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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:

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

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 A10-5800K

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

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

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 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

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

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

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

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 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

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 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 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

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

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 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

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 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

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

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 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 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

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

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

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

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

	AMD E-350	AMD A6-7400K	AMD A10-5800K	AMD A10-7800	AMD A10-7870K	AMD A12-9800	AMD Athlon II X3 425	AMD FX-8350	Ryzen 5 2400G	Ryzen 5 2600	Ryzen 5 2600X	Ryzen 7 1700	Ryzen 7 1800X	Ryzen 7 2700	Ryzen 7 2700X	Ryzen Threadripper 1900	Intel Core 2 Duo E8400	Pentium G3258	Core i3 2100	Core i5 2400S	Core i5 7600K	Core i5 8400	Core i7 5960X	Core i7 7740X	Core i7 7700	Core i7 8700K	Core i7 9900X	Core i9 7900X	Core i9 7980XE	Willow 6C	Willow 16C	Core i5 8500T	Core i5 4570T	i5 3470T Gigabyte RAM	i5 3470T Gigabyte RAM	2x E5-2667v3	i5 6500 8GB RAM	i5 6500 Gigabyte RAM	Lenovo M700 Tiny
7-Zip Compression - C.S.T (MIP	484	880	1085	1164	4496	2402	1298	1313	3357	3375	3752	3767	3740	4738	7595	5585	6894	8594	1060	1064	2783	3202	2629	1648	4872	2518	6139	9330	1913	1397	2033	2934	8059	1018	1678	1386	1750
Normalized	5.19%	9.49%	10.9%	12.47%	4.81%	23.9%	20.5%	33.5%	35.8%	36.1%	40.1%	39.9%	43.2%	79.0%	5.95%	7.36%	9.2%	11.36%	18.67%	29.81%	39.84%	31.72%	17.66%	43.7%	27.04%	66.28%	100%	20.53%	39.95%	21.81%	10%	8.63%	10.84%	72.64%	14.57%	14.54%	8.03%
Standard Deviation	0.2%	3.5%	1.4%	0.9%	0.7%	0.5%	0.7%	0.3%	0.6%	0.5%	0.1%	0.2%	0.5%	0.3%	0.1%	1.6%		0.1%	0.2%	0.2%	0.9%	0.3%	0.8%	1%	1.7%	0.4%	0.1%	1.2%	0.9%	0.6%	1%	2.4%	1.3%	0.7%	0.3%	0.7%	2.4%

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

FLAC Audio Encoding - WAV To FLAC	94.36	17.01	16.07	18.69	16.88	25.60	16.03	10.47	10.40	9.72	11.13	10.22	10.11	9.45	9.85	9.55	27.48	14.39	15.73	14.86	8.52	8.53	13.06	7.80	19.04	7.44	16.02	18.58	9.88	12.56	12.54	11.43	15.30	14.53	12.23	13.05
Normalized	7.88%	43.4%	46.3%	39.8%	44.0%	29.0%	46.4%	71.0%	71.5%	76.5%	66.8%	74.2%	73.5%	78.7%	75.5%	27.0%	51.7%	47.3%	50.0%	87.3%	87.2%	56.9%	95.3%	39.0%	10.0%	46.4%	87.3%	75.3%	59.2%	59.3%	65.6%	49.6%	47.0%	51.2%	56.9%	61.3%	61.3%	57.2%
Standard Deviation	0%	0.4%	0.4%	0.5%	0.7%	0.2%	0.3%	0.4%	0.1%	0.2%	0.5%	0.4%	0.4%	0.4%	0.2%	0.3%	0.2%	0.6%	0.7%	0.6%	0.3%	0.9%	0.5%	0.6%	0.3%	0.7%	0.8%	0.5%	0.2%	0.8%	0.4%	0.4%	0.6%	0.2%	0.4%	0.5%	0.6%	0.6%
LAME MP3 Encoding - WAV To MP3	4.26	1.35	1.53	1.91	1.57	2.34	1.40	8.75	8.74	8.09	9.23	8.44	8.44	7.90	9.07	1.76	1.58	1.40	1.87	8.59	9.04	1.20	8.39	1.68	7.90	1.69	8.75	1.12	1.29	1.55	1.18	1.83	1.33	3.59	1.02	1.07	4.97
Normalized	17.0%	58.5%	59.0%	52.0%	58.2%	35.3%	59.4%	90.2%	90.3%	97.6%	84.7%	93.1%	93.6%	10.0%	87.1%	44.8%	63.9%	56.1%	59.5%	88.2%	87.3%	65.5%	94.1%	47.9%	10.0%	57.7%	90.1%	70.1%	60.9%	62.9%	75.0%	66.7%	63.7%	69.4%	21.9%	77.0%	77.5%	15.8
Standard Deviation	0.2%	0.5%	0.1%	0.3%	0.3%	0.1%	0.2%	0.2%	0.2%	0.1%	0.2%	0.6%	0.5%	0.2%	0.8%	0.1%	0.1%	0.1%	0.1%	0.2%	0.1%	0.6%	0.1%	0.6%	0.2%	0.1%	0.9%	0.3%	0.5%	0.8%	0.3%	0.1%	0.5%	0.3%	0%	0.1%	0.1%	0.7%
m-queens - Time To Solve	16.58	6.52	8.28	7.60	7.04	4.07	9.72							43.76	8.04	8.13	9.59	9.13	2.32		8.04	4.46	3.78		1.37	17.51	9.26	0.04	0.15	5.88	8.55	3.96	0.09	9.57	7.35	3.01	1.19	8.61
Normalized	2.64%	6.65%	8.28%	11.9%	13.3%	8.51%	23.0%							10.0%	4.93%	7.13%	8.27%	10.1%	18.4%		40.5%	26.6%	14.9%		25.5%	58.4%	87.0%	21.8%	41.4%	20.9%	8.87%	7.81%	9.53%	84.5%	14.4%	14.5%	8.61%
Standard Deviation					8%		7%											9%	4%		1%	1%	%		4%	2%	7%	4%	7%	6%				8%	4%	1%	

Intel / AMD Large Ubuntu Linux CPU Benchmark Comparison

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Intel / AMD Large Ubuntu Linux CPU Benchmark Comparison

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Timed Linux Kernel Compilation - Time To Compile	243.84	148.39	83.91	52.16	39.20	28.15	23.16	19.50	16.04	14.84	13.84	12.87	12.07	11.42	10.62	10.15	9.90	9.43	9.05	8.80	8.30	8.03	7.55	7.15	6.95	6.83
Normalized	1.5%	5.24%	7.44%	10.57%	11.98%	6.99%	21.4%	22.4%	34.2%	37.8%	37.3%	42.4%	40.7%	46.3%	76.1%	5.73%	8.52%	8.15%	11.6%	22.7%	31.2%	40.6%	33.2%	15.2%	44.4%	23.2%	64.1%	100%
Standard Deviation	0.4%	0.4%	0.7%	0.7%	0.9%	0.6%	1.4%	1.1%	1.3%	1.3%	1.6%	1.4%	1.7%	1.5%	2.9%	0.4%	0.5%	0.6%	0.6%	0.8%	1.1%	1.2%	1%	0.7%	1.3%	2.3%	2.3%	3.3%
Timed PHP Compilation - Time To Compile (sec)	142.70	90.28	63.61	49.23	39.62	30.48	24.26	20.58	17.36	15.08	13.59	12.41	11.47	10.76	9.91	9.19	8.59	8.11	7.71	7.31	7.03	6.74	6.46	6.15	5.87	5.61	4.61	11.12
Normalized	3.63%	11.5%	17.2%	21.3%	24.3%	14.2%	42.5%	43.4%	58.8%	63.9%	55.1%	62.3%	61.4%	68.9%	81.3%	13.6%	17.8%	18.1%	25.7%	44.4%	66.4%	61.0%	68.2%	32.7%	81.7%	42.5%	87.7%	100%
Standard Deviation	0%	0.1%	6.5%	0.2%	0.1%	0.1%	0.3%	0.7%	0.7%	0.4%	0.6%	0.3%	0.4%	%	0.9%	%	0.6%	0.1%	0.1%	0.3%	0.4%	0.5%	0.6%	0.5%	0.4%	0.1%	0.3%	0.5%

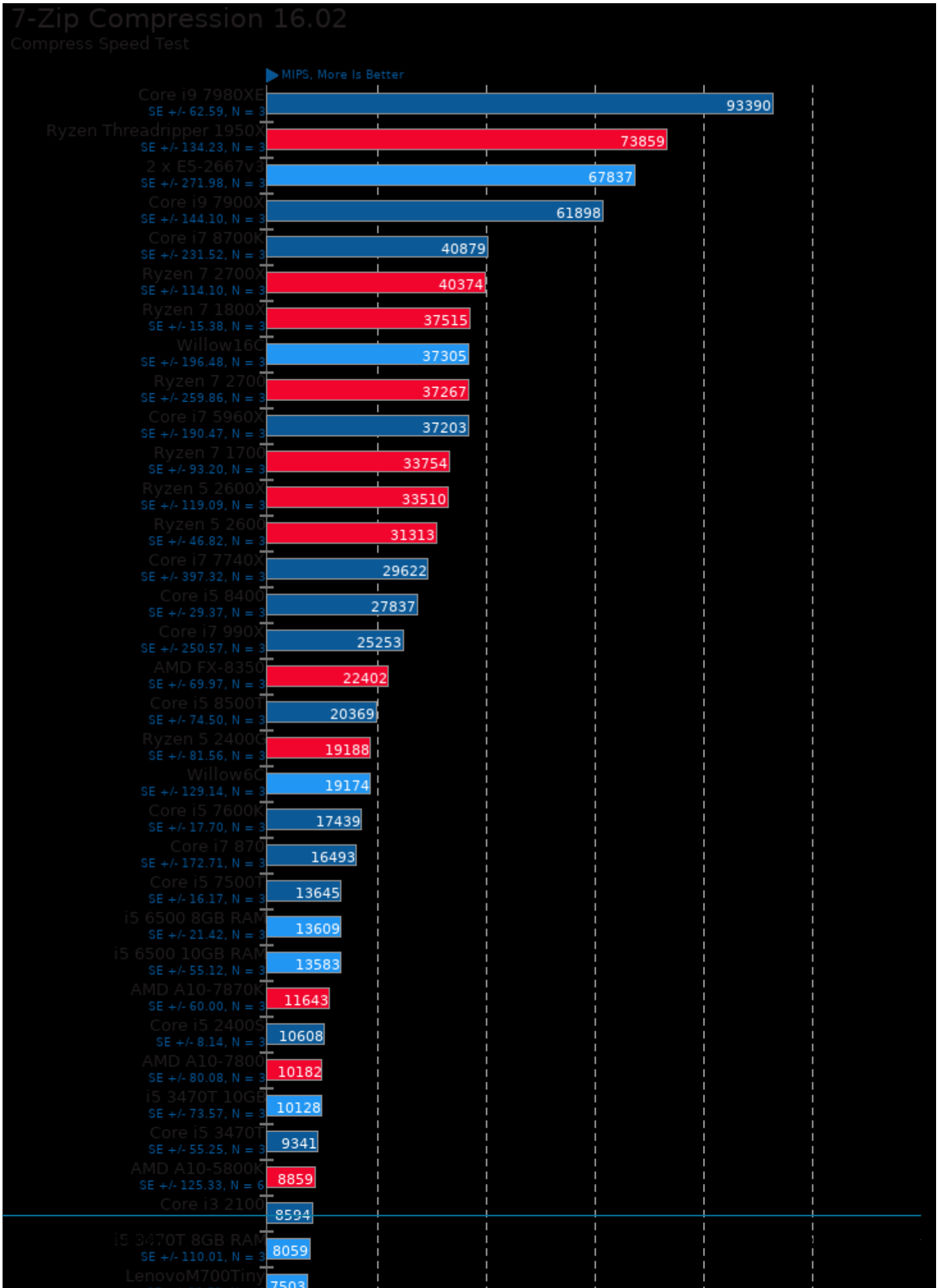
Intel / AMD Large Ubuntu Linux CPU Benchmark Comparison

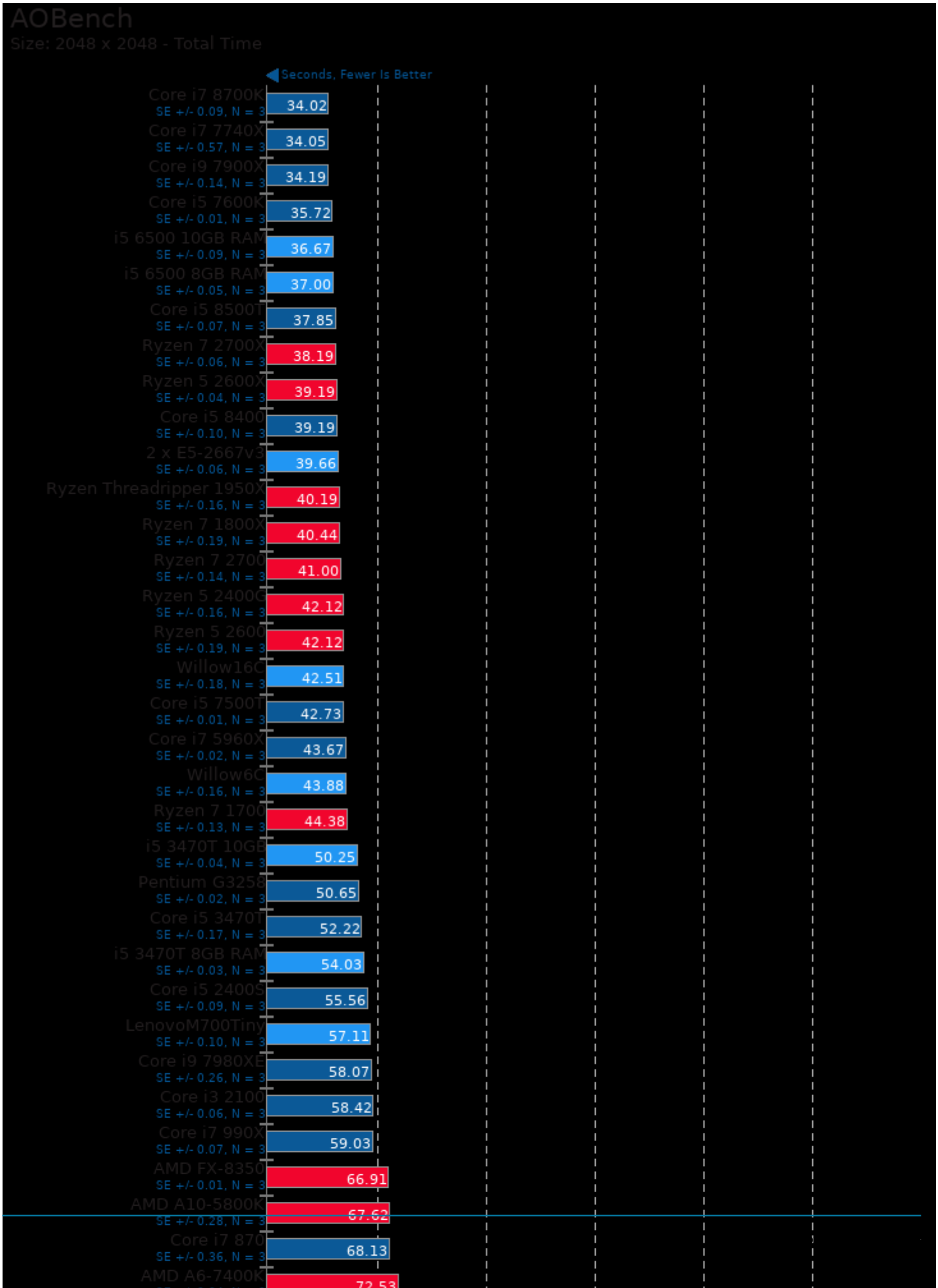
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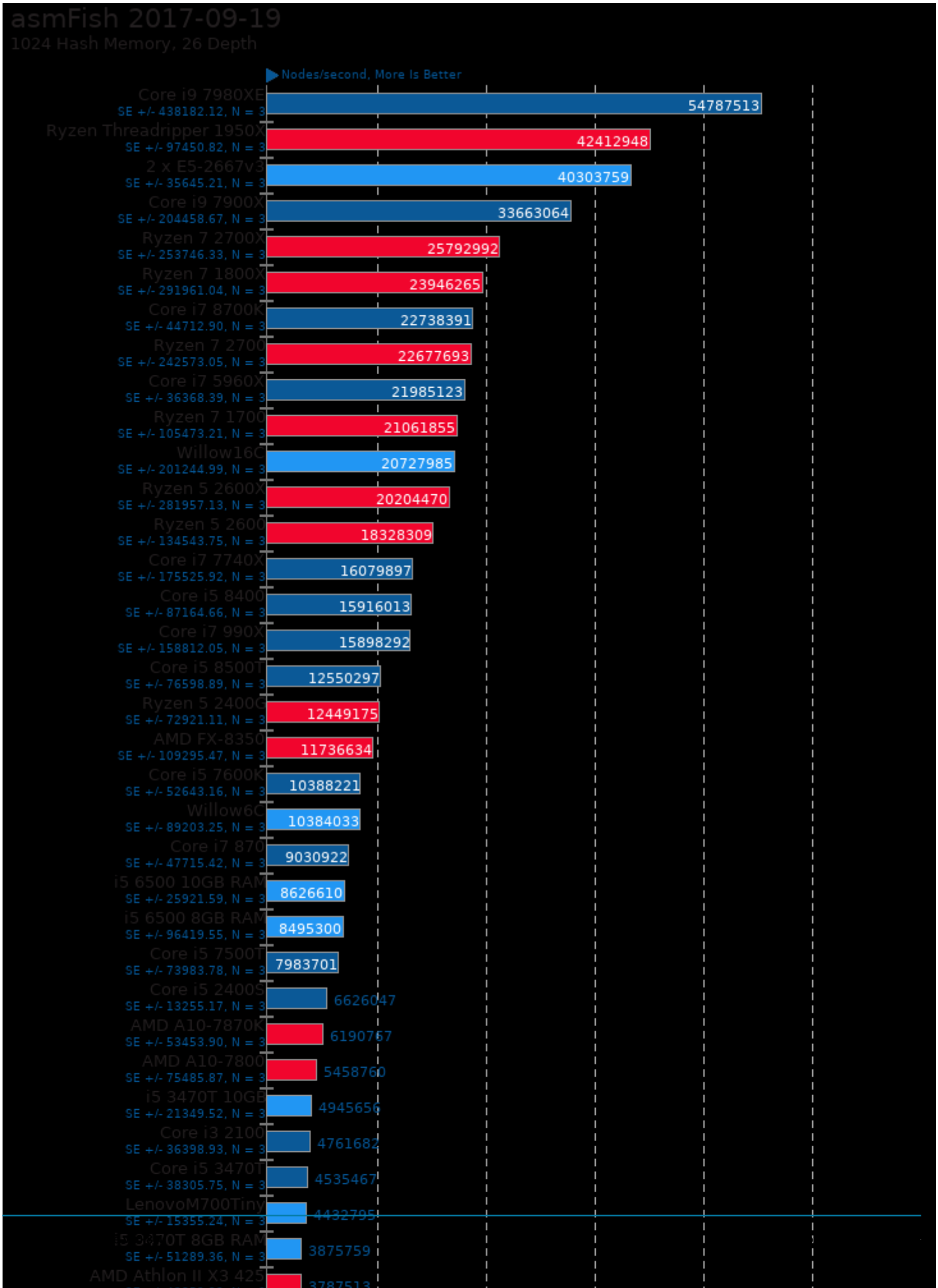
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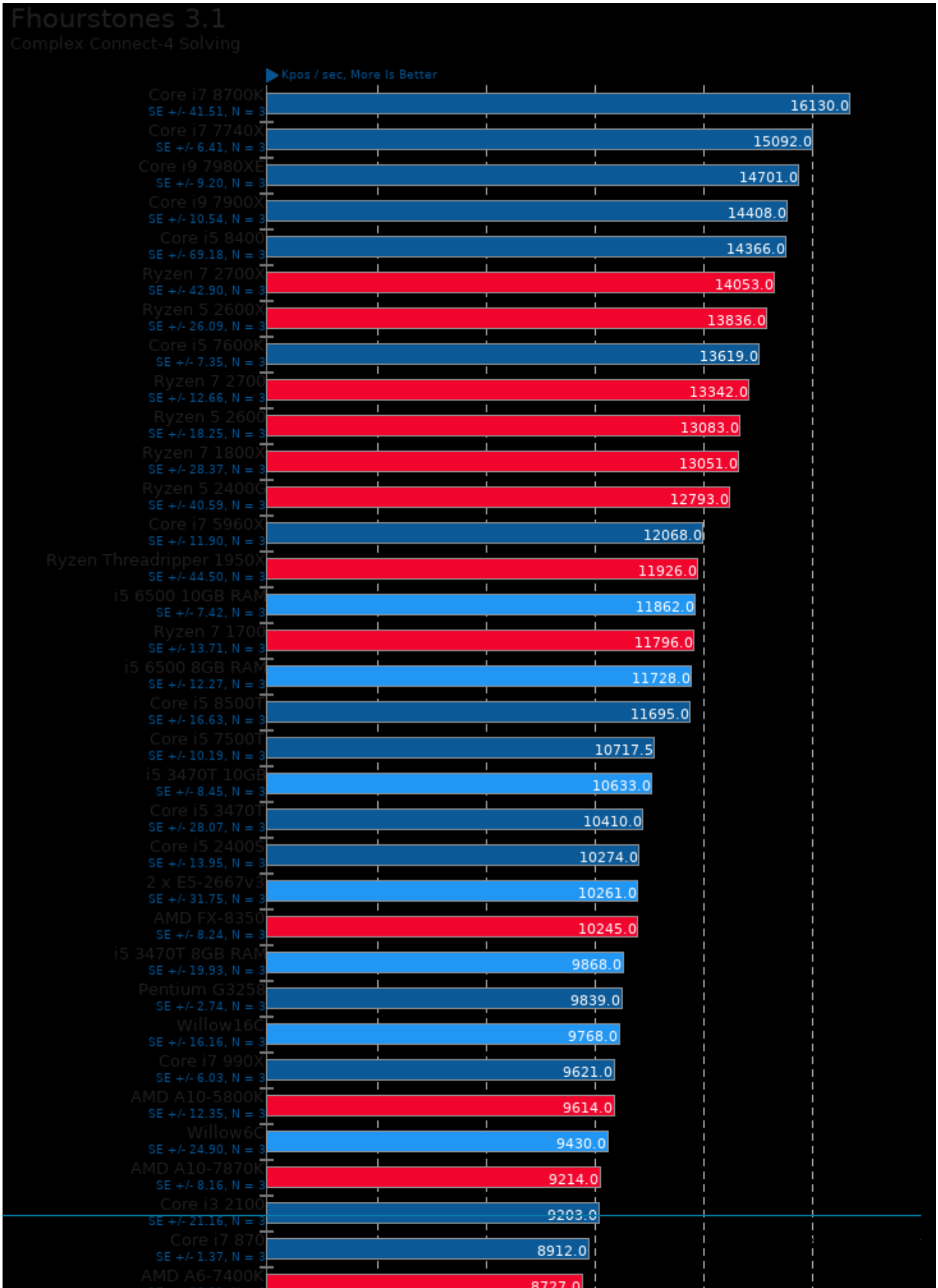
Intel / AMD Large Ubuntu Linux CPU Benchmark Comparison

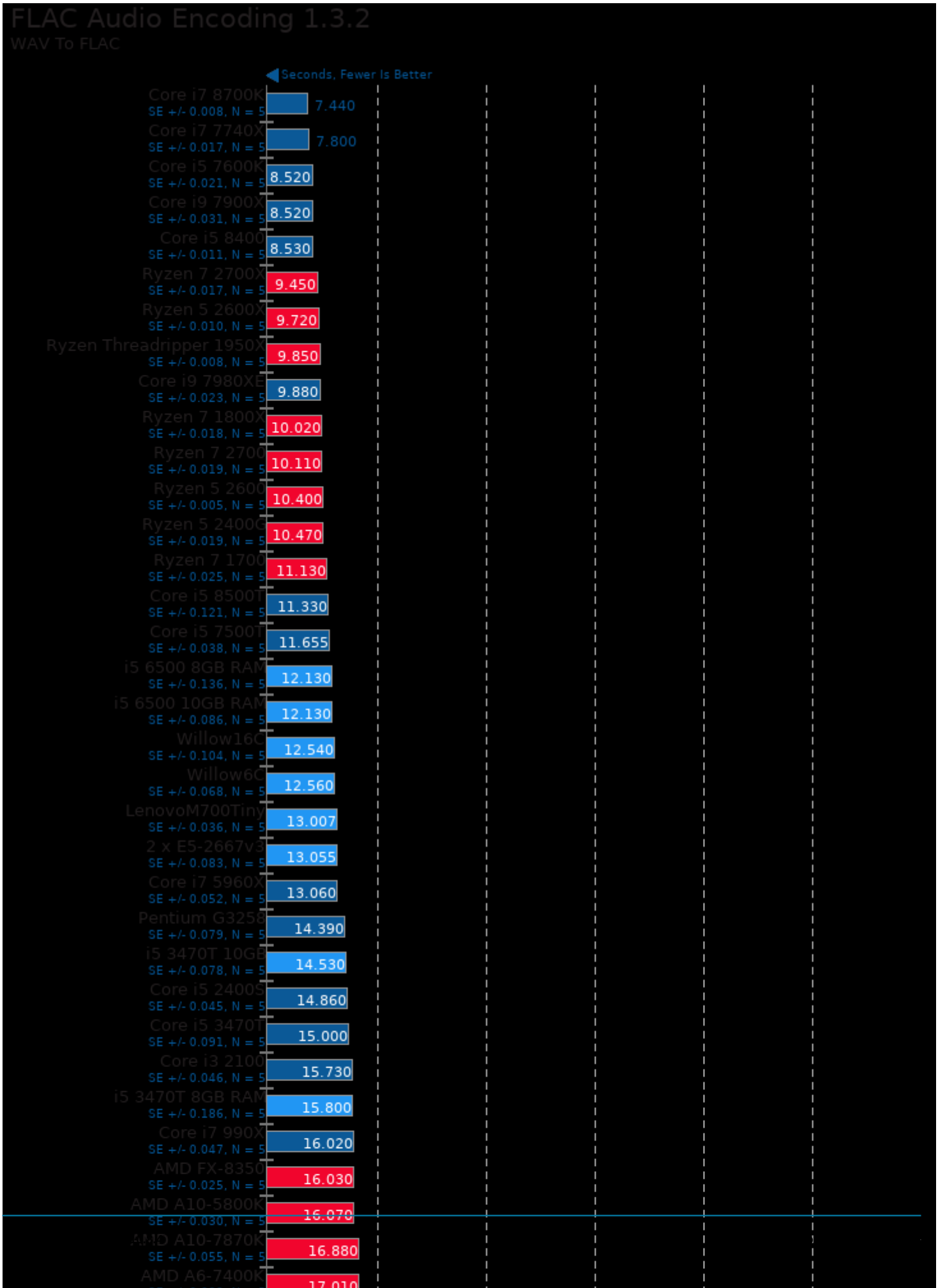
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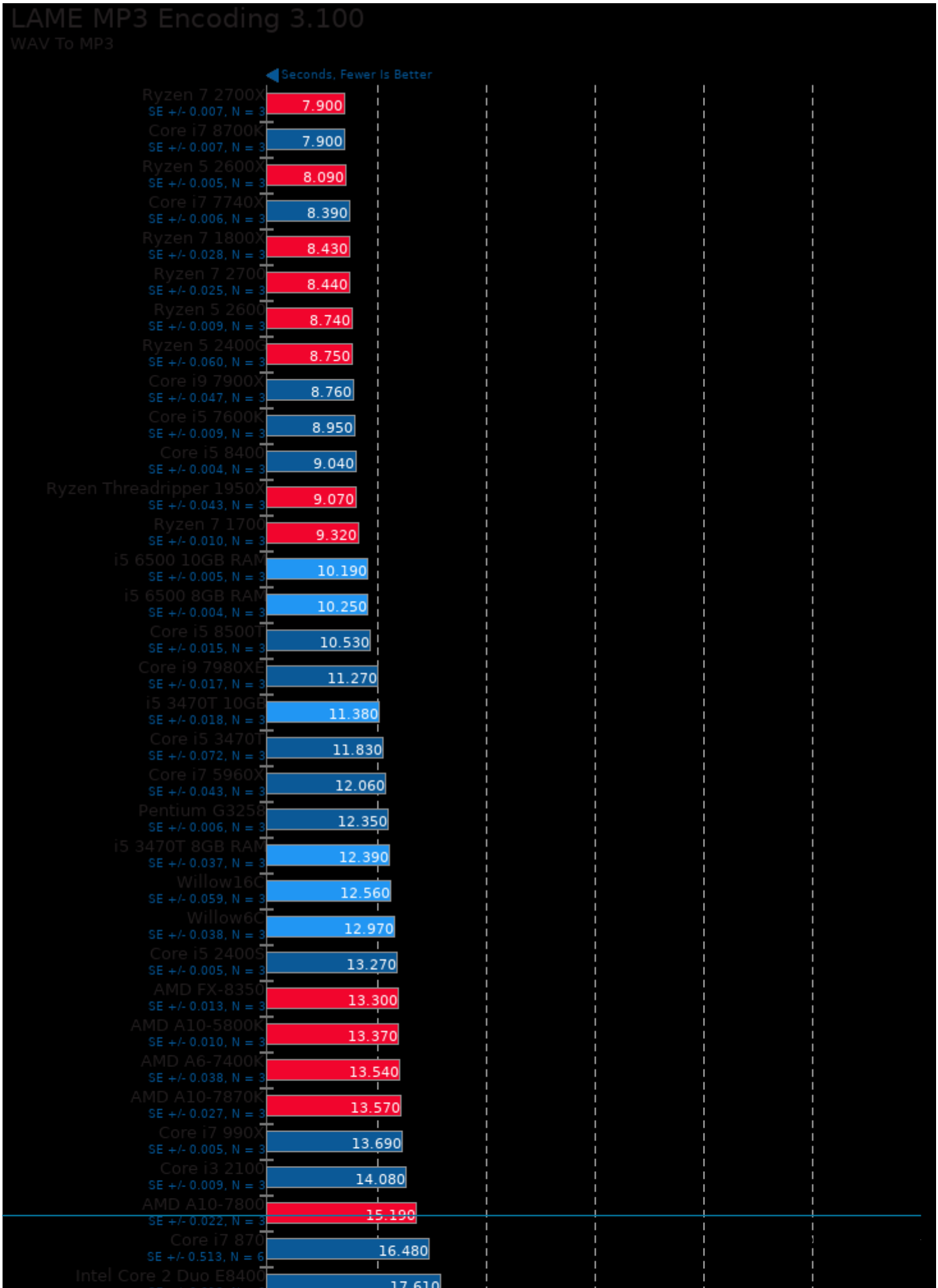

7-Zip Compression 16.02
Compress Speed Test
MIPS, More Is Better
Core i9 7980XE
SE +/- 62.59, N = 3
93390
Ryzen Threadripper 1950X
SE +/- 134.23, N = 3
73859
2 x E5-2667v3
SE +/- 271.98, N = 3
67837
Core i9 7900X
SE +/- 144.10, N = 3
61898
Core i7 8700K
SE +/- 231.52, N = 3
40879
Ryzen 7 2700X
SE +/- 114.10, N = 3
40374
Ryzen 7 1800X
SE +/- 15.38, N = 3
37515
Willow16C
SE +/- 196.48, N = 3
37305
Ryzen 7 2700
SE +/- 259.86, N = 3
37267
Core i7 5960X
SE +/- 190.47, N = 3
37203
Ryzen 7 1700
SE +/- 93.20, N = 3
33754
Ryzen 5 2600X
SE +/- 119.09, N = 3
33510
Ryzen 5 2600
SE +/- 46.82, N = 3
31313
Core i7 7740X
SE +/- 397.32, N = 3
29622
Core i5 8400
SE +/- 29.37, N = 3
27837
Core i7 990X
SE +/- 250.57, N = 3
25253
AMD FX-8350
SE +/- 69.97, N = 3
22402
Core i5 8500T
SE +/- 74.50, N = 3
20369
Ryzen 5 2400G
SE +/- 81.56, N = 3
19188
Willow6C
SE +/- 129.14, N = 3
19174
Core i5 7600K
SE +/- 17.70, N = 3
17439
Core i7 870
SE +/- 172.71, N = 3
16493
Core i5 7500T
SE +/- 16.17, N = 3
13645
i5 6500 8GB RAM
SE +/- 21.42, N = 3
13609
i5 6500 10GB RAM
SE +/- 55.12, N = 3
13583
AMD A10-7870K
SE +/- 60.00, N = 3
11643
Core i5 2400S
SE +/- 8.14, N = 3
10608
AMD A10-7800
SE +/- 80.08, N = 3
10182
i5 3470T 10GB
SE +/- 73.57, N = 3
10128
Core i5 3470T
SE +/- 55.25, N = 3
9341
AMD A10-5800K
SE +/- 125.33, N = 6
8859
Core i3 2100
8594
i5 3470T 8GB RAM
SE +/- 110.01, N = 3
8059
LenovoM700Tiny
7503

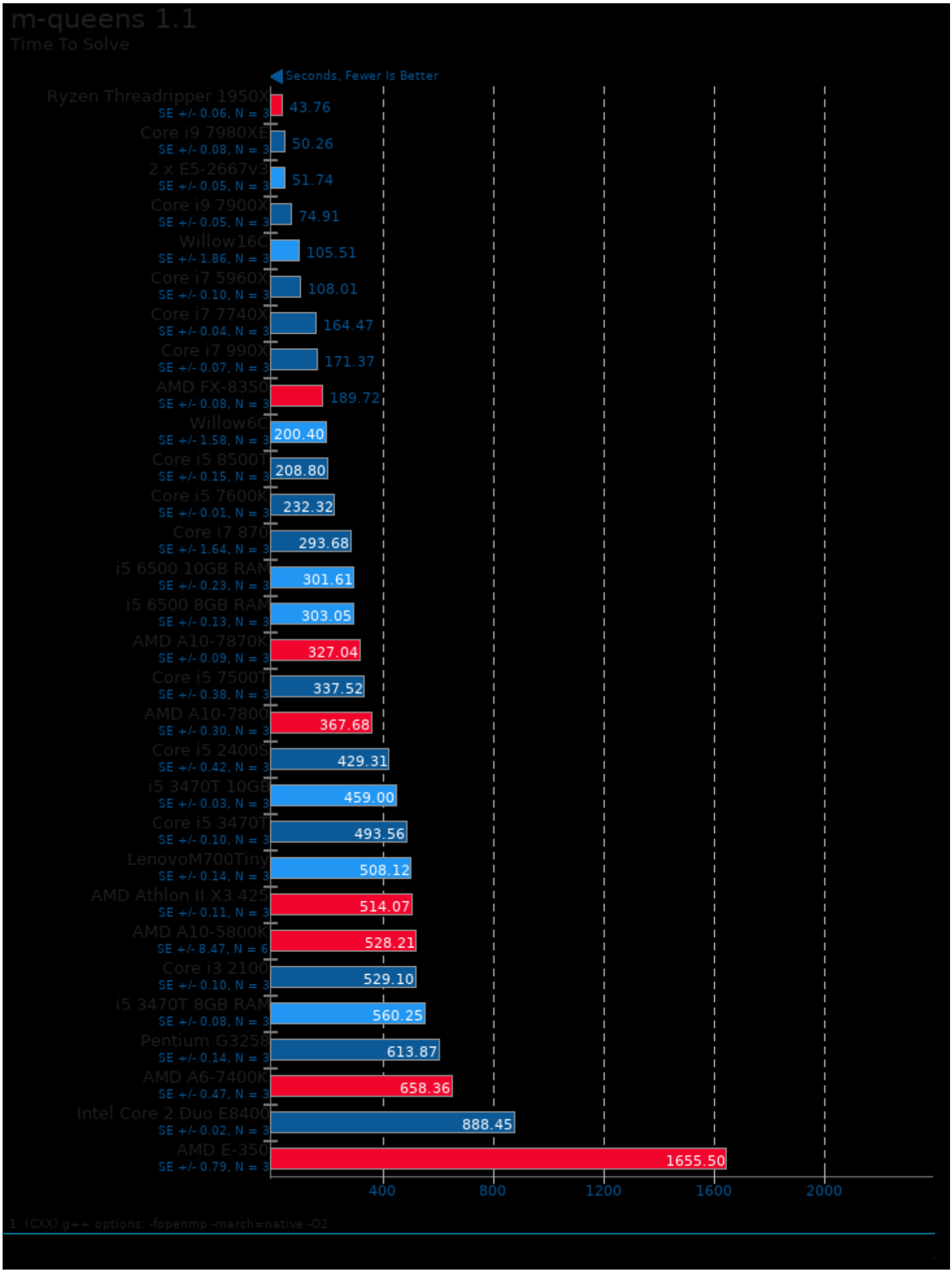

AOBench
Size: 2048 x 2048 - Total Time
Seconds, Fewer Is Better
Core i7 8700K
SE +/- 0.09, N = 3
34.02
Core i7 7740X
SE +/- 0.57, N = 3
34.05
Core i9 7900X
SE +/- 0.14, N = 3
34.19
Core i5 7600K
SE +/- 0.01, N = 3
35.72
i5 6500 10GB RAM
SE +/- 0.09, N = 3
36.67
i5 6500 8GB RAM
SE +/- 0.05, N = 3
37.00
Core i5 8500T
SE +/- 0.07, N = 3
37.85
Ryzen 7 2700X
SE +/- 0.06, N = 3
38.19
Ryzen 5 2600X
SE +/- 0.04, N = 3
39.19
Core i5 8400
SE +/- 0.10, N = 3
39.19
2 x E5-2667v3
SE +/- 0.06, N = 3
39.66
Ryzen Threadripper 1950X
SE +/- 0.16, N = 3
40.19
Ryzen 7 1800X
SE +/- 0.19, N = 3
40.44
Ryzen 7 2700
SE +/- 0.14, N = 3
41.00
Ryzen 5 2400G
SE +/- 0.16, N = 3
42.12
Ryzen 5 2600
SE +/- 0.19, N = 3
42.12
Willow16C
SE +/- 0.18, N = 3
42.51
Core i5 7500T
SE +/- 0.01, N = 3
42.73
Core i7 5960X
SE +/- 0.02, N = 3
43.67
Willow6C
SE +/- 0.16, N = 3
43.88
Ryzen 7 1700
SE +/- 0.13, N = 3
44.38
i5 3470T 10GB
SE +/- 0.04, N = 3
50.25
Pentium G3258
SE +/- 0.02, N = 3
50.65
Core i5 3470T
SE +/- 0.17, N = 3
52.22
i5 3470T 8GB RAM
SE +/- 0.03, N = 3
54.03
Core i5 2400S
SE +/- 0.09, N = 3
55.56
LenovoM700Tiny
SE +/- 0.10, N = 3
57.11
Core i9 7980XE
SE +/- 0.26, N = 3
58.07
Core i3 2100
SE +/- 0.06, N = 3
58.42
Core i7 990X
SE +/- 0.07, N = 3
59.03
AMD FX-8350
SE +/- 0.01, N = 3
66.91
AMD A10-5800K
SE +/- 0.28, N = 3
67.62
Core i7 870
SE +/- 0.36, N = 3
68.13
AMD A6-7400K
72.53

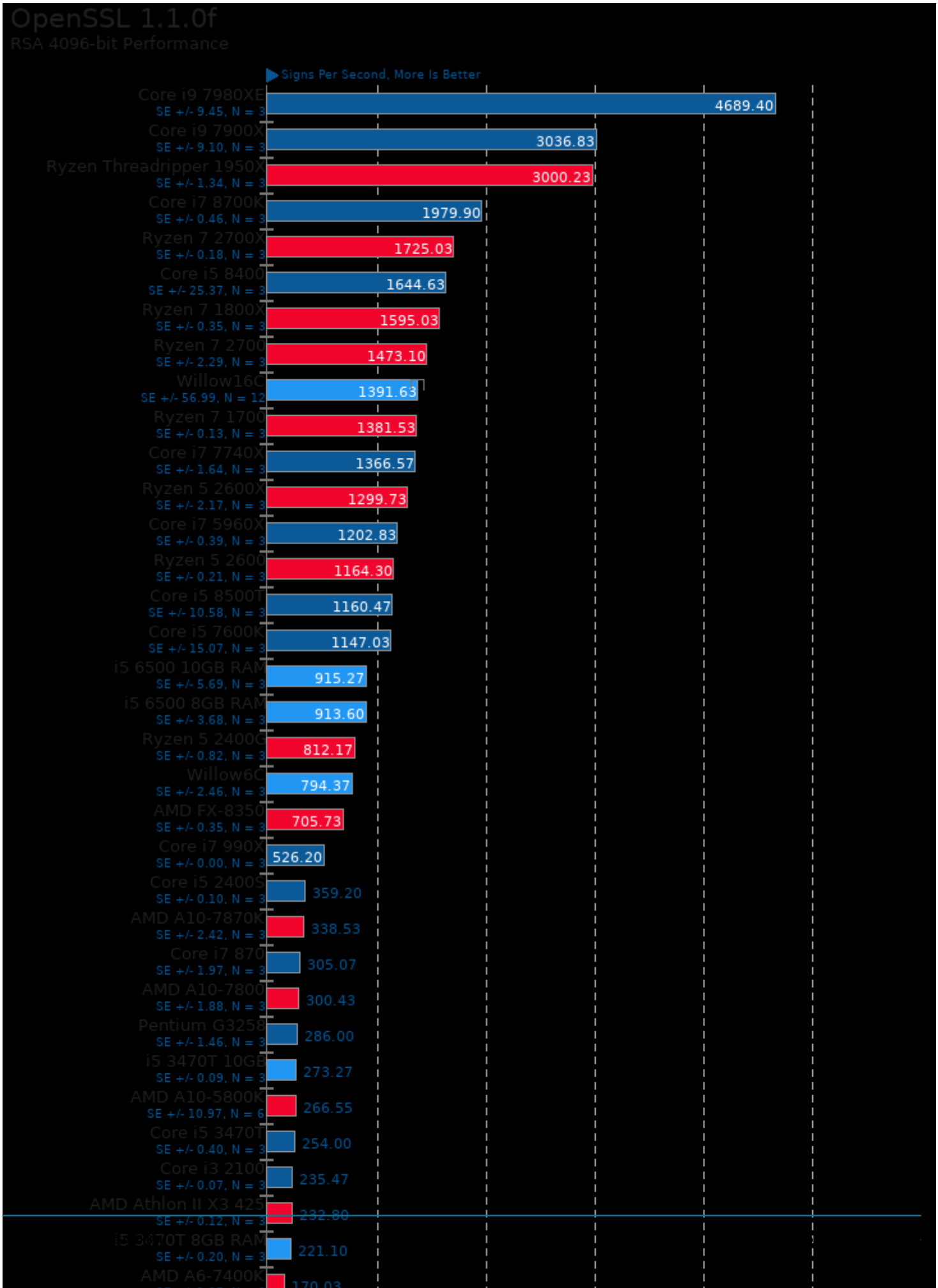

asmFish 2017-09-19
1024 Hash Memory, 26 Depth
Nodes/second, More Is Better
Core i9 7980XE
SE +/- 438182.12, N = 3
54787513
Ryzen Threadripper 1950X
SE +/- 97450.82, N = 3
42412948
2 x E5-2667v3
SE +/- 35645.21, N = 3
40303759
Core i9 7900X
SE +/- 204458.67, N = 3
33663064
Ryzen 7 2700X
SE +/- 253746.33, N = 3
25792992
Ryzen 7 1800X
SE +/- 291961.04, N = 3
23946265
Core i7 8700K
SE +/- 44712.90, N = 3
22738391
Ryzen 7 2700
SE +/- 242573.05, N = 3
22677693
Core i7 5960X
SE +/- 36368.39, N = 3
21985123
Ryzen 7 1700
SE +/- 105473.21, N = 3
21061855
Willow16C
SE +/- 201244.99, N = 3
20727985
Ryzen 5 2600X
SE +/- 281957.13, N = 3
20204470
Ryzen 5 2600
SE +/- 134543.75, N = 3
18328309
Core i7 7740X
SE +/- 175525.92, N = 3
16079897
Core i5 8400
SE +/- 87164.66, N = 3
15916013
Core i7 990X
SE +/- 158812.05, N = 3
15898292
Core i5 8500T
SE +/- 76598.89, N = 3
12550297
Ryzen 5 2400G
SE +/- 72921.11, N = 3
12449175
AMD FX-8350
SE +/- 109295.47, N = 3
11736634
Core i5 7600K
SE +/- 52643.16, N = 3
10388221
Willow6C
SE +/- 89203.25, N = 3
10384033
Core i7 870
SE +/- 47715.42, N = 3
9030922
i5 6500 10GB RAM
SE +/- 25921.59, N = 3
8626610
i5 6500 8GB RAM
SE +/- 96419.55, N = 3
8495300
Core i5 7500T
SE +/- 73983.78, N = 3
7983701
Core i5 2400S
SE +/- 13255.17, N = 3
6626047
AMD A10-7870K
SE +/- 53453.90, N = 3
6190767
AMD A10-7800
SE +/- 75485.87, N = 3
5458760
i5 3470T 10GB
SE +/- 21349.52, N = 3
4945656
Core i3 2100
SE +/- 36398.93, N = 3
4761682
Core i5 3470T
SE +/- 38305.75, N = 3
4535467
LenovoM700Tiny
SE +/- 15355.24, N = 3
4432795
i5 3470T 8GB RAM
SE +/- 51289.36, N = 3
3875759
AMD Athlon II X3 425
3787513

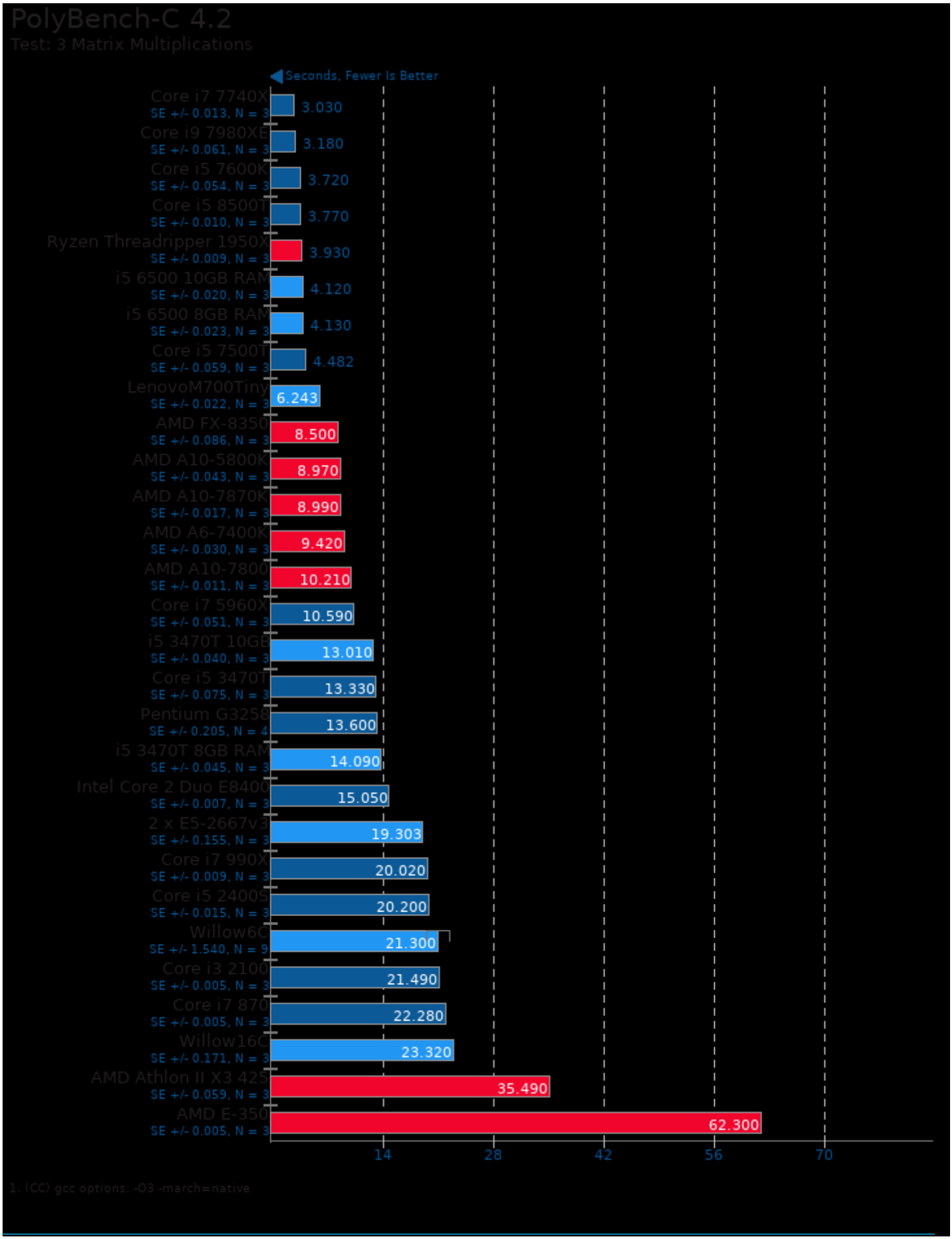

Fhourstones 3.1
Complex Connect-4 Solving
Kpos / sec, More Is Better
Core i7 8700K
SE +/- 41.51, N = 3
16130.0
Core i7 7740X
SE +/- 6.41, N = 3
15092.0
Core i9 7980XE
SE +/- 9.20, N = 3
14701.0
Core i9 7900X
SE +/- 10.54, N = 3
14408.0
Core i5 8400
SE +/- 69.18, N = 3
14366.0
Ryzen 7 2700X
SE +/- 42.90, N = 3
14053.0
Ryzen 5 2600X
SE +/- 26.09, N = 3
13836.0
Core i5 7600K
SE +/- 7.35, N = 3
13619.0
Ryzen 7 2700
SE +/- 12.66, N = 3
13342.0
Ryzen 5 2600
SE +/- 18.25, N = 3
13083.0
Ryzen 7 1800X
SE +/- 28.37, N = 3
13051.0
Ryzen 5 2400G
SE +/- 40.59, N = 3
12793.0
Core i7 5960X
SE +/- 11.90, N = 3
12068.0
Ryzen Threadripper 1950X
SE +/- 44.50, N = 3
11926.0
i5 6500 10GB RAM
SE +/- 7.42, N = 3
11862.0
Ryzen 7 1700
SE +/- 13.71, N = 3
11796.0
i5 6500 8GB RAM
SE +/- 12.27, N = 3
11728.0
Core i5 8500T
SE +/- 16.63, N = 3
11695.0
Core i5 7500T
SE +/- 10.19, N = 3
10717.5
i5 3470T 10GB
SE +/- 8.45, N = 3
10633.0
Core i5 3470T
SE +/- 28.07, N = 3
10410.0
Core i5 2400S
SE +/- 13.95, N = 3
10274.0
2 x E5-2667v3
SE +/- 31.75, N = 3
10261.0
AMD FX-8350
SE +/- 8.24, N = 3
10245.0
i5 3470T 8GB RAM
SE +/- 19.93, N = 3
9868.0
Pentium G3258
SE +/- 2.74, N = 3
9839.0
Willow16C
SE +/- 16.16, N = 3
9768.0
Core i7 990X
SE +/- 6.03, N = 3
9621.0
AMD A10-5800K
SE +/- 12.35, N = 3
9614.0
Willow6C
SE +/- 24.90, N = 3
9430.0
AMD A10-7870K
SE +/- 8.16, N = 3
9214.0
Core i3 2100
SE +/- 21.16, N = 3
9203.0
Core i7 870
SE +/- 1.37, N = 3
8912.0
AMD A6-7400K
8727.0

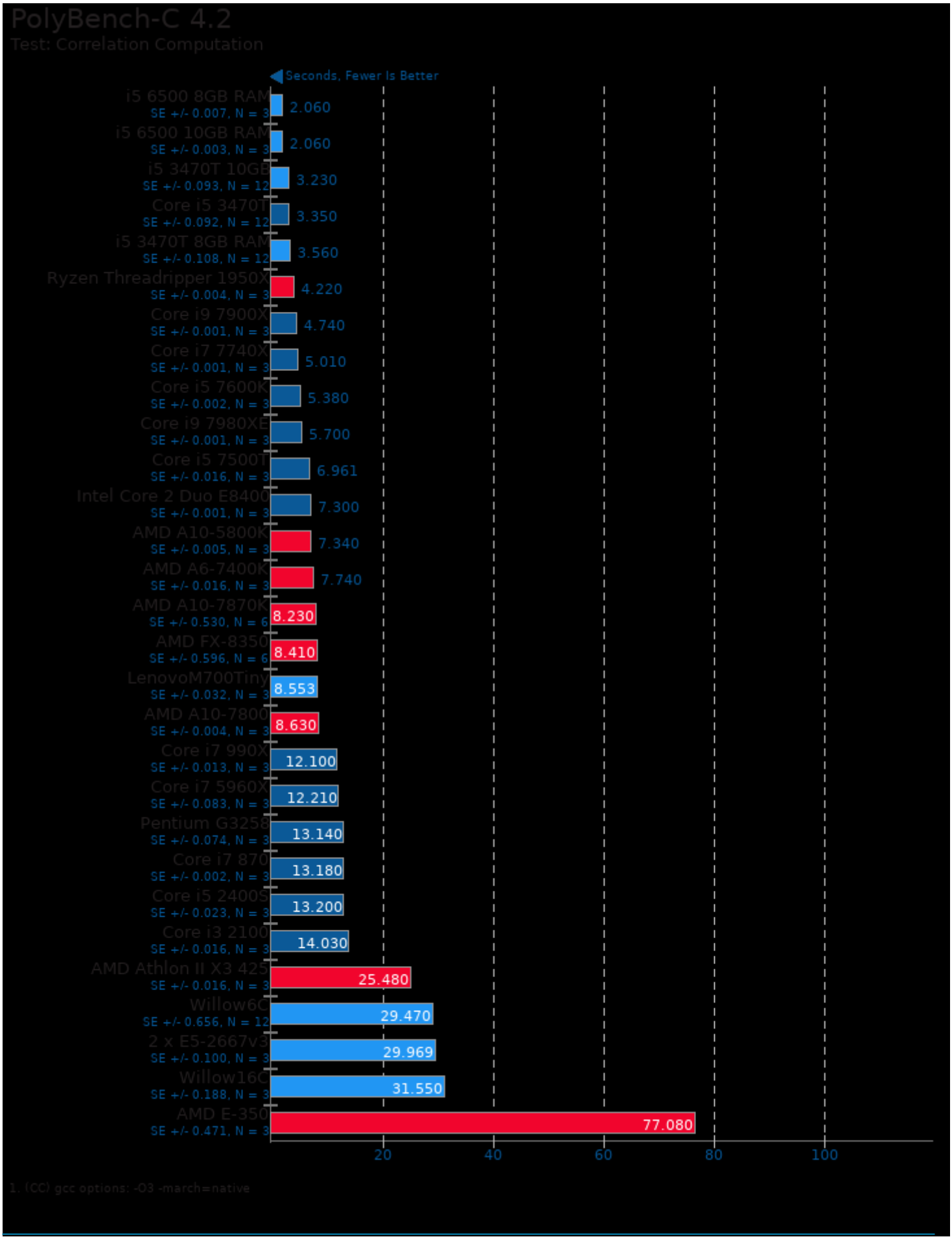

FLAC Audio Encoding 1.3.2
WAV To FLAC
Seconds, Fewer Is Better
Core i7 8700K
SE +/- 0.008, N = 5
7.440
Core i7 7740X
SE +/- 0.017, N = 5
7.800
Core i5 7600K
SE +/- 0.021, N = 5
8.520
Core i9 7900X
SE +/- 0.031, N = 5
8.520
Core i5 8400
SE +/- 0.011, N = 5
8.530
Ryzen 7 2700X
SE +/- 0.017, N = 5
9.450
Ryzen 5 2600X
SE +/- 0.010, N = 5
9.720
Ryzen Threadripper 1950X
SE +/- 0.008, N = 5
9.850
Core i9 7980XE
SE +/- 0.023, N = 5
9.880
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
Ryzen 5 2400G
SE +/- 0.019, N = 5
10.470
Ryzen 7 1700
SE +/- 0.025, N = 5
11.130
Core i5 8500T
SE +/- 0.121, N = 5
11.330
Core i5 7500T
SE +/- 0.038, N = 5
11.655
i5 6500 8GB RAM
SE +/- 0.136, N = 5
12.130
i5 6500 10GB RAM
SE +/- 0.086, N = 5
12.130
Willow16C
SE +/- 0.104, N = 5
12.540
Willow6C
SE +/- 0.068, N = 5
12.560
LenovoM700Tiny
SE +/- 0.036, N = 5
13.007
2 x E5-2667v3
SE +/- 0.083, N = 5
13.055
Core i7 5960X
SE +/- 0.052, N = 5
13.060
Pentium G3258
SE +/- 0.079, N = 5
14.390
i5 3470T 10GB
SE +/- 0.078, N = 5
14.530
Core i5 2400S
SE +/- 0.045, N = 5
14.860
Core i5 3470T
SE +/- 0.091, N = 5
15.000
Core i3 2100
SE +/- 0.046, N = 5
15.730
i5 3470T 8GB RAM
SE +/- 0.186, N = 5
15.800
Core i7 990X
SE +/- 0.047, N = 5
16.020
AMD FX-8350
SE +/- 0.025, N = 5
16.030
AMD A10-5800K
SE +/- 0.030, N = 5
16.070
AMD A10-7870K
SE +/- 0.055, N = 5
16.880
AMD A6-7400K
17.010

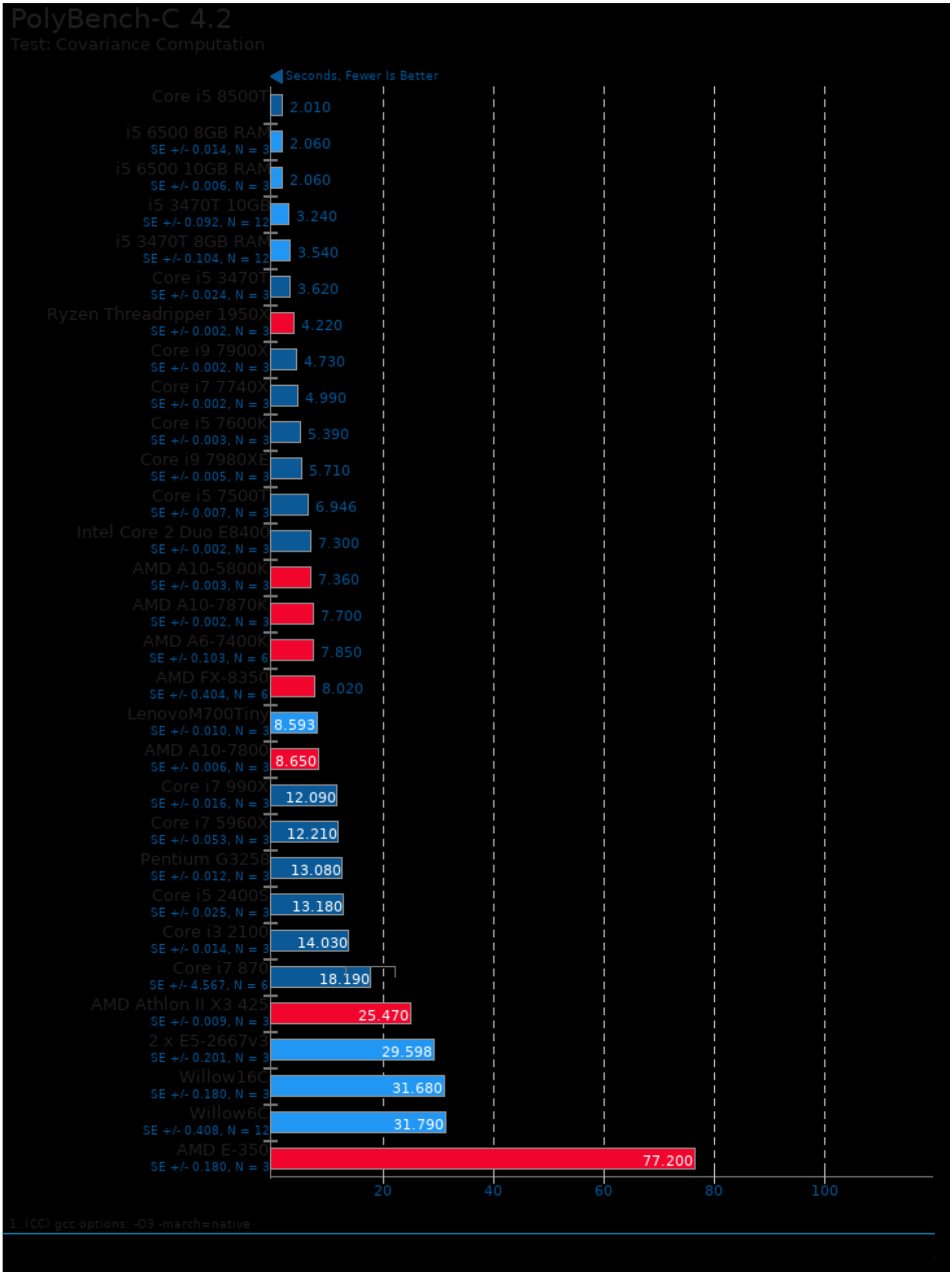

LAME MP3 Encoding 3.100
WAV To MP3
Seconds, Fewer Is Better
Ryzen 7 2700X
SE +/- 0.007, N = 3
7.900
Core i7 8700K
SE +/- 0.007, N = 3
7.900
Ryzen 5 2600X
SE +/- 0.005, N = 3
8.090
Core i7 7740X
SE +/- 0.006, N = 3
8.390
Ryzen 7 1800X
SE +/- 0.028, N = 3
8.430
Ryzen 7 2700
SE +/- 0.025, N = 3
8.440
Ryzen 5 2600
SE +/- 0.009, N = 3
8.740
Ryzen 5 2400G
SE +/- 0.060, N = 3
8.750
Core i9 7900X
SE +/- 0.047, N = 3
8.760
Core i5 7600K
SE +/- 0.009, N = 3
8.950
Core i5 8400
SE +/- 0.004, N = 3
9.040
Ryzen Threadripper 1950X
SE +/- 0.043, N = 3
9.070
Ryzen 7 1700
SE +/- 0.010, N = 3
9.320
i5 6500 10GB RAM
SE +/- 0.005, N = 3
10.190
i5 6500 8GB RAM
SE +/- 0.004, N = 3
10.250
Core i5 8500T
SE +/- 0.015, N = 3
10.530
Core i9 7980XE
SE +/- 0.017, N = 3
11.270
i5 3470T 10GB
SE +/- 0.018, N = 3
11.380
Core i5 3470T
SE +/- 0.072, N = 3
11.830
Core i7 5960X
SE +/- 0.043, N = 3
12.060
Pentium G3258
SE +/- 0.006, N = 3
12.350
i5 3470T 8GB RAM
SE +/- 0.037, N = 3
12.390
Willow16C
SE +/- 0.059, N = 3
12.560
Willow6C
SE +/- 0.038, N = 3
12.970
Core i5 2400S
SE +/- 0.005, N = 3
13.270
AMD FX-8350
SE +/- 0.013, N = 3
13.300
AMD A10-5800K
SE +/- 0.010, N = 3
13.370
AMD A6-7400K
SE +/- 0.038, N = 3
13.540
AMD A10-7870K
SE +/- 0.027, N = 3
13.570
Core i7 990X
SE +/- 0.005, N = 3
13.690
Core i3 2100
SE +/- 0.009, N = 3
14.080
AMD A10-7800
SE +/- 0.022, N = 3
15.190
Core i7 870
SE +/- 0.513, N = 6
16.480
Intel Core 2 Duo E8400
17.610

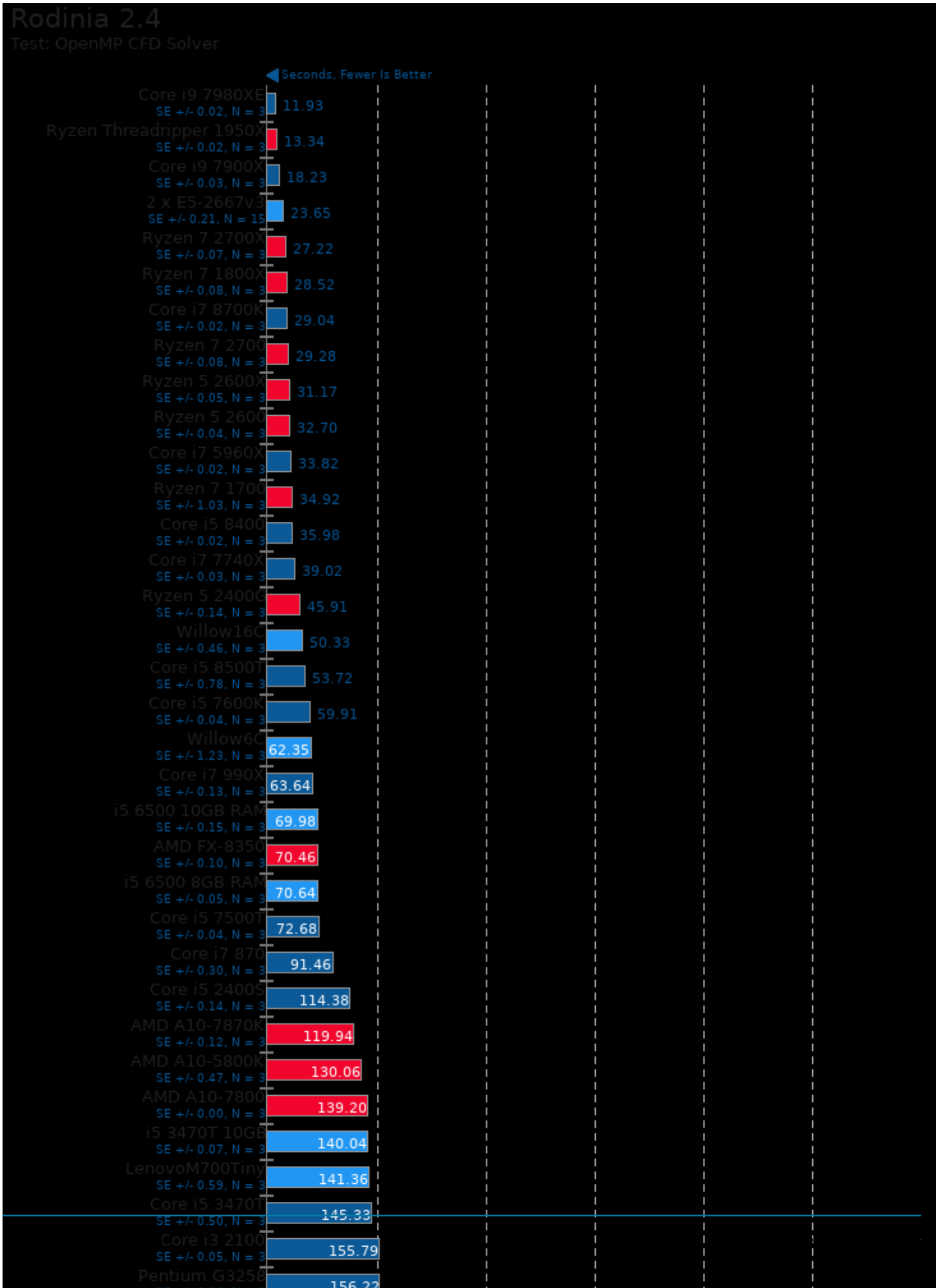

m-queens 1.1
Time To Solve
Seconds, Fewer Is Better
Ryzen Threadripper 1950X
SE +/- 0.06, N = 3
43.76
Core i9 7980XE
SE +/- 0.08, N = 3
50.26
2 x E5-2667v3
SE +/- 0.05, N = 3
51.74
Core i9 7900X
SE +/- 0.05, N = 3
74.91
Willow16C
SE +/- 1.86, N = 3
105.51
Core i7 5960X
SE +/- 0.10, N = 3
108.01
Core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

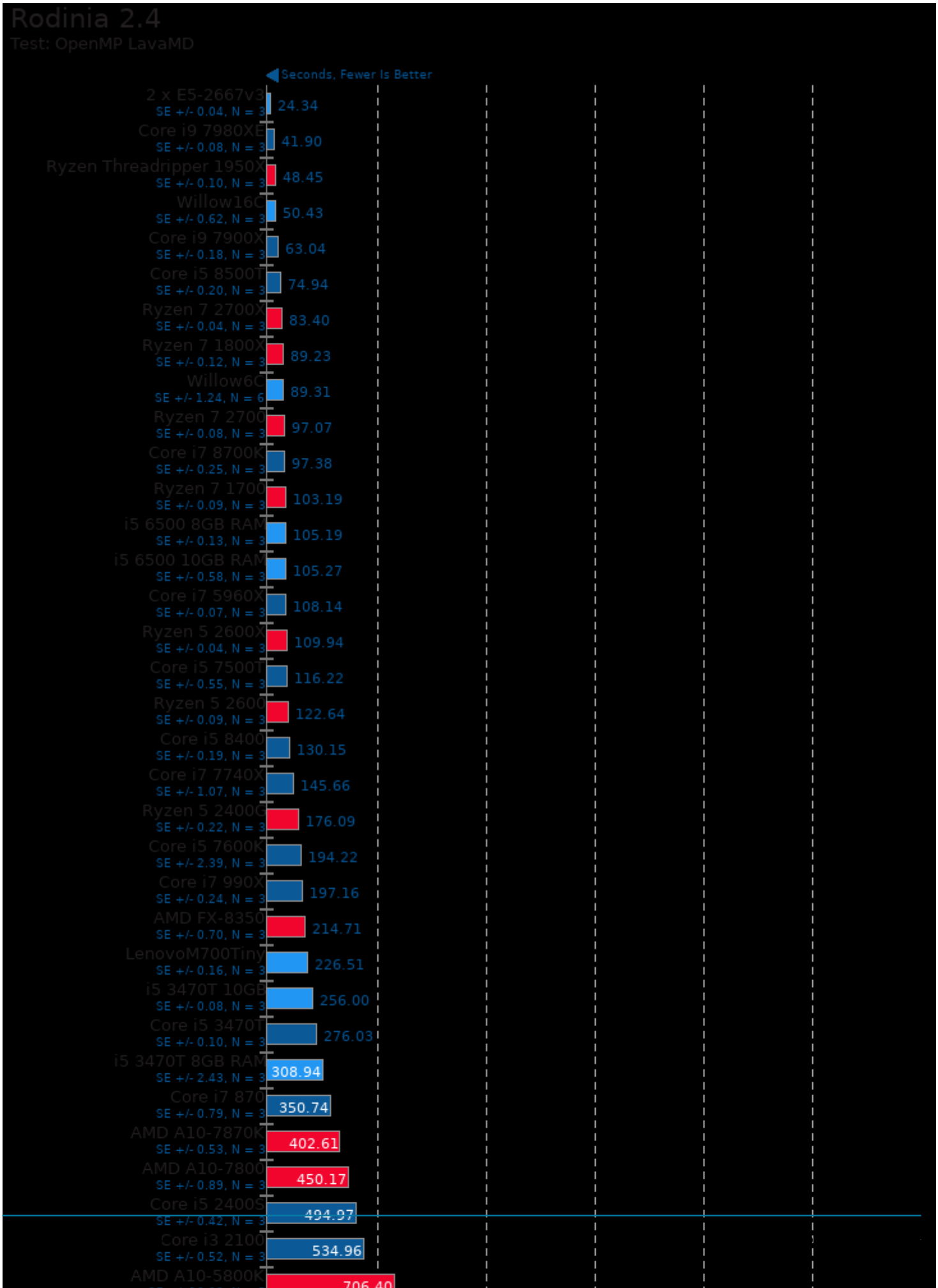

OpenSSL 1.1.0f
RSA 4096-bit Performance
Signs Per Second, More Is Better
Core i9 7980XE
SE +/- 9.45, N = 3
4689.40
Core i9 7900X
SE +/- 9.10, N = 3
3036.83
Ryzen Threadripper 1950X
SE +/- 1.34, N = 3
3000.23
Core i7 8700K
SE +/- 0.46, N = 3
1979.90
Ryzen 7 2700X
SE +/- 0.18, N = 3
1725.03
Core i5 8400
SE +/- 25.37, N = 3
1644.63
Ryzen 7 1800X
SE +/- 0.35, N = 3
1595.03
Ryzen 7 2700
SE +/- 2.29, N = 3
1473.10
Willow16C
SE +/- 56.99, N = 12
1391.63
Ryzen 7 1700
SE +/- 0.13, N = 3
1381.53
Core i7 7740X
SE +/- 1.64, N = 3
1366.57
Ryzen 5 2600X
SE +/- 2.17, N = 3
1299.73
Core i7 5960X
SE +/- 0.39, N = 3
1202.83
Ryzen 5 2600
SE +/- 0.21, N = 3
1164.30
Core i5 8500T
SE +/- 10.58, N = 3
1160.47
Core i5 7600K
SE +/- 15.07, N = 3
1147.03
i5 6500 10GB RAM
SE +/- 5.69, N = 3
915.27
i5 6500 8GB RAM
SE +/- 3.68, N = 3
913.60
Ryzen 5 2400G
SE +/- 0.82, N = 3
812.17
Willow6C
SE +/- 2.46, N = 3
794.37
AMD FX-8350
SE +/- 0.35, N = 3
705.73
Core i7 990X
SE +/- 0.00, N = 3
526.20
Core i5 2400S
SE +/- 0.10, N = 3
359.20
AMD A10-7870K
SE +/- 2.42, N = 3
338.53
Core i7 870
SE +/- 1.97, N = 3
305.07
AMD A10-7800
SE +/- 1.88, N = 3
300.43
Pentium G3258
SE +/- 1.46, N = 3
286.00
i5 3470T 10GB
SE +/- 0.09, N = 3
273.27
AMD A10-5800K
SE +/- 10.97, N = 6
266.55
Core i5 3470T
SE +/- 0.40, N = 3
254.00
Core i3 2100
SE +/- 0.07, N = 3
235.47
AMD Athlon II X3 425
SE +/- 0.12, N = 3
232.80
i5 3470T 8GB RAM
SE +/- 0.20, N = 3
221.10
AMD A6-7400K

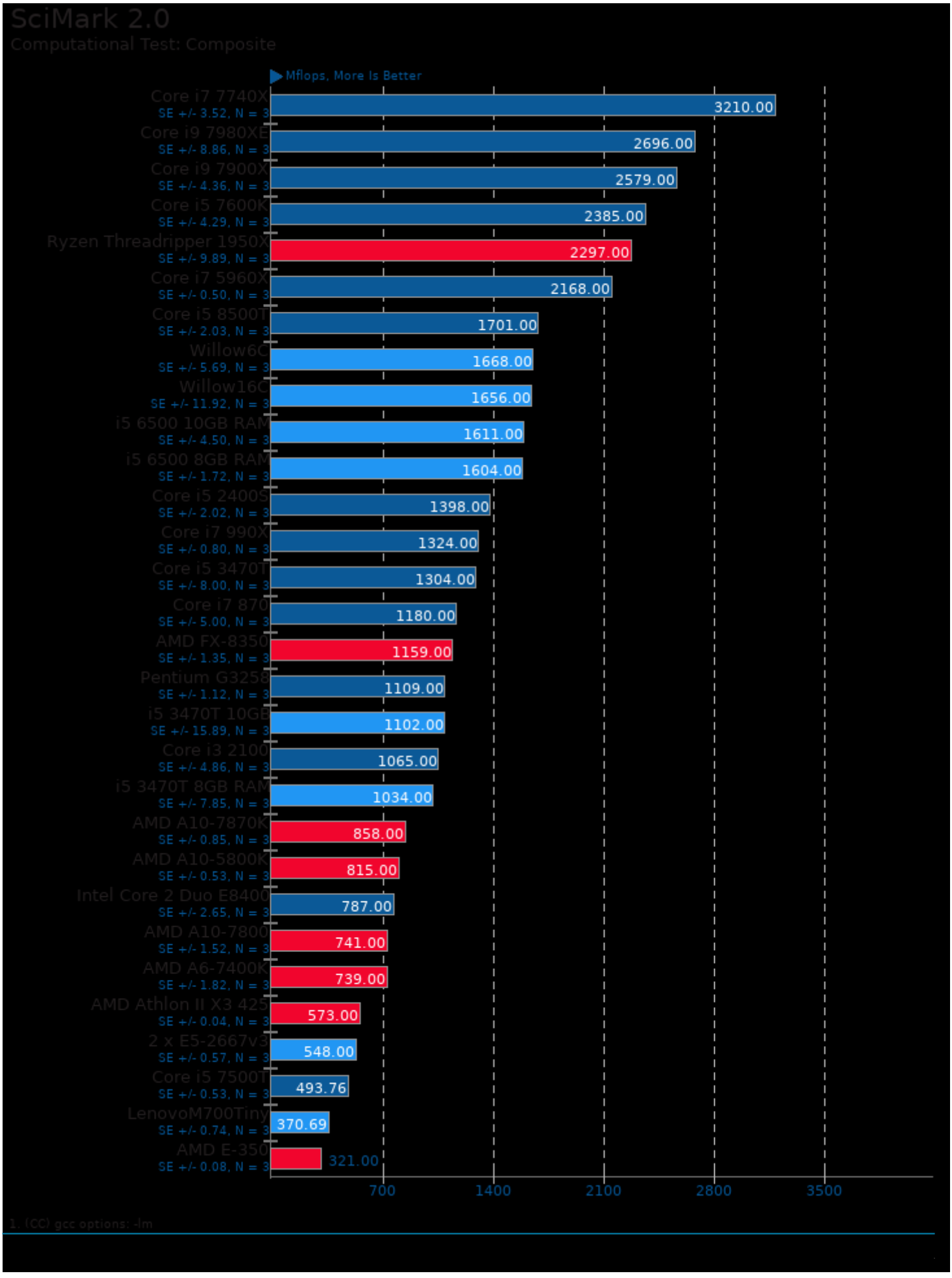

PolyBench-C 4.2
Test: 3 Matrix Multiplications
Seconds, Fewer Is Better
Core i7 7740X
SE +/- 0.013, N = 3
3.030
Core i9 7980XE
SE +/- 0.061, N = 3
3.180
Core i5 7600K
SE +/- 0.054, N = 3
3.720
Core i5 8500T
SE +/- 0.010, N = 3
3.770
Ryzen Threadripper 1950X
SE +/- 0.009, N = 3
3.930
i5 6500 10GB RAM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

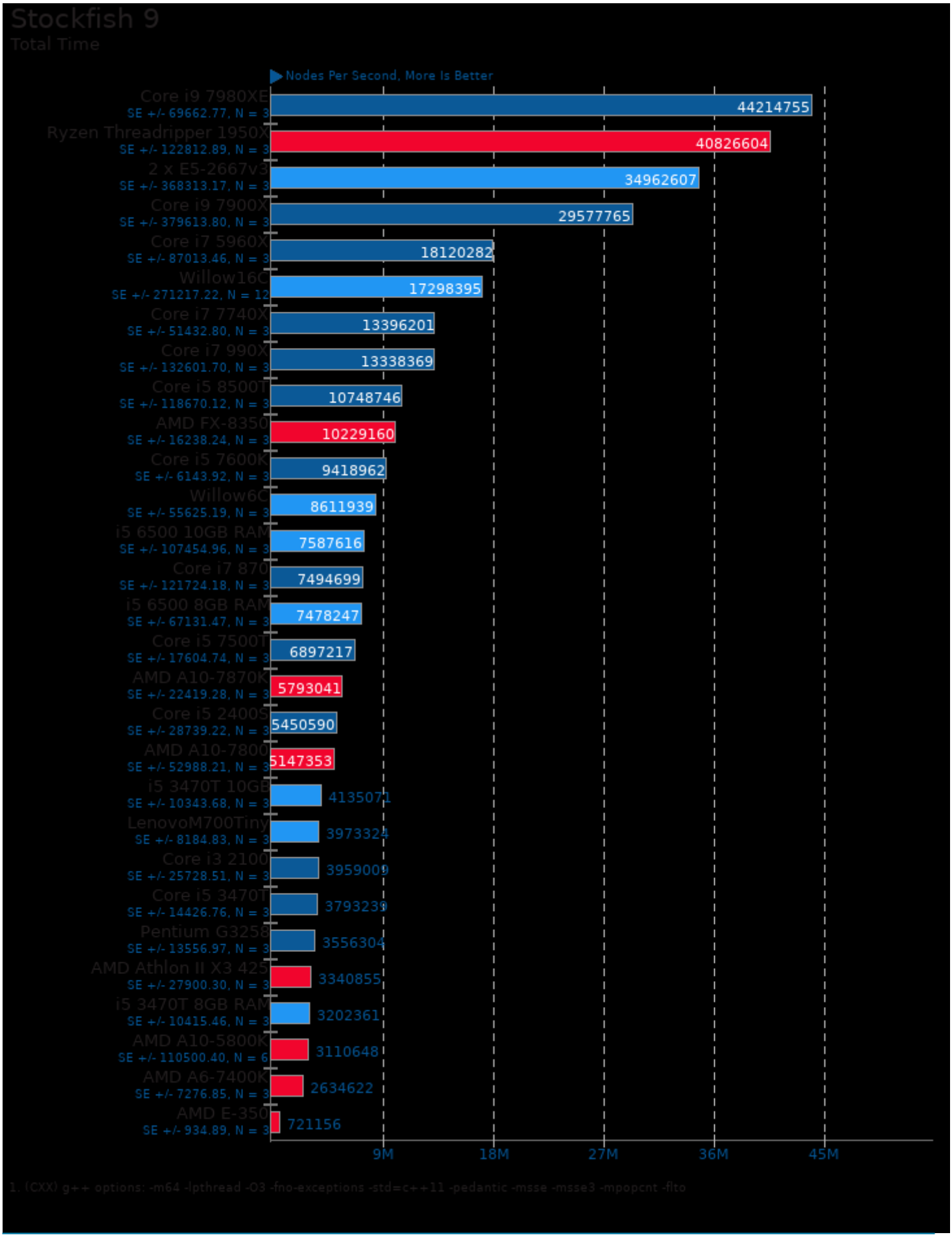

PolyBench-C 4.2
Test: Correlation Computation
Seconds, Fewer Is Better
i5 6500 8GB RAM
SE +/- 0.007, N = 3
2.060
i5 6500 10GB RAM
SE +/- 0.003, N = 3
2.060
i5 3470T 10GB
SE +/- 0.093, N = 12
3.230
Core i5 3470T
SE +/- 0.092, N = 12
3.350
i5 3470T 8GB RAM
SE +/- 0.108, N = 12
3.560
Ryzen Threadripper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

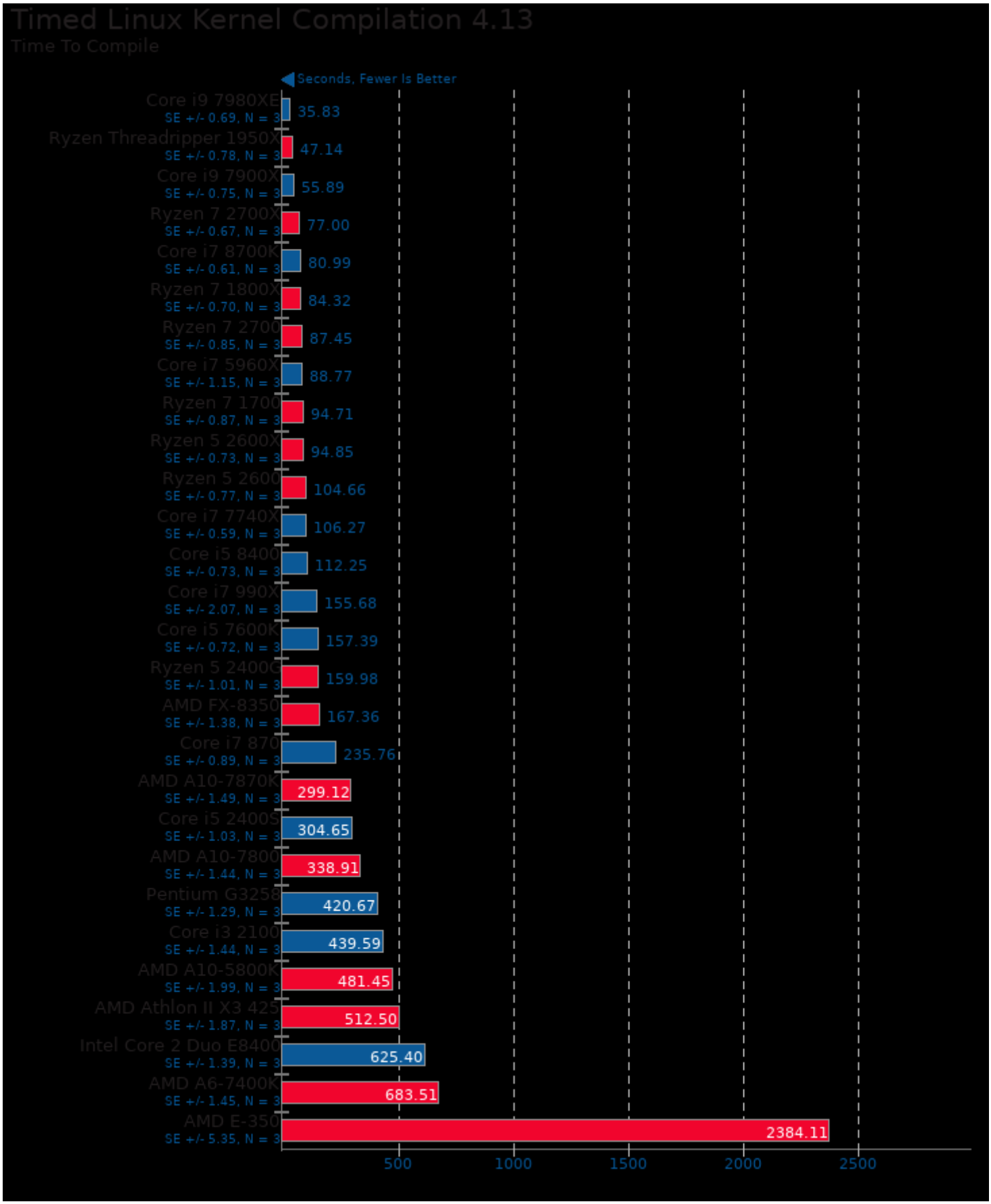

PolyBench-C 4.2
Test: Covariance Computation
Seconds, Fewer Is Better
Core i5 8500T
2.010
i5 6500 8GB RAM
SE +/- 0.014, N = 3
2.060
i5 6500 10GB RAM
SE +/- 0.006, N = 3
2.060
i5 3470T 10GB
SE +/- 0.092, N = 12
3.240
i5 3470T 8GB RAM
SE +/- 0.104, N = 12
3.540
Core i5 3470T
SE +/- 0.024, N = 3
3.620
Ryzen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

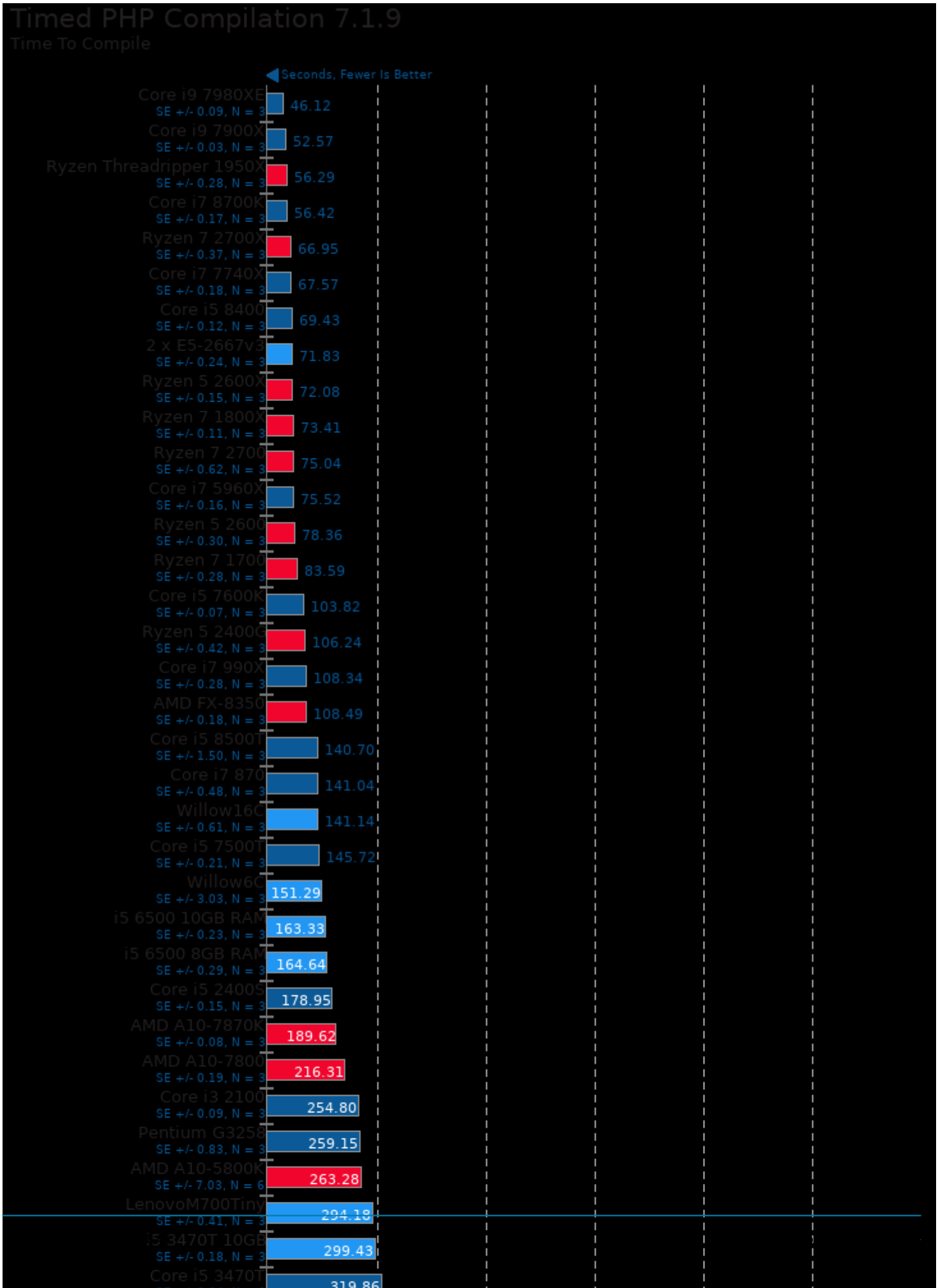

Rodinia 2.4
Test: OpenMP CFD Solver
Seconds, Fewer Is Better
Core i9 7980XE
SE +/- 0.02, N = 3
11.93
Ryzen Threadripper 1950X
SE +/- 0.02, N = 3
13.34
Core i9 7900X
SE +/- 0.03, N = 3
18.23
2 x E5-2667v3
SE +/- 0.21, N = 15
23.65
Ryzen 7 2700X
SE +/- 0.07, N = 3
27.22
Ryzen 7 1800X
SE +/- 0.08, N = 3
28.52
Core i7 8700K
SE +/- 0.02, N = 3
29.04
Ryzen 7 2700
SE +/- 0.08, N = 3
29.28
Ryzen 5 2600X
SE +/- 0.05, N = 3
31.17
Ryzen 5 2600
SE +/- 0.04, N = 3
32.70
Core i7 5960X
SE +/- 0.02, N = 3
33.82
Ryzen 7 1700
SE +/- 1.03, N = 3
34.92
Core i5 8400
SE +/- 0.02, N = 3
35.98
Core i7 7740X
SE +/- 0.03, N = 3
39.02
Ryzen 5 2400G
SE +/- 0.14, N = 3
45.91
Willow16C
SE +/- 0.46, N = 3
50.33
Core i5 8500T
SE +/- 0.78, N = 3
53.72
Core i5 7600K
SE +/- 0.04, N = 3
59.91
Willow6C
SE +/- 1.23, N = 3
62.35
Core i7 990X
SE +/- 0.13, N = 3
63.64
i5 6500 10GB RAM
SE +/- 0.15, N = 3
69.98
AMD FX-8350
SE +/- 0.10, N = 3
70.46
i5 6500 8GB RAM
SE +/- 0.05, N = 3
70.64
Core i5 7500T
SE +/- 0.04, N = 3
72.68
Core i7 870
SE +/- 0.30, N = 3
91.46
Core i5 2400S
SE +/- 0.14, N = 3
114.38
AMD A10-7870K
SE +/- 0.12, N = 3
119.94
AMD A10-5800K
SE +/- 0.47, N = 3
130.06
AMD A10-7800
SE +/- 0.00, N = 3
139.20
i5 3470T 10GB
SE +/- 0.07, N = 3
140.04
LenovoM700Tiny
SE +/- 0.59, N = 3
141.36
Core i5 3470T
SE +/- 0.50, N = 3
145.33
Core i3 2100
SE +/- 0.05, N = 3
155.79
Pentium G3258
156.22

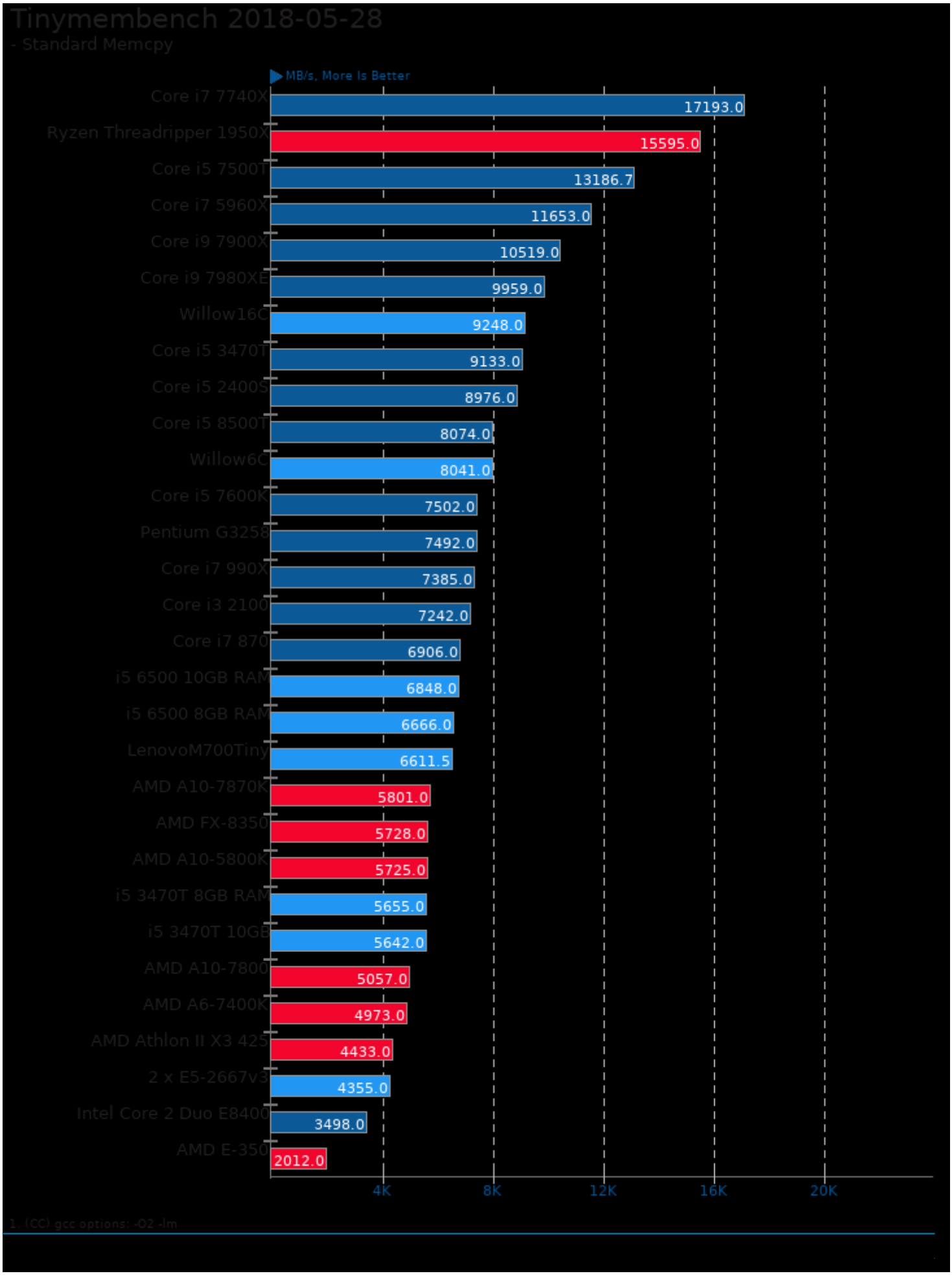

Rodinia 2.4
Test: OpenMP LavaMD
Seconds, Fewer Is Better
2 x E5-2667v3
SE +/- 0.04, N = 3
24.34
Core i9 7980XE
SE +/- 0.08, N = 3
41.90
Ryzen Threadripper 1950X
SE +/- 0.10, N = 3
48.45
Willow16C
SE +/- 0.62, N = 3
50.43
Core i9 7900X
SE +/- 0.18, N = 3
63.04
Core i5 8500T
SE +/- 0.20, N = 3
74.94
Ryzen 7 2700X
SE +/- 0.04, N = 3
83.40
Ryzen 7 1800X
SE +/- 0.12, N = 3
89.23
Willow6C
SE +/- 1.24, N = 6
89.31
Ryzen 7 2700
SE +/- 0.08, N = 3
97.07
Core i7 8700K
SE +/- 0.25, N = 3
97.38
Ryzen 7 1700
SE +/- 0.09, N = 3
103.19
i5 6500 8GB RAM
SE +/- 0.13, N = 3
105.19
i5 6500 10GB RAM
SE +/- 0.58, N = 3
105.27
Core i7 5960X
SE +/- 0.07, N = 3
108.14
Ryzen 5 2600X
SE +/- 0.04, N = 3
109.94
Core i5 7500T
SE +/- 0.55, N = 3
116.22
Ryzen 5 2600
SE +/- 0.09, N = 3
122.64
Core i5 8400
SE +/- 0.19, N = 3
130.15
Core i7 7740X
SE +/- 1.07, N = 3
145.66
Ryzen 5 2400G
SE +/- 0.22, N = 3
176.09
Core i5 7600K
SE +/- 2.39, N = 3
194.22
Core i7 990X
SE +/- 0.24, N = 3
197.16
AMD FX-8350
SE +/- 0.70, N = 3
214.71
LenovoM700Tiny
SE +/- 0.16, N = 3
226.51
i5 3470T 10GB
SE +/- 0.08, N = 3
256.00
Core i5 3470T
SE +/- 0.10, N = 3
276.03
i5 3470T 8GB RAM
SE +/- 2.43, N = 3
308.94
Core i7 870
SE +/- 0.79, N = 3
350.74
AMD A10-7870K
SE +/- 0.53, N = 3
402.61
AMD A10-7800
SE +/- 0.89, N = 3
450.17
Core i5 2400S
SE +/- 0.42, N = 3
494.97
Core i3 2100
SE +/- 0.52, N = 3
534.96
AMD A10-5800K
706.40

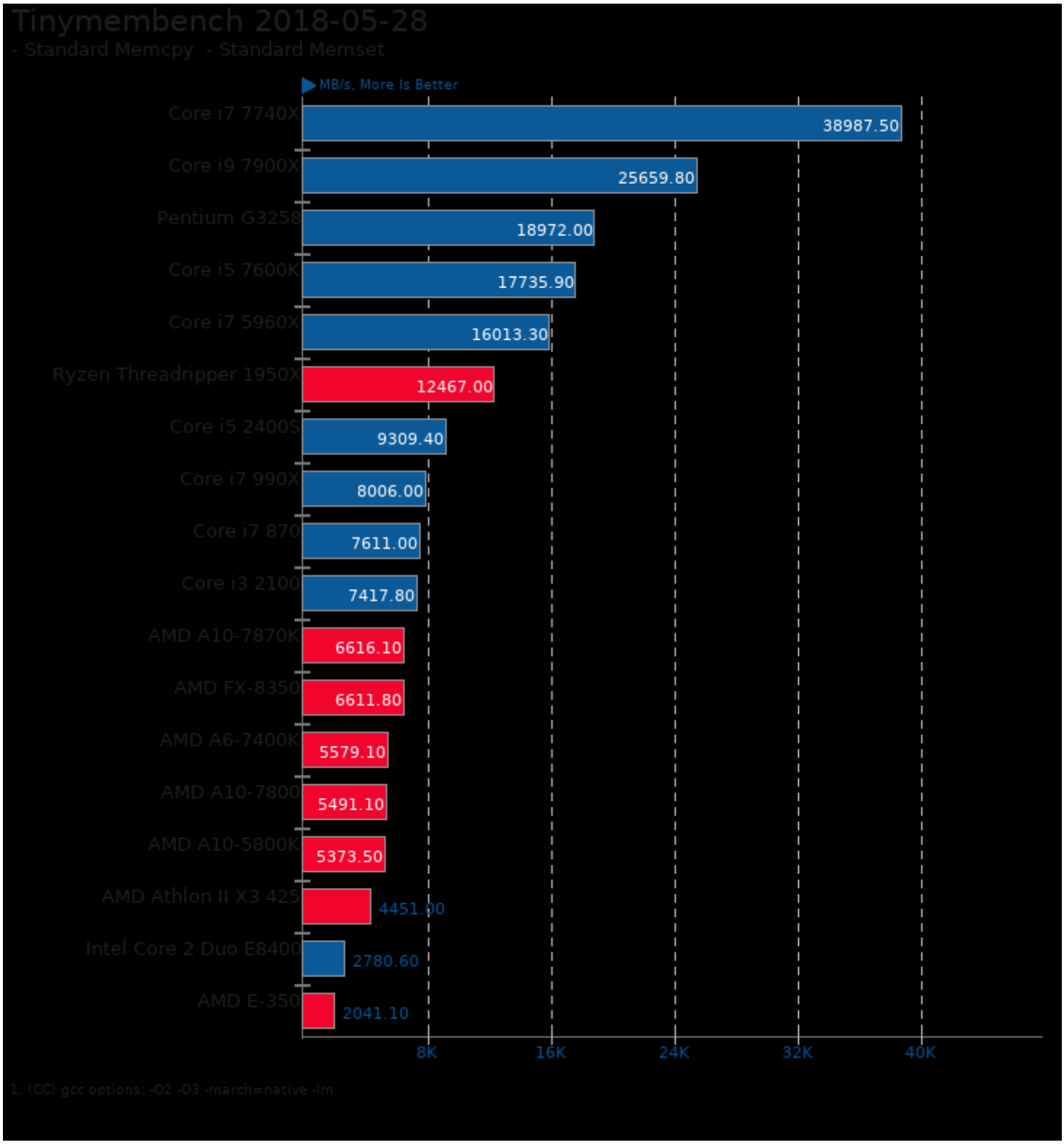

SciMark 2.0
Computational Test: Composite
Mflops, More Is Better
Core i7 7740X
SE +/- 3.52, N = 3
3210.00
Core i9 7980XE
SE +/- 8.86, N = 3
2696.00
Core i9 7900X
SE +/- 4.36, N = 3
2579.00
Core i5 7600K
SE +/- 4.29, N = 3
2385.00
Ryzen Threadripper 1950X
SE +/- 9.89, N = 3
2297.00
Core i7 5960X
SE +/-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

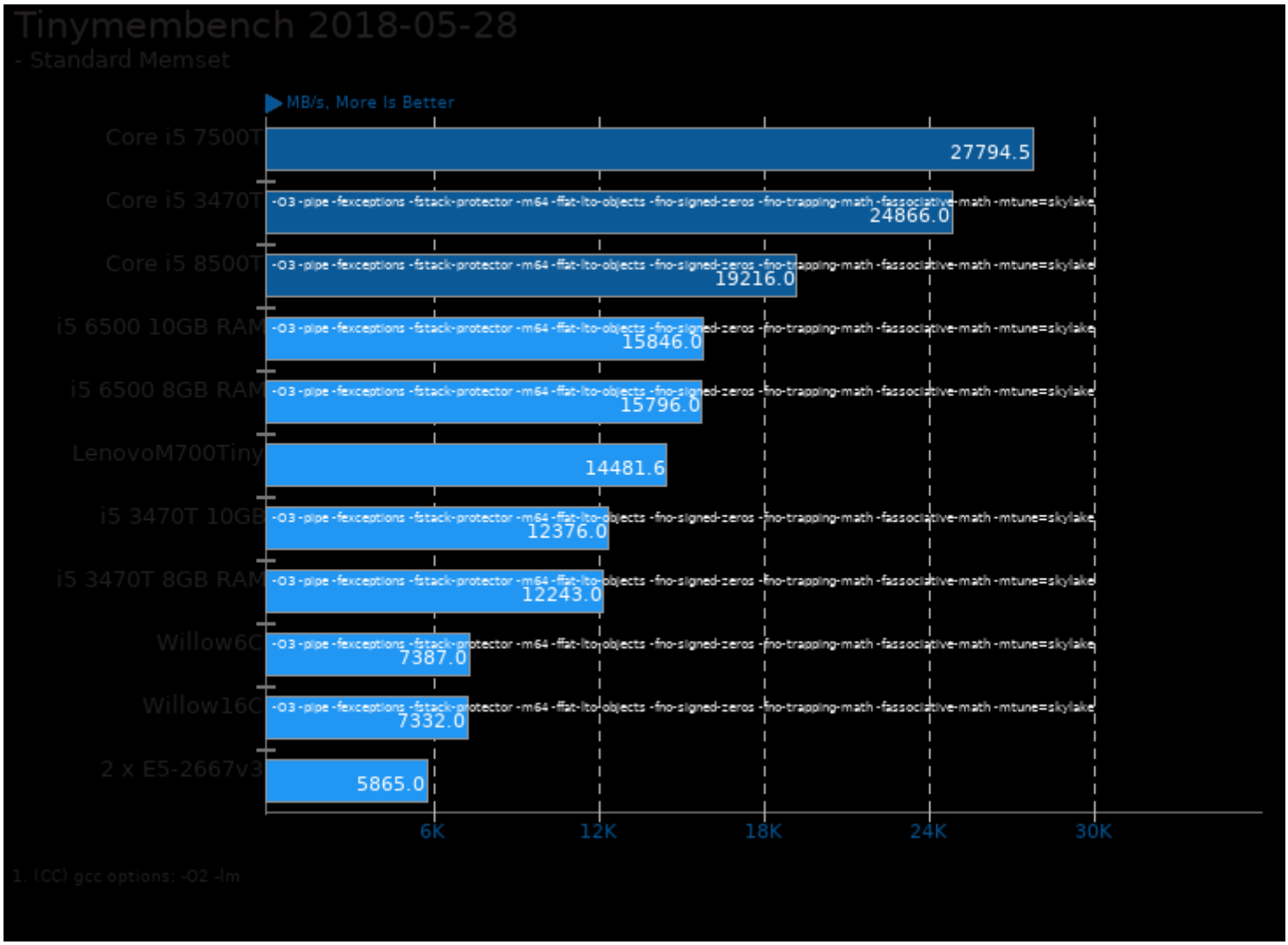

Stockfish 9
Total Time
Nodes Per Second, More Is Better
Core i9 7980XE
SE +/- 69662.77, N = 3
44214755
Ryzen Threadripper 1950X
SE +/- 122812.89, N = 3
40826604
2 x E5-2667v3
SE +/- 368313.17, N = 3
34962607
Core i9 7900X
SE +/- 379613.80, N = 3
29577765
Core i7 5960X
SE +/- 87013.46, N = 3
18120282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

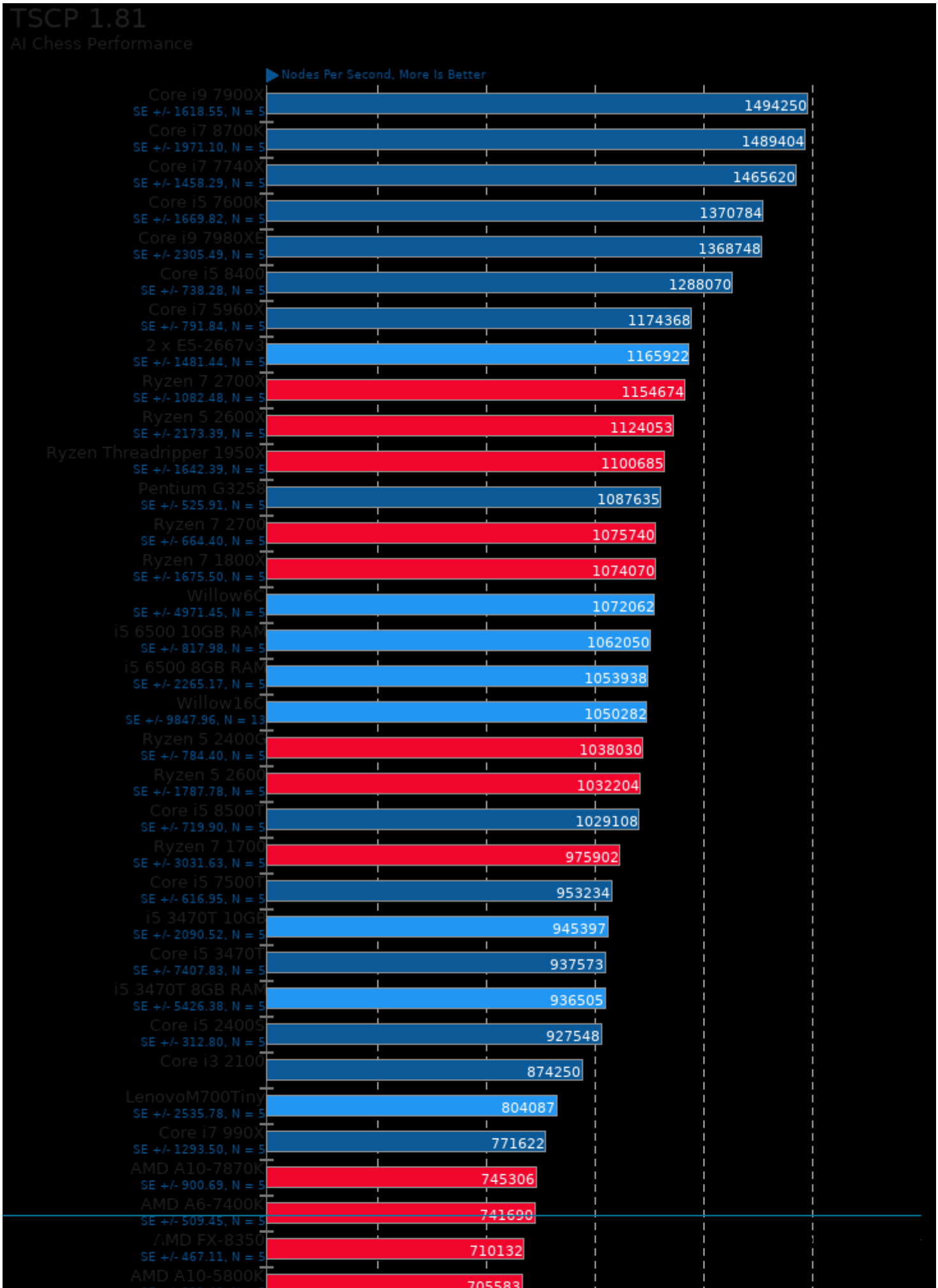

Timed Linux Kernel Compilation 4.13
Time To Compile
Seconds, Fewer Is Better
Core i9 7980XE
SE +/- 0.69, N = 3
35.83
Ryzen Threadripper 1950X
SE +/- 0.78, N = 3
47.14
Core i9 7900X
SE +/- 0.75, N = 3
55.89
Ryzen 7 2700X
SE +/- 0.67, N = 3
77.00
Core i7 8700K
SE +/- 0.61, N = 3
80.99
Ryzen 7 1800X
SE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

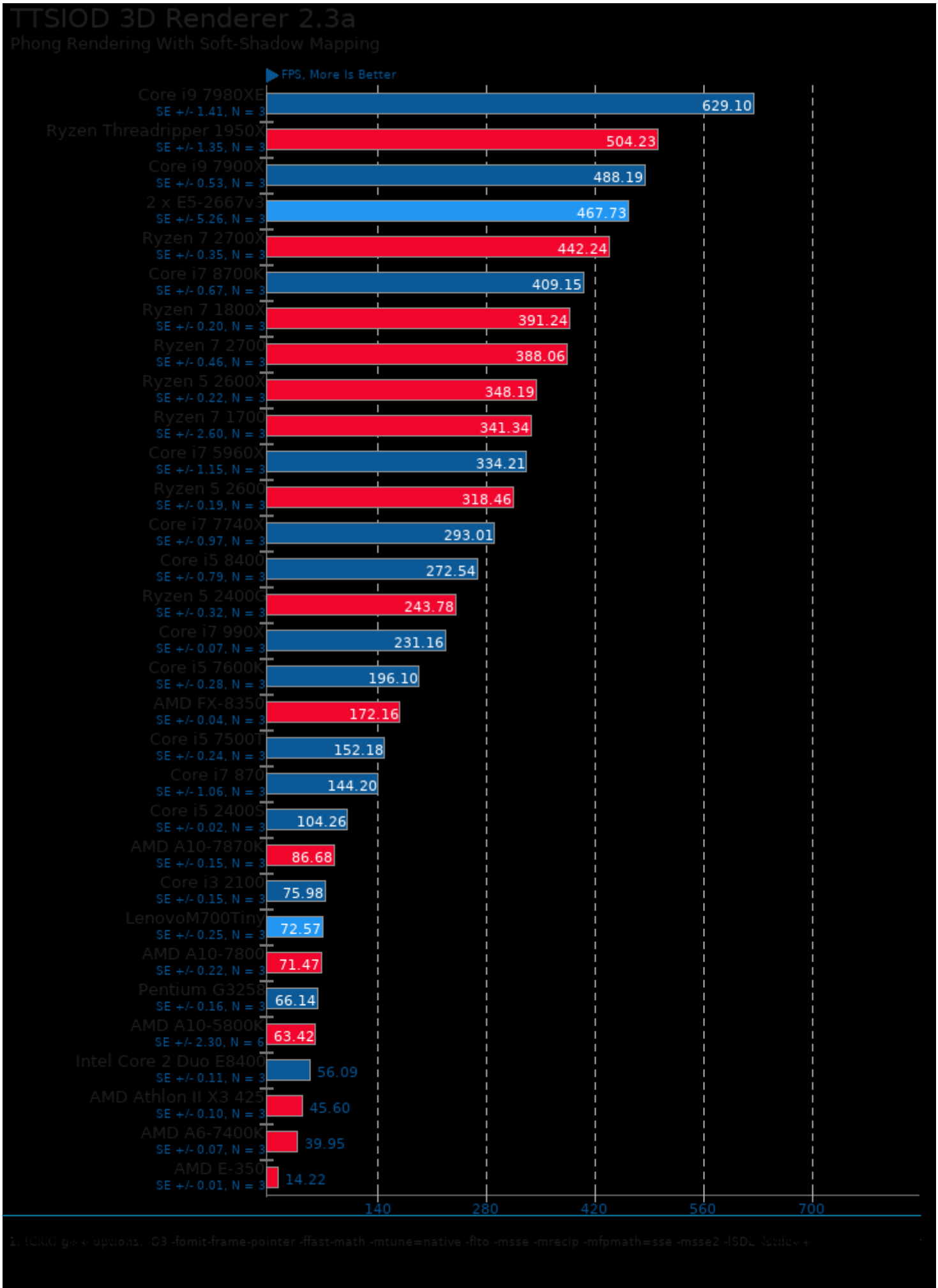

Timed PHP Compilation 7.1.9
Time To Compile
Seconds, Fewer Is Better
Core i9 7980XE
SE +/- 0.09, N = 3
46.12
Core i9 7900X
SE +/- 0.03, N = 3
52.57
Ryzen Threadripper 1950X
SE +/- 0.28, N = 3
56.29
Core i7 8700K
SE +/- 0.17, N = 3
56.42
Ryzen 7 2700X
SE +/- 0.37, N = 3
66.95
Core i7 7740X
SE +/- 0.18, N = 3
67.57
Core i5 8400
SE +/- 0.12, N = 3
69.43
2 x E5-2667v3
SE +/- 0.24, N = 3
71.83
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
Core i7 5960X
SE +/- 0.16, N = 3
75.52
Ryzen 5 2600
SE +/- 0.30, N = 3
78.36
Ryzen 7 1700
SE +/- 0.28, N = 3
83.59
Core i5 7600K
SE +/- 0.07, N = 3
103.82
Ryzen 5 2400G
SE +/- 0.42, N = 3
106.24
Core i7 990X
SE +/- 0.28, N = 3
108.34
AMD FX-8350
SE +/- 0.18, N = 3
108.49
Core i5 8500T
SE +/- 1.50, N = 3
140.70
Core i7 870
SE +/- 0.48, N = 3
141.04
Willow16C
SE +/- 0.61, N = 3
141.14
Core i5 7500T
SE +/- 0.21, N = 3
145.72
Willow6C
SE +/- 3.03, N = 3
151.29
i5 6500 10GB RAM
SE +/- 0.23, N = 3
163.33
i5 6500 8GB RAM
SE +/- 0.29, N = 3
164.64
Core i5 2400S
SE +/- 0.15, N = 3
178.95
AMD A10-7870K
SE +/- 0.08, N = 3
189.62
AMD A10-7800
SE +/- 0.19, N = 3
216.31
Core i3 2100
SE +/- 0.09, N = 3
254.80
Pentium G3258
SE +/- 0.83, N = 3
259.15
AMD A10-5800K
SE +/- 7.03, N = 6
263.28
LenovoM700Tiny
SE +/- 0.41, N = 3
294.18
i5 3470T 10GB
SE +/- 0.18, N = 3
299.43
Core i5 3470T
319.86

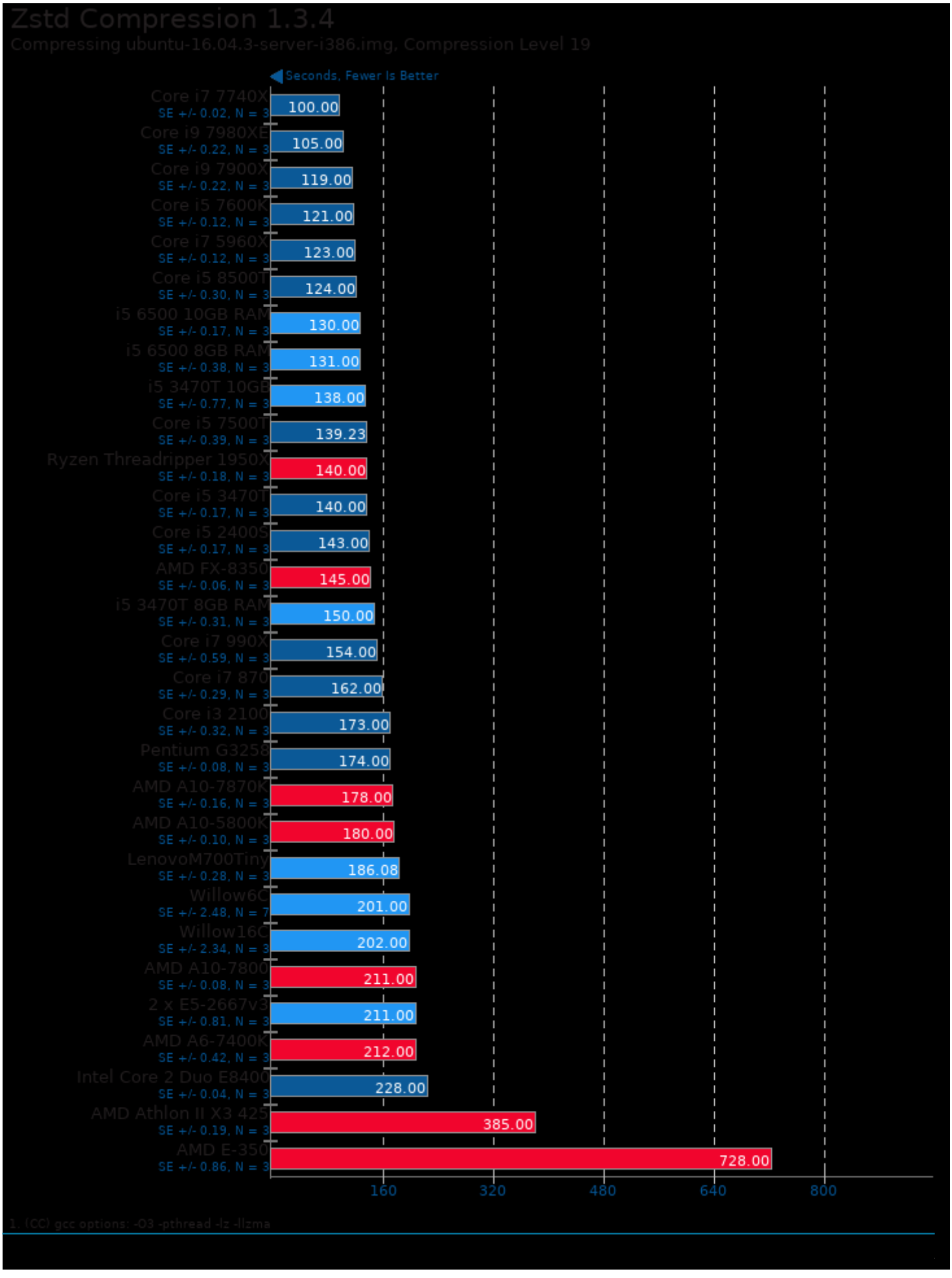

Tinymembench 2018-05-28
- Standard Memcpy
MB/s, More Is Better
Core i7 7740X
17193.0
Ryzen Threadripper 1950X
15595.0
Core i5 7500T
13186.7
Core i7 5960X
11653.0
Core i9 7900X
10519.0
Core i9 7980XE
9959.0
Willow16C
9248.0
Core i5 3470T
9133.0
Core i5 2400S
8976.0
Core i5 8500T
8074.0
Willow6C
8041.0
Core i5 7600K
7502.0
Pentium G3258
7492.0
Core i7 990X
7385.0
Core i3 2100
7242.0
Core i7 870
6906.0
i5 6500 10GB RAM
6848.0
i5 6500 8GB RAM
6666.0
LenovoM700Tiny
6611.5
AMD A10-7870K
5801.0
AMD FX-8350
5728.0
AMD A10-5800K
5725.0
i5 3470T 8GB RAM
5655.0
i5 3470T 10GB
5642.0
AMD A10-7800
5057.0
AMD A6-7400K
4973.0
AMD Athlon II X3 425
4433.0
2 x E5-2667v3
4355.0
Intel Core 2 Duo E8400
3498.0
AMD E-350
2012.0
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 i7 7740X
38987.50
Core i9 7900X
25659.80
Pentium G3258
18972.00
Core i5 7600K
17735.90
Core i7 5960X
16013.30
Ryzen Threadripper 1950X
12467.00
Core i5 2400S
9309.40
Core i7 990X
8006.00
Core i7 870
7611.00
Core i3 2100
7417.80
AMD A10-7870K
6616.10
AMD FX-8350
6611.80
AMD A6-7400K
5579.10
AMD A10-7800
5491.10
AMD A10-5800K
5373.50
AMD Athlon II X3 425
4451.00
Intel Core 2 Duo E8400
2780.60
AMD E-350
2041.10
8K
16K
24K
32K
40K
1. (CC) gcc options: -O2 -O3 -march=native -lm

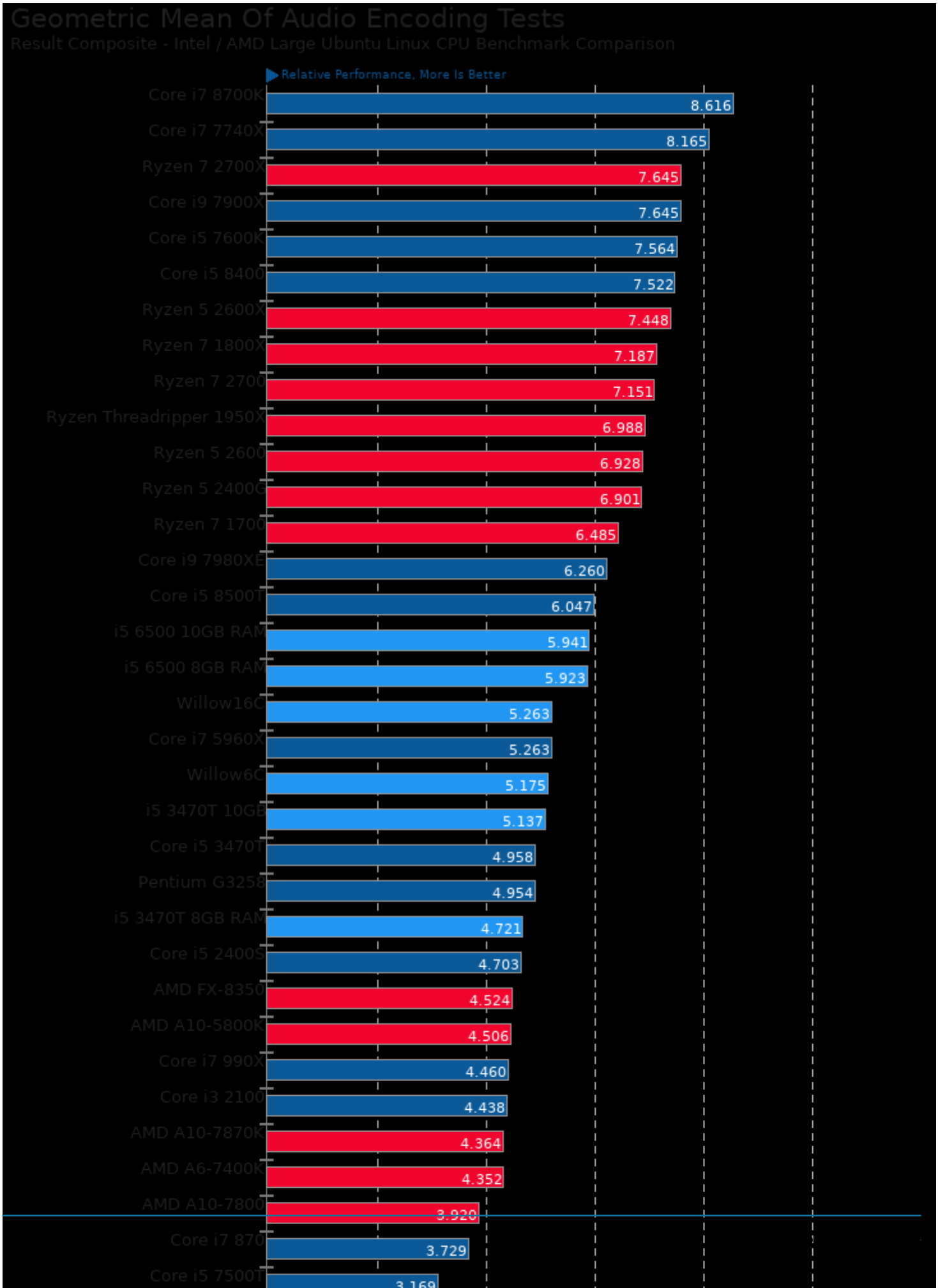

Tinymembench 2018-05-28
- Standard Memset
MB/s, More Is Better
Core i5 7500T
27794.5
Core i5 3470T
-O3 -pipe -fexceptions -fstack-protector -m64 -flat-lto-objects -fno-signed-zeros -fno-trapping-math -fassociative-math -mtune=skylake
24866.0
Core i5 8500T
-O3 -pipe -fexceptions -fstack-protector -m64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


TSCP 1.81
AI Chess Performance
Nodes Per Second, More Is Better
Core i9 7900X
SE +/- 1618.55, N = 5
1494250
Core i7 8700K
SE +/- 1971.10, N = 5
1489404
Core i7 7740X
SE +/- 1458.29, N = 5
1465620
Core i5 7600K
SE +/- 1669.82, N = 5
1370784
Core i9 7980XE
SE +/- 2305.49, N = 5
1368748
Core i5 8400
SE +/- 738.28, N = 5
1288070
Core i7 5960X
SE +/- 791.84, N = 5
1174368
2 x E5-2667v3
SE +/- 1481.44, N = 5
1165922
Ryzen 7 2700X
SE +/- 1082.48, N = 5
1154674
Ryzen 5 2600X
SE +/- 2173.39, N = 5
1124053
Ryzen Threadripper 1950X
SE +/- 1642.39, N = 5
1100685
Pentium G3258
SE +/- 525.91, N = 5
1087635
Ryzen 7 2700
SE +/- 664.40, N = 5
1075740
Ryzen 7 1800X
SE +/- 1675.50, N = 5
1074070
Willow6C
SE +/- 4971.45, N = 5
1072062
i5 6500 10GB RAM
SE +/- 817.98, N = 5
1062050
i5 6500 8GB RAM
SE +/- 2265.17, N = 5
1053938
Willow16C
SE +/- 9847.96, N = 13
1050282
Ryzen 5 2400G
SE +/- 784.40, N = 5
1038030
Ryzen 5 2600
SE +/- 1787.78, N = 5
1032204
Core i5 8500T
SE +/- 719.90, N = 5
1029108
Ryzen 7 1700
SE +/- 3031.63, N = 5
975902
Core i5 7500T
SE +/- 616.95, N = 5
953234
i5 3470T 10GB
SE +/- 2090.52, N = 5
945397
Core i5 3470T
SE +/- 7407.83, N = 5
937573
i5 3470T 8GB RAM
SE +/- 5426.38, N = 5
936505
Core i5 2400S
SE +/- 312.80, N = 5
927548
Core i3 2100
874250
LenovoM700Tiny
SE +/- 2535.78, N = 5
804087
Core i7 990X
SE +/- 1293.50, N = 5
771622
AMD A10-7870K
SE +/- 900.69, N = 5
745306
AMD A6-7400K
SE +/- 509.45, N = 5
741690
AMD FX-8350
SE +/- 467.11, N = 5
710132
AMD A10-5800K
705583

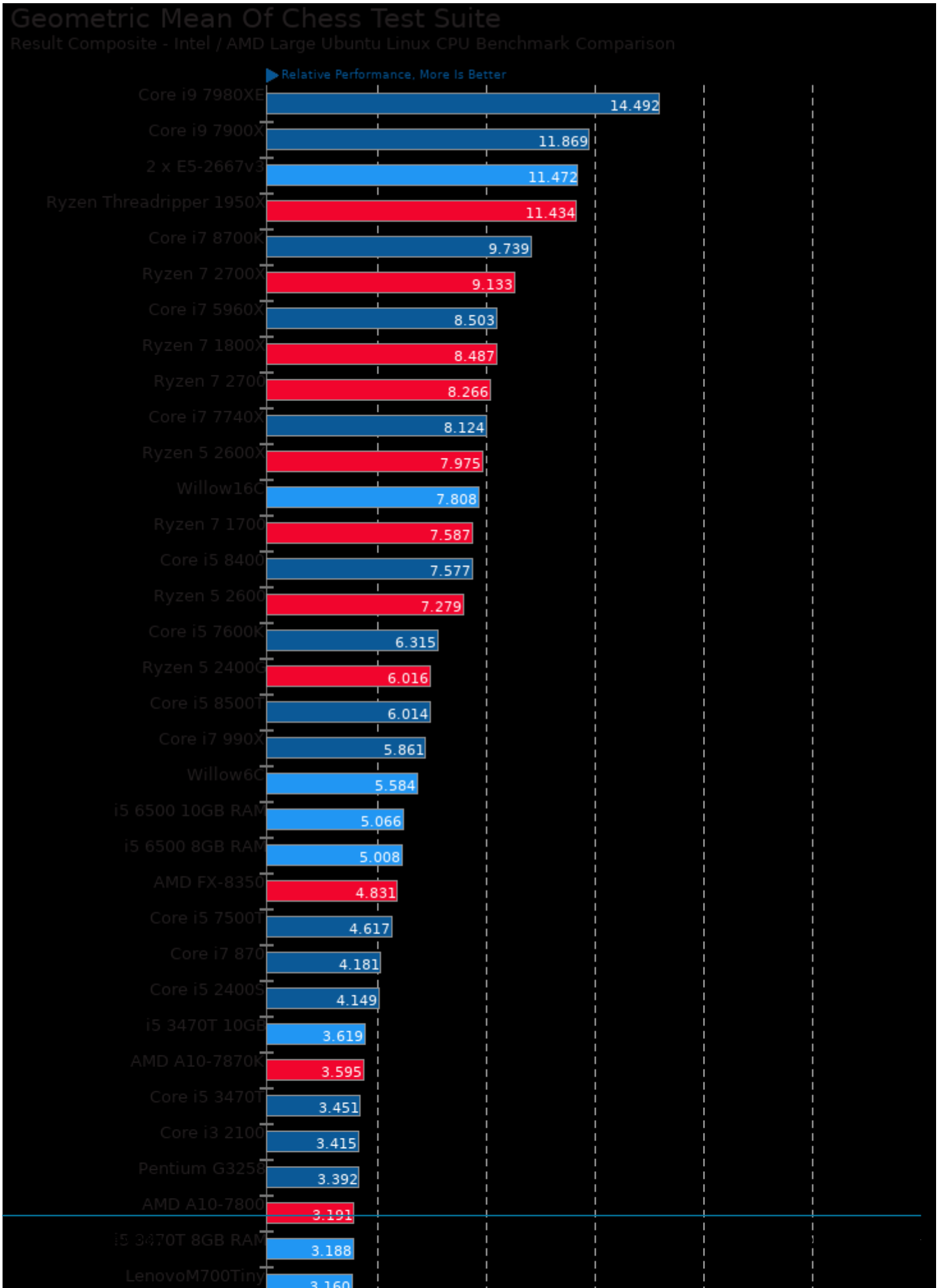

TTSIOD 3D Renderer 2.3a
Phong Rendering With Soft-Shadow Mapping
FPS, More Is Better
Core i9 7980XE
SE +/- 1.41, N = 3
629.10
Ryzen Threadripper 1950X
SE +/- 1.35, N = 3
504.23
Core i9 7900X
SE +/- 0.53, N = 3
488.19
2 x E5-2667v3
SE +/- 5.26, N = 3
467.73
Ryzen 7 2700X
SE +/- 0.35, N = 3
442.24
Core i7 8700K
SE +/- 0.67, N = 3
409.15
Ryzen 7 1800X
SE +/- 0.20, N = 3
391.24
Ryzen 7 2700
SE +/- 0.46, N = 3
388.06
Ryzen 5 2600X
SE +/- 0.22, N = 3
348.19
Ryzen 7 1700
SE +/- 2.60, N = 3
341.34
Core i7 5960X
SE +/- 1.15, N = 3
334.21
Ryzen 5 2600
SE +/- 0.19, N = 3
318.46
Core i7 7740X
SE +/- 0.97, N = 3
293.01
Core i5 8400
SE +/- 0.79, N = 3
272.54
Ryzen 5 2400G
SE +/- 0.32, N = 3
243.78
Core i7 990X
SE +/- 0.07, N = 3
231.16
Core i5 7600K
SE +/- 0.28, N = 3
196.10
AMD FX-8350
SE +/- 0.04, N = 3
172.16
Core i5 7500T
SE +/- 0.24, N = 3
152.18
Core i7 870
SE +/- 1.06, N = 3
144.20
Core i5 2400S
SE +/- 0.02, N = 3
104.26
AMD A10-7870K
SE +/- 0.15, N = 3
86.68
Core i3 2100
SE +/- 0.15, N = 3
75.98
LenovoM700Tiny
SE +/- 0.25, N = 3
72.57
AMD A10-7800
SE +/- 0.22, N = 3
71.47
Pentium G3258
SE +/- 0.16, N = 3
66.14
AMD A10-5800K
SE +/- 2.30, N = 6
63.42
Intel Core 2 Duo E8400
SE +/- 0.11, N = 3
56.09
AMD Athlon II X3 425
SE +/- 0.10, N = 3
45.60
AMD A6-7400K
SE +/- 0.07, N = 3
39.95
AMD E-350
SE +/- 0.01, N = 3
14.22
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 i7 7740X
SE +/- 0.02, N = 3
100.00
Core i9 7980XE
SE +/- 0.22, N = 3
105.00
Core i9 7900X
SE +/- 0.22, N = 3
119.00
Core i5 7600K
SE +/- 0.12, N = 3
121.00
Core i7 5960X
SE +/- 0.12, N = 3
123.00
Core i5 8500T
SE +/- 0.30, N = 3
124.00
i5 6500 10GB RAM
SE +/- 0.17, N = 3
130.00
i5 6500 8GB RAM
SE +/- 0.38, N = 3
131.00
i5 3470T 10GB
SE +/- 0.77, N = 3
138.00
Core i5 7500T
SE +/- 0.39, N = 3
139.23
Ryzen Threadripper 1950X
SE +/- 0.18, N = 3
140.00
Core i5 3470T
SE +/- 0.17, N = 3
140.00
Core i5 2400S
SE +/- 0.17, N = 3
143.00
AMD FX-8350
SE +/- 0.06, N = 3
145.00
i5 3470T 8GB RAM
SE +/- 0.31, N = 3
150.00
Core i7 990X
SE +/- 0.59, N = 3
154.00
Core i7 870
SE +/- 0.29, N = 3
162.00
Core i3 2100
SE +/- 0.32, N = 3
173.00
Pentium G3258
SE +/- 0.08, N = 3
174.00
AMD A10-7870K
SE +/- 0.16, N = 3
178.00
AMD A10-5800K
SE +/- 0.10, N = 3
180.00
LenovoM700Tiny
SE +/- 0.28, N = 3
186.08
Willow6C
SE +/- 2.48, N = 7
201.00
Willow16C
SE +/- 2.34, N = 3
202.00
AMD A10-7800
SE +/- 0.08, N = 3
211.00
2 x E5-2667v3
SE +/- 0.81, N = 3
211.00
AMD A6-7400K
SE +/- 0.42, N = 3
212.00
Intel Core 2 Duo E8400
SE +/- 0.04, N = 3
228.00
AMD Athlon II X3 425
SE +/- 0.19, N = 3
385.00
AMD E-350
SE +/- 0.86, N = 3
728.00
160
320
480
640
800
1. (CC) gcc options: -O3 -pthread -lz -llzma

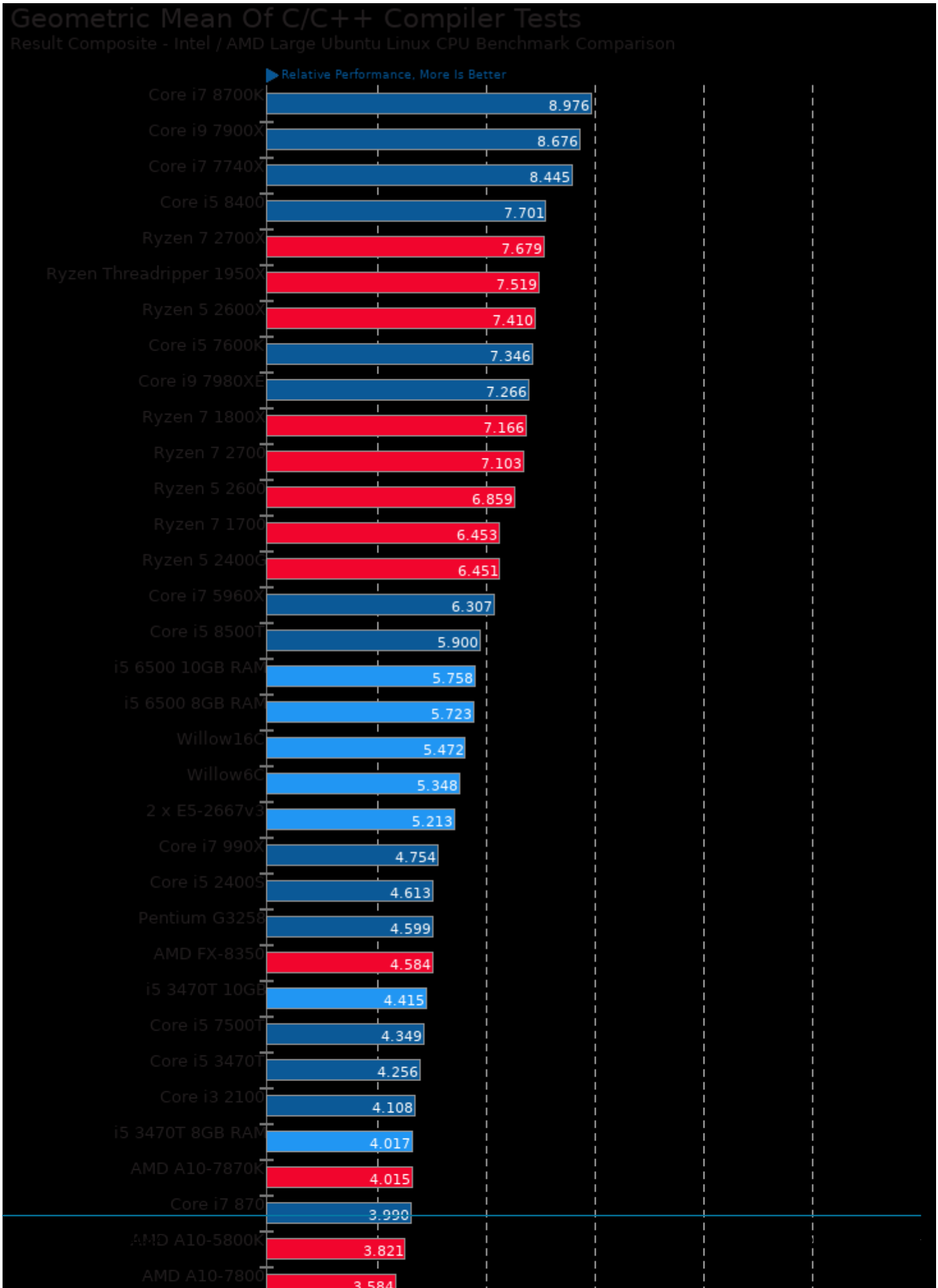
These geometric means are based upon test groupings / test suites for this result file.


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
Ryzen 7 2700X 7.645
Core i9 7900X 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

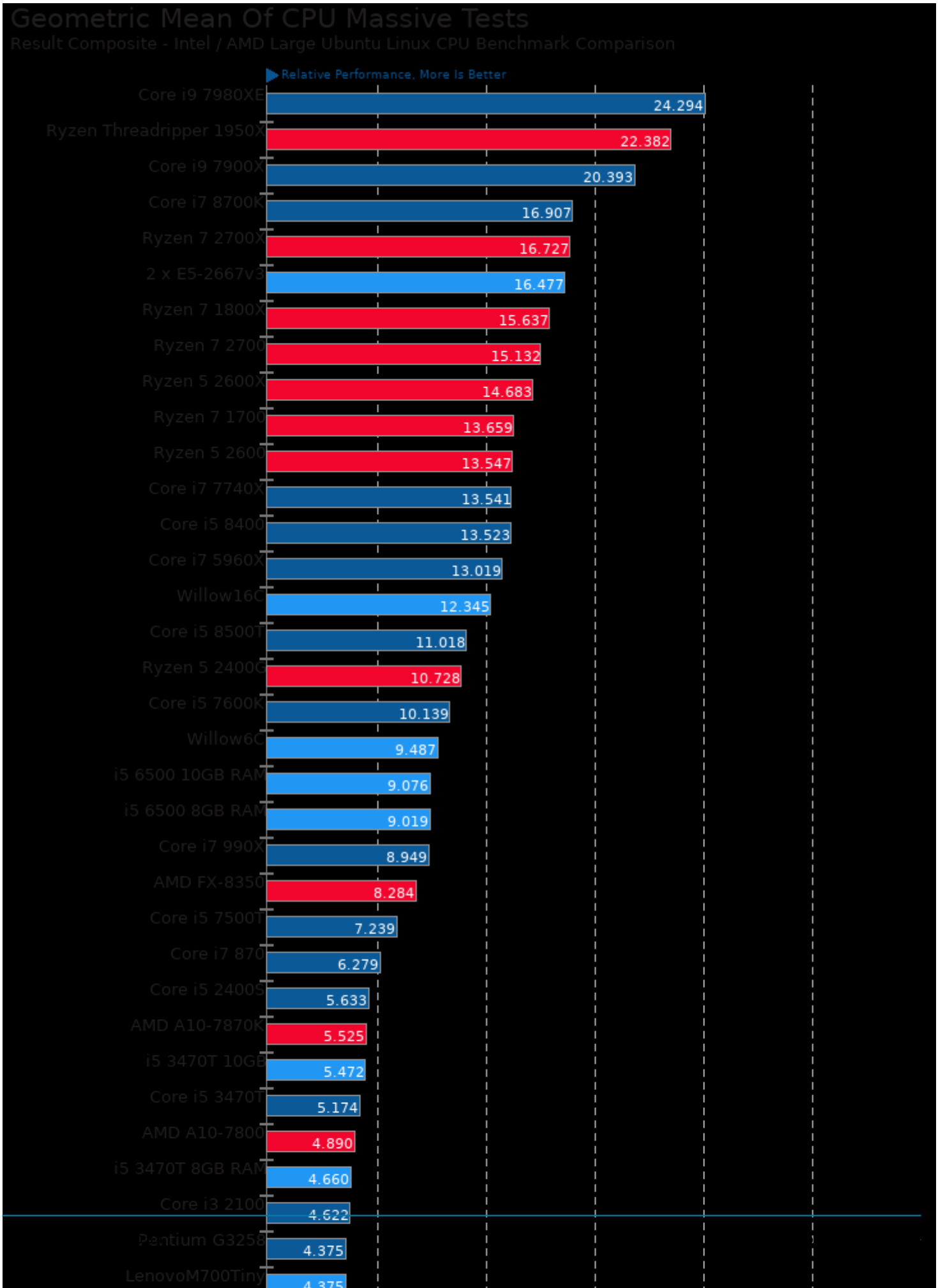
Geometric mean based upon tests: pts/encode-mp3 and pts/encode-flac


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

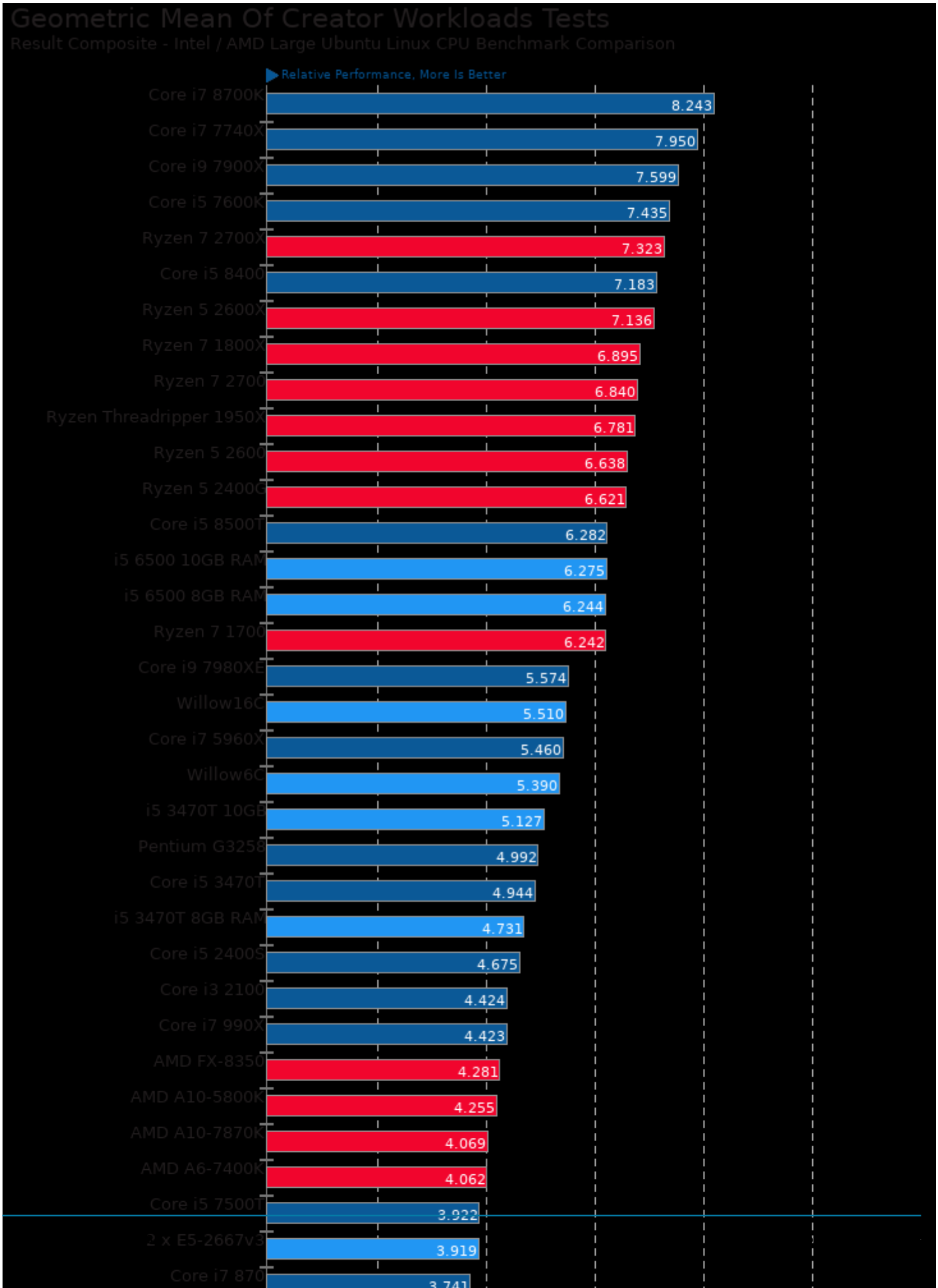
Geometric mean based upon tests: pts/tscp, pts/stockfish, pts/asmfish and pts/m-queens


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

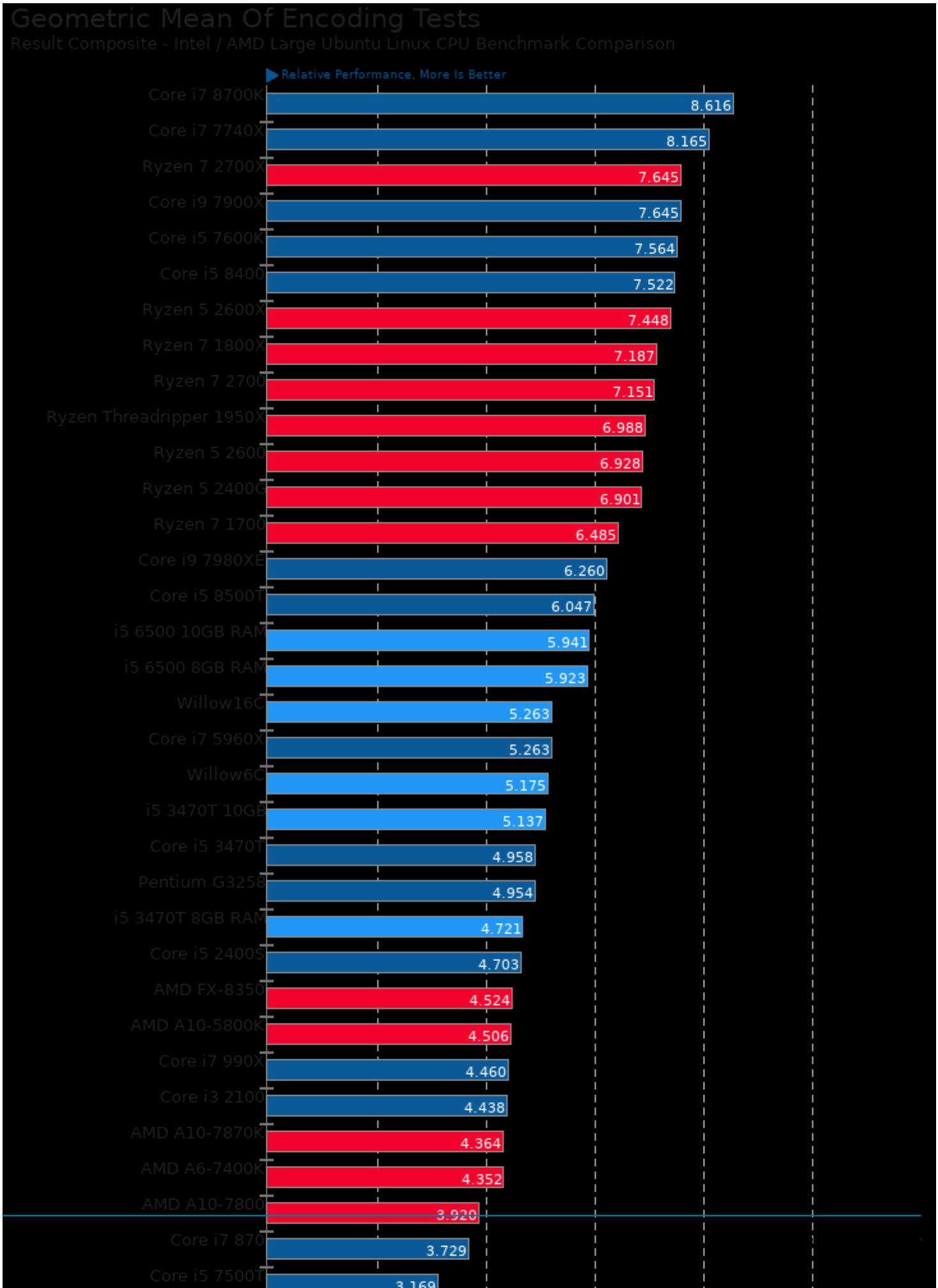
Geometric mean based upon tests: pts/scimark2, pts/aobench, pts/tscp, pts/stockfish, pts/build-php, pts/compress-7zip, pts/encode-mp3, pts/encode-flac, pts/compress-zstd and pts/openssl


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
Pentium G3258 4.375
LenovoM700Tiny 4.375

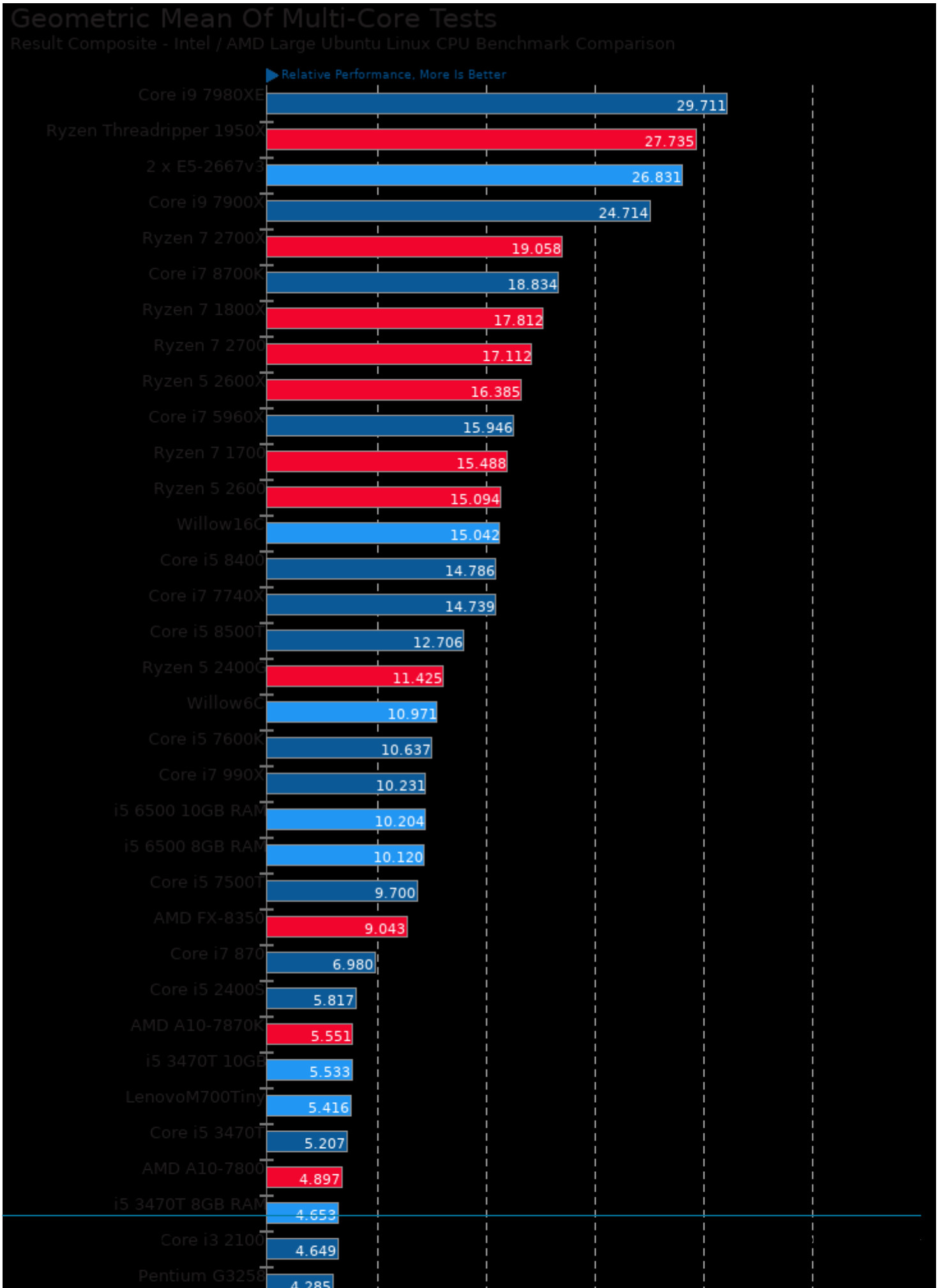
Geometric mean based upon tests: pts/asmfish, pts/build-linux-kernel, pts/build-php, pts/compress-7zip, pts/compress-zstd, pts/encode-flac, pts/encode-mp3, pts/openssl, pts/m-queens, pts/rodinia, pts/stockfish, pts/tinymembench and pts/ttsiod-renderer


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

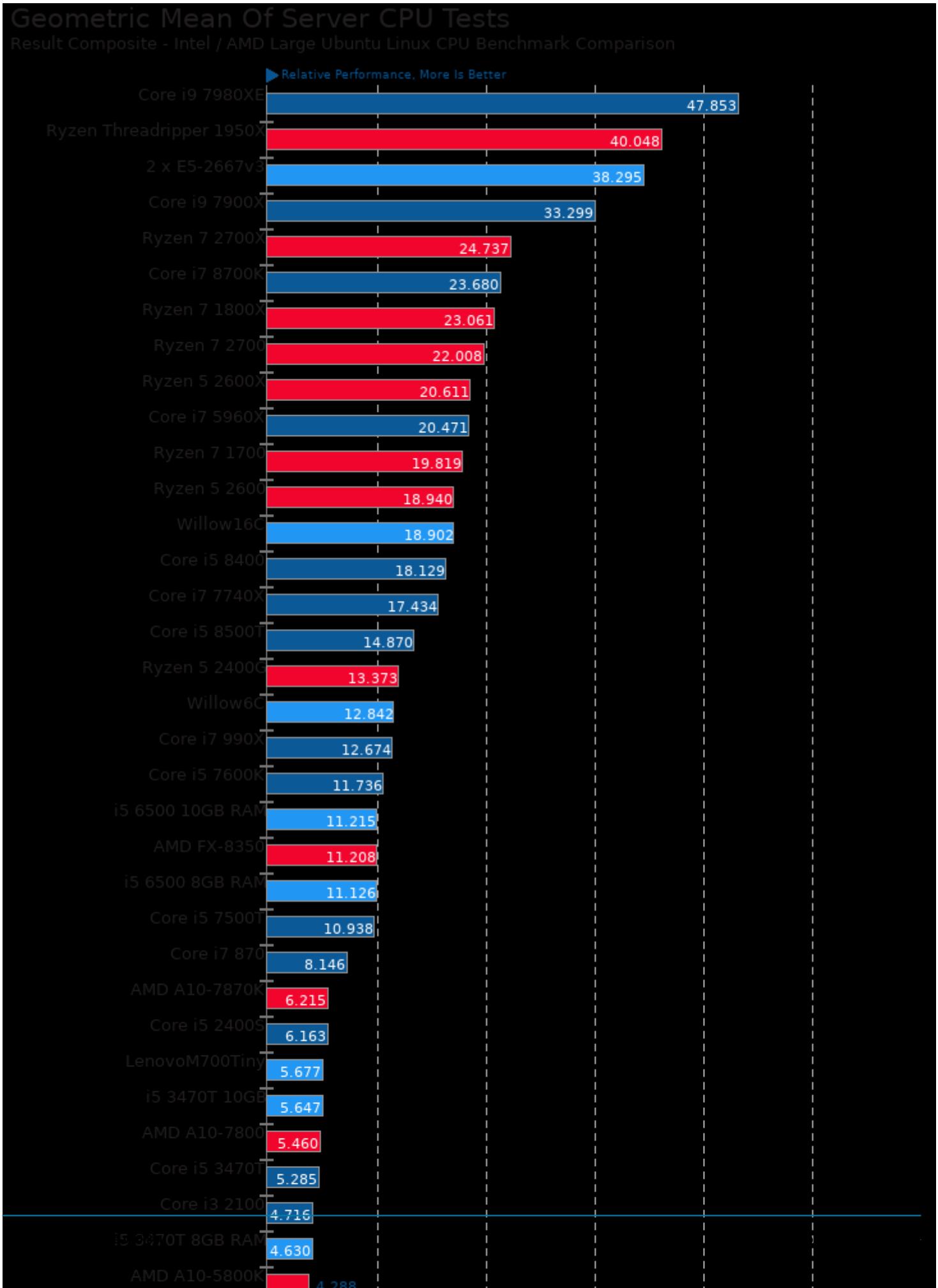
Geometric mean based upon tests: pts/aobench, pts/ttsiod-renderer, pts/encode-mp3 and pts/encode-flac


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
Ryzen 7 2700X 7.645
Core i9 7900X 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

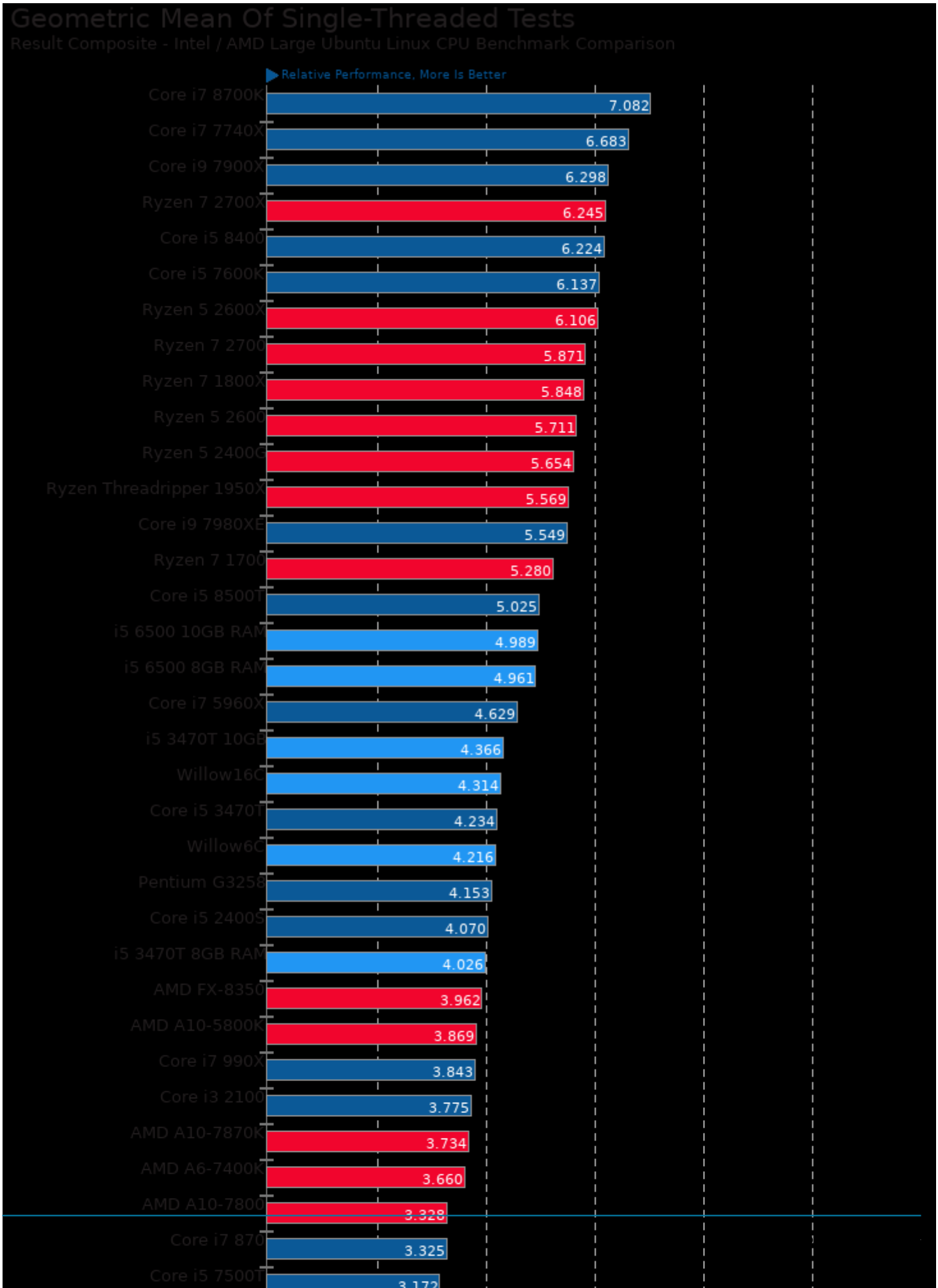
Geometric mean based upon tests: pts/encode-mp3 and pts/encode-flac


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 20:28.