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# Intel Core i7 8770K Ubuntu Linux Benchmarks

miarch vs 8700k

**Automated Executive Summary**

*Core i9 7980XE had the most wins, coming in first place for 35% of the tests.*

*Based on the geometric mean of all complete results, the fastest (Core i9 7980XE) was 4.168x the speed of the slowest (Core i5 7600K).*

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

*Xsbench at 7.083x*
*John The Ripper (Test: Blowfish) at 6.394x*
*NAS Parallel Benchmarks (Test / Class: EP.C) at 5.907x*
*asmFish (1024 Hash Memory, 26 Depth) at 5.421x*
*Rodinia (Test: OpenMP LavaMD) at 4.573x*
*OpenSSL (RSA 4096-bit Performance) at 4.409x*
*TTSIOD 3D Renderer (Phong Rendering With Soft-Shadow Mapping) at 3.818x*
*x264 (H.264 Video Encoding) at 3.744x*
*Timed HMMer Search (Pfam Database Search) at 2.344x*
*Timed PHP Compilation (Time To Compile) at 2.304x.*

# Test Systems:

## Core i5 7600K

Processor: Intel Core i5-7600K @ 4.20GHz (4 Cores), Motherboard: Gigabyte Z270M-D3H-CF, Chipset: Intel Device 591f + Z270, Memory: 8192MB, Disk: 250GB Samsung SSD 850, Graphics: Intel HD 630 (1150MHz), Audio: Realtek ALC892, Monitor: Acer B286HK, Network: Intel Connection

OS: Ubuntu 17.10, Kernel: 4.13.0-11-generic (x86_64), Desktop: GNOME Shell 3.26.0, Display Server: Wayland, OpenGL: 4.5 Mesa 17.2.1, Compiler: GCC 7.2.0, File-System: ext4, Screen Resolution: 1920x1080

Environment Notes: GJS_DEBUG_TOPICS=JS ERROR;JS LOG GJS_DEBUG_OUTPUT=stderr
Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-gnu-unique-object --enable-languages=c,ada,c++,go,brig,d,fortran,objc,obj-c++ --enable-libmpx --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none --enable-plugin --enable-shared --enable-threads=posix --host=x86_64-linux-gnu --program-prefix=x86_64-linux-gnu- --target=x86_64-linux-gnu --with-abi=m64 --with-arch-32=i686 --with-default-libstdcxx-abi=new --with-gcc-major-version-only --with-multilib-list=m32,m64,mx32 --with-target-system-zlib --with-tune=generic --without-cuda-driver -v
Processor Notes: Scaling Governor: intel_pstate performance

## Core i5 8400

Processor: Intel Core i5-8400 @ 4.00GHz (6 Cores), Motherboard: ASUS PRIME Z370-A, Chipset: Intel Device 3ec2, Memory: 16384MB, Disk: 120GB Force MP500, Graphics: EFI VGA, Audio: Realtek ALC1220, Network: Intel Connection

OS: Ubuntu 17.10, Kernel: 4.13.0-11-generic (x86_64), Desktop: GNOME Shell 3.26.0, Display Driver: modesetting 1.19.3, OpenGL: 3.3 Mesa 17.2.1 (LLVM 5.0 256 bits), Compiler: GCC 7.2.0, File-System: ext4, Screen Resolution: 1024x768

Environment Notes: GJS_DEBUG_TOPICS=JS ERROR;JS LOG GJS_DEBUG_OUTPUT=stderr
Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-gnu-unique-object --enable-languages=c,ada,c++,go,brig,d,fortran,objc,obj-c++ --enable-libmpx --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none --enable-plugin --enable-shared --enable-threads=posix --host=x86_64-linux-gnu --program-prefix=x86_64-linux-gnu- --target=x86_64-linux-gnu --with-abi=m64 --with-arch-32=i686 --with-default-libstdcxx-abi=new --with-gcc-major-version-only --with-multilib-list=m32,m64,mx32 --with-target-system-zlib --with-tune=generic --without-cuda-driver -v
Processor Notes: Scaling Governor: intel_pstate performance

## Core i7 4790K

Processor: Intel Core i7-4790K @ 4.40GHz (8 Cores), Motherboard: Gigabyte Z97-HD3P, Chipset: Intel 4th Gen Core DRAM, Memory: 16384MB, Disk: 120GB OCZ TRION100, Graphics: Intel Xeon E3-1200 v3/4th Gen Core IGP (1250MHz), Audio: Intel Xeon E3-1200 v3/4th, Monitor: Acer B286HK, Network: Realtek RTL8111/8168/8411

OS: Ubuntu 17.10, Kernel: 4.13.0-11-generic (x86_64), Desktop: GNOME Shell 3.26.0, Display Server: Wayland, OpenGL: 4.5 Mesa 17.2.1, Compiler: GCC 7.2.0, File-System: ext4, Screen Resolution: 1920x1080

Environment Notes: GJS_DEBUG_TOPICS=JS ERROR;JS LOG GJS_DEBUG_OUTPUT=stderr
Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-gnu-unique-object --enable-languages=c,ada,c++,go,brig,d,fortran,objc,obj-c++ --enable-libmpx --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none --enable-plugin --enable-shared --enable-threads=posix --host=x86_64-linux-gnu --program-prefix=x86_64-linux-gnu- --target=x86_64-linux-gnu --with-abi=m64 --with-arch-32=i686 --with-default-libstdcxx-abi=new --with-gcc-major-version-only --with-multilib-list=m32,m64,mx32 --with-target-system-zlib --with-tune=generic --without-cuda-driver -v
Processor Notes: Scaling Governor: intel_pstate performance

## Core i7 7700K

Processor: Intel Core i7-7700K @ 4.50GHz (8 Cores), Motherboard: MSI Z270-A PRO (MS-7A71) v1.0, Chipset: Intel Device 591f + Z270, Memory: 16384MB, Disk: 128GB THNSN5128GPU7 TOSHIBA, Graphics: Intel HD 630

(1150MHz), Audio: Realtek ALC892, Monitor: DELL P2415Q, Network: Realtek RTL8111/8168/8411

OS: Ubuntu 17.10, Kernel: 4.13.0-11-generic (x86_64), Desktop: GNOME Shell 3.26.0, Display Server: Wayland, OpenGL: 4.5 Mesa 17.2.1, Compiler: GCC 7.2.0, File-System: ext4, Screen Resolution: 3840x2160

Environment Notes: GJS_DEBUG_TOPICS=JS ERROR;JS LOG GJS_DEBUG_OUTPUT=stderr
Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-gnu-unique-object --enable-languages=c,ada,c++,go,brig,d,fortran,objc,obj-c++ --enable-libmpx --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none --enable-plugin --enable-shared --enable-threads=posix --host=x86_64-linux-gnu --program-prefix=x86_64-linux-gnu- --target=x86_64-linux-gnu --with-abi=m64 --with-arch-32=i686 --with-default-libstdcxx-abi=new --with-gcc-major-version-only --with-multilib-list=m32,m64,mx32 --with-target-system-zlib --with-tune=generic --without-cuda-driver -v
Processor Notes: Scaling Governor: intel_pstate performance

## Core i7 7740X

Processor: Intel Core i7-7740K @ 4.50GHz (8 Cores), Motherboard: ASUS PRIME X299-A, Chipset: Intel Device 591f, Memory: 16384MB, Disk: 240GB Force MP500, Graphics: NV132 11264MB, Audio: Realtek ALC1220, Network: Intel Connection

OS: Ubuntu 17.10, Kernel: 4.13.0-11-generic (x86_64), Desktop: GNOME Shell 3.26.0, OpenGL: 4.3 Mesa 17.2.1, Compiler: GCC 7.2.0, File-System: ext4, Screen Resolution: 3840x2160

Environment Notes: GJS_DEBUG_TOPICS=JS ERROR;JS LOG GJS_DEBUG_OUTPUT=stderr
Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-gnu-unique-object --enable-languages=c,ada,c++,go,brig,d,fortran,objc,obj-c++ --enable-libmpx --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none --enable-plugin --enable-shared --enable-threads=posix --host=x86_64-linux-gnu --program-prefix=x86_64-linux-gnu- --target=x86_64-linux-gnu --with-abi=m64 --with-arch-32=i686 --with-default-libstdcxx-abi=new --with-gcc-major-version-only --with-multilib-list=m32,m64,mx32 --with-target-system-zlib --with-tune=generic --without-cuda-driver -v
Processor Notes: Scaling Governor: intel_pstate performance

## Core i7 7820X

Processor: Intel Core i7-7820X @ 4.50GHz (16 Cores), Motherboard: MSI X299 SLI PLUS (MS-7A93) v1.0, Chipset: Intel Device 2020, Memory: 16384MB, Disk: 240GB Force MP500, Graphics: NV132 11264MB, Audio: Realtek ALC1220, Network: Intel Connection

OS: Ubuntu 17.10, Kernel: 4.13.0-11-generic (x86_64), Desktop: GNOME Shell 3.26.0, OpenGL: 4.3 Mesa 17.2.1, Compiler: GCC 7.2.0, File-System: ext4, Screen Resolution: 3840x2160

Environment Notes: GJS_DEBUG_TOPICS=JS ERROR;JS LOG GJS_DEBUG_OUTPUT=stderr
Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-gnu-unique-object --enable-languages=c,ada,c++,go,brig,d,fortran,objc,obj-c++ --enable-libmpx --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none --enable-plugin --enable-shared --enable-threads=posix --host=x86_64-linux-gnu --program-prefix=x86_64-linux-gnu- --target=x86_64-linux-gnu --with-abi=m64 --with-arch-32=i686 --with-default-libstdcxx-abi=new --with-gcc-major-version-only --with-multilib-list=m32,m64,mx32 --with-target-system-zlib --with-tune=generic --without-cuda-driver -v
Processor Notes: Scaling Governor: intel_pstate performance

## Core i7 8700K

Processor: Intel Core i7-8700K @ 4.00GHz (12 Cores), Motherboard: ASUS PRIME Z370-A, Chipset: Intel Device 3ec2, Memory: 16384MB, Disk: 120GB Force MP500, Graphics: llvmpipe 16000MB, Audio: Realtek ALC1220, Network: Intel Connection

OS: Ubuntu 17.10, Kernel: 4.13.0-11-generic (x86_64), Desktop: GNOME Shell 3.26.0, Display Driver: modesetting 1.19.3, OpenGL: 3.3 Mesa 17.2.1 (LLVM 5.0 256 bits), Compiler: GCC 7.2.0, File-System: ext4, Screen Resolution: 1024x768

Environment Notes: GJS_DEBUG_TOPICS=JS ERROR;JS LOG GJS_DEBUG_OUTPUT=stderr
Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --enable-checking=release --enable-clocale=gnu --enable-default-pie

--enable-gnu-unique-object --enable-languages=c,ada,c++,go,brig,d,fortran,objc,obj-c++ --enable-libmpx --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none --enable-plugin --enable-shared --enable-threads=posix --host=x86_64-linux-gnu --program-prefix=x86_64-linux-gnu- --target=x86_64-linux-gnu --with-abi=m64 --with-arch-32=i686 --with-default-libstdcxx-abi=new --with-gcc-major-version-only --with-multilib-list=m32,m64,mx32 --with-target-system-zlib --with-tune=generic --without-cuda-driver -v
Processor Notes: Scaling Governor: intel_pstate performance

## Core i9 7900X

Processor: Intel Core i7-7900X @ 4.50GHz (20 Cores), Motherboard: MSI X299 SLI PLUS (MS-7A93) v1.0, Chipset: Intel Device 2020, Memory: 16384MB, Disk: 240GB Force MP500, Graphics: NV132 11264MB, Audio: Realtek ALC1220, Network: Intel Connection

OS: Ubuntu 17.10, Kernel: 4.13.0-11-generic (x86_64), Desktop: GNOME Shell 3.26.0, OpenGL: 4.3 Mesa 17.2.1, Compiler: GCC 7.2.0, File-System: ext4, Screen Resolution: 3840x2160

Environment Notes: GJS_DEBUG_TOPICS=JS ERROR;JS LOG GJS_DEBUG_OUTPUT=stderr
Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-gnu-unique-object --enable-languages=c,ada,c++,go,brig,d,fortran,objc,obj-c++ --enable-libmpx --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none --enable-plugin --enable-shared --enable-threads=posix --host=x86_64-linux-gnu --program-prefix=x86_64-linux-gnu- --target=x86_64-linux-gnu --with-abi=m64 --with-arch-32=i686 --with-default-libstdcxx-abi=new --with-gcc-major-version-only --with-multilib-list=m32,m64,mx32 --with-target-system-zlib --with-tune=generic --without-cuda-driver -v
Processor Notes: Scaling Governor: intel_pstate performance

## Core i9 7960X

Processor: Intel Core i9-7960X @ 4.40GHz (32 Cores), Motherboard: MSI X299 SLI PLUS (MS-7A93) v1.0, Chipset: Intel Device 2020, Memory: 16384MB, Disk: 240GB Force MP500, Graphics: NV132 11264MB, Audio: Realtek ALC1220, Network: Intel Connection

OS: Ubuntu 17.10, Kernel: 4.13.0-11-generic (x86_64), Desktop: GNOME Shell 3.26.0, OpenGL: 4.3 Mesa 17.2.1, Compiler: GCC 7.2.0, File-System: ext4, Screen Resolution: 3840x2160

Environment Notes: GJS_DEBUG_TOPICS=JS ERROR;JS LOG GJS_DEBUG_OUTPUT=stderr
Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-gnu-unique-object --enable-languages=c,ada,c++,go,brig,d,fortran,objc,obj-c++ --enable-libmpx --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none --enable-plugin --enable-shared --enable-threads=posix --host=x86_64-linux-gnu --program-prefix=x86_64-linux-gnu- --target=x86_64-linux-gnu --with-abi=m64 --with-arch-32=i686 --with-default-libstdcxx-abi=new --with-gcc-major-version-only --with-multilib-list=m32,m64,mx32 --with-target-system-zlib --with-tune=generic --without-cuda-driver -v
Processor Notes: Scaling Governor: intel_pstate performance

## Core i9 7980XE

Processor: Intel Core i9-7980XE @ 4.40GHz (36 Cores), Motherboard: ASUS PRIME X299-A, Chipset: Intel Device 2020, Memory: 16384MB, Disk: 240GB Force MP500, Graphics: NV132 11264MB, Audio: Realtek ALC1220, Network: Intel Connection

OS: Ubuntu 17.10, Kernel: 4.13.0-11-generic (x86_64), Desktop: GNOME Shell 3.26.0, OpenGL: 4.3 Mesa 17.2.1, Compiler: GCC 7.2.0, File-System: ext4, Screen Resolution: 3840x2160

Environment Notes: GJS_DEBUG_TOPICS=JS ERROR;JS LOG GJS_DEBUG_OUTPUT=stderr
Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-gnu-unique-object --enable-languages=c,ada,c++,go,brig,d,fortran,objc,obj-c++ --enable-libmpx --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none --enable-plugin --enable-shared --enable-threads=posix --host=x86_64-linux-gnu --program-prefix=x86_64-linux-gnu- --target=x86_64-linux-gnu --with-abi=m64 --with-arch-32=i686 --with-default-libstdcxx-abi=new --with-gcc-major-version-only --with-multilib-list=m32,m64,mx32 --with-target-system-zlib --with-tune=generic --without-cuda-driver -v
Processor Notes: Scaling Governor: intel_pstate performance

## Ryzen 7 1700

Processor: AMD Ryzen 7 1700 Eight-Core @ 3.00GHz (16 Cores), Motherboard: MSI B350 TOMAHAWK (MS-7A34) v1.0, Chipset: AMD Device 1450, Memory: 16384MB, Disk: 120GB Samsung SSD 840, Graphics: HIS AMD Radeon HD

7750/8740 / R7 250E, Audio: AMD Cape Verde/Pitcairn, Network: Realtek RTL8111/8168/8411

OS: Ubuntu 17.10, Kernel: 4.13.0-11-generic (x86_64), Desktop: GNOME Shell 3.26.0, Display Driver: modesetting 1.19.3, OpenGL: 3.3 Mesa 17.2.1 (LLVM 5.0 128 bits), Compiler: GCC 7.2.0, File-System: ext4, Screen Resolution: 1024x768

Environment Notes: GJS_DEBUG_TOPICS=JS ERROR;JS LOG GJS_DEBUG_OUTPUT=stderr
Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-gnu-unique-object --enable-languages=c,ada,c++,go,brig,d,fortran,objc,obj-c++ --enable-libmpx --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none --enable-plugin --enable-shared --enable-threads=posix --host=x86_64-linux-gnu --program-prefix=x86_64-linux-gnu- --target=x86_64-linux-gnu --with-abi=m64 --with-arch-32=i686 --with-default-libstdcxx-abi=new --with-gcc-major-version-only --with-multilib-list=m32,m64,mx32 --with-target-system-zlib --with-tune=generic --without-cuda-driver -v
Processor Notes: Scaling Governor: acpi-cpufreq performance

## Ryzen 7 1800X

Processor: AMD Ryzen 7 1800X Eight-Core @ 3.60GHz (16 Cores), Motherboard: MSI X370 XPOWER GAMING TITANIUM (MS-7A31) v1.0, Chipset: AMD Device 1450, Memory: 16384MB, Disk: 256GB INTEL SSDPEKKW256G7, Graphics: NVE4 2048MB, Audio: NVIDIA GK104 HDMI Audio, Monitor: G237HL, Network: Intel I211 Gigabit Connection

OS: Ubuntu 17.10, Kernel: 4.13.0-11-generic (x86_64), Desktop: GNOME Shell 3.26.0, Display Server: Wayland, OpenGL: 4.3 Mesa 17.2.1, Compiler: GCC 7.2.0, File-System: ext4, Screen Resolution: 1920x1080

Environment Notes: GJS_DEBUG_TOPICS=JS ERROR;JS LOG GJS_DEBUG_OUTPUT=stderr
Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-gnu-unique-object --enable-languages=c,ada,c++,go,brig,d,fortran,objc,obj-c++ --enable-libmpx --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none --enable-plugin --enable-shared --enable-threads=posix --host=x86_64-linux-gnu --program-prefix=x86_64-linux-gnu- --target=x86_64-linux-gnu --with-abi=m64 --with-arch-32=i686 --with-default-libstdcxx-abi=new --with-gcc-major-version-only --with-multilib-list=m32,m64,mx32 --with-target-system-zlib --with-tune=generic --without-cuda-driver -v
Processor Notes: Scaling Governor: acpi-cpufreq performance

## Ryzen Threadripper 1950X

Processor: AMD Ryzen Threadripper 1950X 16-Core @ 3.40GHz (32 Cores), Motherboard: Gigabyte X399 AORUS Gaming 7, Chipset: AMD Device 1450, Memory: 16384MB, Disk: 240GB Force MP500, Graphics: NV132 11264MB, Audio: Realtek ALC1220, Network: Qualcomm Atheros Device e0b1 + Intel Wireless 8265 / 8275

OS: Ubuntu 17.10, Kernel: 4.13.0-11-generic (x86_64), Desktop: GNOME Shell 3.26.0, OpenGL: 4.3 Mesa 17.2.1, Compiler: GCC 7.2.0, File-System: ext4, Screen Resolution: 3840x2160

Environment Notes: GJS_DEBUG_TOPICS=JS ERROR;JS LOG GJS_DEBUG_OUTPUT=stderr
Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-gnu-unique-object --enable-languages=c,ada,c++,go,brig,d,fortran,objc,obj-c++ --enable-libmpx --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none --enable-plugin --enable-shared --enable-threads=posix --host=x86_64-linux-gnu --program-prefix=x86_64-linux-gnu- --target=x86_64-linux-gnu --with-abi=m64 --with-arch-32=i686 --with-default-libstdcxx-abi=new --with-gcc-major-version-only --with-multilib-list=m32,m64,mx32 --with-target-system-zlib --with-tune=generic --without-cuda-driver -v
Processor Notes: Scaling Governor: acpi-cpufreq performance

## miarch

Processor: Intel Core i7-4790K @ 4.60GHz (4 Cores / 8 Threads), Motherboard: Gigabyte Z97X-SOC Force (F8 BIOS), Chipset: Intel 4th Gen Core DRAM, Memory: 32768MB, Disk: Samsung SSD 950 PRO 512GB, Graphics: Gigabyte AMD Radeon RX 560 4096MB (1250MHz), Audio: Intel Xeon E3-1200 v3/4th, Monitor: DELL P2715Q, Network: Qualcomm Atheros Killer E220x Gigabit

OS: Arch rolling, Kernel: 4.15.13-1-ARCH (x86_64), Desktop: KDE Plasma 5.12.3, Display Driver: modesetting 1.19.6, OpenGL: 4.5 Mesa 17.3.7 (LLVM 6.0.0), Compiler: GCC 7.3.1 20180312 + Clang 6.0.0, File-System: ext4, Screen Resolution: 3840x2160

# Intel Core i7 8770K Ubuntu Linux Benchmarks

Compiler Notes: --disable-libssp --disable-libstdcxx-pch --disable-libunwind-exceptions --disable-werror --enable-__cxa_atexit --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-default-ssp --enable-gnu-indirect-function --enable-gnu-unique-object --enable-install-libiberty --enable-languages=c,c++,ada,fortran,go,lto,objc,obj-c++ --enable-libmpx --enable-lto --enable-multilib --enable-plugin --enable-shared --enable-threads=posix --mandir=/usr/share/man --with-isl --with-linker-hash-style=gnu
Processor Notes: Scaling Governor: intel_pstate performance
Security Notes: KPTI + __user pointer sanitization + Full generic retpoline IBPB IBRS_FW Protection

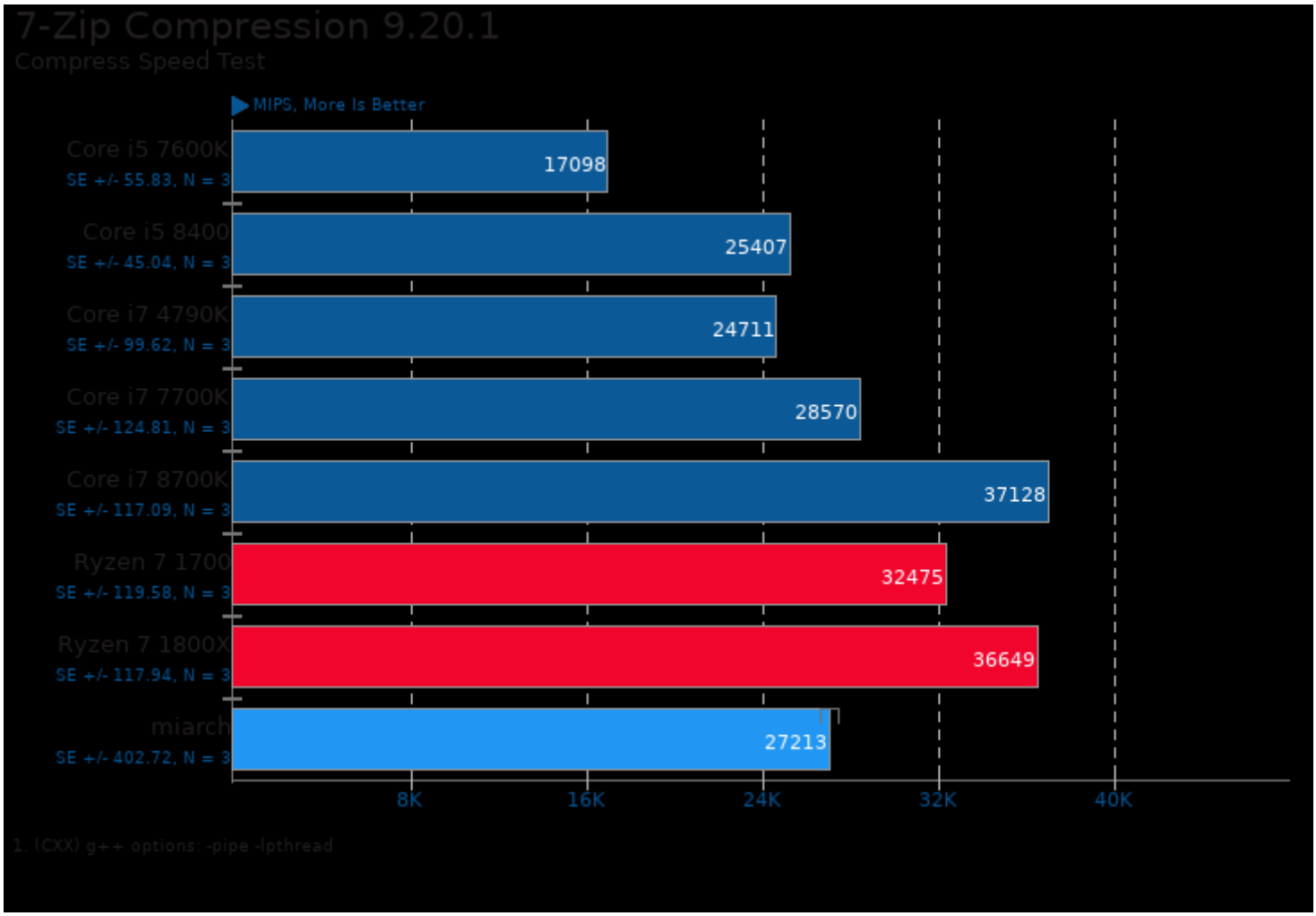
| | Core i5 7600K | Core i5 8400 | Core i7 4790K | Core i7 7700K | Core i7 7740X | Core i7 7820X | Core i7 8700K | Core i9 7900X | Core i9 7960X | Core i9 7980XE | Ryzen 7 1700 | Ryzen 7 1800X | Ryzen Threadripper | miarch |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **7-Zip Compression - C.S.T (MIPS)** | 17098 | 25407 | 24711 | 28570 | | | 37128 | | | | 32475 | 36649 | | 27213 |
| **Normalized** | 46.05% | 68.43% | 66.56% | 76.95% | | | 100% | | | | 87.47% | 98.71% | | 73.3% |
| **Standard** | 0.6% | 0.3% | 0.7% | 0.8% | | | 0.5% | | | | 0.6% | 0.6% | | 2.6% |
| **asmFish - 1.H.M.2.D (Nodes/s)** | 10419006 | 16099472 | 14304842 | 16024705 | 15947406 | 28301133 | 21842867 | 36151239 | 52443163 | 56478666 | 21212680 | 23943535 | 42424098 | 15075773 |
| **Normalized** | 18.45% | 28.51% | 25.33% | 28.37% | 28.24% | 50.11% | 38.67% | 64.01% | 92.85% | 100% | 37.56% | 42.39% | 75.12% | 26.69% |
| **Standard** | 1.2% | 1.1% | 1.6% | 1.3% | 1.2% | 1.1% | 0.7% | 1.1% | 1.4% | 0.3% | 1.3% | 1.4% | 0.2% | 0.5% |
| **C-Ray - Total Time (sec)** | 22.24 | 15.22 | 20.91 | 18.21 | 18.29 | 10.33 | 13.74 | 8.14 | 5.97 | 5.24 | 11.60 | 9.79 | 5.14 | 20.11 |
| **Normalized** | 23.11% | 33.77% | 24.58% | 28.23% | 28.1% | 49.76% | 37.41% | 63.14% | 86.1% | 98.09% | 44.31% | 52.5% | 100% | 25.56% |
| **Standard** | 0.1% | 0.1% | 0.1% | 0.1% | 0.1% | 6.7% | 0.1% | 6.7% | 11.5% | 0.4% | 7.4% | 0.8% | 0.9% | 0.1% |
| **Darktable - Masskrug - CPU-only** | 13.27 | 8.43 | 10.76 | 9.01 | | | 7.43 | | | | 8.29 | 7.37 | | |
| **Normalized** | 55.54% | 87.43% | 68.49% | 81.8% | | | 99.19% | | | | 88.9% | 100% | | |
| **Standard** | 0.2% | 0.2% | 0.1% | 0.2% | | | 0.2% | | | | 0.3% | 0.7% | | |
| **Darktable - Server Room - CPU-only** | 11.35 | 6.87 | 9.44 | 7.66 | | | 6.48 | | | | 6.30 | 5.65 | | |
| **Normalized** | 49.78% | 82.24% | 59.85% | 73.76% | | | 87.19% | | | | 89.68% | 100% | | |
| **Standard** | 0.3% | 0.1% | 0% | 0.1% | | | 0.1% | | | | 1% | 0.2% | | |
| **FFmpeg - H.2.H.T.N.D (sec)** | 6.51 | 4.67 | 5.74 | 4.88 | | | 4.52 | | | | 9.53 | 7.72 | | |
| **Normalized** | 69.43% | 96.79% | 78.75% | 92.62% | | | 100% | | | | 47.43% | 58.55% | | |
| **Standard** | 1.3% | 0.4% | 0.7% | 1.5% | | | 2.6% | | | | 0.3% | 1.4% | | |
| **Java JMH - Throughput (Ops/s)** | 15985 60302 1 | 23296 14696 4 | 17487 84508 9 | 17976 93613 5 | | | 23957 94605 4 | | | | 12779 95846 6 | 14781 30834 1 | | 18209 38951 6 |
| **Normalized** | 66.72% | 97.24% | 72.99% | 75.04% | | | 100% | | | | 53.34% | 61.7% | | 76.01% |

# Intel Core i7 8770K Ubuntu Linux Benchmarks

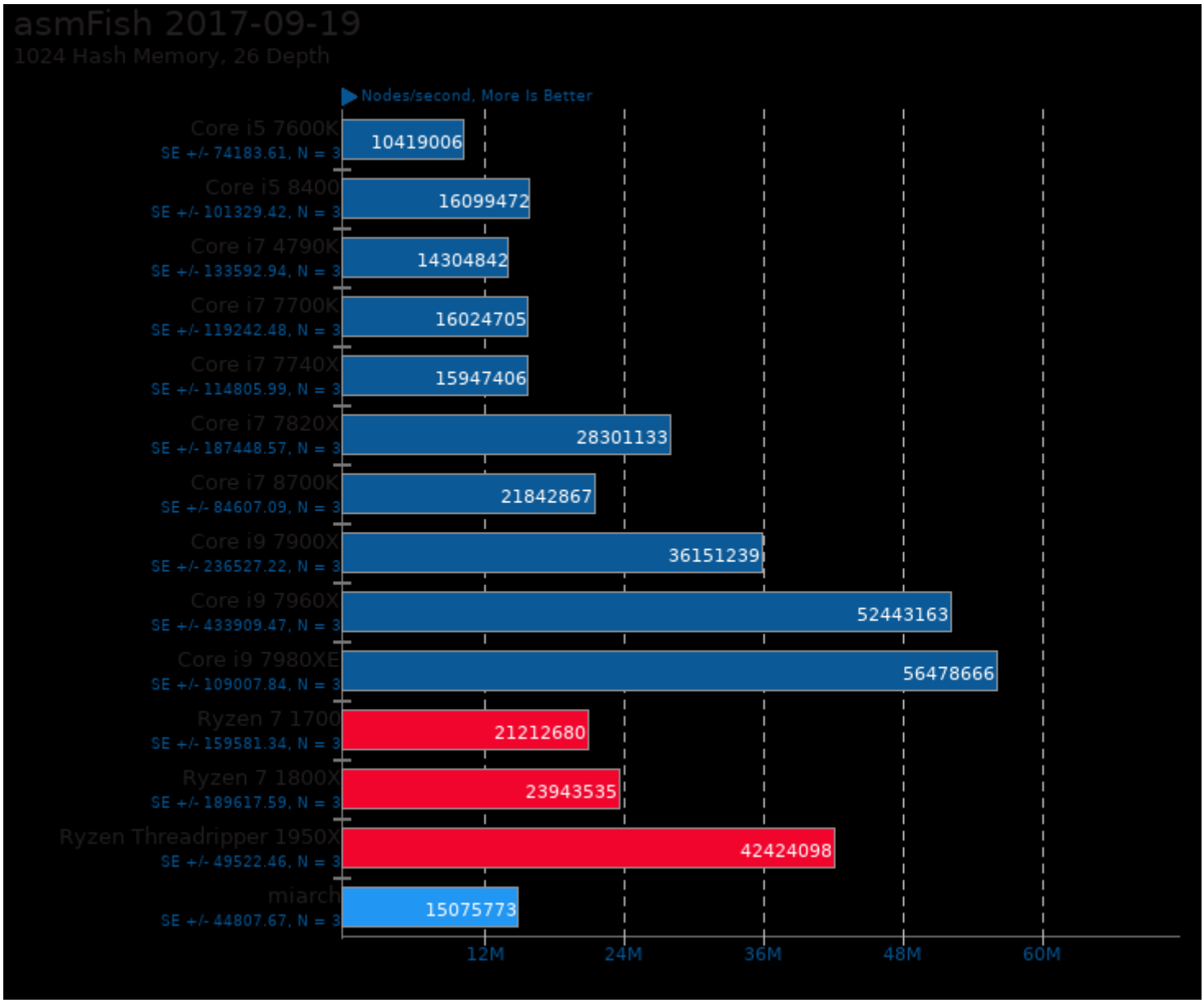
| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **John The Ripper - Blowfish (Real C/S)** | **4907** | 7156 | 7811 | 8899 | 8892 | 16451 | 11856 | 20514 | 29574 | **31377** | 10667 | 12431 | 23562 | 7978 |
| **Normalized** | 15.64% | 22.81% | 24.89% | 28.36% | 28.34% | 52.43% | 37.79% | 65.38% | 94.25% | 100% | 34% | 39.62% | 75.09% | 25.43% |
| **Standard** | 0.1% | | 0.1% | | 0.1% | 0.1% | 0.1% | 0.2% | 0.1% | 0.1% | 0.8% | 0.3% | 1.9% | 0.5% |
| **NAS Parallel Benchmarks - EP.C (Mop/s)** | **225.48** | 327.55 | 377.34 | 406.23 | 407.57 | 745.27 | 542.04 | 927.48 | 1330 | **1332** | 491.96 | 566.72 | 1087 | |
| **Normalized** | 16.93% | 24.59% | 28.33% | 30.5% | 30.6% | 55.96% | 40.7% | 69.64% | 99.84% | 100% | 36.94% | 42.55% | 81.65% | |
| **Standard** | 0% | 0.4% | 0.9% | 1.1% | 0.7% | 0.6% | 0.5% | 0.8% | 0.4% | 0.5% | 0.2% | 0.3% | 0.3% | |
| **OpenSSL - R.4.b.P (Signs/sec)** | **681.57** | 997.47 | 730.07 | 849.63 | 848.70 | 1573 | 1131 | 1964 | 2830 | **3005** | 986.80 | 1141 | 2186 | 760.10 |
| **Normalized** | 22.68% | 33.2% | 24.3% | 28.28% | 28.24% | 52.34% | 37.64% | 65.37% | 94.18% | 100% | 32.84% | 37.98% | 72.74% | 25.3% |
| **Standard** | 0.6% | 0.1% | 0.1% | 0% | 0% | 0% | 0% | 0.1% | 0% | 0% | 0.2% | 0.2% | 0.2% | 0.1% |
| **Rodinia - OpenMP LavaMD (sec)** | **203.55** | 139.65 | 170.17 | 154.37 | 153.09 | | 115.83 | 69.93 | 48.88 | 46.61 | 95.27 | 82.74 | **44.51** | 166.67 |
| **Normalized** | 21.87% | 31.87% | 26.16% | 28.83% | 29.07% | | 38.43% | 63.65% | 91.06% | 95.49% | 46.72% | 53.8% | 100% | 26.71% |
| **Standard** | 0.2% | 0.1% | 0% | 0.7% | 0.3% | | 0.1% | 0.2% | 2% | 1.6% | 0% | 0.5% | 0.3% | 0.3% |
| **Timed HMMer Search - P.D.S (sec)** | **10.71** | 6.45 | 8.06 | 6.42 | 6.42 | 5.00 | 5.71 | 4.75 | 4.67 | **4.57** | 9.58 | 8.05 | 8.23 | 7.68 |
| **Normalized** | 42.67% | 70.85% | 56.7% | 71.18% | 71.18% | 91.4% | 80.04% | 96.21% | 97.86% | 100% | 47.7% | 56.77% | 55.53% | 59.51% |
| **Standard** | 0.1% | 0.5% | 0.4% | 0% | 0.2% | 1.2% | 0.2% | 0.8% | 0.7% | 0.3% | 0.5% | 0.3% | 1.4% | 0.1% |
| **Timed LLVM Compilation - Time To Compile (sec)** | **897.89** | 571.40 | 719.37 | 586.45 | | | **445.72** | | | | 527.12 | 467.26 | | 713.84 |
| **Normalized** | 49.64% | 78% | 61.96% | 76% | | | 100% | | | | 84.56% | 95.39% | | 62.44% |
| **Standard** | 0.1% | 0.1% | 0.1% | 0.1% | | | 0.1% | | | | 0.2% | 0.1% | | 0.2% |
| **Timed PHP Compilation - Time To Compile (sec)** | **102.13** | 70.12 | 78.77 | 66.50 | 66.78 | 54.24 | 57.31 | 48.58 | **44.33** | 45.03 | 76.83 | 67.41 | 52.37 | 76.79 |
| **Normalized** | 43.41% | 63.22% | 56.28% | 66.66% | 66.38% | 81.73% | 77.35% | 91.25% | 100% | 98.45% | 57.7% | 65.76% | 84.65% | 57.73% |
| **Standard** | 0.1% | 0.3% | 0.1% | 0.3% | 0.4% | 1.7% | 1.4% | 1.7% | 2.3% | 3.3% | 0.6% | 0.6% | 0.4% | 0.1% |
| **TTSIOD 3D Renderer - P.R.W.S.S.M (FPS)** | **188.08** | 270.18 | 237.87 | 282.62 | 283.20 | 404.56 | 364.71 | 505.29 | **718.06** | 701.37 | 284.85 | 326.67 | 470.29 | 249.90 |
| **Normalized** | 26.19% | 37.63% | 33.13% | 39.36% | 39.44% | 56.34% | 50.79% | 70.37% | 100% | 97.68% | 39.67% | 45.49% | 65.49% | 34.8% |
| **Standard** | 0.1% | 0.2% | 0.3% | 0.7% | 0.4% | 5.8% | 0.5% | 6.7% | 0.5% | 6.6% | 0% | 0.5% | 2.5% | 0.4% |
| **x264 - H.2.V.E (FPS)** | **151.38** | 240.85 | 203.66 | 231.23 | 231.11 | 410.56 | 296.95 | 504.03 | **566.83** | 492.03 | 242.97 | 273.26 | 388.92 | |
| **Normalized** | 26.71% | 42.49% | 35.93% | 40.79% | 40.77% | 72.43% | 52.39% | 88.92% | 100% | 86.8% | 42.86% | 48.21% | 68.61% | |
| **Standard** | 1.1% | 0.4% | 0.2% | 0.7% | 0.4% | 0.4% | 0.4% | 1.4% | 0.6% | 0.5% | 0.4% | 1.4% | 1.9% | |
| **Xsbench (Lookups/s)** | **69318 0** | 15136 06 | 12429 14 | 15295 16 | 15064 80 | 25377 61 | 19421 08 | 35088 43 | 47400 36 | **49099 04** | 15955 23 | 16425 32 | 27572 08 | 12496 20 |
| **Normalized** | 14.12% | 30.83% | 25.31% | 31.15% | 30.68% | 51.69% | 39.55% | 71.46% | 96.54% | 100% | 32.5% | 33.45% | 56.16% | 25.45% |
| **Standard** | | | | | | | | | | | | | | |

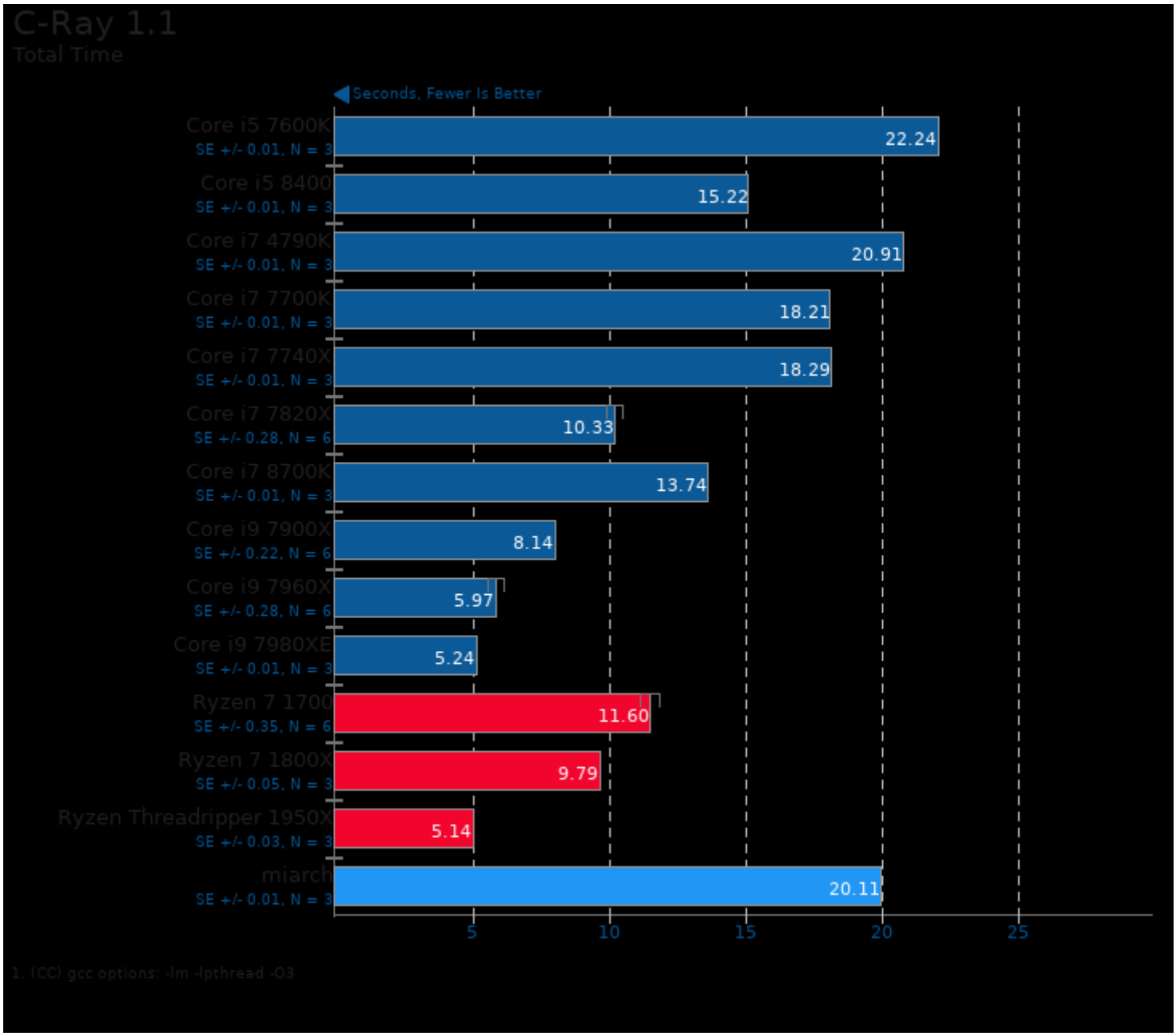
**Deviation**

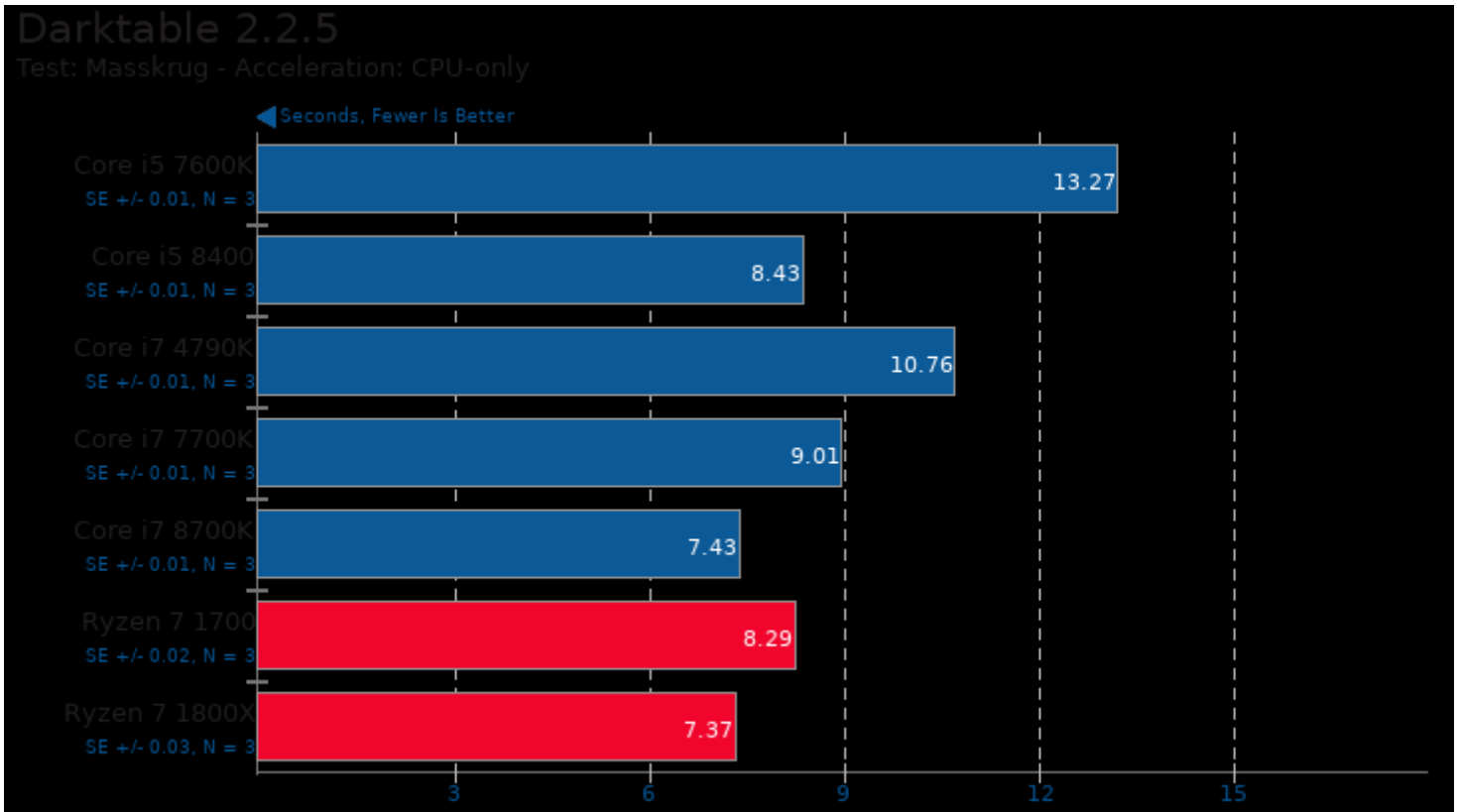
# Intel Core i7 8770K Ubuntu Linux Benchmarks

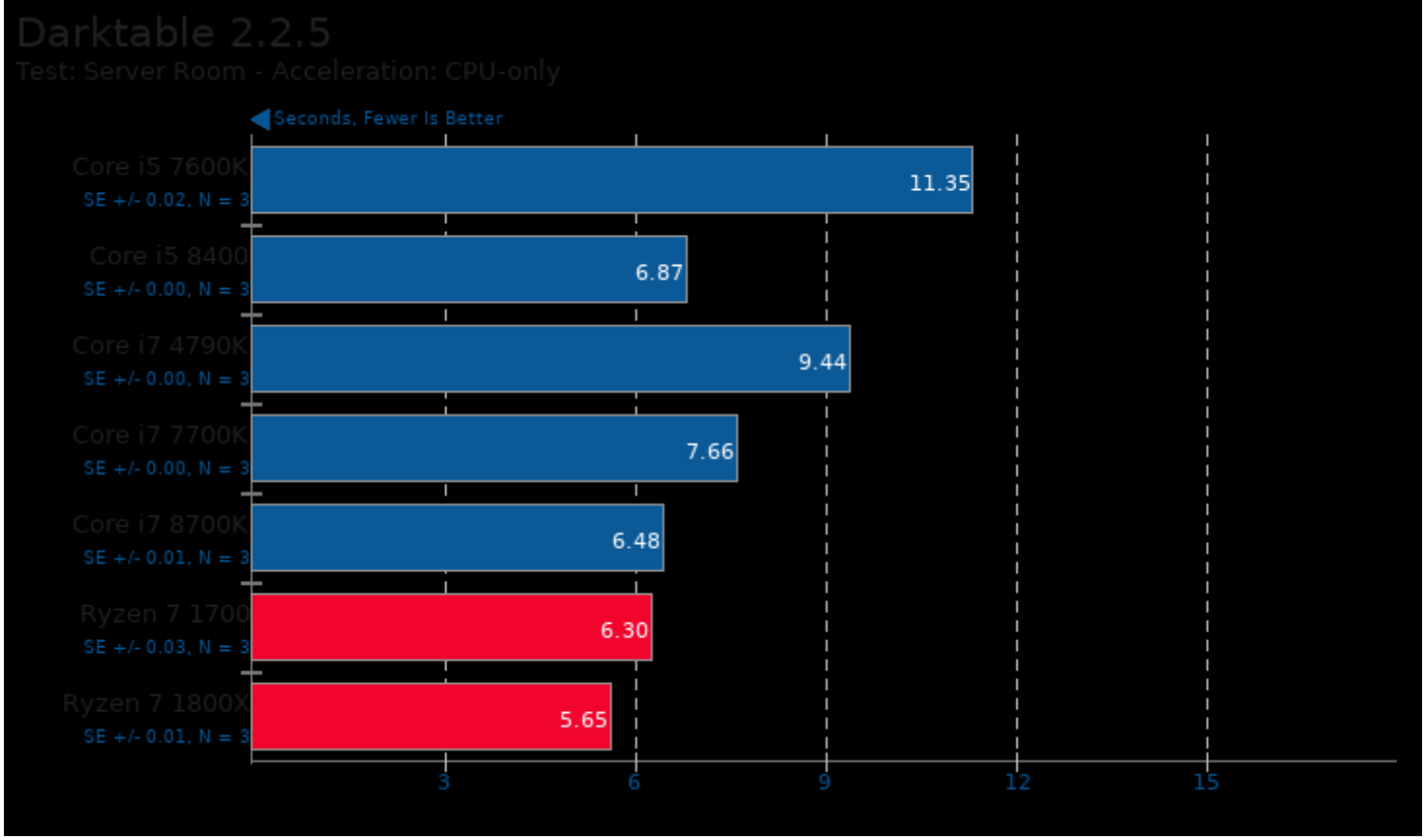


# Intel Core i7 8770K Ubuntu Linux Benchmarks

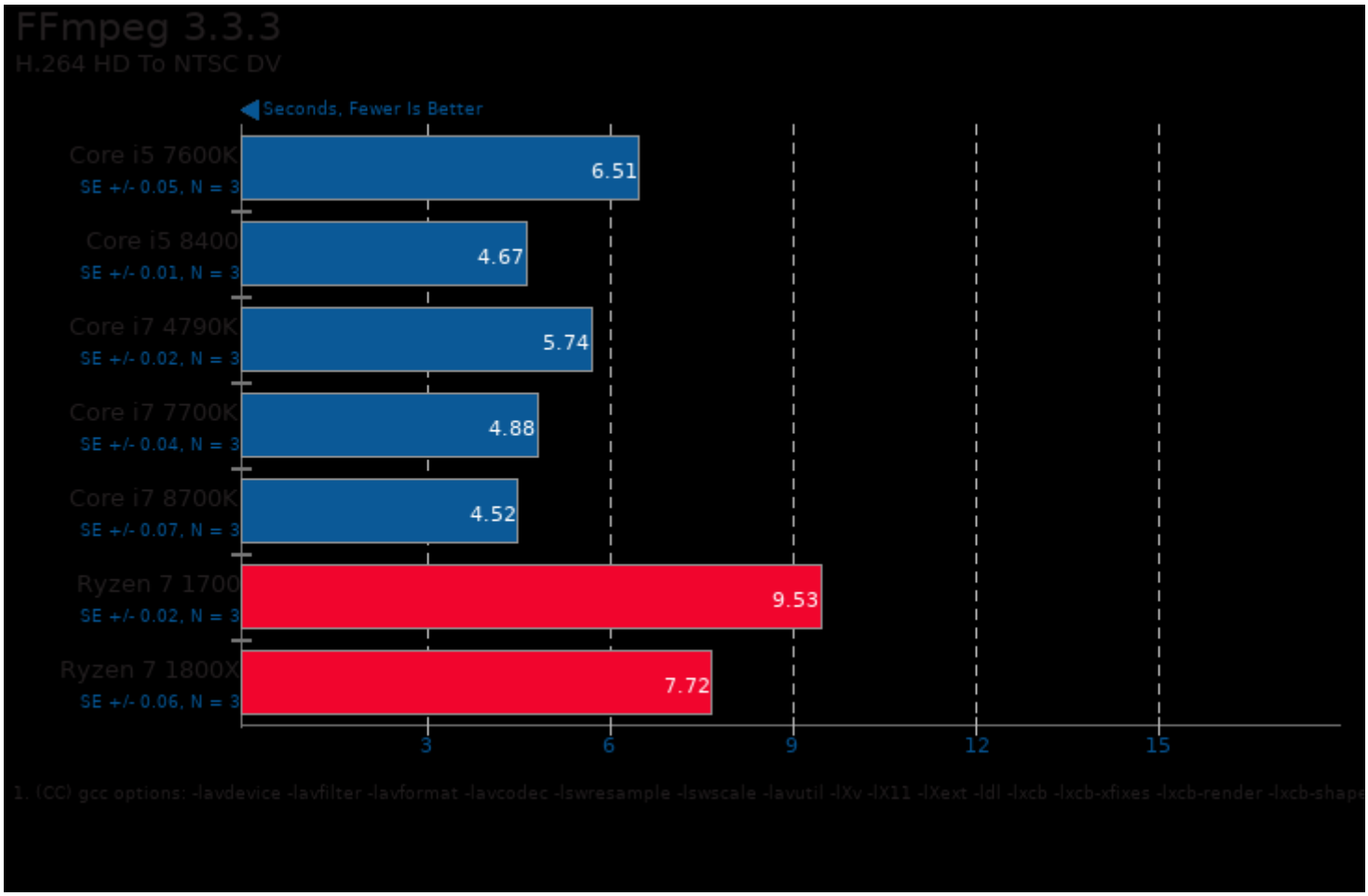



C-Ray 1.1
Total Time
Seconds, Fewer Is Better
Core i5 7600K
SE +/- 0.01, N = 3
22.24
Core i5 8400
SE +/- 0.01, N = 3
15.22
Core i7 4790K
SE +/- 0.01, N = 3
20.91
Core i7 7700K
SE +/- 0.01, N = 3
18.21
Core i7 7740X
SE +/- 0.01, N = 3
18.29
Core i7 7820X
SE +/- 0.28, N = 6
10.33
Core i7 8700K
SE +/- 0.01, N = 3
13.74
Core i9 7900X
SE +/- 0.22, N = 6
8.14
Core i9 7960X
SE +/- 0.28, N = 6
5.97
Core i9 7980XE
SE +/- 0.01, N = 3
5.24
Ryzen 7 1700
SE +/- 0.35, N = 6
11.60
Ryzen 7 1800X
SE +/- 0.05, N = 3
9.79
Ryzen Threadripper 1950X
SE +/- 0.03, N = 3
5.14
miarch
SE +/- 0.01, N = 3
20.11
5
10
15
20
25
1. (CC) gcc options: -lm -lpthread -O3

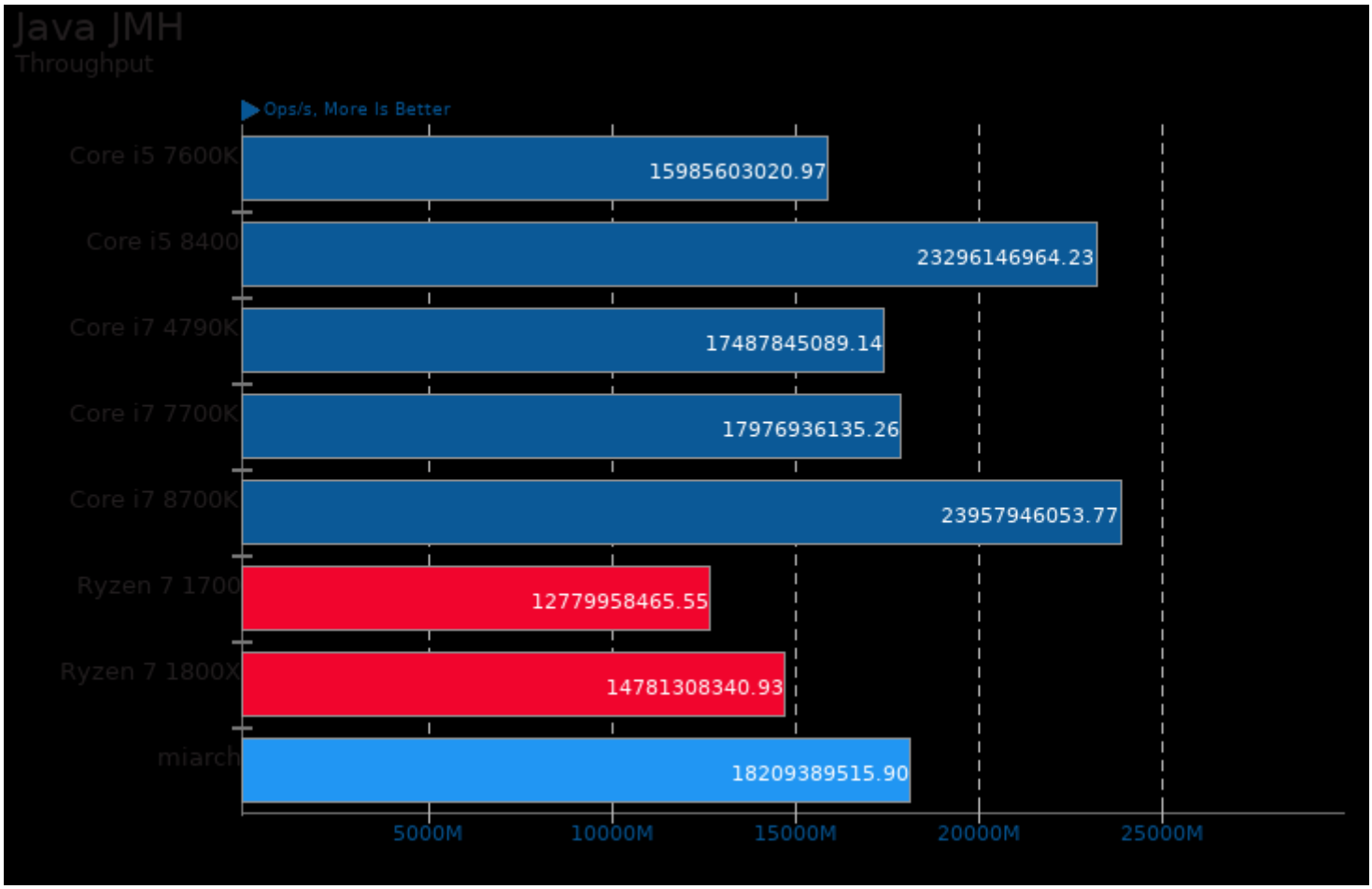

Darktable 2.2.5
Test: Masskrug - Acceleration: CPU-only
Seconds, Fewer Is Better
Core i5 7600K
SE +/- 0.01, N = 3
13.27
Core i5 8400
SE +/- 0.01, N = 3
8.43
Core i7 4790K
SE +/- 0.01, N = 3
10.76
Core i7 7700K
SE +/- 0.01, N = 3
9.01
Core i7 8700K
SE +/- 0.01, N = 3
7.43
Ryzen 7 1700
SE +/- 0.02, N = 3
8.29
Ryzen 7 1800X
SE +/- 0.03, N = 3
7.37
3
6
9
12
15


Darktable 2.2.5
Test: Server Room - Acceleration: CPU-only
Seconds, Fewer Is Better
Core i5 7600K
SE +/- 0.02, N = 3
11.35
Core i5 8400
SE +/- 0.00, N = 3
6.87
Core i7 4790K
SE +/- 0.00, N = 3
9.44
Core i7 7700K
SE +/- 0.00, N = 3
7.66
Core i7 8700K
SE +/- 0.01, N = 3
6.48
Ryzen 7 1700
SE +/- 0.03, N = 3
6.30
Ryzen 7 1800X
SE +/- 0.01, N = 3
5.65
3
6
9
12
15

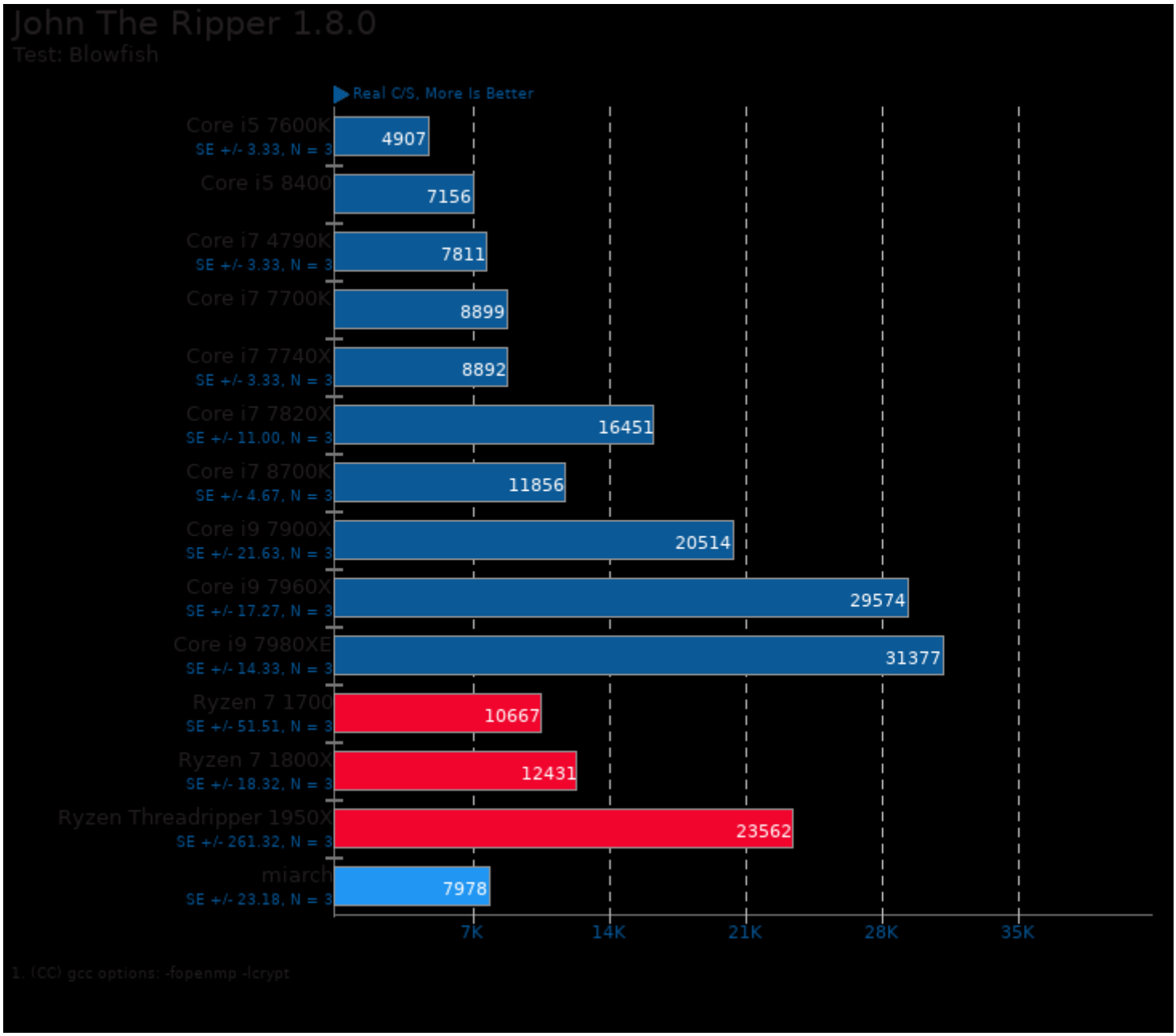
# Intel Core i7 8770K Ubuntu Linux Benchmarks

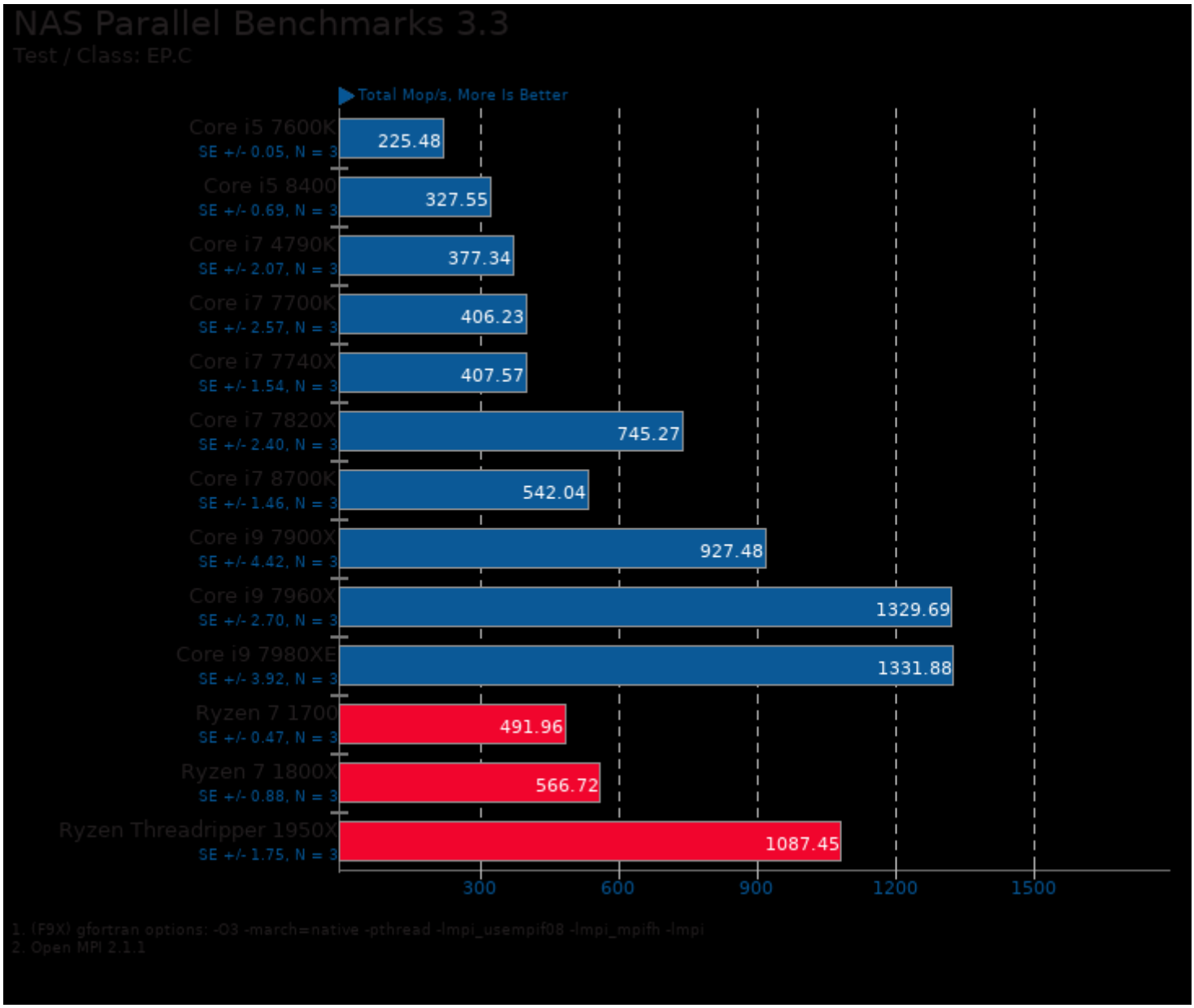


# Intel Core i7 8770K Ubuntu Linux Benchmarks

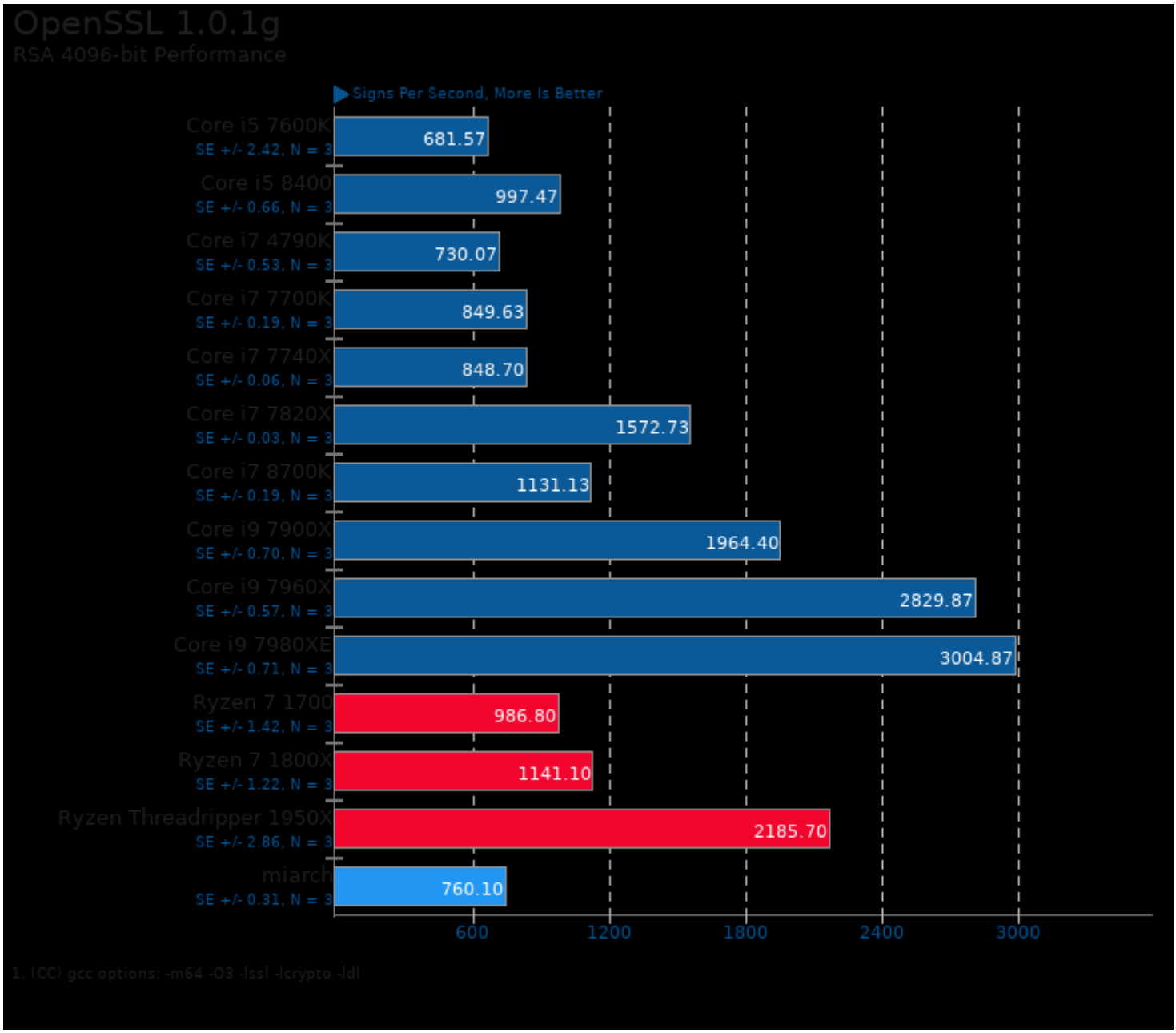


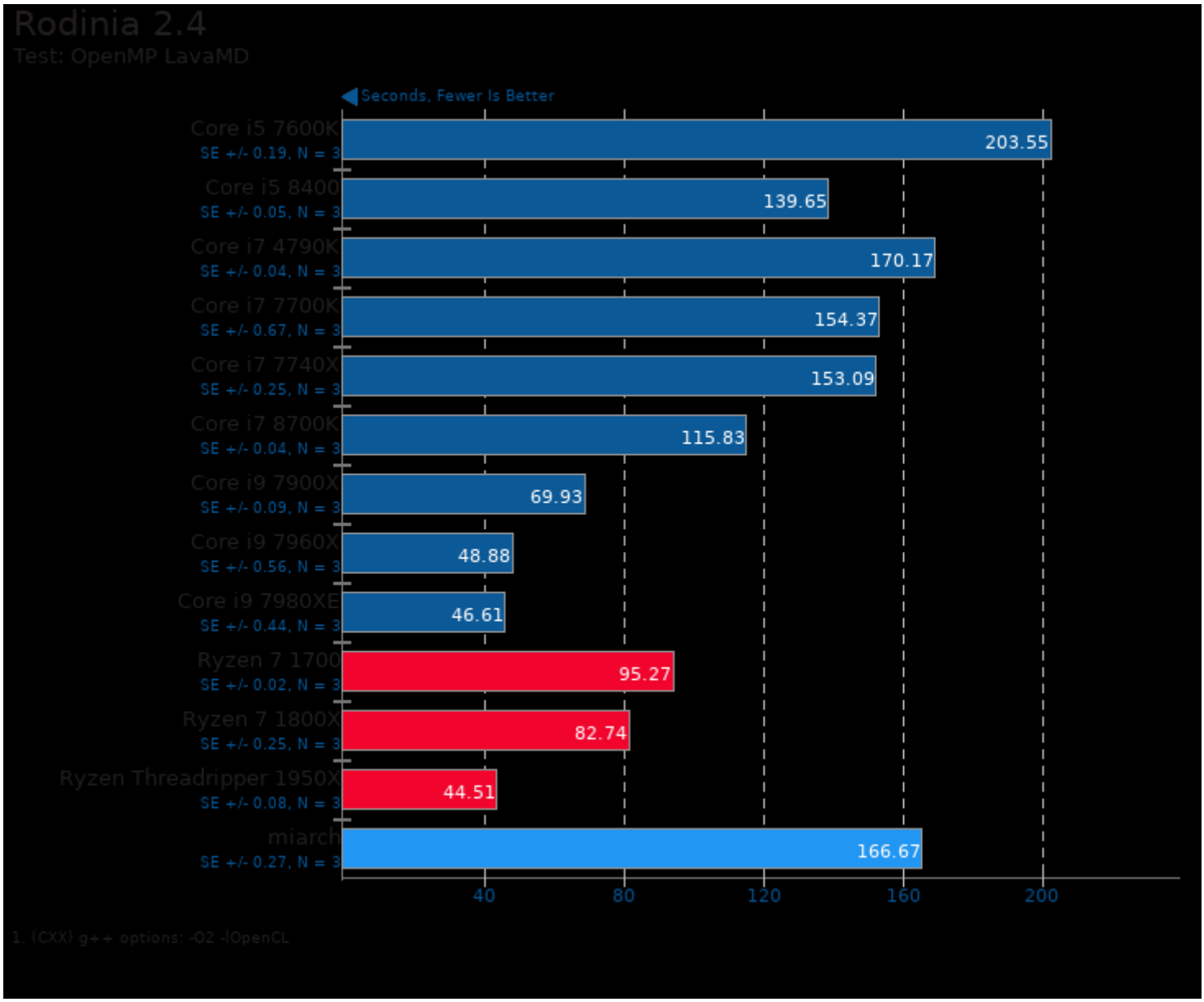
# Intel Core i7 8770K Ubuntu Linux Benchmarks



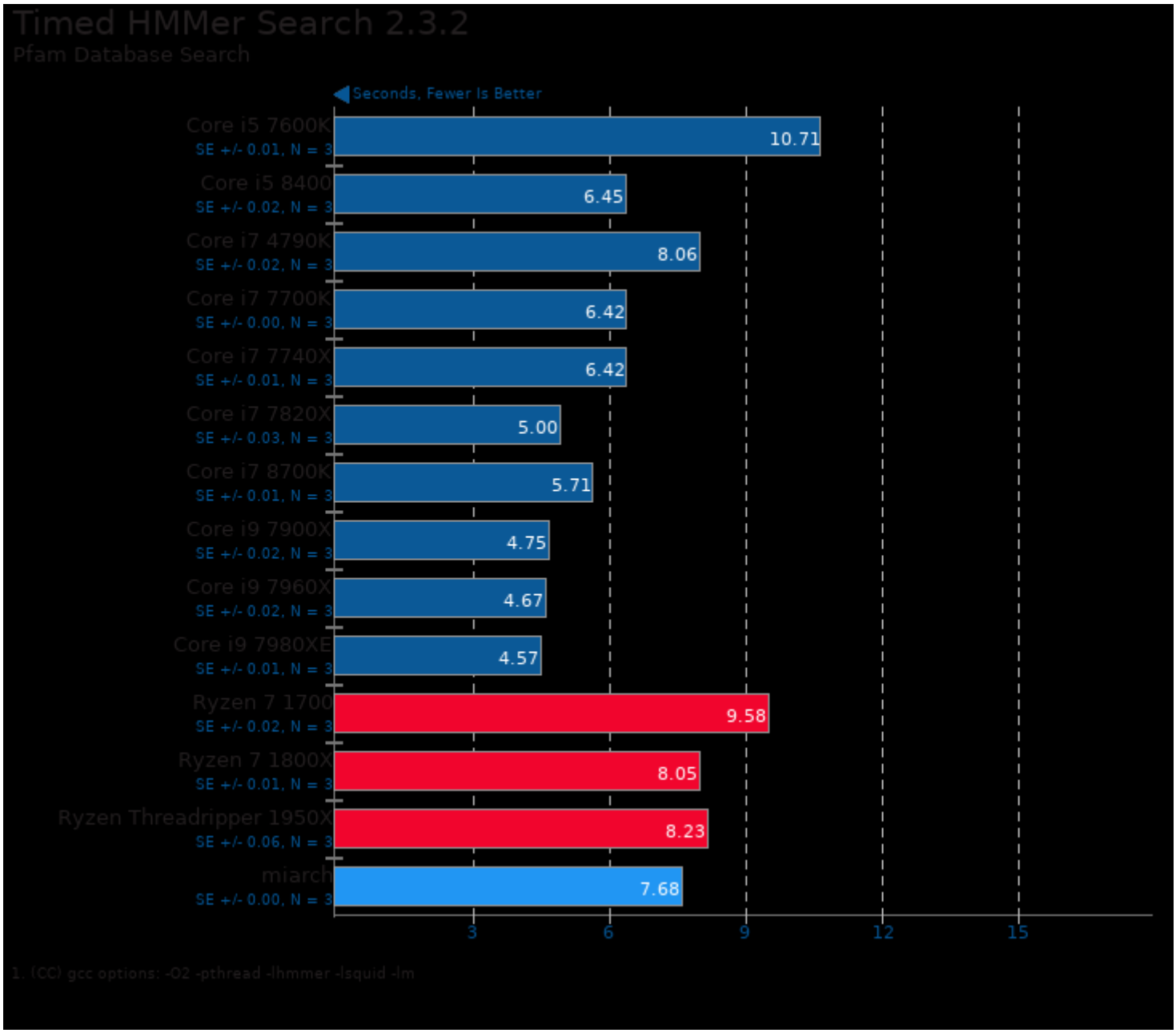

NAS Parallel Benchmarks 3.3
Test / Class: EP.C
Total Mop/s, More Is Better
Core i5 7600K
SE +/- 0.05, N = 3
225.48
Core i5 8400
SE +/- 0.69, N = 3
327.55
Core i7 4790K
SE +/- 2.07, N = 3
377.34
Core i7 7700K
SE +/- 2.57, N = 3
406.23
Core i7 7740X
SE +/- 1.54, N = 3
407.57
Core i7 7820X
SE +/- 2.40, N = 3
745.27
Core i7 8700K
SE +/- 1.46, N = 3
542.04
Core i9 7900X
SE +/- 4.42, N = 3
927.48
Core i9 7960X
SE +/- 2.70, N = 3
1329.69
Core i9 7980XE
SE +/- 3.92, N = 3
1331.88
Ryzen 7 1700
SE +/- 0.47, N = 3
491.96
Ryzen 7 1800X
SE +/- 0.88, N = 3
566.72
Ryzen Threadripper 1950X
SE +/- 1.75, N = 3
1087.45
300
600
900
1200
1500
1. (F9X) gfortran options: -O3 -march=native -pthread -lmpi_usempif08 -lmpi_mpifh -lmpi
2. Open MPI 2.1.1

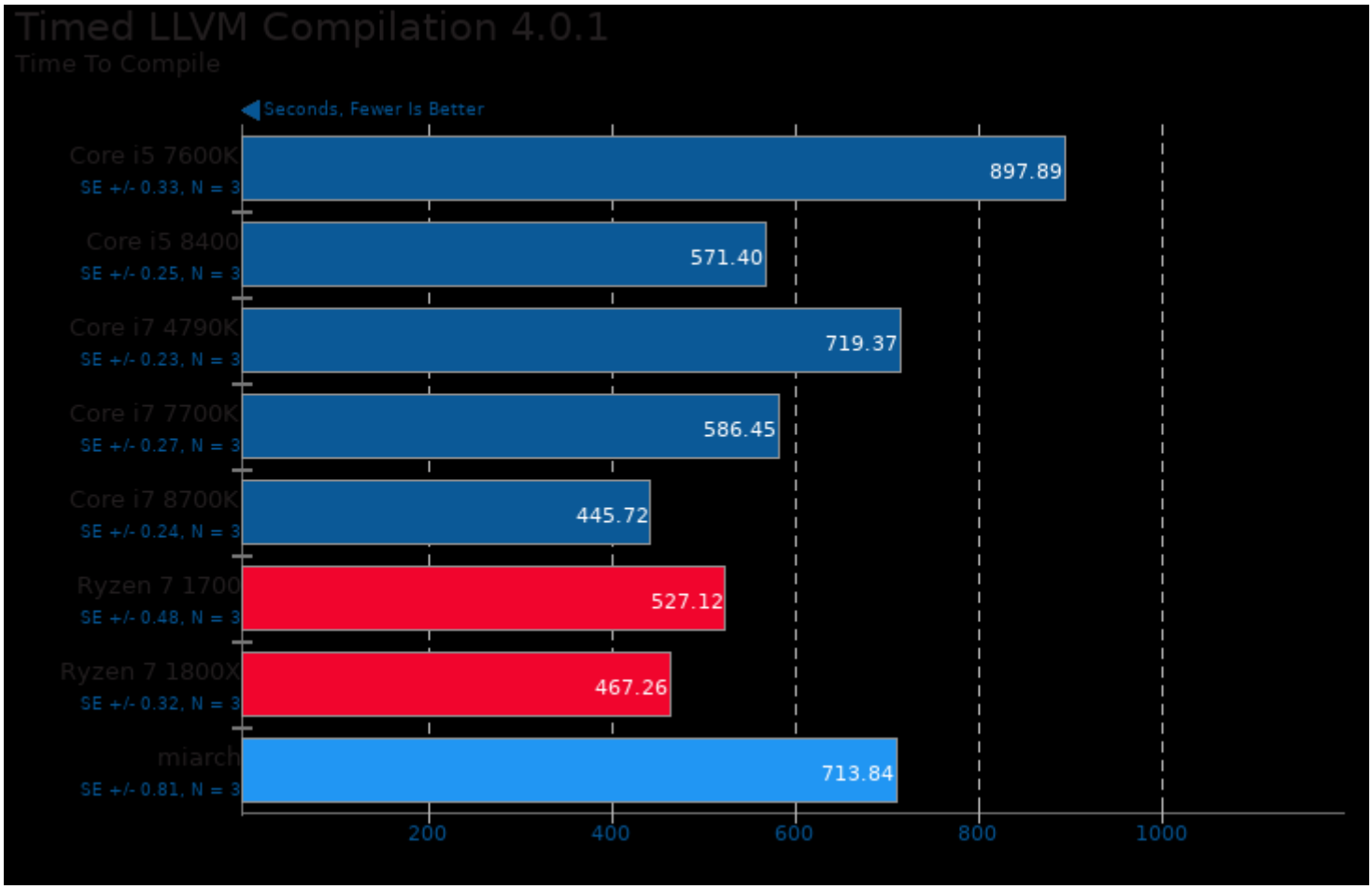
# Intel Core i7 8770K Ubuntu Linux Benchmarks

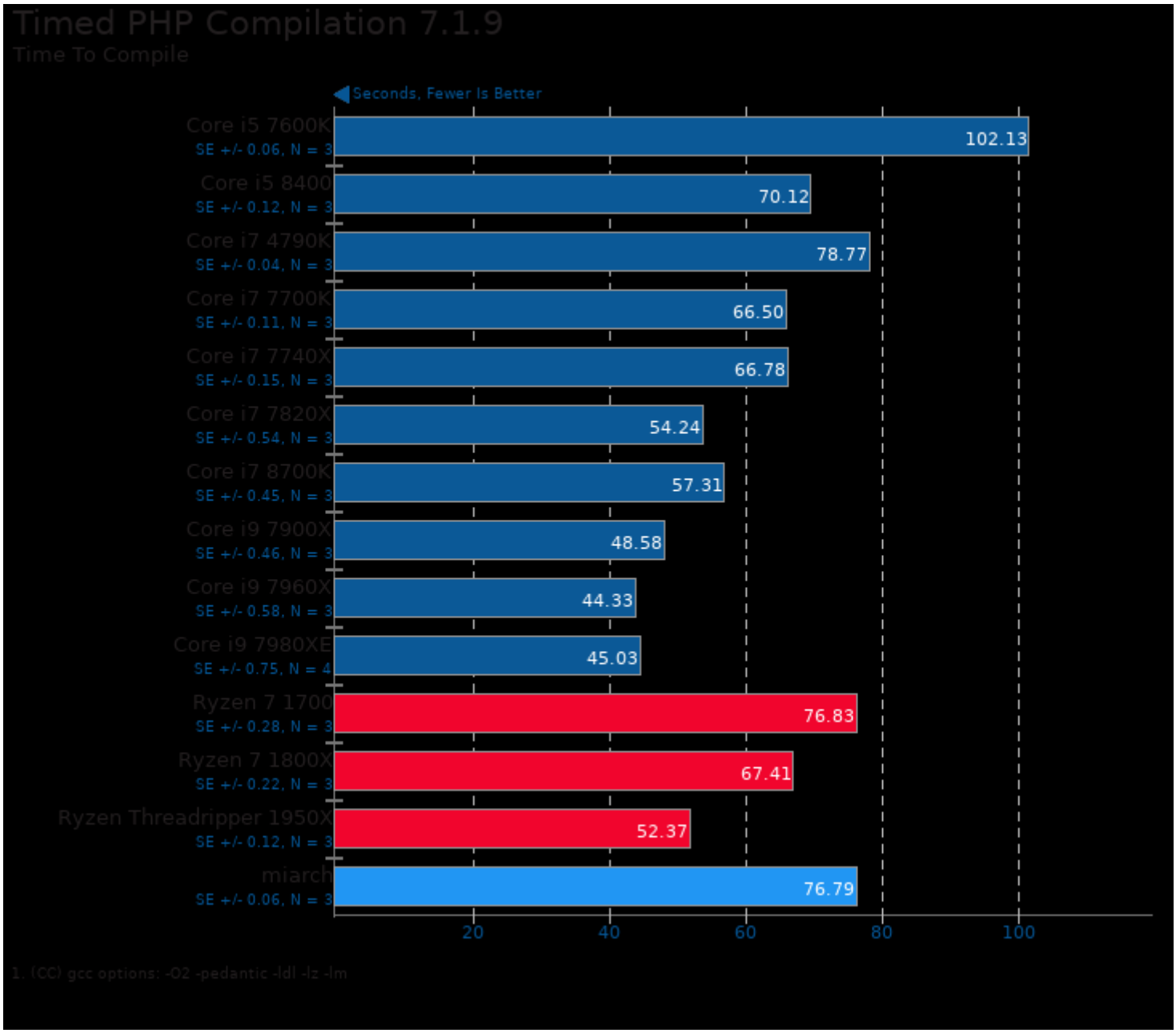


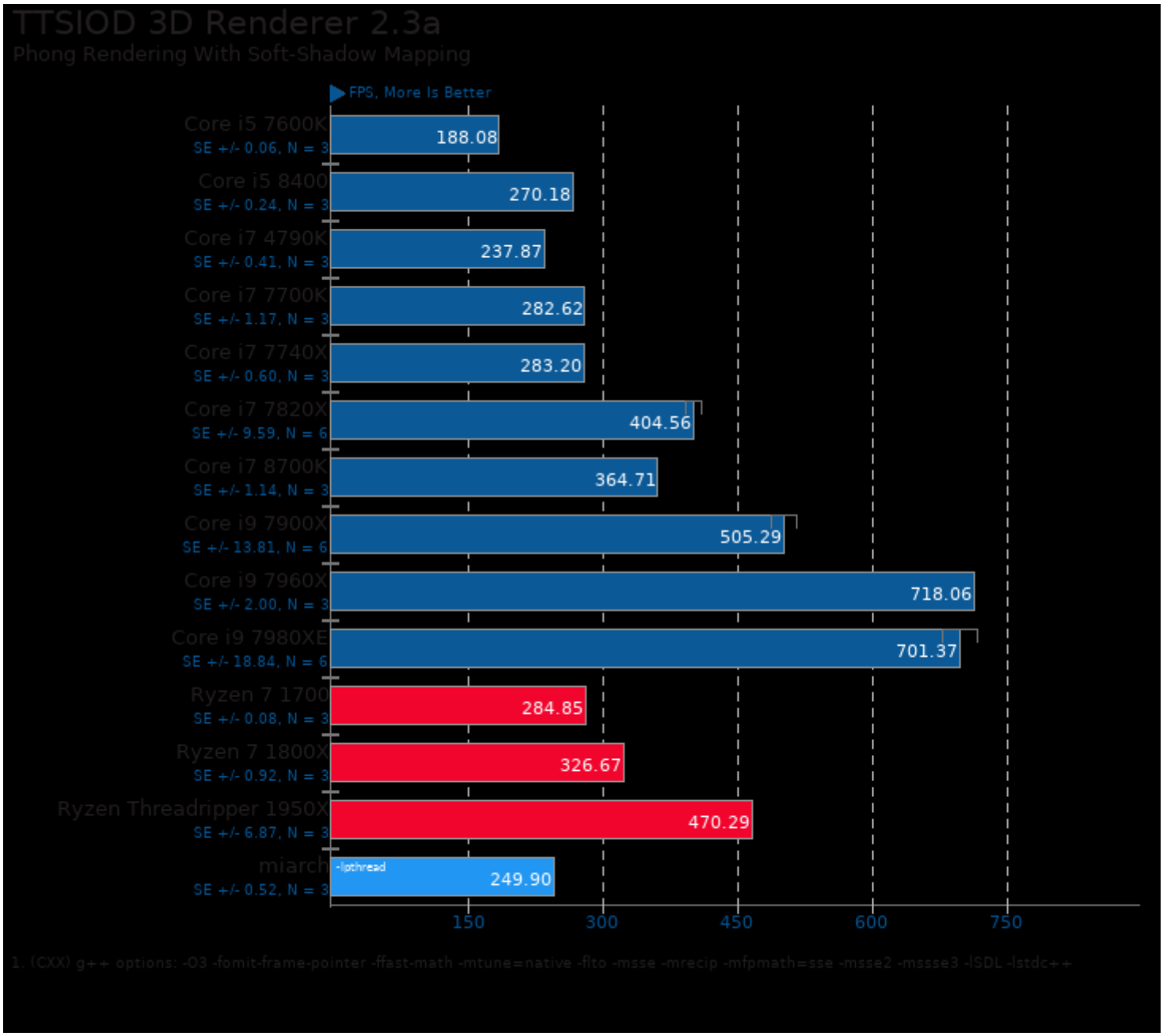

Rodinia 2.4
Test: OpenMP LavaMD
Seconds, Fewer Is Better
Core i5 7600K
SE +/- 0.19, N = 3
203.55
Core i5 8400
SE +/- 0.05, N = 3
139.65
Core i7 4790K
SE +/- 0.04, N = 3
170.17
Core i7 7700K
SE +/- 0.67, N = 3
154.37
Core i7 7740X
SE +/- 0.25, N = 3
153.09
Core i7 8700K
SE +/- 0.04, N = 3
115.83
Core i9 7900X
SE +/- 0.09, N = 3
69.93
Core i9 7960X
SE +/- 0.56, N = 3
48.88
Core i9 7980XE
SE +/- 0.44, N = 3
46.61
Ryzen 7 1700
SE +/- 0.02, N = 3
95.27
Ryzen 7 1800X
SE +/- 0.25, N = 3
82.74
Ryzen Threadripper 1950X
SE +/- 0.08, N = 3
44.51
miarch
SE +/- 0.27, N = 3
166.67
40
80
120
160
200
1. (CXX) g++ options: -O2 -lOpenCL

# Intel Core i7 8770K Ubuntu Linux Benchmarks

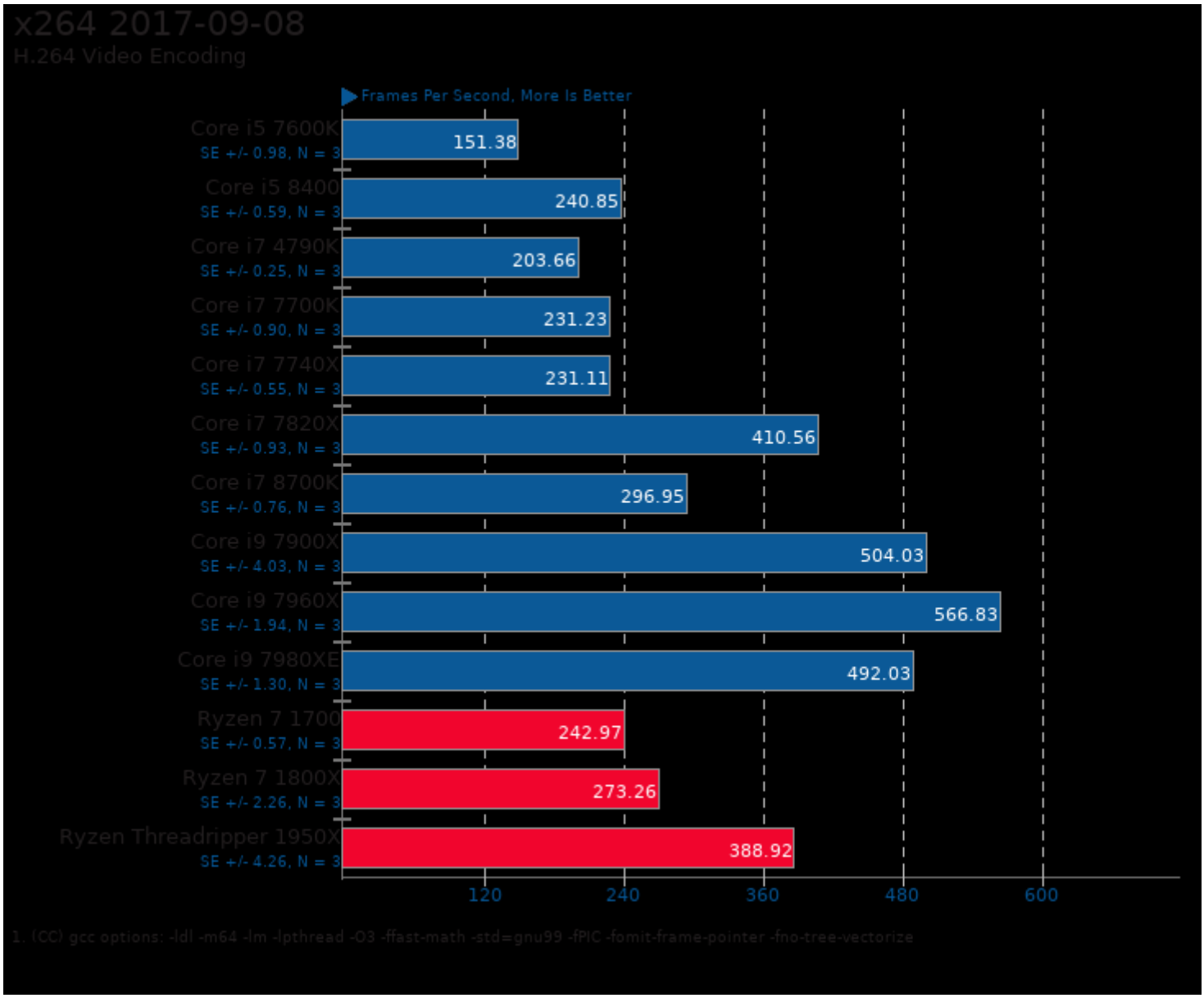



Timed LLVM Compilation 4.0.1
Time To Compile
Seconds, Fewer Is Better
Core i5 7600K
SE +/- 0.33, N = 3
897.89
Core i5 8400
SE +/- 0.25, N = 3
571.40
Core i7 4790K
SE +/- 0.23, N = 3
719.37
Core i7 7700K
SE +/- 0.27, N = 3
586.45
Core i7 8700K
SE +/- 0.24, N = 3
445.72
Ryzen 7 1700
SE +/- 0.48, N = 3
527.12
Ryzen 7 1800X
SE +/- 0.32, N = 3
467.26
miarch
SE +/- 0.81, N = 3
713.84
200
400
600
800
1000

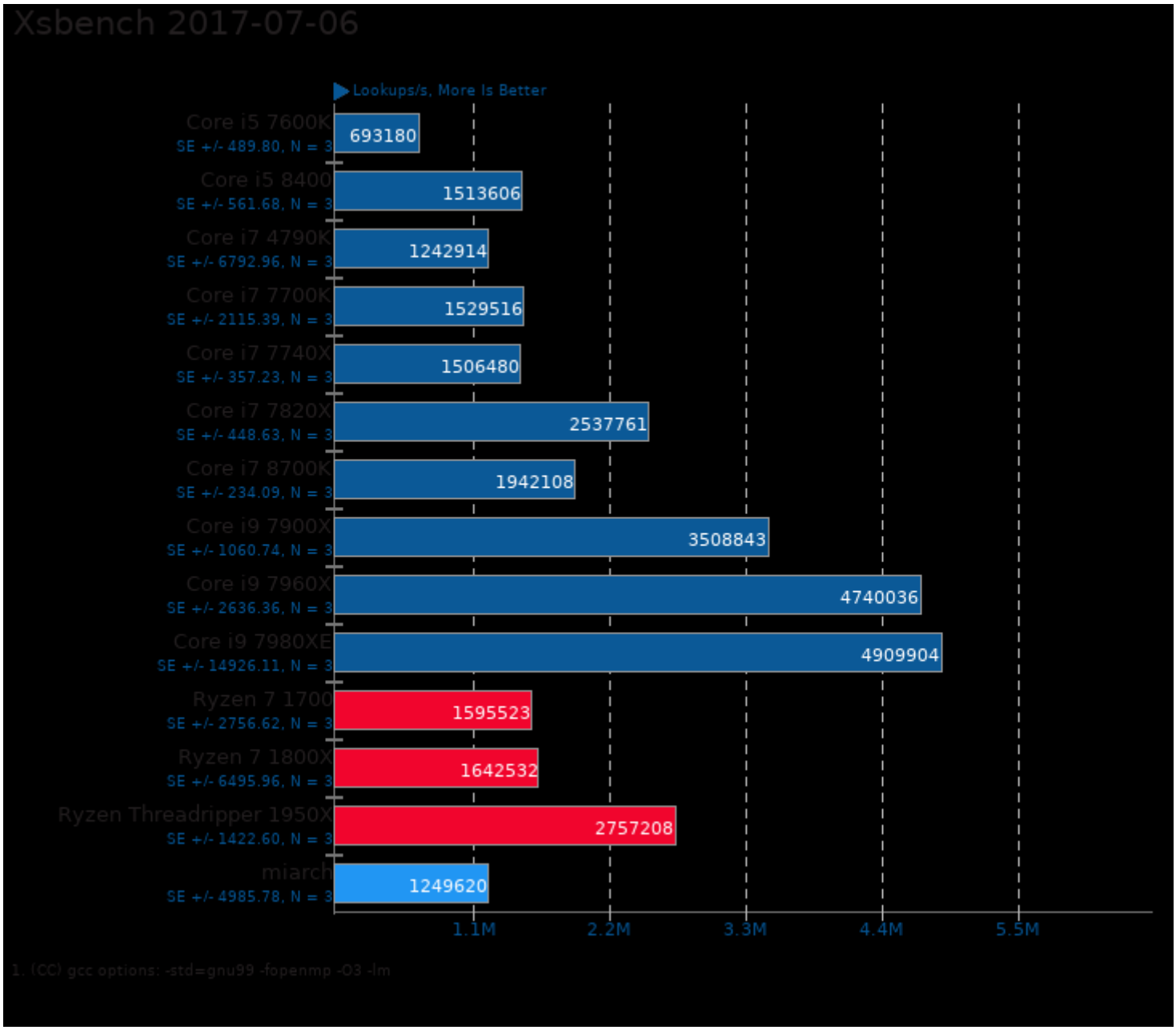

Timed PHP Compilation 7.1.9
Time To Compile
Seconds, Fewer Is Better
Core i5 7600K
SE +/- 0.06, N = 3
102.13
Core i5 8400
SE +/- 0.12, N = 3
70.12
Core i7 4790K
SE +/- 0.04, N = 3
78.77
Core i7 7700K
SE +/- 0.11, N = 3
66.50
Core i7 7740X
SE +/- 0.15, N = 3
66.78
Core i7 7820X
SE +/- 0.54, N = 3
54.24
Core i7 8700K
SE +/- 0.45, N = 3
57.31
Core i9 7900X
SE +/- 0.46, N = 3
48.58
Core i9 7960X
SE +/- 0.58, N = 3
44.33
Core i9 7980XE
SE +/- 0.75, N = 4
45.03
Ryzen 7 1700
SE +/- 0.28, N = 3
76.83
Ryzen 7 1800X
SE +/- 0.22, N = 3
67.41
Ryzen Threadripper 1950X
SE +/- 0.12, N = 3
52.37
miarch
SE +/- 0.06, N = 3
76.79
20
40
60
80
100
1. (CC) gcc options: -O2 -pedantic -ldl -lz -lm


TTSIOD 3D Renderer 2.3a
Phong Rendering With Soft-Shadow Mapping
FPS, More Is Better
Core i5 7600K
SE +/- 0.06, N = 3
188.08
Core i5 8400
SE +/- 0.24, N = 3
270.18
Core i7 4790K
SE +/- 0.41, N = 3
237.87
Core i7 7700K
SE +/- 1.17, N = 3
282.62
Core i7 7740X
SE +/- 0.60, N = 3
283.20
Core i7 7820X
SE +/- 9.59, N = 6
404.56
Core i7 8700K
SE +/- 1.14, N = 3
364.71
Core i9 7900X
SE +/- 13.81, N = 6
505.29
Core i9 7960X
SE +/- 2.00, N = 3
718.06
Core i9 7980XE
SE +/- 18.84, N = 6
701.37
Ryzen 7 1700
SE +/- 0.08, N = 3
284.85
Ryzen 7 1800X
SE +/- 0.92, N = 3
326.67
Ryzen Threadripper 1950X
SE +/- 6.87, N = 3
470.29
miarch
SE +/- 0.52, N = 3
-lpthread
249.90
150
300
450
600
750
1. (CXX) g++ options: -O3 -fomit-frame-pointer -ffast-math -mtune=native -flto -msse -mrecip -mfpmath=sse -msse2 -mssse3 -lSDL -lstdc++

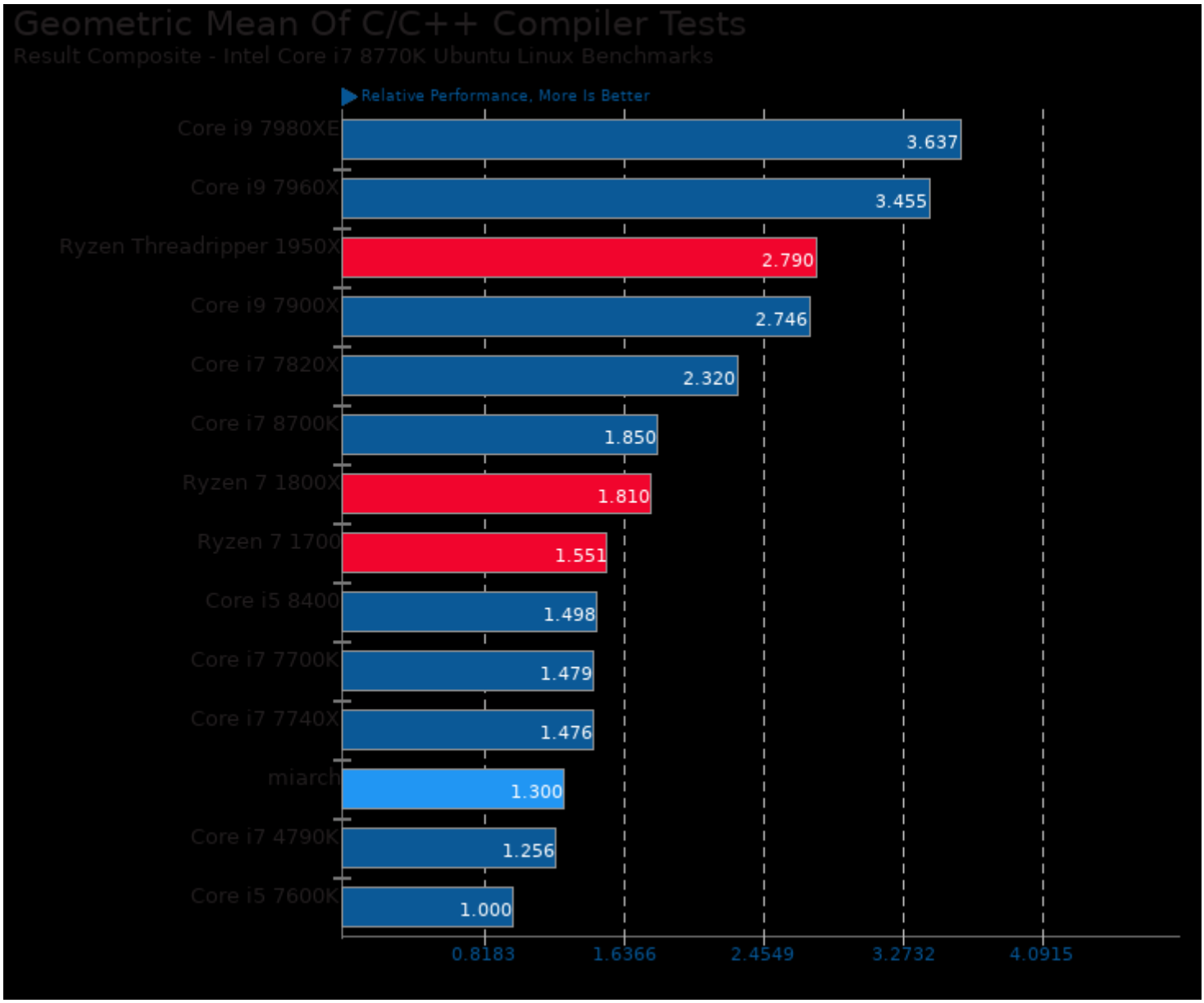
# Intel Core i7 8770K Ubuntu Linux Benchmarks



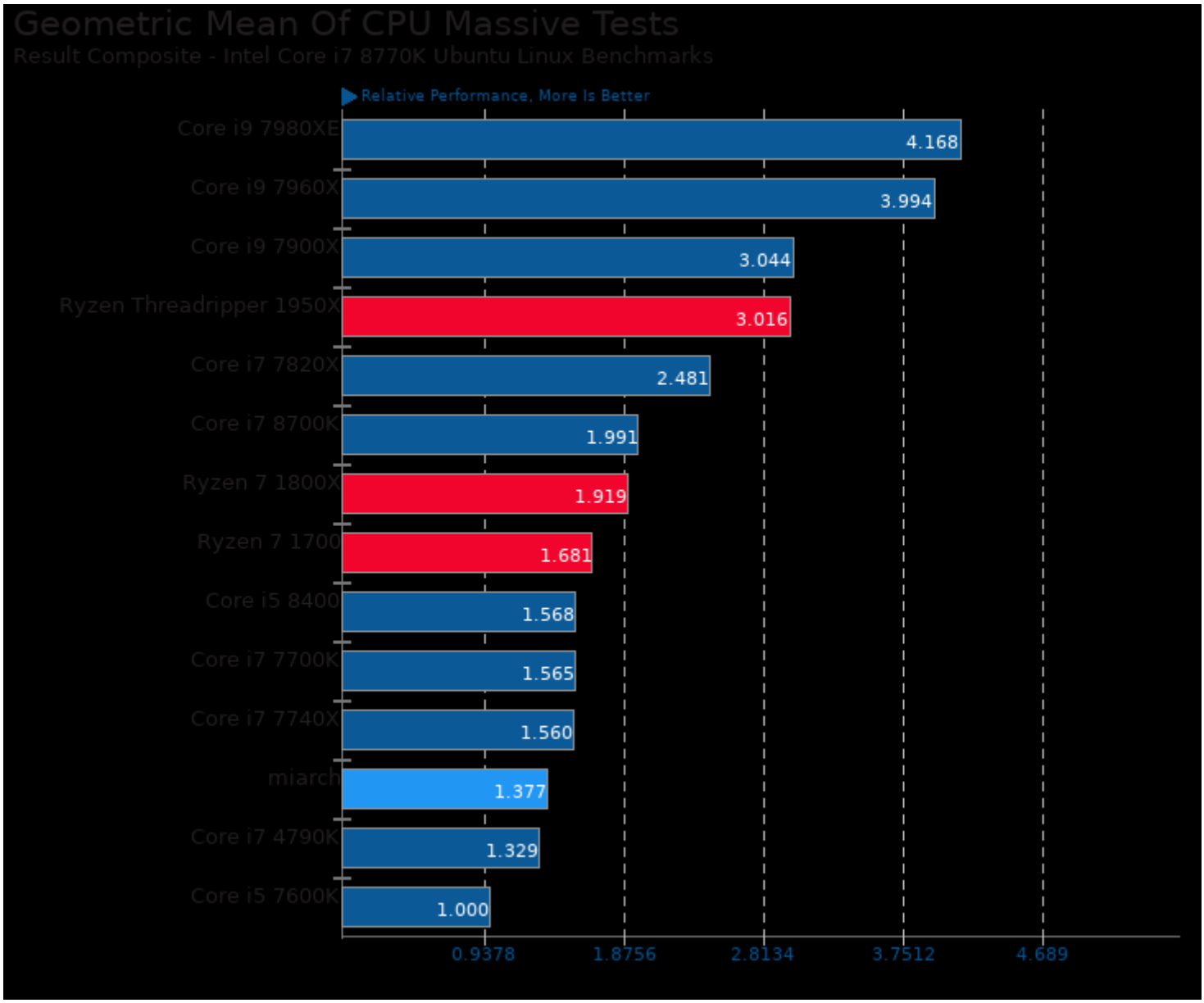
# Intel Core i7 8770K Ubuntu Linux Benchmarks



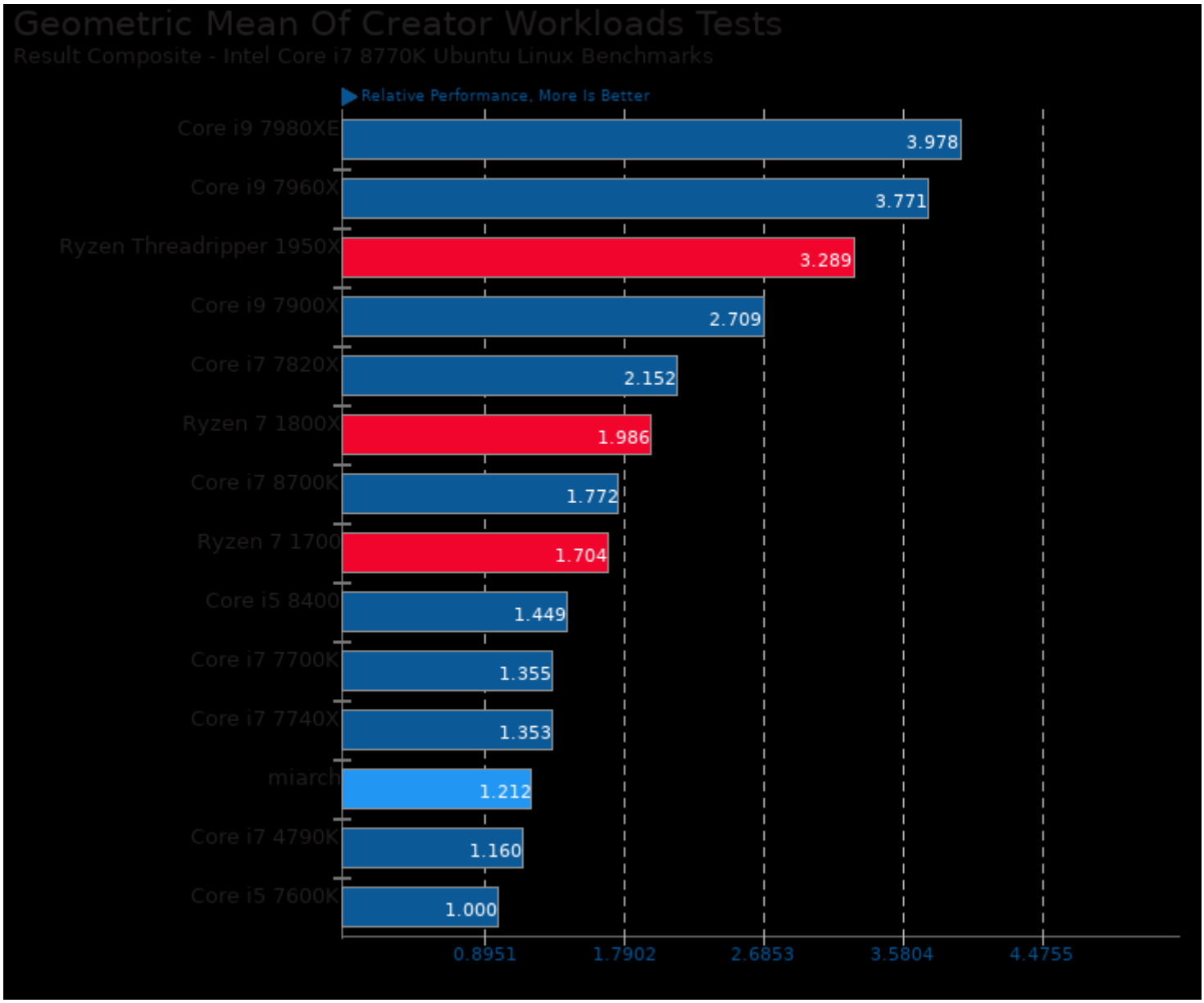
These geometric means are based upon test groupings / test suites for this result file.



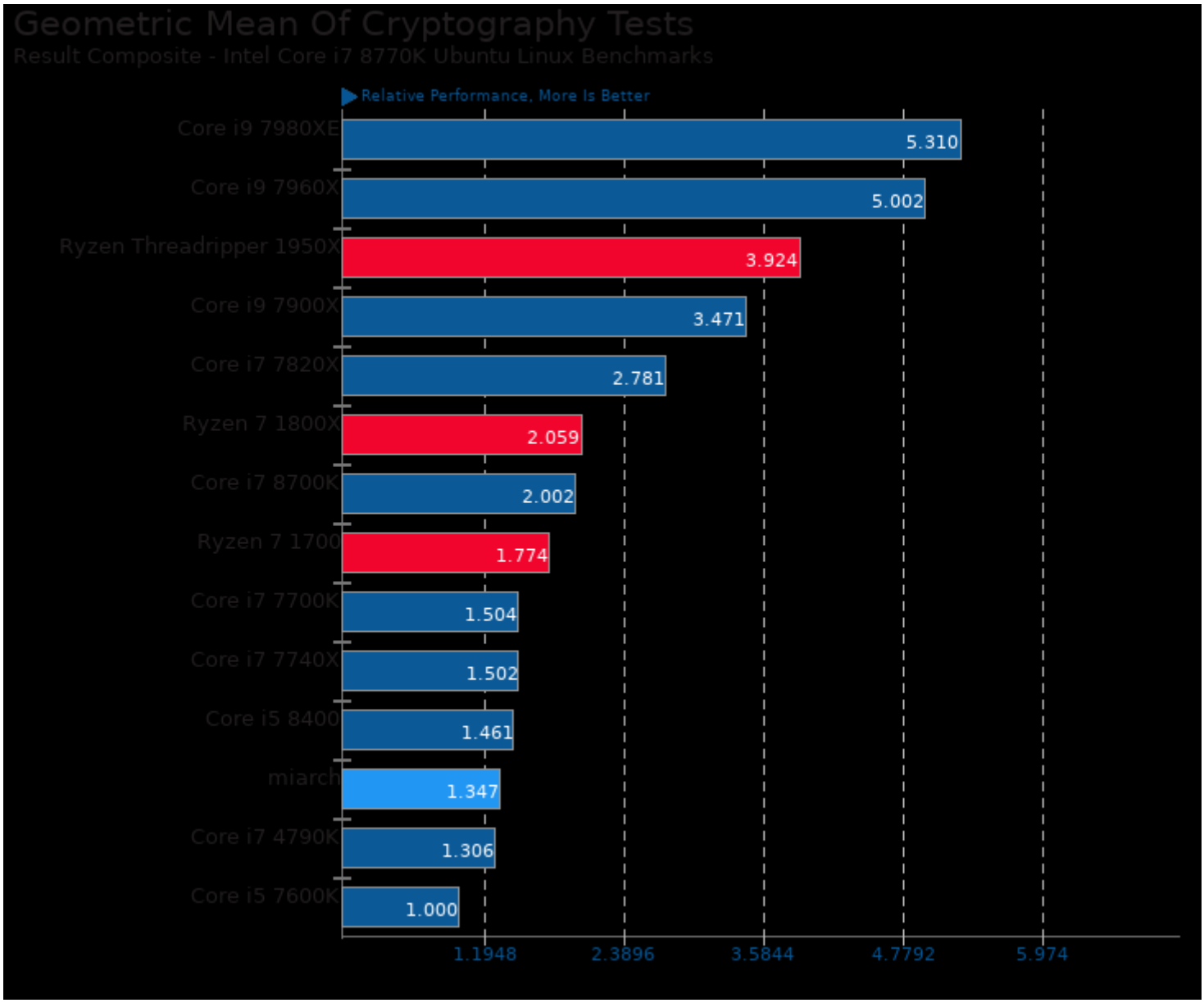

Geometric mean based upon tests: pts/hmmer, pts/build-php, pts/build-llvm, pts/c-ray, pts/compress-7zip, pts/john-the-ripper, pts/x264 and pts/openssl



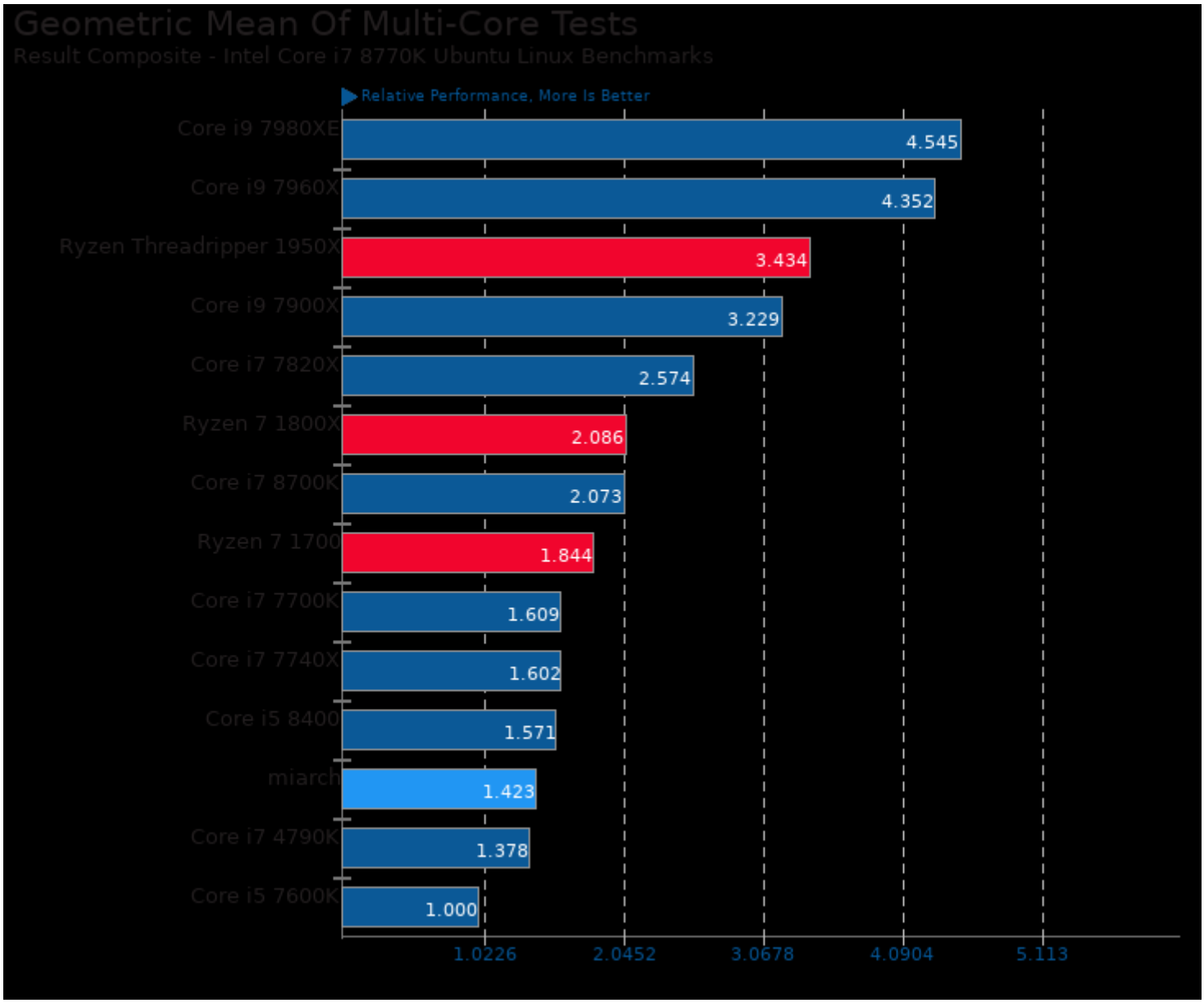

Geometric mean based upon tests: pts/asmfish, pts/build-llvm, pts/build-php, pts/c-ray, pts/compress-7zip, pts/x264, pts/hmmer, pts/john-the-ripper, pts/openssl, pts/npb, pts/rodinia, pts/ttsiod-renderer, pts/xsbench and system/darktable



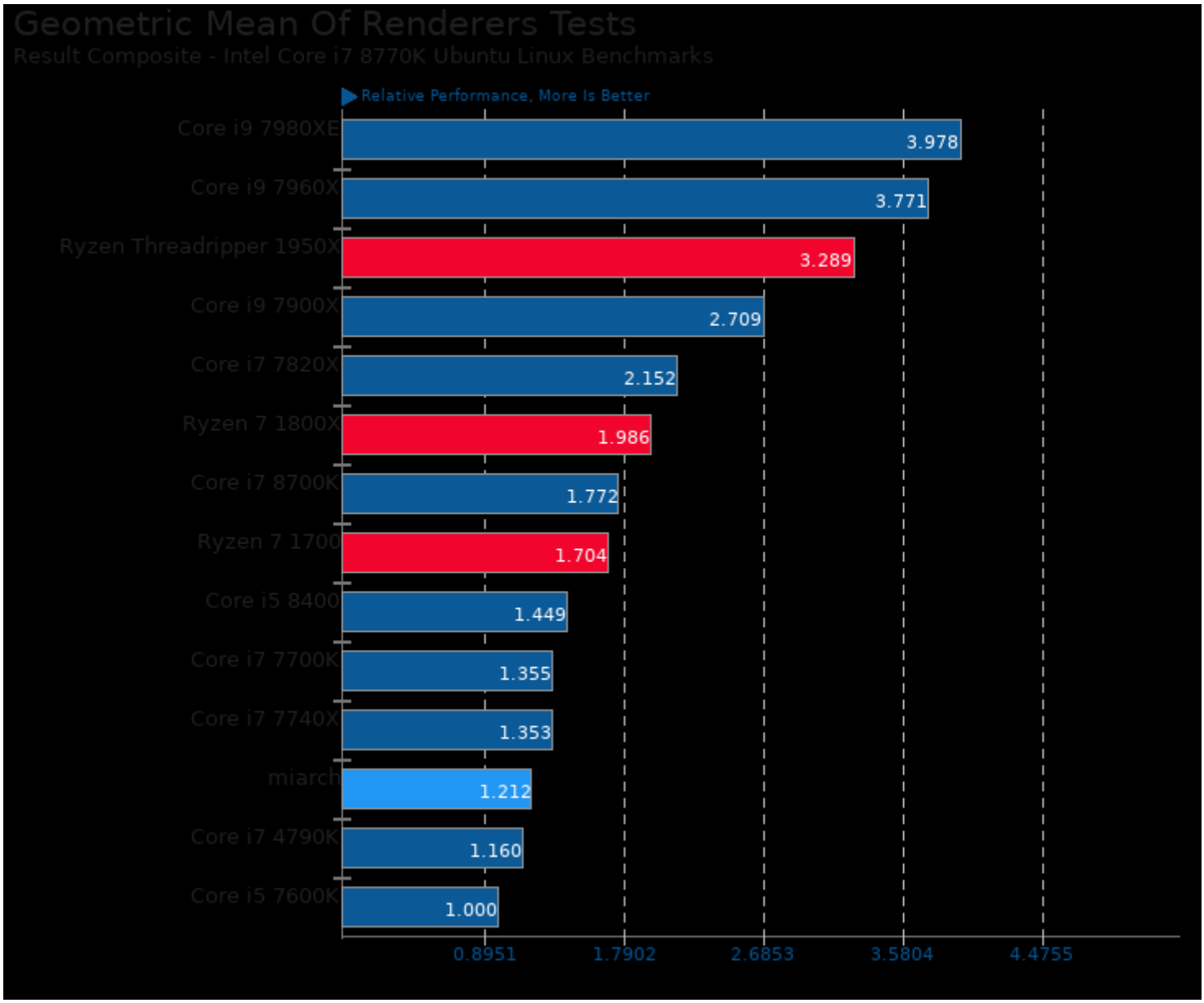

Geometric mean based upon tests: pts/c-ray, pts/ttsiod-renderer, pts/x264, pts/ffmpeg and system/darktable



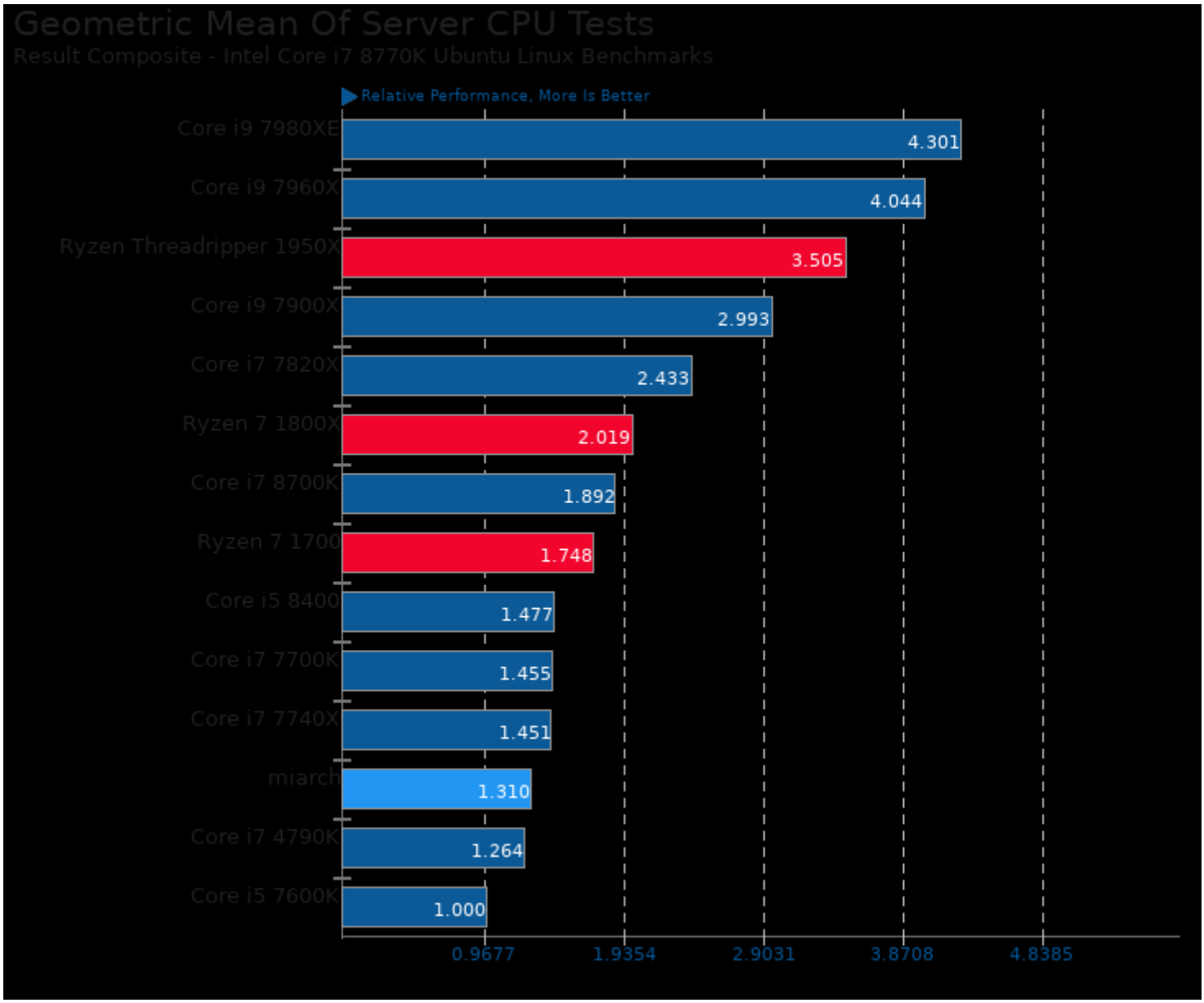

Geometric mean based upon tests: pts/openssl and pts/john-the-ripper




Geometric mean based upon tests: pts/c-ray, pts/x264, pts/ffmpeg, pts/rodinia, pts/npb, pts/john-the-ripper, pts/asmfish, pts/compress-7zip, pts/build-php, pts/build-llvm, pts/ttsiod-renderer and pts/xsbench




Geometric mean based upon tests: pts/c-ray and pts/ttsiod-renderer




Geometric mean based upon tests: pts/npb, pts/rodinia, pts/john-the-ripper, pts/x264, pts/compress-7zip, pts/asmfish, pts/build-php, pts/build-llvm, pts/c-ray and pts/openssl

*This file was automatically generated via the Phoronix Test Suite benchmarking software on Thursday, 28 March 2024 16:48.*