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Linux 3.x To 4.15 Kernel Core i7 System Benchmarks

Tests for a future article on Phoronix.

Automated Executive Summary

i7-990X: Linux 4.6 had the most wins, coming in first place for 18% of the tests.

Based on the geometric mean of all complete results, the fastest (i7-5960X: Linux 3.17) was 1.312x the speed of the slowest (i7-990X: Linux 4.9).

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

Systemd Total Boot Time (Test: Total) at 46.781x
Systemd Total Boot Time (Test: Userspace) at 10.223x
Stress-NG (Test: Semaphores) at 4.328x
Systemd Total Boot Time (Test: Kernel) at 4.207x
PostgreSQL pgbench (Scaling: Buffer Test - Test: Normal Load - Mode: Read Write) at 3.507x
PostgreSQL pgbench (Scaling: Buffer Test - Test: Heavy Contention - Mode: Read Write) at 3.485x
Stress-NG (Test: Socket Activity) at 3.086x
Systemd Total Boot Time (Test: Firmware) at 3.071x
Hackbench (Count: 16 - Type: Process) at 2.377x
FS-Mark (Test: 1000 Files, 1MB Size) at 2.376x.

Test Systems:

i7-5960X: Linux 3.17

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: Intel C610/X99, Monitor: DELL S2409W, Network: Intel Connection

OS: Ubuntu 18.04, Kernel: 3.17.0-031700-generic (x86_64), Desktop: GNOME Shell 3.26.2, Display Driver: modesetting 1.19.5, Compiler: GCC 7.2.0, File-System: ext4, Screen Resolution: 1920x1080

Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-gnu-unique-object --enable-languages=c,ada,c++,go,brig,d,fortran,objc,obj-c++ --enable-libmpx --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none --enable-plugin --enable-shared --enable-threads=posix --host=x86_64-linux-gnu --program-prefix=x86_64-linux-gnu- --target=x86_64-linux-gnu --with-abi=m64 --with-arch-32=i686 --with-default-libstdcxx-abi=new --with-gcc-major-version-only --with-multilib-list=m32,m64,mx32 --with-target-system-zlib --with-tune=generic --without-cuda-driver -v
Disk Notes: DEADLINE / data=ordered,errors=remount-ro,relatime,rw
Processor Notes: Scaling Governor: intel_pstate powersave
Python Notes: Python 2.7.14+ + Python 3.6.4

i7-5960X: Linux 3.18

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: Intel C610/X99, Monitor: DELL S2409W, Network: Intel Connection

OS: Ubuntu 18.04, Kernel: 3.18.0-031800-generic (x86_64), Desktop: GNOME Shell 3.26.2, Display Driver: modesetting 1.19.5, Compiler: GCC 7.2.0, File-System: ext4, Screen Resolution: 1920x1080

Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-gnu-unique-object --enable-languages=c,ada,c++,go,brig,d,fortran,objc,obj-c++ --enable-libmpx --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none --enable-plugin --enable-shared --enable-threads=posix --host=x86_64-linux-gnu --program-prefix=x86_64-linux-gnu- --target=x86_64-linux-gnu --with-abi=m64 --with-arch-32=i686 --with-default-libstdcxx-abi=new --with-gcc-major-version-only --with-multilib-list=m32,m64,mx32 --with-target-system-zlib --with-tune=generic --without-cuda-driver -v
Disk Notes: DEADLINE / data=ordered,errors=remount-ro,relatime,rw
Processor Notes: Scaling Governor: intel_pstate powersave
Python Notes: Python 2.7.14+ + Python 3.6.4

i7-5960X: Linux 3.19

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: Intel C610/X99, Monitor: DELL S2409W, Network: Intel Connection

OS: Ubuntu 18.04, Kernel: 3.19.0-031900-generic (x86_64), Desktop: GNOME Shell 3.26.2, Display Driver: modesetting 1.19.5, Compiler: GCC 7.2.0, File-System: ext4, Screen Resolution: 1920x1080

Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-gnu-unique-object --enable-languages=c,ada,c++,go,brig,d,fortran,objc,obj-c++ --enable-libmpx --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none --enable-plugin --enable-shared --enable-threads=posix --host=x86_64-linux-gnu --program-prefix=x86_64-linux-gnu- --target=x86_64-linux-gnu --with-abi=m64 --with-arch-32=i686 --with-default-libstdcxx-abi=new --with-gcc-major-version-only --with-multilib-list=m32,m64,mx32 --with-target-system-zlib --with-tune=generic --without-cuda-driver -v
Disk Notes: DEADLINE / data=ordered,errors=remount-ro,relatime,rw
Processor Notes: Scaling Governor: intel_pstate powersave
Python Notes: Python 2.7.14+ + Python 3.6.4

i7-5960X: Linux 4.0

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: Intel C610/X99, Monitor: DELL S2409W, Network: Intel Connection

OS: Ubuntu 18.04, Kernel: 4.0.0-040000-generic (x86_64), Desktop: GNOME Shell 3.26.2, Display Driver: modesetting 1.19.5, Compiler: GCC 7.2.0, File-System: ext4, Screen Resolution: 1920x1080

Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-gnu-unique-object --enable-languages=c,ada,c++,go,brig,d,fortran,objc,obj-c++ --enable-libmpx --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none --enable-plugin --enable-shared --enable-threads=posix --host=x86_64-linux-gnu --program-prefix=x86_64-linux-gnu- --target=x86_64-linux-gnu --with-abi=m64 --with-arch-32=i686 --with-default-libstdcxx-abi=new --with-gcc-major-version-only --with-multilib-list=m32,m64,mx32 --with-target-system-zlib --with-tune=generic --without-cuda-driver -v
Disk Notes: DEADLINE / data=ordered,errors=remount-ro,relatime,rw
Processor Notes: Scaling Governor: intel_pstate powersave
Python Notes: Python 2.7.14+ + Python 3.6.4

i7-5960X: Linux 4.1

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, Monitor: DELL S2409W, Network: Intel Connection

OS: Ubuntu 18.04, Kernel: 4.1.0-040100-generic (x86_64), Desktop: GNOME Shell 3.26.2, Display Driver: modesetting 1.19.5, Compiler: GCC 7.2.0, File-System: ext4, Screen Resolution: 1920x1080

Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-gnu-unique-object --enable-languages=c,ada,c++,go,brig,d,fortran,objc,obj-c++ --enable-libmpx --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none --enable-plugin --enable-shared --enable-threads=posix --host=x86_64-linux-gnu --program-prefix=x86_64-linux-gnu- --target=x86_64-linux-gnu --with-abi=m64 --with-arch-32=i686 --with-default-libstdcxx-abi=new --with-gcc-major-version-only --with-multilib-list=m32,m64,mx32 --with-target-system-zlib --with-tune=generic --without-cuda-driver -v
Disk Notes: DEADLINE / data=ordered,errors=remount-ro,relatime,rw
Processor Notes: Scaling Governor: intel_pstate powersave
Python Notes: Python 2.7.14+ + Python 3.6.4

i7-5960X: Linux 4.2

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, Monitor: DELL S2409W, Network: Intel Connection

OS: Ubuntu 18.04, Kernel: 4.2.0-040200-generic (x86_64), Display Driver: modesetting 1.19.5, Compiler: GCC 7.2.0, File-System: ext4, Screen Resolution: 1920x1080

Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-gnu-unique-object --enable-languages=c,ada,c++,go,brig,d,fortran,objc,obj-c++ --enable-libmpx --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none --enable-plugin --enable-shared --enable-threads=posix --host=x86_64-linux-gnu --program-prefix=x86_64-linux-gnu- --target=x86_64-linux-gnu --with-abi=m64 --with-arch-32=i686 --with-default-libstdcxx-abi=new --with-gcc-major-version-only --with-multilib-list=m32,m64,mx32 --with-target-system-zlib --with-tune=generic --without-cuda-driver -v
Disk Notes: DEADLINE / data=ordered,errors=remount-ro,relatime,rw
Processor Notes: Scaling Governor: intel_pstate powersave
Python Notes: Python 2.7.14+ + Python 3.6.4

i7-5960X: Linux 4.3

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, Monitor: DELL S2409W, Network: Intel Connection

OS: Ubuntu 18.04, Kernel: 4.3.0-040300-generic (x86_64), Desktop: GNOME Shell 3.26.2, Display Driver: modesetting 1.19.5, Compiler: GCC 7.2.0, File-System: ext4, Screen Resolution: 1920x1080

Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-gnu-unique-object --enable-languages=c,ada,c++,go,brig,d,fortran,objc,obj-c++ --enable-libmpx --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none --enable-plugin --enable-shared --enable-threads=posix --host=x86_64-linux-gnu --program-prefix=x86_64-linux-gnu- --target=x86_64-linux-gnu --with-abi=m64 --with-arch-32=i686 --with-default-libstdcxx-abi=new --with-gcc-major-version-only --with-multilib-list=m32,m64,mx32 --with-target-system-zlib --with-tune=generic --without-cuda-driver -v
Disk Notes: DEADLINE / data=ordered,errors=remount-ro,relatime,rw
Processor Notes: Scaling Governor: intel_pstate powersave
Python Notes: Python 2.7.14+ + Python 3.6.4

i7-5960X: Linux 4.4

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, Monitor: DELL S2409W, Network: Intel Connection

OS: Ubuntu 18.04, Kernel: 4.4.0-040400-generic (x86_64), Display Driver: modesetting 1.19.5, Compiler: GCC 7.2.0, File-System: ext4, Screen Resolution: 1920x1080

Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-gnu-unique-object --enable-languages=c,ada,c++,go,brig,d,fortran,objc,obj-c++ --enable-libmpx --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none --enable-plugin --enable-shared --enable-threads=posix --host=x86_64-linux-gnu --program-prefix=x86_64-linux-gnu- --target=x86_64-linux-gnu --with-abi=m64 --with-arch-32=i686 --with-default-libstdcxx-abi=new --with-gcc-major-version-only --with-multilib-list=m32,m64,mx32 --with-target-system-zlib --with-tune=generic --without-cuda-driver -v
Disk Notes: DEADLINE / data=ordered,errors=remount-ro,relatime,rw
Processor Notes: Scaling Governor: intel_pstate powersave
Python Notes: Python 2.7.14+ + Python 3.6.4

i7-5960X: Linux 4.5

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, Monitor: DELL S2409W, Network: Intel Connection

OS: Ubuntu 18.04, Kernel: 4.5.0-040500-generic (x86_64), Display Driver: modesetting 1.19.5, Compiler: GCC 7.2.0, File-System: ext4, Screen Resolution: 1920x1080

Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-gnu-unique-object --enable-languages=c,ada,c++,go,brig,d,fortran,objc,obj-c++ --enable-libmpx --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none --enable-plugin --enable-shared --enable-threads=posix --host=x86_64-linux-gnu --program-prefix=x86_64-linux-gnu- --target=x86_64-linux-gnu --with-abi=m64 --with-arch-32=i686 --with-default-libstdcxx-abi=new --with-gcc-major-version-only --with-multilib-list=m32,m64,mx32 --with-target-system-zlib --with-tune=generic --without-cuda-driver -v
Disk Notes: DEADLINE / data=ordered,errors=remount-ro,relatime,rw
Processor Notes: Scaling Governor: intel_pstate powersave
Python Notes: Python 2.7.14+ + Python 3.6.4

i7-5960X: Linux 4.6

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, Monitor: DELL S2409W, Network: Intel Connection

OS: Ubuntu 18.04, Kernel: 4.6.0-040600-generic (x86_64), Desktop: GNOME Shell 3.26.2, Display Driver: modesetting 1.19.5, Compiler: GCC 7.2.0, File-System: ext4, Screen Resolution: 1920x1080

Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-gnu-unique-object --enable-languages=c,ada,c++,go,brig,d,fortran,objc,obj-c++ --enable-libmpx --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none --enable-plugin --enable-shared --enable-threads=posix --host=x86_64-linux-gnu --program-prefix=x86_64-linux-gnu- --target=x86_64-linux-gnu --with-abi=m64 --with-arch-32=i686 --with-default-libstdcxx-abi=new --with-gcc-major-version-only --with-multilib-list=m32,m64,mx32 --with-target-system-zlib --with-tune=generic --without-cuda-driver -v
Disk Notes: DEADLINE / data=ordered,errors=remount-ro,relatime,rw
Processor Notes: Scaling Governor: intel_pstate powersave
Python Notes: Python 2.7.14+ + Python 3.6.4

i7-5960X: Linux 4.8

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, Monitor: DELL S2409W, Network: Intel Connection

OS: Ubuntu 18.04, Kernel: 4.8.0-040800-generic (x86_64), Desktop: GNOME Shell 3.26.2, Display Driver: modesetting 1.19.5, Compiler: GCC 7.2.0, File-System: ext4, Screen Resolution: 1920x1080

Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-gnu-unique-object --enable-languages=c,ada,c++,go,brig,d,fortran,objc,obj-c++ --enable-libmpx --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none --enable-plugin --enable-shared --enable-threads=posix --host=x86_64-linux-gnu --program-prefix=x86_64-linux-gnu- --target=x86_64-linux-gnu --with-abi=m64 --with-arch-32=i686 --with-default-libstdcxx-abi=new --with-gcc-major-version-only --with-multilib-list=m32,m64,mx32 --with-target-system-zlib --with-tune=generic --without-cuda-driver -v
Disk Notes: none / data=ordered,errors=remount-ro,relatime,rw
Processor Notes: Scaling Governor: intel_pstate powersave
Python Notes: Python 2.7.14+ + Python 3.6.4

i7-5960X: Linux 4.9

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, Monitor: DELL S2409W, Network: Intel Connection

OS: Ubuntu 18.04, Kernel: 4.9.0-040900-generic (x86_64), Desktop: GNOME Shell 3.26.2, Display Driver: modesetting 1.19.5, Compiler: GCC 7.2.0, File-System: ext4, Screen Resolution: 1920x1080

Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-gnu-unique-object --enable-languages=c,ada,c++,go,brig,d,fortran,objc,obj-c++ --enable-libmpx --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none --enable-plugin --enable-shared --enable-threads=posix --host=x86_64-linux-gnu --program-prefix=x86_64-linux-gnu- --target=x86_64-linux-gnu --with-abi=m64 --with-arch-32=i686 --with-default-libstdcxx-abi=new --with-gcc-major-version-only --with-multilib-list=m32,m64,mx32 --with-target-system-zlib --with-tune=generic --without-cuda-driver -v
Disk Notes: DEADLINE / data=ordered,errors=remount-ro,relatime,rw
Processor Notes: Scaling Governor: intel_pstate powersave
Python Notes: Python 2.7.14+ + Python 3.6.4

i7-5960X: Linux 4.10

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, Monitor: DELL S2409W, Network: Intel Connection

OS: Ubuntu 18.04, Kernel: 4.10.0-041000-generic (x86_64), Desktop: GNOME Shell 3.26.2, Display Driver: modesetting 1.19.5, Compiler: GCC 7.2.0, File-System: ext4, Screen Resolution: 1920x1080

Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-gnu-unique-object --enable-languages=c,ada,c++,go,brig,d,fortran,objc,obj-c++ --enable-libmpx --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none --enable-plugin --enable-shared --enable-threads=posix --host=x86_64-linux-gnu --program-prefix=x86_64-linux-gnu- --target=x86_64-linux-gnu --with-abi=m64 --with-arch-32=i686 --with-default-libstdcxx-abi=new --with-gcc-major-version-only --with-multilib-list=m32,m64,mx32 --with-target-system-zlib --with-tune=generic --without-cuda-driver -v
Disk Notes: CFQ / data=ordered,errors=remount-ro,relatime,rw
Processor Notes: Scaling Governor: intel_pstate powersave
Python Notes: Python 2.7.14+ + Python 3.6.4

i7-5960X: Linux 4.11

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, Monitor: DELL S2409W, Network: Intel Connection

OS: Ubuntu 18.04, Kernel: 4.11.0-041100-generic (x86_64), Desktop: GNOME Shell 3.26.2, Display Driver: modesetting 1.19.5, Compiler: GCC 7.2.0, File-System: ext4, Screen Resolution: 1920x1080

Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-gnu-unique-object --enable-languages=c,ada,c++,go,brig,d,fortran,objc,obj-c++ --enable-libmpx --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none --enable-plugin --enable-shared --enable-threads=posix --host=x86_64-linux-gnu --program-prefix=x86_64-linux-gnu- --target=x86_64-linux-gnu --with-abi=m64 --with-arch-32=i686 --with-default-libstdcxx-abi=new --with-gcc-major-version-only --with-multilib-list=m32,m64,mx32 --with-target-system-zlib --with-tune=generic --without-cuda-driver -v
Disk Notes: CFQ / data=ordered,errors=remount-ro,relatime,rw
Processor Notes: Scaling Governor: intel_pstate powersave
Python Notes: Python 2.7.14+ + Python 3.6.4

i7-5960X: Linux 4.12

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, Monitor: DELL S2409W, Network: Intel Connection

OS: Ubuntu 18.04, Kernel: 4.12.0-041200-generic (x86_64), Desktop: GNOME Shell 3.26.2, Display Driver: modesetting 1.19.5, Compiler: GCC 7.2.0, File-System: ext4, Screen Resolution: 1920x1080

Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-gnu-unique-object --enable-languages=c,ada,c++,go,brig,d,fortran,objc,obj-c++ --enable-libmpx --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none --enable-plugin --enable-shared --enable-threads=posix --host=x86_64-linux-gnu --program-prefix=x86_64-linux-gnu- --target=x86_64-linux-gnu --with-abi=m64 --with-arch-32=i686 --with-default-libstdcxx-abi=new --with-gcc-major-version-only --with-multilib-list=m32,m64,mx32 --with-target-system-zlib --with-tune=generic --without-cuda-driver -v
Disk Notes: CFQ / data=ordered,errors=remount-ro,relatime,rw
Processor Notes: Scaling Governor: intel_pstate powersave
Python Notes: Python 2.7.14+ + Python 3.6.4

i7-5960X: Linux 4.13

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, Monitor: DELL S2409W, Network: Intel Connection

OS: Ubuntu 18.04, Kernel: 4.13.0-041300-generic (x86_64), Desktop: GNOME Shell 3.26.2, Display Driver: modesetting 1.19.5, Compiler: GCC 7.2.0, File-System: ext4, Screen Resolution: 1920x1080

Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-gnu-unique-object --enable-languages=c,ada,c++,go,brig,d,fortran,objc,obj-c++ --enable-libmpx --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none --enable-plugin --enable-shared --enable-threads=posix --host=x86_64-linux-gnu --program-prefix=x86_64-linux-gnu- --target=x86_64-linux-gnu --with-abi=m64 --with-arch-32=i686 --with-default-libstdcxx-abi=new --with-gcc-major-version-only --with-multilib-list=m32,m64,mx32 --with-target-system-zlib --with-tune=generic --without-cuda-driver -v
Disk Notes: CFQ / data=ordered,errors=remount-ro,relatime,rw
Processor Notes: Scaling Governor: intel_pstate powersave
Python Notes: Python 2.7.14+ + Python 3.6.4

i7-5960X: Linux 4.14

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, Monitor: DELL S2409W, Network: Intel Connection

OS: Ubuntu 18.04, Kernel: 4.14.0-041400-generic (x86_64), Desktop: GNOME Shell 3.26.2, Display Driver: modesetting 1.19.5, Compiler: GCC 7.2.0, File-System: ext4, Screen Resolution: 1920x1080

Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-gnu-unique-object --enable-languages=c,ada,c++,go,brig,d,fortran,objc,obj-c++ --enable-libmpx --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none --enable-plugin --enable-shared --enable-threads=posix --host=x86_64-linux-gnu --program-prefix=x86_64-linux-gnu- --target=x86_64-linux-gnu --with-abi=m64 --with-arch-32=i686 --with-default-libstdcxx-abi=new

--with-gcc-major-version-only --with-multilib-list=m32,m64,mx32 --with-target-system-zlib --with-tune=generic --without-cuda-driver -v
Disk Notes: CFQ / data=ordered,errors=remount-ro,relatime,rw
Processor Notes: Scaling Governor: intel_pstate powersave
Python Notes: Python 2.7.14+ + Python 3.6.4

i7-5960X: Linux 4.15 Git

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, Monitor: DELL S2409W, Network: Intel Connection

OS: Ubuntu 18.04, Kernel: 4.15.0-999-generic (x86_64) 20180123, Desktop: GNOME Shell 3.26.2, Display Driver: modesetting 1.19.5, Compiler: GCC 7.2.0, File-System: ext4, Screen Resolution: 1920x1080

Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-gnu-unique-object --enable-languages=c,ada,c++,go,brig,d,fortran,objc,obj-c++ --enable-libmpx --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none --enable-plugin --enable-shared --enable-threads=posix --host=x86_64-linux-gnu --program-prefix=x86_64-linux-gnu- --target=x86_64-linux-gnu --with-abi=m64 --with-arch-32=i686 --with-default-libstdcxx-abi=new --with-gcc-major-version-only --with-multilib-list=m32,m64,mx32 --with-target-system-zlib --with-tune=generic --without-cuda-driver -v
Disk Notes: CFQ / data=ordered,errors=remount-ro,relatime,rw
Processor Notes: Scaling Governor: intel_pstate powersave
Python Notes: Python 2.7.14+ + Python 3.6.4
Security Notes: KPTI + Minimal generic ASM retpoline Protection

i7-990X: Linux 3.17

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: Intel 82801JI, Monitor: DELL S2409W, Network: Realtek RTL8111/8168/8411

OS: Ubuntu 18.04, Kernel: 3.17.0-031700-generic (x86_64), Desktop: GNOME Shell 3.26.2, Compiler: GCC 7.2.0, File-System: ext4, Screen Resolution: 1920x1080

Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-gnu-unique-object --enable-languages=c,ada,c++,go,brig,d,fortran,objc,obj-c++ --enable-libmpx --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none --enable-plugin --enable-shared --enable-threads=posix --host=x86_64-linux-gnu --program-prefix=x86_64-linux-gnu- --target=x86_64-linux-gnu --with-abi=m64 --with-arch-32=i686 --with-default-libstdcxx-abi=new --with-gcc-major-version-only --with-multilib-list=m32,m64,mx32 --with-target-system-zlib --with-tune=generic --without-cuda-driver -v
Disk Notes: DEADLINE / data=ordered,errors=remount-ro,relatime,rw
Processor Notes: Scaling Governor: acpi-cpufreq ondemand
Python Notes: Python 2.7.14+ + Python 3.6.4

i7-990X: Linux 3.18

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: Intel 82801JI, Monitor: DELL S2409W, Network: Realtek RTL8111/8168/8411

OS: Ubuntu 18.04, Kernel: 3.18.0-031800-generic (x86_64), Desktop: GNOME Shell 3.26.2, Compiler: GCC 7.2.0, File-System: ext4, Screen Resolution: 1920x1080

Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-gnu-unique-object --enable-languages=c,ada,c++,go,brig,d,fortran,objc,obj-c++ --enable-libmpx --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none --enable-plugin --enable-shared --enable-threads=posix --host=x86_64-linux-gnu --program-prefix=x86_64-linux-gnu- --target=x86_64-linux-gnu --with-abi=m64 --with-arch-32=i686 --with-default-libstdcxx-abi=new --with-gcc-major-version-only --with-multilib-list=m32,m64,mx32 --with-target-system-zlib --with-tune=generic --without-cuda-driver -v
Disk Notes: DEADLINE / data=ordered,errors=remount-ro,relatime,rw
Processor Notes: Scaling Governor: acpi-cpufreq ondemand
Python Notes: Python 2.7.14+ + Python 3.6.4

i7-990X: Linux 3.19

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: Intel 82801JI, Monitor: DELL S2409W, Network: Realtek RTL8111/8168/8411

OS: Ubuntu 18.04, Kernel: 3.19.0-031900-generic (x86_64), Desktop: GNOME Shell 3.26.2, Compiler: GCC 7.2.0, File-System: ext4, Screen Resolution: 1920x1080

Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-gnu-unique-object --enable-languages=c,ada,c++,go,brig,d,fortran,objc,obj-c++ --enable-libmpx --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none --enable-plugin --enable-shared --enable-threads=posix --host=x86_64-linux-gnu --program-prefix=x86_64-linux-gnu- --target=x86_64-linux-gnu --with-abi=m64 --with-arch-32=i686 --with-default-libstdcxx-abi=new --with-gcc-major-version-only --with-multilib-list=m32,m64,mx32 --with-target-system-zlib --with-tune=generic --without-cuda-driver -v
Disk Notes: DEADLINE / data=ordered,errors=remount-ro,relatime,rw
Processor Notes: Scaling Governor: acpi-cpufreq ondemand
Python Notes: Python 2.7.14+ + Python 3.6.4

i7-990X: Linux 4.0

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: Intel 82801JI, Monitor: DELL S2409W, Network: Realtek RTL8111/8168/8411

OS: Ubuntu 18.04, Kernel: 4.0.0-040000-generic (x86_64), Desktop: GNOME Shell 3.26.2, Compiler: GCC 7.2.0, File-System: ext4, Screen Resolution: 1920x1080

Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-gnu-unique-object --enable-languages=c,ada,c++,go,brig,d,fortran,objc,obj-c++ --enable-libmpx --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none --enable-plugin --enable-shared --enable-threads=posix --host=x86_64-linux-gnu --program-prefix=x86_64-linux-gnu- --target=x86_64-linux-gnu --with-abi=m64 --with-arch-32=i686 --with-default-libstdcxx-abi=new --with-gcc-major-version-only --with-multilib-list=m32,m64,mx32 --with-target-system-zlib --with-tune=generic --without-cuda-driver -v
Disk Notes: DEADLINE / data=ordered,errors=remount-ro,relatime,rw
Processor Notes: Scaling Governor: acpi-cpufreq ondemand
Python Notes: Python 2.7.14+ + Python 3.6.4

i7-990X: Linux 4.1

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, Monitor: DELL S2409W, Network: Realtek RTL8111/8168/8411

OS: Ubuntu 18.04, Kernel: 4.1.0-040100-generic (x86_64), Desktop: GNOME Shell 3.26.2, Compiler: GCC 7.2.0, File-System: ext4, Screen Resolution: 1920x1080

Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-gnu-unique-object --enable-languages=c,ada,c++,go,brig,d,fortran,objc,obj-c++ --enable-libmpx --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none --enable-plugin --enable-shared --enable-threads=posix --host=x86_64-linux-gnu --program-prefix=x86_64-linux-gnu- --target=x86_64-linux-gnu --with-abi=m64 --with-arch-32=i686 --with-default-libstdcxx-abi=new --with-gcc-major-version-only --with-multilib-list=m32,m64,mx32 --with-target-system-zlib --with-tune=generic --without-cuda-driver -v
Disk Notes: DEADLINE / data=ordered,errors=remount-ro,relatime,rw
Processor Notes: Scaling Governor: acpi-cpufreq ondemand
Python Notes: Python 2.7.14+ + Python 3.6.4

i7-990X: Linux 4.2

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, Monitor: DELL S2409W, Network: Realtek RTL8111/8168/8411

OS: Ubuntu 18.04, Kernel: 4.2.0-040200-generic (x86_64), Desktop: GNOME Shell 3.26.2, Compiler: GCC 7.2.0, File-System: ext4, Screen Resolution: 1920x1080

Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-gnu-unique-object --enable-languages=c,ada,c++,go,brig,d,fortran,objc,obj-c++ --enable-libmpx --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none --enable-plugin --enable-shared --enable-threads=posix --host=x86_64-linux-gnu --program-prefix=x86_64-linux-gnu- --target=x86_64-linux-gnu --with-abi=m64 --with-arch-32=i686 --with-default-libstdcxx-abi=new --with-gcc-major-version-only --with-multilib-list=m32,m64,mx32 --with-target-system-zlib --with-tune=generic --without-cuda-driver -v
Disk Notes: DEADLINE / data=ordered,errors=remount-ro,relatime,rw
Processor Notes: Scaling Governor: acpi-cpufreq ondemand
Python Notes: Python 2.7.14+ + Python 3.6.4

i7-990X: Linux 4.3

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, Monitor: DELL S2409W, Network: Realtek RTL8111/8168/8411

OS: Ubuntu 18.04, Kernel: 4.3.0-040300-generic (x86_64), Desktop: GNOME Shell 3.26.2, Compiler: GCC 7.2.0, File-System: ext4, Screen Resolution: 1920x1080

Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-gnu-unique-object --enable-languages=c,ada,c++,go,brig,d,fortran,objc,obj-c++ --enable-libmpx --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none --enable-plugin --enable-shared --enable-threads=posix --host=x86_64-linux-gnu --program-prefix=x86_64-linux-gnu- --target=x86_64-linux-gnu --with-abi=m64 --with-arch-32=i686 --with-default-libstdcxx-abi=new --with-gcc-major-version-only --with-multilib-list=m32,m64,mx32 --with-target-system-zlib --with-tune=generic --without-cuda-driver -v
Disk Notes: DEADLINE / data=ordered,errors=remount-ro,relatime,rw
Processor Notes: Scaling Governor: acpi-cpufreq ondemand
Python Notes: Python 2.7.14+ + Python 3.6.4

i7-990X: Linux 4.4

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, Monitor: DELL S2409W, Network: Realtek RTL8111/8168/8411

OS: Ubuntu 18.04, Kernel: 4.4.0-040400-generic (x86_64), Desktop: GNOME Shell 3.26.2, Compiler: GCC 7.2.0, File-System: ext4, Screen Resolution: 1920x1080

Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-gnu-unique-object --enable-languages=c,ada,c++,go,brig,d,fortran,objc,obj-c++ --enable-libmpx --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none --enable-plugin --enable-shared --enable-threads=posix --host=x86_64-linux-gnu --program-prefix=x86_64-linux-gnu- --target=x86_64-linux-gnu --with-abi=m64 --with-arch-32=i686 --with-default-libstdcxx-abi=new --with-gcc-major-version-only --with-multilib-list=m32,m64,mx32 --with-target-system-zlib --with-tune=generic --without-cuda-driver -v
Disk Notes: DEADLINE / data=ordered,errors=remount-ro,relatime,rw
Processor Notes: Scaling Governor: acpi-cpufreq ondemand
Python Notes: Python 2.7.14+ + Python 3.6.4

i7-990X: Linux 4.5

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, Monitor: DELL S2409W, Network: Realtek

RTL8111/8168/8411

OS: Ubuntu 18.04, Kernel: 4.5.0-040500-generic (x86_64), Desktop: GNOME Shell 3.26.2, Compiler: GCC 7.2.0, File-System: ext4, Screen Resolution: 1920x1080

Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-gnu-unique-object --enable-languages=c,ada,c++,go,brig,d,fortran,objc,obj-c++ --enable-libmpx --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none --enable-plugin --enable-shared --enable-threads=posix --host=x86_64-linux-gnu --program-prefix=x86_64-linux-gnu- --target=x86_64-linux-gnu --with-abi=m64 --with-arch-32=i686 --with-default-libstdcxx-abi=new --with-gcc-major-version-only --with-multilib-list=m32,m64,mx32 --with-target-system-zlib --with-tune=generic --without-cuda-driver -v
Disk Notes: DEADLINE / data=ordered,errors=remount-ro,relatime,rw
Processor Notes: Scaling Governor: acpi-cpufreq ondemand
Python Notes: Python 2.7.14+ + Python 3.6.4

i7-990X: Linux 4.6

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, Monitor: DELL S2409W, Network: Realtek RTL8111/8168/8411

OS: Ubuntu 18.04, Kernel: 4.6.0-040600-generic (x86_64), Desktop: GNOME Shell 3.26.2, Compiler: GCC 7.2.0, File-System: ext4, Screen Resolution: 1920x1080

Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-gnu-unique-object --enable-languages=c,ada,c++,go,brig,d,fortran,objc,obj-c++ --enable-libmpx --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none --enable-plugin --enable-shared --enable-threads=posix --host=x86_64-linux-gnu --program-prefix=x86_64-linux-gnu- --target=x86_64-linux-gnu --with-abi=m64 --with-arch-32=i686 --with-default-libstdcxx-abi=new --with-gcc-major-version-only --with-multilib-list=m32,m64,mx32 --with-target-system-zlib --with-tune=generic --without-cuda-driver -v
Disk Notes: DEADLINE / data=ordered,errors=remount-ro,relatime,rw
Processor Notes: Scaling Governor: acpi-cpufreq performance
Python Notes: Python 2.7.14+ + Python 3.6.4

i7-990X: Linux 4.8

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, Monitor: DELL S2409W, Network: Realtek RTL8111/8168/8411

OS: Ubuntu 18.04, Kernel: 4.8.0-040800-generic (x86_64), Desktop: GNOME Shell 3.26.2, Compiler: GCC 7.2.0, File-System: ext4, Screen Resolution: 1920x1080

Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-gnu-unique-object --enable-languages=c,ada,c++,go,brig,d,fortran,objc,obj-c++ --enable-libmpx --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none --enable-plugin --enable-shared --enable-threads=posix --host=x86_64-linux-gnu --program-prefix=x86_64-linux-gnu- --target=x86_64-linux-gnu --with-abi=m64 --with-arch-32=i686 --with-default-libstdcxx-abi=new --with-gcc-major-version-only --with-multilib-list=m32,m64,mx32 --with-target-system-zlib --with-tune=generic --without-cuda-driver -v
Disk Notes: none / data=ordered,errors=remount-ro,relatime,rw
Processor Notes: Scaling Governor: acpi-cpufreq ondemand
Python Notes: Python 2.7.14+ + Python 3.6.4

i7-990X: Linux 4.9

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, Monitor: DELL S2409W, Network: Realtek RTL8111/8168/8411

OS: Ubuntu 18.04, Kernel: 4.9.0-040900-generic (x86_64), Desktop: GNOME Shell 3.26.2, Compiler: GCC 7.2.0, File-System: ext4, Screen Resolution: 1920x1080

Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-gnu-unique-object --enable-languages=c,ada,c++,go,brig,d,fortran,objc,obj-c++ --enable-libmpx --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none --enable-plugin --enable-shared --enable-threads=posix --host=x86_64-linux-gnu --program-prefix=x86_64-linux-gnu- --target=x86_64-linux-gnu --with-abi=m64 --with-arch-32=i686 --with-default-libstdcxx-abi=new --with-gcc-major-version-only --with-multilib-list=m32,m64,mx32 --with-target-system-zlib --with-tune=generic --without-cuda-driver -v
Disk Notes: DEADLINE / data=ordered,errors=remount-ro,relatime,rw
Processor Notes: Scaling Governor: acpi-cpufreq ondemand
Python Notes: Python 2.7.14+ + Python 3.6.4

i7-990X: Linux 4.10

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, Monitor: DELL S2409W, Network: Realtek RTL8111/8168/8411

OS: Ubuntu 18.04, Kernel: 4.10.0-041000-generic (x86_64), Desktop: GNOME Shell 3.26.2, Compiler: GCC 7.2.0, File-System: ext4, Screen Resolution: 1920x1080

Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-gnu-unique-object --enable-languages=c,ada,c++,go,brig,d,fortran,objc,obj-c++ --enable-libmpx --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none --enable-plugin --enable-shared --enable-threads=posix --host=x86_64-linux-gnu --program-prefix=x86_64-linux-gnu- --target=x86_64-linux-gnu --with-abi=m64 --with-arch-32=i686 --with-default-libstdcxx-abi=new --with-gcc-major-version-only --with-multilib-list=m32,m64,mx32 --with-target-system-zlib --with-tune=generic --without-cuda-driver -v
Disk Notes: CFQ / data=ordered,errors=remount-ro,relatime,rw
Processor Notes: Scaling Governor: acpi-cpufreq ondemand
Python Notes: Python 2.7.14+ + Python 3.6.4

i7-990X: Linux 4.11

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, Monitor: DELL S2409W, Network: Realtek RTL8111/8168/8411

OS: Ubuntu 18.04, Kernel: 4.11.0-041100-generic (x86_64), Desktop: GNOME Shell 3.26.2, Compiler: GCC 7.2.0, File-System: ext4, Screen Resolution: 1920x1080

Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-gnu-unique-object --enable-languages=c,ada,c++,go,brig,d,fortran,objc,obj-c++ --enable-libmpx --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none --enable-plugin --enable-shared --enable-threads=posix --host=x86_64-linux-gnu --program-prefix=x86_64-linux-gnu- --target=x86_64-linux-gnu --with-abi=m64 --with-arch-32=i686 --with-default-libstdcxx-abi=new --with-gcc-major-version-only --with-multilib-list=m32,m64,mx32 --with-target-system-zlib --with-tune=generic --without-cuda-driver -v
Disk Notes: CFQ / data=ordered,errors=remount-ro,relatime,rw
Processor Notes: Scaling Governor: acpi-cpufreq ondemand
Python Notes: Python 2.7.14+ + Python 3.6.4

i7-990X: Linux 4.12

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, Monitor: DELL S2409W, Network: Realtek RTL8111/8168/8411

OS: Ubuntu 18.04, Kernel: 4.12.0-041200-generic (x86_64), Desktop: GNOME Shell 3.26.2, Compiler: GCC 7.2.0, File-System: ext4, Screen Resolution: 1920x1080

Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-gnu-unique-object --enable-languages=c,ada,c++,go,brig,d,fortran,objc,obj-c++ --enable-libmpx --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none --enable-plugin --enable-shared --enable-threads=posix --host=x86_64-linux-gnu --program-prefix=x86_64-linux-gnu- --target=x86_64-linux-gnu --with-abi=m64 --with-arch-32=i686 --with-default-libstdcxx-abi=new --with-gcc-major-version-only --with-multilib-list=m32,m64,mx32 --with-target-system-zlib --with-tune=generic --without-cuda-driver -v
Disk Notes: CFQ / data=ordered,errors=remount-ro,relatime,rw
Processor Notes: Scaling Governor: acpi-cpufreq ondemand
Python Notes: Python 2.7.14+ + Python 3.6.4

i7-990X: Linux 4.13

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, Monitor: DELL S2409W, Network: Realtek RTL8111/8168/8411

OS: Ubuntu 18.04, Kernel: 4.13.0-041300-generic (x86_64), Desktop: GNOME Shell 3.26.2, Compiler: GCC 7.2.0, File-System: ext4, Screen Resolution: 1920x1080

Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-gnu-unique-object --enable-languages=c,ada,c++,go,brig,d,fortran,objc,obj-c++ --enable-libmpx --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none --enable-plugin --enable-shared --enable-threads=posix --host=x86_64-linux-gnu --program-prefix=x86_64-linux-gnu- --target=x86_64-linux-gnu --with-abi=m64 --with-arch-32=i686 --with-default-libstdcxx-abi=new --with-gcc-major-version-only --with-multilib-list=m32,m64,mx32 --with-target-system-zlib --with-tune=generic --without-cuda-driver -v
Disk Notes: CFQ / data=ordered,errors=remount-ro,relatime,rw
Processor Notes: Scaling Governor: acpi-cpufreq ondemand
Python Notes: Python 2.7.14+ + Python 3.6.4

i7-990X: Linux 4.14

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, Monitor: DELL S2409W, Network: Realtek RTL8111/8168/8411

OS: Ubuntu 18.04, Kernel: 4.14.0-041400-generic (x86_64), Desktop: GNOME Shell 3.26.2, Compiler: GCC 7.2.0, File-System: ext4, Screen Resolution: 1920x1080

Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-gnu-unique-object --enable-languages=c,ada,c++,go,brig,d,fortran,objc,obj-c++ --enable-libmpx --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none --enable-plugin --enable-shared --enable-threads=posix --host=x86_64-linux-gnu --program-prefix=x86_64-linux-gnu- --target=x86_64-linux-gnu --with-abi=m64 --with-arch-32=i686 --with-default-libstdcxx-abi=new --with-gcc-major-version-only --with-multilib-list=m32,m64,mx32 --with-target-system-zlib --with-tune=generic --without-cuda-driver -v
Disk Notes: CFQ / data=ordered,errors=remount-ro,relatime,rw
Processor Notes: Scaling Governor: acpi-cpufreq ondemand
Python Notes: Python 2.7.14+ + Python 3.6.4

i7-990X: Linux 4.15 Git

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, Monitor: DELL S2409W, Network: Realtek RTL8111/8168/8411

OS: Ubuntu 18.04, Kernel: 4.15.0-999-generic (x86_64) 20180123, Desktop: GNOME Shell 3.26.2, Compiler: GCC 7.2.0, File-System: ext4, Screen Resolution: 1920x1080

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

Linux 3.x To 4.15 Kernel Core i7 System Benchmarks

--with-gcc-major-version-only --with-multilib-list=m32,m64,mx32 --with-target-system-zlib --with-tune=generic --without-cuda-driver -v
Disk Notes: CFQ / data=ordered,errors=remount-ro,relatime,rw
Processor Notes: Scaling Governor: acpi-cpufreq ondemand
Python Notes: Python 2.7.14+ + Python 3.6.4
Security Notes: KPTI + Minimal generic ASM retpoline Protection

	i7-5960X: Linux 3.17	i7-5960X: Linux 3.18	i7-5960X: Linux 3.19	i7-5960X: Linux 4.0	i7-5960X: Linux 4.1	i7-5960X: Linux 4.2	i7-5960X: Linux 4.3	i7-5960X: Linux 4.4	i7-5960X: Linux 4.5	i7-5960X: Linux 4.6	i7-5960X: Linux 4.8	i7-5960X: Linux 4.9	i7-5960X: Linux 4.10	i7-5960X: Linux 4.11	i7-5960X: Linux 4.12	i7-5960X: Linux 4.13	i7-5960X: Linux 4.14	i7-5960X: Linux 4.15 Git	i7-9900X: Linux 3.17	i7-9900X: Linux 3.18	i7-9900X: Linux 3.19	i7-9900X: Linux 4.0	i7-9900X: Linux 4.1	i7-9900X: Linux 4.2	i7-9900X: Linux 4.3	i7-9900X: Linux 4.4	i7-9900X: Linux 4.5	i7-9900X: Linux 4.6	i7-9900X: Linux 4.8	i7-9900X: Linux 4.9	i7-9900X: Linux 4.10	i7-9900X: Linux 4.11	i7-9900X: Linux 4.12	i7-9900X: Linux 4.13	i7-9900X: Linux 4.14	i7-9900X: Linux 4.15 Git
FS-Mark - 1.F.1.S (Files/s)	39.37	38.43	**38.40**	39.40	39.60	40.13	38.80	40.13	39.70	39.67	39.77	39.30	39.33	40.40	39.07	40.53	39.73	39.40	84.03	83.80	84.50	84.03	84.39	85.54	87.33	87.33	87.23	**91.23**	85.67	83.70	85.13	82.68	85.43	85.37	84.92	84.37
Normalized	43.15	42.12	42.09	43.19	43.41	43.91	42.53	43.92	43.25	43.28	43.26	43.08	43.11	44.18	43.27	44.34	43.44	43.10	92.55	91.86	92.62	92.44	93.04	93.72	95.97	95.73	95.62	100%	93.91	91.03	93.53	90.66	93.64	93.47	93.14	92.48
Standard Deviation	0.72%	1.25%	3.51%	0.55%	2.44%	0.94%	2.44%	0.75%	1.57%	1.28%	0.89%	1.29%	1.47%	0.72%	1.75%	0.55%	1.93%	1.31%	0.12%	0.62%	0.21%	0.11%	0.13%	0.32%	0.29%	0.22%	0.19%	2.91%	0.19%	3.14%	0.15%	0.81%	0.26%	0.22%	0.21%	0.14%

Linux 3.x To 4.15 Kernel Core i7 System Benchmarks

Phoronix Test Suite

FS-Mark - 4.F.3.S.D. 1.S (Files/s)	3	3	3	3	3	3	4	3	4	3	3	3	4	4	4	4	3	3	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
	8.7	7.	8.9	9.3	9.6	9.0	0.7	9.7	0.2	9.3	9.4	9.1	0.6	0.4	0.9	0.6	8.4	9.0	3.8	3.5	4.6	4.3	5	5.2	7.5	7.3	7.2	9.5	3.7	3.0	5.2	5.1	5.3	5.3	5.0	4.4
	3	9	6	4	7	6	3	7	2	3	4	1	4	0	2	0	9	3	7	6	6	3		3	4	3	2	5	8	6	2	1	4	3	0	4
	0	3	0	3	3	0	7	7	0	7	7	3	3	7	3	3	0	0	0	7	0	3		3	3	3	7	7	0	0	7	3	3	7	3	0
Normalized	42	42	43	44	44	44	45	44	44	43	44	43	45	44	44	44	43	43	93	93	94	94	94	95	97	97	97	10	93	93	95	95	95	95	94	94
	.76	.35	.09	.02	.36	.21	.07	.4%	.88	.95	.07	.69	.14	.74	.91	.96	.43	.88	.45	.11	.55	.5%	.9%	.27	.61	.5%	.43	0%	.56	.33	.2%	.04	.38	.43	.93	.23
Standard Deviation	0.7	1.3	0.4	0.%	1%	0.5	0.6	0.1	1.1	0.4	1.2	0.3	0.7	0.9	1.3	1%	0.9	0.4	0.9	1.1	0.2	0.1		0.1	0.1	0.1	0.1	0.1%	2%	3%	0.1	0.1	0.1	0.1	0.1	0.1
	%	%	%	%		%	%	%	%	%	%	%	%	%	%		%	%	%	%	%	%		%	%	%	%	%			%	%	%	%	%	%
Compile Benchmark - Compile (MB/s)	88	86	87	87	89	90	91	91	91	91	89	89	89	88	98	10	97	97	45	45	49	49	50	50	52	50	52	51	49	48	48	48	50	49	50	49
	.09	.61	.02	.72	.07	.03	.69	.74	.21	.01	.83	.89	.46	.79	.53	0%	.72	.96	.72	.84	.15	.52	.21	.57	.79	.29	.21	.13	.35	.55	.53	.37	.38	.84	.42	.02
	3.3	2.2	3.1	2.5	3.8	4.7	4.7	2.2	3.5	3.2%	3	4.1	4.2	3.7	1.5	1.5	4.7	1.7	2.6	1.6	1.4	2.1	1.8	3.7	1.9	2.3	0.3	1.4	0.3	3.4	2.5	1.6	1.1	4.7	2.7	1.4
	%	%	%	%	%	%	%	%	%	%		%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
Compile Benchmark - Initial Create (MB/s)	4	4	3	4	4	4	4	4	4	4	4	3	4	3	4	4	4	4	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
	2.2	2.9	0.0	2.3	3.3	4.4	4.2	1.9	3.4	4.8	4.8	1.9	3.3	1.0	2.1	2.2	2.2	2.3	1.8	2.2	2.3	4.3	3.4	3.3	1.3	3.3	2.3	3.1	3.3	2.9	3.5	3.3	2.3	3.1	3.3	1.9
	5.0	4.4	5.2	6.7	4.6	7.2	7.4	2.7	7.6	3.4	4.8	1.9	7.3	1.4	4.7	7.8	7.7	7.4	9.4	5.2	2.7	0.2	2.3	8.1	0.1	4.1	7.6	9.3	2.7	6.1	9.3	7.6	1.4	9.3	1.9	3.9
	9	5	8	5	0	5	6	4	2	4	7	1	9	7	3	6	8	2	6	8	7	6	7	4	3	4	7	8	6	9	2	7	6	1	9	3
	9	9	4	6	1	1	3	1	7	4	9	0	8	7	0	0	4	8	4	2	7	4	9	5	0	3	6	1	9	1	8	7	9	4	8	8
Normalized	95	94	88	90	90	94	97	97	99	10	99	85	92	89	96	98	92	90	50	48	50	51	50	52	54	53	53	52	52	48	51	51	49	52	51	49
	.21	%	.24	.42	.52	.43	.58	.7%	.29	0%	.85	.62	.71	.12	.39	.25	.0%	.35	.8%	.6%	.91	.32	.24	.62	.15	.0%	.8%	.0%	.24	.9%	.6%	.5%	.5%	.32	.8%	.0%
	1		4	2	2	3	8	6	9	%	5	2	5	2	9	5	4	5	8	8	1	2	4	2	5	6	1	3	3	2	9	8	5	3	5	3
Standard Deviation	9.7	6.1	7%	9%	13.2	10.7	11.7	9.8	10.5	13.4	2.6	9.3	7.1	6.4	10.1	6.2	14.9	7.5	6.9	9%	8%	9.6	11%	12.7	13.8	12.8	12.1	10%	6.6	12.1	7.1	10%	7.5	9%	8.6	9.3
	%	%			%	%	%	%	%	%	%	%	%	%	%	%	%	%	%			%		%	%	%	%		%	%	%		%		%	%
Deviation																																				

Linux 3.x To 4.15 Kernel Core i7 System Benchmarks

Post Mark - D.T.P (TPS)	5 6 3 9	5 5 5 5	5 7 6 9	5 7 7 1	5 9 0 0	6 0 9 7	**6 3 5 7**	6 3 0 3	**6 3 5 7**	6 1 9 9	6 0 9 7	5 9 5 2	5 8 6 2	5 8 5 9	6 1 5 1	6 2 5 0	6 3 0 3	5 6 3 9	4 2 1 3	4 0 9 8	4 5 1 8	4 3 8 5	4 6 5 8	4 7 4 8	5 0 0 0	4 8 7 7	4 8 8 6	4 6 3 0	4 6 3 8	4 4 1 1	4 4 1 1	4 5 4 5	4 5 1 9	4 5 4 5	**3 9 6 9**
Normalized	88.71%	87.38%	90.75%	90.78%	92.81%	95.91%	100%	99.15%	100%	97.51%	95.11%	93.63%	92.21%	92.17%	96.76%	98.62%	99.15%	88.81%	66.17%	64.26%	71.47%	68.28%	73.71%	74.29%	78.65%	76.51%	75.12%	73.23%	72.33%	69.81%	69.19%	69.99%	71.95%	71.09%	71.55%	62.44%
Standard Deviation	1.3%		1.3%	2.7%	3.2%		1.5%	1.5%	1.5%	1.4%			2.7%	1.4%	2.8%		1.5%	1.3%	%		1%		1.1%	2.2%		1.1%		1.3%	1.8%	1%	1%	1%		2.1%		1.6%
ebizzy (Records/s)	2 0 5 9 0 3	2 1 1 9 2 6	2 2 1 1 8 8	2 1 5 8 5 0	2 4 1 0 6	2 1 9 6 7	2 1 3 6 9 8	2 0 9 3 8 9	2 2 1 4 4 2	2 2 1 4 3 8	2 1 0 4 7 0	2 1 6 7 5 2	2 1 6 5 3 6	2 0 8 2 0 6	2 1 3 5 9	2 3 5 5 0 7	**2 5 5 8 1 7**	2 3 7 8 3 0	3 7 8 0 0 3	3 8 7 7 6 9	3 7 8 4 5 0	**3 3 6 2 8**	3 6 7 8 2 4	3 7 6 1 8 9	3 6 5 4 2 0	3 5 7 2 5 9	3 7 8 5 9 8	3 8 7 9 2 0	3 7 8 4 1 3	3 5 7 6 2 9	3 8 7 4 6 1	3 5 7 6 0 2	3 7 8 0 9 1	3 8 6
Standard Deviation	2.1%	9.5%	5.3%	8.9%	2%	0.6%	7.5%	6.4%	3.4%	3.3%	2.2%	7.8%	7.9%	6.3%	4.8%	6.2%	3%	4.3%	10%	2.6%	6.3%	7.1%	16.8%	3.4%	8%	0.5%	12.4%	5.9%	0.9%	0.9%	2.7%	2.2%	3.5%	4.6%	3.9%	2.1%
Systemd Total Boot Time - Total (ms)	8 0 3 3	1 9 3 1	1 3 7 1 0	**7 4 9 0**	1 2 0 5 0	7 5 8 0	5 9 0 5 0	5 5 0 6 0	5 1 0 6 0	5 4 2 0 0	2 5 1 9 0	8 9 6 0	3 3 8 4 7	2 5 1 9 0	3 2 2 2 0	2 7 0 6 8	**3 5 0 3 9 0**	2 6 0 6 0	1 0 4 4 0	2 7 0 5 0	2 7 0 3 9	2 6 0 5 0	1 2 4 0 0	2 6 0 4 0	1 0 3 2 0	1 2 7 5 0	2 2 6 6 0	2 8 4 7 0	4 7 2 5 0	2 2 9 5 0	2 2 8 3 0	2 2 9 4 0	2 2 7 6 0	2 2 7 6 0	2 0 0 6 0
Normalized	93.28%	39.05%	5.46%	10.60%	62.16%	98.81%	12.68%	13.66%	14.67%	13.82%	29.23%	83.29%	2.21%	29.73%	2.32%	27.68%	2.14%	28.74%	71.44%	27.64%	27.71%	28.75%	59.54%	28.46%	60.58%	58.75%	28.41%	26.54%	27.61%	17.64%	25.78%	26.29%	25.75%	25.27%	27.61%	27.66%
Standard Deviation	8%	5%	%	%	6%	1%	8%	%	7%	2%	3%	9%	%	3%	%	8%	%	4%	4%	9%	1%	5%	4%	6%	%	5%	4%	1%	7%	7%	8%	2%	9%	7%	8%	8%

Linux 3.x To 4.15 Kernel Core i7 System Benchmarks

Systemd Total Boot Time - Kernel (ms)	1	1	1	1	1	**1**	1	1	1	3	3	3	3	3	3	3	2	2	4	4	4	4	4	4	4	4	4	**6**	5	5	5	5	5	5	4	3
	7	7	7	5	6	**5**	6	5	5	9	3	3	4	4	4	4	3	3	5	5	5	4	4	3	4	3	4	**3**	0	5	5	5	5	5	7	4
	4	7	3	9	0	**0**	9	5	2	8	7	5	5	1	4	2	1	4	7	9	7	2	4	5	8	9	0	**1**	4	5	3	3	4	2	6	7
	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
Normalized	86.2	84.7	86.1	94.3	93.7	10.0%	88.7	96.7	98.6	37.6	44.5	44.7	43.4	43.9	43.6	43.8	64.9	64.1%	32.8	32.6	32.8	33.9	33.7	34.4	33.4	34.1	34.0	23.7	29.7	27.0	27.1	27.1	27.0	27.1	31.5	43.2

Systemd Total Boot Time - Loader (ms)	**8**												**4**		5		5																							
	9												**9**		0		1																							
	2												**0**		6		4																							
	0												**0**		0		0																							
Normalized	54.9												10.0%		96.8		95.3																							

Systemd Total Boot Time - Firmware (ms)	**1**												3		**3**		3																							
	1												0		**5**		2																							
	4												6		**0**		1																							
	0												5		**1**		2																							
	0												2		**0**		0																							
	0												0		**0**		0																							
Normalized	10.0%												37.1%		32.5%		35.4%																							

Linux 3.x To 4.15 Kernel Core i7 System Benchmarks

Phoronix Test Suite

System Boot Time - User space (ms)	6 2 0	1 7 1 0	1 2 5 0	5 8 0	1 0 5 0	6 0	**5 7 3 0**	5 3 0	4 9 4 0	5 0 1 0	2 1 1 0	**5 6 0**	2 3 9 0	2 1 7 0	2 3 6 0	2 3 5 0	2 1 4 0	2 3 2 0	5 8 2 0	2 2 5 0	2 2 5 0	2 1 2 0	8 1 0	2 1 9 0	7 8 0	8 3 0	2 1 1 0	2 1 2 0	3 6 0	2 3 0	2 2 4 0	2 3 5 0	2 3 5 0	2 2 5 0	2 3 5 0
Normalized	89.19	32.26	45.05	95.25	53.68	92.27	**9.78%**	10.48	11.32	11.17	25.72	**10.0%**	23.88	25.77	23.75	23.54	25.83	23.65	95.53	24.99	24.99	25.95	68.83	25.86	71.66	67.11	25.91	25.83	25.48	15.33	23.86	24.94	23.87	23.84	25.71	23.79
PostgreSQL pgbench - Buffer Test - Normal Load - Read Write (TPS)	1 3 6 2	1 4 0 4	1 3 2 9	1 3 4 2	1 3 5	**1 3 0 9**	1 3 5 3	1 3 5 9	1 3 5 7	1 3 5 8	1 3 5 4	1 3 5 1	1 3 7 8	1 3 9 0	1 3 5 9	1 3 6 8	1 4 1 5	1 3 3 2	4 3 8 2	4 3 9 7	4 3 7 7	4 3 8 4	4 4 5 2	4 4 9 7	4 4 6 6	4 4 5 6	4 4 2 6	4 5 4 6	4 3 6 2	4 4 2 3	4 4 6 0	**4 5 9 3**	4 4 8 8	4 5 3 7	4 5 0 2
Normalized	29.67	30.57	28.94	29.25	29.45	28.51	29.47	29.66	29.54	29.58	29.81	29.41	30.18	30.26	29.58	29.88	30.18	29.95	95.42	95.73	95.34	95.41	96.92	97.29	97.20	97.03	96.98	98.87	94.73	96.67	97.61	98.10	10.00	97.72	98.78	98.02
Standard Deviation	3.15%	1.52	1.59%	3.55%	3.37%	1.77%	2.77%	1.%	1.45%	2.52%	2.%	2.48%	0.6%	3.67	1.79%	0.93%	3.38%	0.8%	0.46%	0.72%	1.32%	1.28%	1.88%	3.21%	4.12%	2.15%	1.19%	2.82%	2.83%	3.28%	2.22%	2.74%	1.%	3.12%	1.45%	3%

Linux 3.x To 4.15 Kernel Core i7 System Benchmarks

Phoronix Test Suite

PostgreSQL pgbench - Buffer Test - Heavy Contention - Read Write (TPS)	1	1	1	1	1	1	1	1	1	1	1	1	**1**	1	1	1	1	1	4	4	4	4	5	4	4	4	5	5	4	5	4	5	5	5	**5**	5
	5	5	5	5	5	4	5	5	5	5	4	5	**4**	5	5	5	6	5	8	8	9	8	1	8	9	8	0	1	6	0	9	0	0	0	**1**	1
	1	5	1	0	5	9	2	6	1	3	8	0	**8**	2	1	1	0	1	9	6	4	3	0	7	1	9	4	2	8	1	4	6	4	1	**5**	2
	7	8	2	4	6	2	6	1	2	3	9	9	**0**	2	1	0	1	6	8	2	0	4	7	9	9	7	3	6	0	5	3	5	6	5	**7**	7
Normalized	29.43	30.22	29.33	29.16	30.18	28.94	29.59	30.26	29.33	29.73	28.88	29.26	28.69	29.52	29.33	29.23	31.20	29.44	94.89	94.28	95.81	93.74	99.04	94.61	95.39	94.59	97.08	99.09	90.63	97.25	95.23	98.26	97.23	97.20	10.99	99.42
Standard Deviation	2.38%	1.88%	3%	1.64%	2.29%	1.79%	2.97%	1.03%	0.43%	3.71%	2.11%	3.18%	1.87%	3.73%	3.73%	3.03%	0.63%	3.21%	1.70%	0.72%	3.22%	2%	1.07%	0.83%	3.71%	3%	2.99%	2.28%	2.31%	3.21%	2.27%	2.23%	3.31%	3.03%	0.11%	1%
GIMP - resize (sec)	4.70	4.33	4.35	4.52	4.60	4.50	4.78	4.91	4.61	4.73	4.65	4.79	4.93	**5.00**	4.61	4.61	4.60	4.55	4.54	4.33	4.33	4.33	4.32	4.25	4.55	4.55	4.55	**4.07**	4.44	4.44	4.44	4.44	4.44	4.44	4.48	4.45
	0	1	5	2	6	0	8	4	1	3	5	8	3	**0**	6	0	9	5	0	5	1	1	6	8	1	0	7	**7**	9	9	9	8	6	3	5	5
Normalized	86.64%	94.43%	93.65%	90.04%	91.26%	90.44%	85.15%	82.93%	88.29%	86.05%	87.53%	85.15%	82.56%	81.04%	97.48%	99.21%	99.51%	89.44%	92.53%	93.59%	94.33%	94.33%	93.95%	95.09%	90.22%	90.44%	89.10%	100.00%	90.65%	90.55%	90.55%	90.80%	91.26%	91.26%	91.48%	83.92%
Standard Deviation	4.87%	8.73%	7.36%	5.99%	7.95%	7.97%	5.92%	4.21%	5.77%	3.72%	3.88%	3.73%	3.37%	3.71%	2.18%	1.55%	1.55%	1.66%	3.07%	3.53%	5.55%	5%	4.44%	4.83%	3.33%	3.53%	3.53%	3.53%	3.33%	3.53%	3.53%	3.53%	3.53%	3.53%	3.53%	3.66%
GIMP - auto-levels	8.04	8.00	7.97	8.26	8.26	8.17	8.56	8.23	8.23	7.65	7.84	8.11	8.19	8.23	**7.24**	7.63	7.73	7.83	7.90	8.70	7.90	8.09	7.99	7.93	8.45	8.55	7.70	7.60	8.14	8.43	8.00	8.01	8.45	8.01	8.00	**8.59**
Normalized	90.05%	89.94%	92.39%	87.66%	87.66%	88.27%	84.58%	87.02%	87.94%	94.65%	92.39%	89.70%	87.66%	87.23%	10.00%	99.70%	98.27%	92.85%	90.58%	90.05%	91.12%	90.58%	91.12%	91.48%	89.70%	89.70%	91.48%	95.05%	89.70%	90.58%	90.58%	88.27%	90.58%	90.58%	89.70%	84.58%
Standard Deviation	0.55%	0.94%	0.94%	0.65%	0.65%	0.62%	0.58%	0.02%	0.94%	0.65%	0.33%	0.27%	0.33%	0.27%	0%	0.72%	0.72%	0.33%	0.87%	0.55%	0.11%	0.05%	0.11%	0.33%	0.05%	0.94%	0.05%	0.27%	0.27%	0.05%	0.11%	0.66%	0.33%	0.27%	0.11%	0.27%

Linux 3.x To 4.15 Kernel Core i7 System Benchmarks

Standard Deviation	5.3	4.1	6%	3.1	2.3	2.4	0.2	4.2	4.4	2.1	2.7	2.1	2.1	1.5	2.5	1.9	1.1	2%	1.2	1%	0.7	0.7	0.8	0.7	0.4	0.3	1.1	0.7	0.5	0.9	0.8	0.1	1.2	0.3	0.9	0.2	1.2%
GIMP-unsharp-mask	1	1	1	1	1	1	1	1	**1**	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	**1**	1	1	1	1	1	1	1	1	1	1
GIMP-unsharp-mask	4.5	4.5	4.7	5.7	5.9	5.0	6.3	5.2	**6.9**	5.6	5.4	5.8	5.8	5.9	5.3	5.7	4.2	4.5	6.4	4.4	4.4	4.9	4.8	4.7	4.8	4.5	**3.2**	4.9	4.8	4.8	5.2	4.2	4.2	4.1	4.5	4.2	5.1
Normalized	92.4	92.3	90.9	89.7	90.2	90.8	84.4	86.0	82.6	90.4	88.2	87.4	86.8	88.5	90.0	92.8	93.8	82.8	94.6	95.6	95.6	95.3	94.0	94.1	94.2	92.0	10.0	93.3	92.7	92.7	93.6	94.4	95.1	93.8	88.7		
Standard Deviation	3.5	2.6	2.9	2.5	3.3	2%	0.5	3.4	1.2	3.4	1.3	0.4	1.7	1.3	1.3	1.7	2.1	1.0	0.5	0.5	0.1	0.7	0.8	0.6	1.2	0.4	4.3	0.0	0.5	0.8	0.5	0.3	0.9	0.7	0.4	0.1	1.2%
Stress-NG - Semaphores (Bogo Ops/s)	1	1	1	**1**	1	1	1	1	1	3	3	3	3	3	3	3	3	3	2	2	2	2	2	2	2	1	6	5	5	5	5	5	**6**	5	5		
Stress-NG - Semaphores (Bogo Ops/s)	4	4	4	**4**	5	5	6	6	4	5	5	5	5	5	5	3	4	4	2	3	2	2	1	1	1	1	9	0	7	7	7	8	9	**1**	9	9	
Stress-NG - Semaphores (Bogo Ops/s)	7	6	4	**1**	2	8	6	2	4	8	8	8	8	5	8	7	6	6	2	5	3	8	0	4	7	0	7	3	4	8	7	3	4	**2**	0	7	
Stress-NG - Semaphores (Bogo Ops/s)	9	4	3	**4**	0	1	6	7	6	5	3	2	8	2	6	8	4	6	8	2	2	2	5	1	7	4	9	2	0	4	5	3	3	**2**	3	9	
Stress-NG - Semaphores (Bogo Ops/s)	3	9	5	**5**	9	1	2	1	7	5	6	4	5	5	5	4	9	6	1	3	6	7	1	2	0	4	0	2	0	7	1	6	2	**5**	1	0	
Stress-NG - Semaphores (Bogo Ops/s)	7	6	1	**3**	5	1	8	9	9	7	8	9	2	9	8	5	2	2	4	7	2	7	5	8	1	4	1	4	6	2	8	1	9	**6**	8	9	
Stress-NG - Semaphores (Bogo Ops/s)	7	3	2	**3**	8	7	9	3	8	3	3	0	3	3	0	5	2	7	6	8	5	1	8	9	2	3	8	0	3	5	3	0	8	**5**	4	0	
Normalized	24.1	23.9	23.5	23.1	24.8	25.8	27.2	26.5	23.6	58.5	58.3	58.5	58.6	58.0	58.5	55.1	56.5	56.6	36.3	38.4	36.4	37.2	34.8	34.9	35.3	34.2	32.3	98.5	93.7	94.4	94.3	95.2	97.0	10.0	96.4	97.6	
Standard Deviation	1.2	2.9	0.3	6.9	1.3	1.7	2.2	1.8	6.1	3.3	0.3	1%	0.6	0.4	0.1	0.3	0.3	0.8	0.6	3.3	1.4	1.4	1.3	2.3	3.8	2.6	1.8	0.4	0.4	0.7	1.1	0.2	0.5	9.4	0.6	10.8	

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Stress-NG - Socket Activity (Bogo Ops/s)	6	6	6	6	6	6	7	7	7	7	7	7	7	7	6	7	7	6	2	2	2	2	2	2	2	2	2	2	2	2	2	3	3
	8	8	8	8	9	9	0	0	0	0	4	5	3	1	9	0	4	5	4	4	4	4	5	5	5	5	5	5	6	6	5	5	5	5	3	1
	3	8	9	3	1	7	6	2	3	1	6	3	9	4	2	5	1	6	5	9	4	4	2	5	8	3	1	4	2	1	9	8	6	4	9	5
	9	1	5	6	2	1	1	4	1	4	8	3	0	7	9	0	1	0	9	5	5	1	8	8	9	9	2	7	6	4	9	6	5	5	9	9
Normalized Standard Deviation	90.9	91.4	91.3	90.5	91.6	92.4	93.3	93.4	93.4	93.1	99.4	10.0	98.1	94.8	91.9	93.5	98.3	87.0	32.6	33.1	32.4	32.4	33.5	33.9	34.3	33.7	33.3	33.8	34.8	34.7	34.5	34.3	34.0	33.7	45.1	41.9
	2.1	1.8	2.1	1%	1.6	1.6	1.3	1.5	2.8	2.3	0.9	1.2	0.2	1.4	2.6	0.7	3.7	3.1	1.2	2.1	1.9	1.7	2.5	2.2	2.5	2.9	2.2	2.1	1.6	2%	1.9	1.6	1.7	2.1	.9%	%
	%	%	%		%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
Stress-NG - Context Switching (Bogo Ops/	4	4	4	4	4	4	4	4	4	4	4	5	4	4	5	4	4	4	2	3	2	3	2	2	3	2	2	2	2	2	3	2	2	2	2	2
	6	5	5	4	3	4	7	5	7	5	5	3	8	9	1	4	5	3	9	0	9	0	7	8	0	7	8	7	8	9	1	4	4	6	7	2
	7	8	8	9	4	1	0	5	3	2	8	7	1	7	4	6	9	1	9	0	9	6	9	7	4	8	9	5	3	2	4	6	3	4	0	7
	5	6	2	4	4	5	0	8	0	0	0	7	6	7	8	2	4	1	4	6	6	6	1	7	8	7	0	0	3	9	7	8	3	3	2	5
	6	0	5	0	2	9	8	4	9	2	4	3	9	4	5	6	1	5	7	1	8	8	1	4	6	1	8	8	9	3	2	7	5	1	7	1
	8	5	0	7	6	1	2	4	4	2	9	8	5	4	4	3	4	9	6	3	2	9	1	2	4	2	1	4	7	0	9	9	8	8	9	5
	7	9	7	2	1	4	1	4	2	2	4	2	6	1	9	9	2	1	2	8	3	9	8	8	4	6	1	6	0	7	5	4	1	3	8	7
Normalized Standard Deviation	86.5	85.2	85.2	83.7	80.9	82.2	87.2	84.7	87.8	84.6	85.8	10.0	89.5	92.6	95.4	82.9	85.3	80.1	55.6	55.9	55.7	57.0	51.9	53.5	56.6	51.8	53.6	51.1	52.7	54.4	58.5	45.9	45.1	49.6	50.2	42.3
	0.4	0.8	%	1%	0.4	0.9	0.7	0.3	0.5	0.8	0.2	0.3	0.7	0.4	%	0.4	0.1	0.3	0.3	0.4	0.5	0.2	0.2	0.1	0.8	0.4	0.8	0.4	%	0.7	0.1	%	0.7	0.5	0.8	0.8
	%	%		%	%	%	%	%	%	%	%	%	%	%		%	%	%	%	%	%	%	%	%	%	%	%	%		%	%		%	%	%	%

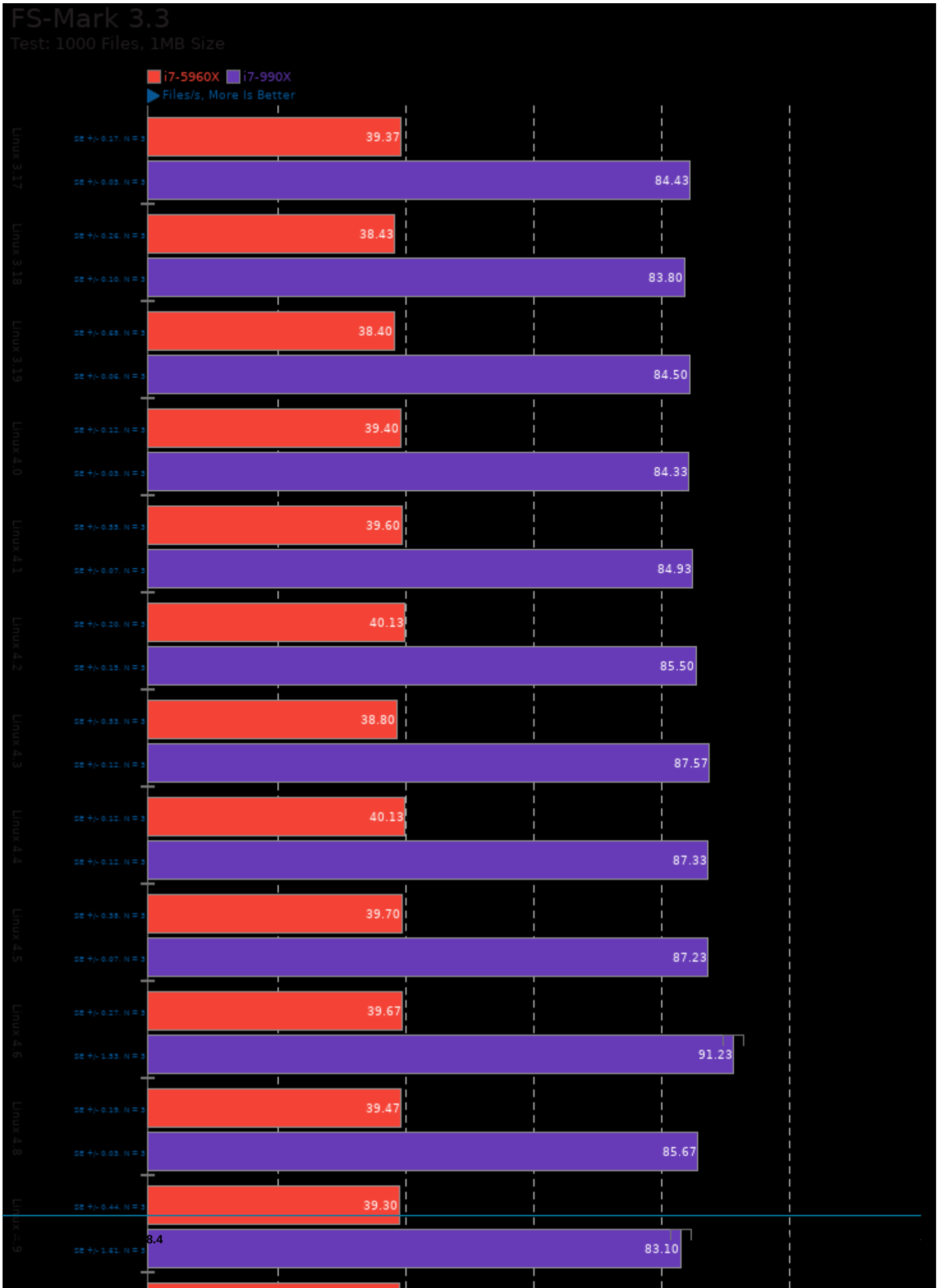
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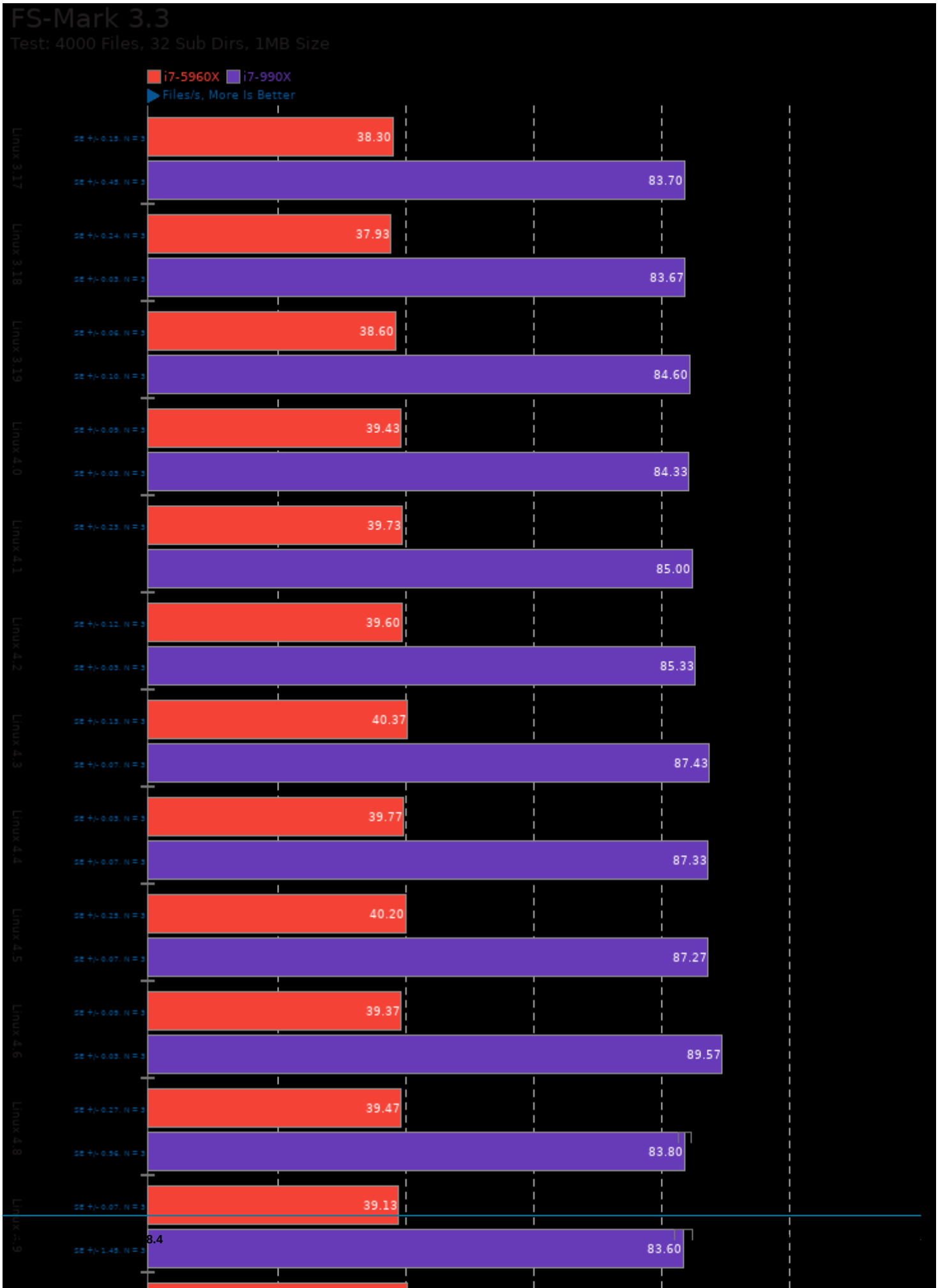
Stress-NG - S.V. M.P (Bogo Ops/s)	1	1	1	8	8	7	8	9	9	1	1	9	1	9	7	8	1	8	1	1	1	8	9	6	8	9	7	9	1	9	9	1	1	1	1	8
	0	0	0	6	3	4	3	5	1	0	1	9	0	0	3	8	0	9	0	1	0	5	6	3	0	6	9	2	0	1	4	0	0	0	2	9
	2	4	9	4	9	4	8	3	8	0	2	8	3	5	5	3	3	0	7	7	9	4	4	8	0	9	7	8	3	5	0	5	6	4	1	2
	1	2	9	8	9	8	7	1	1	2	4	5	0	5	8	9	8	5	0	2	0	1	7	6	6	8	8	0	5	3	2	6	4	6	1	3
	2	8	5	9	3	1	7	8	3	9	2	8	6	2	1	1	5	3	8	0	3	5	7	1	1	0	4	3	0	4	4	0	7	3	7	8
	5	6	4	4	9	9	0	1	1	0	6	7	5	8	7	0	3	9	6	6	0	8	7	6	3	2	3	9	7	8	1	3	4	2	0	8
	6	6	9	8	0	7	1	3	3	2	4	0	3	9	2	3	1	3	6	5	3	6	3	9	7	2	9	7	3	9	5	6	1	1	7	8
	9	5	0							7	6		8				1		8	2	8								8			0	5	7	0	
Normalized Standard Deviation	84	86	90	71	69	61	69	78	75	82	92	82	85	74	60	72	85	73	88	96	89	70	79	52	66	80	65	76	85	75	77	87	87	86	10	73
	.2	.0	.7	.3	.3	.4	.2	.6	.7	.7	.7	.4	.0	.7	.7	.9	.7	.4	.3	.7	.9	.4	.6	.7	.0	.0	.8	.5	.4	.5	.6	.1	.8	.3	0	.6
	8	7	4	8	2	7	2	6	7	7	8	1	6	3	3	5	1	9	8	3	8	9	2	%	7	4	4	9	2	4	%	5	7	5	%	5
	12	8.	3.	8.	9.	10	10	16	11	16	4.	2.	3.	0.	28	30	0.	0.	12	0.	0.	9.	21	6.	19	21	10	5.	5.	8.	1.	2.	2.	2.	0.	0.
	%	3	3	2	1	%	.2	.8	.2	.5	2	7	4	3	.6	.5	1	1	.5	5	4	5	%	3	.8	.1	.5	9	8	8	2	3	4	8	5	1
		%	%	%	%		%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%		%	%	%	%	%	%	%	%	%	%	%	%	%
NGINX Benchmark - S.W.P.S (Reqs/sec)	4	4	4	3	4	4	4	3	4	4	3	3	2	2	3	3	3	3								2										
	0	0	0	9	0	1	1	9	1	0	5	0	9	8	7	7	5	1								3										
	4	1	8	2	2	6	0	7	2	6	4	3	1	5	3	2	2	1								5										
	9	0	4	0	9	7	9	5	3	9	3	9	0	4	5	2	4	5								1										
	9	2	2	6	0	7	1	4	4	4	7	0	0	7	8	8	0	5								8										
Normalized Standard Deviation	97	96	98	94	96	10	98	95	98	97	85	72	69	68	89	89	84	74								56										
	.1	.2	%	.0	.6	0	.6	.3	.9	.6	.0	.9	.8	.5	.6	.3	.5	.7								.4										
	7	2		7	7	%	%	9	4	4	3	2	2	%	4	3	6	5								3										
	7.	1	3.	2.	2.	2.	0.	2	2.	3.	6.	1.	0.	5.	2.	1.	2.	0.																		
	8	%	4	7	4	3	8	%	1	2	2	4	9	7	1	1	7	4																		
	%		%	%	%	%	%		%	%	%	%	%	%	%	%	%	%																		

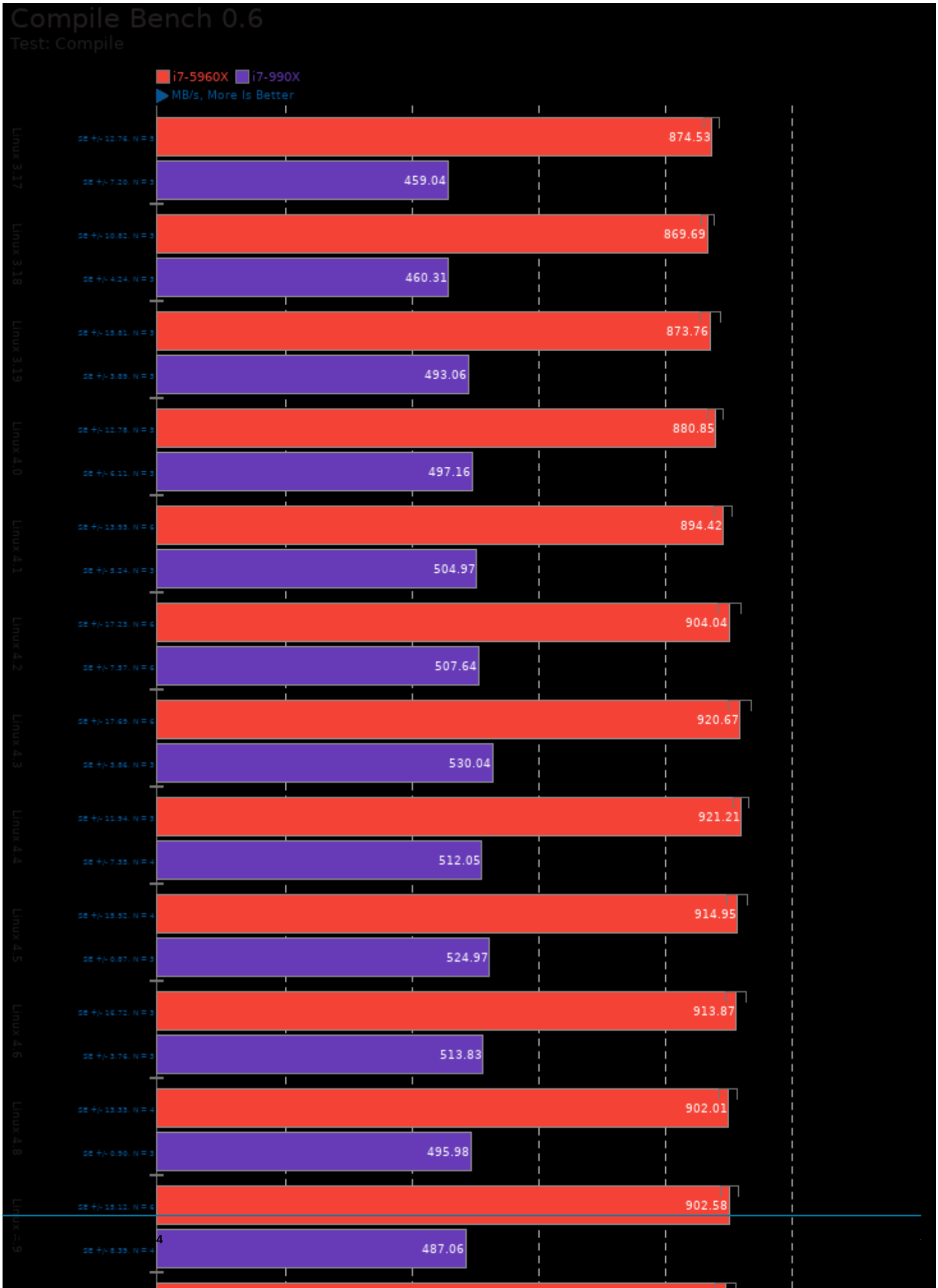
Linux 3.x To 4.15 Kernel Core i7 System Benchmarks

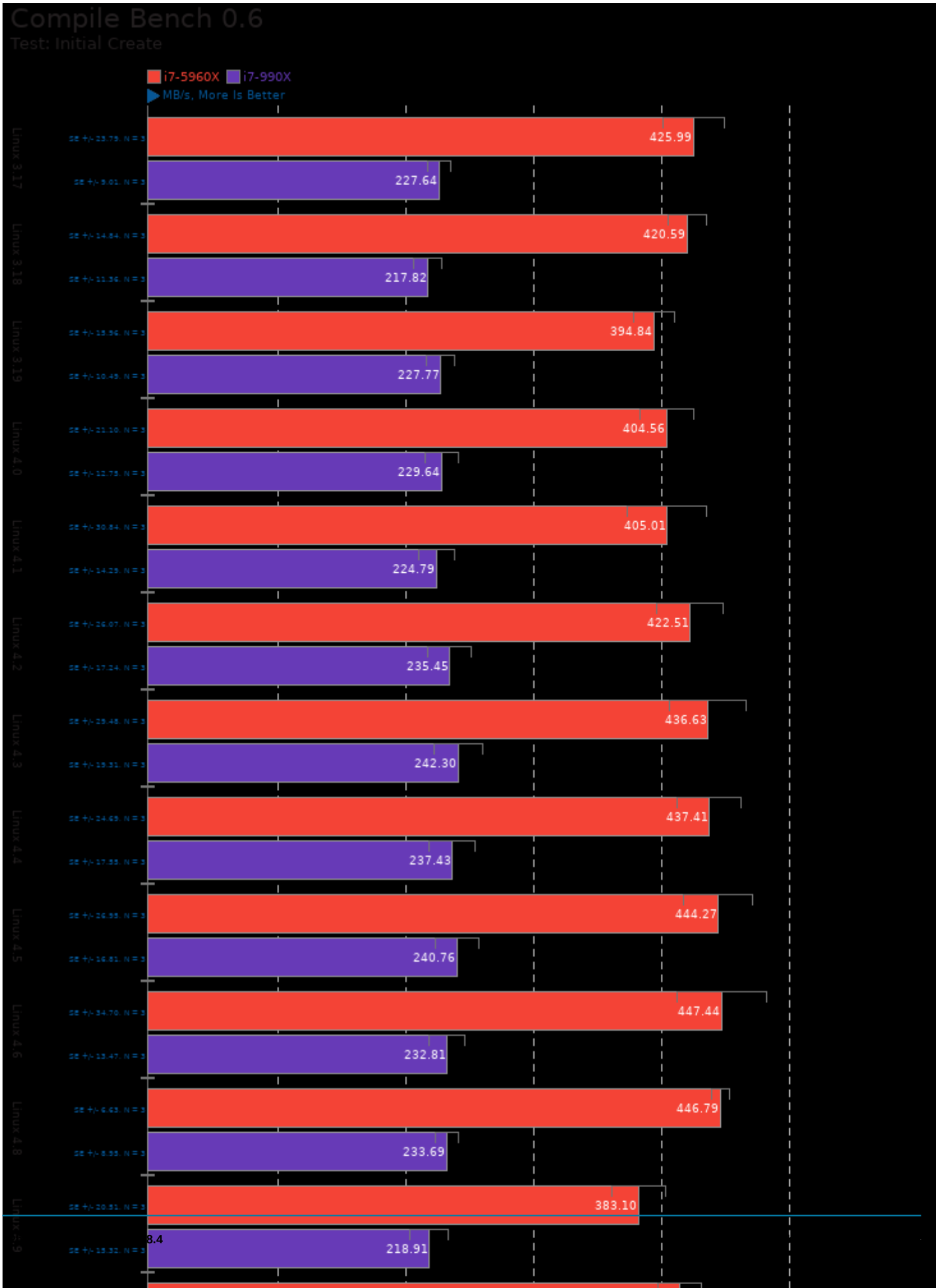
Apache Benchmark - S.W.P.S (Reqs/sec)	4	4	4	3	3	3	3	3	3	3	2	3	3	3	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1	1
	0	0	0	9	8	9	9	4	5	6	8	3	7	0	5	7	8	4	5	5	4	5	4	4	5	3	3	4	0	1	1	0	0	0	9	8
	7	8	1	4	1	3	6	6	0	1	3	2	4	3	5	4	7	6	1	7	7	3	8	7	2	2	9	2	5	1	1	0	0	0	7	4
	1	1	0	7	0	1	9	6	7	3	3	7	5	4	6	2	0	6	1	8	3	5	1	2	7	0	4	9	5	9	0	8	0	9	4	0
	8	4	8	8	6	7	8	2	3	0	2	4	0	4	1	3	2	5	9	6	3	9	7	5	2	0	4	6	1	8	8	2	4	6	0	7
Normalized Standard Deviation	99.76%	10%	98.27%	96.73%	93.37%	96.33%	97.27%	84.13%	85.93%	88.52%	69.42%	81.53%	91.36%	74.25%	62.83%	67.19%	70.23%	60.43%	61.54%	63.18%	60.16%	62.13%	60.81%	60.58%	61.92%	56.47%	58.74%	59.53%	50.35%	51.89%	51.72%	49.26%	49.04%	49.24%	48.32%	45.71%
	3.47%	4.77%	3.44%	3.44%	4.77%	3.75%	2.71%	4.11%	2%	3.96%	4.66%	4.55%	3.11%	1.28%	3.85%	3.95%	2.59%	2.23%	2%	1.08%	2.89%	0.33%	0.03%	0.77%	0.18%	0.81%	0.16%	0.06%	0.24%	0.43%	0.26%	0.62%	0.46%	0.55%	0.44%	0.44%
Hackbench - 16 - Thread (sec)	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	4	4	4	5	5	5	5	4	4	5	5	5	5	5	5	5	5	5	6
	0.8	0.6	4.8	1.9	8.7	8.9	3.2	2.4	3.0	3.3	4.5	4.2	3.8	6.2	5.9	6.3	5.0	3.4	9.6	8.4	1.5	4.2	6.3	5.9	9.7	9.2	0.2	0.5	2.1	1.3	0.3	1.4	2.0	3.4	2.0	7.6
	8	3	4	2	5	3	8	3	0	3	5	4	2	8	6	3	0	4	6	6	9	5	2	3	9	7	2	5	3	3	4	4	4	3	7	3
Normalized Standard Deviation	99.10%	10%	87.92%	95.96%	79.05%	78.86%	92.04%	93.02%	91.71%	92.73%	88.14%	89.22%	90.36%	83.05%	85.18%	85.01%	85.70%	70.15%	61.98%	62.69%	59.49%	56.54%	54.95%	55.13%	61.64%	61.79%	60.97%	60.58%	58.07%	60.08%	60.85%	59.26%	58.57%	57.58%	58.45%	45.29%
	6.44%	2.04%	16.32%	1.31%	24.05%	22.88%	1.99%	2.21%	1.11%	1.11%	0.11%	1.96%	1.66%	3.22%	1.22%	3.24%	2.43%	3.13%	2.31%	3.75%	3.55%	1.75%	2.09%	0.43%	2.63%	3.33%	2.21%	1.55%	3.58%	1.51%	1.16%	0.71%	1.11%	1.16%	1.16%	0.16%
Hackbench - 16 - Process (sec)	2	2	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	4	4	4	4	5	5	5	4	4	4	5	4	4	4	4	5	5	5	6
	8.1	8.0	9.2	4.0	1.7	1.9	2.7	2.5	2.1	1.0	3.0	5.6	4.9	3.8	4.4	5.0	4.1	1.8	8.5	5.9	9.2	2.5	4.8	3.5	4.5	5.9	6.0	0.7	8.9	9.0	9.9	9.7	1.5	0.7	1.5	7.3
	8	2	3	3	0	3	1	6	1	8	7	3	9	9	8	1	7	9	1	5	8	9	6	9	7	7	4	7	8	8	4	9	4	6	5	0
	1	0	1	7	9	0	2	0	3	0	4	1	5	8	6	0	7	1	3	0	4	8	8	1	5	9	7	4	5	0	0	7	5	7	9	3
Normalized Standard Deviation	97.81%	10%	96.21%	82.05%	90.75%	90.11%	87.87%	86.54%	87.77%	88.68%	83.55%	79.81%	80.69%	82.94%	80.99%	80.33%	81.13%	67.12%	58.54%	61.95%	56.53%	53.51%	51.52%	52.63%	61.59%	60.55%	57.75%	56.57%	57.56%	56.54%	54.55%	54.42%				
	1.55%	0.53%	1.36%	1.67%	1.73%	0.39%	3.99%	4.%	1.66%	0.66%	1.%	1.1%	3.%	1.6%	2.5%	7.%	2.7%	3.5%	2.3%	1.6%	2.5%	1.%	2.%	0.2%	4.5%	2.8%	2.5%	3.%	0.9%	0.6%	3.2%	1.3%	0.3%	2.6%	1.1%	0.2%

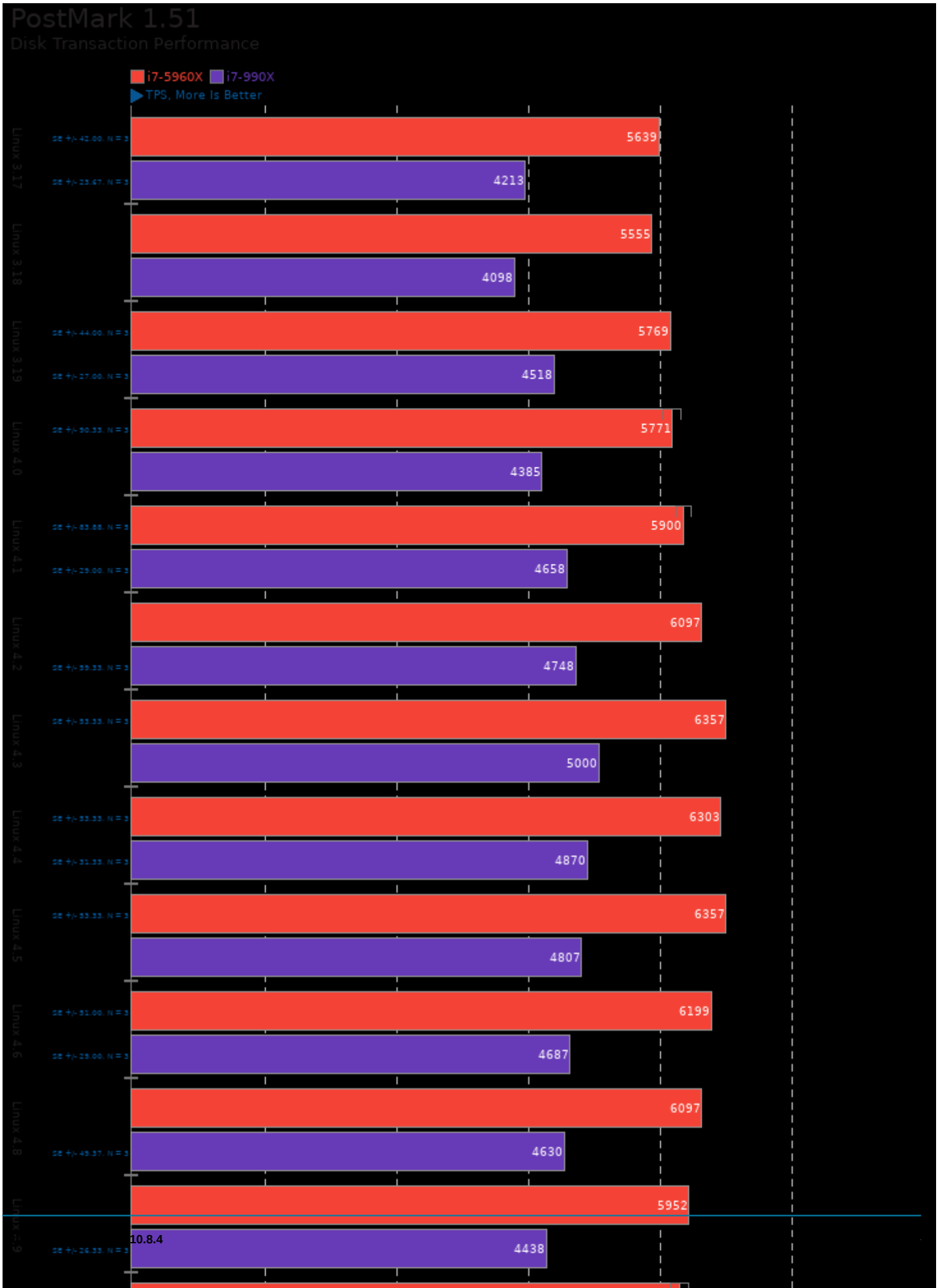
Linux 3.x To 4.15 Kernel Core i7 System Benchmarks

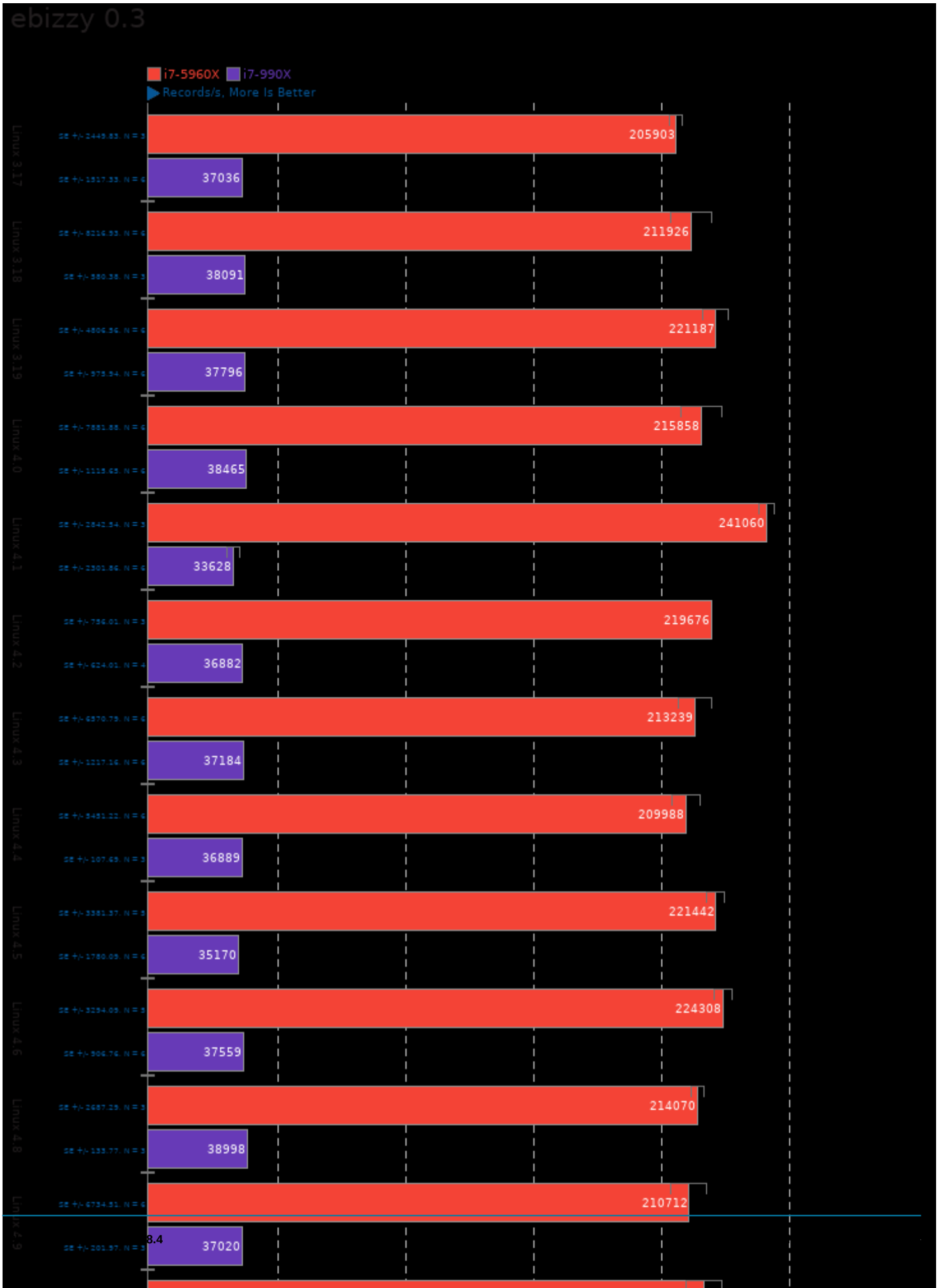

FS-Mark 3.3
Test: 1000 Files, 1MB Size
i7-5960X
i7-990X
Files/s, More Is Better
39.37
84.43
38.43
83.80
38.40
84.50
39.40
84.33
39.60
84.93
40.13
85.50
38.80
87.57
40.13
87.33
39.70
87.23
39.67
91.23
39.47
85.67
39.30
83.10

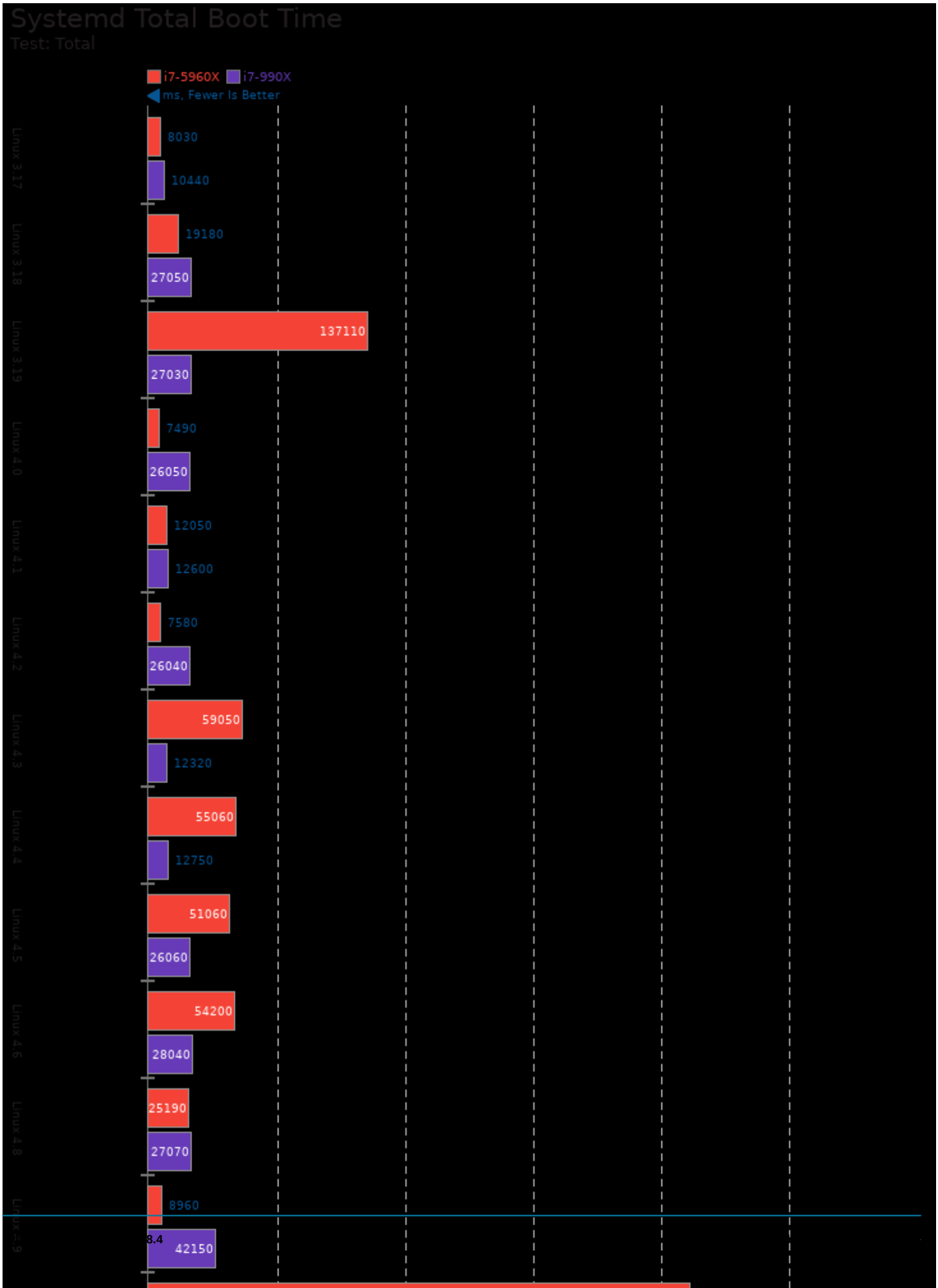

FS-Mark 3.3
Test: 4000 Files, 32 Sub Dirs, 1MB Size
i7-5960X
i7-990X
Files/s, More Is Better
38.30
83.70
37.93
83.67
38.60
84.60
39.43
84.33
39.73
85.00
39.60
85.33
40.37
87.43
39.77
87.33
40.20
87.27
39.37
89.57
39.47
83.80
39.13
83.60
8.4

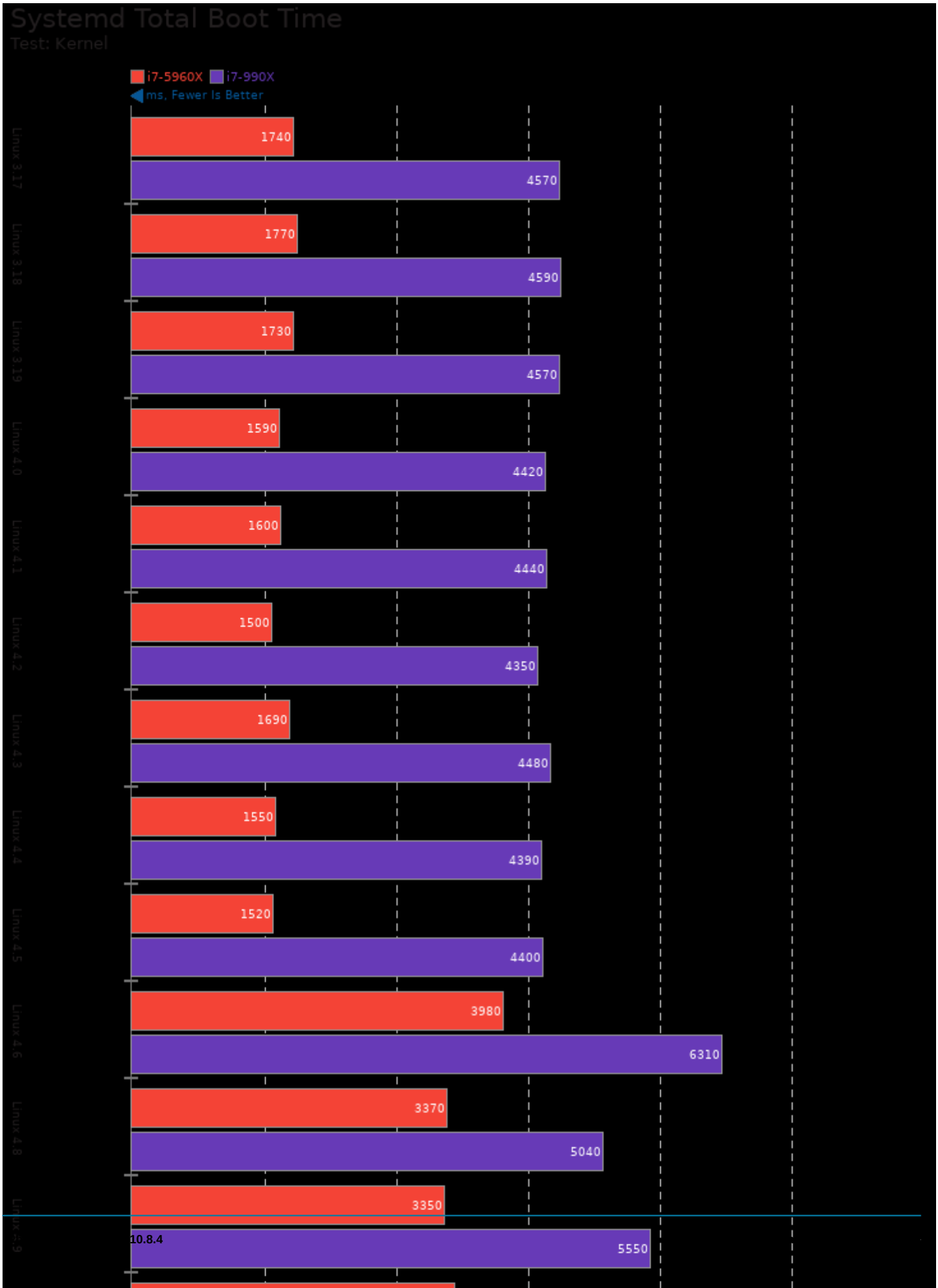

Compile Bench 0.6
Test: Compile
i7-5960X
i7-990X
MB/s, More Is Better
874.53
459.04
869.69
460.31
873.76
493.06
880.85
497.16
894.42
504.97
904.04
507.64
920.67
530.04
921.21
512.05
914.95
524.97
913.87
513.83
902.01
495.98
902.58
487.06

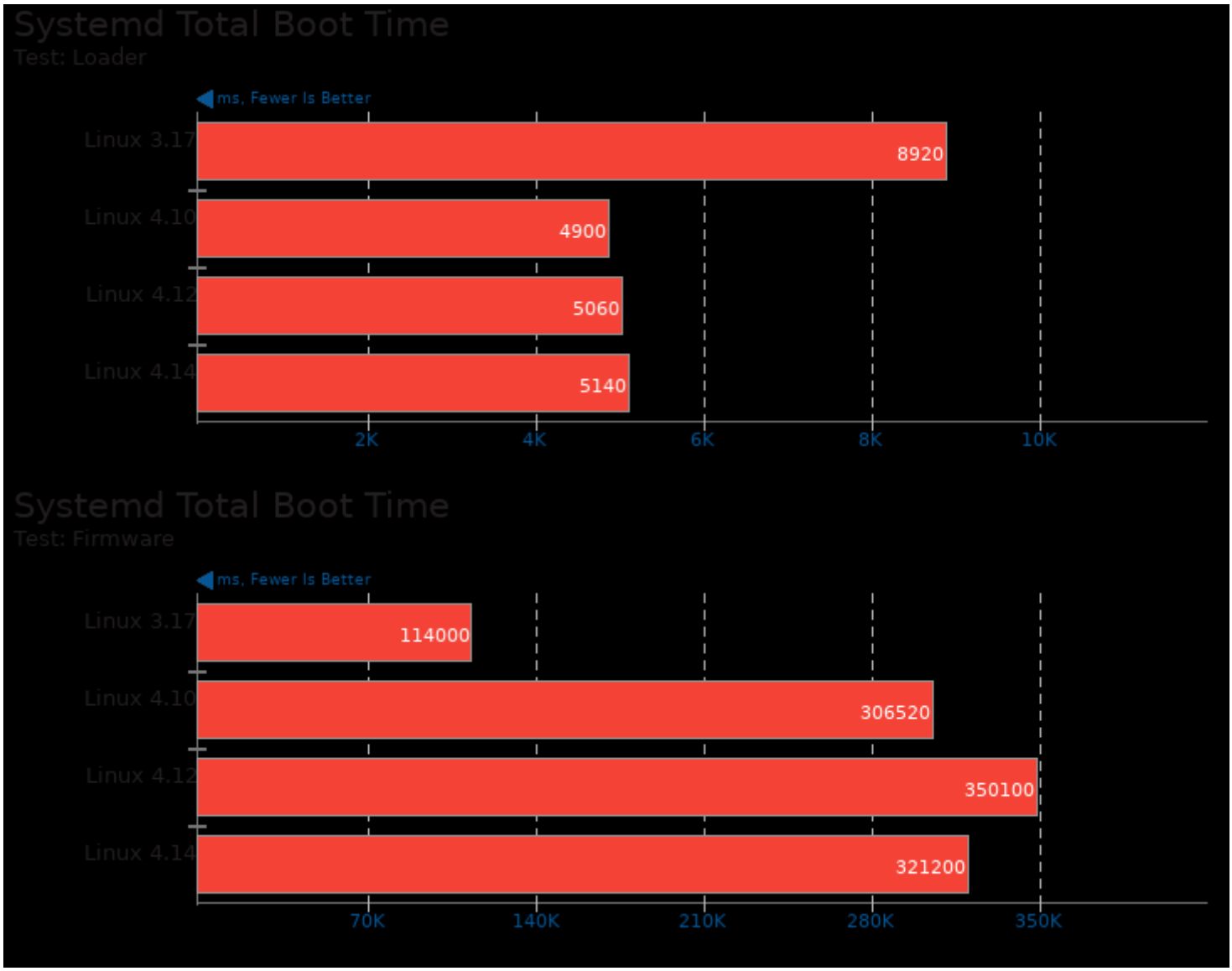

Compile Bench 0.6
Test: Initial Create
i7-5960X
i7-990X
MB/s, More Is Better
425.99
227.64
420.59
217.82
394.84
227.77
404.56
229.64
405.01
224.79
422.51
235.45
436.63
242.30
437.41
237.43
444.27
240.76
447.44
232.81
446.79
233.69
383.10
218.91
Linux 3.17
Linux 3.18
Linux 3.19
Linux 4.0
Linux 4.1
Linux 4.2
Linux 4.3
Linux 4.4
Linux 4.5
Linux 4.6
Linux 4.8

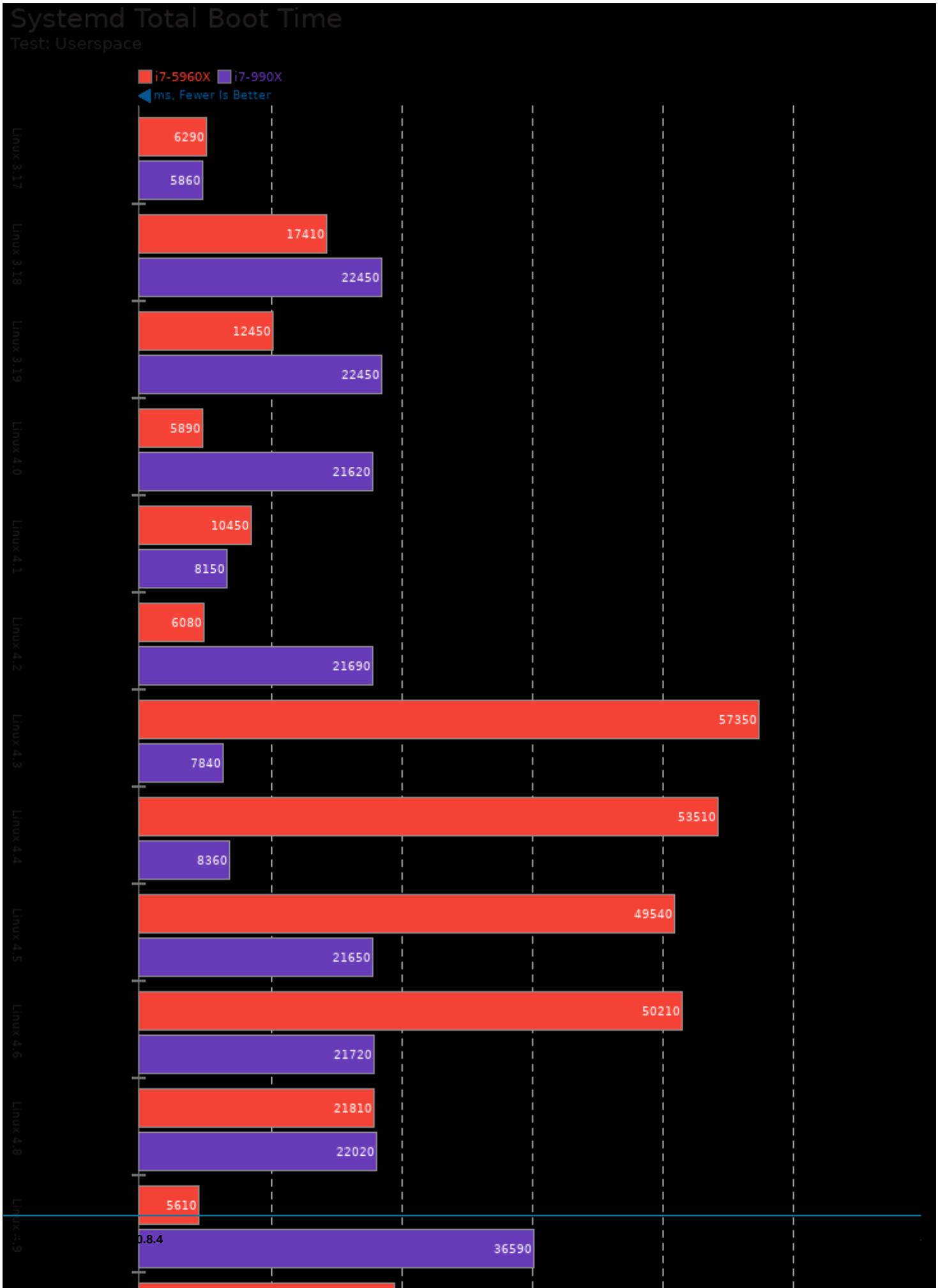

PostMark 1.51
Disk Transaction Performance
i7-5960X
i7-990X
TPS, More Is Better
5639
4213
5555
4098
5769
4518
5771
4385
5900
4658
6097
4748
6357
5000
6303
4870
6357
4807
6199
4687
6097
4630
5952
4438
10.8.4

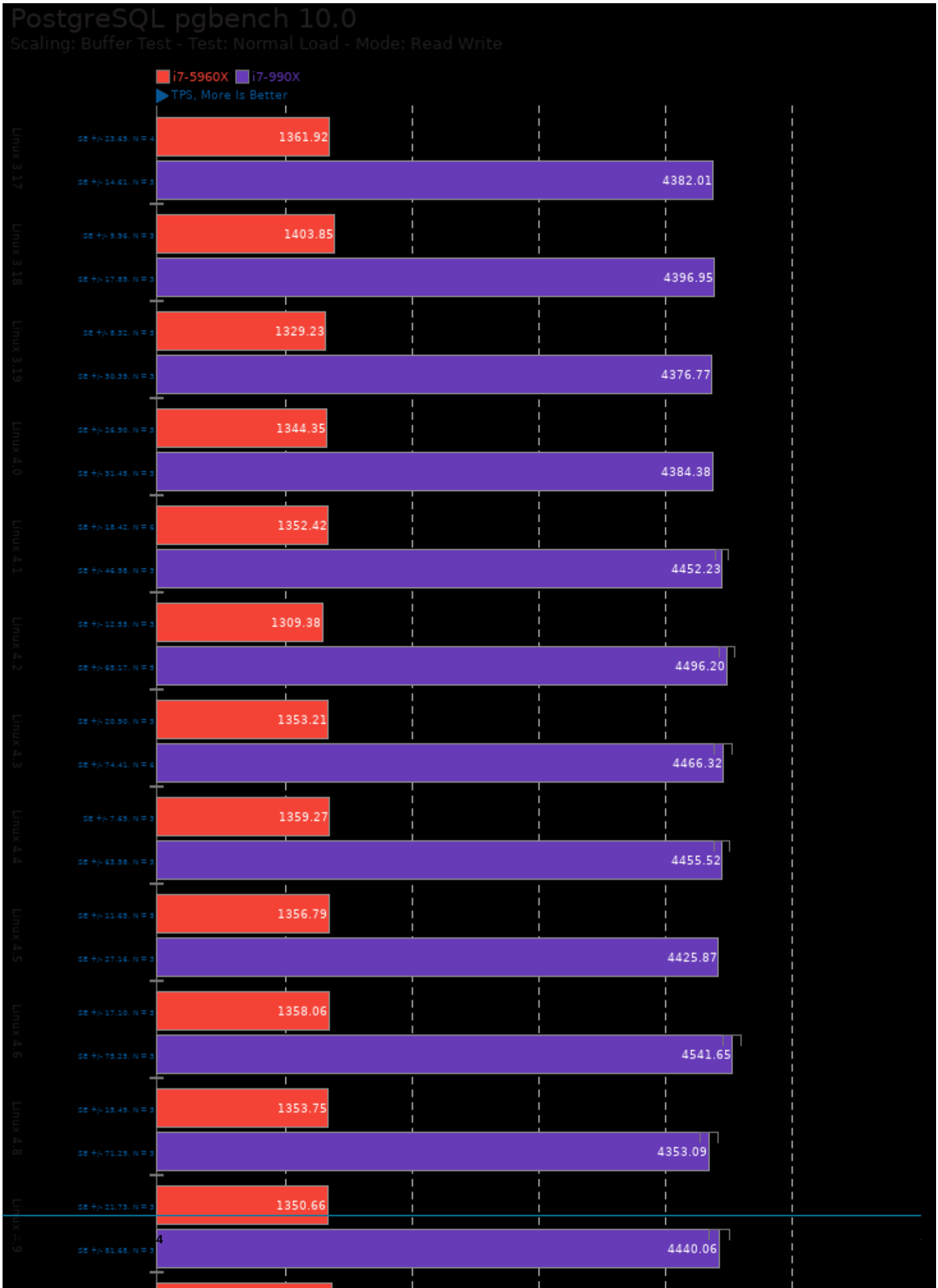

ebizzy 0.3
i7-5960X
i7-990X
Records/s, More Is Better
205903
37036
211926
38091
221187
37796
215858
38465
241060
33628
219676
36882
213239
37184
209988
36889
221442
35170
224308
37559
214070
38998
210712
37020
Linux 3.17
Linux 3.18
Linux 3.19
Linux 4.0
Linux 4.1
Linux 4.2
Linux 4.3
Linux 4.4
Linux 4.5
Linux 4.6
Linux 4.8
Linux 4.9
8.4

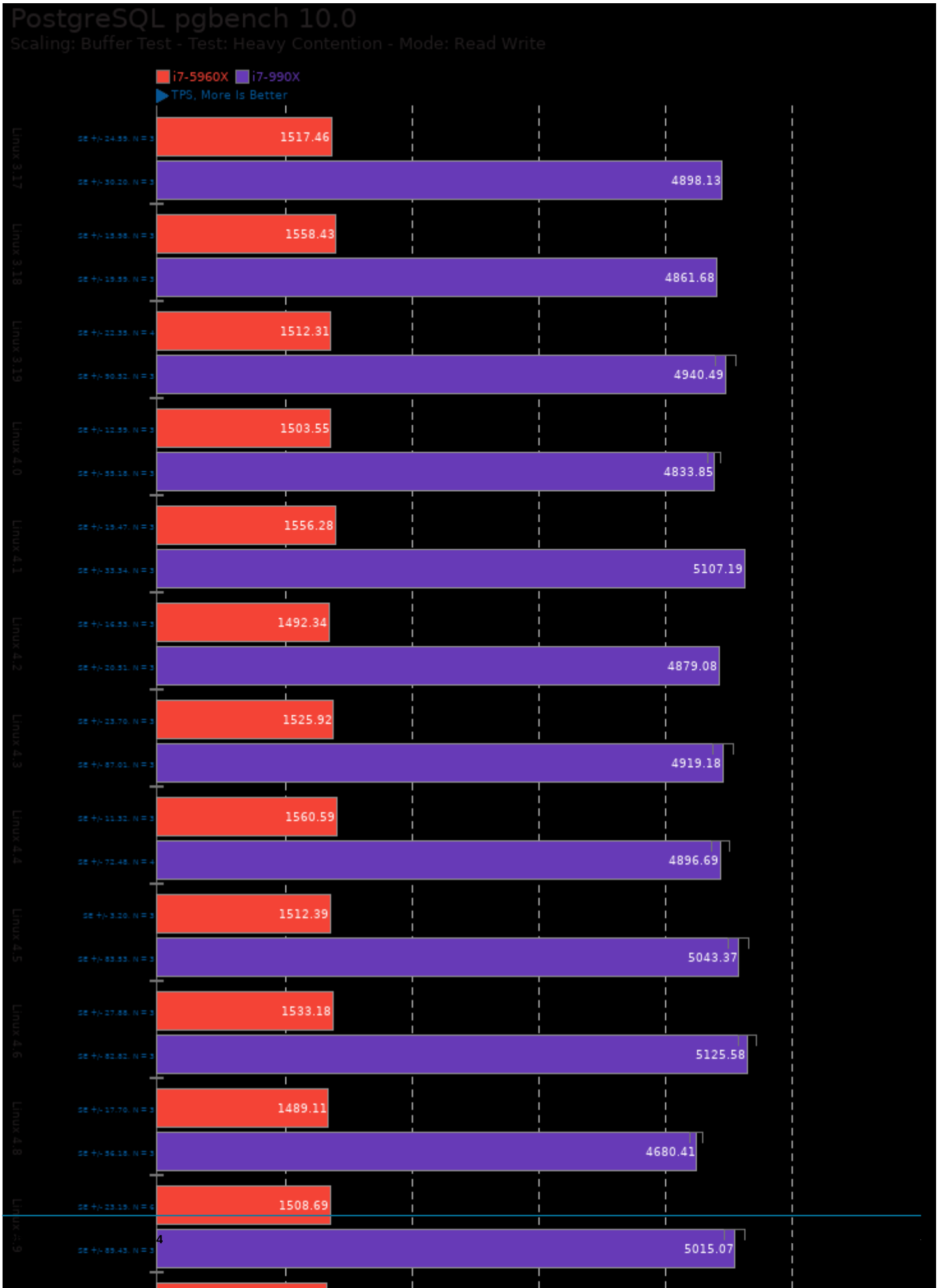

Systemd Total Boot Time
Test: Total
i7-5960X
i7-990X
ms, Fewer Is Better
8030
10440
19180
27050
137110
27030
7490
26050
12050
12600
7580
26040
59050
12320
55060
12750
51060
26060
54200
28040
25190
27070
8960
42150
Linux 3.17
Linux 3.18
Linux 3.19
Linux 4.0
Linux 4.1
Linux 4.2
Linux 4.3
Linux 4.4
Linux 4.5
Linux 4.6
Linux 4.8
Linux 4.9
8.4

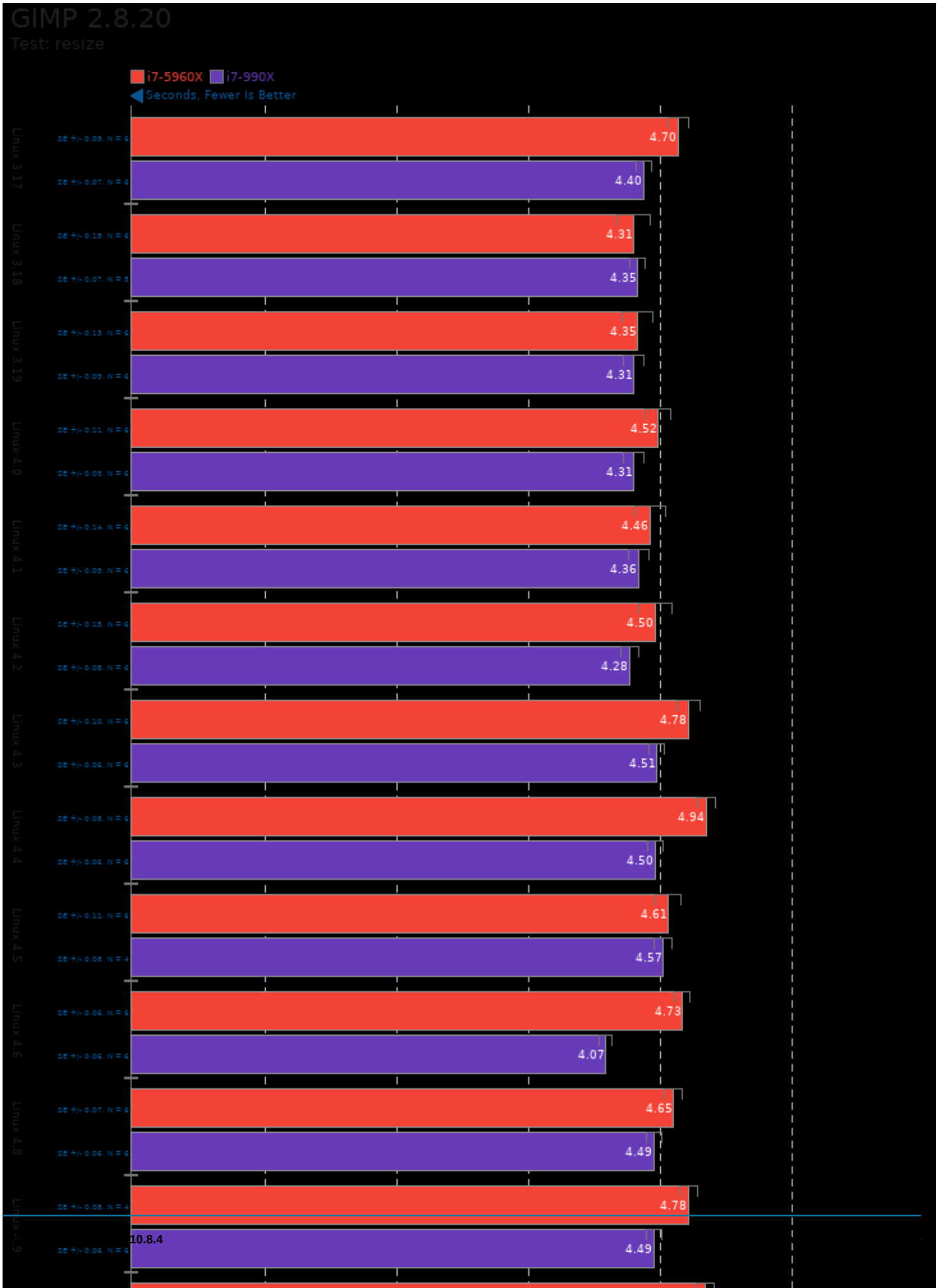

Systemd Total Boot Time
Test: Kernel
i7-5960X
i7-990X
ms, Fewer Is Better
Linux 3.17
Linux 3.18
Linux 3.19
Linux 4.0
Linux 4.1
Linux 4.2
Linux 4.3
Linux 4.4
Linux 4.5
Linux 4.6
Linux 4.8
Linux 4.9
1740
4570
1770
4590
1730
4570
1590
4420
1600
4440
1500
4350
1690
4480
1550
4390
1520
4400
3980
6310
3370
5040
3350
10.8.4
5550

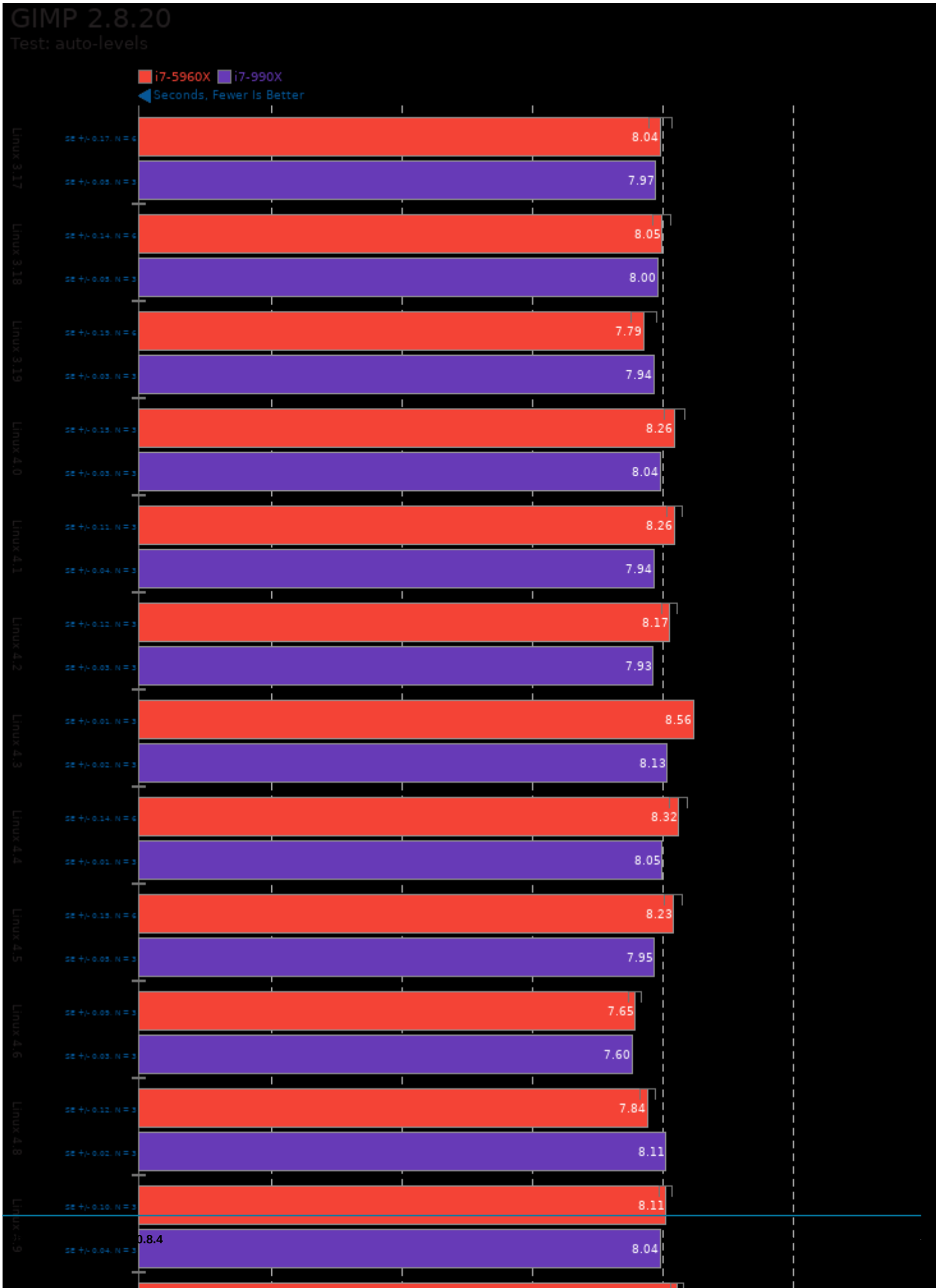

Systemd Total Boot Time
Test: Loader
ms, Fewer Is Better
Linux 3.17
8920
Linux 4.10
4900
Linux 4.12
5060
Linux 4.14
5140
2K
4K
6K
8K
10K
Systemd Total Boot Time
Test: Firmware
ms, Fewer Is Better
Linux 3.17
114000
Linux 4.10
306520
Linux 4.12
350100
Linux 4.14
321200
70K
140K
210K
280K
350K

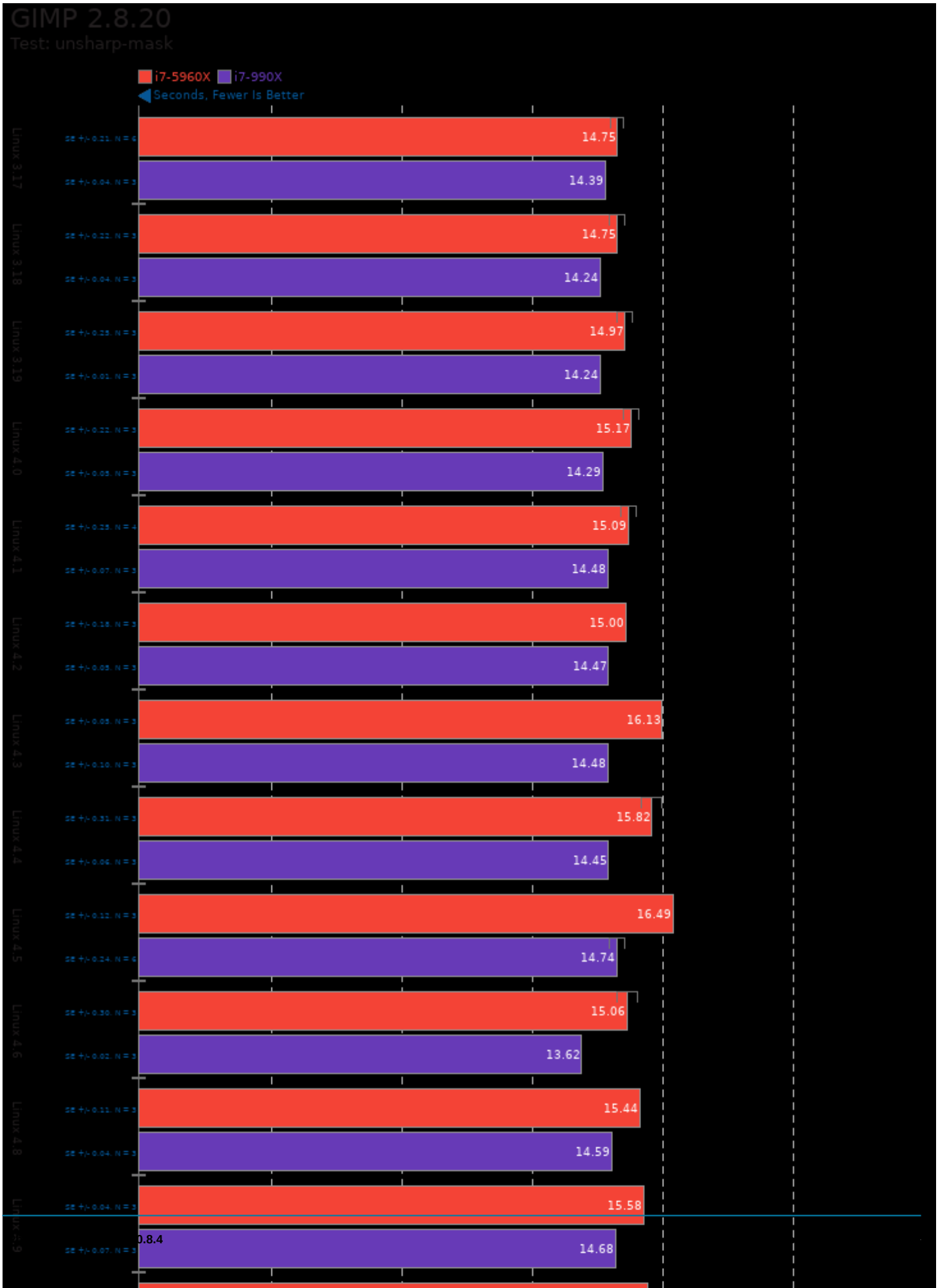

Systemd Total Boot Time
Test: Userspace
i7-5960X
i7-990X
ms, Fewer Is Better
6290
5860
17410
22450
12450
22450
5890
21620
10450
8150
6080
21690
57350
7840
53510
8360
49540
21650
50210
21720
21810
22020
5610
36590
Linux 3.17
Linux 3.18
Linux 3.19
Linux 4.0
Linux 4.1
Linux 4.2
Linux 4.3
Linux 4.4
Linux 4.5
Linux 4.6
Linux 4.8

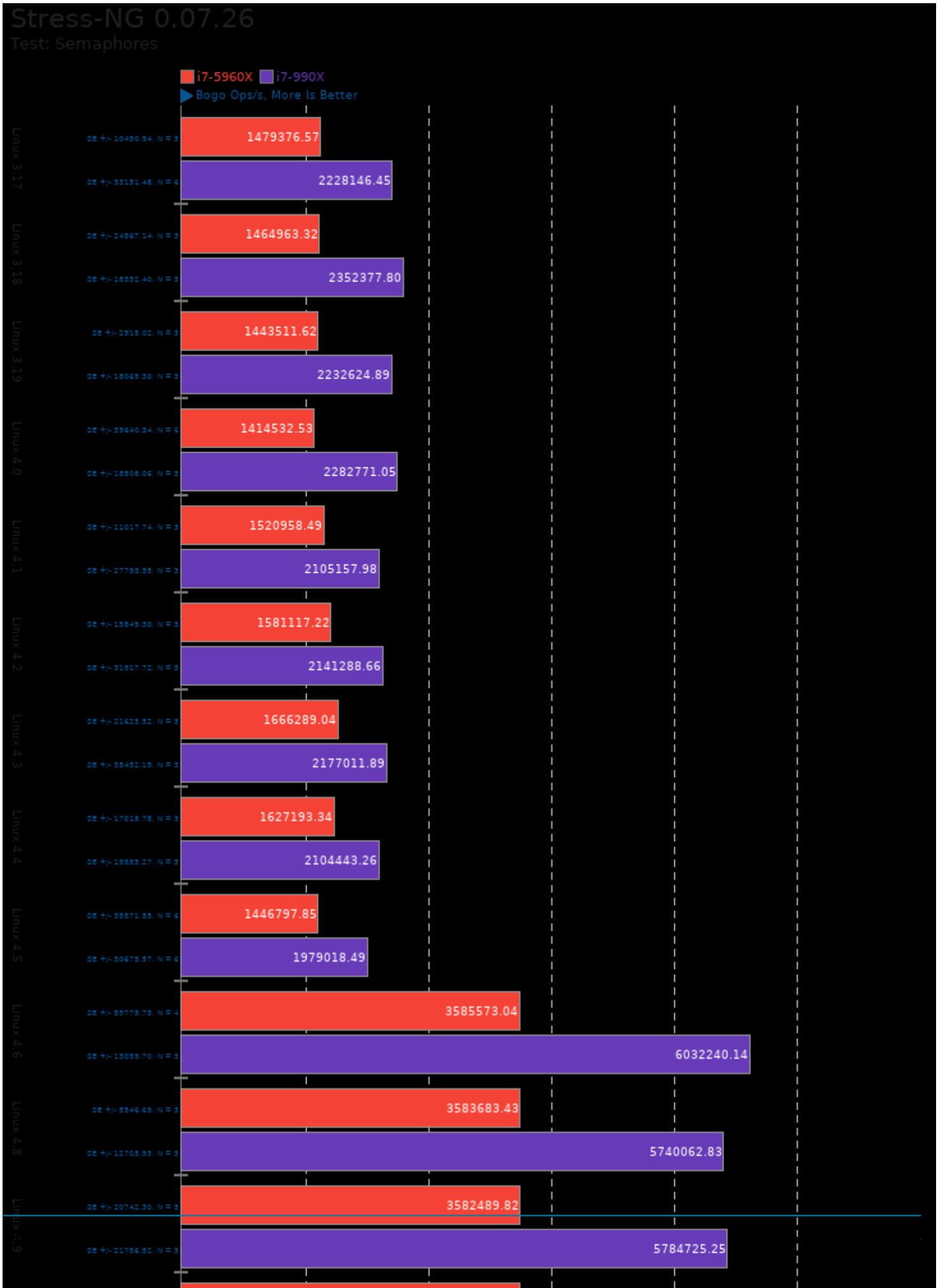

PostgreSQL pgbench 10.0
Scaling: Buffer Test - Test: Normal Load - Mode: Read Write
i7-5960X
i7-990X
TPS, More Is Better
1361.92
4382.01
1403.85
4396.95
1329.23
4376.77
1344.35
4384.38
1352.42
4452.23
1309.38
4496.20
1353.21
4466.32
1359.27
4455.52
1356.79
4425.87
1358.06
4541.65
1353.75
4353.09
1350.66
4440.06

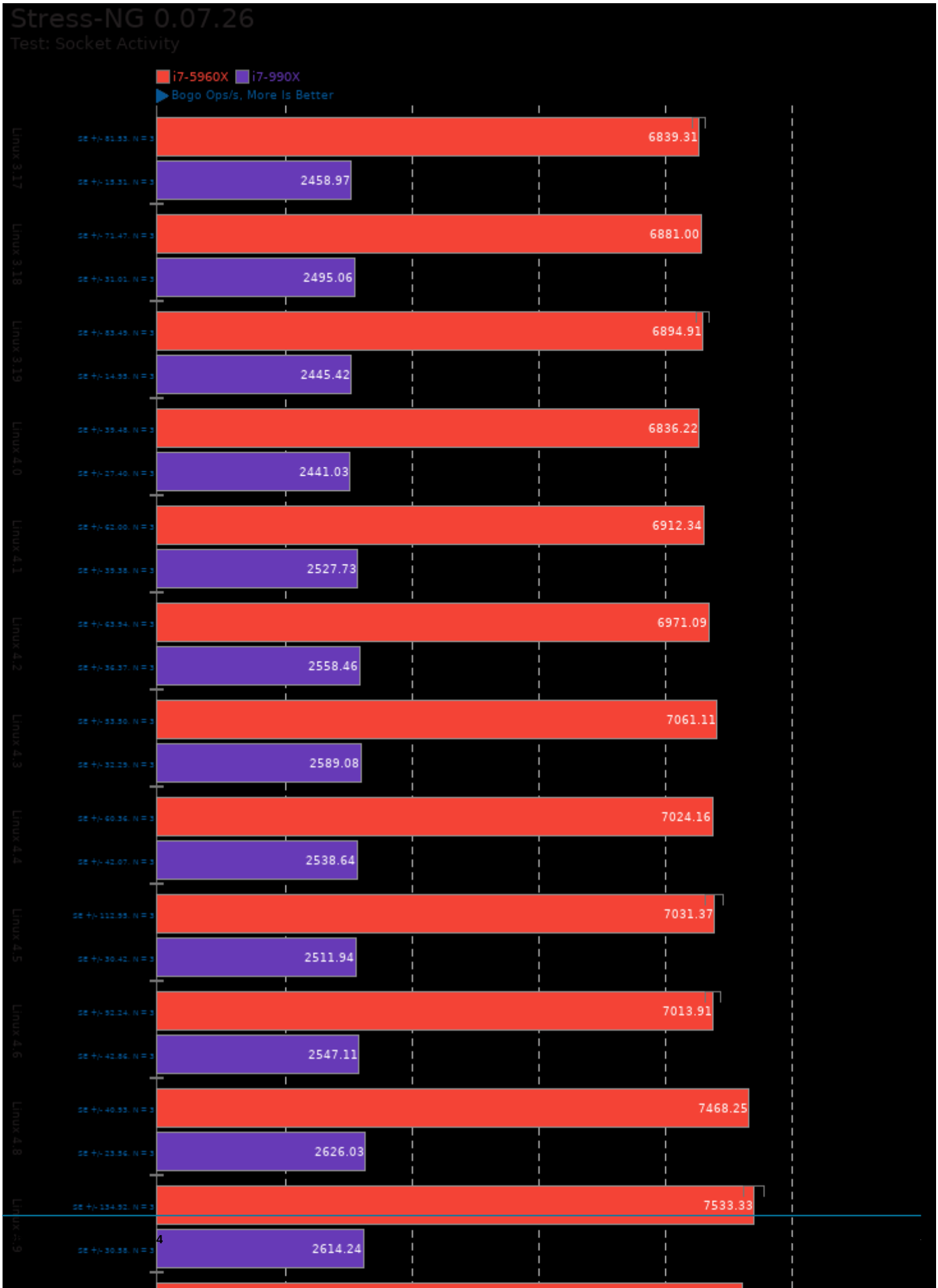

PostgreSQL pgbench 10.0
Scaling: Buffer Test - Test: Heavy Contention - Mode: Read Write
i7-5960X
i7-990X
TPS, More Is Better
Linux 3.17
Linux 3.18
Linux 3.19
Linux 4.0
Linux 4.1
Linux 4.2
Linux 4.3
Linux 4.4
Linux 4.5
Linux 4.6
Linux 4.8
1517.46
4898.13
1558.43
4861.68
1512.31
4940.49
1503.55
4833.85
1556.28
5107.19
1492.34
4879.08
1525.92
4919.18
1560.59
4896.69
1512.39
5043.37
1533.18
5125.58
1489.11
4680.41
1508.69
5015.07

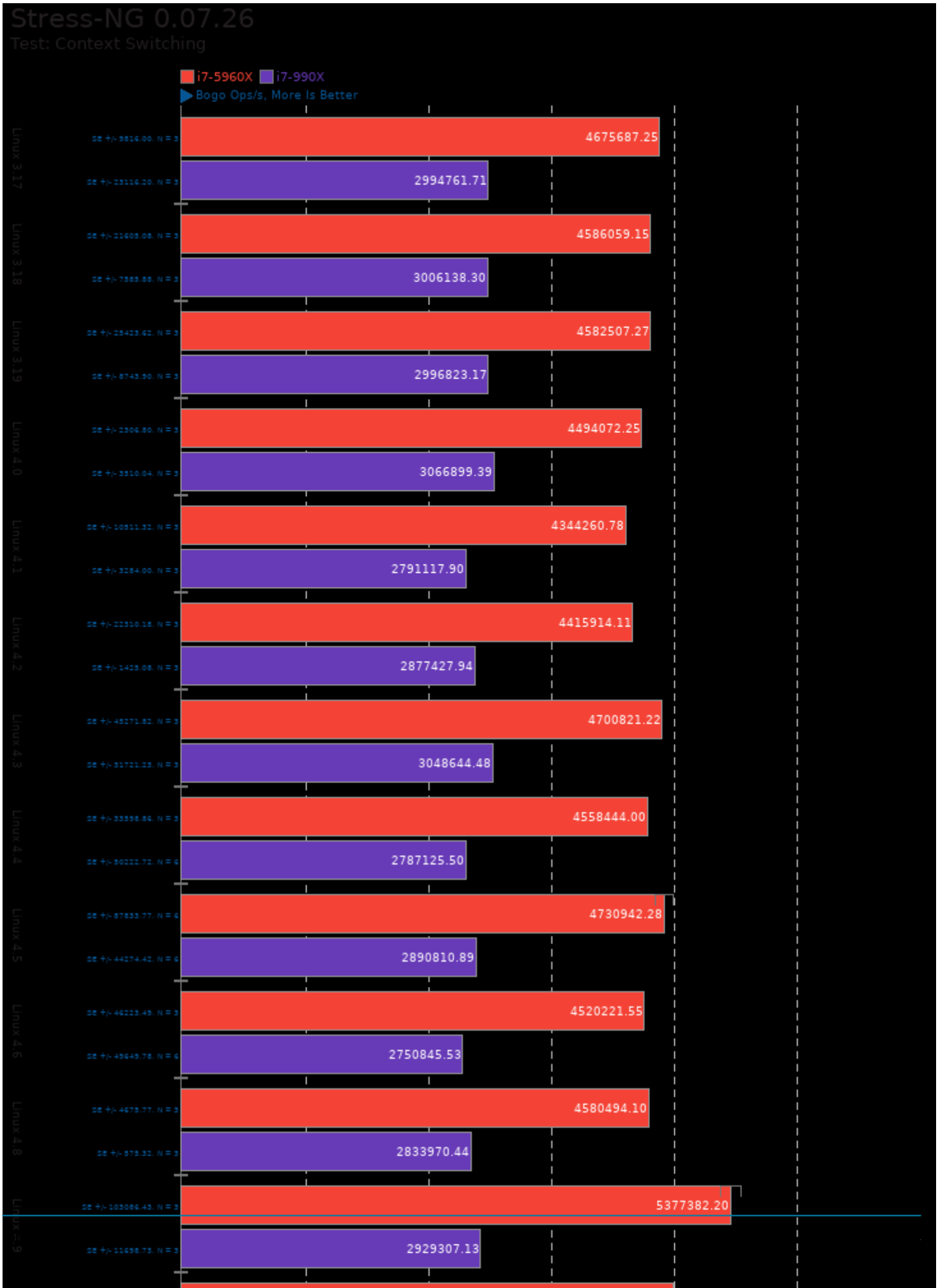

GIMP 2.8.20
Test: resize
i7-5960X
i7-990X
Seconds, Fewer Is Better
4.70
4.40
4.31
4.35
4.35
4.31
4.52
4.31
4.46
4.36
4.50
4.28
4.78
4.51
4.94
4.50
4.61
4.57
4.73
4.07
4.65
4.49
4.78
4.49
10.8.4

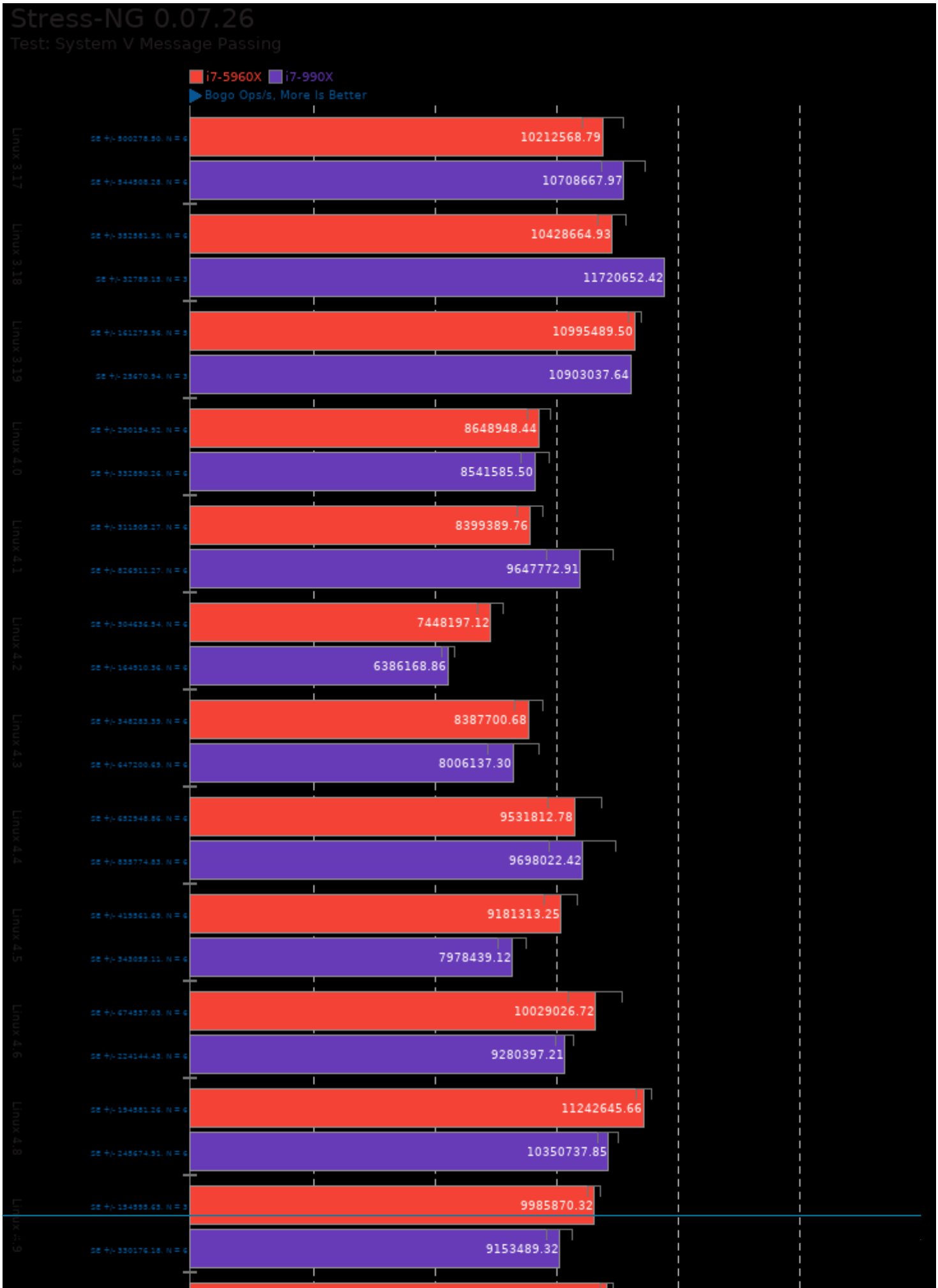

GIMP 2.8.20
Test: auto-levels
i7-5960X
i7-990X
Seconds, Fewer Is Better
Linux 3.17
Linux 3.18
Linux 3.19
Linux 4.0
Linux 4.1
Linux 4.2
Linux 4.3
Linux 4.4
Linux 4.5
Linux 4.6
Linux 4.8
8.04
7.97
8.05
8.00
7.79
7.94
8.26
8.04
8.26
7.94
8.17
7.93
8.56
8.13
8.32
8.05
8.23
7.95
7.65
7.60
7.84
8.11
8.11
8.04


GIMP 2.8.20
Test: unsharp-mask
i7-5960X
i7-990X
Seconds, Fewer Is Better
14.75
14.39
14.75
14.24
14.97
14.24
15.17
14.29
15.09
14.48
15.00
14.47
16.13
14.48
15.82
14.45
16.49
14.74
15.06
13.62
15.44
14.59
15.58
14.68

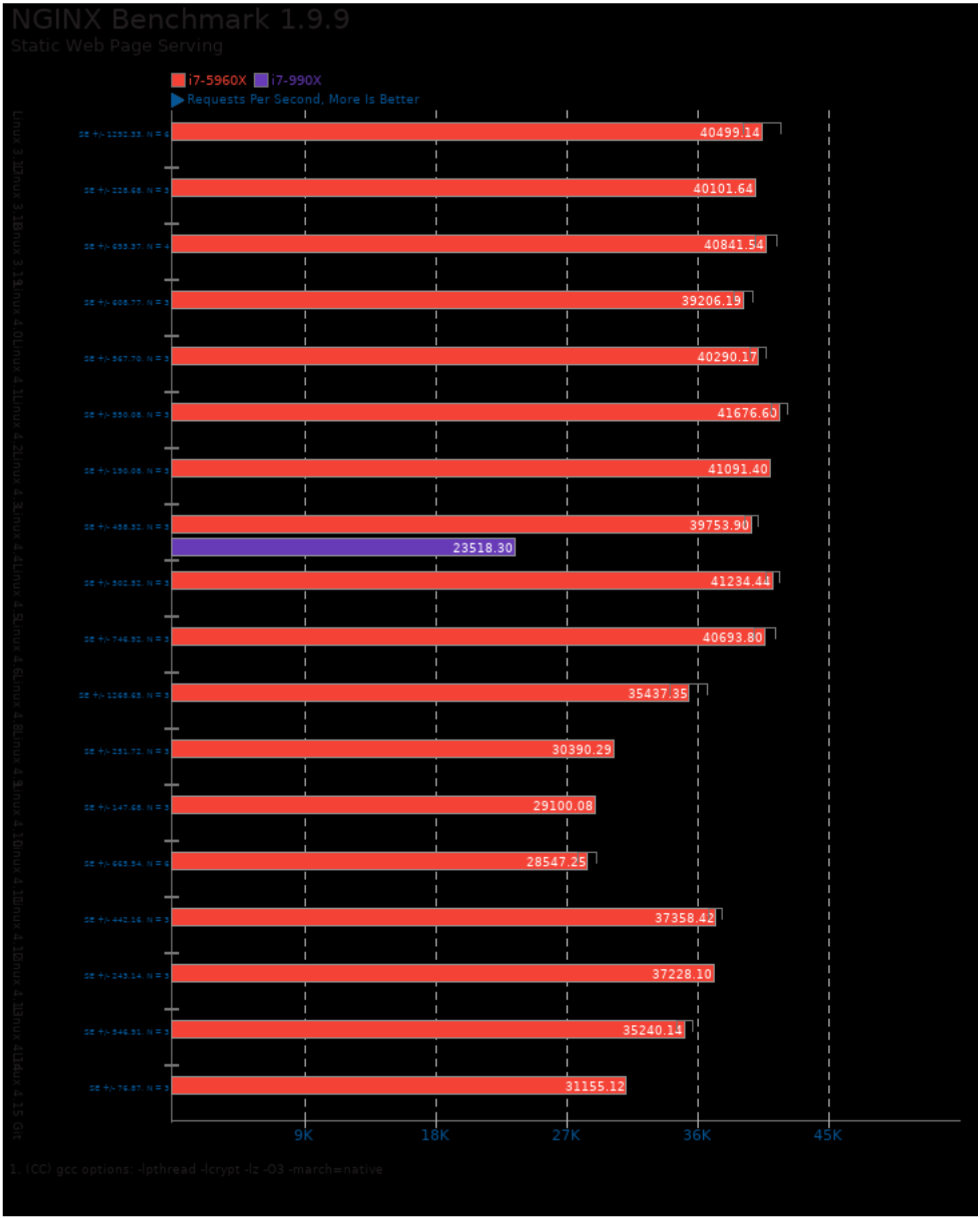

Stress-NG 0.07.26
Test: Semaphores
i7-5960X
i7-990X
Bogo Ops/s, More Is Better
1479376.57
2228146.45
1464963.32
2352377.80
1443511.62
2232624.89
1414532.53
2282771.05
1520958.49
2105157.98
1581117.22
2141288.66
1666289.04
2177011.89
1627193.34
2104443.26
1446797.85
1979018.49
3585573.04
6032240.14
3583683.43
5740062.83
3582489.82
5784725.25

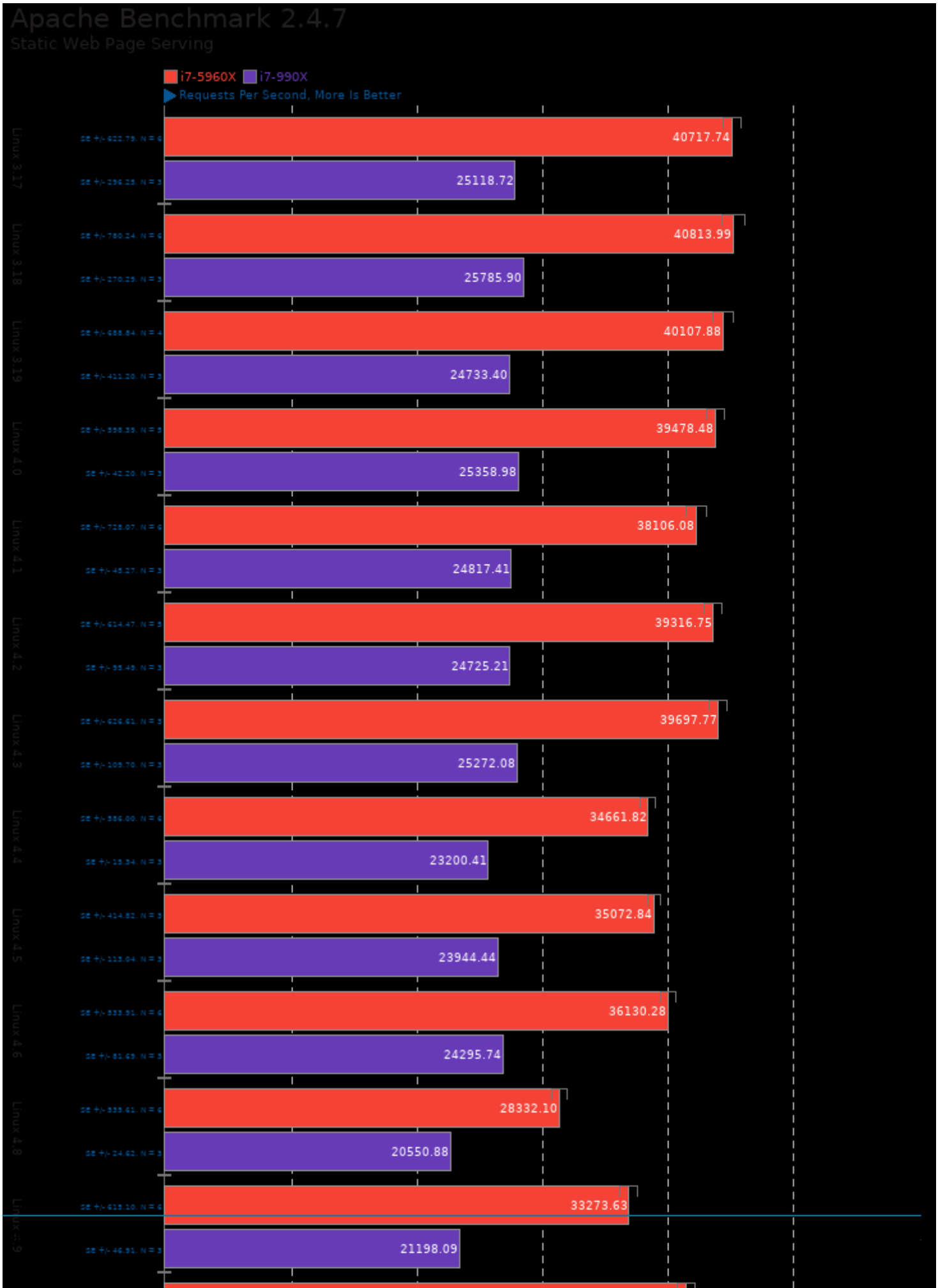

Stress-NG 0.07.26
Test: Socket Activity
i7-5960X
i7-990X
Bogo Ops/s, More Is Better
6839.31
2458.97
6881.00
2495.06
6894.91
2445.42
6836.22
2441.03
6912.34
2527.73
6971.09
2558.46
7061.11
2589.08
7024.16
2538.64
7031.37
2511.94
7013.91
2547.11
7468.25
2626.03
7533.33
2614.24

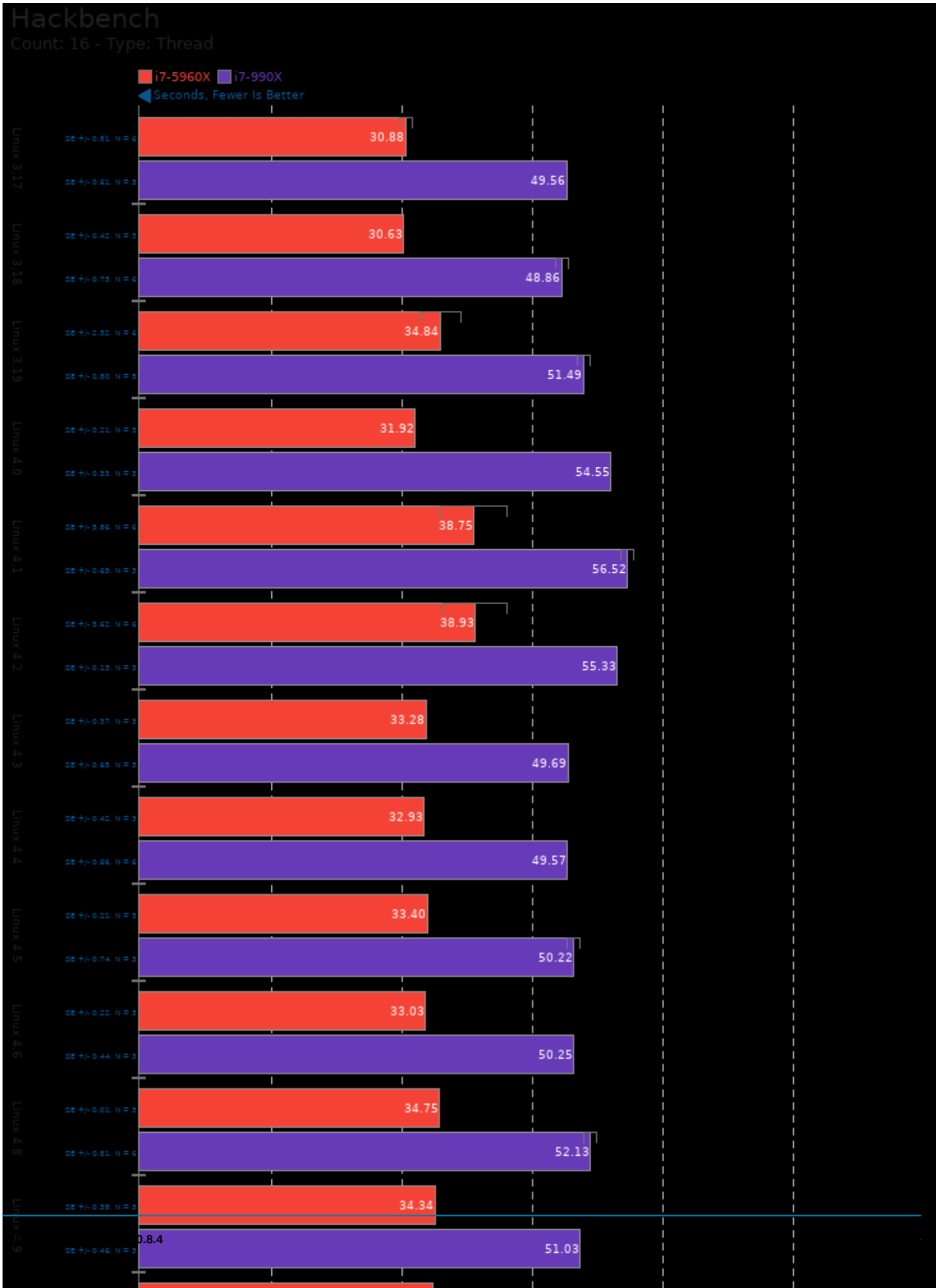

Stress-NG 0.07.26
Test: Context Switching
i7-5960X
i7-990X
Bogo Ops/s, More Is Better
4675687.25
2994761.71
4586059.15
3006138.30
4582507.27
2996823.17
4494072.25
3066899.39
4344260.78
2791117.90
4415914.11
2877427.94
4700821.22
3048644.48
4558444.00
2787125.50
4730942.28
2890810.89
4520221.55
2750845.53
4580494.10
2833970.44
5377382.20
2929307.13

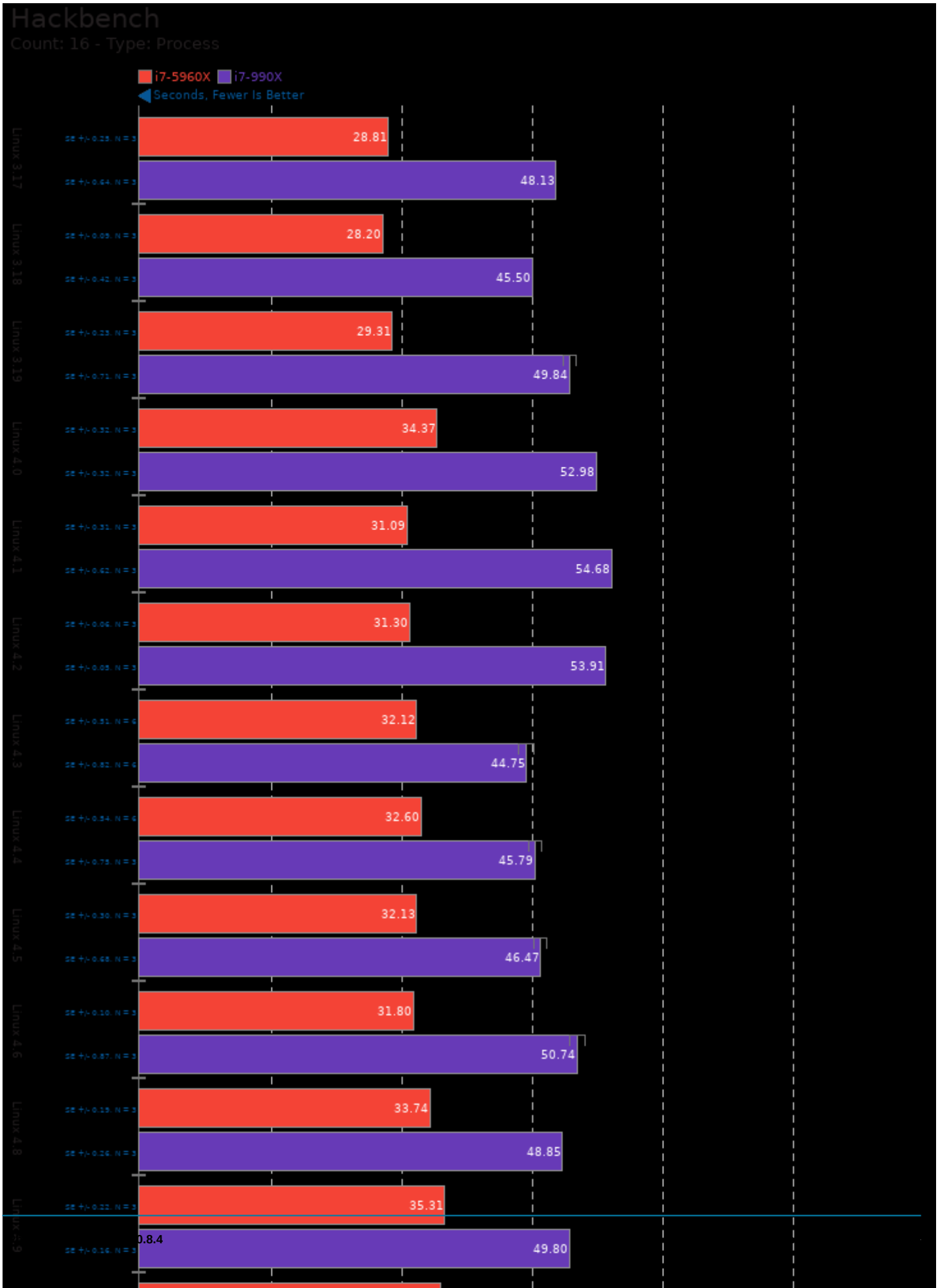

Stress-NG 0.07.26
Test: System V Message Passing
i7-5960X
i7-990X
Bogo Ops/s, More Is Better
10212568.79
10708667.97
10428664.93
11720652.42
10995489.50
10903037.64
8648948.44
8541585.50
8399389.76
9647772.91
7448197.12
6386168.86
8387700.68
8006137.30
9531812.78
9698022.42
9181313.25
7978439.12
10029026.72
9280397.21
11242645.66
10350737.85
9985870.32
9153489.32
Linux 3.17
Linux 3.18
Linux 3.19
Linux 4.0
Linux 4.1
Linux 4.2
Linux 4.3
Linux 4.4
Linux 4.5
Linux 4.6
Linux 4.8
Linux 4.9

Linux 3.x To 4.15 Kernel Core i7 System Benchmarks



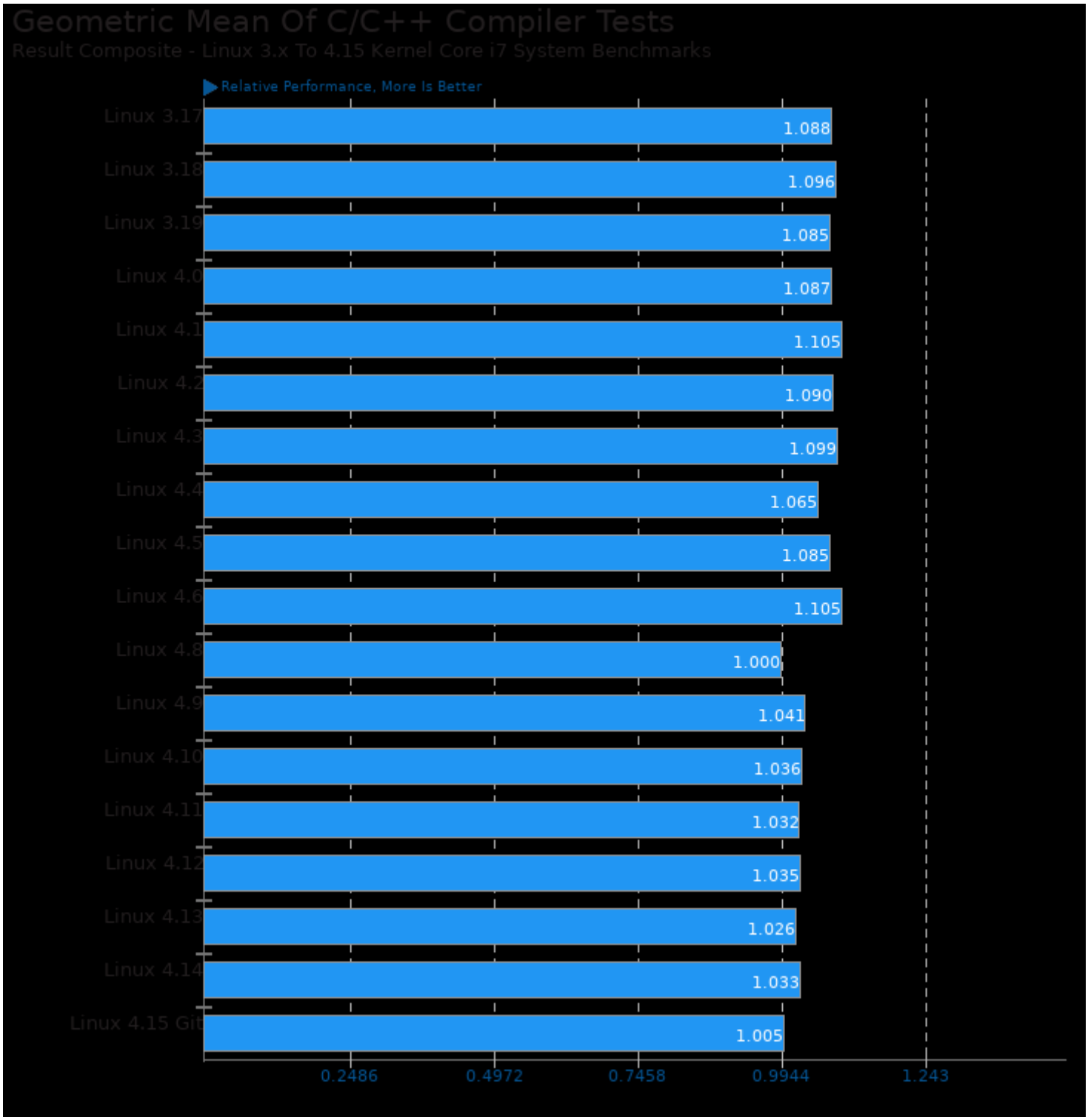

Apache Benchmark 2.4.7
Static Web Page Serving
i7-5960X
i7-990X
Requests Per Second, More Is Better
Linux 3.17
Linux 3.18
Linux 3.19
Linux 4.0
Linux 4.1
Linux 4.2
Linux 4.3
Linux 4.4
Linux 4.5
Linux 4.6
Linux 4.8
Linux 4.9
40717.74
25118.72
40813.99
25785.90
40107.88
24733.40
39478.48
25358.98
38106.08
24817.41
39316.75
24725.21
39697.77
25272.08
34661.82
23200.41
35072.84
23944.44
36130.28
24295.74
28332.10
20550.88
33273.63
21198.09


Hackbench
Count: 16 - Type: Thread
i7-5960X
i7-990X
Seconds, Fewer Is Better
30.88
49.56
30.63
48.86
34.84
51.49
31.92
54.55
38.75
56.52
38.93
55.33
33.28
49.69
32.93
49.57
33.40
50.22
33.03
50.25
34.75
52.13
34.34
51.03

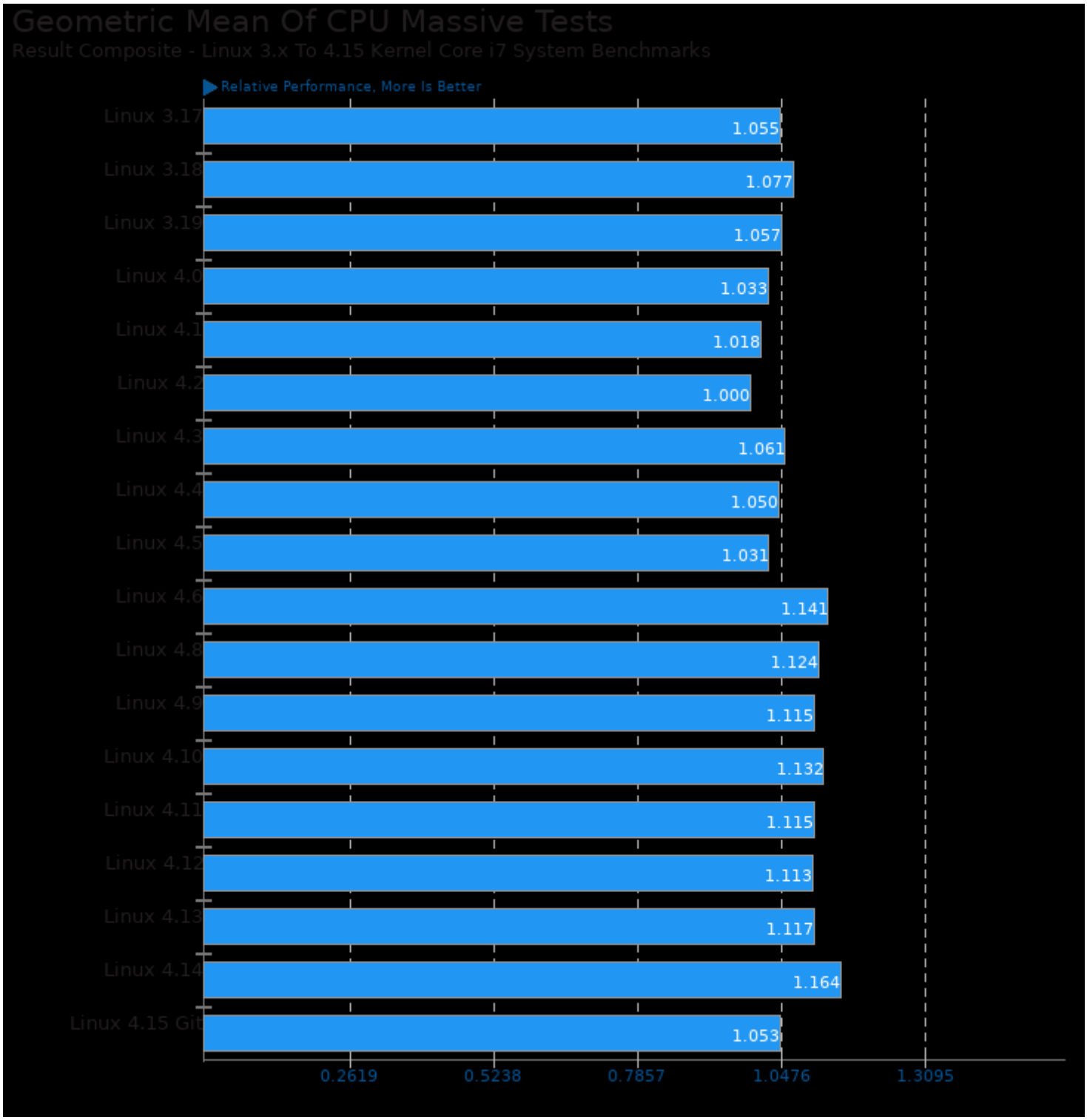

Hackbench
Count: 16 - Type: Process
i7-5960X
i7-990X
Seconds, Fewer Is Better
28.81
48.13
28.20
45.50
29.31
49.84
34.37
52.98
31.09
54.68
31.30
53.91
32.12
44.75
32.60
45.79
32.13
46.47
31.80
50.74
33.74
48.85
35.31
49.80

Linux 3.x To 4.15 Kernel Core i7 System Benchmarks

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

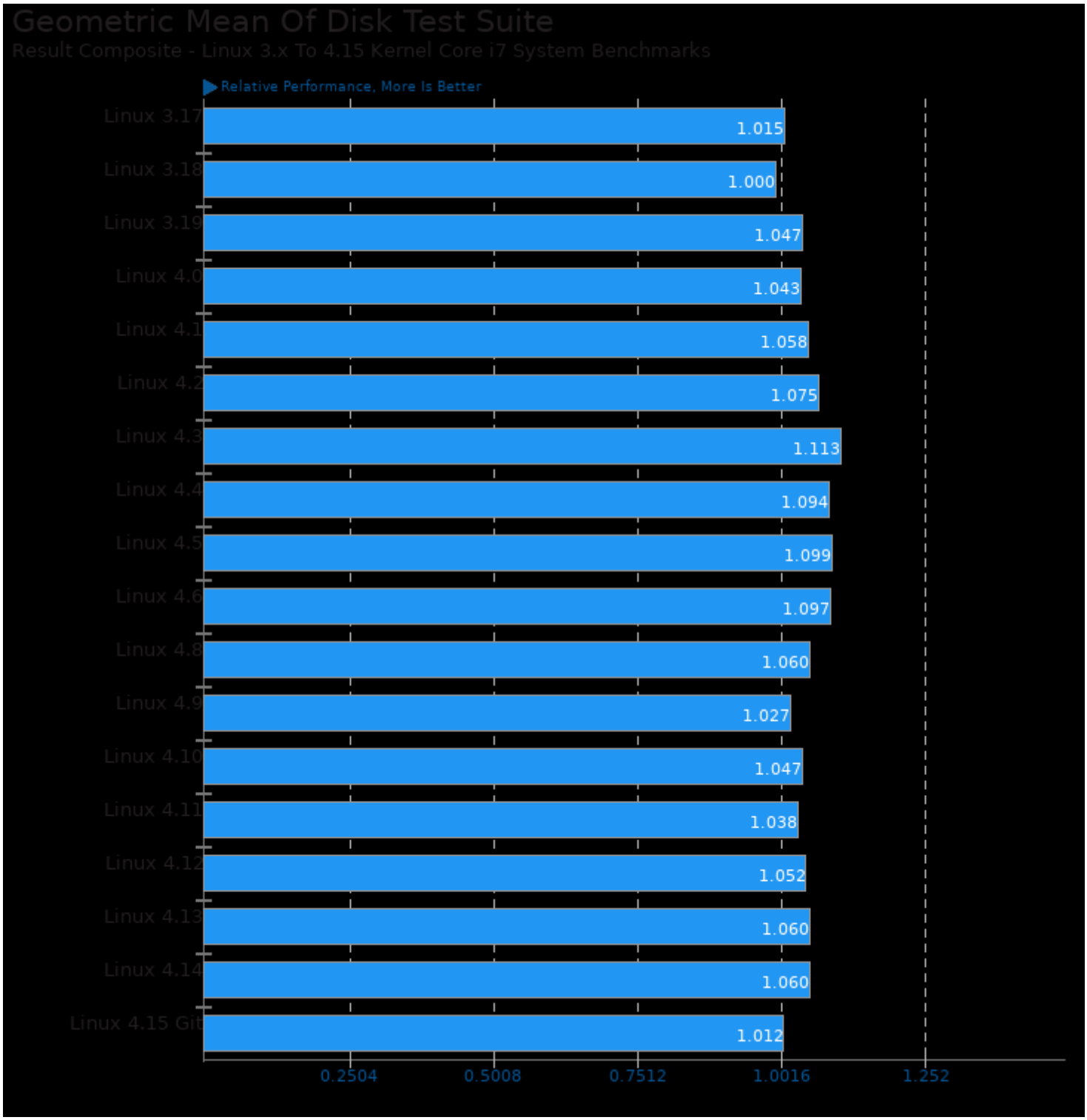


Geometric mean based upon tests: pts/pgbench, pts/apache and pts/nginx



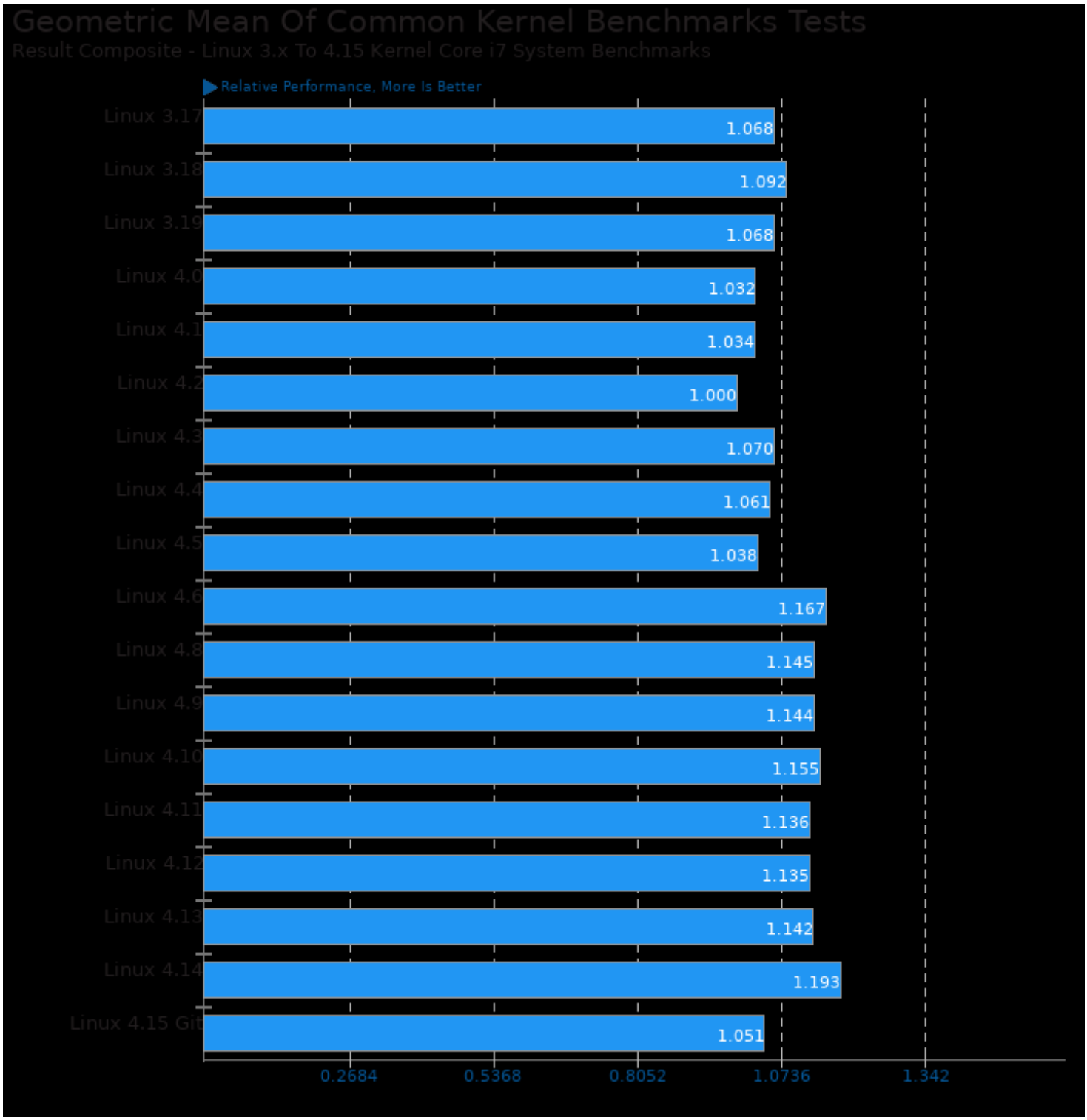
Geometric mean based upon tests: pts/apache, pts/compilebench, pts/ebizzy, pts/hackbench, pts/nginx, pts/pgbench and pts/stress-ng

Linux 3.x To 4.15 Kernel Core i7 System Benchmarks

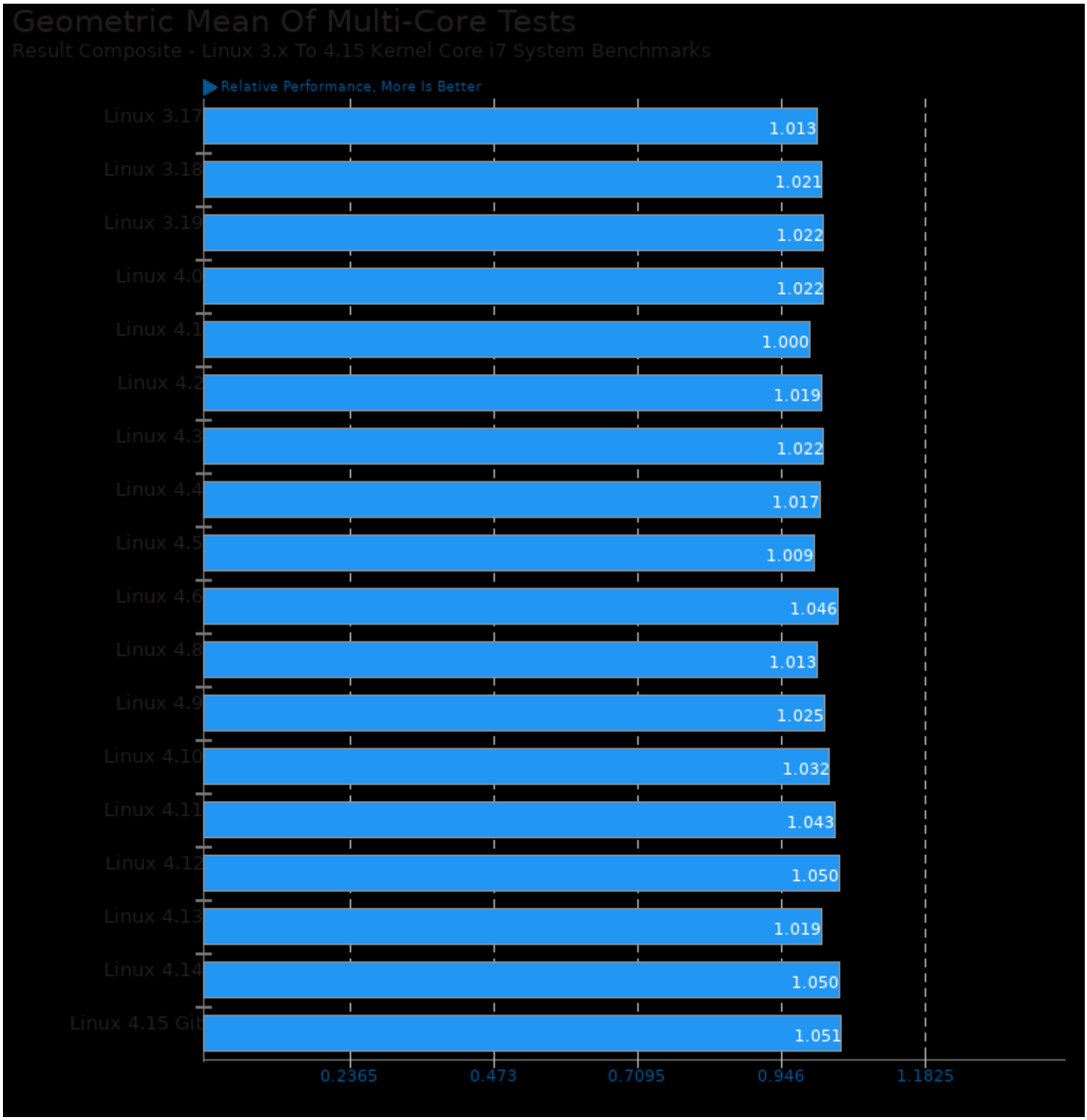


Geometric mean based upon tests: pts/fs-mark, pts/compilebench and pts/postmark

Linux 3.x To 4.15 Kernel Core i7 System Benchmarks

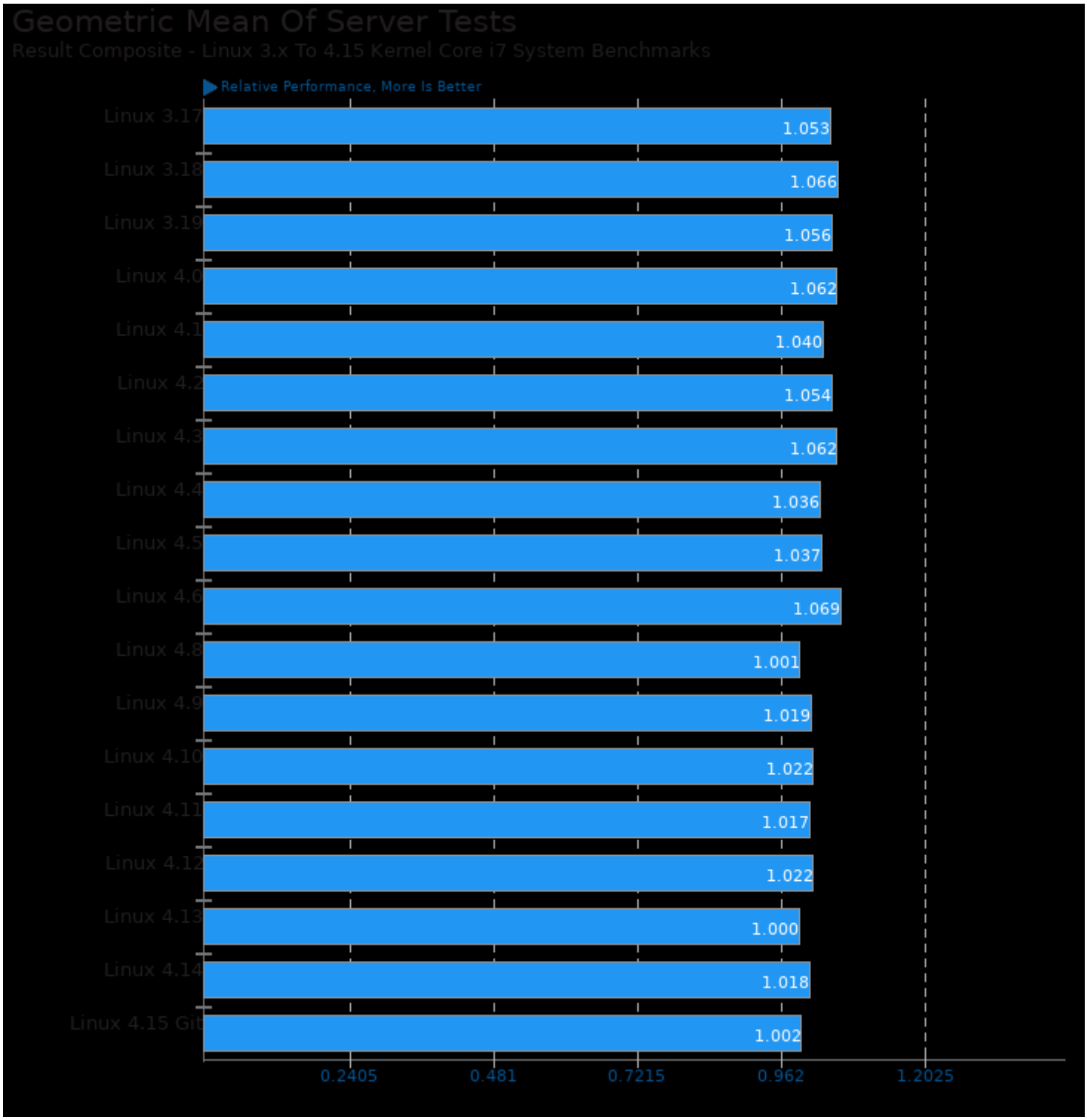


Geometric mean based upon tests: pts/apache, pts/postmark, pts/pgbench, pts/hackbench and pts/stress-ng



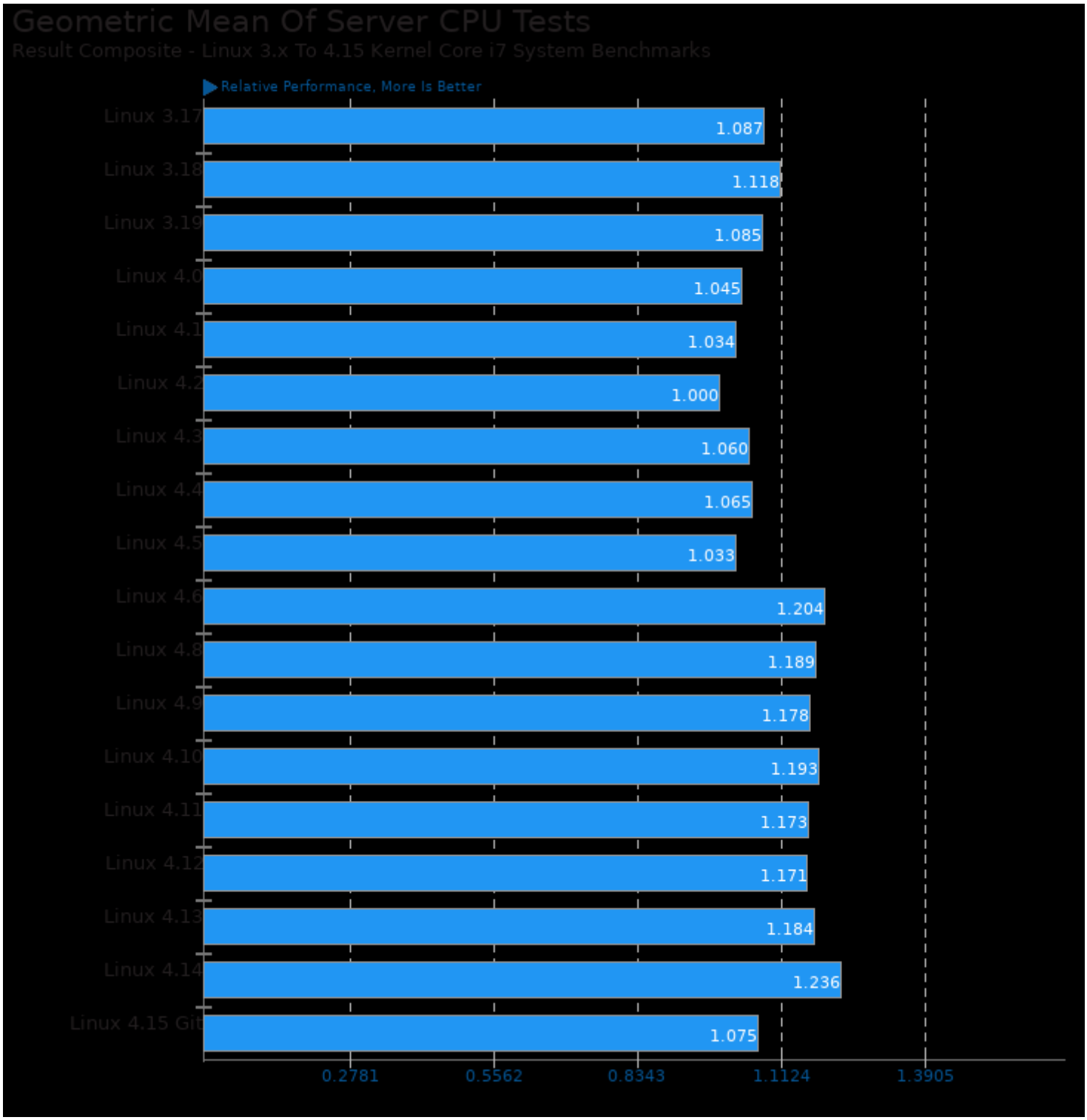
Geometric mean based upon tests: pts/ebizzy and pts/pgbench

Linux 3.x To 4.15 Kernel Core i7 System Benchmarks



Geometric mean based upon tests: pts/apache, pts/nginx, pts/ebizzy and pts/pgbench

Linux 3.x To 4.15 Kernel Core i7 System Benchmarks



Geometric mean based upon tests: pts/hackbench, system/gimp and pts/stress-ng

This file was automatically generated via the Phoronix Test Suite benchmarking software on Thursday, 28 March 2024 18:32.