-generic (x86_64), Compiler: GCC 9.1.1 20190512 gcc-9-branch@271104 + Clang 8.0.0 + LLVM 8.0.0, File-System: overlayfs, Screen Resolution: 1920x1080, System Layer: Docker

Environment Notes:
CFFLAGS=-g-O3-feliminate-unused-debug-types-pipe-Wall-Wp-D_FORTIFY_SOURCE=2-fexceptions-fstack-protector--param=ssp-buffer-size=32-m64-fasynchronous-unwind-tables-Wp-D_REENTRANT-ftree-loop-distribute-patterns-Wl-z-Wl now-Wl-z-Wl relro-malign-data=abi-fno-semantic-interposition-ftree-vectorize-ftree-loop-vectorize-Wl-sort-common-Wl--enable-new-dtags
FFLAGS=-g-O3-feliminate-unused-debug-types-pipe-Wall-Wp-D_FORTIFY_SOURCE=2-fexceptions-fstack-protector--param=ssp-buffer-size=32-m64-fasynchronous-unwind-tables-Wp-D_REENTRANT-ftree-loop-distribute-patterns-Wl-z-Wl
relro-malign-data=abi-fno-semantic-interposition-ftree-vectorize-ftree-loop-vectorize-Wl--enable-new-dtags
CXXFLAGS=-g-O3-feliminate-unused-debug-types-pipe-Wall-Wp-D_FORTIFY_SOURCE=2-fexceptions-fstack-protector--param=ssp-buffer-size=32-Wformat-Wformat-security-m64-fasynchronous-unwind-tables-Wp-D_REENTRANT-ftree-loop-distribute-patterns-Wl-z-Wl
relro-fno-semantic-interposition-ffat-lto-objects-fno-signed-zeros-fno-trapping-math-fassociative-math-Wl-sort-common-Wl--enable-new-dtags-mtune=skylake-fvisibility-inlines-hidden-Wl--enable-new-dtags
CFLAGS=-g-O3-feliminate-unused-debug-types-pipe-Wall-Wp-D_FORTIFY_SOURCE=2-fexceptions-fstack-protector--param=ssp-buffer-size=32-Wformat-Wformat-security-m64-fasynchronous-unwind-tables-Wp-D_REENTRANT-ftree-loop-distribute-patterns-Wl-z-Wl
relro-fno-semantic-interposition-ffat-lto-objects-fno-signed-zeros-fno-trapping-math-fassociative-math-Wl-sort-common-Wl--enable-new-dtags-mtune=skylake
THEANO_FLAGS=floatX=float32 openmp=true gcc.cxxflags="-ftree-vectorize-mavx"
Compiler Notes: --build=x86_64-generic-linux --disable-libmpx --disable-libunwind-exceptions --disable-multiarch --disable-vtable-verify --disable-werror --enable-__cxa_atexit --enable-bootstrap --enable-cet --enable-clocale=gnu --enable-default-pie --enable-gnu-indirect-function --enable-languages=c,c++,fortran,go --enable-ld=default --enable-libstdcxx-pch --enable-lto --enable-multilib --enable-plugin --enable-shared --enable-threads=posix --exec-prefix=/usr --includedir=/usr/include --target=x86_64-generic-linux --with-arch=westmere --with-gcc-major-version-only --with-glibc-version=2.19 --with-gnu-ld --with-isl --with-ppl=yes --with-tune=haswell
Processor Notes: Scaling Governor: intel_pstate performance
Security Notes: KPTI + usercopy/swapgs barriers and __user pointer sanitization + Full generic retpoline IBPB: conditional IBRS_FW STIBP: disabled RSB filling + SSB disabled via prctl and seccomp + PTE Inversion

i5 6500 10GB RAM

Processor: Intel Core i5-6500 @ 3.60GHz (4 Cores), Motherboard: HP 8056 (N21 Ver. 02.21 BIOS), Memory: 10240MB, Disk: 120GB KINGSTON SV300S3, Graphics: i915drmfb (1050MHz), Audio: Realtek ALC221, Monitor: SAMSUNG

OS: Clear Linux OS 29390, Kernel: 5.3.0-45-generic (x86_64), Compiler: GCC 9.1.1 20190512 gcc-9-branch@271104 + Clang 8.0.0 + LLVM 8.0.0, File-System: overlayfs, Screen Resolution: 1920x1080, System Layer: Docker

Environment Notes:
CFFLAGS=-g-O3-feliminate-unused-debug-types-pipe-Wall-Wp-D_FORTIFY_SOURCE=2-fexceptions-fstack-protector--param=ssp-buffer-size=32-m64-fasynchronous-unwind-tables-Wp-D_REENTRANT-ftree-loop-distribute-patterns-Wl-z-Wl now-Wl-z-Wl
relro-malign-data=abi-fno-semantic-interposition-ftree-vectorize-ftree-loop-vectorize-Wl-sort-common-Wl--enable-new-dtags
FFLAGS=-g-O3-feliminate-unused-debug-types-pipe-Wall-Wp-D_FORTIFY_SOURCE=2-fexceptions-fstack-protector--param=ssp-buffer-size=32-m64-fasynchronous-unwind-tables-Wp-D_REENTRANT-ftree-loop-distribute-patterns-Wl-z-Wl
relro-malign-data=abi-fno-semantic-interposition-ftree-vectorize-ftree-loop-vectorize-Wl--enable-new-dtags
CXXFLAGS=-g-O3-feliminate-unused-debug-types-pipe-Wall-Wp-D_FORTIFY_SOURCE=2-fexceptions-fstack-protector--param=ssp-buffer-size=32-Wformat-Wformat-security-m64-fasynchronous-unwind-tables-Wp-D_REENTRANT-ftree-loop-distribute-patterns-Wl-z-Wl
relro-fno-semantic-interposition-ffat-lto-objects-fno-signed-zeros-fno-trapping-math-fassociative-math-Wl-sort-common-Wl--enable-new-dtags-mtune=skylake-fvisibility-inlines-hidden-Wl--enable-new-dtags
CFLAGS=-g-O3-feliminate-unused-debug-types-pipe-Wall-Wp-D_FORTIFY_SOURCE=2-fexceptions-fstack-protector--param=ssp-buffer-size=32-Wformat-Wformat-security-m64-fasynchronous-unwind-tables-Wp-D_REENTRANT-ftree-loop-distribute-patterns-Wl-z-Wl
relro-fno-semantic-interposition-ffat-lto-objects-fno-signed-zeros-fno-trapping-math-fassociative-math-Wl-sort-common-Wl--enable-new-dtags-mtune=skylake
THEANO_FLAGS=floatX=float32 openmp=true gcc.cxxflags="-ftree-vectorize-mavx"
Compiler Notes: --build=x86_64-generic-linux --disable-libmpx --disable-libunwind-exceptions --disable-multiarch --disable-vtable-verify --disable-werror --enable-__cxa_atexit --enable-bootstrap --enable-cet --enable-clocale=gnu --enable-default-pie --enable-gnu-indirect-function --enable-languages=c,c++,fortran,go --enable-ld=default --enable-libstdcxx-pch --enable-lto --enable-multilib --enable-plugin --enable-shared --enable-threads=posix --exec-prefix=/usr --includedir=/usr/include --target=x86_64-generic-linux --with-arch=westmere --with-gcc-major-version-only --with-glibc-version=2.19 --with-gnu-ld --with-isl --with-ppl=yes --with-tune=haswell
Processor Notes: Scaling Governor: intel_pstate powersave
Security Notes: KPTI + usercopy/swapgs barriers and __user pointer sanitization + Full generic retpoline IBPB: conditional IBRS_FW STIBP: disabled RSB filling + SSB disabled via prctl and seccomp + PTE Inversion

LenovoM700Tiny

Processor: Intel Core i3-6100T @ 3.20GHz (2 Cores / 4 Threads), Motherboard: LENOVO SKYBAY (FWKT53A BIOS), Memory: 4096MB, Disk: 240GB Western Digital WDS240G2G0A + 3001GB EZRZ-00Z5HB0, Graphics: i915drmfb (950MHz), Audio: Realtek ALC233, Monitor: SAMSUNG

OS: Ubuntu 20.04.1 LTS, Kernel: 5.8.1-050801-generic (x86_64), Display Driver: i915drmfb, Compiler: GCC 9.3.0, File-System: overlayfs, Screen Resolution: 1920x1080, System Layer: Docker

Kernel Notes: Transparent Huge Pages: madvise
Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-gnu-unique-object --enable-languages=c,ada,c++,go,brig,d,fortran,objc,obj-c++,gm2 --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none=/build/gcc-9-HskZEa/gcc-9-9.3.0/debian/tmp-nvptx/usr,hsa --enable-plugin --enable-shared --enable-threads=posix --host=x86_64-linux-gnu --program-prefix=x86_64-linux-gnu- --target=x86_64-linux-gnu --with-abi=m64 --with-arch-32=i686 --with-default-libstdcxx-abi=new --with-gcc-major-version-only --with-multilib-list=m32,m64,mx32 --with-target-system-zlib=auto --with-tune=generic --without-cuda-driver -v
Processor Notes: Scaling Governor: intel_pstate powersave - CPU Microcode: 0xe2
Security Notes: itlb_multihit: KVM: Mitigation of Split huge pages + l1tf: Mitigation of PTE Inversion; VMX: conditional cache flushes SMT vulnerable + mds: Mitigation of Clear buffers; SMT vulnerable + meltdown: Mitigation of PTI + spec_store_bypass: Mitigation of SSB disabled via prctl and seccomp + spectre_v1: Mitigation of usercopy/swapgs barriers and __user pointer sanitization + spectre_v2: Mitigation of Full generic retpoline IBPB: conditional IBRS_FW STIBP: conditional RSB filling + srbds: Mitigation of Microcode + tsx_async_abort: Not affected

Core i5 7500T

Processor: Intel Core i5-7500T @ 3.30GHz (4 Cores), Motherboard: HP 82A5 (P23 Ver. 02.04 BIOS), Chipset: Intel Xeon E3-1200 v6/7th + H270, Memory: 16GB, Disk: 256GB Western Digital WDS256G1X0C-00ENX0, Graphics: Intel HD 630 3GB (1100MHz), Audio: Conexant CX20632, Monitor: S243HL, Network: Realtek RTL8111/8168/8411

OS: Ubuntu 20.04, Kernel: 5.10.0-1033-oem (x86_64), Display Server: X Server 1.20.9, OpenGL: 4.6 Mesa 20.2.6, Vulkan: 1.2.145, Compiler: GCC 9.3.0, File-System: ext4, Screen Resolution: 1920x1080

Kernel Notes: Transparent Huge Pages: madvise
Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-gnu-unique-object --enable-languages=c,ada,c++,go,brig,d,fortran,objc,obj-c++,gm2 --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none=/build/gcc-9-HskZEa/gcc-9-9.3.0/debian/tmp-nvptx/usr,hsa --enable-plugin --enable-shared --enable-threads=posix --host=x86_64-linux-gnu --program-prefix=x86_64-linux-gnu- --target=x86_64-linux-gnu --with-abi=m64 --with-arch-32=i686 --with-default-libstdcxx-abi=new --with-gcc-major-version-only --with-multilib-list=m32,m64,mx32 --with-target-system-zlib=auto --with-tune=generic --without-cuda-driver -v
Processor Notes: Scaling Governor: intel_pstate performance - CPU Microcode: 0xea - Thermald 1.9.1
Security Notes: itlb_multihit: KVM: Mitigation of VMX unsupported + l1tf: Mitigation of PTE Inversion + mds: Mitigation of Clear buffers; SMT disabled + meltdown: Mitigation of PTI + spec_store_bypass: Mitigation of SSB disabled via prctl and seccomp + spectre_v1: Mitigation of usercopy/swapgs barriers and __user pointer sanitization + spectre_v2: Mitigation of Full generic retpoline IBPB: conditional IBRS_FW STIBP: disabled RSB filling + srbds: Mitigation of Microcode + tsx_async_abort: Mitigation of Clear buffers; SMT disabled

	Ryzen 7 7700X	Ryzen 5 7600X	Ryzen 7 7800X	Ryzen 7 7700	Ryzen 5 7600	Core i7-8700K	Ryzen 5 2400G	Core i5-8400	Ryzen 7 1700	Core i9-7980XE	Core i5-7600K	Core i7-8700	Core i7-7700K	Core i9-7900X	Core i7-6850K	AMD FX-8350	AMD Athlon II X3 425	Ryzen Threadripper 1950X	Intel Core 2 Duo E8400	AMD EPYC 3501	Core i5-2400S	AMD A6-7400K	AMD A10-7800	Core i3-2100	Core i7-9900X	AMD A10-7870K	AMD A10-5800K	Core i7-5960X	Pentium G3258	Willow 6C	Willow 16C	Core i5-8500T	Core i5-5400T	i5-3470T Gaming AM	i5-3470T Gaming	2x E5-2667v3	i5-6500 Gaming AM	i5-6500 Gaming	Lenovo M700 Tiny
7-Zip Compression - C.S.T (MIPS)	43037	35851	40557	39267	33137	43479	20981	29837	36574	109339	18376	17649	31262	66298	23402	4.81496	79.09859	5.95553	11.36084	5.19644	10.91804	9.2525	27.04233	12.49189	9.48537	39.03635	7.36754	20.51974	39.70545	21.80369	10.41	8.63899	10.48289	72.64187	14.58609	14.58353	8.03750
Normalized	43.3%	35.8%	40.7%	39.9%	33.5%	43.7%	20.5%	29.8%	36.1%	10.0%	18.6%	17.6%	31.2%	66.2%	23.9%	4.81%	79.0%	5.95%	11.36%	5.19%	10.92%	9.2%	27.04%	12.47%	9.49%	39.8%	7.36%	20.53%	39.95%	21.81%	10%	8.63%	10.48%	72.64%	14.58%	14.58%	8.03%
Standard Deviation	0.5%	0.6%	0.1%	1.2%	0.3%	1%	0.7%	0.2%	0.5%	0.1%	0.2%	1.8%	2.3%	0.4%	0.5%	0.7%	0.3%	0.1%	0.1%	0.2%	1.4%		1.7%	0.9%	3.5%	0.9%	1.6%	1.2%	0.9%	0.6%	1%	2.4%	1.3%	0.7%	0.3%	0.7%	0.4%	2.4%

Intel / AMD Large Ubuntu Linux CPU Benchmark Comparison

AOBench - 2048 x 2048 - Total Time (sec)	3	3	4	4	4	**3**	4	3	4	5	3	6	3	3	6	1	4	8	**2**	5	7	8	5	5	7	6	4	5	4	4	3	5	5	5	3	3	3	5
	8.	9.	0.	1.	2.	**4.**	2.	9.	4.	8.	5.	8.	4.	4.	6.	1	0.	1.	**5**	5.	2.	0.	8.	9.	2.	7.	3.	0.	3.	2.	7.	2.	4.	0.	9.	7.	6.	7.
	1	1	4	0	1	**0**	1	1	3	0	7	1	0	1	9	2.	1	5	**6.**	5	5	8	4	0	5	6	6	6	8	5	8	2	0	2	6	0	6	1
	9	9	4	0	2	**2**	2	9	8	7	2	3	5	9	1	6	9	3	**2**	6	3	7	2	3	7	2	7	5	8	1	5	2	3	5	6	0	7	0
																2			**0**																2			6
Normalized Standard Deviation	89	86	84	82	80	10	80	86	76	58	95	49	99	99	50	30	84	41	13	61	46	42	58	57	46	50	77	67	77	80	89	65	62	67	85	91	92	59
	.0	.8	.1	.9	.7	0	.7	.8	.6	.5	.2	.9	.9	.5	.8	.2	.6	.7	.2	.2	.9	.0	.2	.6	.8	.3	.9	.1	.5	.0	.8	.1	.9	.7	.7	.9	.7	.5
	8	1	2	8	7	%	7	1	6	8	4	3	1	%	4	1	5	3	8	3	%	7	3	3	8	1	%	7	3	3	8	5	7	%	7	5	7	7
	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.	0.	0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	3	2	8	6	8	5	7	4	5	8	1	9	9	7	%	1	7	7	8	3	1	1	2	2	4	7	1	1	6	7	3	6	1	1	3	3	4	3
	%	%	%	%	%	%	%	%	%	%	%	%	%	%		%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
asmFish - 1.H.M.2.D (Nodes/s)	2	2	2	2	1	2	1	1	2	**5**	1	9	1	3	1	3	4	3	**1**	6	2	5	4	1	6	3	2	3	1	2	1	4	3	4	4	8	8	4
	5	0	3	2	8	2	2	5	1	**4**	0	0	6	3	1	7	2	2	**1**	6	8	4	7	5	1	7	1	7	0	0	2	5	8	9	0	4	6	4
	7	2	9	6	3	7	4	9	0	**7**	3	3	0	6	7	8	4	5	**0**	2	4	5	6	8	9	0	9	7	3	7	5	3	7	4	3	9	2	3
	9	0	4	7	2	3	4	1	6	**8**	8	0	7	6	3	7	1	9	**8**	6	9	8	1	9	0	6	8	7	8	2	5	5	5	5	0	5	6	2
	2	4	6	7	8	8	9	6	1	**7**	8	9	9	3	6	5	2	7	**0**	0	3	7	6	8	7	4	5	1	4	7	0	4	7	6	3	3	6	7
	9	4	2	6	3	3	1	0	8	**5**	2	2	8	0	6	1	9	7	**4**	4	0	6	8	2	6	3	1	9	0	9	2	6	5	5	7	0	1	9
	9	7	6	9	0	9	7	1	5	**1**	2	2	9	6	3	3	4	8	**1**	7	4	0	2	9	7	9	2	4	3	8	9	7	9	6	5	0	0	5
	2	0	5	3	9	1	5	3	5	**3**	1		7	4	4		8							2			3		3	5	7				9			
Normalized Standard Deviation	47	36	43	41	33	41	22	29	38	10	18	16	29	61	21	6.	77	5.	2.	12	5.	9.	8.	29	11	6.	40	6.	18	37	22	8.	7.	9.	73	15	15	8.
	.0	.8	.7	.3	.4	.5	.7	.0	.4	0	.9	.4	.3	.4	.4	91	.4	95	02	.0	2	96	69	.0	.3	77	.1	89	.9	.8	.9	28	07	03	.5	.5	.7	09
	8	8	1	9	5	%	2	5	4	%	6	8	5	4	2	%	1	%	%	9	%	%	%	2	%	%	3	%	5	3	1	%	%	%	6	1	5	%
	1.	2.	2.	1.	1.	0.	1	0.	0.	1.	0.	0.	1.	1.	1.	2	0.	1.	1.	0.	2.	2.	1.	1.	1.	1.	0.	0.	1.	1.	1.	1.	2.	0.	0.	2	0.	0.
	7	4	1	9	3	3	%	9	9	4	9	9	9	1	6	%	4	7	6	3	1	4	3	7	5	5	3	6	5	7	1	5	3	7	2	%	5	6
	%	%	%	%	%	%		%	%	%	%	%	%	%	%		%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%		%	%
Fhourstones - C.C. 4.S (Kpos / sec)	1	1	1	1	1	**1**	1	1	1	1	1	8	1	1	1	7	1	7	**3**	1	8	8	9	9	9	9	1	9	9	9	1	1	9	1	1	1	1	8
	4	3	3	3	3	**6**	2	4	1	4	3	9	5	4	0	0	1	9	**3**	0	7	0	2	6	2	6	2	8	4	7	1	0	8	0	0	1	1	3
	0	8	0	3	0	**1**	7	3	7	7	6	1	0	4	2	6	9	4	**7**	2	2	8	0	2	1	1	0	3	3	6	6	4	6	6	2	7	8	9
	5	3	5	4	8	**3**	9	6	9	0	1	2	9	0	4	1	2	0	**3**	7	7	7	3	1	4	4	6	9	0	8	9	1	8	3	6	2	6	2
	3	6	1	2	3	**0**	3	6	6	1	9		2	8	5		6			4							8				5	0		3	1	8	2	
Normalized Standard Deviation	87	85	80	82	81	10	79	89	73	91	84	55	93	89	63	43	73	49	20	63	54	50	57	59	57	59	74	61	58	60	72	64	61	65	63	72	73	52
	.1	.7	.9	.7	.1	0	.3	.0	.1	.1	.4	.2	.5	.3	.5	.7	.9	.2	.9	.6	.1	.1	.0	.6	.1	.6	.8	%	.4	.5	.5	.5	.1	.9	.6	.7	.5	.0
	2	8	1	2	1	%	1	6	3	4	3	5	6	2	2	8	4	3	1	9	%	4	6	5	2	%	2		6	6	%	4	8	2	1	1	4	3
	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	5	3	4	2	2	4	5	8	2	1	1	%	1	1	1	1	6	2	1	2	6	1	4	1	2	2	2	%	5	3	2	5	3	1	5	2	1	4
	%	%	%	%	%	%	%	%	%	%	%		%	%	%	%	%	%	%	%	%	%	%	%	%	%	%		%	%	%	%	%	%	%	%	%	%

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Intel / AMD Large Ubuntu Linux CPU Benchmark Comparison

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Intel / AMD Large Ubuntu Linux CPU Benchmark Comparison

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Intel / AMD Large Ubuntu Linux CPU Benchmark Comparison

SciMark - Composite (Mflops)	26.96	23.18	10.70	32.10	25.17	15.37	29.72	28.47	32.82	31.83	33.99	34.07	10.65	16.23	35.41	18.51	11.60	16.67	30.13	14.26	44.22	16.69	31.37	46.70	16.69	37.04	0.16	19.69	
Normalized	83.96%	74.36%	36.70%	10.00%	80.34%	36.11%	17.85%	71.56%	24.52%	10.00%	43.52%	23.08%	23.08%	33.18%	41.25%	26.73%	25.39%	67.04%	34.55%	51.69%	51.69%	52.29%	40.62%	32.21%	34.37%	17.07%	49.70%	50.11%	11.55%
Standard Deviation	0.63%	0.37%	0.72%	0.02%	0.34%	0.21%	0%	0.76%	0.26%	0%	0.24%	0.44%	0.48%	0.81%	0.12%	0.21%	0.13%	0%	0.26%	0.61%	0.21%	0.29%	0.21%	0.13%	0.35%	0.22%	0.25%	0.53%	0.36%
Stockfish - Total Time (Nodes/s)	49247165	44796975	21939055	19270	27596665	12705965	30480256	42086	57	10	52563904	23977398	59369396	30839618	12705965	30480256	42086	57	10	52563904	23977398	59369396	30839618	12705965	30480256	42086	57	10	
Normalized	10.00%	21.30%	16.59%	30.63%	66.23%	23.07%	7.56%	92.43%	1.63%	12.96%	5.96%	11.95%	8.30%	30.13%	13.71%	7.04%	40.89%	8.04%	19.41%	39.24%	24.58%	8.24%	7.35%	9.79%	16.17%	17.99%	8.99%		
Standard Deviation	0.33%	0.12%	2.85%	0.77%	2.23%	0.34%	1.45%	0.56%	0.22%	0.95%	0.58%	1.81%	1.17%	0.77%	0.87%	0.78%	0.87%	0.71%	0.15%	0.49%	1.47%	0.97%	0.64%	0.48%	0.81%	1.12%	2.04%	0.44%	

Intel / AMD Large Ubuntu Linux CPU Benchmark Comparison

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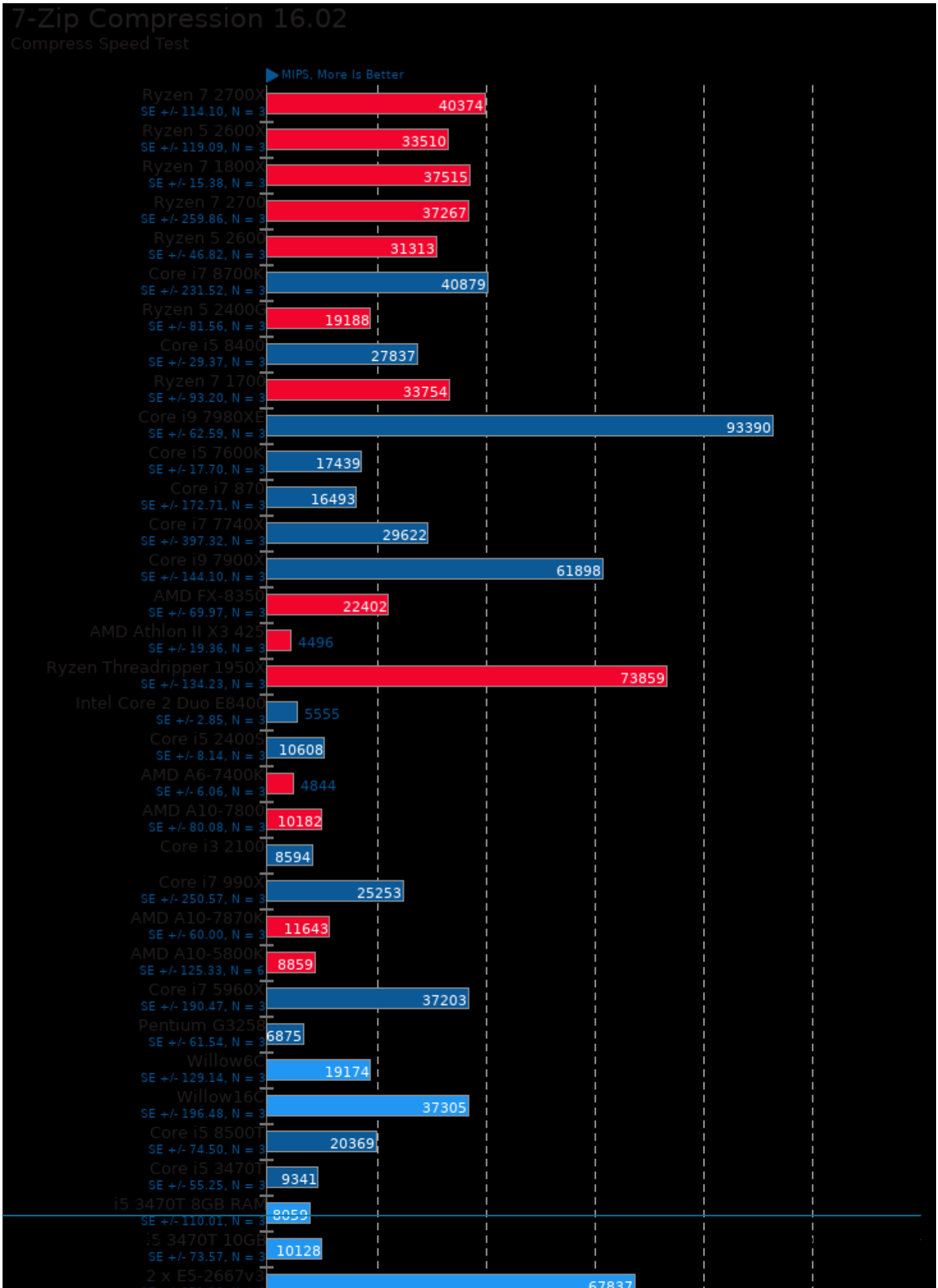
Intel / AMD Large Ubuntu Linux CPU Benchmark Comparison

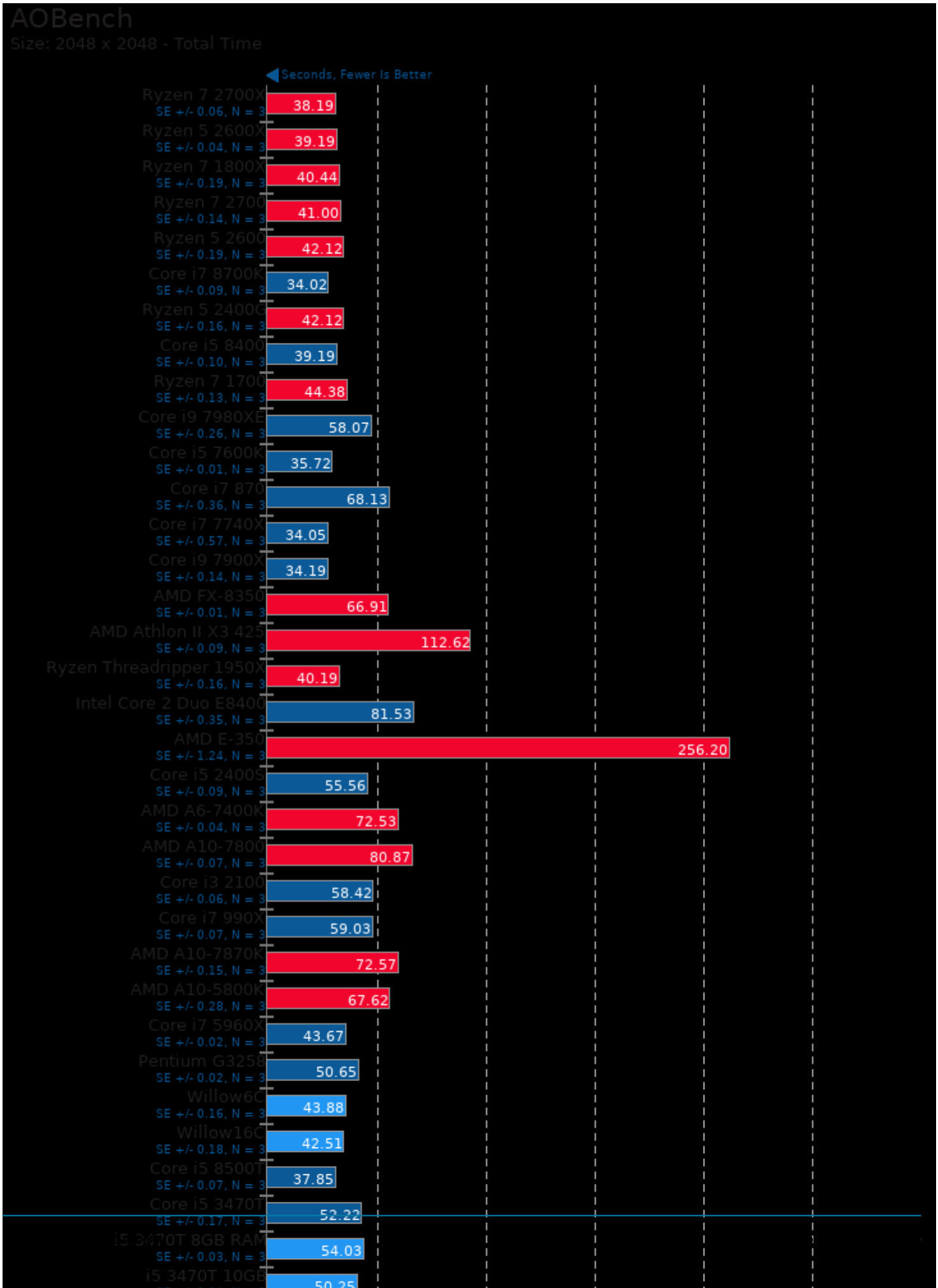
Tiny memb ench - - Stan dard Mem cpy (MB/s)	9	7	6	1	1	5	4	1	3	2	8	4	5	7	7	5	5	1	7	8	9	8	9	5	5	4	6	6	6
	9	5	9	7	0	7	4	5	4	0	9	9	0	2	3	8	7	1	4	0	2	0	1	6	6	3	6	8	6
	5	0	0	1	5	2	3	5	9	1	7	7	5	4	8	0	2	6	9	4	4	7	3	5	4	5	6	4	1
	9	2	6	9	1	8	3	9	8	2	6	3	7	2	5	1	5	5	2	1	8	4	3	5	2	5	6	8	2
				3	9			5										3											
Normalized	57.92	43.63	40.17	10.0%	61.18	33.32	25.78	90.71	20.35	11.7%	52.21	28.92	29.41	42.12	42.95	33.74	33.3%	67.78	43.58	46.67	53.79	46.96	53.12	32.89	32.82	25.53	38.77	39.83	38.45
Tiny memb ench - - Stan dard Mem cpy - Stan dard Mem set (MB/s)		1	7	3	2	6	4	1	2	2	9	5	5	7	8	6	5	1	1										
		7	6	8	5	6	4	2	7	0	3	5	4	4	0	6	3	6	8										
		7	1	9	6	1	5	4	8	4	0	7	9	1	0	1	7	0	9										
		3	1	8	6	2	1	6	1	1	9	9	1	8	6	6	4	1	7										
		6		8	0			7										3	2										
Normalized		45.49%	19.52%	10.0%	65.82%	16.96%	11.42%	31.98%	7.13%	5.24%	23.88%	14.31%	14.08%	19.03%	20.53%	16.97%	13.7%	41.07%	48.66%										

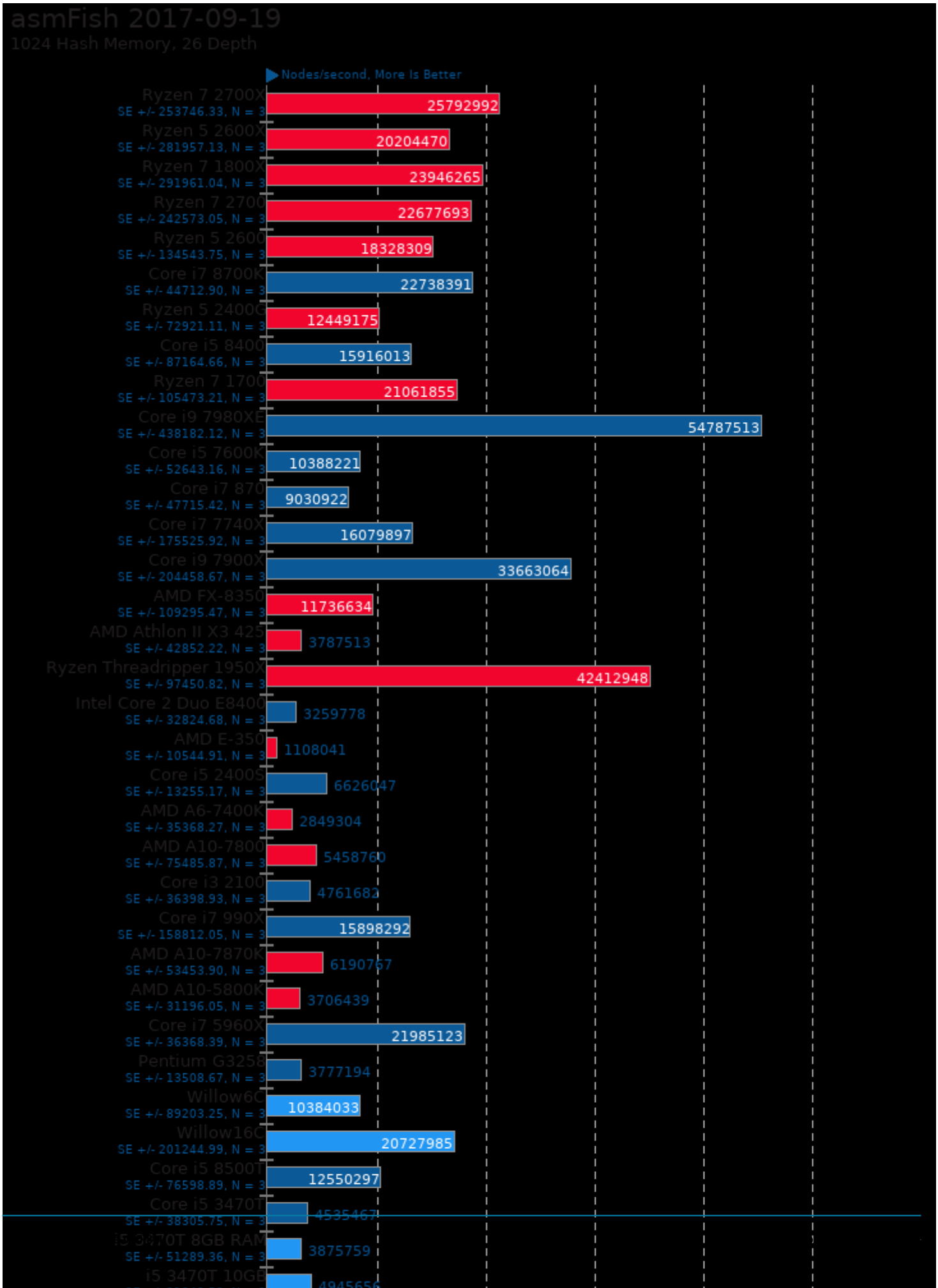
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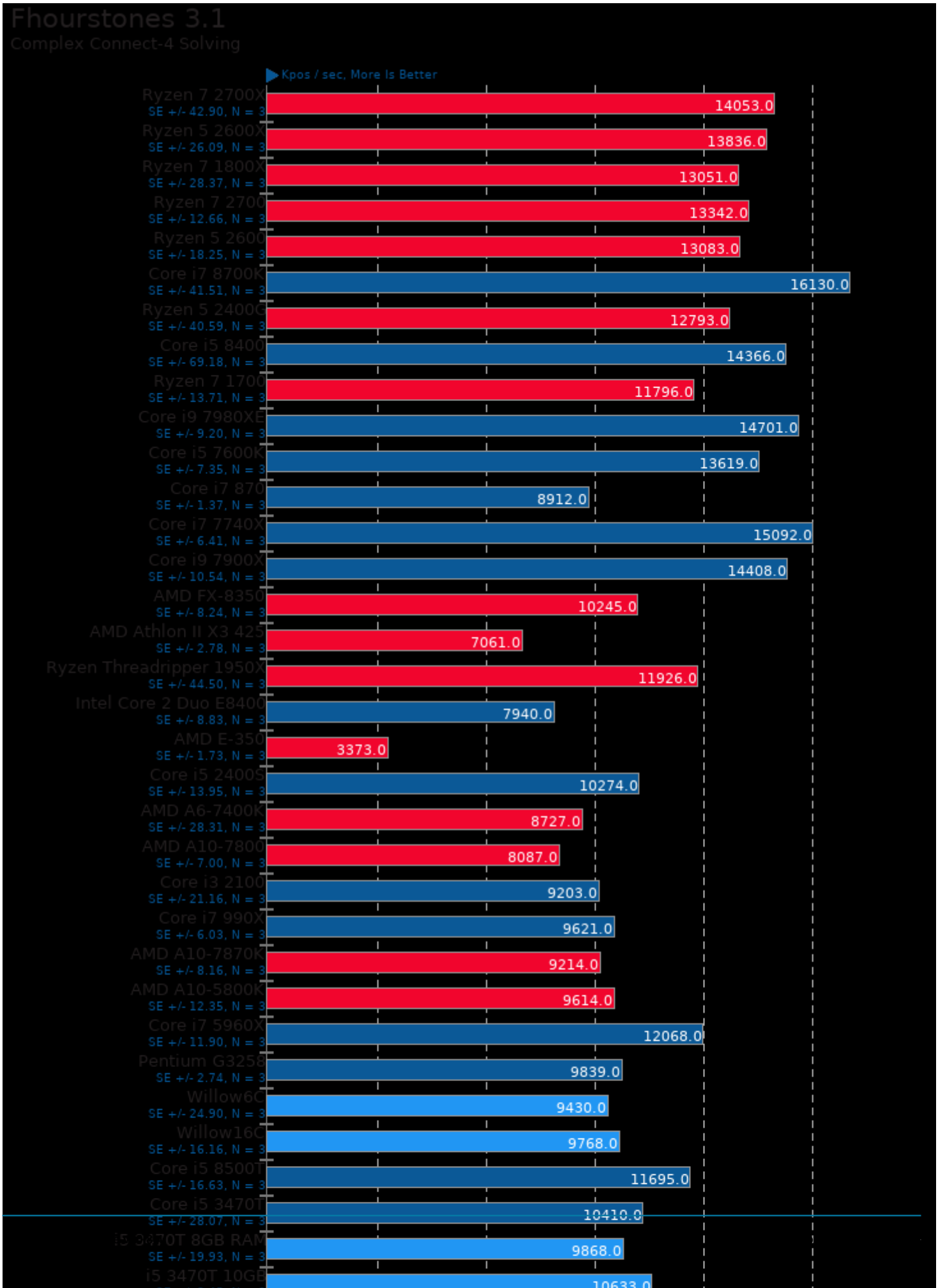
Intel / AMD Large Ubuntu Linux CPU Benchmark Comparison

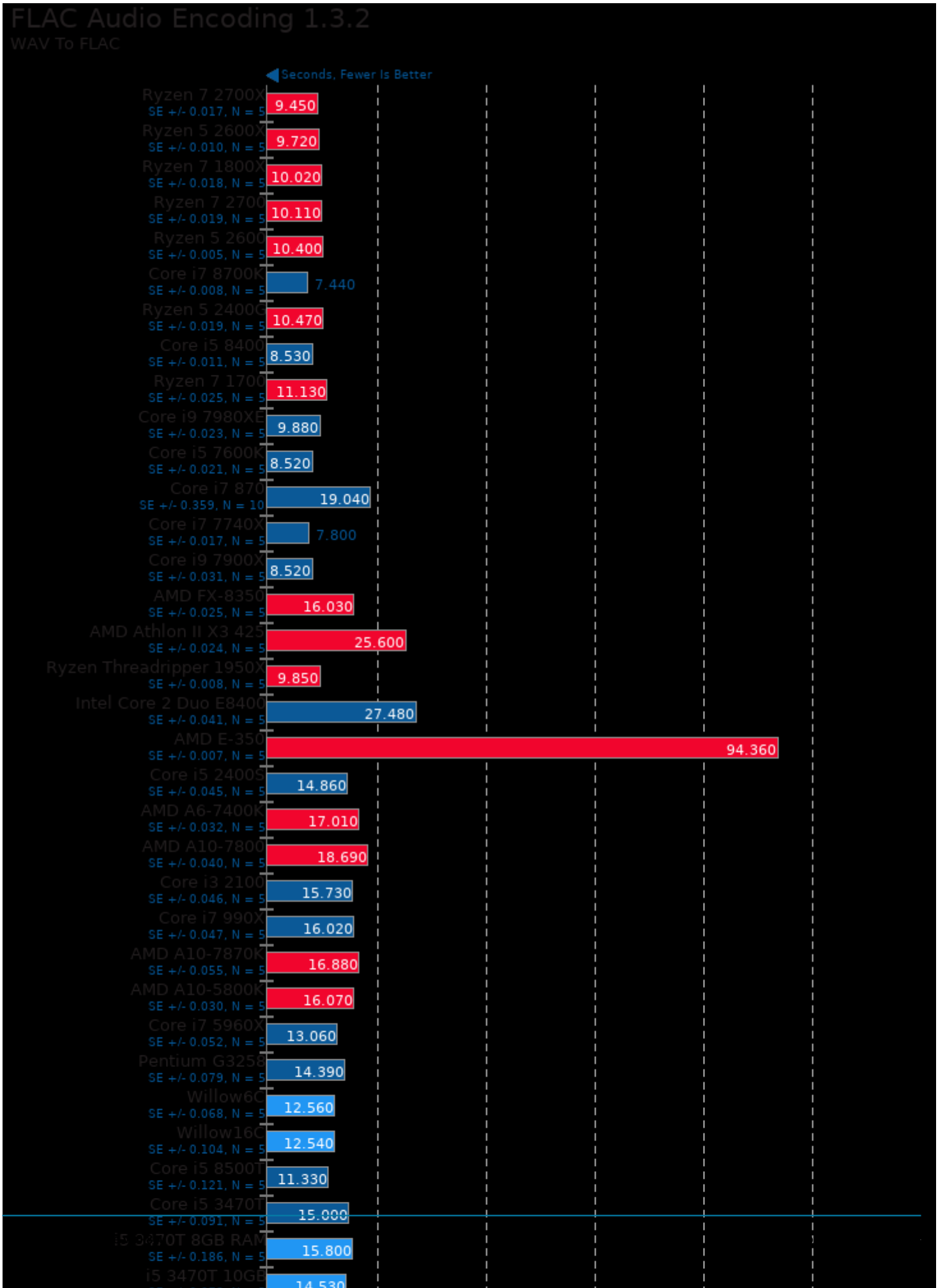
Zstd Compression - C.u.1.0.3.s.i.i.C.L.1	1 0 5	1 2 1	1 6 2	**1 0 0**	1 1 9	1 4 5	3 8 5	1 4 0	2 2 8	**7 2 8**	1 4 3	2 1 2	2 1 1	1 7 3	1 5 4	1 7 8	1 8 0	1 2 3	1 7 4	2 0 1	2 0 2	1 2 4	1 4 0	1 5 0	1 3 8	2 1 1	1 3 1	1 3 0	1 8 6.0 8 2
Normalized	95.24	82.61	61.73	10.0%	84.03	68.97	25.97	71.43	43.86	13.74	69.93	47.17	47.39	57.38	64.94	56.18	55.56	81.33	57.47	49.75	49.52	80.56	71.43	66.47	72.64	47.39	76.34	76.42	53.74
Standard Deviation	0.4%	0.2%	0.3%	0%	0.3%	0.1%	0.1%	0.2%	%	0.2%	0.2%	0.3%	0.1%	0.3%	0.7%	0.2%	0.1%	0.2%	0.1%	3.3%	2%	0.4%	0.2%	0.4%	1%	0.7%	0.5%	0.2%	0.3%

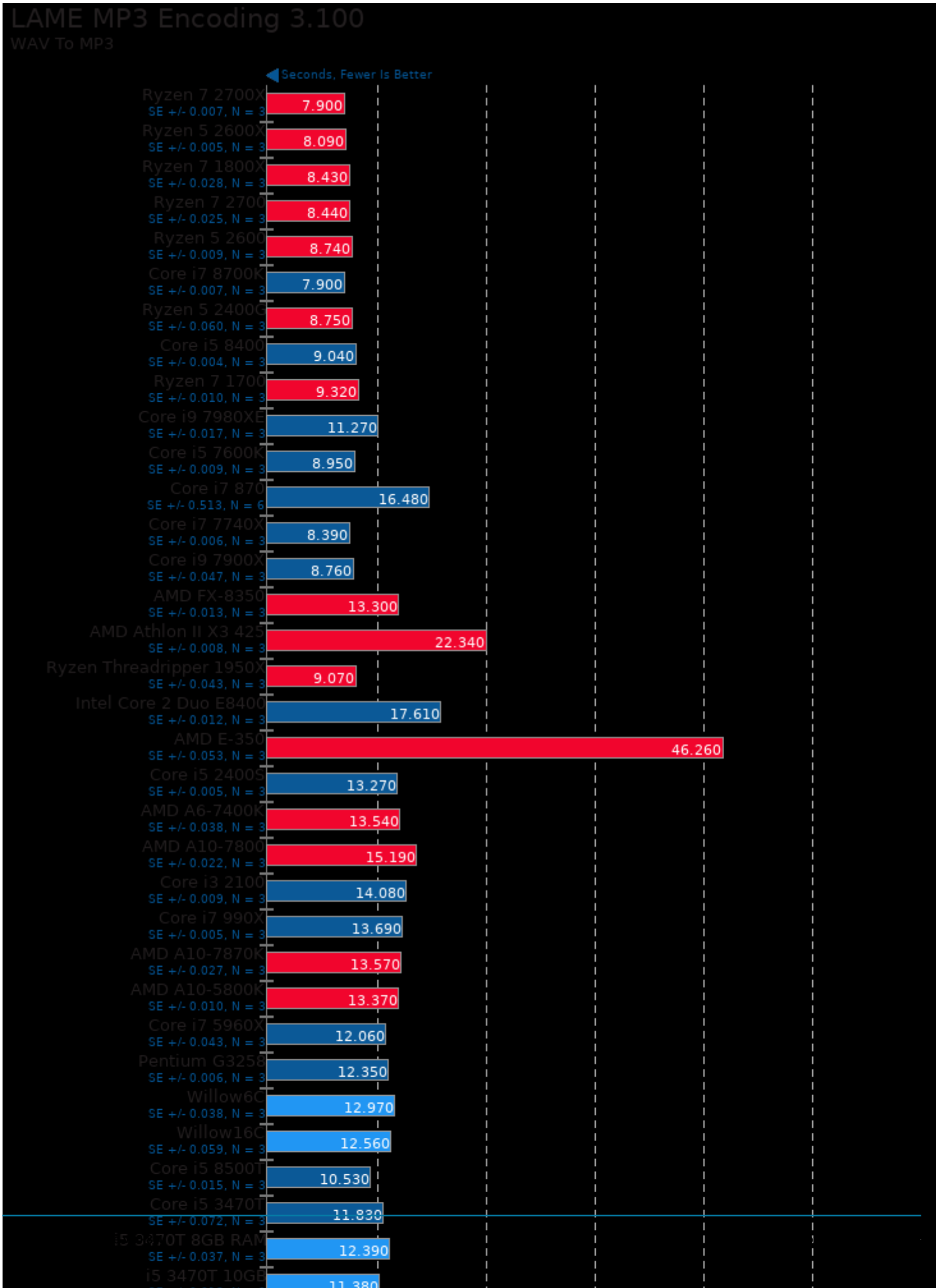

7-Zip Compression 16.02
Compress Speed Test
MIPS, More Is Better
Ryzen 7 2700X
SE +/- 114.10, N = 3
40374
Ryzen 5 2600X
SE +/- 119.09, N = 3
33510
Ryzen 7 1800X
SE +/- 15.38, N = 3
37515
Ryzen 7 2700
SE +/- 259.86, N = 3
37267
Ryzen 5 2600
SE +/- 46.82, N = 3
31313
Core i7 8700K
SE +/- 231.52, N = 3
40879
Ryzen 5 2400G
SE +/- 81.56, N = 3
19188
Core i5 8400
SE +/- 29.37, N = 3
27837
Ryzen 7 1700
SE +/- 93.20, N = 3
33754
Core i9 7980XE
SE +/- 62.59, N = 3
93390
Core i5 7600K
SE +/- 17.70, N = 3
17439
Core i7 870
SE +/- 172.71, N = 3
16493
Core i7 7740X
SE +/- 397.32, N = 3
29622
Core i9 7900X
SE +/- 144.10, N = 3
61898
AMD FX-8350
SE +/- 69.97, N = 3
22402
AMD Athlon II X3 425
SE +/- 19.36, N = 3
4496
Ryzen Threadripper 1950X
SE +/- 134.23, N = 3
73859
Intel Core 2 Duo E8400
SE +/- 2.85, N = 3
5555
Core i5 2400S
SE +/- 8.14, N = 3
10608
AMD A6-7400K
SE +/- 6.06, N = 3
4844
AMD A10-7800
SE +/- 80.08, N = 3
10182
Core i3 2100
8594
Core i7 990X
SE +/- 250.57, N = 3
25253
AMD A10-7870K
SE +/- 60.00, N = 3
11643
AMD A10-5800K
SE +/- 125.33, N = 6
8859
Core i7 5960X
SE +/- 190.47, N = 3
37203
Pentium G3258
SE +/- 61.54, N = 3
6875
Willow6C
SE +/- 129.14, N = 3
19174
Willow16C
SE +/- 196.48, N = 3
37305
Core i5 8500T
SE +/- 74.50, N = 3
20369
Core i5 3470T
SE +/- 55.25, N = 3
9341
i5 3470T 8GB RAM
SE +/- 110.01, N = 3
8059
i5 3470T 10GB
SE +/- 73.57, N = 3
10128
2 x E5-2667v3
67837

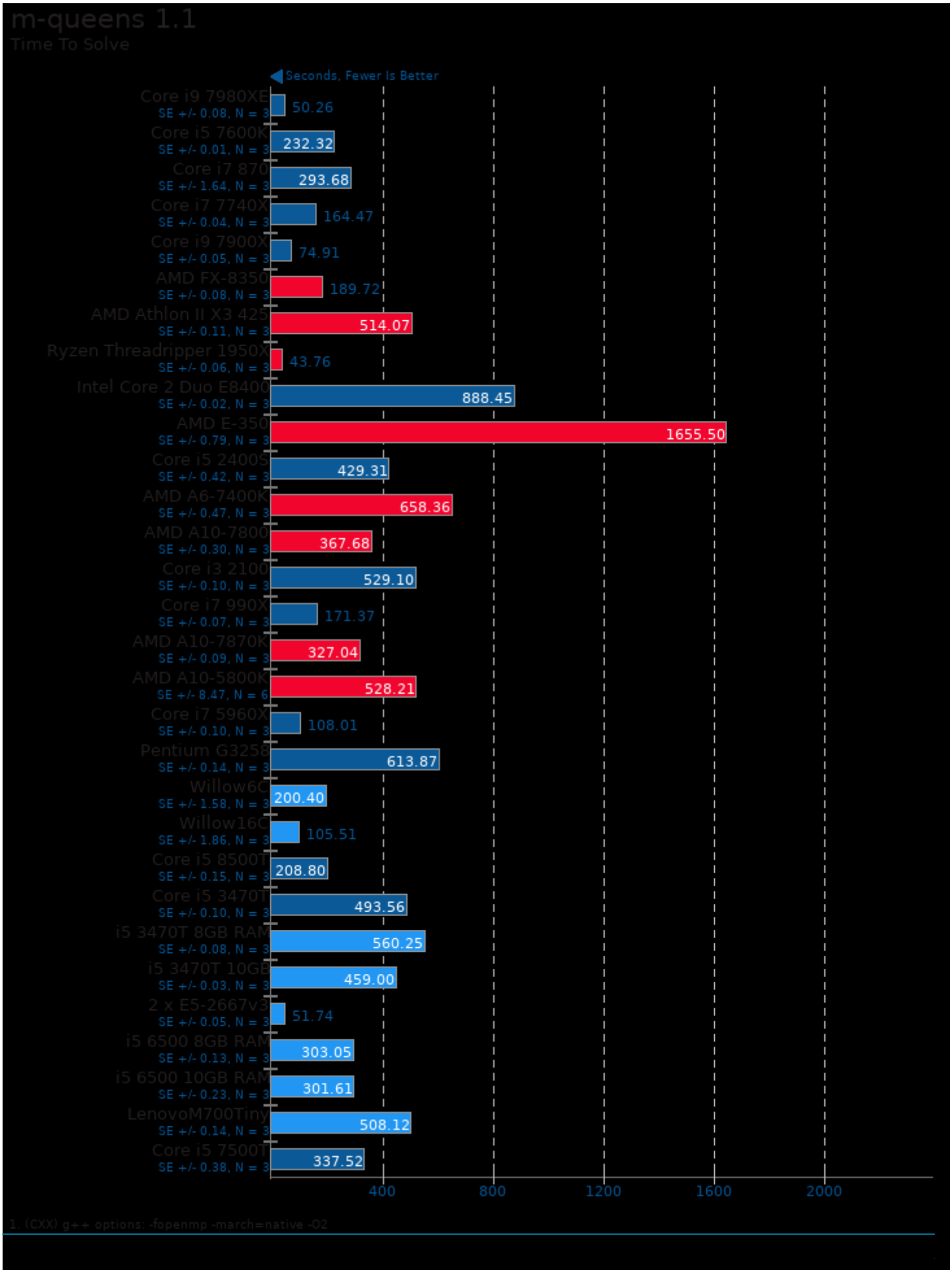

AOBench
Size: 2048 x 2048 - Total Time
Seconds, Fewer Is Better
Ryzen 7 2700X
SE +/- 0.06, N = 3
38.19
Ryzen 5 2600X
SE +/- 0.04, N = 3
39.19
Ryzen 7 1800X
SE +/- 0.19, N = 3
40.44
Ryzen 7 2700
SE +/- 0.14, N = 3
41.00
Ryzen 5 2600
SE +/- 0.19, N = 3
42.12
Core i7 8700K
SE +/- 0.09, N = 3
34.02
Ryzen 5 2400G
SE +/- 0.16, N = 3
42.12
Core i5 8400
SE +/- 0.10, N = 3
39.19
Ryzen 7 1700
SE +/- 0.13, N = 3
44.38
Core i9 7980XE
SE +/- 0.26, N = 3
58.07
Core i5 7600K
SE +/- 0.01, N = 3
35.72
Core i7 870
SE +/- 0.36, N = 3
68.13
Core i7 7740X
SE +/- 0.57, N = 3
34.05
Core i9 7900X
SE +/- 0.14, N = 3
34.19
AMD FX-8350
SE +/- 0.01, N = 3
66.91
AMD Athlon II X3 425
SE +/- 0.09, N = 3
112.62
Ryzen Threadripper 1950X
SE +/- 0.16, N = 3
40.19
Intel Core 2 Duo E8400
SE +/- 0.35, N = 3
81.53
AMD E-350
SE +/- 1.24, N = 3
256.20
Core i5 2400S
SE +/- 0.09, N = 3
55.56
AMD A6-7400K
SE +/- 0.04, N = 3
72.53
AMD A10-7800
SE +/- 0.07, N = 3
80.87
Core i3 2100
SE +/- 0.06, N = 3
58.42
Core i7 990X
SE +/- 0.07, N = 3
59.03
AMD A10-7870K
SE +/- 0.15, N = 3
72.57
AMD A10-5800K
SE +/- 0.28, N = 3
67.62
Core i7 5960X
SE +/- 0.02, N = 3
43.67
Pentium G3258
SE +/- 0.02, N = 3
50.65
Willow6C
SE +/- 0.16, N = 3
43.88
Willow16C
SE +/- 0.18, N = 3
42.51
Core i5 8500T
SE +/- 0.07, N = 3
37.85
Core i5 3470T
SE +/- 0.17, N = 3
52.22
i5 3470T 8GB RAM
SE +/- 0.03, N = 3
54.03
i5 3470T 10GB
50.25

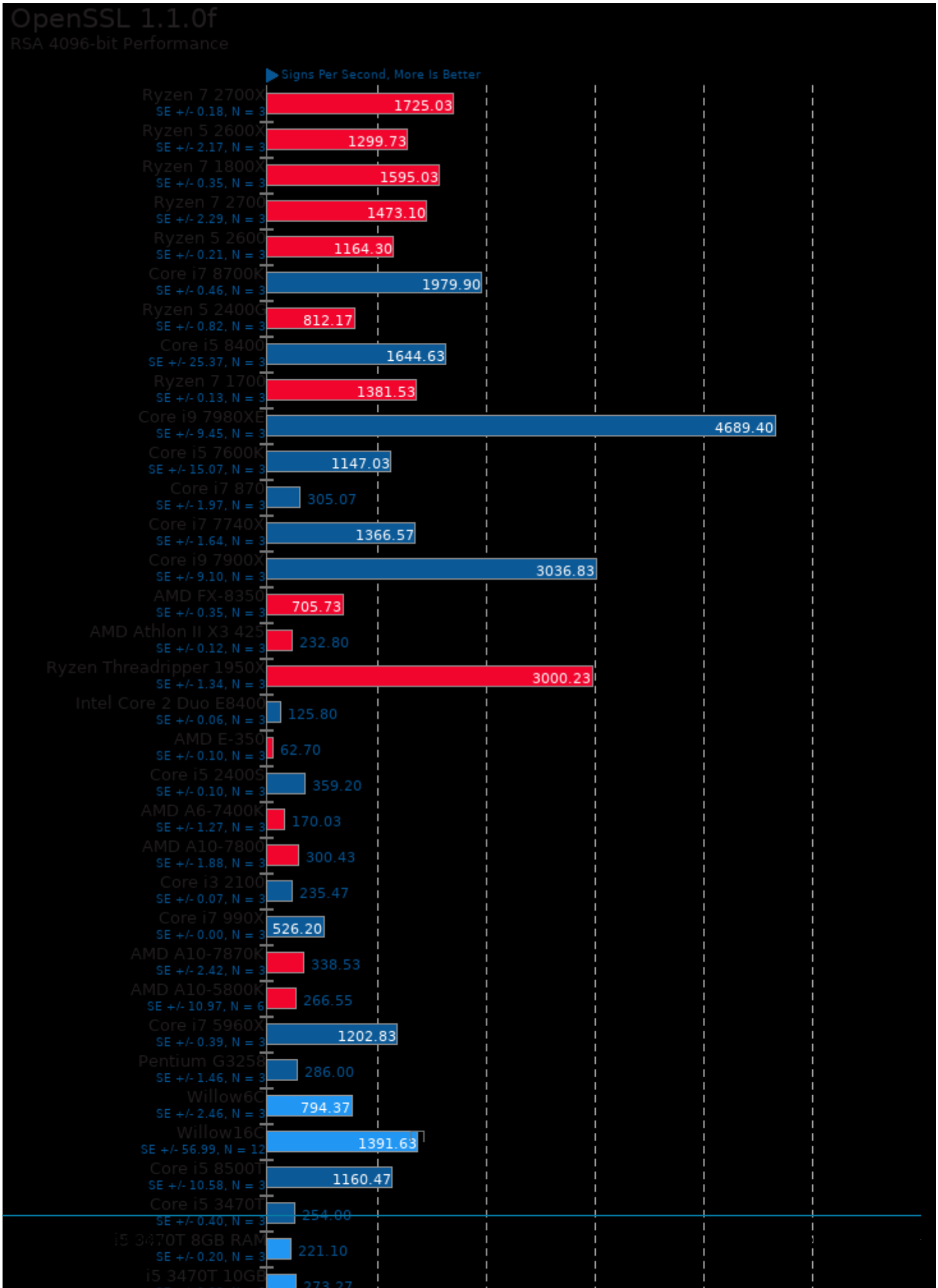

asmFish 2017-09-19
1024 Hash Memory, 26 Depth
Nodes/second, More Is Better
Ryzen 7 2700X
SE +/- 253746.33, N = 3
25792992
Ryzen 5 2600X
SE +/- 281957.13, N = 3
20204470
Ryzen 7 1800X
SE +/- 291961.04, N = 3
23946265
Ryzen 7 2700
SE +/- 242573.05, N = 3
22677693
Ryzen 5 2600
SE +/- 134543.75, N = 3
18328309
Core i7 8700K
SE +/- 44712.90, N = 3
22738391
Ryzen 5 2400G
SE +/- 72921.11, N = 3
12449175
Core i5 8400
SE +/- 87164.66, N = 3
15916013
Ryzen 7 1700
SE +/- 105473.21, N = 3
21061855
Core i9 7980XE
SE +/- 438182.12, N = 3
54787513
Core i5 7600K
SE +/- 52643.16, N = 3
10388221
Core i7 870
SE +/- 47715.42, N = 3
9030922
Core i7 7740X
SE +/- 175525.92, N = 3
16079897
Core i9 7900X
SE +/- 204458.67, N = 3
33663064
AMD FX-8350
SE +/- 109295.47, N = 3
11736634
AMD Athlon II X3 425
SE +/- 42852.22, N = 3
3787513
Ryzen Threadripper 1950X
SE +/- 97450.82, N = 3
42412948
Intel Core 2 Duo E8400
SE +/- 32824.68, N = 3
3259778
AMD E-350
SE +/- 10544.91, N = 3
1108041
Core i5 2400S
SE +/- 13255.17, N = 3
6626047
AMD A6-7400K
SE +/- 35368.27, N = 3
2849304
AMD A10-7800
SE +/- 75485.87, N = 3
5458760
Core i3 2100
SE +/- 36398.93, N = 3
4761682
Core i7 990X
SE +/- 158812.05, N = 3
15898292
AMD A10-7870K
SE +/- 53453.90, N = 3
6190767
AMD A10-5800K
SE +/- 31196.05, N = 3
3706439
Core i7 5960X
SE +/- 36368.39, N = 3
21985123
Pentium G3258
SE +/- 13508.67, N = 3
3777194
Willow6C
SE +/- 89203.25, N = 3
10384033
Willow16C
SE +/- 201244.99, N = 3
20727985
Core i5 8500T
SE +/- 76598.89, N = 3
12550297
Core i5 3470T
SE +/- 38305.75, N = 3
4535467
i5 3470T 8GB RAM
SE +/- 51289.36, N = 3
3875759
i5 3470T 10GB
4945656

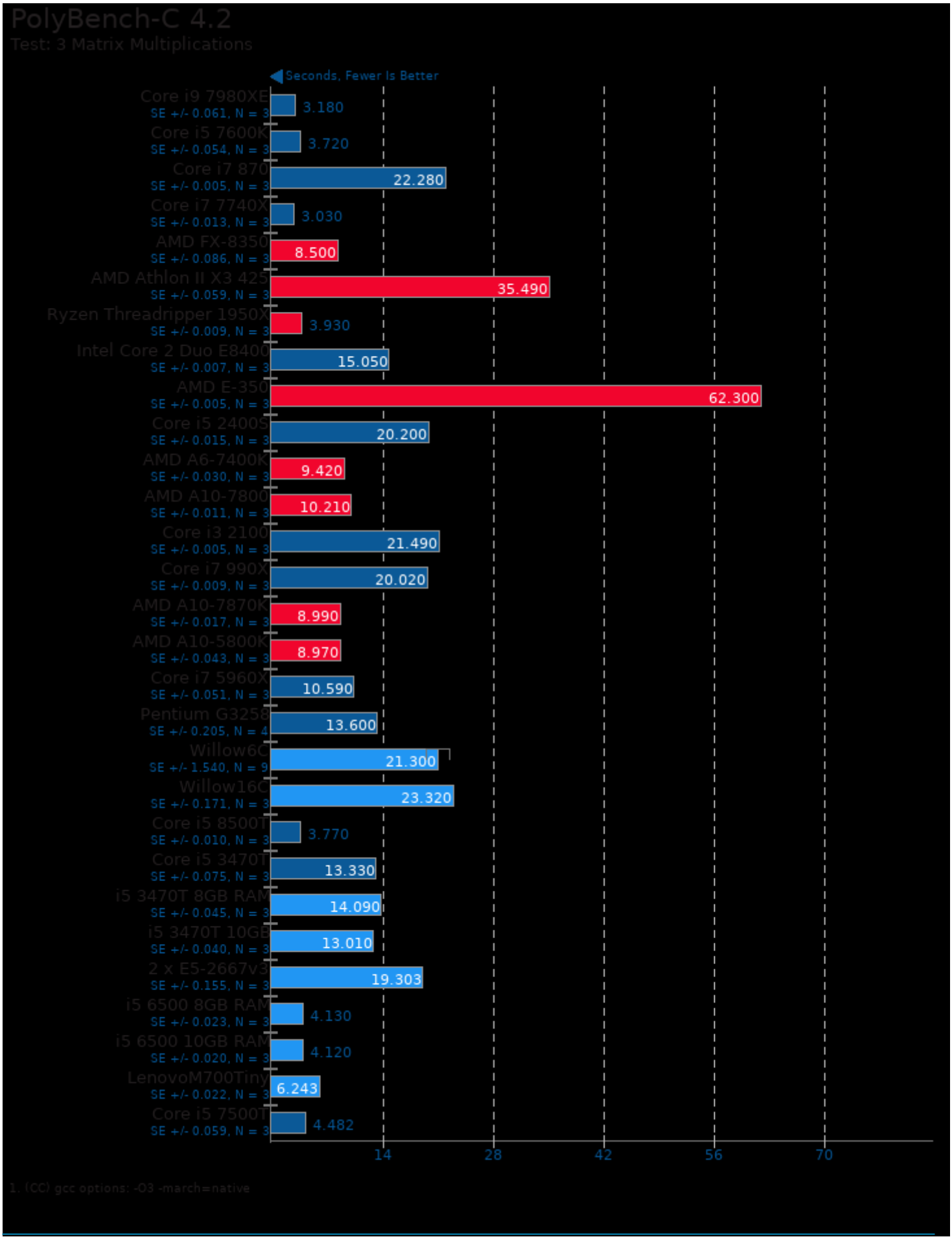

Fhourstones 3.1
Complex Connect-4 Solving
Kpos / sec, More Is Better
Ryzen 7 2700X
SE +/- 42.90, N = 3
14053.0
Ryzen 5 2600X
SE +/- 26.09, N = 3
13836.0
Ryzen 7 1800X
SE +/- 28.37, N = 3
13051.0
Ryzen 7 2700
SE +/- 12.66, N = 3
13342.0
Ryzen 5 2600
SE +/- 18.25, N = 3
13083.0
Core i7 8700K
SE +/- 41.51, N = 3
16130.0
Ryzen 5 2400G
SE +/- 40.59, N = 3
12793.0
Core i5 8400
SE +/- 69.18, N = 3
14366.0
Ryzen 7 1700
SE +/- 13.71, N = 3
11796.0
Core i9 7980XE
SE +/- 9.20, N = 3
14701.0
Core i5 7600K
SE +/- 7.35, N = 3
13619.0
Core i7 870
SE +/- 1.37, N = 3
8912.0
Core i7 7740X
SE +/- 6.41, N = 3
15092.0
Core i9 7900X
SE +/- 10.54, N = 3
14408.0
AMD FX-8350
SE +/- 8.24, N = 3
10245.0
AMD Athlon II X3 425
SE +/- 2.78, N = 3
7061.0
Ryzen Threadripper 1950X
SE +/- 44.50, N = 3
11926.0
Intel Core 2 Duo E8400
SE +/- 8.83, N = 3
7940.0
AMD E-350
SE +/- 1.73, N = 3
3373.0
Core i5 2400S
SE +/- 13.95, N = 3
10274.0
AMD A6-7400K
SE +/- 28.31, N = 3
8727.0
AMD A10-7800
SE +/- 7.00, N = 3
8087.0
Core i3 2100
SE +/- 21.16, N = 3
9203.0
Core i7 990X
SE +/- 6.03, N = 3
9621.0
AMD A10-7870K
SE +/- 8.16, N = 3
9214.0
AMD A10-5800K
SE +/- 12.35, N = 3
9614.0
Core i7 5960X
SE +/- 11.90, N = 3
12068.0
Pentium G3258
SE +/- 2.74, N = 3
9839.0
Willow6C
SE +/- 24.90, N = 3
9430.0
Willow16C
SE +/- 16.16, N = 3
9768.0
Core i5 8500T
SE +/- 16.63, N = 3
11695.0
Core i5 3470T
SE +/- 28.07, N = 3
10410.0
i5 3470T 8GB RAM
SE +/- 19.93, N = 3
9868.0
i5 3470T 10GB
10633.0

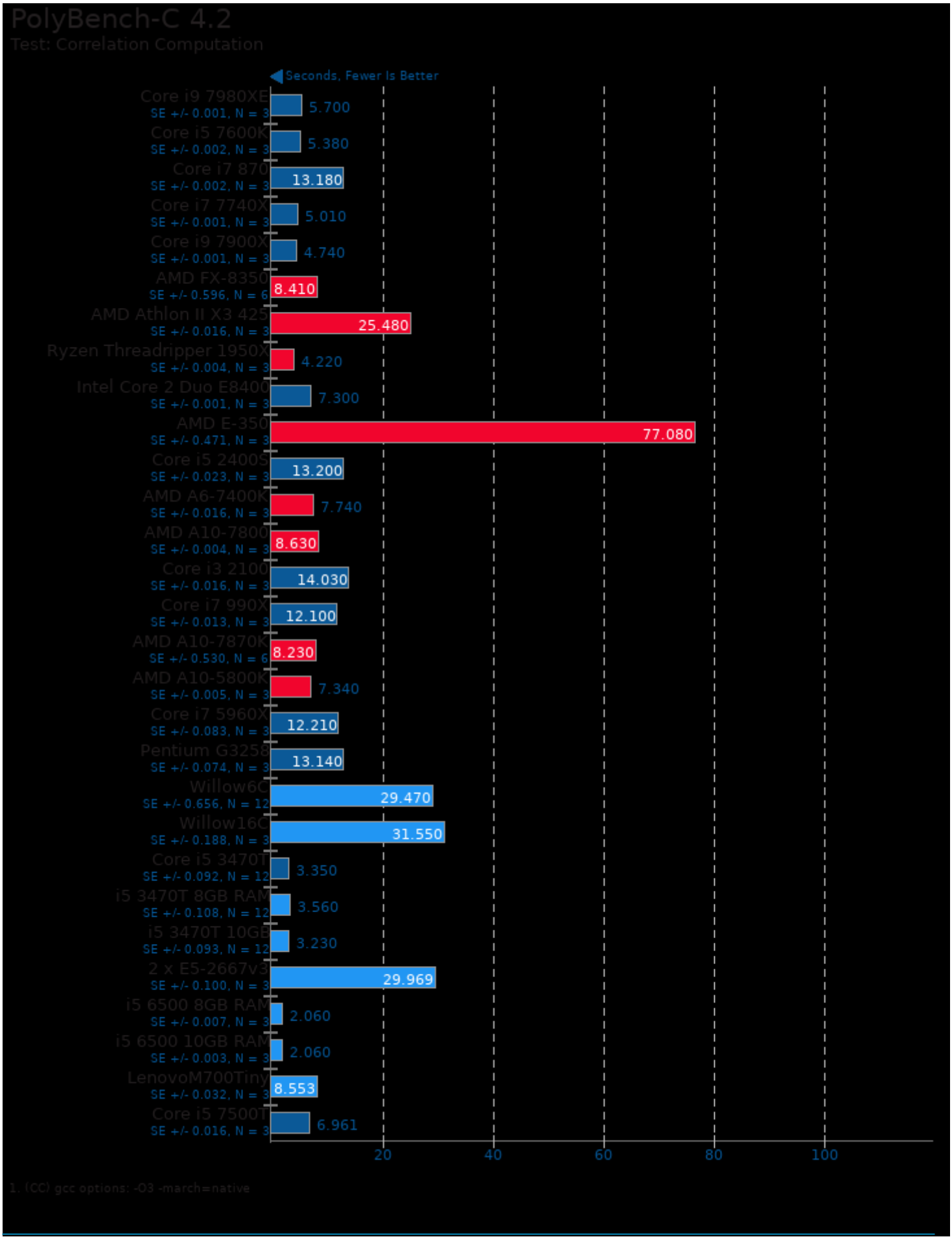

FLAC Audio Encoding 1.3.2
WAV To FLAC
Seconds, Fewer Is Better
Ryzen 7 2700X
SE +/- 0.017, N = 5
9.450
Ryzen 5 2600X
SE +/- 0.010, N = 5
9.720
Ryzen 7 1800X
SE +/- 0.018, N = 5
10.020
Ryzen 7 2700
SE +/- 0.019, N = 5
10.110
Ryzen 5 2600
SE +/- 0.005, N = 5
10.400
Core i7 8700K
SE +/- 0.008, N = 5
7.440
Ryzen 5 2400G
SE +/- 0.019, N = 5
10.470
Core i5 8400
SE +/- 0.011, N = 5
8.530
Ryzen 7 1700
SE +/- 0.025, N = 5
11.130
Core i9 7980XE
SE +/- 0.023, N = 5
9.880
Core i5 7600K
SE +/- 0.021, N = 5
8.520
Core i7 870
SE +/- 0.359, N = 10
19.040
Core i7 7740X
SE +/- 0.017, N = 5
7.800
Core i9 7900X
SE +/- 0.031, N = 5
8.520
AMD FX-8350
SE +/- 0.025, N = 5
16.030
AMD Athlon II X3 425
SE +/- 0.024, N = 5
25.600
Ryzen Threadripper 1950X
SE +/- 0.008, N = 5
9.850
Intel Core 2 Duo E8400
SE +/- 0.041, N = 5
27.480
AMD E-350
SE +/- 0.007, N = 5
94.360
Core i5 2400S
SE +/- 0.045, N = 5
14.860
AMD A6-7400K
SE +/- 0.032, N = 5
17.010
AMD A10-7800
SE +/- 0.040, N = 5
18.690
Core i3 2100
SE +/- 0.046, N = 5
15.730
Core i7 990X
SE +/- 0.047, N = 5
16.020
AMD A10-7870K
SE +/- 0.055, N = 5
16.880
AMD A10-5800K
SE +/- 0.030, N = 5
16.070
Core i7 5960X
SE +/- 0.052, N = 5
13.060
Pentium G3258
SE +/- 0.079, N = 5
14.390
Willow6C
SE +/- 0.068, N = 5
12.560
Willow16C
SE +/- 0.104, N = 5
12.540
Core i5 8500T
SE +/- 0.121, N = 5
11.330
Core i5 3470T
SE +/- 0.091, N = 5
15.000
i5 3470T 8GB RAM
SE +/- 0.186, N = 5
15.800
i5 3470T 10GB
14.530

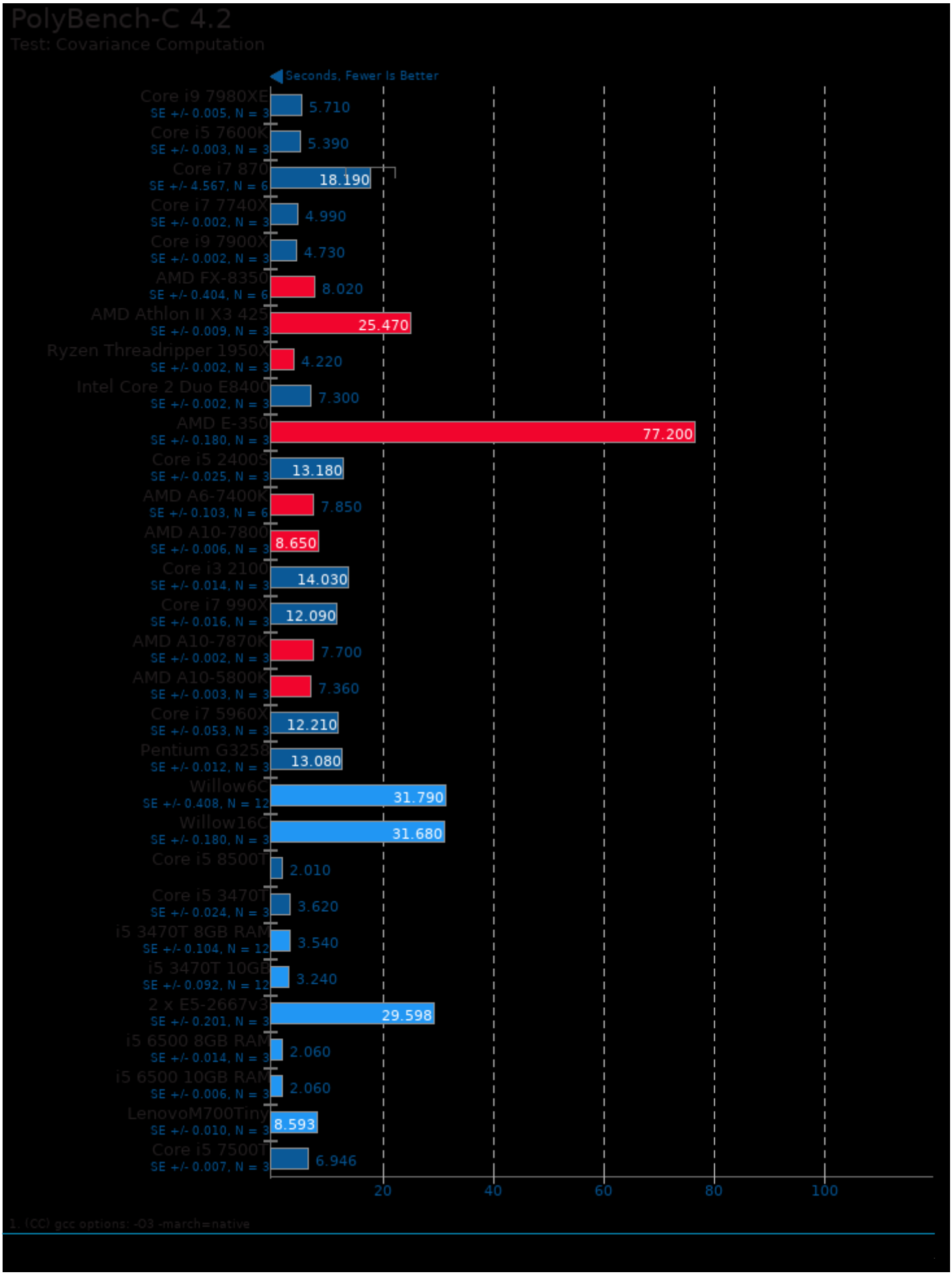

LAME MP3 Encoding 3.100
WAV To MP3
Seconds, Fewer Is Better
Ryzen 7 2700X
SE +/- 0.007, N = 3
7.900
Ryzen 5 2600X
SE +/- 0.005, N = 3
8.090
Ryzen 7 1800X
SE +/- 0.028, N = 3
8.430
Ryzen 7 2700
SE +/- 0.025, N = 3
8.440
Ryzen 5 2600
SE +/- 0.009, N = 3
8.740
Core i7 8700K
SE +/- 0.007, N = 3
7.900
Ryzen 5 2400G
SE +/- 0.060, N = 3
8.750
Core i5 8400
SE +/- 0.004, N = 3
9.040
Ryzen 7 1700
SE +/- 0.010, N = 3
9.320
Core i9 7980XE
SE +/- 0.017, N = 3
11.270
Core i5 7600K
SE +/- 0.009, N = 3
8.950
Core i7 870
SE +/- 0.513, N = 6
16.480
Core i7 7740X
SE +/- 0.006, N = 3
8.390
Core i9 7900X
SE +/- 0.047, N = 3
8.760
AMD FX-8350
SE +/- 0.013, N = 3
13.300
AMD Athlon II X3 425
SE +/- 0.008, N = 3
22.340
Ryzen Threadripper 1950X
SE +/- 0.043, N = 3
9.070
Intel Core 2 Duo E8400
SE +/- 0.012, N = 3
17.610
AMD E-350
SE +/- 0.053, N = 3
46.260
Core i5 2400S
SE +/- 0.005, N = 3
13.270
AMD A6-7400K
SE +/- 0.038, N = 3
13.540
AMD A10-7800
SE +/- 0.022, N = 3
15.190
Core i3 2100
SE +/- 0.009, N = 3
14.080
Core i7 990X
SE +/- 0.005, N = 3
13.690
AMD A10-7870K
SE +/- 0.027, N = 3
13.570
AMD A10-5800K
SE +/- 0.010, N = 3
13.370
Core i7 5960X
SE +/- 0.043, N = 3
12.060
Pentium G3258
SE +/- 0.006, N = 3
12.350
Willow6C
SE +/- 0.038, N = 3
12.970
Willow16C
SE +/- 0.059, N = 3
12.560
Core i5 8500T
SE +/- 0.015, N = 3
10.530
Core i5 3470T
SE +/- 0.072, N = 3
11.830
i5 3470T 8GB RAM
SE +/- 0.037, N = 3
12.390
i5 3470T 10GB
11.380

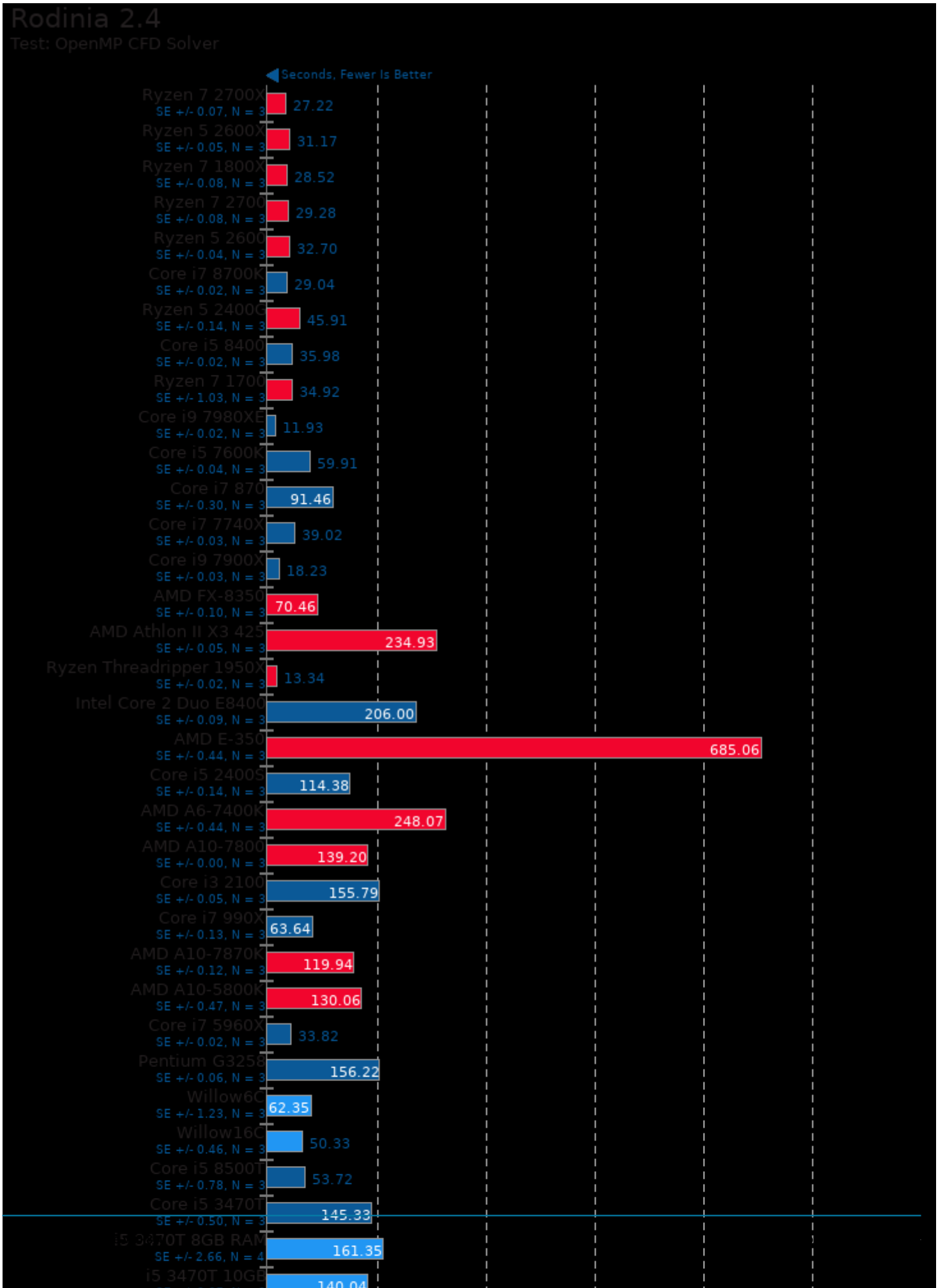

m-queens 1.1
Time To Solve
Seconds, Fewer Is Better
Core i9 7980XE
SE +/- 0.08, N = 3
50.26
Core i5 7600K
SE +/- 0.01, N = 3
232.32
Core i7 870
SE +/- 1.64, N = 3
293.68
Core i7 7740X
SE +/- 0.04, N = 3
164.47
Core i9 7900X
SE +/- 0.05, N = 3
74.91
AMD FX-8350
SE +/- 0.08, N = 3
189.72
AMD Athlon II X3 425
SE +/- 0.11, N = 3
514.07
Ryzen Threadripper 1950X
SE +/- 0.06, N = 3
43.76
Intel Core 2 Duo E8400
SE +/- 0.02, N = 3
888.45
AMD E-350
SE +/- 0.79, N = 3
1655.50
Core i5 2400S
SE +/- 0.42, N = 3
429.31
AMD A6-7400K
SE +/- 0.47, N = 3
658.36
AMD A10-7800
SE +/- 0.30, N = 3
367.68
Core i3 2100
SE +/- 0.10, N = 3
529.10
Core i7 990X
SE +/- 0.07, N = 3
171.37
AMD A10-7870K
SE +/- 0.09, N = 3
327.04
AMD A10-5800K
SE +/- 8.47, N = 6
528.21
Core i7 5960X
SE +/- 0.10, N = 3
108.01
Pentium G3258
SE +/- 0.14, N = 3
613.87
Willow6C
SE +/- 1.58, N = 3
200.40
Willow16C
SE +/- 1.86, N = 3
105.51
Core i5 8500T
SE +/- 0.15, N = 3
208.80
Core i5 3470T
SE +/- 0.10, N = 3
493.56
i5 3470T 8GB RAM
SE +/- 0.08, N = 3
560.25
i5 3470T 10GB
SE +/- 0.03, N = 3
459.00
2 x E5-2667v3
SE +/- 0.05, N = 3
51.74
i5 6500 8GB RAM
SE +/- 0.13, N = 3
303.05
i5 6500 10GB RAM
SE +/- 0.23, N = 3
301.61
LenovoM700Tiny
SE +/- 0.14, N = 3
508.12
Core i5 7500T
SE +/- 0.38, N = 3
337.52
400
800
1200
1600
2000
1. (CXX) g++ options: -fopenmp -march=native -O2

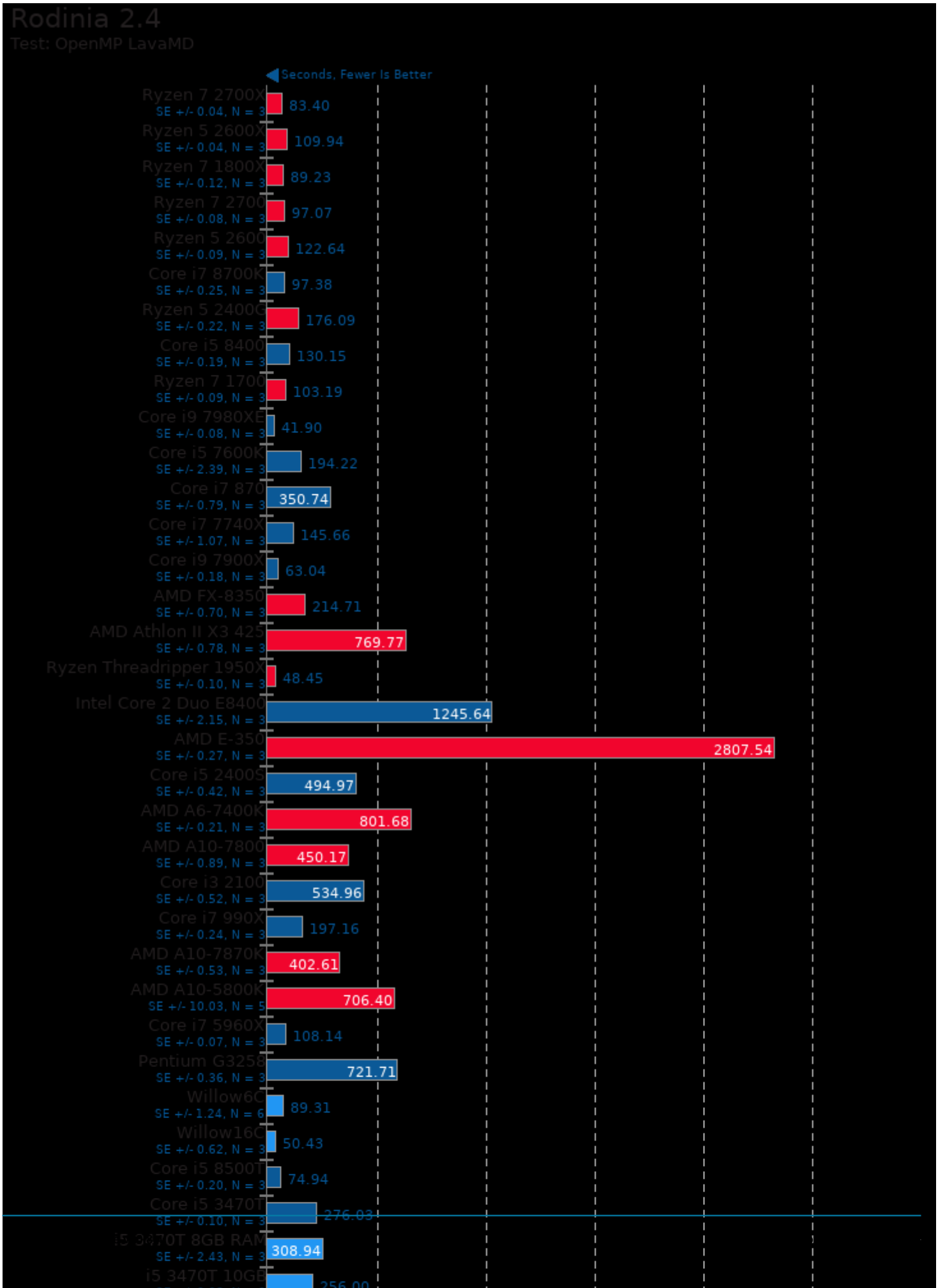

OpenSSL 1.1.0f
RSA 4096-bit Performance
Signs Per Second, More Is Better
Ryzen 7 2700X
SE +/- 0.18, N = 3
1725.03
Ryzen 5 2600X
SE +/- 2.17, N = 3
1299.73
Ryzen 7 1800X
SE +/- 0.35, N = 3
1595.03
Ryzen 7 2700
SE +/- 2.29, N = 3
1473.10
Ryzen 5 2600
SE +/- 0.21, N = 3
1164.30
Core i7 8700K
SE +/- 0.46, N = 3
1979.90
Ryzen 5 2400G
SE +/- 0.82, N = 3
812.17
Core i5 8400
SE +/- 25.37, N = 3
1644.63
Ryzen 7 1700
SE +/- 0.13, N = 3
1381.53
Core i9 7980XE
SE +/- 9.45, N = 3
4689.40
Core i5 7600K
SE +/- 15.07, N = 3
1147.03
Core i7 870
SE +/- 1.97, N = 3
305.07
Core i7 7740X
SE +/- 1.64, N = 3
1366.57
Core i9 7900X
SE +/- 9.10, N = 3
3036.83
AMD FX-8350
SE +/- 0.35, N = 3
705.73
AMD Athlon II X3 425
SE +/- 0.12, N = 3
232.80
Ryzen Threadripper 1950X
SE +/- 1.34, N = 3
3000.23
Intel Core 2 Duo E8400
SE +/- 0.06, N = 3
125.80
AMD E-350
SE +/- 0.10, N = 3
62.70
Core i5 2400S
SE +/- 0.10, N = 3
359.20
AMD A6-7400K
SE +/- 1.27, N = 3
170.03
AMD A10-7800
SE +/- 1.88, N = 3
300.43
Core i3 2100
SE +/- 0.07, N = 3
235.47
Core i7 990X
SE +/- 0.00, N = 3
526.20
AMD A10-7870K
SE +/- 2.42, N = 3
338.53
AMD A10-5800K
SE +/- 10.97, N = 6
266.55
Core i7 5960X
SE +/- 0.39, N = 3
1202.83
Pentium G3258
SE +/- 1.46, N = 3
286.00
Willow6C
SE +/- 2.46, N = 3
794.37
Willow16C
SE +/- 56.99, N = 12
1391.63
Core i5 8500T
SE +/- 10.58, N = 3
1160.47
Core i5 3470T
SE +/- 0.40, N = 3
254.00
i5 3470T 8GB RAM
SE +/- 0.20, N = 3
221.10
i5 3470T 10GB
273.27

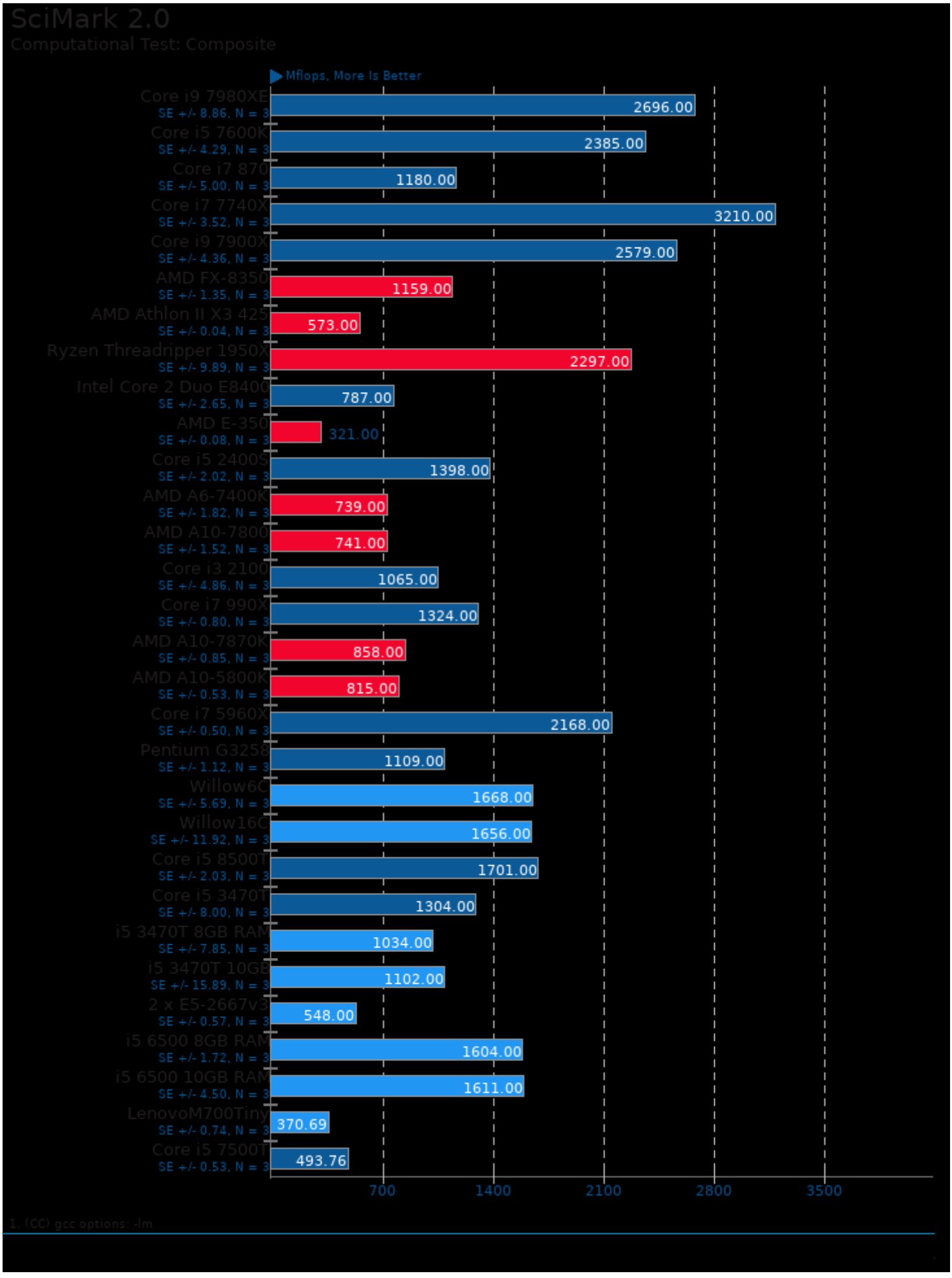

PolyBench-C 4.2
Test: 3 Matrix Multiplications
Seconds, Fewer Is Better
Core i9 7980XE
SE +/- 0.061, N = 3
3.180
Core i5 7600K
SE +/- 0.054, N = 3
3.720
Core i7 870
SE +/- 0.005, N = 3
22.280
Core i7 7740X
SE +/- 0.013, N = 3
3.030
AMD FX-8350
SE +/- 0.086, N = 3
8.500
AMD Athlon II X3 425
SE +/- 0.059, N = 3
35.490
Ryzen Threadripper 1950X
SE +/- 0.009, N = 3
3.930
Intel Core 2 Duo E8400
SE +/- 0.007, N = 3
15.050
AMD E-350
SE +/- 0.005, N = 3
62.300
Core i5 2400S
SE +/- 0.015, N = 3
20.200
AMD A6-7400K
SE +/- 0.030, N = 3
9.420
AMD A10-7800
SE +/- 0.011, N = 3
10.210
Core i3 2100
SE +/- 0.005, N = 3
21.490
Core i7 990X
SE +/- 0.009, N = 3
20.020
AMD A10-7870K
SE +/- 0.017, N = 3
8.990
AMD A10-5800K
SE +/- 0.043, N = 3
8.970
Core i7 5960X
SE +/- 0.051, N = 3
10.590
Pentium G3258
SE +/- 0.205, N = 4
13.600
Willow6C
SE +/- 1.540, N = 9
21.300
Willow16C
SE +/- 0.171, N = 3
23.320
Core i5 8500T
SE +/- 0.010, N = 3
3.770
Core i5 3470T
SE +/- 0.075, N = 3
13.330
i5 3470T 8GB RAM
SE +/- 0.045, N = 3
14.090
i5 3470T 10GB
SE +/- 0.040, N = 3
13.010
2 x E5-2667v3
SE +/- 0.155, N = 3
19.303
i5 6500 8GB RAM
SE +/- 0.023, N = 3
4.130
i5 6500 10GB RAM
SE +/- 0.020, N = 3
4.120
LenovoM700Tiny
SE +/- 0.022, N = 3
6.243
Core i5 7500T
SE +/- 0.059, N = 3
4.482
14
28
42
56
70
1. (CC) gcc options: -O3 -march=native

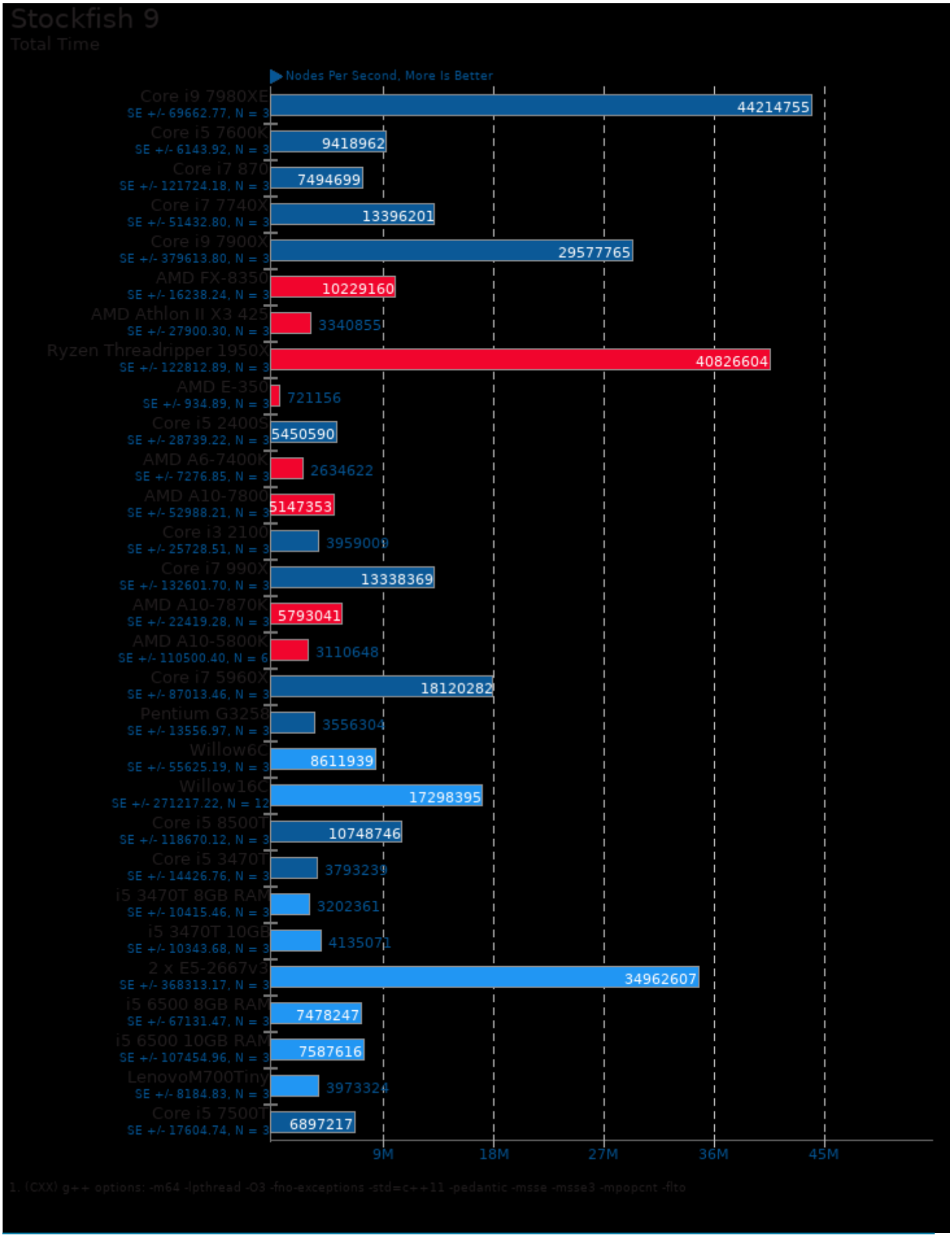

PolyBench-C 4.2
Test: Correlation Computation
Seconds, Fewer Is Better
Core i9 7980XE
SE +/- 0.001, N = 3
5.700
Core i5 7600K
SE +/- 0.002, N = 3
5.380
Core i7 870
SE +/- 0.002, N = 3
13.180
Core i7 7740X
SE +/- 0.001, N = 3
5.010
Core i9 7900X
SE +/- 0.001, N = 3
4.740
AMD FX-8350
SE +/- 0.596, N = 6
8.410
AMD Athlon II X3 425
SE +/- 0.016, N = 3
25.480
Ryzen Threadripper 1950X
SE +/- 0.004, N = 3
4.220
Intel Core 2 Duo E8400
SE +/- 0.001, N = 3
7.300
AMD E-350
SE +/- 0.471, N = 3
77.080
Core i5 2400S
SE +/- 0.023, N = 3
13.200
AMD A6-7400K
SE +/- 0.016, N = 3
7.740
AMD A10-7800
SE +/- 0.004, N = 3
8.630
Core i3 2100
SE +/- 0.016, N = 3
14.030
Core i7 990X
SE +/- 0.013, N = 3
12.100
AMD A10-7870K
SE +/- 0.530, N = 6
8.230
AMD A10-5800K
SE +/- 0.005, N = 3
7.340
Core i7 5960X
SE +/- 0.083, N = 3
12.210
Pentium G3258
SE +/- 0.074, N = 3
13.140
Willow6C
SE +/- 0.656, N = 12
29.470
Willow16C
SE +/- 0.188, N = 3
31.550
Core i5 3470T
SE +/- 0.092, N = 12
3.350
i5 3470T 8GB RAM
SE +/- 0.108, N = 12
3.560
i5 3470T 10GB
SE +/- 0.093, N = 12
3.230
2 x E5-2667v3
SE +/- 0.100, N = 3
29.969
i5 6500 8GB RAM
SE +/- 0.007, N = 3
2.060
i5 6500 10GB RAM
SE +/- 0.003, N = 3
2.060
LenovoM700Tiny
SE +/- 0.032, N = 3
8.553
Core i5 7500T
SE +/- 0.016, N = 3
6.961
20
40
60
80
100
1. (CC) gcc options: -O3 -march=native

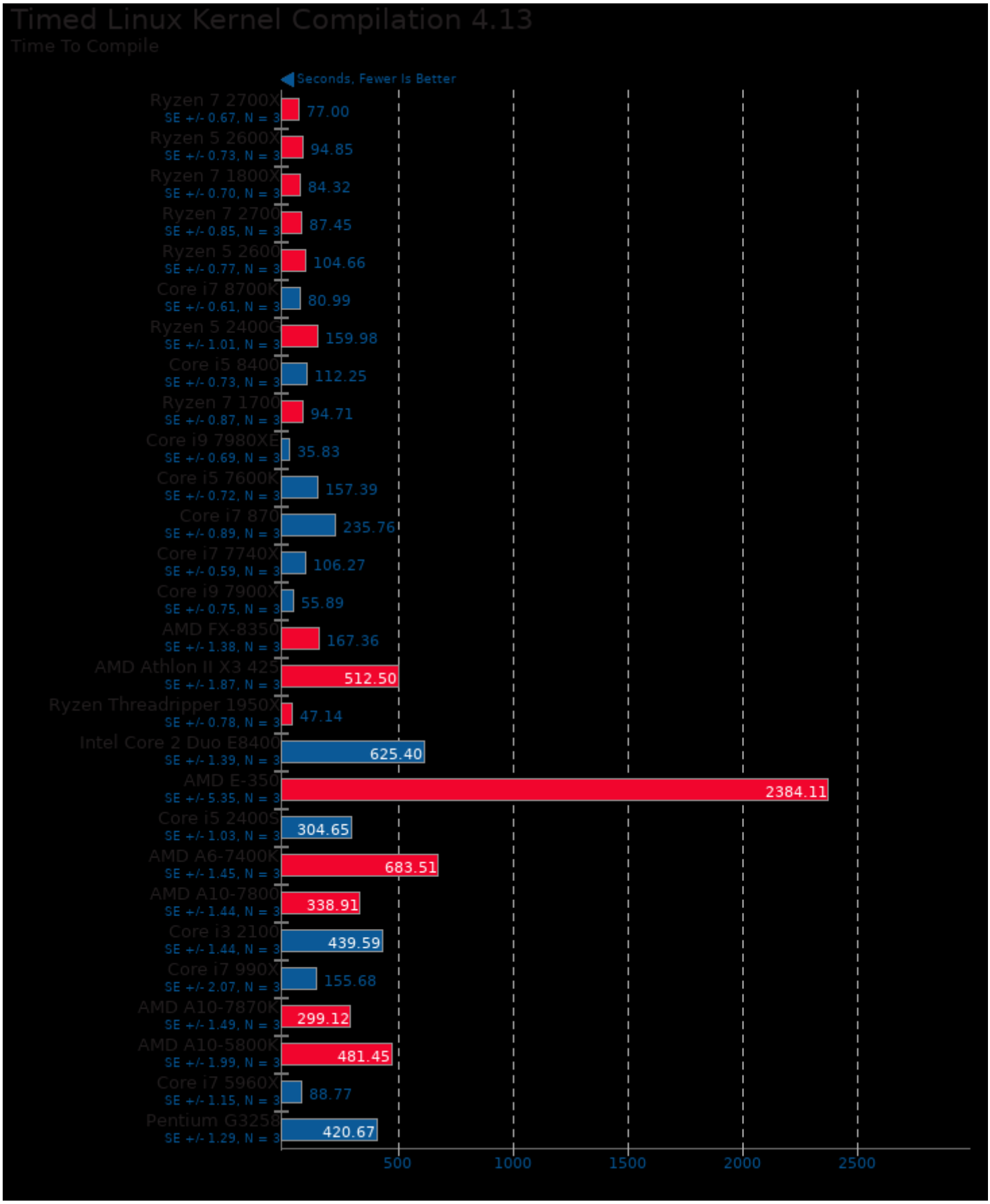

PolyBench-C 4.2
Test: Covariance Computation
Seconds, Fewer Is Better
Core i9 7980XE
SE +/- 0.005, N = 3
5.710
Core i5 7600K
SE +/- 0.003, N = 3
5.390
Core i7 870
SE +/- 4.567, N = 6
18.190
Core i7 7740X
SE +/- 0.002, N = 3
4.990
Core i9 7900X
SE +/- 0.002, N = 3
4.730
AMD FX-8350
SE +/- 0.404, N = 6
8.020
AMD Athlon II X3 425
SE +/- 0.009, N = 3
25.470
Ryzen Threadripper 1950X
SE +/- 0.002, N = 3
4.220
Intel Core 2 Duo E8400
SE +/- 0.002, N = 3
7.300
AMD E-350
SE +/- 0.180, N = 3
77.200
Core i5 2400S
SE +/- 0.025, N = 3
13.180
AMD A6-7400K
SE +/- 0.103, N = 6
7.850
AMD A10-7800
SE +/- 0.006, N = 3
8.650
Core i3 2100
SE +/- 0.014, N = 3
14.030
Core i7 990X
SE +/- 0.016, N = 3
12.090
AMD A10-7870K
SE +/- 0.002, N = 3
7.700
AMD A10-5800K
SE +/- 0.003, N = 3
7.360
Core i7 5960X
SE +/- 0.053, N = 3
12.210
Pentium G3258
SE +/- 0.012, N = 3
13.080
Willow6C
SE +/- 0.408, N = 12
31.790
Willow16C
SE +/- 0.180, N = 3
31.680
Core i5 8500T
2.010
Core i5 3470T
SE +/- 0.024, N = 3
3.620
i5 3470T 8GB RAM
SE +/- 0.104, N = 12
3.540
i5 3470T 10GB
SE +/- 0.092, N = 12
3.240
2 x E5-2667v3
SE +/- 0.201, N = 3
29.598
i5 6500 8GB RAM
SE +/- 0.014, N = 3
2.060
i5 6500 10GB RAM
SE +/- 0.006, N = 3
2.060
LenovoM700Tiny
SE +/- 0.010, N = 3
8.593
Core i5 7500T
SE +/- 0.007, N = 3
6.946
20
40
60
80
100
1. (CC) gcc options: -O3 -march=native

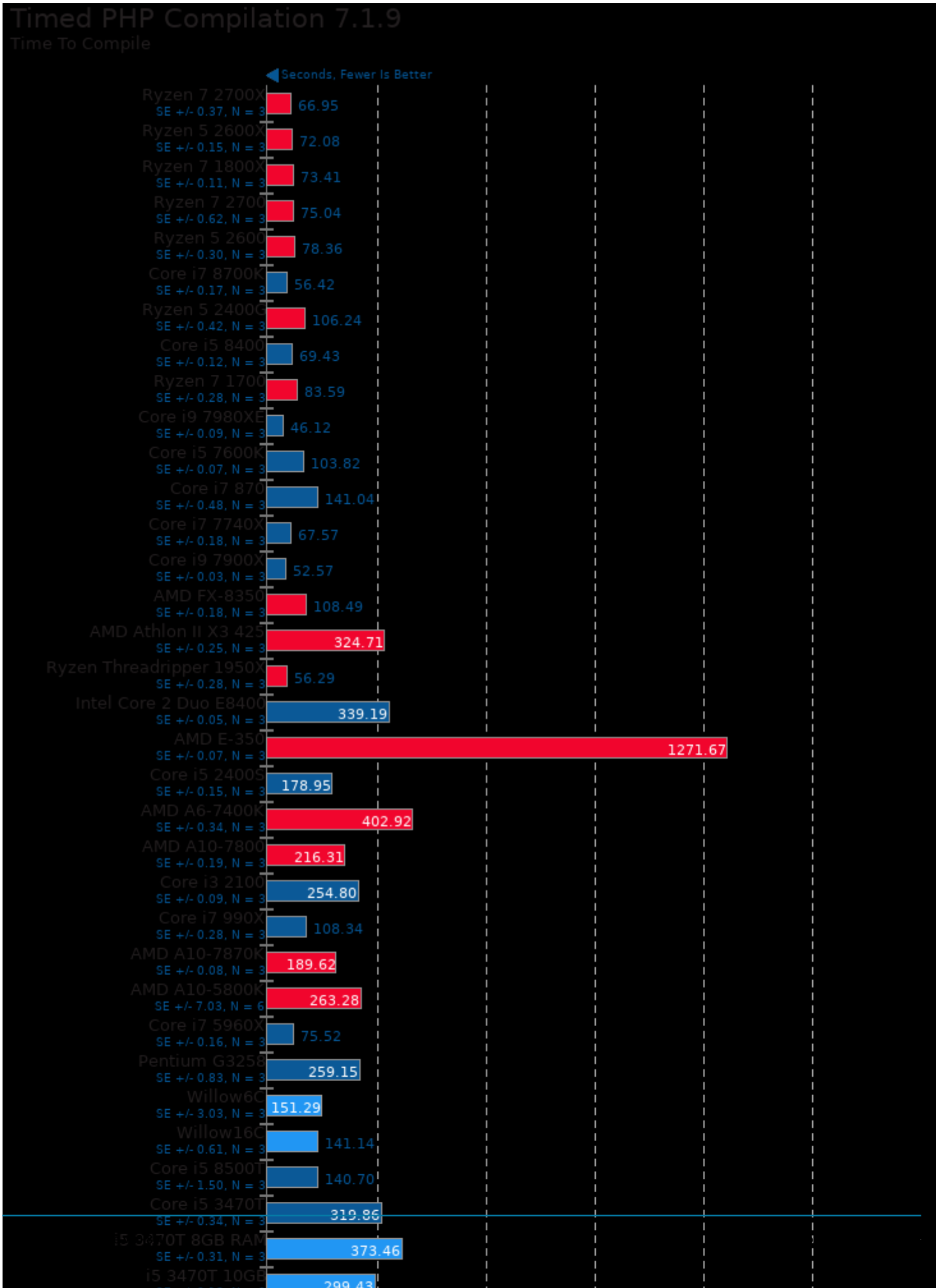

Rodinia 2.4
Test: OpenMP CFD Solver
Seconds, Fewer Is Better
Ryzen 7 2700X
SE +/- 0.07, N = 3
27.22
Ryzen 5 2600X
SE +/- 0.05, N = 3
31.17
Ryzen 7 1800X
SE +/- 0.08, N = 3
28.52
Ryzen 7 2700
SE +/- 0.08, N = 3
29.28
Ryzen 5 2600
SE +/- 0.04, N = 3
32.70
Core i7 8700K
SE +/- 0.02, N = 3
29.04
Ryzen 5 2400G
SE +/- 0.14, N = 3
45.91
Core i5 8400
SE +/- 0.02, N = 3
35.98
Ryzen 7 1700
SE +/- 1.03, N = 3
34.92
Core i9 7980XE
SE +/- 0.02, N = 3
11.93
Core i5 7600K
SE +/- 0.04, N = 3
59.91
Core i7 870
SE +/- 0.30, N = 3
91.46
Core i7 7740X
SE +/- 0.03, N = 3
39.02
Core i9 7900X
SE +/- 0.03, N = 3
18.23
AMD FX-8350
SE +/- 0.10, N = 3
70.46
AMD Athlon II X3 425
SE +/- 0.05, N = 3
234.93
Ryzen Threadripper 1950X
SE +/- 0.02, N = 3
13.34
Intel Core 2 Duo E8400
SE +/- 0.09, N = 3
206.00
AMD E-350
SE +/- 0.44, N = 3
685.06
Core i5 2400S
SE +/- 0.14, N = 3
114.38
AMD A6-7400K
SE +/- 0.44, N = 3
248.07
AMD A10-7800
SE +/- 0.00, N = 3
139.20
Core i3 2100
SE +/- 0.05, N = 3
155.79
Core i7 990X
SE +/- 0.13, N = 3
63.64
AMD A10-7870K
SE +/- 0.12, N = 3
119.94
AMD A10-5800K
SE +/- 0.47, N = 3
130.06
Core i7 5960X
SE +/- 0.02, N = 3
33.82
Pentium G3258
SE +/- 0.06, N = 3
156.22
Willow6C
SE +/- 1.23, N = 3
62.35
Willow16C
SE +/- 0.46, N = 3
50.33
Core i5 8500T
SE +/- 0.78, N = 3
53.72
Core i5 3470T
SE +/- 0.50, N = 3
145.33
i5 3470T 8GB RAM
SE +/- 2.66, N = 4
161.35
i5 3470T 10GB
140.04

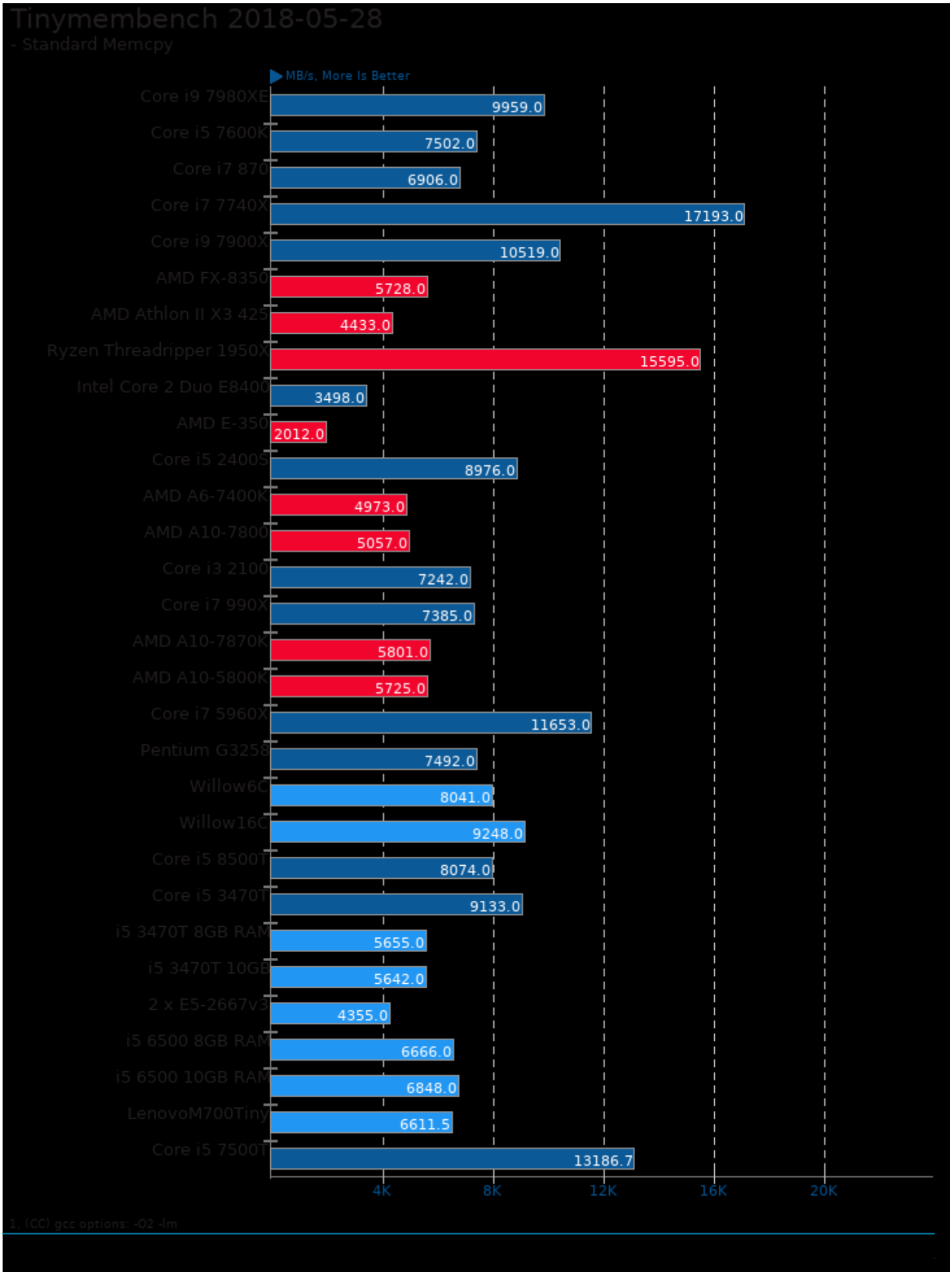

Rodinia 2.4
Test: OpenMP LavaMD
Seconds, Fewer Is Better
Ryzen 7 2700X
SE +/- 0.04, N = 3
83.40
Ryzen 5 2600X
SE +/- 0.04, N = 3
109.94
Ryzen 7 1800X
SE +/- 0.12, N = 3
89.23
Ryzen 7 2700
SE +/- 0.08, N = 3
97.07
Ryzen 5 2600
SE +/- 0.09, N = 3
122.64
Core i7 8700K
SE +/- 0.25, N = 3
97.38
Ryzen 5 2400G
SE +/- 0.22, N = 3
176.09
Core i5 8400
SE +/- 0.19, N = 3
130.15
Ryzen 7 1700
SE +/- 0.09, N = 3
103.19
Core i9 7980XE
SE +/- 0.08, N = 3
41.90
Core i5 7600K
SE +/- 2.39, N = 3
194.22
Core i7 870
SE +/- 0.79, N = 3
350.74
Core i7 7740X
SE +/- 1.07, N = 3
145.66
Core i9 7900X
SE +/- 0.18, N = 3
63.04
AMD FX-8350
SE +/- 0.70, N = 3
214.71
AMD Athlon II X3 425
SE +/- 0.78, N = 3
769.77
Ryzen Threadripper 1950X
SE +/- 0.10, N = 3
48.45
Intel Core 2 Duo E8400
SE +/- 2.15, N = 3
1245.64
AMD E-350
SE +/- 0.27, N = 3
2807.54
Core i5 2400S
SE +/- 0.42, N = 3
494.97
AMD A6-7400K
SE +/- 0.21, N = 3
801.68
AMD A10-7800
SE +/- 0.89, N = 3
450.17
Core i3 2100
SE +/- 0.52, N = 3
534.96
Core i7 990X
SE +/- 0.24, N = 3
197.16
AMD A10-7870K
SE +/- 0.53, N = 3
402.61
AMD A10-5800K
SE +/- 10.03, N = 5
706.40
Core i7 5960X
SE +/- 0.07, N = 3
108.14
Pentium G3258
SE +/- 0.36, N = 3
721.71
Willow6C
SE +/- 1.24, N = 6
89.31
Willow16C
SE +/- 0.62, N = 3
50.43
Core i5 8500T
SE +/- 0.20, N = 3
74.94
Core i5 3470T
SE +/- 0.10, N = 3
276.03
i5 3470T 8GB RAM
SE +/- 2.43, N = 3
308.94
i5 3470T 10GB
256.00

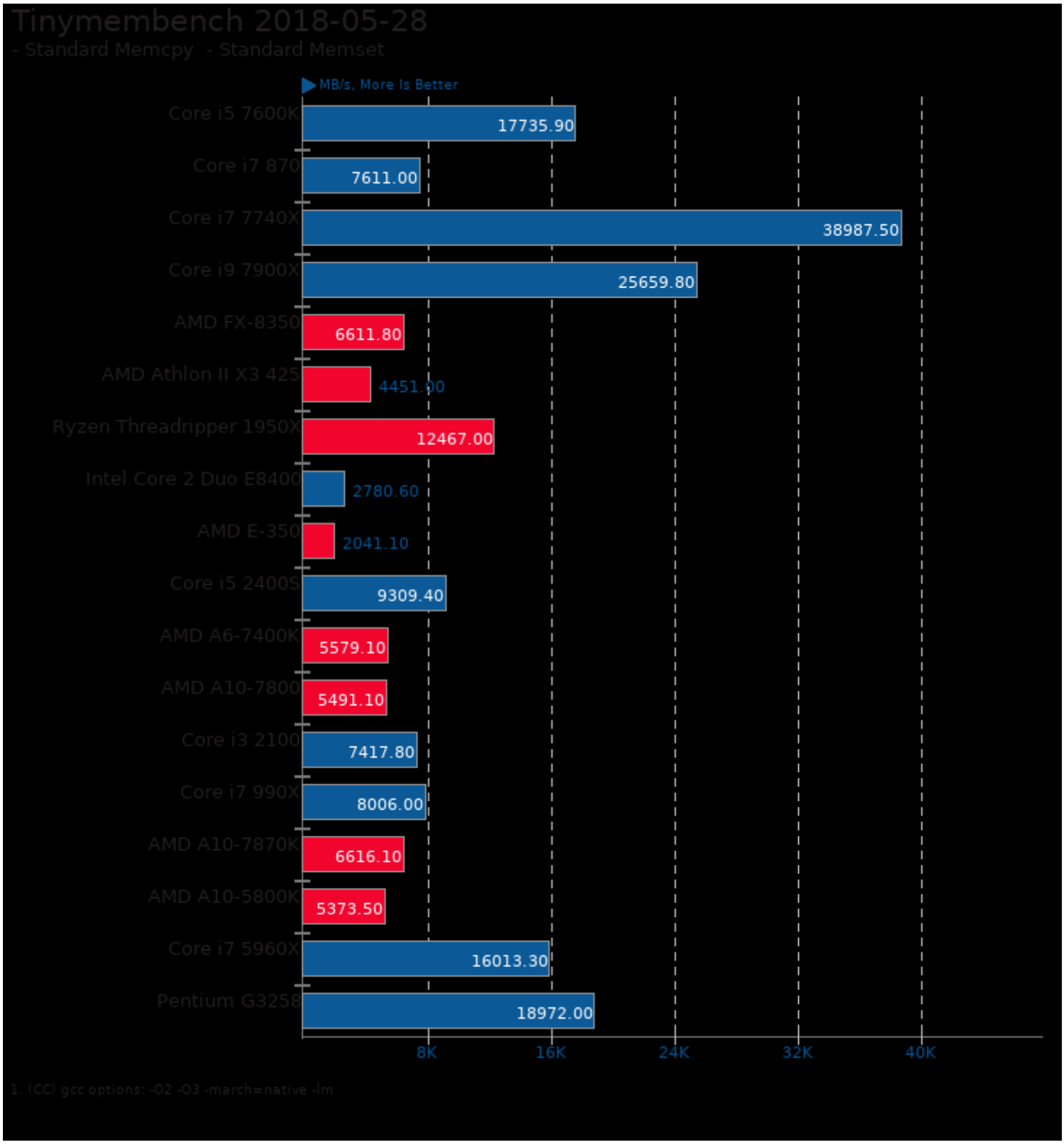

SciMark 2.0
Computational Test: Composite
Mflops, More Is Better
Core i9 7980XE
SE +/- 8.86, N = 3
2696.00
Core i5 7600K
SE +/- 4.29, N = 3
2385.00
Core i7 870
SE +/- 5.00, N = 3
1180.00
Core i7 7740X
SE +/- 3.52, N = 3
3210.00
Core i9 7900X
SE +/- 4.36, N = 3
2579.00
AMD FX-8350
SE +/- 1.35, N = 3
1159.00
AMD Athlon II X3 425
SE +/- 0.04, N = 3
573.00
Ryzen Threadripper 1950X
SE +/- 9.89, N = 3
2297.00
Intel Core 2 Duo E8400
SE +/- 2.65, N = 3
787.00
AMD E-350
SE +/- 0.08, N = 3
321.00
Core i5 2400S
SE +/- 2.02, N = 3
1398.00
AMD A6-7400K
SE +/- 1.82, N = 3
739.00
AMD A10-7800
SE +/- 1.52, N = 3
741.00
Core i3 2100
SE +/- 4.86, N = 3
1065.00
Core i7 990X
SE +/- 0.80, N = 3
1324.00
AMD A10-7870K
SE +/- 0.85, N = 3
858.00
AMD A10-5800K
SE +/- 0.53, N = 3
815.00
Core i7 5960X
SE +/- 0.50, N = 3
2168.00
Pentium G3258
SE +/- 1.12, N = 3
1109.00
Willow6C
SE +/- 5.69, N = 3
1668.00
Willow16C
SE +/- 11.92, N = 3
1656.00
Core i5 8500T
SE +/- 2.03, N = 3
1701.00
Core i5 3470T
SE +/- 8.00, N = 3
1304.00
i5 3470T 8GB RAM
SE +/- 7.85, N = 3
1034.00
i5 3470T 10GB
SE +/- 15.89, N = 3
1102.00
2 x E5-2667v3
SE +/- 0.57, N = 3
548.00
i5 6500 8GB RAM
SE +/- 1.72, N = 3
1604.00
i5 6500 10GB RAM
SE +/- 4.50, N = 3
1611.00
LenovoM700Tiny
SE +/- 0.74, N = 3
370.69
Core i5 7500T
SE +/- 0.53, N = 3
493.76
700
1400
2100
2800
3500
1. (CC) gcc options: -lm

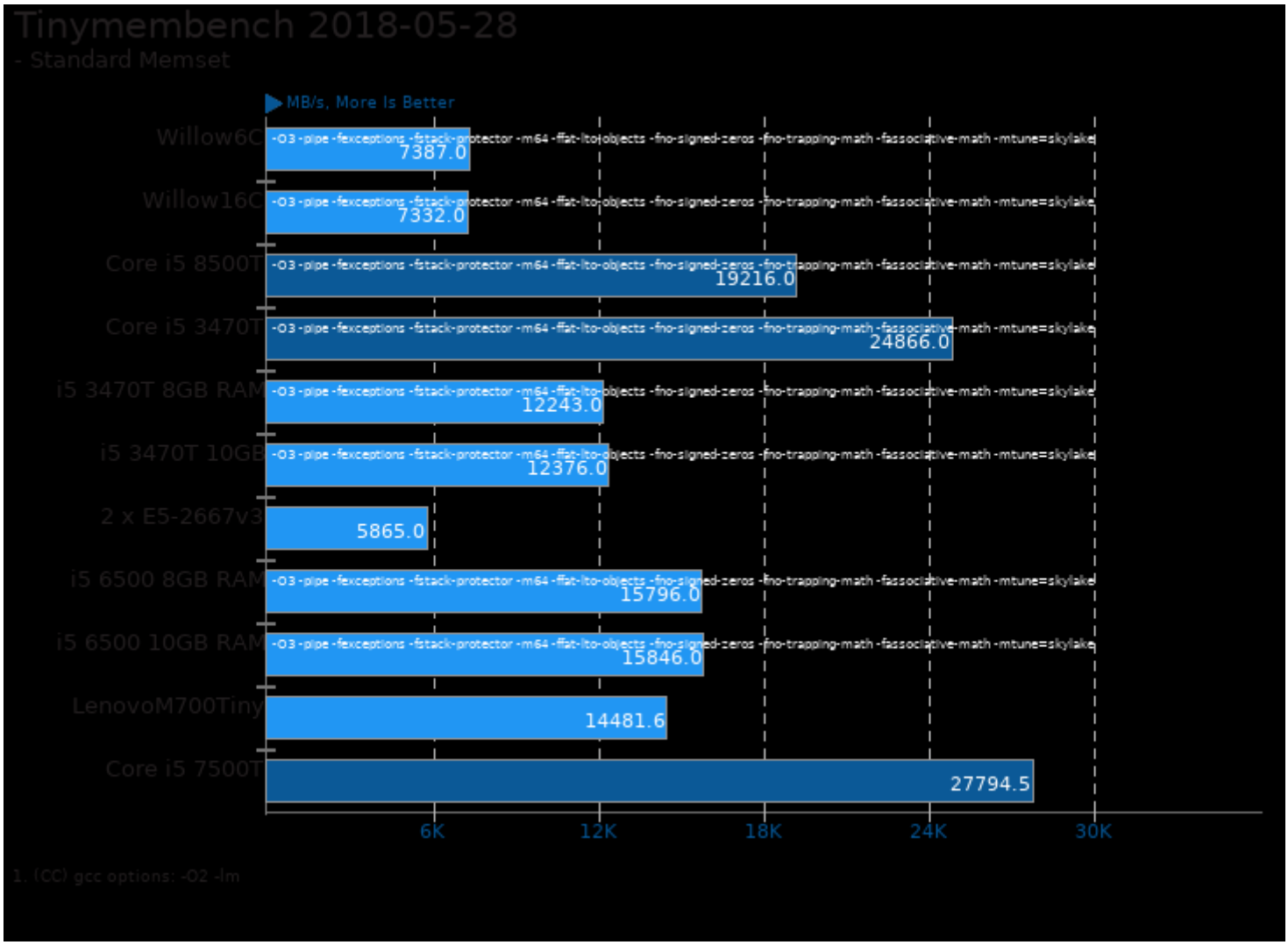

Stockfish 9
Total Time
Nodes Per Second, More Is Better
Core i9 7980XE
SE +/- 69662.77, N = 3
44214755
Core i5 7600K
SE +/- 6143.92, N = 3
9418962
Core i7 870
SE +/- 121724.18, N = 3
7494699
Core i7 7740X
SE +/- 51432.80, N = 3
13396201
Core i9 7900X
SE +/- 379613.80, N = 3
29577765
AMD FX-8350
SE +/- 16238.24, N = 3
10229160
AMD Athlon II X3 425
SE +/- 27900.30, N = 3
3340855
Ryzen Threadripper 1950X
SE +/- 122812.89, N = 3
40826604
AMD E-350
SE +/- 934.89, N = 3
721156
Core i5 2400S
SE +/- 28739.22, N = 3
5450590
AMD A6-7400K
SE +/- 7276.85, N = 3
2634622
AMD A10-7800
SE +/- 52988.21, N = 3
5147353
Core i3 2100
SE +/- 25728.51, N = 3
3959009
Core i7 990X
SE +/- 132601.70, N = 3
13338369
AMD A10-7870K
SE +/- 22419.28, N = 3
5793041
AMD A10-5800K
SE +/- 110500.40, N = 6
3110648
Core i7 5960X
SE +/- 87013.46, N = 3
18120282
Pentium G3258
SE +/- 13556.97, N = 3
3556304
Willow6C
SE +/- 55625.19, N = 3
8611939
Willow16C
SE +/- 271217.22, N = 12
17298395
Core i5 8500T
SE +/- 118670.12, N = 3
10748746
Core i5 3470T
SE +/- 14426.76, N = 3
3793239
i5 3470T 8GB RAM
SE +/- 10415.46, N = 3
3202361
i5 3470T 10GB
SE +/- 10343.68, N = 3
4135071
2 x E5-2667v3
SE +/- 368313.17, N = 3
34962607
i5 6500 8GB RAM
SE +/- 67131.47, N = 3
7478247
i5 6500 10GB RAM
SE +/- 107454.96, N = 3
7587616
LenovoM700Tiny
SE +/- 8184.83, N = 3
3973324
Core i5 7500T
SE +/- 17604.74, N = 3
6897217
9M
18M
27M
36M
45M
1. (CXX) g++ options: -m64 -lpthread -O3 -fno-exceptions -std=c++11 -pedantic -msse -msse3 -mpopcnt -flto

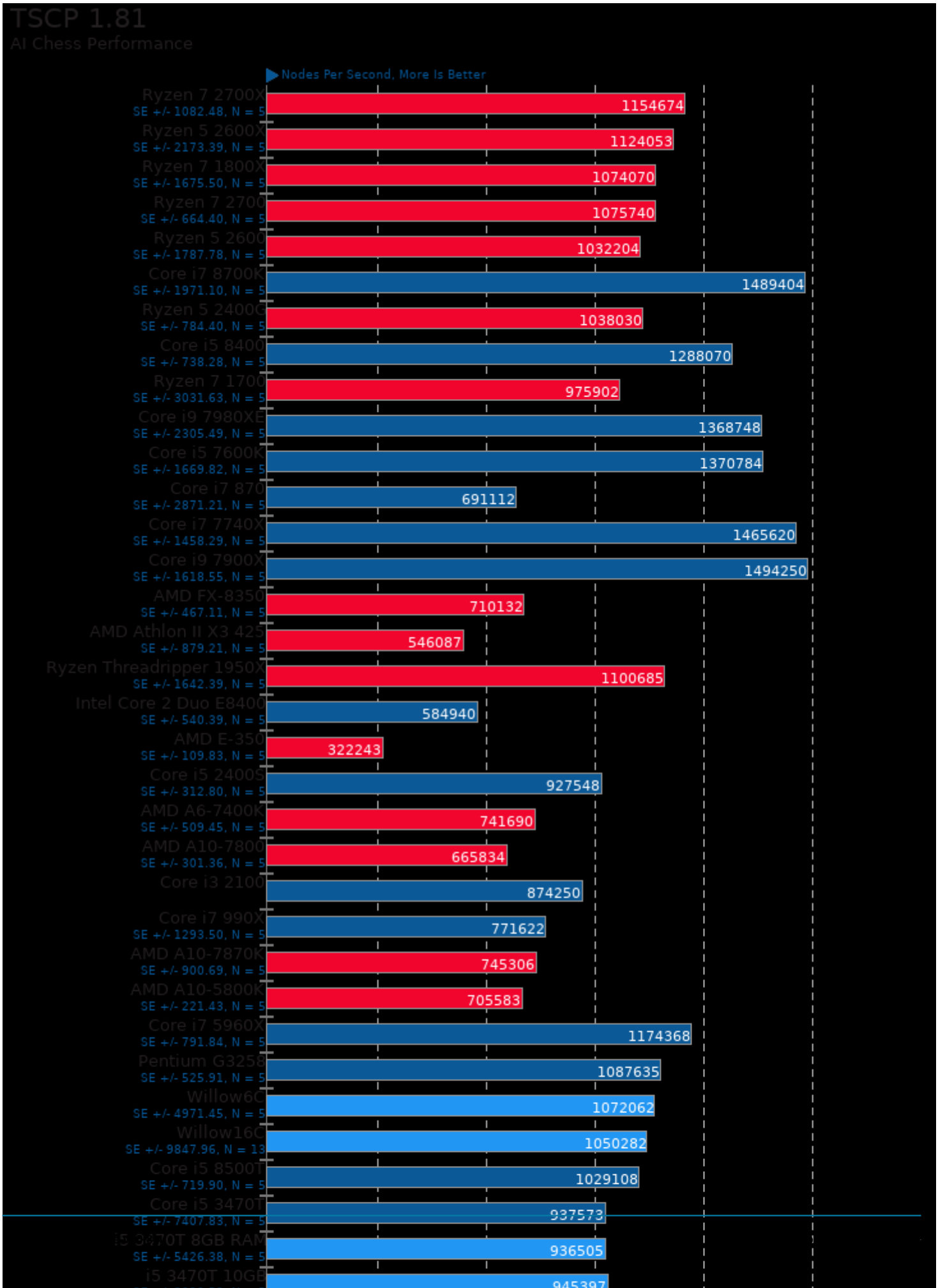

Timed Linux Kernel Compilation 4.13
Time To Compile
Seconds, Fewer Is Better
Ryzen 7 2700X
SE +/- 0.67, N = 3
77.00
Ryzen 5 2600X
SE +/- 0.73, N = 3
94.85
Ryzen 7 1800X
SE +/- 0.70, N = 3
84.32
Ryzen 7 2700
SE +/- 0.85, N = 3
87.45
Ryzen 5 2600
SE +/- 0.77, N = 3
104.66
Core i7 8700K
SE +/- 0.61, N = 3
80.99
Ryzen 5 2400G
SE +/- 1.01, N = 3
159.98
Core i5 8400
SE +/- 0.73, N = 3
112.25
Ryzen 7 1700
SE +/- 0.87, N = 3
94.71
Core i9 7980XE
SE +/- 0.69, N = 3
35.83
Core i5 7600K
SE +/- 0.72, N = 3
157.39
Core i7 870
SE +/- 0.89, N = 3
235.76
Core i7 7740X
SE +/- 0.59, N = 3
106.27
Core i9 7900X
SE +/- 0.75, N = 3
55.89
AMD FX-8350
SE +/- 1.38, N = 3
167.36
AMD Athlon II X3 425
SE +/- 1.87, N = 3
512.50
Ryzen Threadripper 1950X
SE +/- 0.78, N = 3
47.14
Intel Core 2 Duo E8400
SE +/- 1.39, N = 3
625.40
AMD E-350
SE +/- 5.35, N = 3
2384.11
Core i5 2400S
SE +/- 1.03, N = 3
304.65
AMD A6-7400K
SE +/- 1.45, N = 3
683.51
AMD A10-7800
SE +/- 1.44, N = 3
338.91
Core i3 2100
SE +/- 1.44, N = 3
439.59
Core i7 990X
SE +/- 2.07, N = 3
155.68
AMD A10-7870K
SE +/- 1.49, N = 3
299.12
AMD A10-5800K
SE +/- 1.99, N = 3
481.45
Core i7 5960X
SE +/- 1.15, N = 3
88.77
Pentium G3258
SE +/- 1.29, N = 3
420.67
500
1000
1500
2000
2500

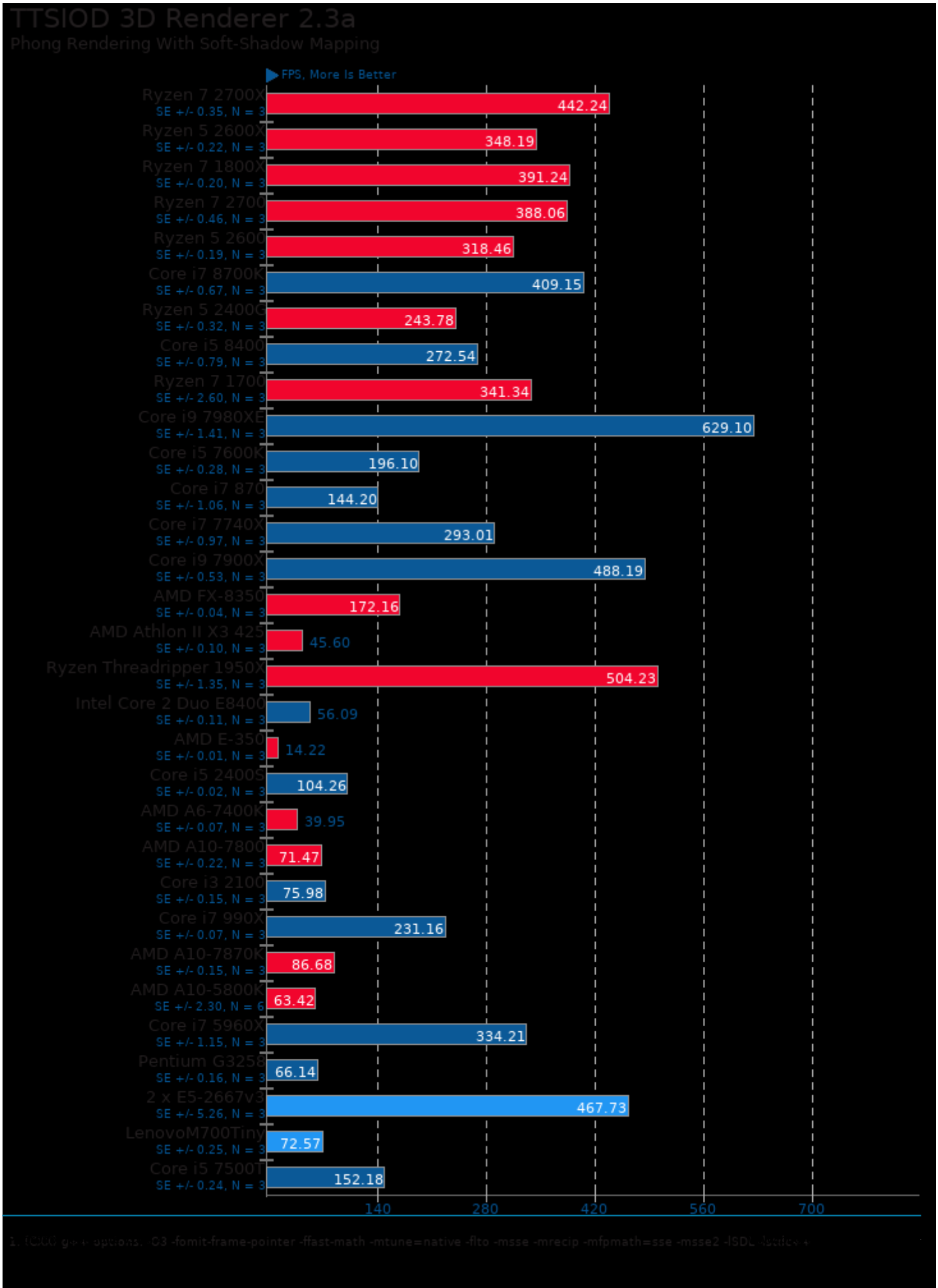

Timed PHP Compilation 7.1.9
Time To Compile
Seconds, Fewer Is Better
Ryzen 7 2700X
SE +/- 0.37, N = 3
66.95
Ryzen 5 2600X
SE +/- 0.15, N = 3
72.08
Ryzen 7 1800X
SE +/- 0.11, N = 3
73.41
Ryzen 7 2700
SE +/- 0.62, N = 3
75.04
Ryzen 5 2600
SE +/- 0.30, N = 3
78.36
Core i7 8700K
SE +/- 0.17, N = 3
56.42
Ryzen 5 2400G
SE +/- 0.42, N = 3
106.24
Core i5 8400
SE +/- 0.12, N = 3
69.43
Ryzen 7 1700
SE +/- 0.28, N = 3
83.59
Core i9 7980XE
SE +/- 0.09, N = 3
46.12
Core i5 7600K
SE +/- 0.07, N = 3
103.82
Core i7 870
SE +/- 0.48, N = 3
141.04
Core i7 7740X
SE +/- 0.18, N = 3
67.57
Core i9 7900X
SE +/- 0.03, N = 3
52.57
AMD FX-8350
SE +/- 0.18, N = 3
108.49
AMD Athlon II X3 425
SE +/- 0.25, N = 3
324.71
Ryzen Threadripper 1950X
SE +/- 0.28, N = 3
56.29
Intel Core 2 Duo E8400
SE +/- 0.05, N = 3
339.19
AMD E-350
SE +/- 0.07, N = 3
1271.67
Core i5 2400S
SE +/- 0.15, N = 3
178.95
AMD A6-7400K
SE +/- 0.34, N = 3
402.92
AMD A10-7800
SE +/- 0.19, N = 3
216.31
Core i3 2100
SE +/- 0.09, N = 3
254.80
Core i7 990X
SE +/- 0.28, N = 3
108.34
AMD A10-7870K
SE +/- 0.08, N = 3
189.62
AMD A10-5800K
SE +/- 7.03, N = 6
263.28
Core i7 5960X
SE +/- 0.16, N = 3
75.52
Pentium G3258
SE +/- 0.83, N = 3
259.15
Willow6C
SE +/- 3.03, N = 3
151.29
Willow16C
SE +/- 0.61, N = 3
141.14
Core i5 8500T
SE +/- 1.50, N = 3
140.70
Core i5 3470T
SE +/- 0.34, N = 3
319.86
i5 3470T 8GB RAM
SE +/- 0.31, N = 3
373.46
i5 3470T 10GB
299.43

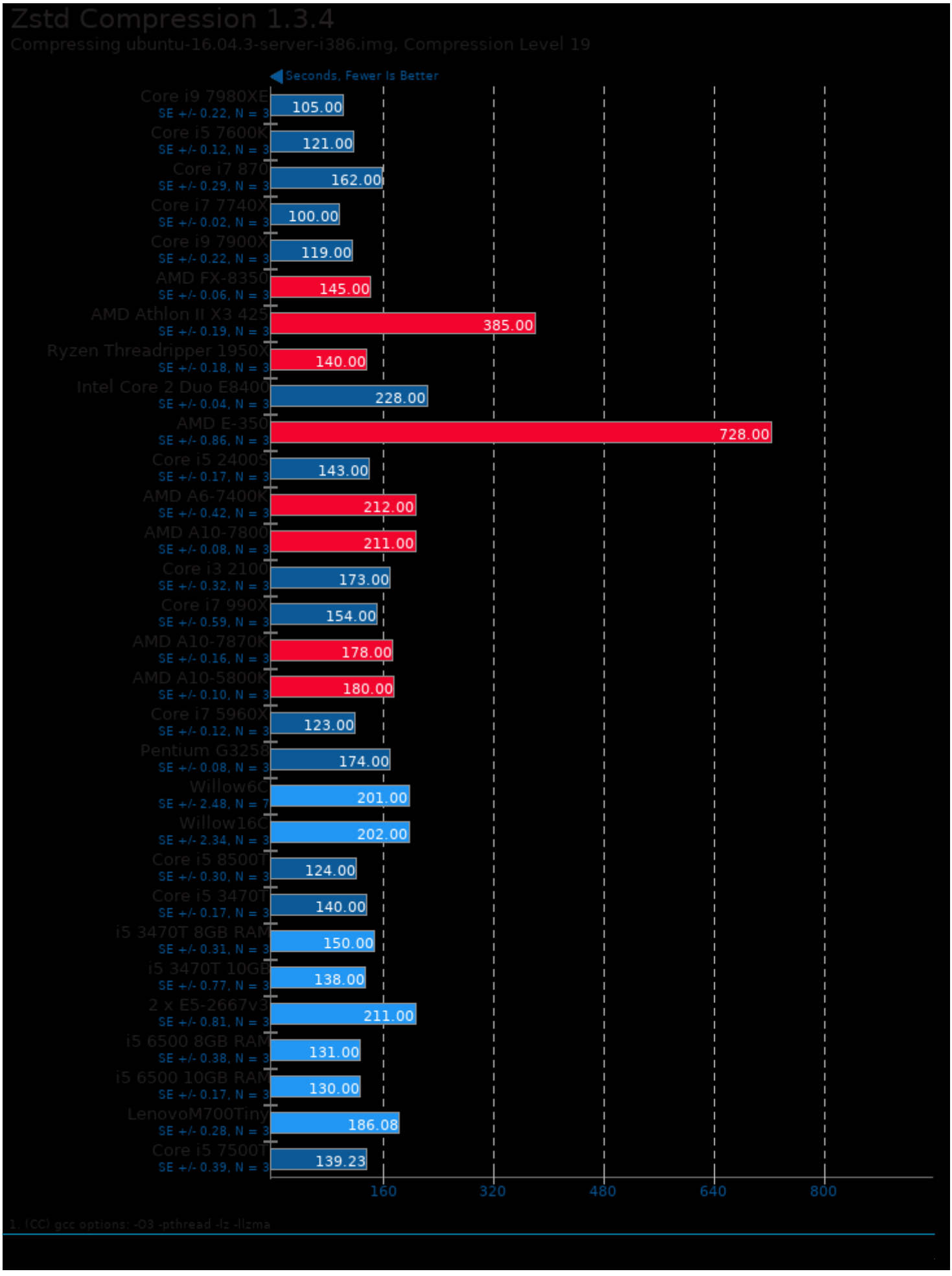

Tinymembench 2018-05-28
- Standard Memcpy
MB/s, More Is Better
Core i9 7980XE
9959.0
Core i5 7600K
7502.0
Core i7 870
6906.0
Core i7 7740X
17193.0
Core i9 7900X
10519.0
AMD FX-8350
5728.0
AMD Athlon II X3 425
4433.0
Ryzen Threadripper 1950X
15595.0
Intel Core 2 Duo E8400
3498.0
AMD E-350
2012.0
Core i5 2400S
8976.0
AMD A6-7400K
4973.0
AMD A10-7800
5057.0
Core i3 2100
7242.0
Core i7 990X
7385.0
AMD A10-7870K
5801.0
AMD A10-5800K
5725.0
Core i7 5960X
11653.0
Pentium G3258
7492.0
Willow6C
8041.0
Willow16C
9248.0
Core i5 8500T
8074.0
Core i5 3470T
9133.0
i5 3470T 8GB RAM
5655.0
i5 3470T 10GB
5642.0
2 x E5-2667v3
4355.0
i5 6500 8GB RAM
6666.0
i5 6500 10GB RAM
6848.0
LenovoM700Tiny
6611.5
Core i5 7500T
13186.7
4K
8K
12K
16K
20K
1. (CC) gcc options: -O2 -lm


Tinymembench 2018-05-28
- Standard Memcpy - Standard Memset
MB/s, More Is Better
Core i5 7600K
17735.90
Core i7 870
7611.00
Core i7 7740X
38987.50
Core i9 7900X
25659.80
AMD FX-8350
6611.80
AMD Athlon II X3 425
4451.00
Ryzen Threadripper 1950X
12467.00
Intel Core 2 Duo E8400
2780.60
AMD E-350
2041.10
Core i5 2400S
9309.40
AMD A6-7400K
5579.10
AMD A10-7800
5491.10
Core i3 2100
7417.80
Core i7 990X
8006.00
AMD A10-7870K
6616.10
AMD A10-5800K
5373.50
Core i7 5960X
16013.30
Pentium G3258
18972.00
8K
16K
24K
32K
40K
1. (CC) gcc options: -O2 -O3 -march=native -lm

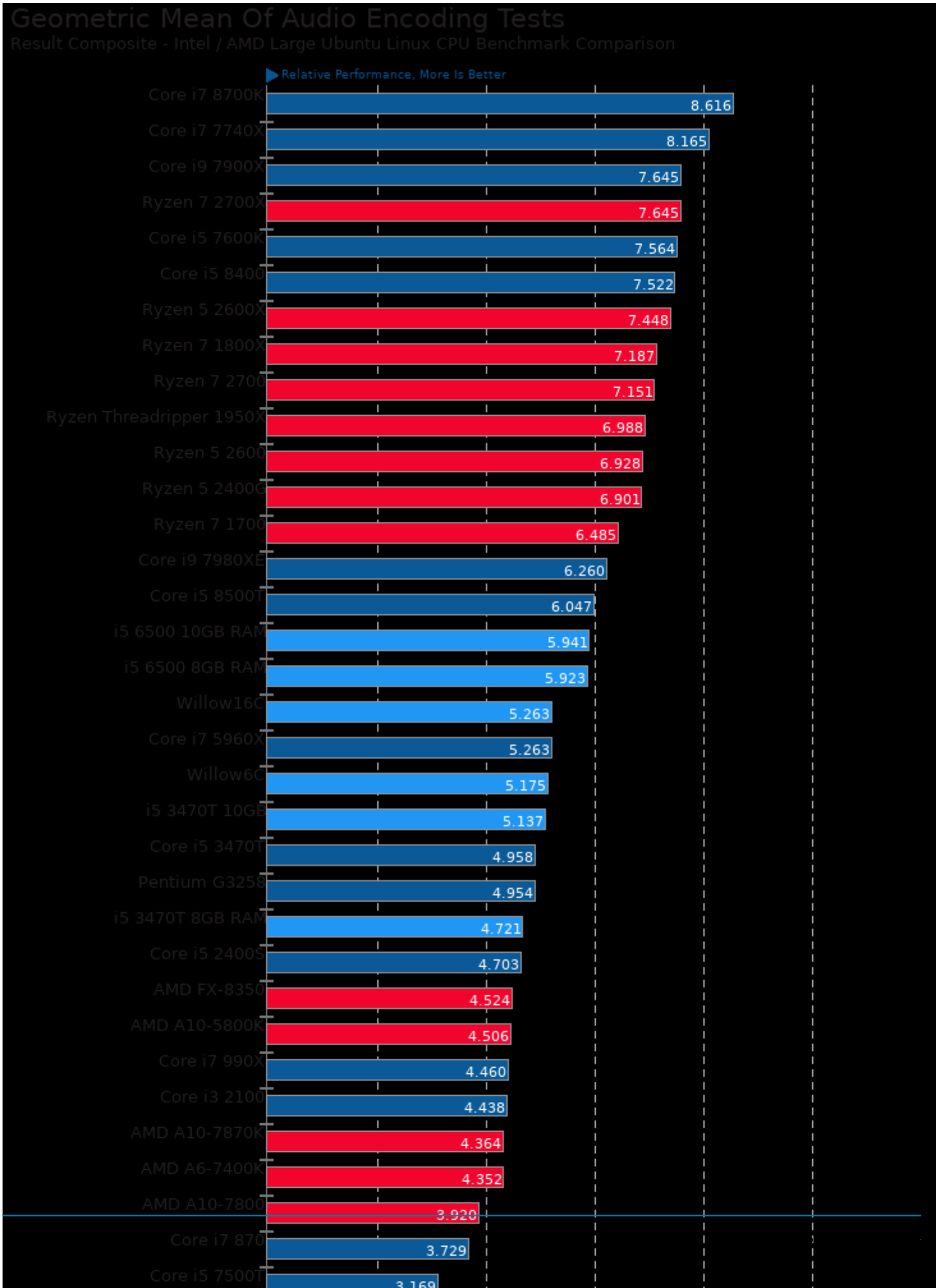

Tinymembench 2018-05-28
- Standard Memset
MB/s, More Is Better
Willow6C
Willow16C
Core i5 8500T
Core i5 3470T
i5 3470T 8GB RAM
i5 3470T 10GB
2 x E5-2667v3
i5 6500 8GB RAM
i5 6500 10GB RAM
LenovoM700Tiny
Core i5 7500T
-O3 -pipe -fexceptions -fstack-protector -m64 -flat-lto-objects -fno-signed-zeros -fno-trapping-math -fassociative-math -mtune=skylake
7387.0
7332.0
19216.0
24866.0
12243.0
12376.0
5865.0
15796.0
15846.0
14481.6
27794.5
6K
12K
18K
24K
30K
1. (CC) gcc options: -O2 -lm


TSCP 1.81
AI Chess Performance
Nodes Per Second, More Is Better
Ryzen 7 2700X
SE +/- 1082.48, N = 5
1154674
Ryzen 5 2600X
SE +/- 2173.39, N = 5
1124053
Ryzen 7 1800X
SE +/- 1675.50, N = 5
1074070
Ryzen 7 2700
SE +/- 664.40, N = 5
1075740
Ryzen 5 2600
SE +/- 1787.78, N = 5
1032204
Core i7 8700K
SE +/- 1971.10, N = 5
1489404
Ryzen 5 2400G
SE +/- 784.40, N = 5
1038030
Core i5 8400
SE +/- 738.28, N = 5
1288070
Ryzen 7 1700
SE +/- 3031.63, N = 5
975902
Core i9 7980XE
SE +/- 2305.49, N = 5
1368748
Core i5 7600K
SE +/- 1669.82, N = 5
1370784
Core i7 870
SE +/- 2871.21, N = 5
691112
Core i7 7740X
SE +/- 1458.29, N = 5
1465620
Core i9 7900X
SE +/- 1618.55, N = 5
1494250
AMD FX-8350
SE +/- 467.11, N = 5
710132
AMD Athlon II X3 425
SE +/- 879.21, N = 5
546087
Ryzen Threadripper 1950X
SE +/- 1642.39, N = 5
1100685
Intel Core 2 Duo E8400
SE +/- 540.39, N = 5
584940
AMD E-350
SE +/- 109.83, N = 5
322243
Core i5 2400S
SE +/- 312.80, N = 5
927548
AMD A6-7400K
SE +/- 509.45, N = 5
741690
AMD A10-7800
SE +/- 301.36, N = 5
665834
Core i3 2100
874250
Core i7 990X
SE +/- 1293.50, N = 5
771622
AMD A10-7870K
SE +/- 900.69, N = 5
745306
AMD A10-5800K
SE +/- 221.43, N = 5
705583
Core i7 5960X
SE +/- 791.84, N = 5
1174368
Pentium G3258
SE +/- 525.91, N = 5
1087635
Willow6C
SE +/- 4971.45, N = 5
1072062
Willow16C
SE +/- 9847.96, N = 13
1050282
Core i5 8500T
SE +/- 719.90, N = 5
1029108
Core i5 3470T
SE +/- 7407.83, N = 5
937573
i5 3470T 8GB RAM
SE +/- 5426.38, N = 5
936505
i5 3470T 10GB
945397

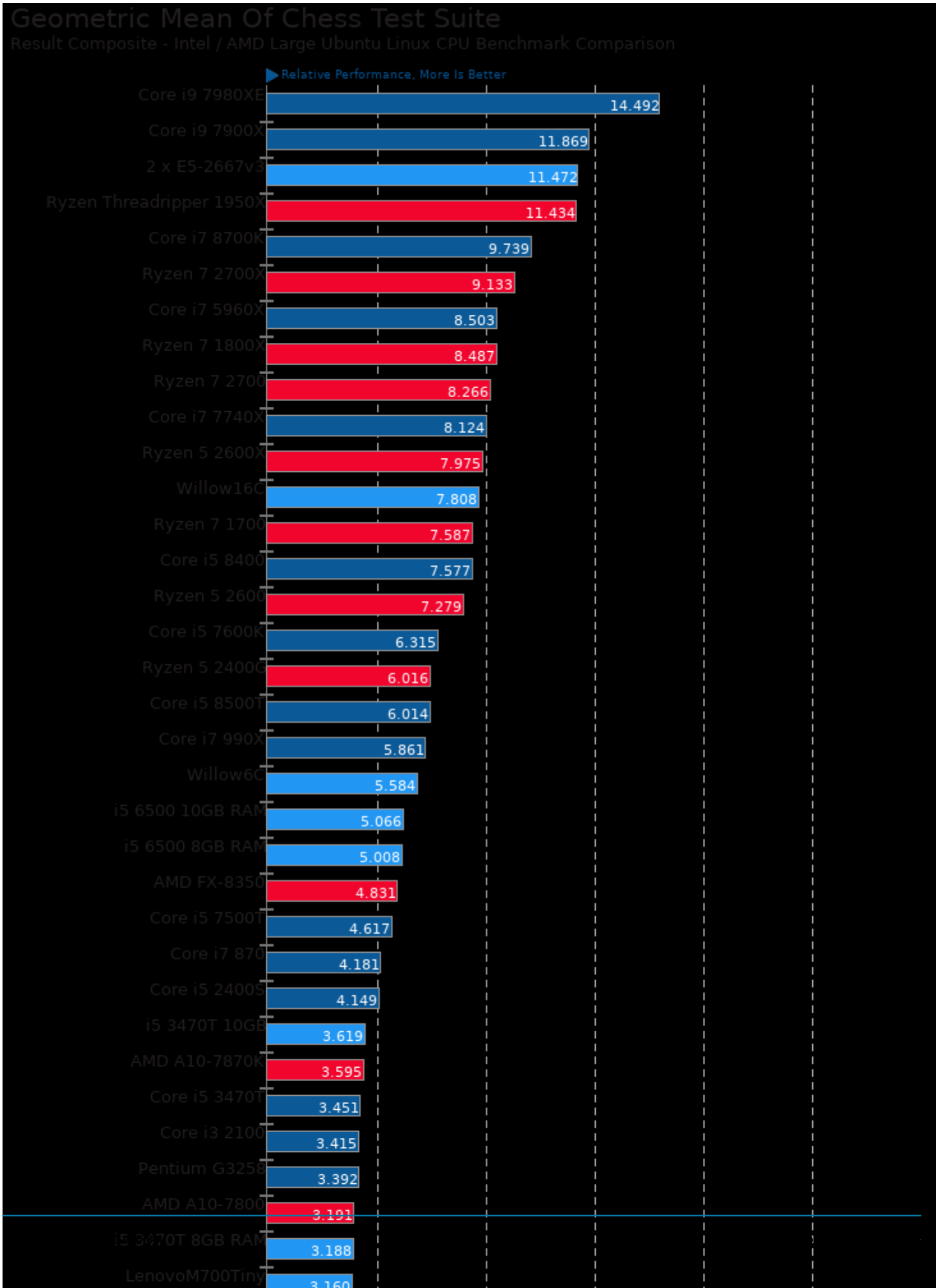

TTSIOD 3D Renderer 2.3a
Phong Rendering With Soft-Shadow Mapping
FPS, More Is Better
Ryzen 7 2700X
SE +/- 0.35, N = 3
442.24
Ryzen 5 2600X
SE +/- 0.22, N = 3
348.19
Ryzen 7 1800X
SE +/- 0.20, N = 3
391.24
Ryzen 7 2700
SE +/- 0.46, N = 3
388.06
Ryzen 5 2600
SE +/- 0.19, N = 3
318.46
Core i7 8700K
SE +/- 0.67, N = 3
409.15
Ryzen 5 2400G
SE +/- 0.32, N = 3
243.78
Core i5 8400
SE +/- 0.79, N = 3
272.54
Ryzen 7 1700
SE +/- 2.60, N = 3
341.34
Core i9 7980XE
SE +/- 1.41, N = 3
629.10
Core i5 7600K
SE +/- 0.28, N = 3
196.10
Core i7 870
SE +/- 1.06, N = 3
144.20
Core i7 7740X
SE +/- 0.97, N = 3
293.01
Core i9 7900X
SE +/- 0.53, N = 3
488.19
AMD FX-8350
SE +/- 0.04, N = 3
172.16
AMD Athlon II X3 425
SE +/- 0.10, N = 3
45.60
Ryzen Threadripper 1950X
SE +/- 1.35, N = 3
504.23
Intel Core 2 Duo E8400
SE +/- 0.11, N = 3
56.09
AMD E-350
SE +/- 0.01, N = 3
14.22
Core i5 2400S
SE +/- 0.02, N = 3
104.26
AMD A6-7400K
SE +/- 0.07, N = 3
39.95
AMD A10-7800
SE +/- 0.22, N = 3
71.47
Core i3 2100
SE +/- 0.15, N = 3
75.98
Core i7 990X
SE +/- 0.07, N = 3
231.16
AMD A10-7870K
SE +/- 0.15, N = 3
86.68
AMD A10-5800K
SE +/- 2.30, N = 6
63.42
Core i7 5960X
SE +/- 1.15, N = 3
334.21
Pentium G3258
SE +/- 0.16, N = 3
66.14
2 x E5-2667v3
SE +/- 5.26, N = 3
467.73
LenovoM700Tiny
SE +/- 0.25, N = 3
72.57
Core i5 7500T
SE +/- 0.24, N = 3
152.18
140
280
420
560
700


Zstd Compression 1.3.4
Compressing ubuntu-16.04.3-server-i386.img, Compression Level 19
Seconds, Fewer Is Better
Core i9 7980XE
SE +/- 0.22, N = 3
105.00
Core i5 7600K
SE +/- 0.12, N = 3
121.00
Core i7 870
SE +/- 0.29, N = 3
162.00
Core i7 7740X
SE +/- 0.02, N = 3
100.00
Core i9 7900X
SE +/- 0.22, N = 3
119.00
AMD FX-8350
SE +/- 0.06, N = 3
145.00
AMD Athlon II X3 425
SE +/- 0.19, N = 3
385.00
Ryzen Threadripper 1950X
SE +/- 0.18, N = 3
140.00
Intel Core 2 Duo E8400
SE +/- 0.04, N = 3
228.00
AMD E-350
SE +/- 0.86, N = 3
728.00
Core i5 2400S
SE +/- 0.17, N = 3
143.00
AMD A6-7400K
SE +/- 0.42, N = 3
212.00
AMD A10-7800
SE +/- 0.08, N = 3
211.00
Core i3 2100
SE +/- 0.32, N = 3
173.00
Core i7 990X
SE +/- 0.59, N = 3
154.00
AMD A10-7870K
SE +/- 0.16, N = 3
178.00
AMD A10-5800K
SE +/- 0.10, N = 3
180.00
Core i7 5960X
SE +/- 0.12, N = 3
123.00
Pentium G3258
SE +/- 0.08, N = 3
174.00
Willow6C
SE +/- 2.48, N = 7
201.00
Willow16C
SE +/- 2.34, N = 3
202.00
Core i5 8500T
SE +/- 0.30, N = 3
124.00
Core i5 3470T
SE +/- 0.17, N = 3
140.00
i5 3470T 8GB RAM
SE +/- 0.31, N = 3
150.00
i5 3470T 10GB
SE +/- 0.77, N = 3
138.00
2 x E5-2667v3
SE +/- 0.81, N = 3
211.00
i5 6500 8GB RAM
SE +/- 0.38, N = 3
131.00
i5 6500 10GB RAM
SE +/- 0.17, N = 3
130.00
LenovoM700Tiny
SE +/- 0.28, N = 3
186.08
Core i5 7500T
SE +/- 0.39, N = 3
139.23
160
320
480
640
800
1. (CC) gcc options: -O3 -pthread -lz -llzma

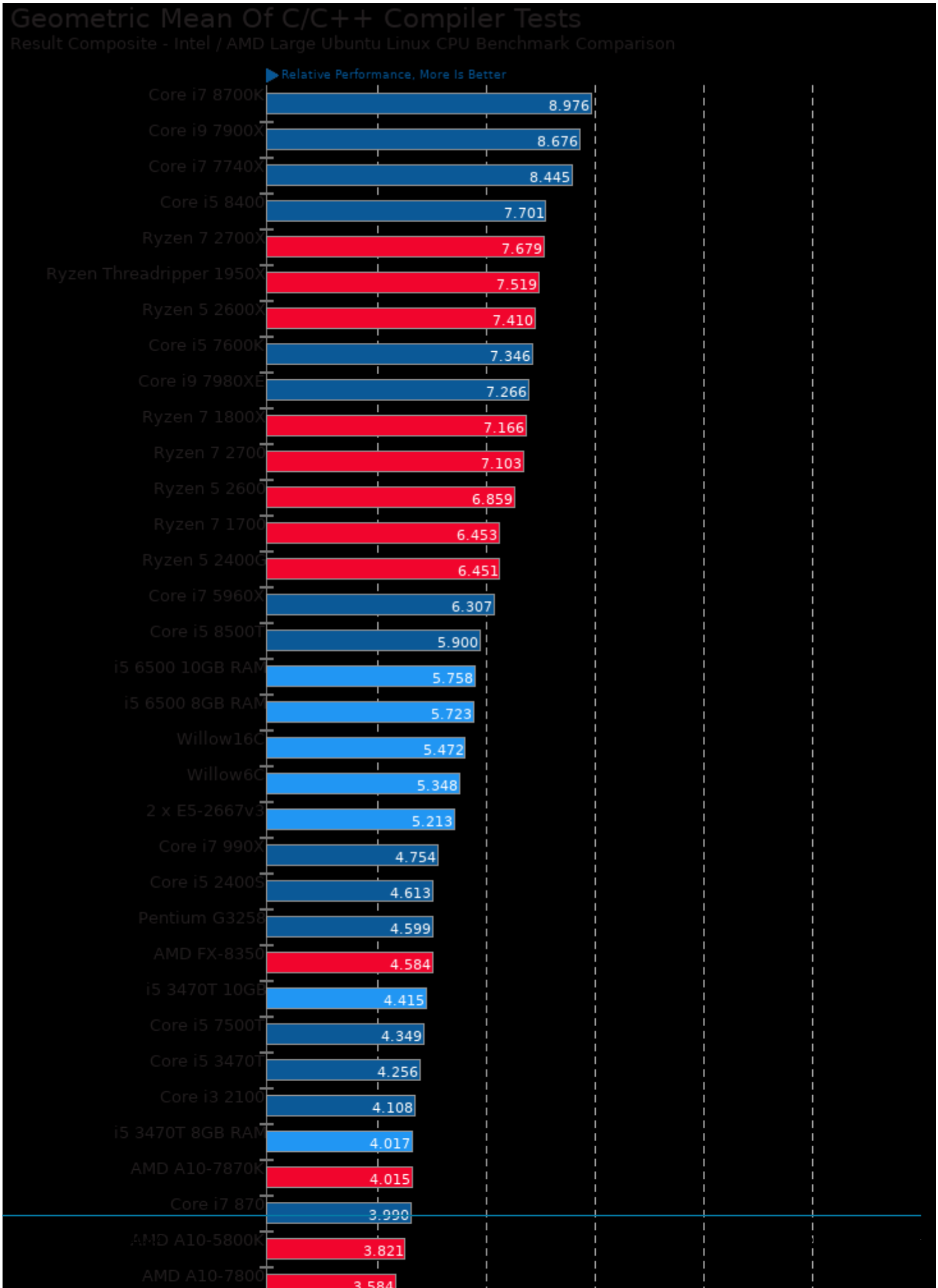
These geometric means are based upon test groupings / test suites for this result file.


Geometric Mean Of Audio Encoding Tests
Result Composite - Intel / AMD Large Ubuntu Linux CPU Benchmark Comparison
Relative Performance, More Is Better
Core i7 8700K 8.616
Core i7 7740X 8.165
Core i9 7900X 7.645
Ryzen 7 2700X 7.645
Core i5 7600K 7.564
Core i5 8400 7.522
Ryzen 5 2600X 7.448
Ryzen 7 1800X 7.187
Ryzen 7 2700 7.151
Ryzen Threadripper 1950X 6.988
Ryzen 5 2600 6.928
Ryzen 5 2400G 6.901
Ryzen 7 1700 6.485
Core i9 7980XE 6.260
Core i5 8500T 6.047
i5 6500 10GB RAM 5.941
i5 6500 8GB RAM 5.923
Willow16C 5.263
Core i7 5960X 5.263
Willow6C 5.175
i5 3470T 10GB 5.137
Core i5 3470T 4.958
Pentium G3258 4.954
i5 3470T 8GB RAM 4.721
Core i5 2400S 4.703
AMD FX-8350 4.524
AMD A10-5800K 4.506
Core i7 990X 4.460
Core i3 2100 4.438
AMD A10-7870K 4.364
AMD A6-7400K 4.352
AMD A10-7800 3.920
Core i7 870 3.729
Core i5 7500T 3.169

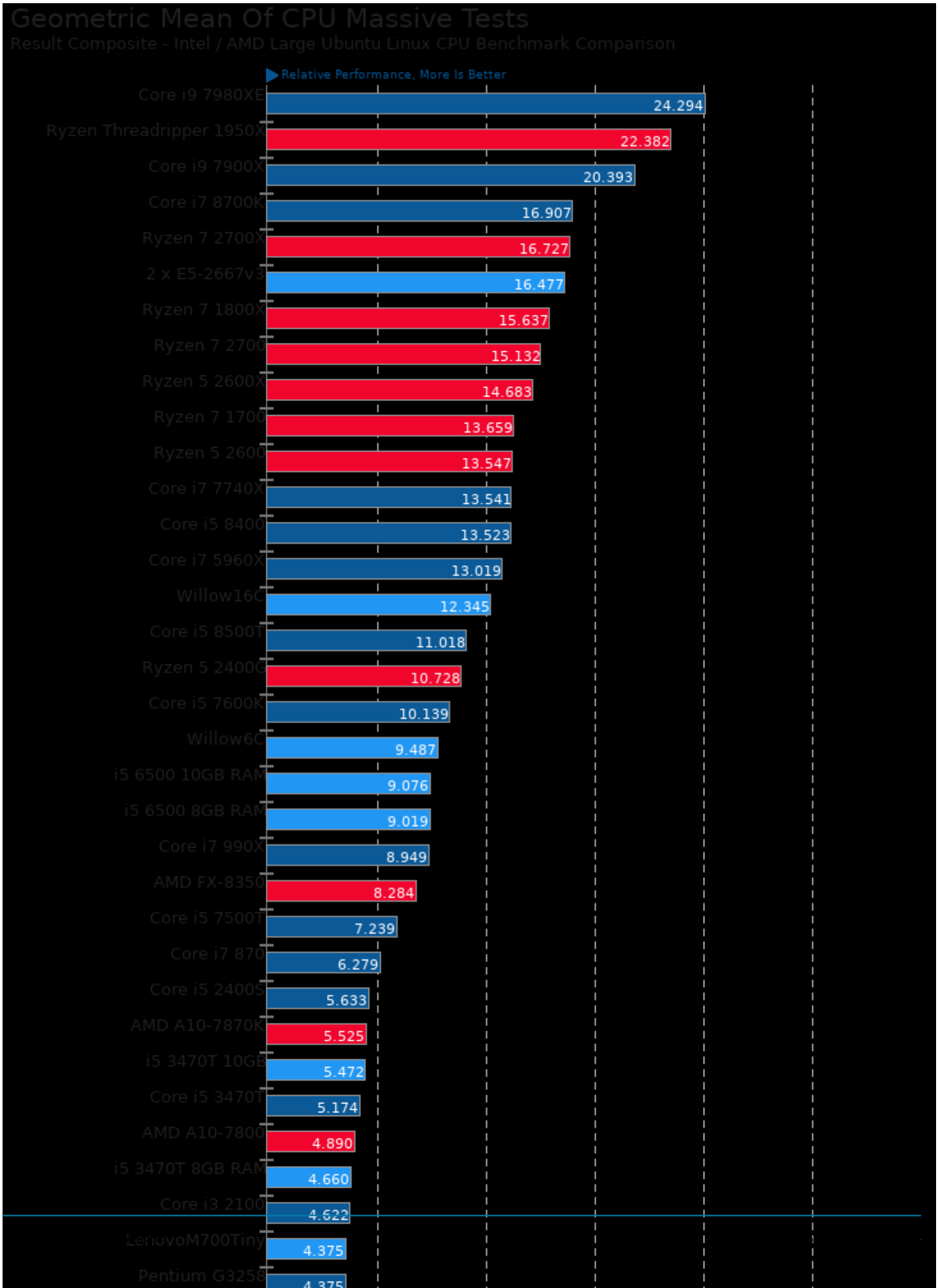
Geometric mean based upon tests: pts/encode-mp3 and pts/encode-flac


Geometric Mean Of Chess Test Suite
Result Composite - Intel / AMD Large Ubuntu Linux CPU Benchmark Comparison
Relative Performance, More Is Better
Core i9 7980XE 14.492
Core i9 7900X 11.869
2 x E5-2667v3 11.472
Ryzen Threadripper 1950X 11.434
Core i7 8700K 9.739
Ryzen 7 2700X 9.133
Core i7 5960X 8.503
Ryzen 7 1800X 8.487
Ryzen 7 2700 8.266
Core i7 7740X 8.124
Ryzen 5 2600X 7.975
Willow16C 7.808
Ryzen 7 1700 7.587
Core i5 8400 7.577
Ryzen 5 2600 7.279
Core i5 7600K 6.315
Ryzen 5 2400G 6.016
Core i5 8500T 6.014
Core i7 990X 5.861
Willow6C 5.584
i5 6500 10GB RAM 5.066
i5 6500 8GB RAM 5.008
AMD FX-8350 4.831
Core i5 7500T 4.617
Core i7 870 4.181
Core i5 2400S 4.149
i5 3470T 10GB 3.619
AMD A10-7870K 3.595
Core i5 3470T 3.451
Core i3 2100 3.415
Pentium G3258 3.392
AMD A10-7800 3.191
i5 3470T 8GB RAM 3.188
LenovoM700Tiny 3.160

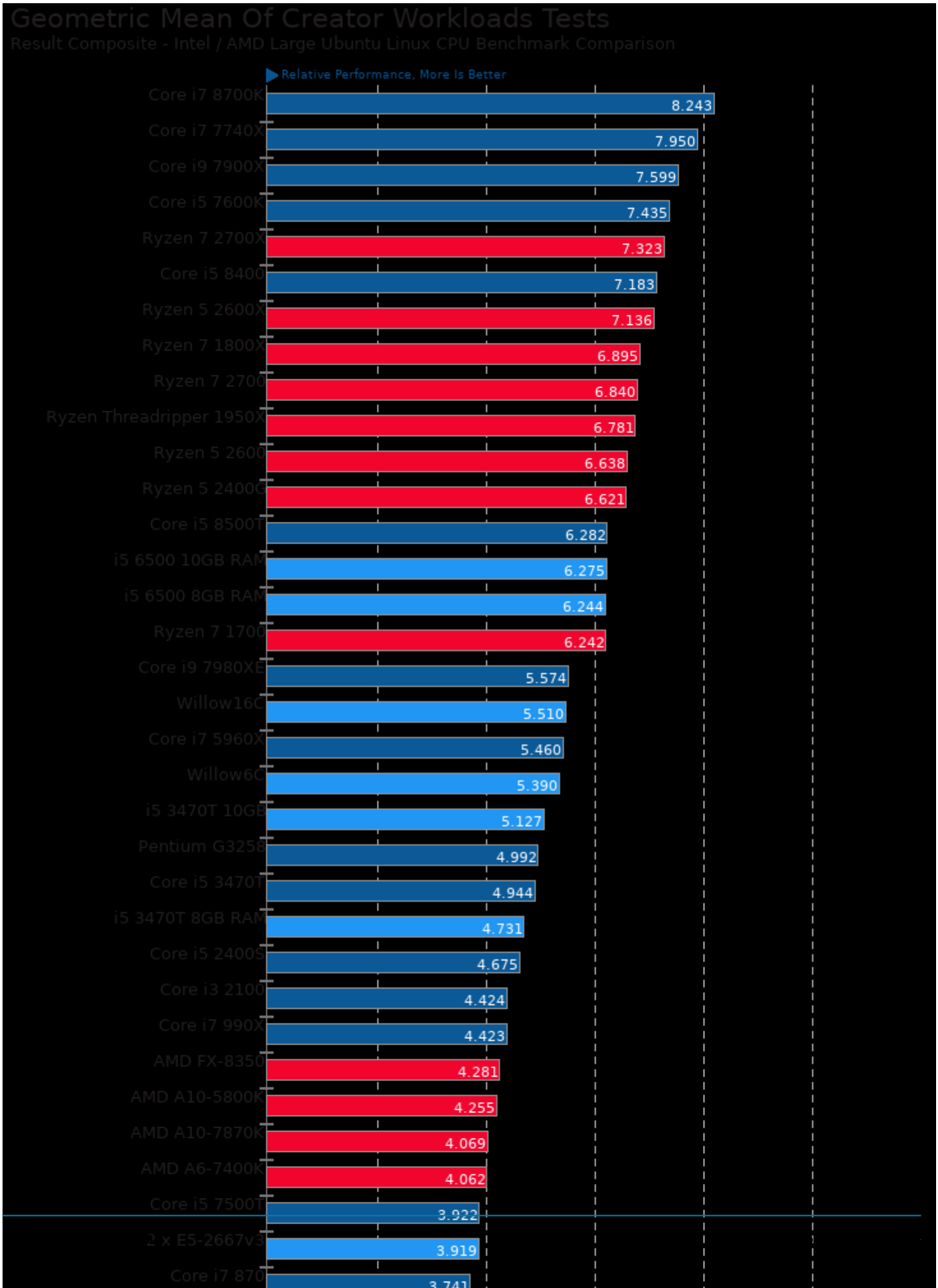
Geometric mean based upon tests: pts/tscp, pts/stockfish, pts/asmfish and pts/m-queens


Geometric Mean Of C/C++ Compiler Tests
Result Composite - Intel / AMD Large Ubuntu Linux CPU Benchmark Comparison
Relative Performance, More Is Better
Core i7 8700K
8.976
Core i9 7900X
8.676
Core i7 7740X
8.445
Core i5 8400
7.701
Ryzen 7 2700X
7.679
Ryzen Threadripper 1950X
7.519
Ryzen 5 2600X
7.410
Core i5 7600K
7.346
Core i9 7980XE
7.266
Ryzen 7 1800X
7.166
Ryzen 7 2700
7.103
Ryzen 5 2600
6.859
Ryzen 7 1700
6.453
Ryzen 5 2400G
6.451
Core i7 5960X
6.307
Core i5 8500T
5.900
i5 6500 10GB RAM
5.758
i5 6500 8GB RAM
5.723
Willow16C
5.472
Willow6C
5.348
2 x E5-2667v3
5.213
Core i7 990X
4.754
Core i5 2400S
4.613
Pentium G3258
4.599
AMD FX-8350
4.584
i5 3470T 10GB
4.415
Core i5 7500T
4.349
Core i5 3470T
4.256
Core i3 2100
4.108
i5 3470T 8GB RAM
4.017
AMD A10-7870K
4.015
Core i7 870
3.990
AMD A10-5800K
3.821
AMD A10-7800
3.584

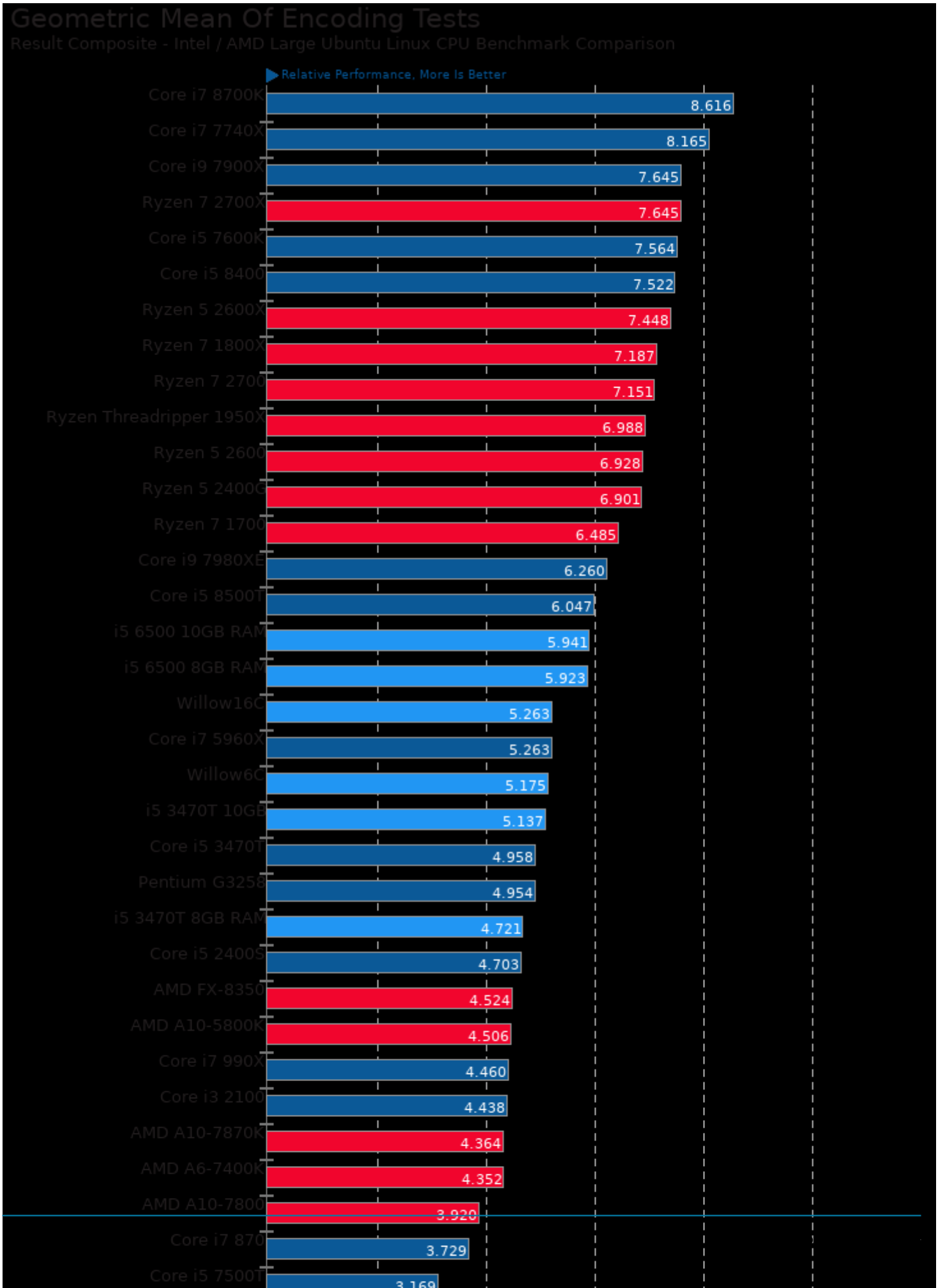
Geometric mean based upon tests: pts/scimark2, pts/aobench, pts/tscp, pts/stockfish, pts/build-php, pts/compress-7zip, pts/encode-mp3, pts/encode-flac, pts/compress-zstd and pts/openssl


Geometric Mean Of CPU Massive Tests
Result Composite - Intel / AMD Large Ubuntu Linux CPU Benchmark Comparison
Relative Performance, More Is Better
Core i9 7980XE
24.294
Ryzen Threadripper 1950X
22.382
Core i9 7900X
20.393
Core i7 8700K
16.907
Ryzen 7 2700X
16.727
2 x E5-2667v3
16.477
Ryzen 7 1800X
15.637
Ryzen 7 2700
15.132
Ryzen 5 2600X
14.683
Ryzen 7 1700
13.659
Ryzen 5 2600
13.547
Core i7 7740X
13.541
Core i5 8400
13.523
Core i7 5960X
13.019
Willow16C
12.345
Core i5 8500T
11.018
Ryzen 5 2400G
10.728
Core i5 7600K
10.139
Willow6C
9.487
i5 6500 10GB RAM
9.076
i5 6500 8GB RAM
9.019
Core i7 990X
8.949
AMD FX-8350
8.284
Core i5 7500T
7.239
Core i7 870
6.279
Core i5 2400S
5.633
AMD A10-7870K
5.525
i5 3470T 10GB
5.472
Core i5 3470T
5.174
AMD A10-7800
4.890
i5 3470T 8GB RAM
4.660
Core i3 2100
4.622
LenovoM700Tiny
4.375
Pentium G3258
4.375

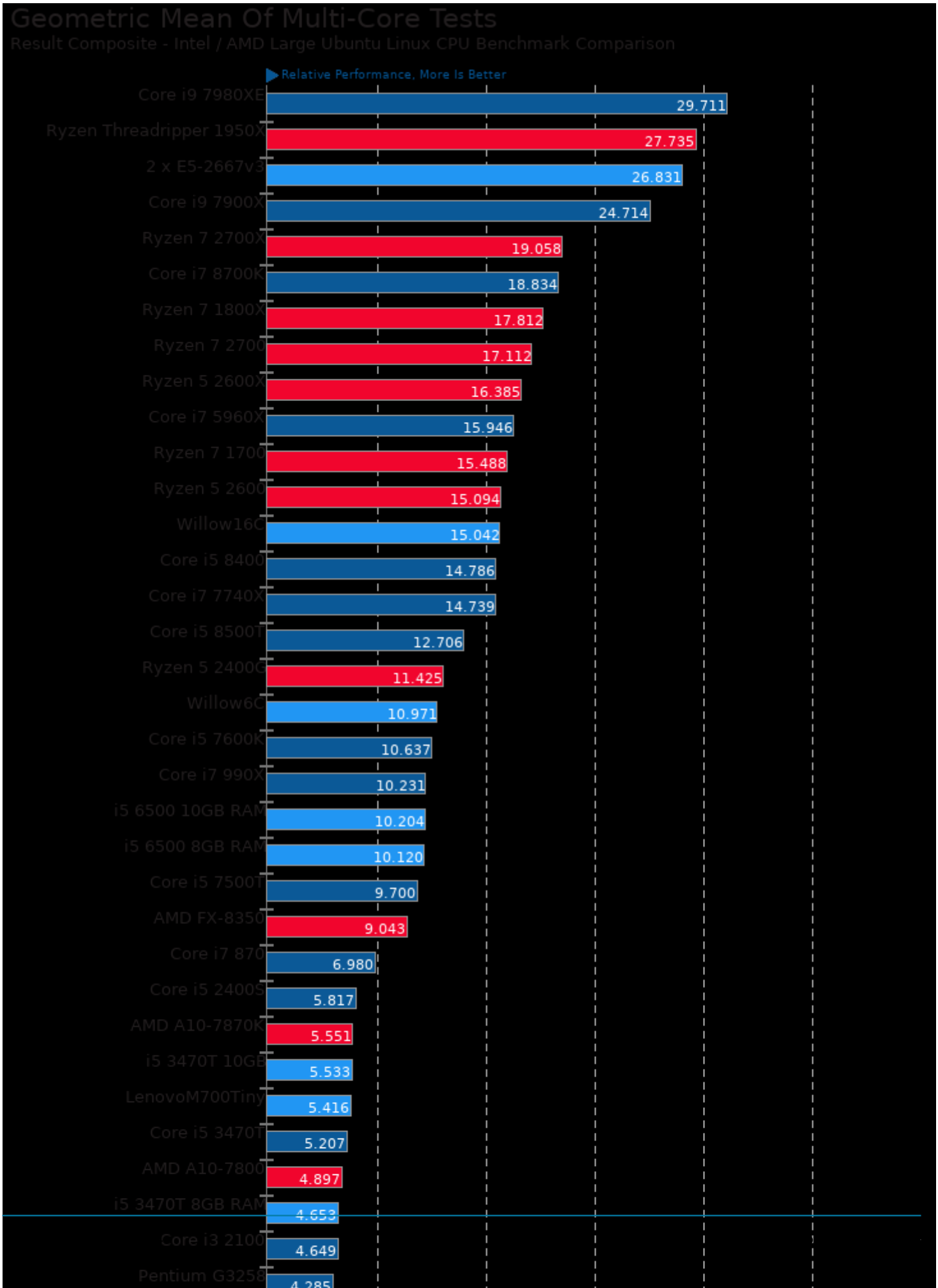
Geometric mean based upon tests: pts/asmfish, pts/build-linux-kernel, pts/build-php, pts/compress-7zip, pts/compress-zstd, pts/encode-flac, pts/encode-mp3, pts/openssl, pts/m-queens, pts/rodinia, pts/stockfish, pts/tinymembench and pts/ttsiod-renderer


Geometric Mean Of Creator Workloads Tests
Result Composite - Intel / AMD Large Ubuntu Linux CPU Benchmark Comparison
Relative Performance, More Is Better
Core i7 8700K 8.243
Core i7 7740X 7.950
Core i9 7900X 7.599
Core i5 7600K 7.435
Ryzen 7 2700X 7.323
Core i5 8400 7.183
Ryzen 5 2600X 7.136
Ryzen 7 1800X 6.895
Ryzen 7 2700 6.840
Ryzen Threadripper 1950X 6.781
Ryzen 5 2600 6.638
Ryzen 5 2400G 6.621
Core i5 8500T 6.282
i5 6500 10GB RAM 6.275
i5 6500 8GB RAM 6.244
Ryzen 7 1700 6.242
Core i9 7980XE 5.574
Willow16C 5.510
Core i7 5960X 5.460
Willow6C 5.390
i5 3470T 10GB 5.127
Pentium G3258 4.992
Core i5 3470T 4.944
i5 3470T 8GB RAM 4.731
Core i5 2400S 4.675
Core i3 2100 4.424
Core i7 990X 4.423
AMD FX-8350 4.281
AMD A10-5800K 4.255
AMD A10-7870K 4.069
AMD A6-7400K 4.062
Core i5 7500T 3.922
2 x E5-2667v3 3.919
Core i7 870 3.741

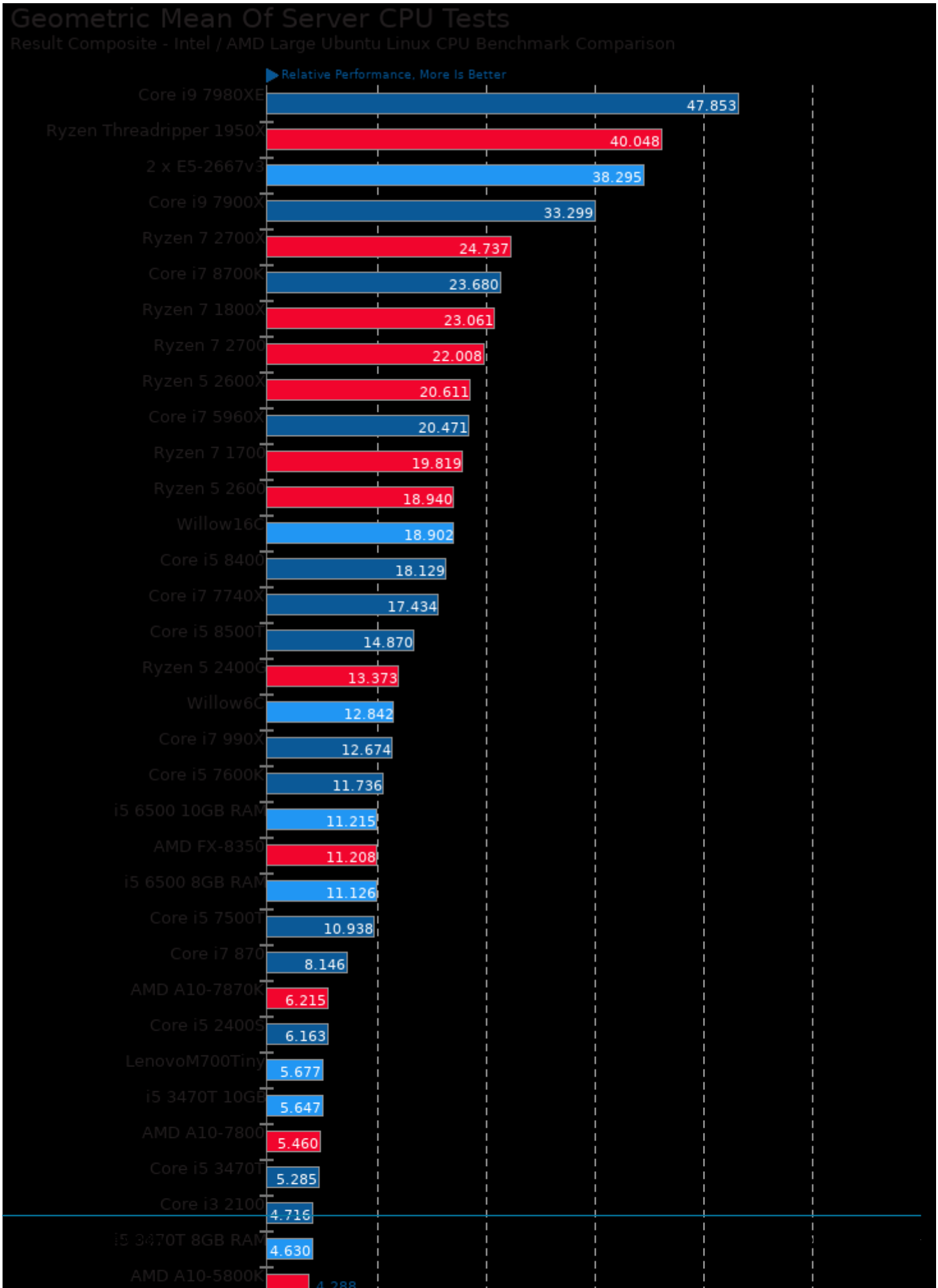
Geometric mean based upon tests: pts/aobench, pts/ttsiod-renderer, pts/encode-mp3 and pts/encode-flac


Geometric Mean Of Encoding Tests
Result Composite - Intel / AMD Large Ubuntu Linux CPU Benchmark Comparison
Relative Performance, More Is Better
Core i7 8700K 8.616
Core i7 7740X 8.165
Core i9 7900X 7.645
Ryzen 7 2700X 7.645
Core i5 7600K 7.564
Core i5 8400 7.522
Ryzen 5 2600X 7.448
Ryzen 7 1800X 7.187
Ryzen 7 2700 7.151
Ryzen Threadripper 1950X 6.988
Ryzen 5 2600 6.928
Ryzen 5 2400G 6.901
Ryzen 7 1700 6.485
Core i9 7980XE 6.260
Core i5 8500T 6.047
i5 6500 10GB RAM 5.941
i5 6500 8GB RAM 5.923
Willow16C 5.263
Core i7 5960X 5.263
Willow6C 5.175
i5 3470T 10GB 5.137
Core i5 3470T 4.958
Pentium G3258 4.954
i5 3470T 8GB RAM 4.721
Core i5 2400S 4.703
AMD FX-8350 4.524
AMD A10-5800K 4.506
Core i7 990X 4.460
Core i3 2100 4.438
AMD A10-7870K 4.364
AMD A6-7400K 4.352
AMD A10-7800 3.920
Core i7 870 3.729
Core i5 7500T 3.169

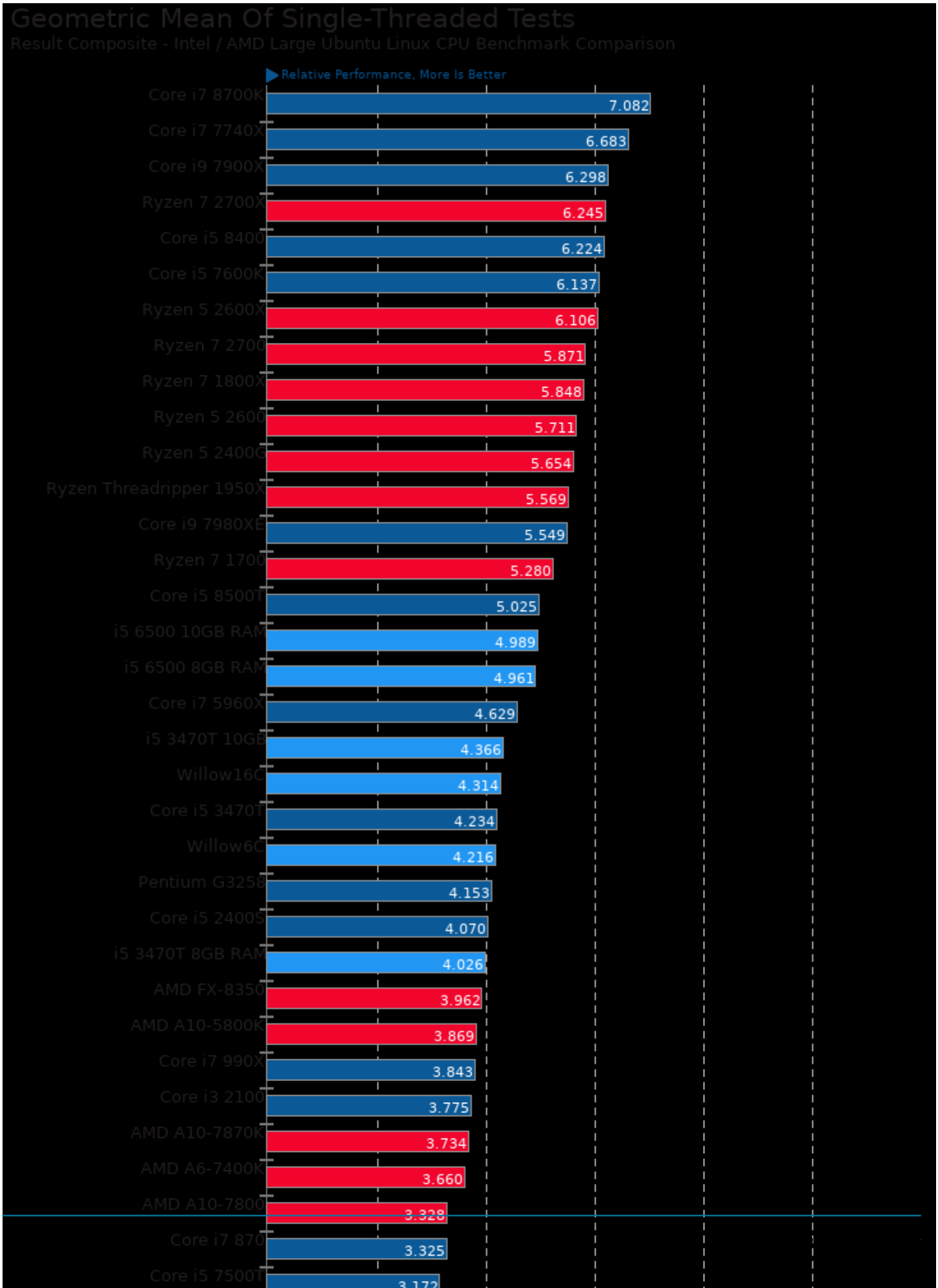
Geometric mean based upon tests: pts/encode-mp3 and pts/encode-flac


Geometric Mean Of Multi-Core Tests
Result Composite - Intel / AMD Large Ubuntu Linux CPU Benchmark Comparison
Relative Performance, More Is Better
Core i9 7980XE 29.711
Ryzen Threadripper 1950X 27.735
2 x E5-2667v3 26.831
Core i9 7900X 24.714
Ryzen 7 2700X 19.058
Core i7 8700K 18.834
Ryzen 7 1800X 17.812
Ryzen 7 2700 17.112
Ryzen 5 2600X 16.385
Core i7 5960X 15.946
Ryzen 7 1700 15.488
Ryzen 5 2600 15.094
Willow16C 15.042
Core i5 8400 14.786
Core i7 7740X 14.739
Core i5 8500T 12.706
Ryzen 5 2400G 11.425
Willow6C 10.971
Core i5 7600K 10.637
Core i7 990X 10.231
i5 6500 10GB RAM 10.204
i5 6500 8GB RAM 10.120
Core i5 7500T 9.700
AMD FX-8350 9.043
Core i7 870 6.980
Core i5 2400S 5.817
AMD A10-7870K 5.551
i5 3470T 10GB 5.533
LenovoM700Tiny 5.416
Core i5 3470T 5.207
AMD A10-7800 4.897
i5 3470T 8GB RAM 4.653
Core i3 2100 4.649
Pentium G3258 4.285

Geometric mean based upon tests: pts/stockfish, pts/m-queens, pts/rodinia, pts/asmfish, pts/compress-7zip, pts/compress-zstd, pts/build-php, pts/build-linux-kernel, pts/aobench and pts/ttsiod-renderer


Geometric Mean Of Server CPU Tests
Result Composite - Intel / AMD Large Ubuntu Linux CPU Benchmark Comparison
Relative Performance, More Is Better
Core i9 7980XE 47.853
Ryzen Threadripper 1950X 40.048
2 x E5-2667v3 38.295
Core i9 7900X 33.299
Ryzen 7 2700X 24.737
Core i7 8700K 23.680
Ryzen 7 1800X 23.061
Ryzen 7 2700 22.008
Ryzen 5 2600X 20.611
Core i7 5960X 20.471
Ryzen 7 1700 19.819
Ryzen 5 2600 18.940
Willow16C 18.902
Core i5 8400 18.129
Core i7 7740X 17.434
Core i5 8500T 14.870
Ryzen 5 2400G 13.373
Willow6C 12.842
Core i7 990X 12.674
Core i5 7600K 11.736
i5 6500 10GB RAM 11.215
AMD FX-8350 11.208
i5 6500 8GB RAM 11.126
Core i5 7500T 10.938
Core i7 870 8.146
AMD A10-7870K 6.215
Core i5 2400S 6.163
LenovoM700Tiny 5.677
i5 3470T 10GB 5.647
AMD A10-7800 5.460
Core i5 3470T 5.285
Core i3 2100 4.716
i5 3470T 8GB RAM 4.630
AMD A10-5800K 4.288

Geometric mean based upon tests: pts/rodinia, pts/compress-7zip, pts/stockfish, pts/asmfish, pts/build-linux-kernel, pts/build-php, pts/compress-zstd, pts/m-queens and pts/openssl


Geometric Mean Of Single-Threaded Tests
Result Composite - Intel / AMD Large Ubuntu Linux CPU Benchmark Comparison
Relative Performance, More Is Better
Core i7 8700K 7.082
Core i7 7740X 6.683
Core i9 7900X 6.298
Ryzen 7 2700X 6.245
Core i5 8400 6.224
Core i5 7600K 6.137
Ryzen 5 2600X 6.106
Ryzen 7 2700 5.871
Ryzen 7 1800X 5.848
Ryzen 5 2600 5.711
Ryzen 5 2400G 5.654
Ryzen Threadripper 1950X 5.569
Core i9 7980XE 5.549
Ryzen 7 1700 5.280
Core i5 8500T 5.025
i5 6500 10GB RAM 4.989
i5 6500 8GB RAM 4.961
Core i7 5960X 4.629
i5 3470T 10GB 4.366
Willow16C 4.314
Core i5 3470T 4.234
Willow6C 4.216
Pentium G3258 4.153
Core i5 2400S 4.070
i5 3470T 8GB RAM 4.026
AMD FX-8350 3.962
AMD A10-5800K 3.869
Core i7 990X 3.843
Core i3 2100 3.775
AMD A10-7870K 3.734
AMD A6-7400K 3.660
AMD A10-7800 3.328
Core i7 870 3.325
Core i5 7500T 3.172

Geometric mean based upon tests: pts/polybench-c, pts/fhourstones, pts/scimark2, pts/encode-flac and pts/encode-mp3

This file was automatically generated via the Phoronix Test Suite benchmarking software on Thursday, 28 March 2024 14:25.