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Linux 6.2 Kernel Benchmark Ryzen 9 7950X

AMD Ryzen 9 7950X 16-Core testing with a ASUS ROG CROSSHAIR X670E HERO (0805 BIOS) and AMD Radeon RX 6750 XT 12GB on Ubuntu 22.10 via the Phoronix Test Suite.

Automated Executive Summary

Linux 6.1 had the most wins, coming in first place for 42% of the tests.

Based on the geometric mean of all complete results, the fastest (Linux 6.2-rc1) was 1.018x the speed of the slowest (Linux 6.0). Linux 6.1 was 0.997x the speed of Linux 6.2-rc1 and Linux 6.0 was 0.986x the speed of Linux 6.1.

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

DDraceNetwork (Resolution: 3840 x 2160 - Mode: Fullscreen - Renderer: Vulkan - Zoom: Default - Demo: RaiNyMore2 - Total Frame Time) at 89.721x
DDraceNetwork (Resolution: 3840 x 2160 - Mode: Fullscreen - Renderer: Vulkan - Zoom: Default - Demo: Multeasymap - Total Frame Time) at 24.772x
Stress-NG (Test: System V Message Passing) at 2.72x
Stargate Digital Audio Workstation (Sample Rate: 192000 - Buffer Size: 512) at 1.442x
Xonotic (Resolution: 3840 x 2160 - Effects Quality: Ultimate) at 1.324x
FFmpeg (Encoder: libx265 - Scenario: Video On Demand) at 1.178x
FFmpeg (Encoder: libx265 - Scenario: Video On Demand) at 1.178x

Xonotic (Resolution: 3840 x 2160 - Effects Quality: Ultra) at 1.168x
FFmpeg (Encoder: libx265 - Scenario: Live) at 1.147x
FFmpeg (Encoder: libx265 - Scenario: Live) at 1.146x.

Test Systems:

Linux 6.0

Processor: AMD Ryzen 9 7950X 16-Core @ 5.88GHz (16 Cores / 32 Threads), Motherboard: ASUS ROG CROSSHAIR X670E HERO (0805 BIOS), Chipset: AMD Device 14d8, Memory: 32GB, Disk: Western Digital WD_BLACK SN850X 1000GB + 257GB Flash Drive, Graphics: AMD Radeon RX 6750 XT 12GB (2880/1124MHz), Audio: AMD Navi 21/23, Monitor: ASUS MG28U, Network: Intel I225-V + Intel Wi-Fi 6 AX210/AX211/AX411

OS: Ubuntu 22.10, Kernel: 6.0.0-060000-generic (x86_64), Desktop: GNOME Shell 43.1, Display Server: X Server + Wayland, OpenGL: 4.6 Mesa 22.2.1 (LLVM 15.0.2 DRM 3.48), Vulkan: 1.3.224, Compiler: GCC 12.2.0, File-System: ext4, Screen Resolution: 3840x2160

Kernel Notes: Transparent Huge Pages: madvise
Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --enable-cet --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-gnu-unique-object --enable-languages=c,ada,c++,go,d,fortran,objc,obj-c++,m2 --enable-libphobos-checking=release --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-defaulted --enable-offload-targets=nvptx-none=/build/gcc-12-U8K4Qv/gcc-12-12.2.0/debian/tmp-nvptx/usr,amdgcn-amdhsa=/build/gcc-12-U8K4Qv/gcc-12-12.2.0/debian/tmp-gcn/usr --enable-plugin --enable-shared --enable-threads=posix --host=x86_64-linux-gnu --program-prefix=x86_64-linux-gnu- --target=x86_64-linux-gnu --with-abi=m64 --with-arch-32=i686 --with-default-libstdcxx-abi=new --with-gcc-major-version-only --with-multilib-list=m32,m64,mx32 --with-target-system-zlib=auto --with-tune=generic --without-cuda-driver -v
Processor Notes: Scaling Governor: amd-pstate schedutil (Boost: Enabled) - CPU Microcode: 0xa601203
Graphics Notes: BAR1 / Visible vRAM Size: 12272 MB - vBIOS Version: 113-EXT800357-L02
Java Notes: OpenJDK Runtime Environment (build 11.0.17+8-post-Ubuntu-1ubuntu2)
Python Notes: Python 3.10.7
Security Notes: itlb_multihit: Not affected + l1tf: Not affected + mds: Not affected + meltdown: Not affected + mmio_stale_data: Not affected + retbleed: Not affected + spec_store_bypass: Mitigation of SSB disabled via prctl + spectre_v1: Mitigation of usercopy/swapgs barriers and __user pointer sanitization + spectre_v2: Mitigation of Retpolines IBPB: conditional IBRS_FW STIBP: always-on RSB filling PBRSB-eIBRS: Not affected + srbds: Not affected + tsx_async_abort: Not affected

Linux 6.1

Processor: AMD Ryzen 9 7950X 16-Core @ 4.50GHz (16 Cores / 32 Threads), Motherboard: ASUS ROG CROSSHAIR X670E HERO (0805 BIOS), Chipset: AMD Device 14d8, Memory: 32GB, Disk: Western Digital WD_BLACK SN850X 1000GB + 257GB Flash Drive, Graphics: AMD Radeon RX 6750 XT 12GB (2880/1124MHz), Audio: AMD Navi 21/23, Monitor: ASUS MG28U, Network: Intel I225-V + Intel Wi-Fi 6 AX210/AX211/AX411

OS: Ubuntu 22.10, Kernel: 6.1.1-phx (x86_64), Desktop: GNOME Shell 43.1, Display Server: X Server + Wayland, OpenGL: 4.6 Mesa 22.2.1 (LLVM 15.0.2 DRM 3.49), Vulkan: 1.3.224, Compiler: GCC 12.2.0, File-System: ext4, Screen Resolution: 3840x2160

Kernel Notes: Transparent Huge Pages: madvise
Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --enable-cet --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-gnu-unique-object --enable-languages=c,ada,c++,go,d,fortran,objc,obj-c++,m2 --enable-libphobos-checking=release --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-defaulted --enable-offload-targets=nvptx-none=/build/gcc-12-U8K4Qv/gcc-12-12.2.0/debian/tmp-nvptx/usr,amdgcn-amdhsa=/build/gcc-12-U8K4Qv/gcc-12-12.2.0/debian/tmp-gcn/usr --enable-plugin --enable-shared --enable-threads=posix --host=x86_64-linux-gnu --program-prefix=x86_64-linux-gnu- --target=x86_64-linux-gnu --with-abi=m64 --with-arch-32=i686 --with-default-libstdcxx-abi=new --with-gcc-major-version-only --with-multilib-list=m32,m64,mx32 --with-target-system-zlib=auto --with-tune=generic --without-cuda-driver -v
Processor Notes: Scaling Governor: acpi-cpufreq schedutil (Boost: Enabled) - CPU Microcode: 0xa601203
Graphics Notes: BAR1 / Visible vRAM Size: 12272 MB - vBIOS Version: 113-EXT800357-L02
Java Notes: OpenJDK Runtime Environment (build 11.0.17+8-post-Ubuntu-1ubuntu2)
Python Notes: Python 3.10.7

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Security Notes: itlb_multihit: Not affected + l1tf: Not affected + mds: Not affected + meltdown: Not affected + mmio_stale_data: Not affected + retbleed: Not affected + spec_store_bypass: Mitigation of SSB disabled via prctl + spectre_v1: Mitigation of usercopy/swapgs barriers and __user pointer sanitization + spectre_v2: Mitigation of Retpolines IBPB: conditional IBRS_FW STIBP: always-on RSB filling PBRSB-eIBRS: Not affected + srbds: Not affected + tsx_async_abort: Not affected

Linux 6.2-rc1

Processor: AMD Ryzen 9 7950X 16-Core @ 4.50GHz (16 Cores / 32 Threads), Motherboard: ASUS ROG CROSSHAIR X670E HERO (0805 BIOS), Chipset: AMD Device 14d8, Memory: 32GB, Disk: Western Digital WD_BLACK SN850X 1000GB + 257GB Flash Drive, Graphics: AMD Radeon RX 6750 XT 12GB (2880/1124MHz), Audio: AMD Navi 21/23, Monitor: ASUS MG28U, Network: Intel I225-V + Intel Wi-Fi 6 AX210/AX211/AX411

OS: Ubuntu 22.10, Kernel: 6.2.0-rc1-phx (x86_64), Desktop: GNOME Shell 43.1, Display Server: X Server + Wayland, OpenGL: 4.6 Mesa 22.2.1 (LLVM 15.0.2 DRM 3.49), Vulkan: 1.3.224, Compiler: GCC 12.2.0, File-System: ext4, Screen Resolution: 3840x2160

Kernel Notes: Transparent Huge Pages: madvise
Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --enable-cet --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-gnu-unique-object --enable-languages=c,ada,c++,go,d,fortran,objc,obj-c++,m2 --enable-libphobos-checking=release --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-defaulted --enable-offload-targets=nvptx-none=/build/gcc-12-U8K4Qv/gcc-12-12.2.0/debian/tmp-nvptx/usr,amdgcn-amdhsa=/build/gcc-12-U8K4Qv/gcc-12-12.2.0/debian/tmp-gcn/usr --enable-plugin --enable-shared --enable-threads=posix --host=x86_64-linux-gnu --program-prefix=x86_64-linux-gnu- --target=x86_64-linux-gnu --with-abi=m64 --with-arch-32=i686 --with-default-libstdcxx-abi=new --with-gcc-major-version-only --with-multilib-list=m32,m64,mx32 --with-target-system-zlib=auto --with-tune=generic --without-cuda-driver -v
Processor Notes: Scaling Governor: acpi-cpufreq schedutil (Boost: Enabled) - CPU Microcode: 0xa601203
Graphics Notes: BAR1 / Visible vRAM Size: 12272 MB - vBIOS Version: 113-EXT800357-L02
Java Notes: OpenJDK Runtime Environment (build 11.0.17+8-post-Ubuntu-1ubuntu2)
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Security Notes: itlb_multihit: Not affected + l1tf: Not affected + mds: Not affected + meltdown: Not affected + mmio_stale_data: Not affected + retbleed: Not affected + spec_store_bypass: Mitigation of SSB disabled via prctl + spectre_v1: Mitigation of usercopy/swapgs barriers and __user pointer sanitization + spectre_v2: Mitigation of Retpolines IBPB: conditional IBRS_FW STIBP: always-on RSB filling PBRSB-eIBRS: Not affected + srbds: Not affected + tsx_async_abort: Not affected

	Linux 6.0	Linux 6.1	Linux 6.2-rc1
Selenium - Jetstream 2 - Google Chrome (Score)	**322.624**	321.261	**320.202**
Normalized	100%	99.58%	99.25%
Standard Deviation		0.7%	0.3%
LAMMPS Molecular Dynamics Simulator - 20k Atoms (ns/day)	**17.124**	17.033	**16.987**
Normalized	100%	99.47%	99.2%
Standard Deviation	0.7%	1%	1%
Timed Linux Kernel Compilation - allmodconfig (sec)	**501.455**	503.275	**504.096**
Normalized	100%	99.64%	99.48%
Standard Deviation	0.1%	0%	0.1%
Blender - Barbershop - CPU-Only (sec)	**473.01**	470.74	**470.26**
Normalized	99.42%	99.9%	100%
Standard Deviation	0.3%	0.2%	0.1%
OpenVKL - vklBenchmark ISPC (Items / Sec)	**401**	**409**	406
Normalized	98.04%	100%	99.27%
Standard Deviation	0.1%	0.3%	0.4%
ClickHouse - 1.R.W.A.D.T.R (Queries/min, Geo Mean)	**301.14**	**317.45**	314.48
Normalized	94.86%	100%	99.06%
Standard Deviation	2.3%	3.1%	2.2%

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ClickHouse - 1.R.W.A.D.S.R (Queries/min, Geo Mean)	**302.39**	**316.89**	314.31
Normalized	95.42%	100%	99.19%
Standard Deviation	2.8%	2.4%	2.3%
ClickHouse - 1.R.W.A.D.F.R.C.C (Queries/min, Geo Mean)	**293.36**	**305.59**	302.12
Normalized	96%	100%	98.86%
Standard Deviation	2.5%	2.9%	3.1%
Timed Node.js Compilation - Time To Compile (sec)	253.401	**253.167**	**253.762**
Normalized	99.91%	100%	99.77%
Standard Deviation	0.2%	0.1%	0.2%
DDraceNetwork - 3840 x 2160 - Fullscreen - Vulkan - Default - RaiNyMore2 (FPS)	**1625**	**1658**	1639
Normalized	98.01%	100%	98.85%
Standard Deviation	2.4%	4.7%	2.9%
OpenRadioss - B.S.o.W (sec)	**158.94**	**158.64**	158.90
Normalized	99.81%	100%	99.84%
Standard Deviation	0.4%	0%	0.2%
Blender - Pabellon Barcelona - CPU-Only	**159.58**	**159.36**	159.47
Normalized	99.86%	100%	99.93%
Standard Deviation	0.1%	0.1%	0.1%
FFmpeg - libx265 - Video On Demand (FPS)	**46.72**	**55.02**	54.89
Normalized	84.91%	100%	99.76%
Standard Deviation	0.3%	0.4%	0%
FFmpeg - libx265 - Video On Demand (sec)	**162.13**	**137.69**	138.01
Normalized	84.93%	100%	99.77%
Standard Deviation	0.3%	0.4%	0%
Stargate Digital Audio Workstation - 192000 - 512 (Render Ratio)	**2.452419**	**3.536253**	3.426146
Normalized	69.35%	100%	96.89%
Standard Deviation	5.6%	0.7%	1.5%
Blender - Classroom - CPU-Only (sec)	**131.08**	130.70	**130.57**
Normalized	99.61%	99.9%	100%
Standard Deviation	0.1%	0.1%	0.1%
Stress-NG - Futex (Bogo Ops/s)	**4558735**	**4464564**	4491350
Normalized	100%	97.93%	98.52%
Standard Deviation	3.9%	1.4%	3.1%
Stress-NG - Socket Activity (Bogo Ops/s)	**33908**	**35299**	35103
Normalized	96.06%	100%	99.44%
Standard Deviation	5.1%	4.8%	1.7%
CockroachDB - KV, 10% Reads - 256 (ops/s)	79074	**79297**	**79034**
Normalized	99.72%	100%	99.67%
Standard Deviation	0%	0%	0.2%
CockroachDB - KV, 60% Reads - 256 (ops/s)	**101385**	**103146**	102870
Normalized	98.29%	100%	99.73%
Standard Deviation	0.1%	1.5%	1.4%
CockroachDB - KV, 50% Reads - 256 (ops/s)	**95997**	**97620**	96610
Normalized	98.34%	100%	98.96%
Standard Deviation	0.2%	1.2%	0%
CockroachDB - KV, 95% Reads - 256 (ops/s)	**125471**	**125990**	125884
Normalized	99.59%	100%	99.92%
Standard Deviation	1.6%	1.7%	0.6%
CockroachDB - KV, 10% Reads - 128 (ops/s)	**76942**	**78522**	77228

Normalized	97.99%	100%	98.35%
Standard Deviation	0.9%	1.6%	0.3%
CockroachDB - KV, 50% Reads - 128 (ops/s)	**98252**	98430	**99228**
Normalized	99.02%	99.2%	100%
Standard Deviation	2.1%	0.6%	1.9%
CockroachDB - KV, 60% Reads - 128 (ops/s)	**104893**	104557	**104095**
Normalized	100%	99.68%	99.24%
Standard Deviation	1.6%	1.7%	0.3%
CockroachDB - KV, 95% Reads - 128 (ops/s)	130032	**131751**	**129698**
Normalized	98.7%	100%	98.44%
Standard Deviation	0.6%	1.3%	0.3%
Stargate Digital Audio Workstation - 192000 - 1024 (Render Ratio)	3.834994	**3.854077**	**3.750148**
Normalized	99.5%	100%	97.3%
Standard Deviation	0.3%	1.5%	4.6%
Unvanquished - 3840 x 2160 - Medium (FPS)	**408.0**	**392.1**	399.3
Normalized	100%	96.1%	97.87%
Standard Deviation	8.5%	13.3%	9.7%
CockroachDB - MoVR - 256 (ops/s)	**907.7**	920.5	**923**
Normalized	98.34%	99.73%	100%
Standard Deviation	0.3%	0.2%	0.1%
CockroachDB - MoVR - 128 (ops/s)	**906.4**	920.9	**921.1**
Normalized	98.4%	99.98%	100%
Standard Deviation	0.1%	0.3%	0.3%
Apache Spark - 1000000 - 100 - B.I.J.T.T (sec)	0.89	**0.91**	**0.86**
Normalized	96.63%	94.51%	100%
Standard Deviation	5.5%	5.1%	1.9%
Apache Spark - 1000000 - 100 - I.J.T.T (sec)	**1.01**	**0.94**	1.00
Normalized	93.07%	100%	94%
Standard Deviation	5.9%	5.3%	1.5%
Apache Spark - 1000000 - 100 - R.T.T (sec)	1.19	**1.18**	**1.22**
Normalized	99.16%	100%	96.72%
Standard Deviation	1.4%	1%	3.6%
Apache Spark - 1000000 - 100 - Group By Test Time (sec)	**2.83**	**2.73**	2.80
Normalized	96.47%	100%	97.5%
Standard Deviation	1.8%	1.7%	2.2%
Apache Spark - 1000000 - 100 - C.P.B.U.D (sec)	**3.70**	**3.63**	**3.63**
Normalized	98.11%	100%	100%
Standard Deviation	0.8%	0.8%	0%
Apache Spark - 1000000 - 100 - C.P.B (sec)	55.87	**55.11**	**56.91**
Normalized	98.64%	100%	96.84%
Standard Deviation	2.2%	1.7%	5%
Apache Spark - 1000000 - 100 - S.5.B.T (sec)	2.17	**2.18**	**2.15**
Normalized	99.08%	98.62%	100%
Standard Deviation	2.5%	1%	1.2%
OpenRadioss - Bumper Beam (sec)	**84.61**	83.67	**83.30**
Normalized	98.45%	99.56%	100%
Standard Deviation	0.4%	0.2%	0.2%
Xonotic - 3840 x 2160 - Ultimate (FPS)	478.5267302	**377.5652948**	**500.0233846**
Normalized	95.7%	75.51%	100%
Standard Deviation	0.4%	0.7%	0.3%
Unvanquished - 3840 x 2160 - High (FPS)	**409.5**	**382.3**	391.0
Normalized	100%	93.36%	95.48%

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Standard Deviation	10.4%	4.2%	0.6%
Redis - GET - 50 (Reqs/sec)	**5454441**	4817235	**4744300**
Normalized	100%	88.32%	86.98%
Standard Deviation	5.7%	7.5%	5.5%
JPEG XL libjxl - JPEG - 90 (MP/s)	**12.88**	**13.13**	12.95
Normalized	98.1%	100%	98.63%
Standard Deviation	0.7%	0.5%	0.4%
JPEG XL libjxl - PNG - 90 (MP/s)	**13.18**	**13.49**	13.32
Normalized	97.7%	100%	98.74%
Standard Deviation	0.5%	0.3%	0.2%
Stress-NG - Context Switching (Bogo Ops/s)	10657844	**9884193**	**10741656**
Normalized	99.22%	92.02%	100%
Standard Deviation	1.6%	9.7%	1.4%
Stress-NG - CPU Stress (Bogo Ops/s)	60796	**61202**	**60755**
Normalized	99.34%	100%	99.27%
Standard Deviation	1%	3.8%	1.7%
Stress-NG - S.V.M.P (Bogo Ops/s)	**11163675**	**30369076**	26608926
Normalized	36.76%	100%	87.62%
Standard Deviation	0.2%	4.8%	0.5%
Stress-NG - Crypto (Bogo Ops/s)	43518	**43466**	**43632**
Normalized	99.74%	99.62%	100%
Standard Deviation	1.3%	4.3%	0.2%
libavif avifenc - 0 (sec)	**69.498**	**69.150**	69.245
Normalized	99.5%	100%	99.86%
Standard Deviation	0.5%	0.1%	0.4%
Blender - Fishy Cat - CPU-Only (sec)	**64.54**	**64.29**	64.45
Normalized	99.61%	100%	99.75%
Standard Deviation	0.3%	0.2%	0.5%
OpenRadioss - R.O.R.S.I (sec)	**62.11**	62.10	**61.52**
Normalized	99.05%	99.07%	100%
Standard Deviation	1.6%	0.3%	0.3%
OpenVINO - P.D.F - CPU (ms)	**1041**	1047	**1047**
Normalized	100%	99.47%	99.47%
Standard Deviation	0.2%	0.1%	0.6%
OpenVINO - P.D.F - CPU (FPS)	**7.64**	7.60	**7.59**
Normalized	100%	99.48%	99.35%
Standard Deviation	0.2%	0.1%	0.7%
OpenFOAM - d.S.M.S - Execution Time (sec)	162.19657	**162.21771**	**160.98497**
Normalized	99.25%	99.24%	100%
OpenFOAM - d.S.M.S - Mesh Time (sec)	**23.967546**	**23.744921**	23.82981
Normalized	99.07%	100%	99.64%
OpenVINO - F.D.F.I - CPU (ms)	**283.16**	282.82	**281.39**
Normalized	99.37%	99.49%	100%
Standard Deviation	0.3%	0.3%	0.4%
OpenVINO - F.D.F.I - CPU (FPS)	**28.22**	28.23	**28.37**
Normalized	99.47%	99.51%	100%
Standard Deviation	0.3%	0.3%	0.5%
OpenVINO - M.T.E.T.D.F - CPU (ms)	58.27	**59.25**	**57.96**
Normalized	99.47%	97.82%	100%
Standard Deviation	2.3%	0.7%	1.4%
OpenVINO - M.T.E.T.D.F - CPU (FPS)	137.20	**134.87**	**137.93**
Normalized	99.47%	97.78%	100%
Standard Deviation	2.3%	0.7%	1.4%
OpenVINO - P.V.B.D.F - CPU (ms)	**4.76**	**4.70**	4.72
Normalized	98.74%	100%	99.58%

Standard Deviation	1.6%	0.9%	0.6%
OpenVINO - P.V.B.D.F - CPU (FPS)	**1678**	**1699**	1694
Normalized	98.79%	100%	99.73%
Standard Deviation	1.6%	0.9%	0.6%
DDraceNetwork - 3840 x 2160 - Fullscreen - Vulkan - Default - Multeasymap (FPS)	1829	**1790**	**1841**
Normalized	99.36%	97.23%	100%
Standard Deviation	0.5%	0.6%	0.1%
OpenVINO - V.D.F.I - CPU (ms)	**4.33**	**4.31**	**4.31**
Normalized	99.54%	100%	100%
Standard Deviation	0.5%	0.4%	0%
OpenVINO - V.D.F.I - CPU (FPS)	**1845**	1851	**1853**
Normalized	99.53%	99.9%	100%
Standard Deviation	0.4%	0.3%	0.1%
OpenVINO - V.D.F - CPU (ms)	**10.29**	**10.46**	10.32
Normalized	100%	98.37%	99.71%
Standard Deviation	0.2%	0.3%	1.5%
OpenVINO - V.D.F - CPU (FPS)	**776.82**	**764.22**	774.14
Normalized	100%	98.38%	99.66%
Standard Deviation	0.3%	0.3%	1.5%
OpenVINO - W.P.D.F.I - CPU (ms)	**5.55**	5.54	**5.53**
Normalized	99.64%	99.82%	100%
Standard Deviation	0.1%	0.1%	0.2%
OpenVINO - W.P.D.F.I - CPU (FPS)	**2881**	2884	**2890**
Normalized	99.68%	99.77%	100%
Standard Deviation	0.1%	0.2%	0.2%
OpenVINO - A.G.R.R.0.F.I - CPU (ms)	0.61	0.61	0.61
Standard Deviation	0%	0%	0%
OpenVINO - A.G.R.R.0.F.I - CPU (FPS)	**25988**	**26039**	26004
Normalized	99.8%	100%	99.87%
Standard Deviation	0%	0.3%	0%
Stress-NG - IO_uring (Bogo Ops/s)	**33864**	33365	**33128**
Normalized	100%	98.53%	97.83%
Standard Deviation	6.5%	1.2%	2%
Timed CPython Compilation - R.B.P.L.O	177.684	**177.718**	**176.512**
Normalized	99.34%	99.32%	100%
Xonotic - 3840 x 2160 - Ultra (FPS)	632.6708656	**554.2988172**	**647.2218647**
Normalized	97.75%	85.64%	100%
Standard Deviation	0.9%	0.9%	0.8%
FFmpeg - libx265 - Live (FPS)	**117.83**	**135.12**	134.20
Normalized	87.2%	100%	99.32%
Standard Deviation	0.5%	2.2%	1.7%
FFmpeg - libx265 - Live (sec)	**42.86**	**37.39**	37.64
Normalized	87.24%	100%	99.34%
Standard Deviation	0.5%	2.2%	1.7%
Xonotic - 3840 x 2160 - High (FPS)	680.7773733	**631.1810468**	**691.5665613**
Normalized	98.44%	91.27%	100%
Standard Deviation	0.7%	0.4%	0.8%
Timed Godot Game Engine Compilation - Time To Compile (sec)	51.100	**51.069**	**51.159**
Normalized	99.94%	100%	99.82%
Standard Deviation	0.3%	0.3%	0.2%
Blender - BMW27 - CPU-Only (sec)	49.74	**49.75**	**49.71**
Normalized	99.94%	99.92%	100%
Standard Deviation	0.1%	0.2%	0.3%

Linux 6.2 Kernel Benchmark Ryzen 9 7950X

Stress-NG - Forking (Bogo Ops/s)	**81552**	78702	**77431**
Normalized	100%	96.51%	94.95%
Standard Deviation	0.5%	2.3%	2%
Timed Linux Kernel Compilation - defconfig (sec)	**45.154**	45.235	**45.252**
Normalized	100%	99.82%	99.78%
Standard Deviation	1.1%	1.2%	1.1%
Xonotic - 3840 x 2160 - Low (FPS)	**828.1950923**	**775.2177505**	825.4446417
Normalized	100%	93.6%	99.67%
Standard Deviation	0.2%	0.4%	1.1%
Redis - SET - 50 (Reqs/sec)	**4086994**	**4257658**	4148442
Normalized	95.99%	100%	97.43%
Standard Deviation	6.8%	1.4%	2.4%
TensorFlow - CPU - 16 - ResNet-50 (images/sec)	**42.73**	**42.81**	**42.73**
Normalized	99.81%	100%	99.81%
Standard Deviation	0.2%	0%	0.1%
Stargate Digital Audio Workstation - 44100 - 1024 (Render Ratio)	8.417254	**8.559100**	**8.369110**
Normalized	98.34%	100%	97.78%
Standard Deviation	0.8%	0.8%	3.8%
Stargate Digital Audio Workstation - 44100 - 512 (Render Ratio)	**7.825462**	7.559470	**7.494346**
Normalized	100%	96.6%	95.77%
Standard Deviation	1.7%	1.3%	4.3%
Aircrack-ng (k/s)	**98095**	**98676**	98418
Normalized	99.41%	100%	99.74%
Standard Deviation	1.1%	0.3%	0.2%
Timed PHP Compilation - Time To Compile (sec)	36.191	**36.341**	**36.029**
Normalized	99.55%	99.14%	100%
Standard Deviation	0.9%	1.2%	1.4%
Selenium - Kraken - Google Chrome (ms)	**389.1**	377.0	**372.5**
Normalized	95.73%	98.81%	100%
Standard Deviation	2.5%	0.2%	0.3%
libavif avifenc - 2 (sec)	**35.029**	34.953	**34.943**
Normalized	99.75%	99.97%	100%
Standard Deviation	0.5%	1.2%	0.5%
SQLite Speedtest - Timed Time - Size 1,000 (sec)	**34.365**	**34.953**	34.911
Normalized	100%	98.32%	98.44%
Standard Deviation	0.6%	0.7%	0.5%
RawTherapee - T.B.T (sec)	**33.732**	32.706	**32.701**
Normalized	96.94%	99.98%	100%
Standard Deviation	0.2%	0.2%	0.1%
Timed Wasmer Compilation - Time To Compile (sec)	**32.215**	31.935	**31.848**
Normalized	98.86%	99.73%	100%
Standard Deviation	0.5%	0.4%	0.6%
Selenium - PSPDFKit WASM - Google Chrome (Score)	2612	**2639**	**2528**
Normalized	96.78%	95.79%	100%
Standard Deviation	0.9%	1.3%	0.4%
Stress-NG - Malloc (Bogo Ops/s)	**40645154**	**37567129**	38551600

Normalized	100%	92.43%	94.85%
Standard Deviation	0.1%	1.1%	0.5%
Stress-NG - Memory Copying (Bogo Ops/s)	**7632**	7670	**7695**
Normalized	99.18%	99.68%	100%
Standard Deviation	0.5%	0.6%	0.2%
Stress-NG - Matrix Math (Bogo Ops/s)	**130281**	130415	**130602**
Normalized	99.75%	99.86%	100%
Standard Deviation	0.3%	0.2%	0.2%
Stress-NG - CPU Cache (Bogo Ops/s)	**177.70**	**184.81**	183.77
Normalized	96.15%	100%	99.44%
Standard Deviation	2.3%	2.3%	0.8%
Stress-NG - Atomic (Bogo Ops/s)	**214581**	**214009**	214523
Normalized	100%	99.73%	99.97%
Standard Deviation	0.2%	0.3%	0.2%
Stress-NG - NUMA (Bogo Ops/s)	**593.62**	627.09	**632.36**
Normalized	93.87%	99.17%	100%
Standard Deviation	0.4%	0.2%	0.8%
Stress-NG - G.C.S.F (Bogo Ops/s)	5003748	**4939244**	**5055043**
Normalized	98.99%	97.71%	100%
Standard Deviation	2.1%	2.1%	1.1%
Stress-NG - Vector Math (Bogo Ops/s)	**144738**	144891	**145198**
Normalized	99.68%	99.79%	100%
Standard Deviation	0%	0%	0%
Stress-NG - Semaphores (Bogo Ops/s)	**3469539**	**3505404**	3475824
Normalized	98.98%	100%	99.16%
Standard Deviation	0.7%	0.1%	2.5%
Stress-NG - MMAP (Bogo Ops/s)	**401.35**	**390.46**	395.87
Normalized	100%	97.29%	98.63%
Standard Deviation	0.1%	0.2%	2%
Stress-NG - G.Q.D.S (Bogo Ops/s)	**384.36**	387.19	**393.14**
Normalized	97.77%	98.49%	100%
Standard Deviation	2.4%	0.3%	2.2%
Stress-NG - MEMFD (Bogo Ops/s)	**1316**	1336	**1341**
Normalized	98.07%	99.58%	100%
Standard Deviation	0.2%	0.1%	0.2%
Stress-NG - SENDFILE (Bogo Ops/s)	**548107**	529667	**525645**
Normalized	100%	96.64%	95.9%
Standard Deviation	0.1%	0.2%	0.3%
Stress-NG - Mutex (Bogo Ops/s)	**14014569**	14156504	**14203987**
Normalized	98.67%	99.67%	100%
Standard Deviation	0.9%	0.6%	0.5%
ASTC Encoder - Exhaustive (MT/s)	**1.8439**	**1.8503**	1.8496
Normalized	99.65%	100%	99.96%
Standard Deviation	0.1%	0.2%	0.1%
srsRAN - 4.P.1.P.M.2.Q (UE Mb/s)	**249.2**	**249.2**	**249.1**
Normalized	100%	100%	99.96%
Standard Deviation	0.7%	0.2%	0.3%
srsRAN - 4.P.1.P.M.2.Q (eNb Mb/s)	667.5	**665.4**	**668.5**
Normalized	99.85%	99.54%	100%
Standard Deviation	0.6%	0.7%	0.2%
Unvanquished - 3840 x 2160 - Ultra (FPS)	392.7	**372.1**	**402.9**
Normalized	97.47%	92.36%	100%
Standard Deviation	0.2%	1.3%	0.5%
srsRAN - 4.P.1.P.M.6.Q (UE Mb/s)	**236.7**	**238.1**	**236.7**
Normalized	99.41%	100%	99.41%

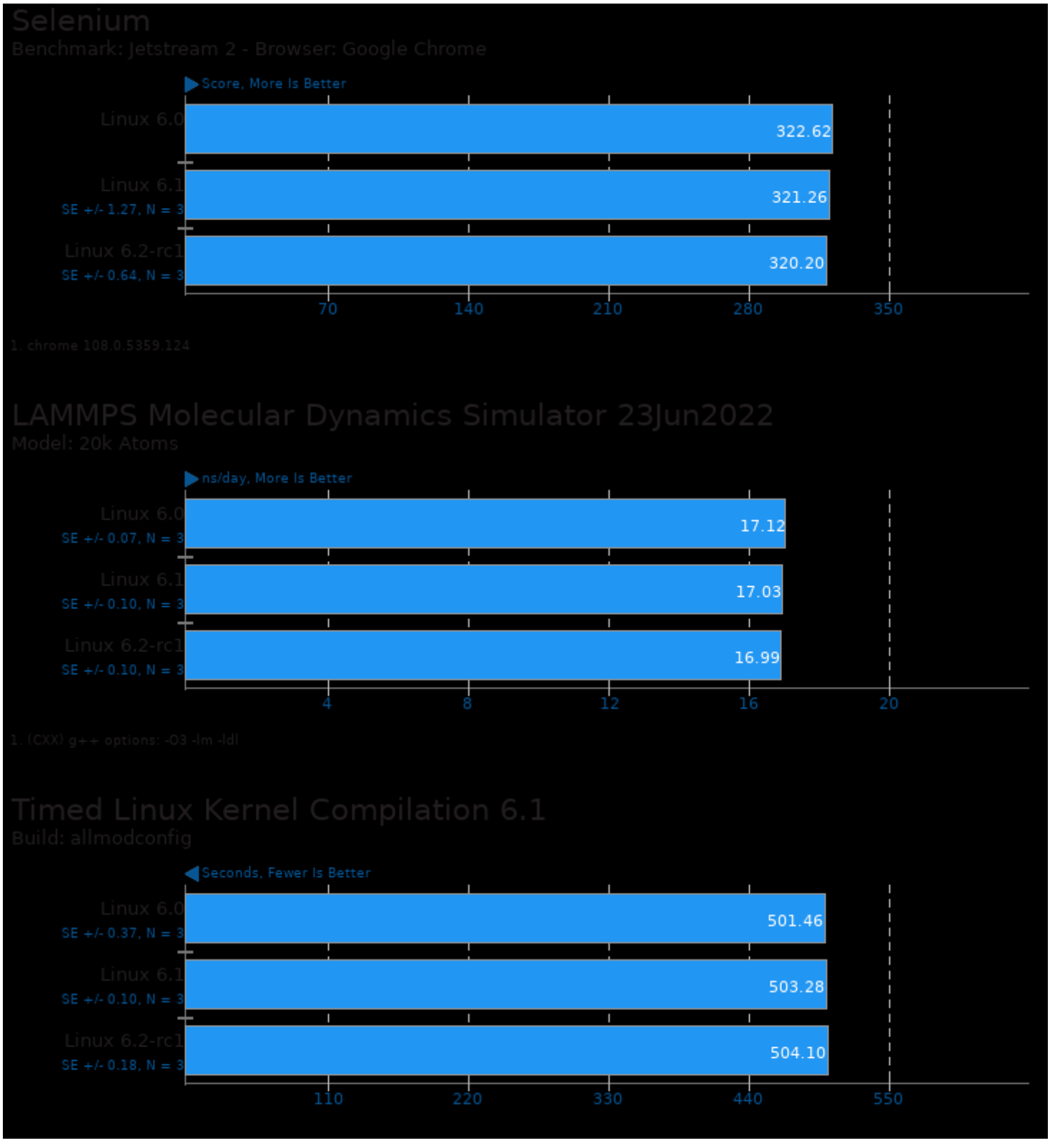
Linux 6.2 Kernel Benchmark Ryzen 9 7950X

Standard Deviation	0.5%	0.2%	0.6%
srsRAN - 4.P.1.P.M.6.Q (eNb Mb/s)	**618.1**	**626.5**	623.9
Normalized	98.66%	100%	99.58%
Standard Deviation	1%	0.1%	0.4%
srsRAN - OFDM_Test (Samples / Second)	239100000	**239366667**	**238366667**
Normalized	99.89%	100%	99.58%
Standard Deviation	1.6%	1%	1.4%
7-Zip Compression - D.R (MIPS)	**182508**	**182968**	182582
Normalized	99.75%	100%	99.79%
Standard Deviation	0.4%	0.3%	0.2%
7-Zip Compression - Compression Rating (MIPS)	**184556**	**185249**	184766
Normalized	99.63%	100%	99.74%
Standard Deviation	0.2%	0.1%	0.1%
ASTC Encoder - Thorough (MT/s)	**17.6429**	17.7672	**17.8369**
Normalized	98.91%	99.61%	100%
Standard Deviation	0.1%	0.2%	0.1%
miniBUDE - OpenMP - BM1 (Billion Interactions/s)	**56.420**	56.414	**56.391**
Normalized	100%	99.99%	99.95%
Standard Deviation	0.1%	0.1%	0.1%
miniBUDE - OpenMP - BM1 (GFInst/s)	**1410**	1410	**1410**
Normalized	100%	99.99%	99.95%
Standard Deviation	0.1%	0.1%	0.1%
GIMP - resize (sec)	**12.920**	**12.366**	12.613
Normalized	95.71%	100%	98.04%
Standard Deviation	2.2%	2.4%	1%
GIMP - unsharp-mask (sec)	**13.115**	**12.513**	12.602
Normalized	95.41%	100%	99.29%
Standard Deviation	0.9%	1%	0.2%
srsRAN - 4.P.1.P.S.2.Q (UE Mb/s)	**260.2**	**259.7**	259.9
Normalized	100%	99.81%	99.88%
Standard Deviation	0.8%	0.5%	0.8%
srsRAN - 4.P.1.P.S.2.Q (eNb Mb/s)	**663.7**	668.7	**669.9**
Normalized	99.07%	99.82%	100%
Standard Deviation	0.4%	0.6%	0.2%
Selenium - W.c - Google Chrome (ms)	**212.92**	**215.41**	213.02
Normalized	100%	98.84%	99.95%
Standard Deviation	2%	1.3%	2.1%
srsRAN - 5.P.T.5.P.S.6.Q (UE Mb/s)	141.2	**141.7**	**136.6**
Normalized	99.65%	100%	96.4%
Standard Deviation	0.6%	0.5%	6.1%
srsRAN - 5.P.T.5.P.S.6.Q (eNb Mb/s)	208.1	**209.6**	**207.9**
Normalized	99.28%	100%	99.19%
Standard Deviation	0.3%	0.2%	0.2%
ASTC Encoder - Fast (MT/s)	**397.5492**	403.9233	**404.1187**
Normalized	98.37%	99.95%	100%
Standard Deviation	0.1%	0.4%	0.8%
GIMP - auto-levels (sec)	**10.683**	10.170	**10.166**
Normalized	95.16%	99.96%	100%
Standard Deviation	0.5%	0.2%	0.4%
srsRAN - 4.P.1.P.S.6.Q (UE Mb/s)	248.9	**248.0**	**251.1**
Normalized	99.12%	98.77%	100%
Standard Deviation	1.1%	0.3%	0.3%
srsRAN - 4.P.1.P.S.6.Q (eNb Mb/s)	620.5	**617.6**	**624.2**

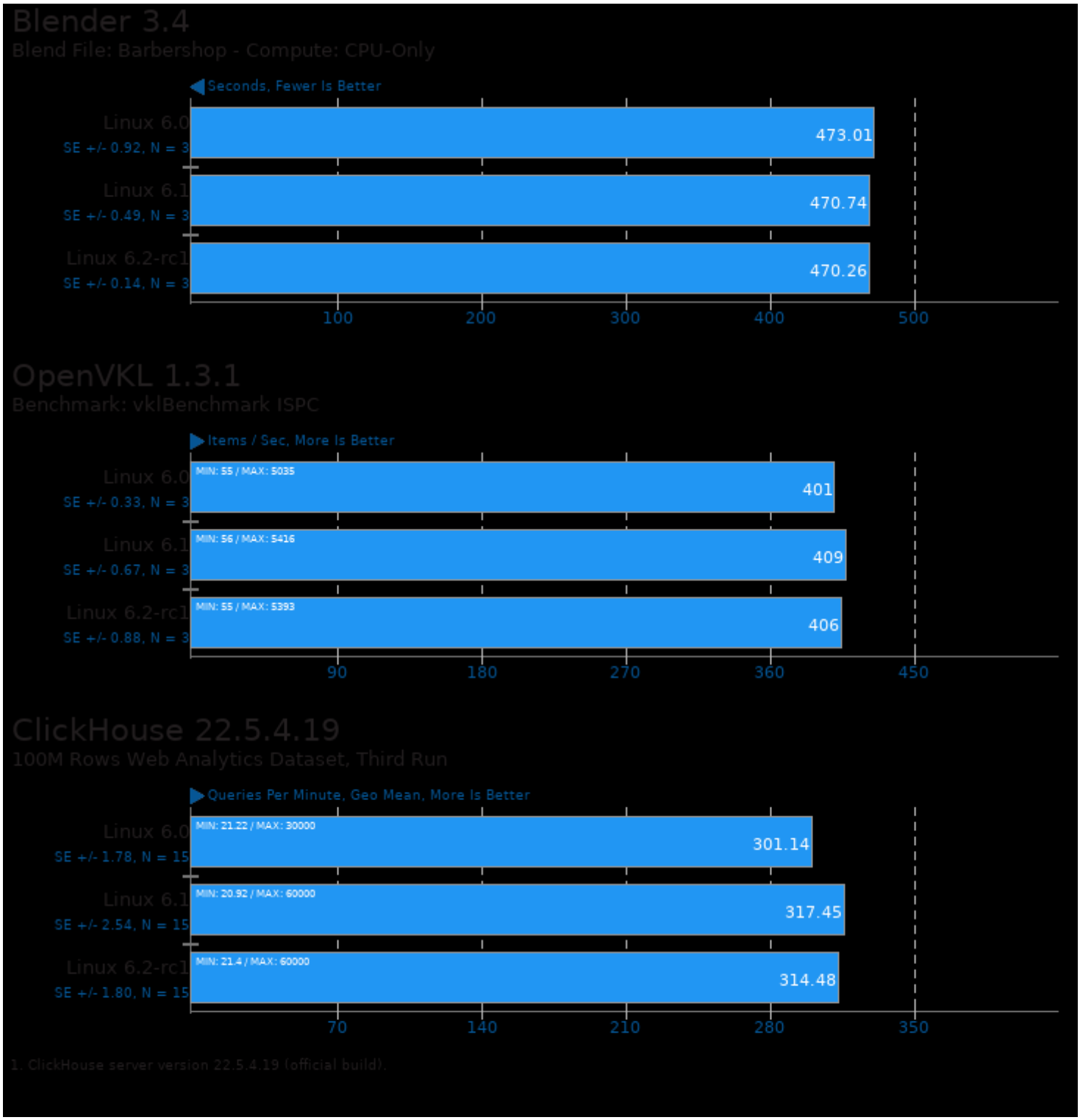
Linux 6.2 Kernel Benchmark Ryzen 9 7950X

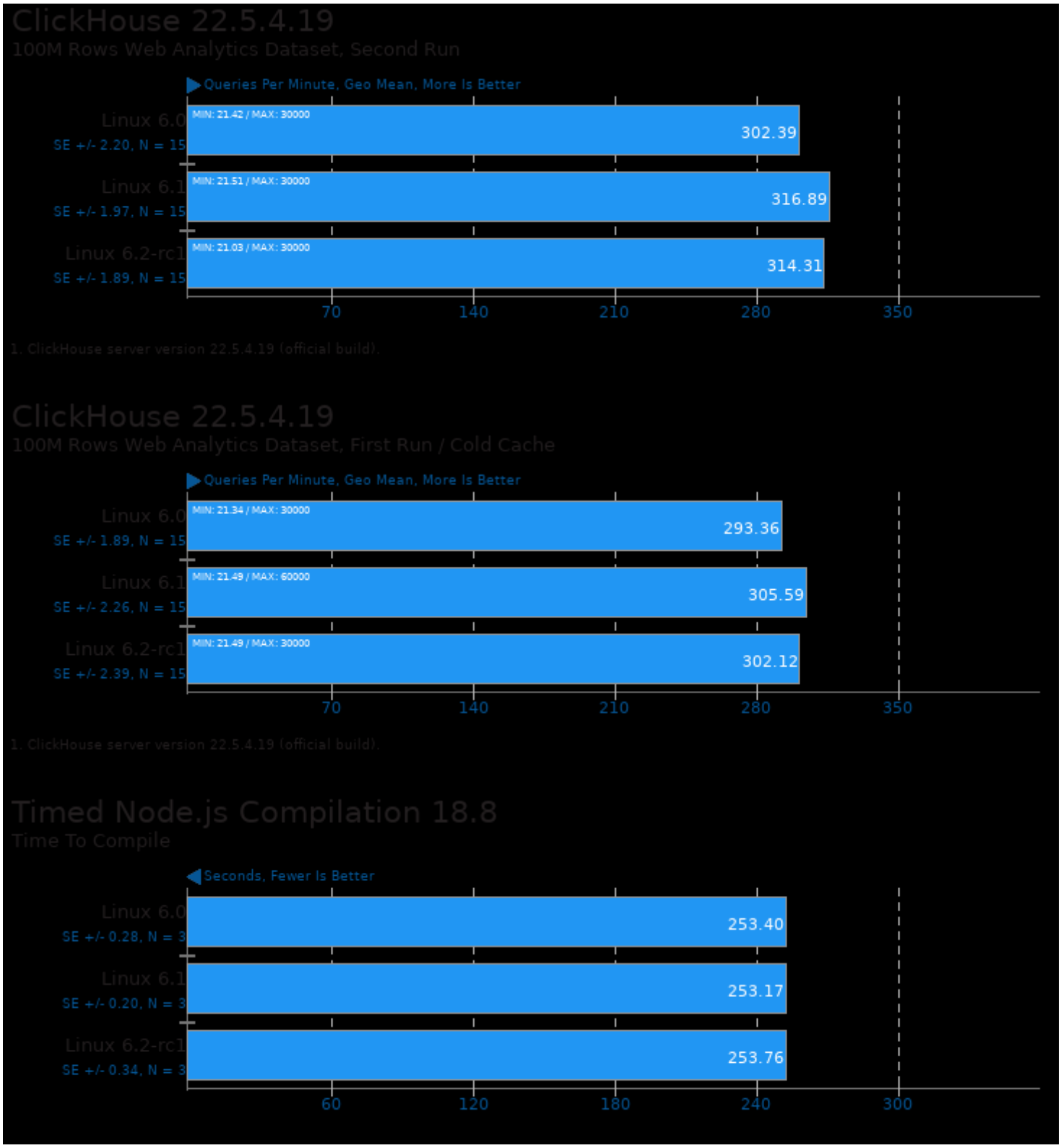
Normalized	99.41%	98.94%	100%
Standard Deviation	0.4%	1.5%	0.4%
SVT-AV1 - Preset 8 - Bosphorus 4K (FPS)	**67.404**	71.755	**71.943**
Normalized	93.69%	99.74%	100%
Standard Deviation	1.5%	2%	0.9%
GIMP - rotate (sec)	**9.522**	9.125	**8.996**
Normalized	94.48%	98.59%	100%
Standard Deviation	0.4%	0.9%	0.7%
Selenium - W.i - Google Chrome (ms)	**17.67**	17.64	**17.61**
Normalized	99.66%	99.83%	100%
Standard Deviation	0.1%	0.7%	0.2%
ASTC Encoder - Medium (MT/s)	**142.0532**	143.1228	**143.3557**
Normalized	99.09%	99.84%	100%
Standard Deviation	0.1%	0.2%	0.2%
libavif avifenc - 6, Lossless (sec)	5.277	**5.239**	**5.288**
Normalized	99.28%	100%	99.07%
Standard Deviation	0.7%	0.3%	1.1%
WebP Image Encode - Q.1.H.C (MP/s)	**5.41**	**5.42**	**5.42**
Normalized	99.82%	100%	100%
Standard Deviation	1.2%	0.6%	0.5%
Timed CPython Compilation - Default (sec)	**12.182**	**11.944**	12.048
Normalized	98.05%	100%	99.14%
SVT-AV1 - Preset 12 - Bosphorus 4K (FPS)	**206.191**	**214.916**	213.719
Normalized	95.94%	100%	99.44%
Standard Deviation	0.2%	0.3%	1.6%
SVT-AV1 - Preset 13 - Bosphorus 4K (FPS)	**200.289**	**214.533**	214.531
Normalized	93.36%	100%	100%
Standard Deviation	1.4%	2.2%	0.6%
Darktable - Masskrug - CPU-only (sec)	**2.662**	**2.667**	**2.667**
Normalized	100%	99.81%	99.81%
Standard Deviation	0.3%	0.7%	0.1%
libavif avifenc - 10, Lossless (sec)	**3.145**	3.203	**3.240**
Normalized	100%	98.19%	97.07%
Standard Deviation	0.6%	1.5%	1.8%
LAMMPS Molecular Dynamics Simulator - Rhodopsin Protein (ns/day)	16.774	**16.600**	**16.926**
Normalized	99.1%	98.07%	100%
Standard Deviation	2.4%	0.7%	1.9%
libavif avifenc - 6 (sec)	**3.098**	3.059	**3.045**
Normalized	98.29%	99.54%	100%
Standard Deviation	1.7%	0.9%	0.8%
Darktable - Server Room - CPU-only (sec)	**2.332**	**2.309**	2.312
Normalized	99.01%	100%	99.87%
Standard Deviation	0.3%	0.4%	0.2%
Darktable - Boat - CPU-only (sec)	**2.349**	**2.349**	**2.341**
Normalized	99.66%	99.66%	100%
Standard Deviation	1.3%	0.5%	0.5%
WebP Image Encode - Quality 100 (MP/s)	**17.18**	**17.36**	17.24
Normalized	98.96%	100%	99.31%
Standard Deviation	0.3%	0.9%	0.1%
Darktable - Server Rack - CPU-only (sec)	**0.185**	**0.173**	**0.173**
Normalized	93.51%	100%	100%
Standard Deviation	9.3%	0%	0.3%

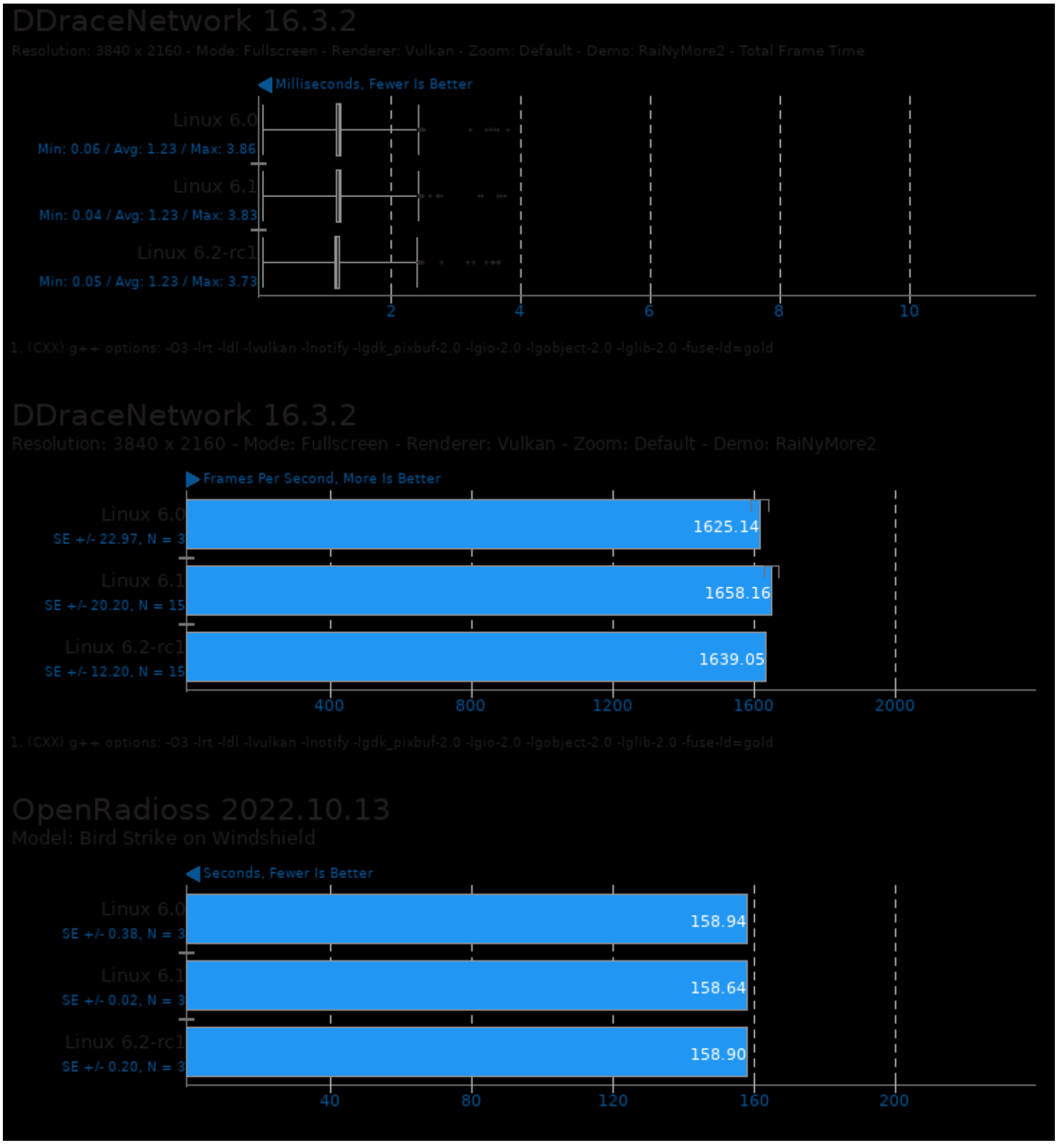
Linux 6.2 Kernel Benchmark Ryzen 9 7950X



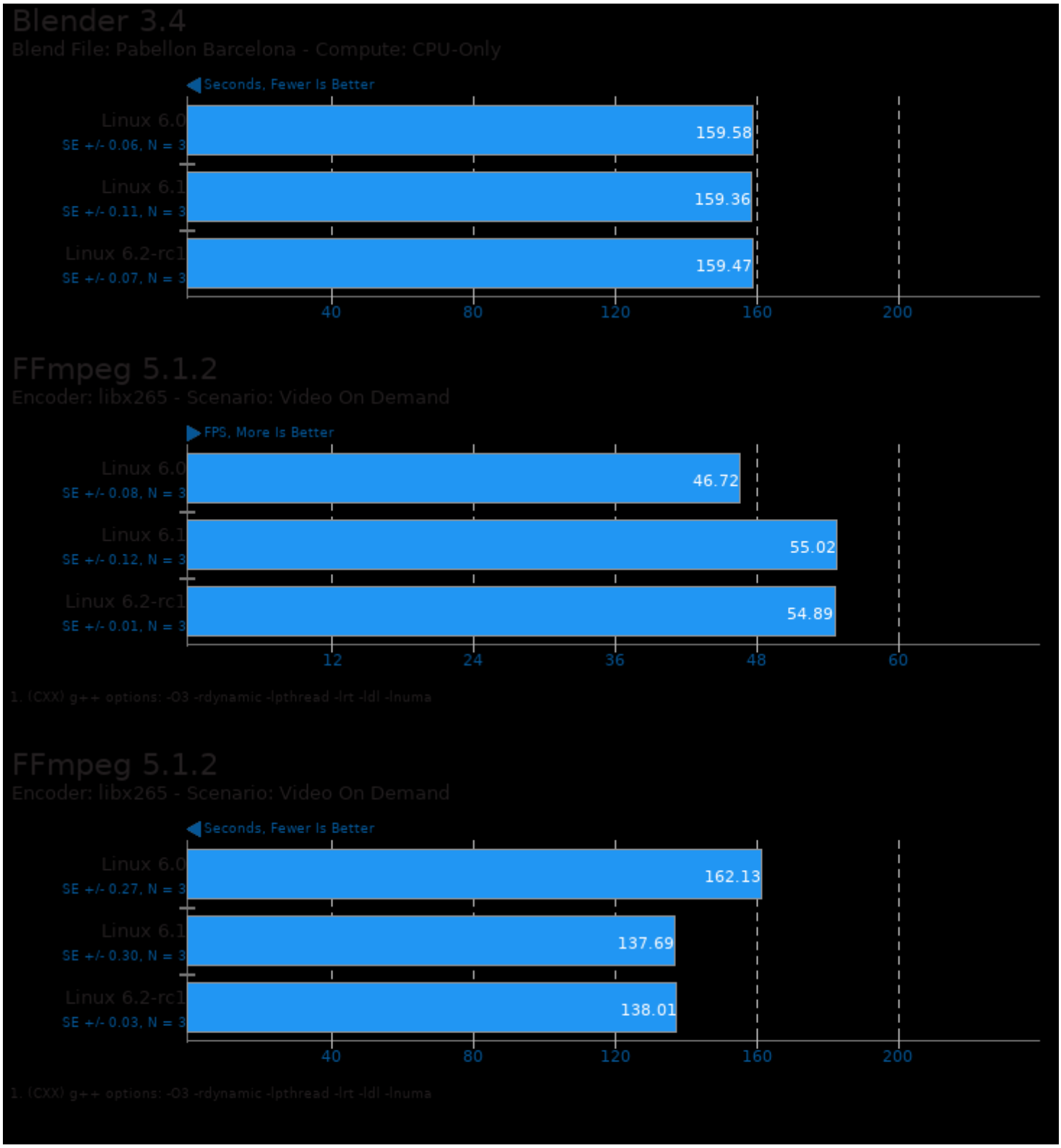
Linux 6.2 Kernel Benchmark Ryzen 9 7950X



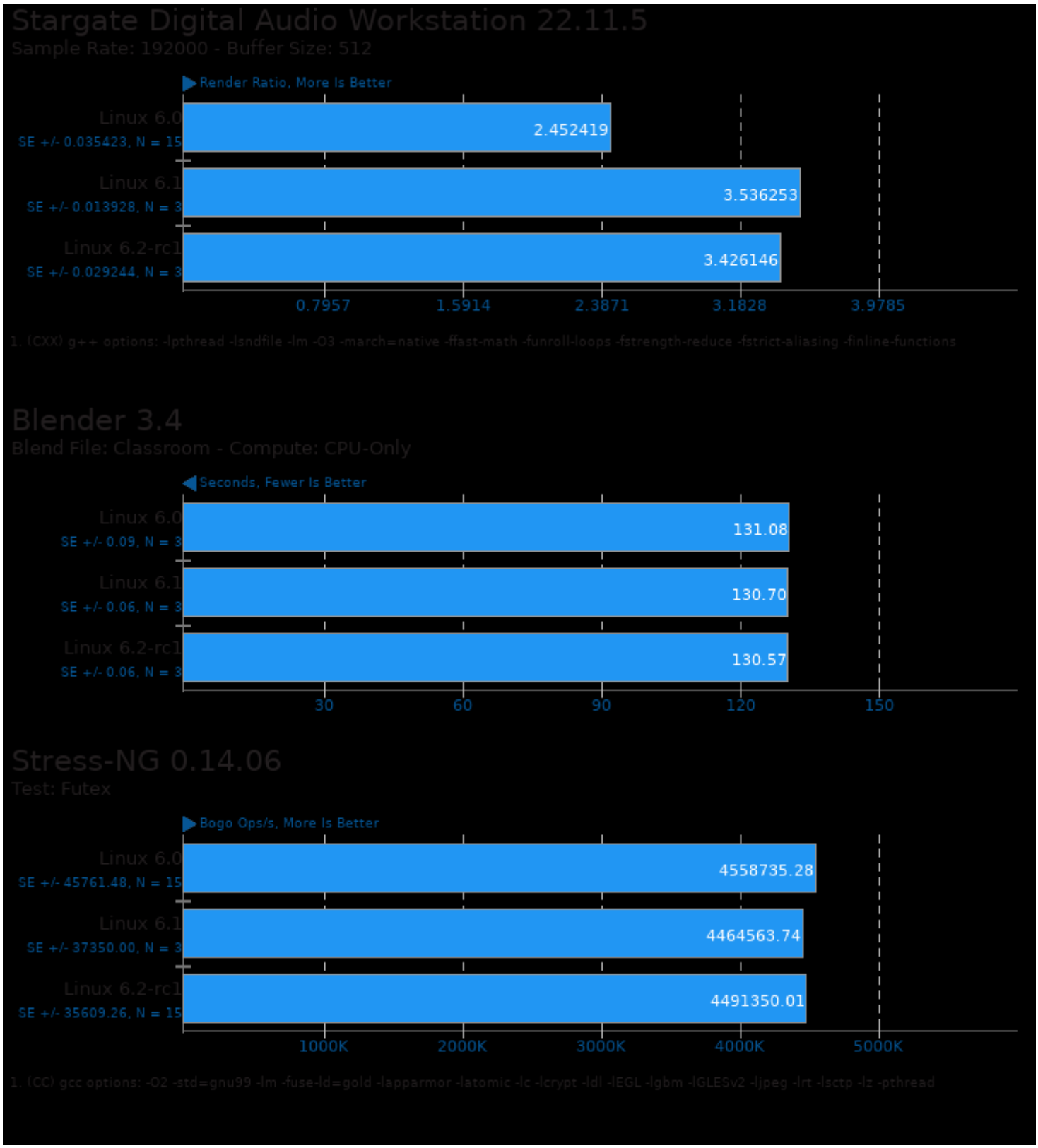

ClickHouse 22.5.4.19
100M Rows Web Analytics Dataset, Second Run
Queries Per Minute, Geo Mean, More Is Better
Linux 6.0
SE +/- 2.20, N = 15
MIN: 21.42 / MAX: 30000
302.39
Linux 6.1
SE +/- 1.97, N = 15
MIN: 21.51 / MAX: 30000
316.89
Linux 6.2-rc1
SE +/- 1.89, N = 15
MIN: 21.03 / MAX: 30000
314.31
70
140
210
280
350
1. ClickHouse server version 22.5.4.19 (official build).
ClickHouse 22.5.4.19
100M Rows Web Analytics Dataset, First Run / Cold Cache
Queries Per Minute, Geo Mean, More Is Better
Linux 6.0
SE +/- 1.89, N = 15
MIN: 21.34 / MAX: 30000
293.36
Linux 6.1
SE +/- 2.26, N = 15
MIN: 21.49 / MAX: 60000
305.59
Linux 6.2-rc1
SE +/- 2.39, N = 15
MIN: 21.49 / MAX: 30000
302.12
70
140
210
280
350
1. ClickHouse server version 22.5.4.19 (official build).
Timed Node.js Compilation 18.8
Time To Compile
Seconds, Fewer Is Better
Linux 6.0
SE +/- 0.28, N = 3
253.40
Linux 6.1
SE +/- 0.20, N = 3
253.17
Linux 6.2-rc1
SE +/- 0.34, N = 3
253.76
60
120
180
240
300


DDraceNetwork 16.3.2
Resolution: 3840 x 2160 - Mode: Fullscreen - Renderer: Vulkan - Zoom: Default - Demo: RaiNyMore2 - Total Frame Time
Milliseconds, Fewer Is Better
Linux 6.0
Min: 0.06 / Avg: 1.23 / Max: 3.86
Linux 6.1
Min: 0.04 / Avg: 1.23 / Max: 3.83
Linux 6.2-rc1
Min: 0.05 / Avg: 1.23 / Max: 3.73
2
4
6
8
10
1. (CXX) g++ options: -O3 -lrt -ldl -lvulkan -lnotify -lgdk_pixbuf-2.0 -lgio-2.0 -lgobject-2.0 -lglib-2.0 -fuse-ld=gold
DDraceNetwork 16.3.2
Resolution: 3840 x 2160 - Mode: Fullscreen - Renderer: Vulkan - Zoom: Default - Demo: RaiNyMore2
Frames Per Second, More Is Better
Linux 6.0
SE +/- 22.97, N = 3
1625.14
Linux 6.1
SE +/- 20.20, N = 15
1658.16
Linux 6.2-rc1
SE +/- 12.20, N = 15
1639.05
400
800
1200
1600
2000
1. (CXX) g++ options: -O3 -lrt -ldl -lvulkan -lnotify -lgdk_pixbuf-2.0 -lgio-2.0 -lgobject-2.0 -lglib-2.0 -fuse-ld=gold
OpenRadioss 2022.10.13
Model: Bird Strike on Windshield
Seconds, Fewer Is Better
Linux 6.0
SE +/- 0.38, N = 3
158.94
Linux 6.1
SE +/- 0.02, N = 3
158.64
Linux 6.2-rc1
SE +/- 0.20, N = 3
158.90
40
80
120
160
200

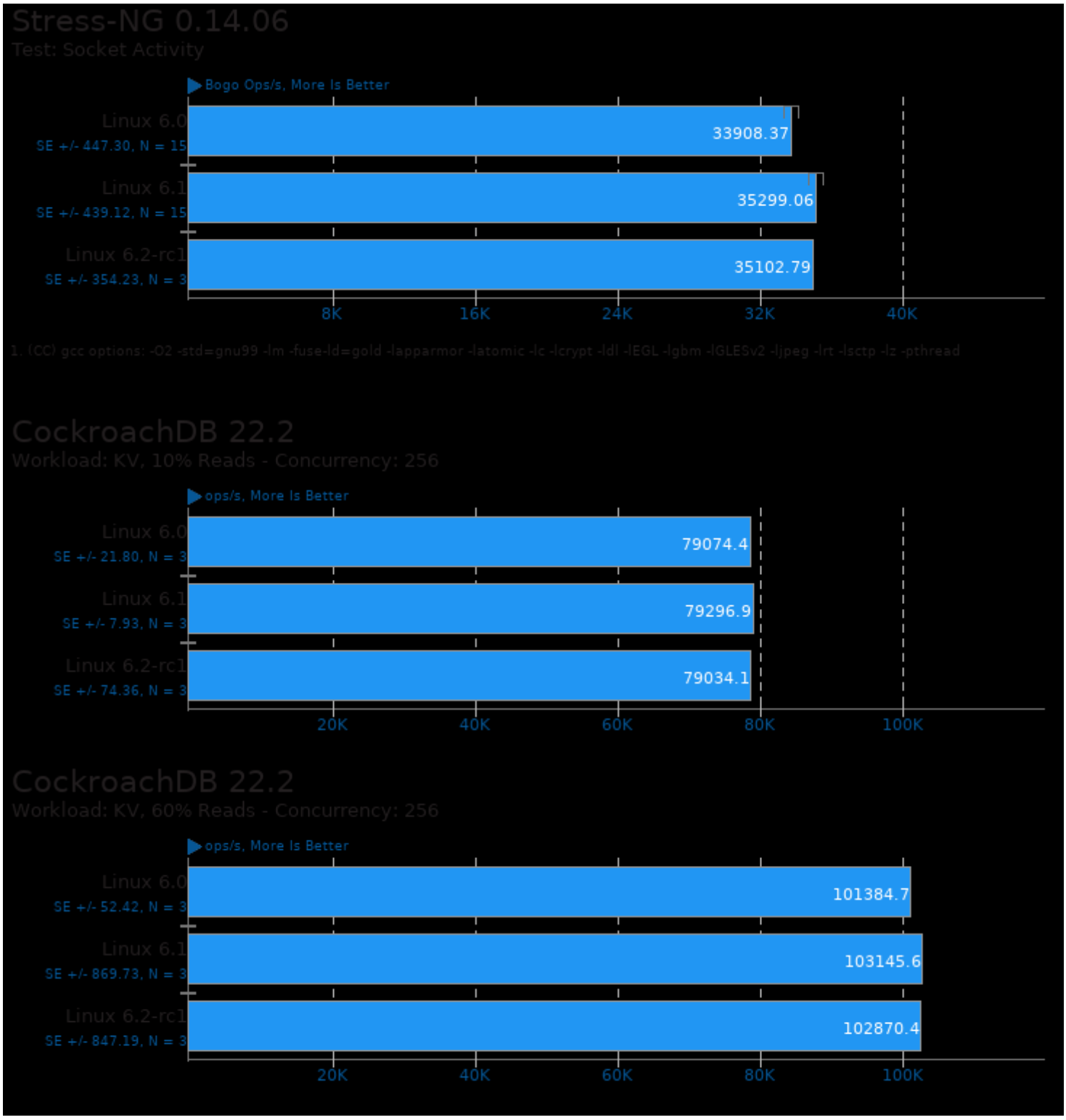
Linux 6.2 Kernel Benchmark Ryzen 9 7950X



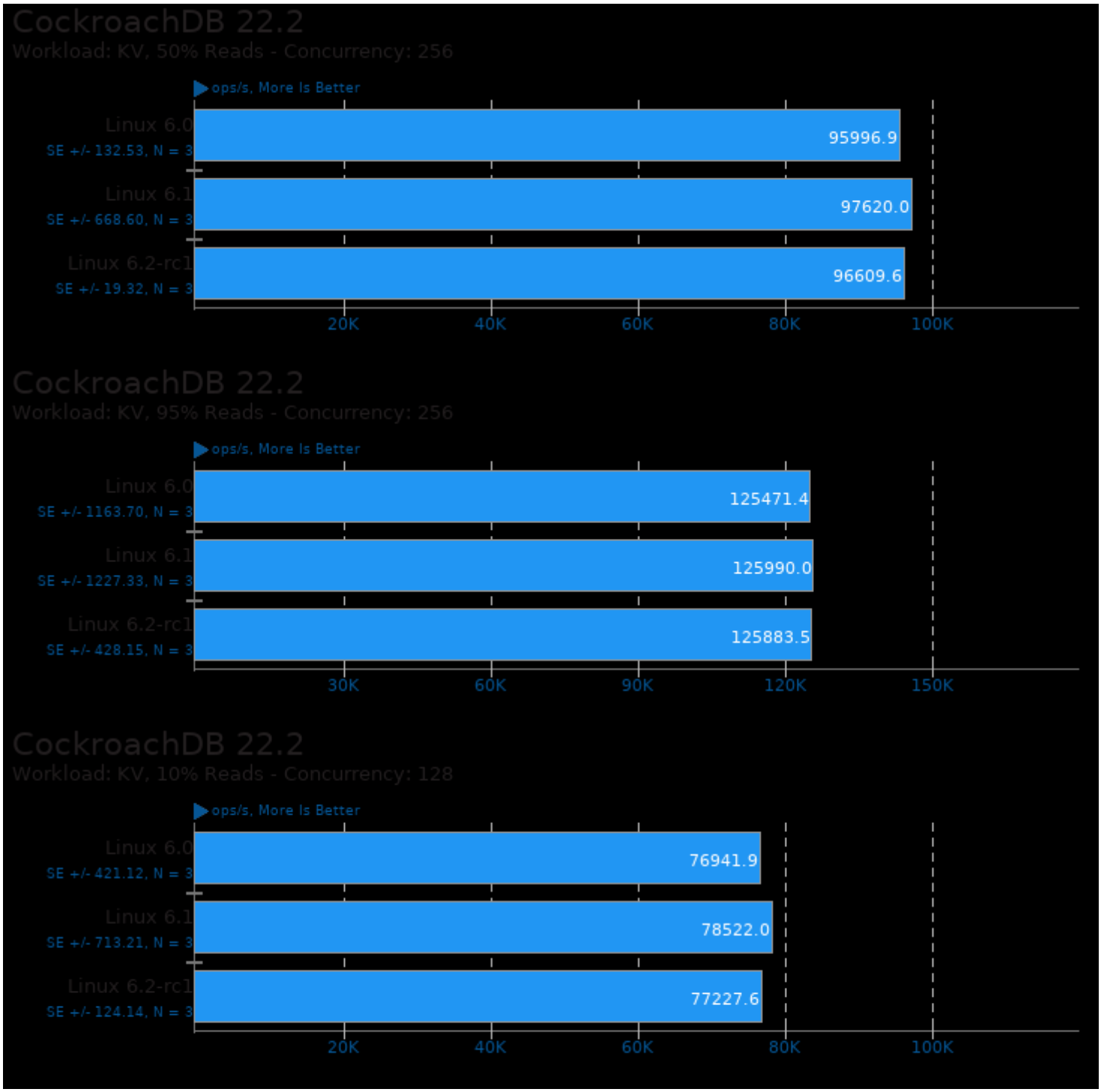
Linux 6.2 Kernel Benchmark Ryzen 9 7950X



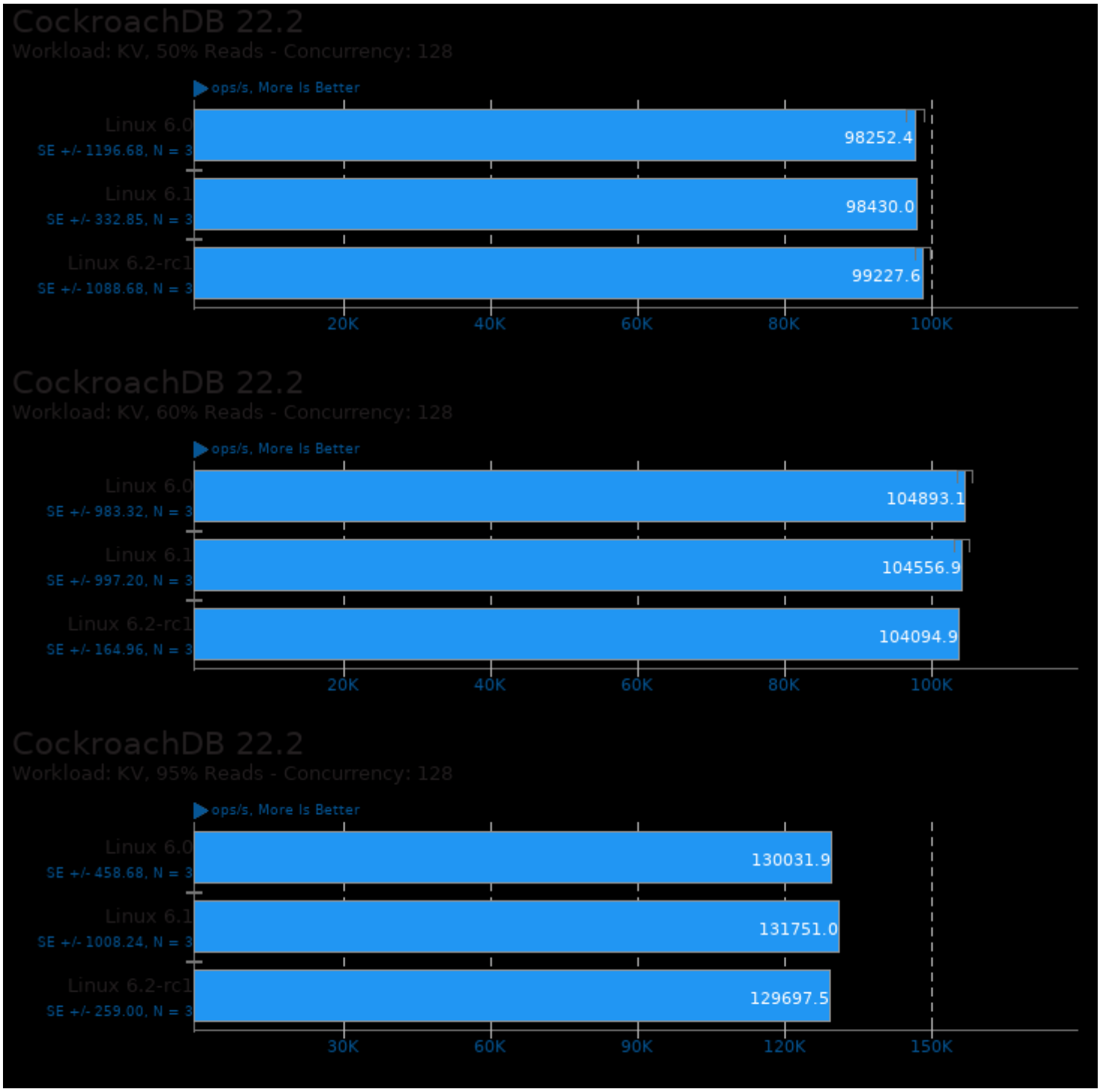
Linux 6.2 Kernel Benchmark Ryzen 9 7950X

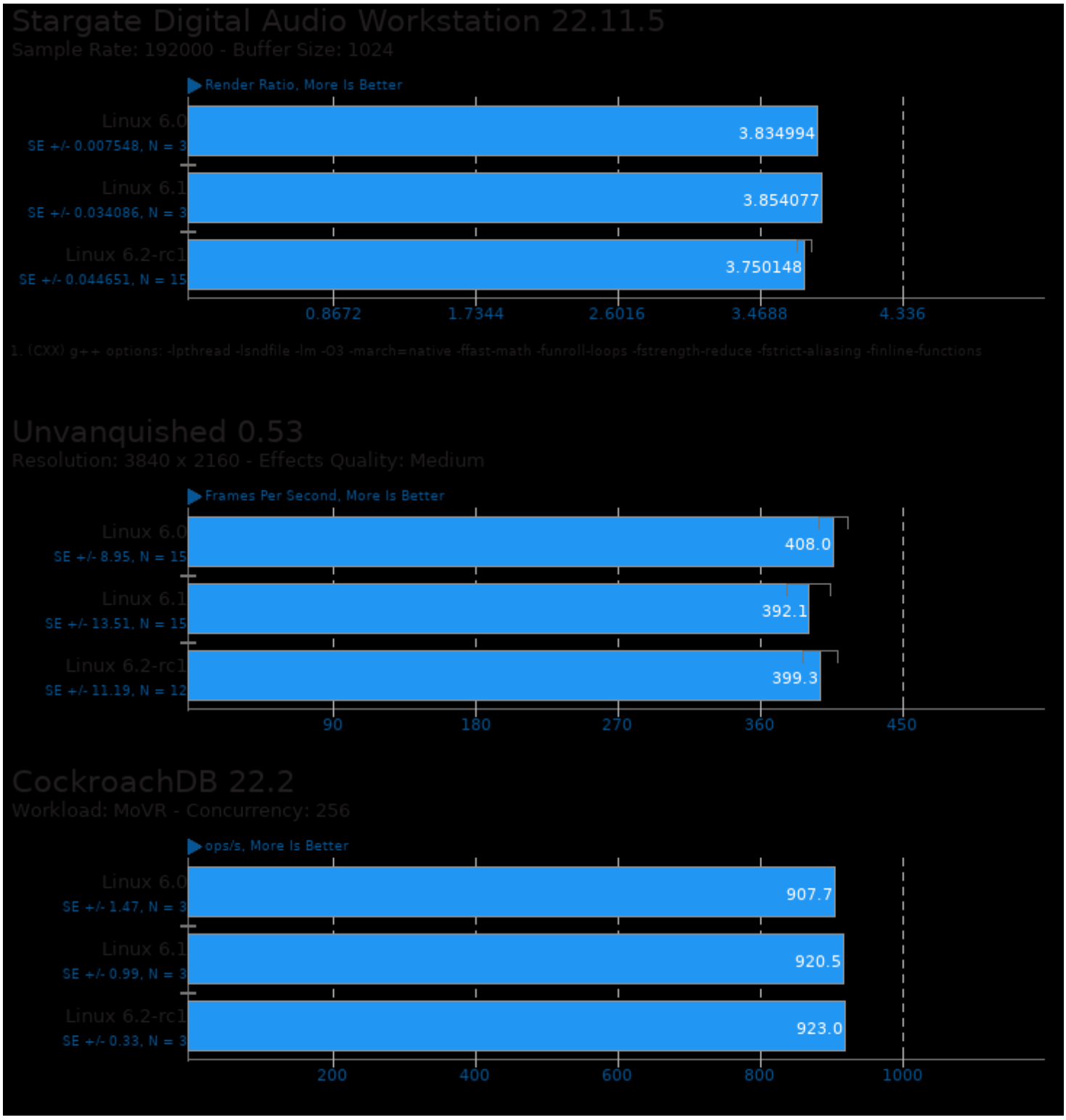


Linux 6.2 Kernel Benchmark Ryzen 9 7950X

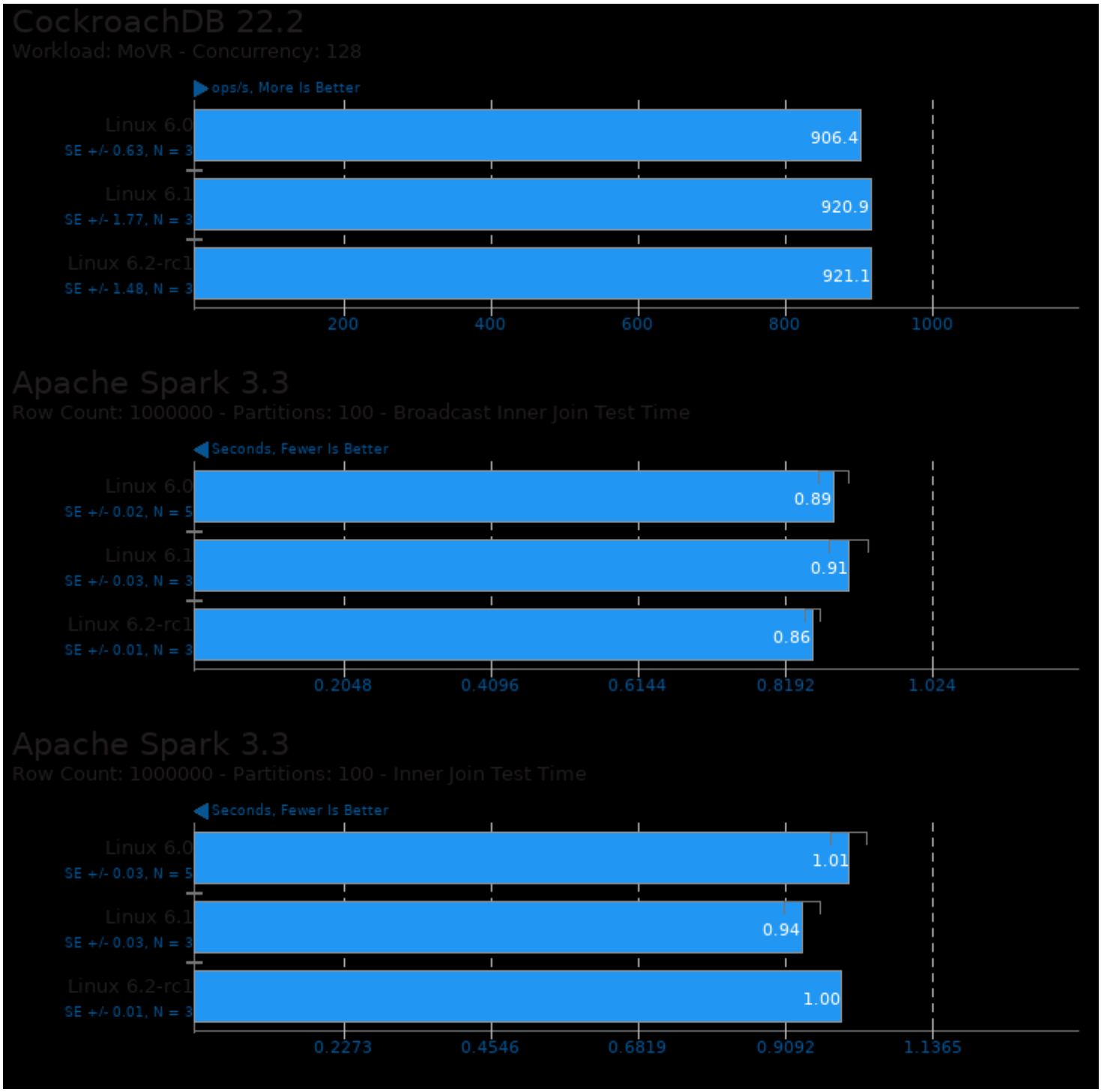


Linux 6.2 Kernel Benchmark Ryzen 9 7950X

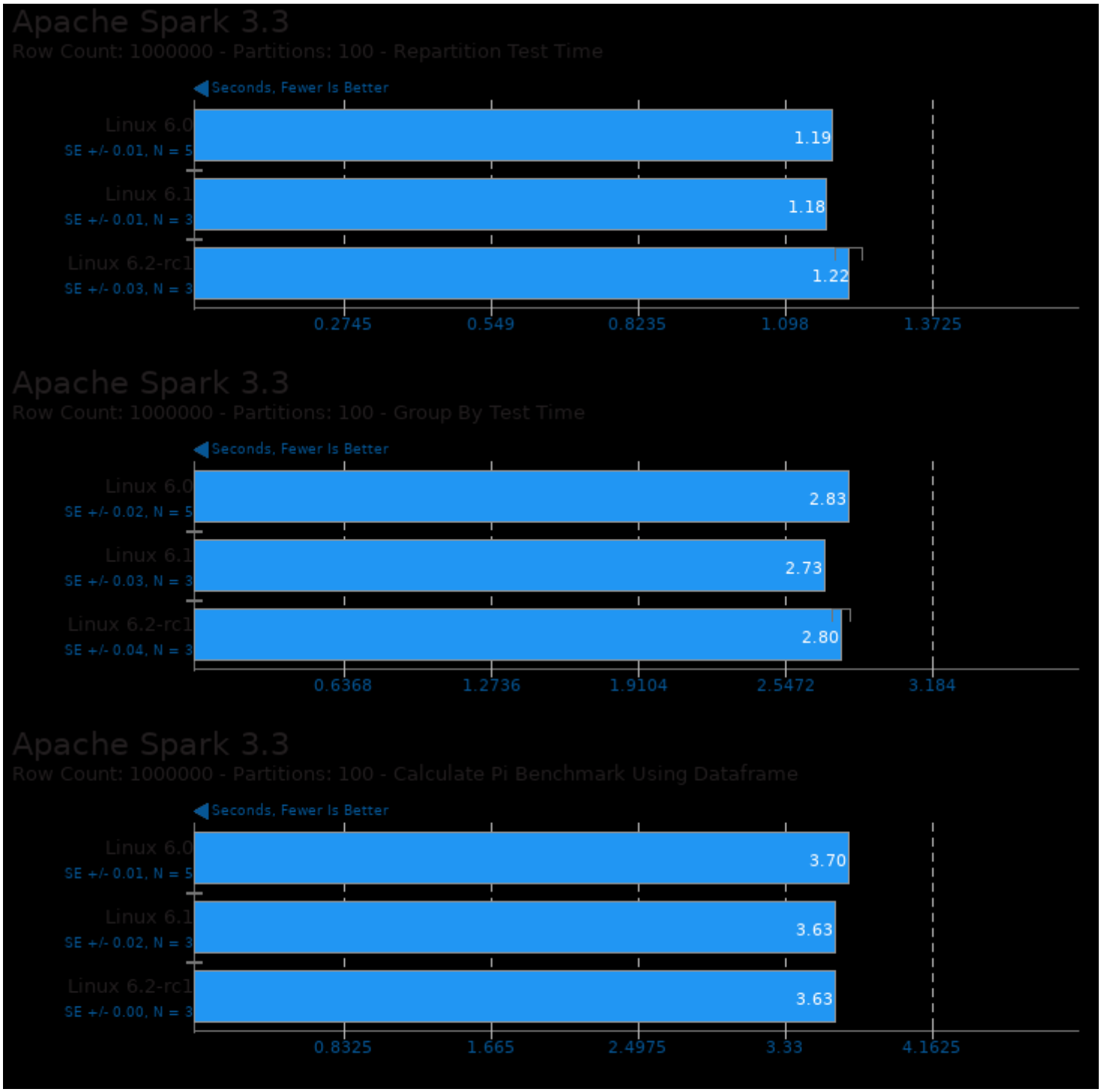



Stargate Digital Audio Workstation 22.11.5
Sample Rate: 192000 - Buffer Size: 1024
Render Ratio, More Is Better
Linux 6.0
SE +/- 0.007548, N = 3
3.834994
Linux 6.1
SE +/- 0.034086, N = 3
3.854077
Linux 6.2-rc1
SE +/- 0.044651, N = 15
3.750148
0.8672
1.7344
2.6016
3.4688
4.336
1. (CXX) g++ options: -lpthread -lsndfile -lm -O3 -march=native -ffast-math -funroll-loops -fstrength-reduce -fstrict-aliasing -finline-functions
Unvanquished 0.53
Resolution: 3840 x 2160 - Effects Quality: Medium
Frames Per Second, More Is Better
Linux 6.0
SE +/- 8.95, N = 15
408.0
Linux 6.1
SE +/- 13.51, N = 15
392.1
Linux 6.2-rc1
SE +/- 11.19, N = 12
399.3
90
180
270
360
450
CockroachDB 22.2
Workload: MoVR - Concurrency: 256
ops/s, More Is Better
Linux 6.0
SE +/- 1.47, N = 3
907.7
Linux 6.1
SE +/- 0.99, N = 3
920.5
Linux 6.2-rc1
SE +/- 0.33, N = 3
923.0
200
400
600
800
1000

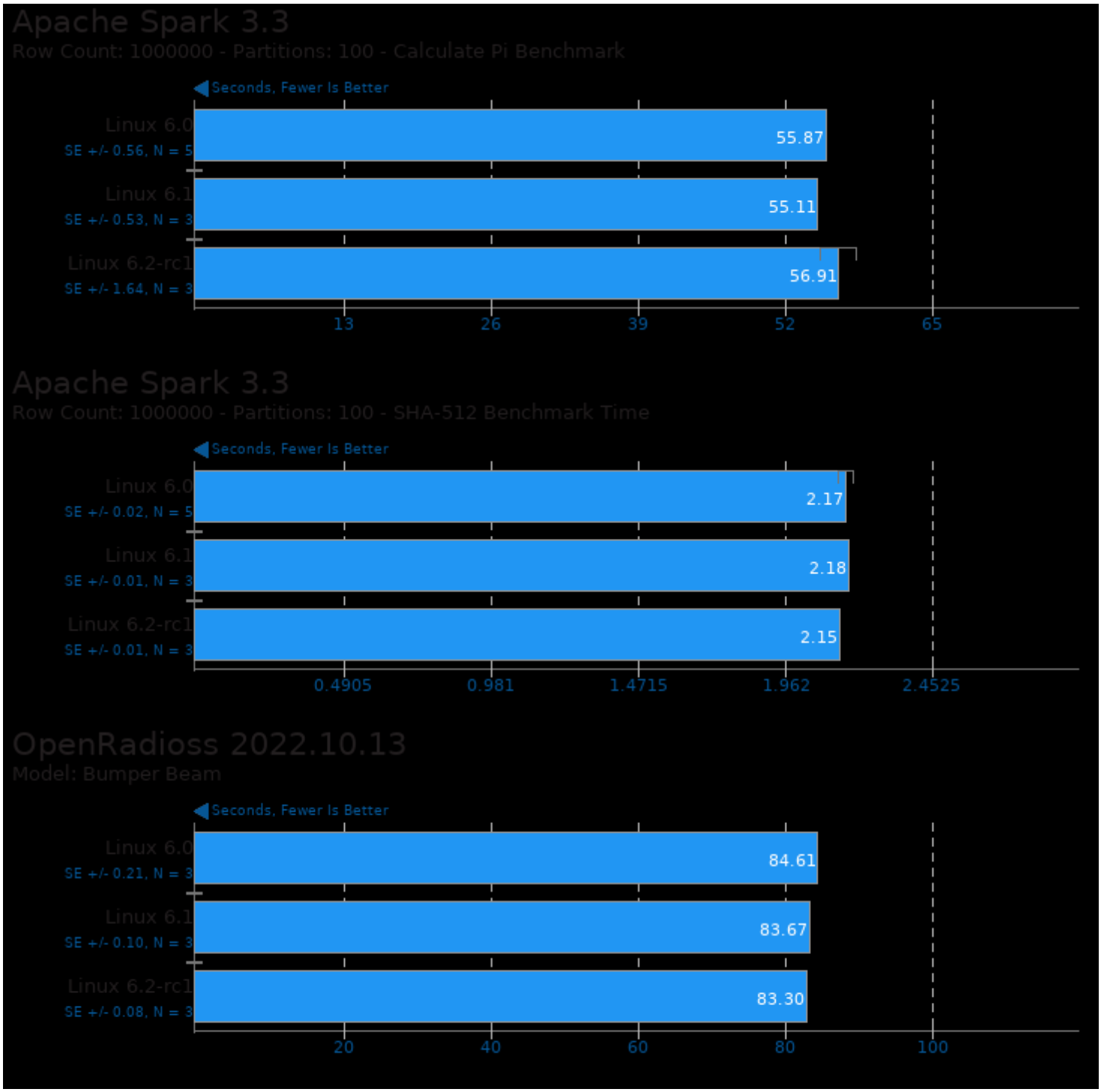
Linux 6.2 Kernel Benchmark Ryzen 9 7950X



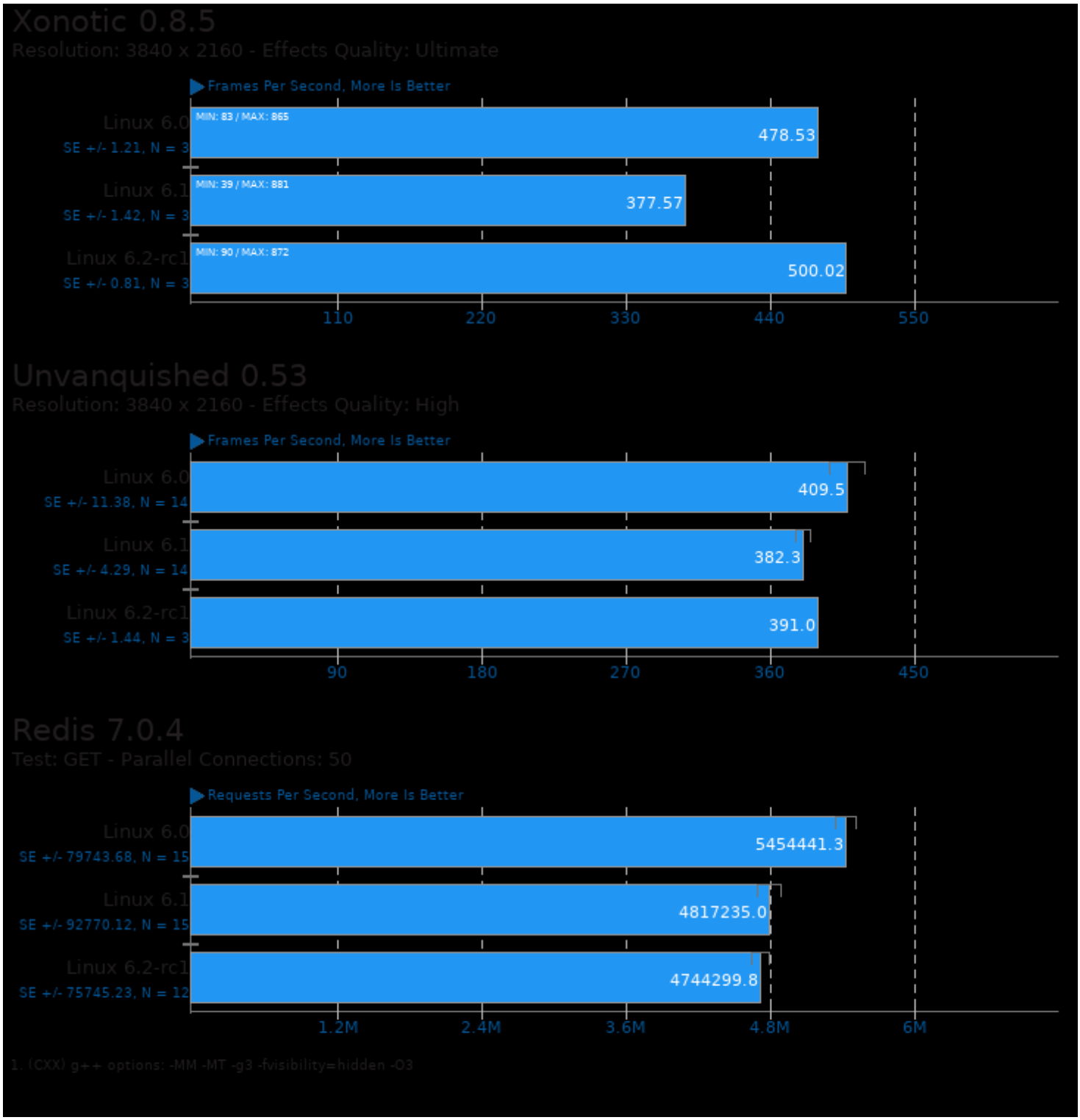
Linux 6.2 Kernel Benchmark Ryzen 9 7950X



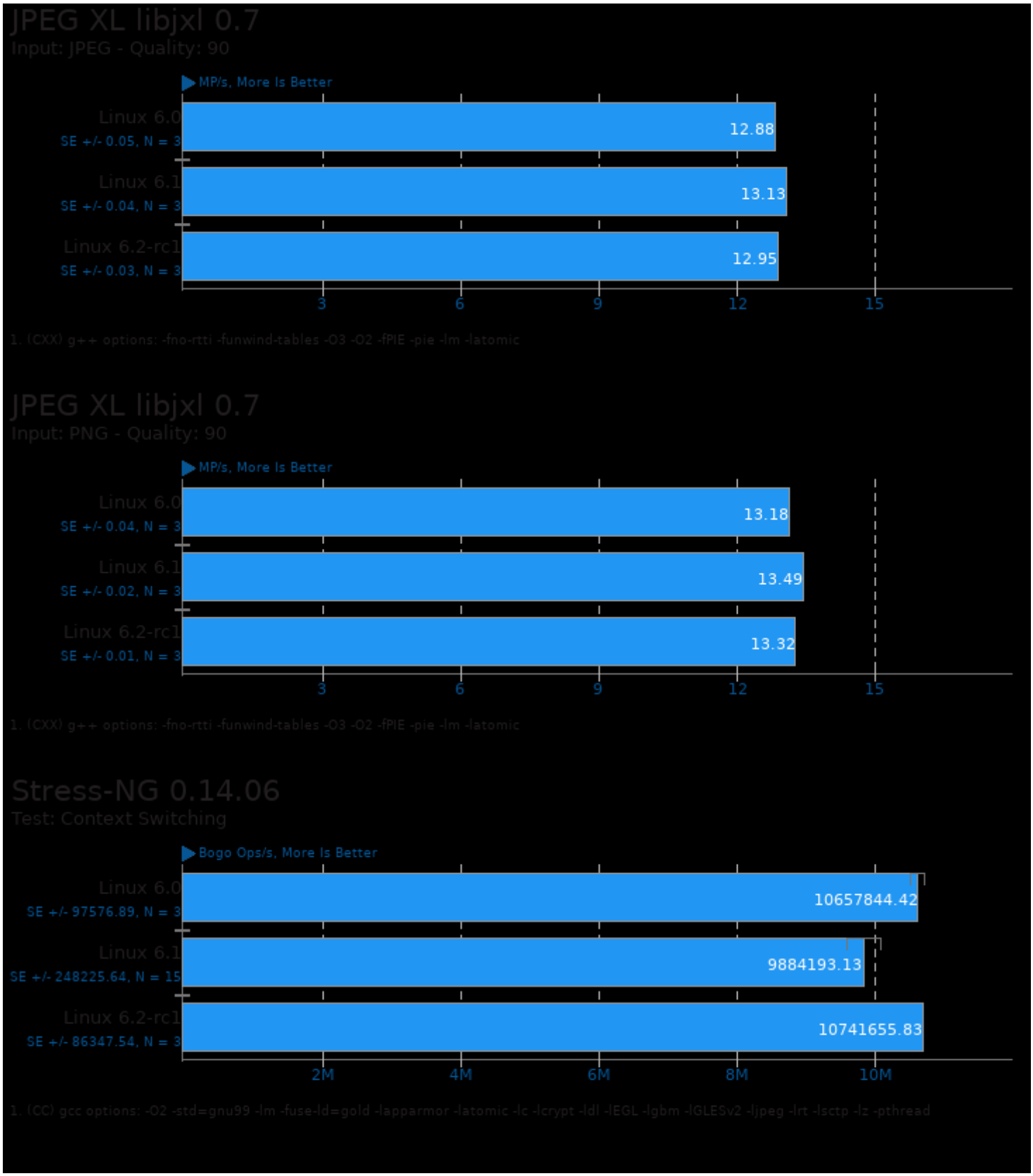
Linux 6.2 Kernel Benchmark Ryzen 9 7950X



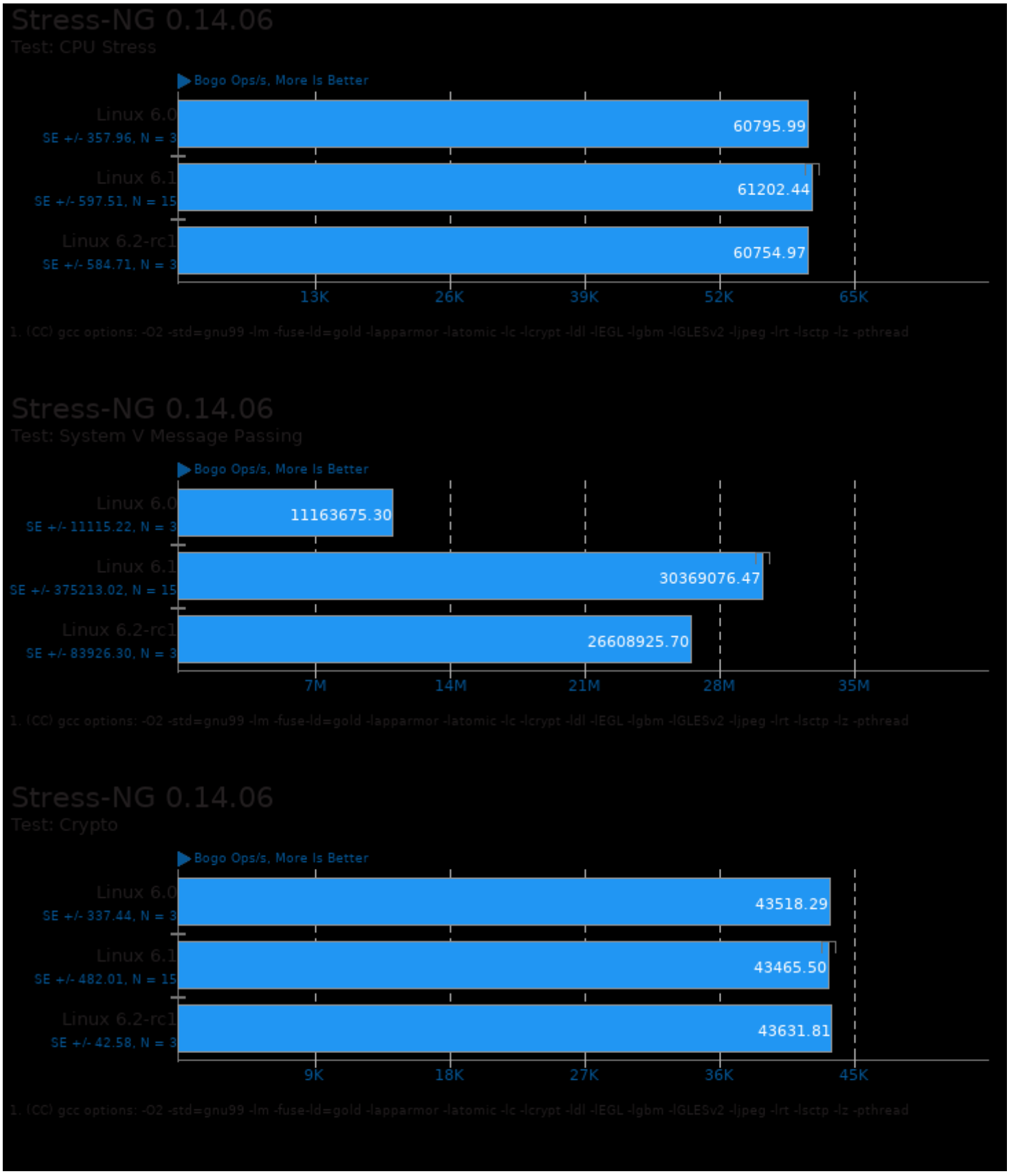
Linux 6.2 Kernel Benchmark Ryzen 9 7950X



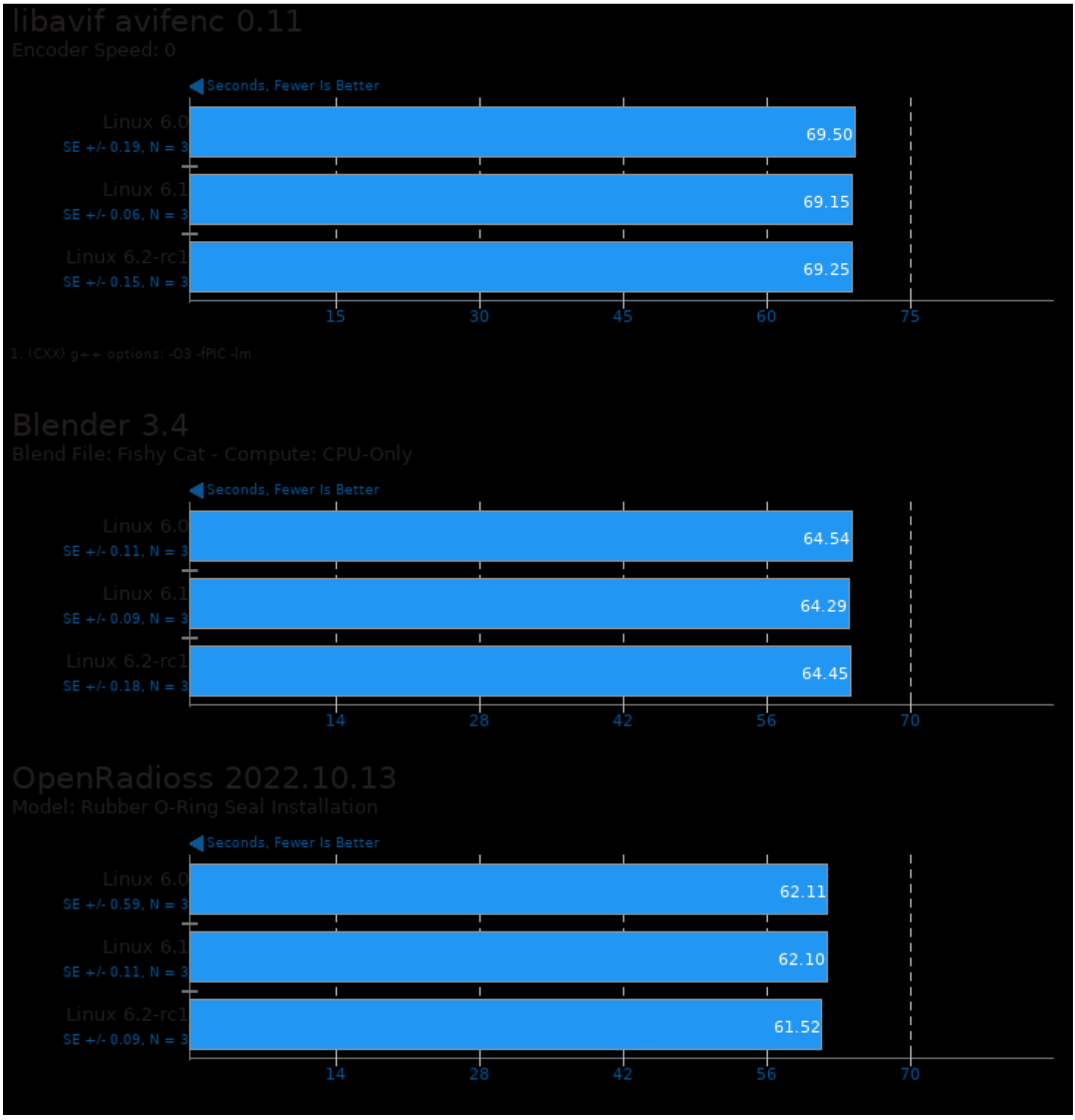
Linux 6.2 Kernel Benchmark Ryzen 9 7950X

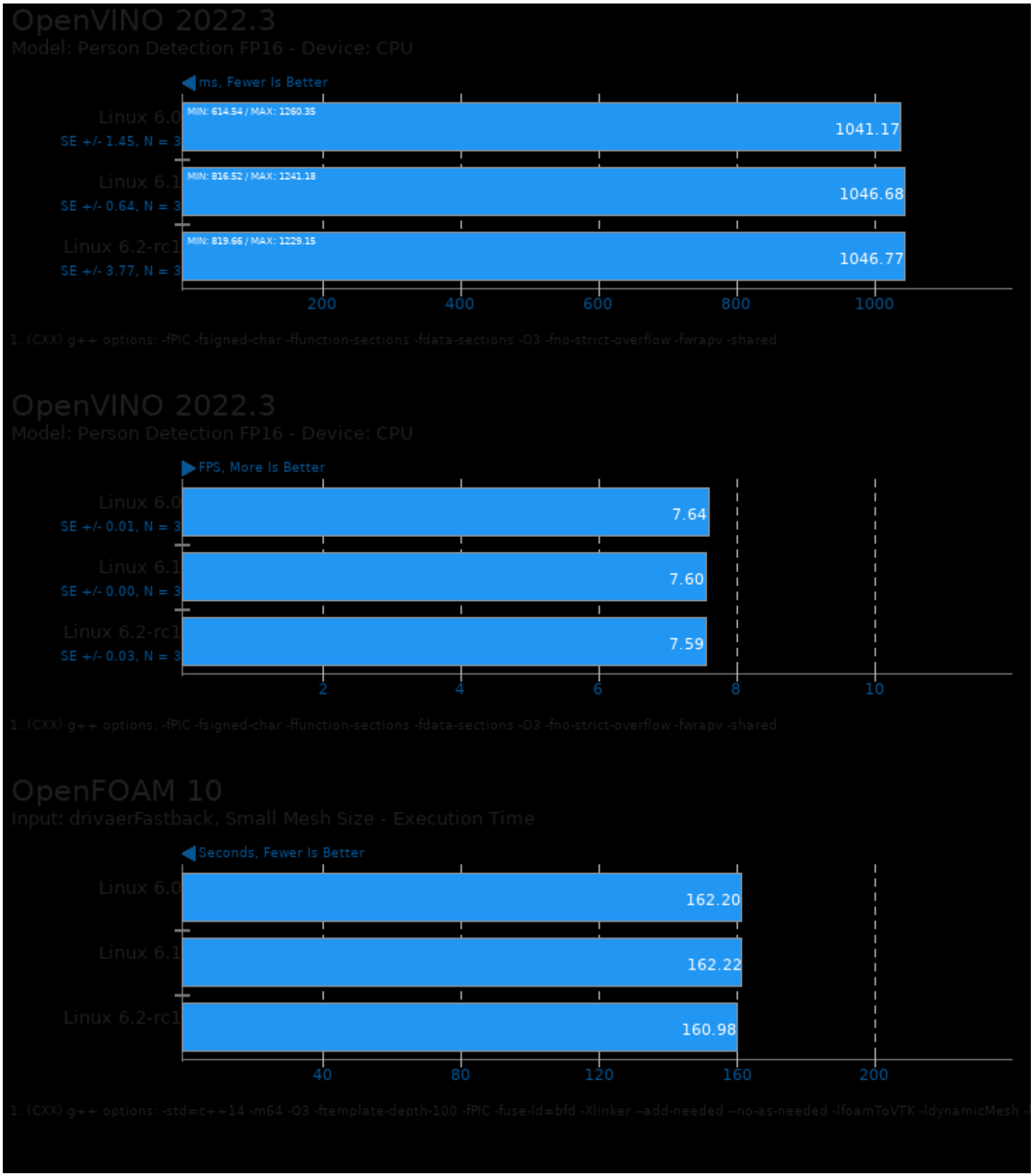


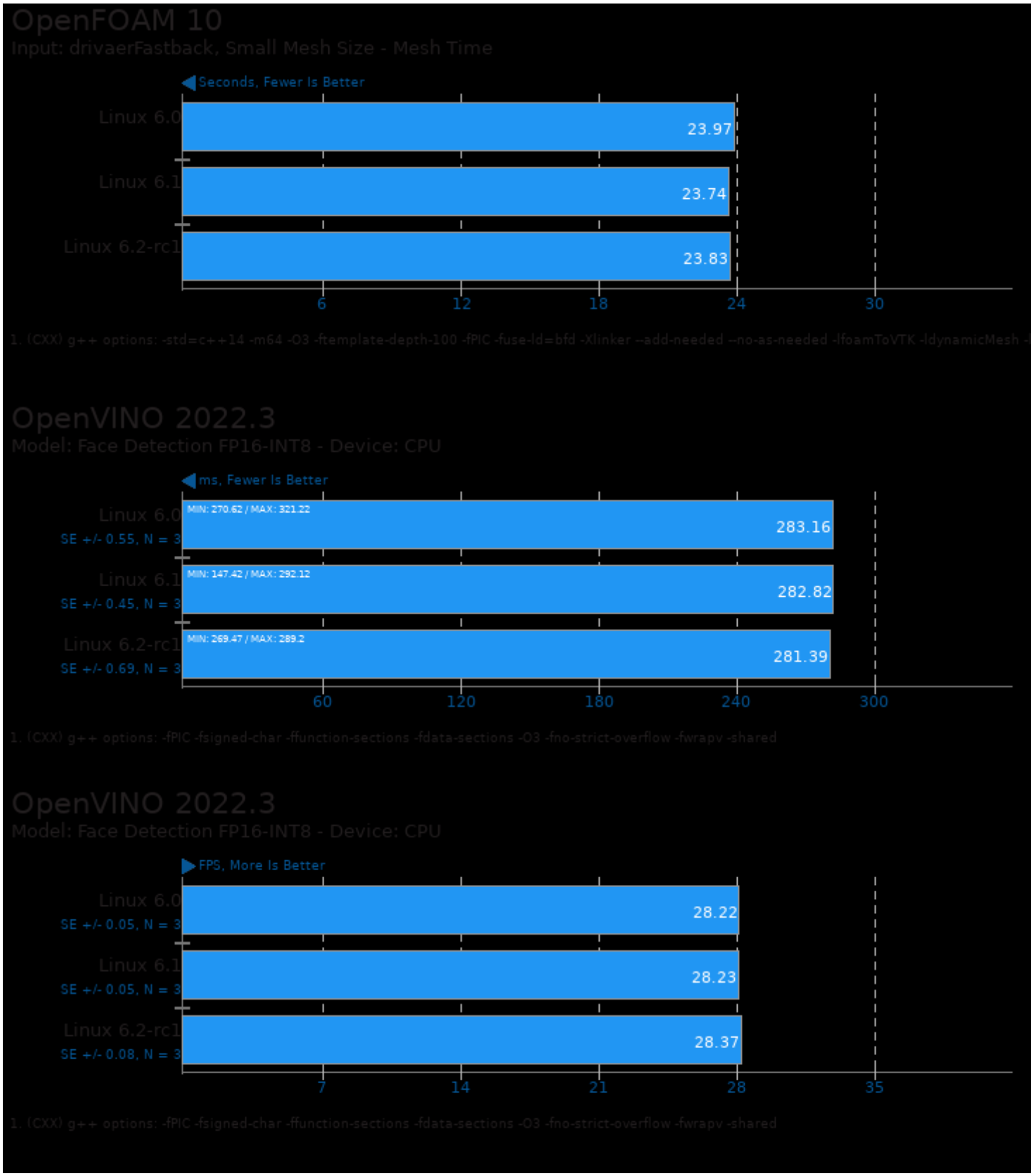
Linux 6.2 Kernel Benchmark Ryzen 9 7950X

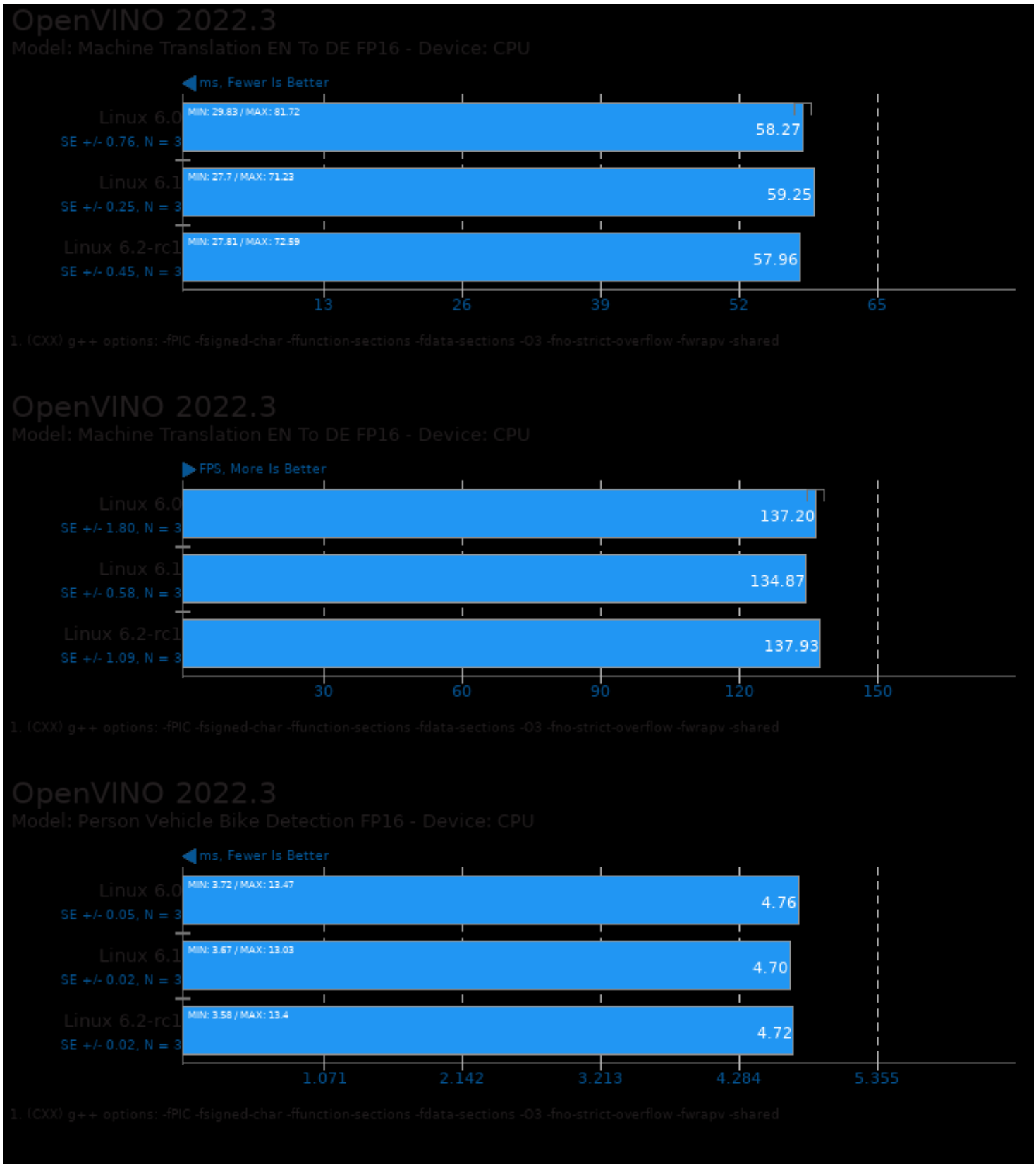


Linux 6.2 Kernel Benchmark Ryzen 9 7950X




OpenVINO 2022.3
Model: Person Detection FP16 - Device: CPU
ms, Fewer Is Better
Linux 6.0
SE +/- 1.45, N = 3
MIN: 614.54 / MAX: 1260.35
1041.17
Linux 6.1
SE +/- 0.64, N = 3
MIN: 816.52 / MAX: 1241.18
1046.68
Linux 6.2-rc1
SE +/- 3.77, N = 3
MIN: 819.66 / MAX: 1229.15
1046.77
200
400
600
800
1000
1. (CXX) g++ options: -fPIC -fsigned-char -ffunction-sections -fdata-sections -O3 -fno-strict-overflow -fwrapv -shared
OpenVINO 2022.3
Model: Person Detection FP16 - Device: CPU
FPS, More Is Better
Linux 6.0
SE +/- 0.01, N = 3
7.64
Linux 6.1
SE +/- 0.00, N = 3
7.60
Linux 6.2-rc1
SE +/- 0.03, N = 3
7.59
2
4
6
8
10
1. (CXX) g++ options: -fPIC -fsigned-char -ffunction-sections -fdata-sections -O3 -fno-strict-overflow -fwrapv -shared
OpenFOAM 10
Input: drivaerFastback, Small Mesh Size - Execution Time
Seconds, Fewer Is Better
Linux 6.0
162.20
Linux 6.1
162.22
Linux 6.2-rc1
160.98
40
80
120
160
200
1. (CXX) g++ options: -std=c++14 -m64 -O3 -ftemplate-depth-100 -fPIC -fuse-ld=bfd -Xlinker --add-needed --no-as-needed -lfoamToVTK -ldynamicMesh

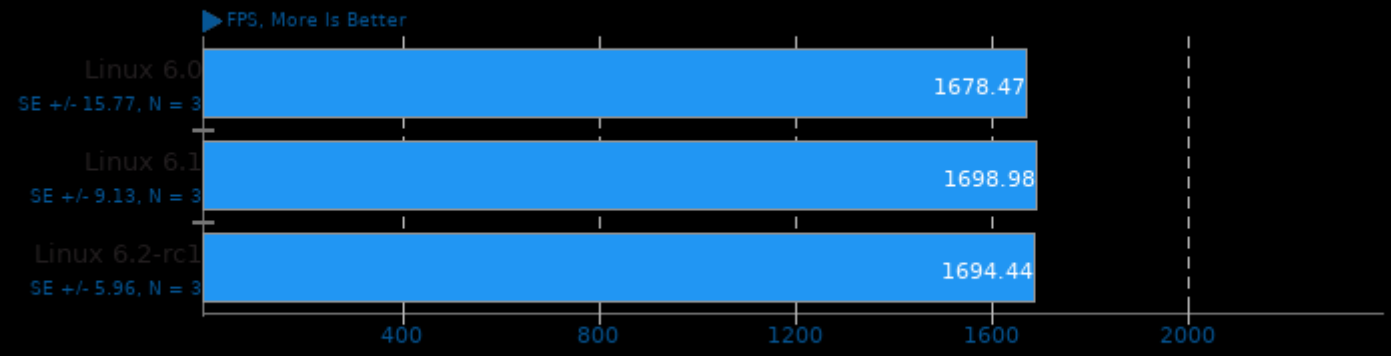

OpenFOAM 10
Input: drivaerFastback, Small Mesh Size - Mesh Time
Seconds, Fewer Is Better
Linux 6.0
23.97
Linux 6.1
23.74
Linux 6.2-rc1
23.83
6
12
18
24
30
1. (CXX) g++ options: -std=c++14 -m64 -O3 -ftemplate-depth-100 -fPIC -fuse-ld=bfd -Xlinker --add-needed --no-as-needed -lfoamToVTK -ldynamicMesh
OpenVINO 2022.3
Model: Face Detection FP16-INT8 - Device: CPU
ms, Fewer Is Better
Linux 6.0
SE +/- 0.55, N = 3
MIN: 270.62 / MAX: 321.22
283.16
Linux 6.1
SE +/- 0.45, N = 3
MIN: 147.42 / MAX: 292.12
282.82
Linux 6.2-rc1
SE +/- 0.69, N = 3
MIN: 269.47 / MAX: 289.2
281.39
60
120
180
240
300
1. (CXX) g++ options: -fPIC -fsigned-char -ffunction-sections -fdata-sections -O3 -fno-strict-overflow -fwrapv -shared
OpenVINO 2022.3
Model: Face Detection FP16-INT8 - Device: CPU
FPS, More Is Better
Linux 6.0
SE +/- 0.05, N = 3
28.22
Linux 6.1
SE +/- 0.05, N = 3
28.23
Linux 6.2-rc1
SE +/- 0.08, N = 3
28.37
7
14
21
28
35
1. (CXX) g++ options: -fPIC -fsigned-char -ffunction-sections -fdata-sections -O3 -fno-strict-overflow -fwrapv -shared


OpenVINO 2022.3
Model: Machine Translation EN To DE FP16 - Device: CPU
ms, Fewer Is Better
Linux 6.0
SE +/- 0.76, N = 3
MIN: 29.83 / MAX: 81.72
58.27
Linux 6.1
SE +/- 0.25, N = 3
MIN: 27.7 / MAX: 71.23
59.25
Linux 6.2-rc1
SE +/- 0.45, N = 3
MIN: 27.81 / MAX: 72.59
57.96
13
26
39
52
65
1. (CXX) g++ options: -fPIC -fsigned-char -ffunction-sections -fdata-sections -O3 -fno-strict-overflow -fwrapv -shared
OpenVINO 2022.3
Model: Machine Translation EN To DE FP16 - Device: CPU
FPS, More Is Better
Linux 6.0
SE +/- 1.80, N = 3
137.20
Linux 6.1
SE +/- 0.58, N = 3
134.87
Linux 6.2-rc1
SE +/- 1.09, N = 3
137.93
30
60
90
120
150
1. (CXX) g++ options: -fPIC -fsigned-char -ffunction-sections -fdata-sections -O3 -fno-strict-overflow -fwrapv -shared
OpenVINO 2022.3
Model: Person Vehicle Bike Detection FP16 - Device: CPU
ms, Fewer Is Better
Linux 6.0
SE +/- 0.05, N = 3
MIN: 3.72 / MAX: 13.47
4.76
Linux 6.1
SE +/- 0.02, N = 3
MIN: 3.67 / MAX: 13.03
4.70
Linux 6.2-rc1
SE +/- 0.02, N = 3
MIN: 3.58 / MAX: 13.4
4.72
1.071
2.142
3.213
4.284
5.355
1. (CXX) g++ options: -fPIC -fsigned-char -ffunction-sections -fdata-sections -O3 -fno-strict-overflow -fwrapv -shared

Linux 6.2 Kernel Benchmark Ryzen 9 7950X

OpenVINO 2022.3

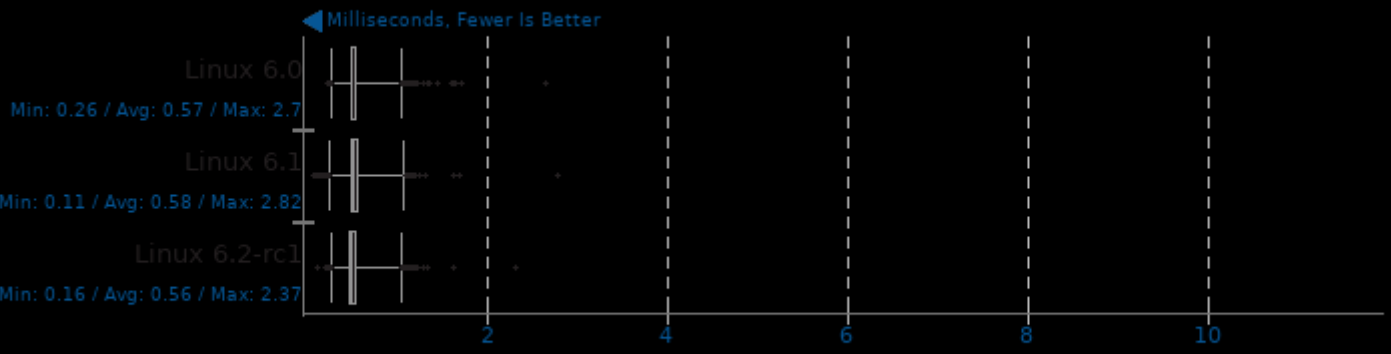
Model: Person Vehicle Bike Detection FP16 - Device: CPU



1. (CXX) g++ options: -fPIC -fsigned-char -ffunction-sections -fdata-sections -O3 -fno-strict-overflow -fwrapv -shared

DDraceNetwork 16.3.2

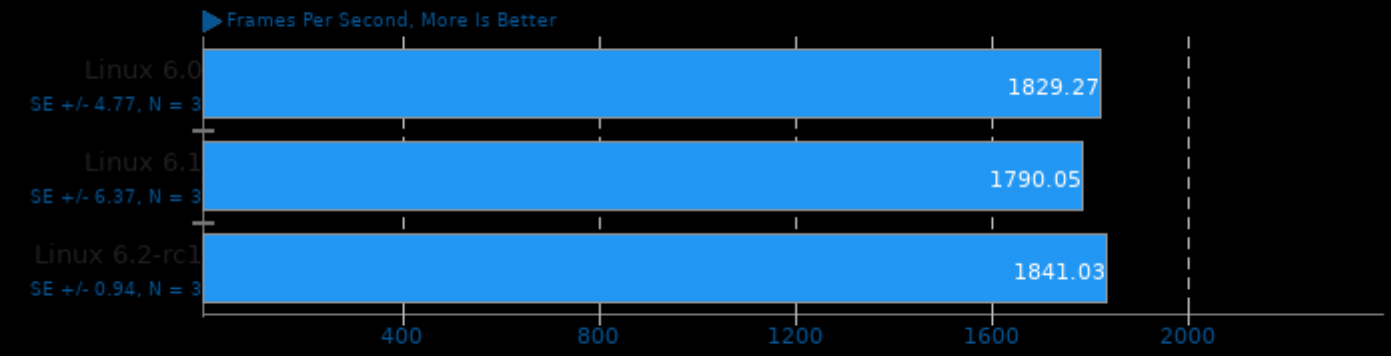
Resolution: 3840 x 2160 - Mode: Fullscreen - Renderer: Vulkan - Zoom: Default - Demo: Multeasymap - Total Frame Time



1. (CXX) g++ options: -O3 -lrt -ldl -lvulkan -lnotify -lgdk_pixbuf-2.0 -lgio-2.0 -lgobject-2.0 -lglib-2.0 -fuse-ld=gold

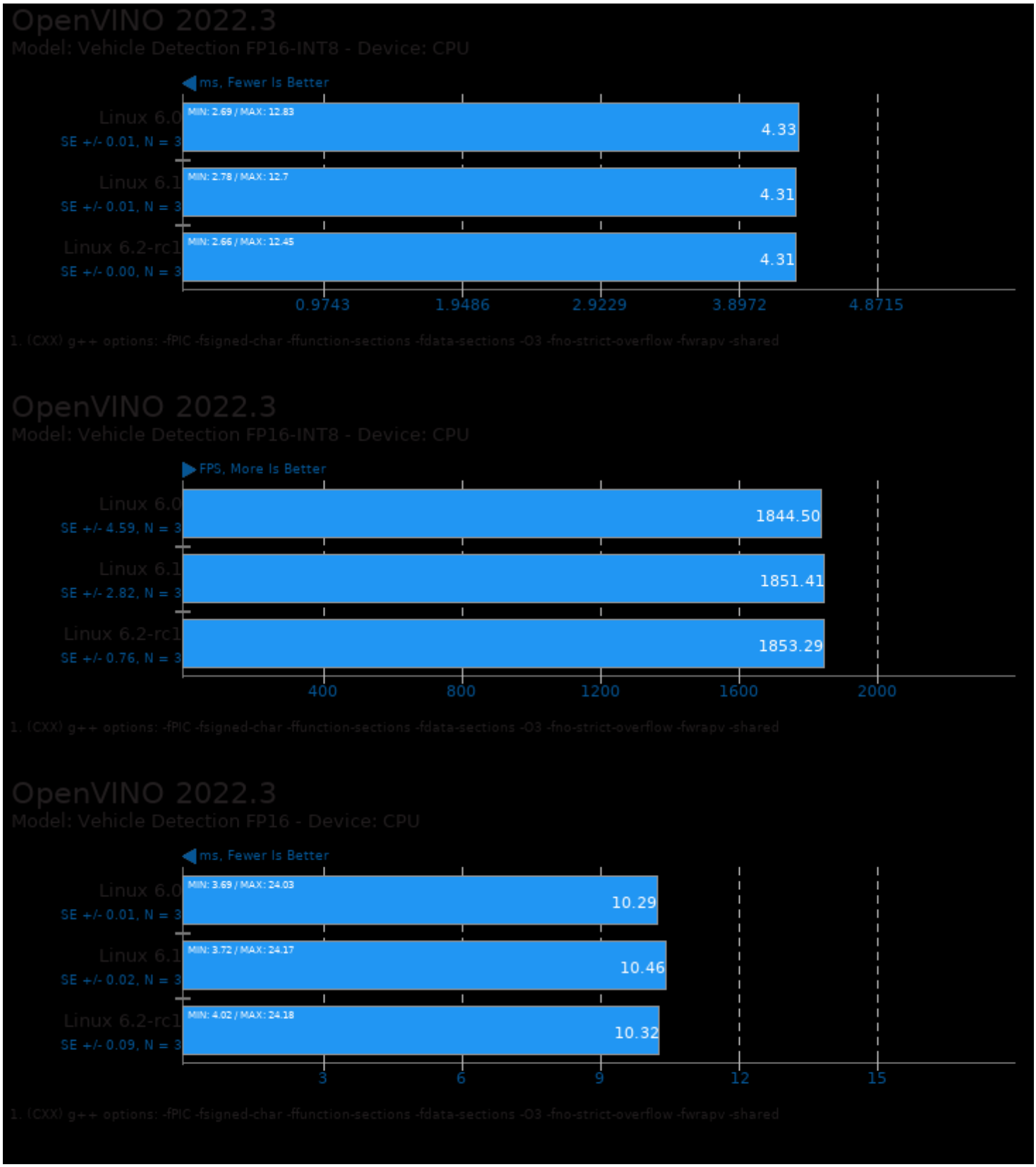
DDraceNetwork 16.3.2

Resolution: 3840 x 2160 - Mode: Fullscreen - Renderer: Vulkan - Zoom: Default - Demo: Multeasymap

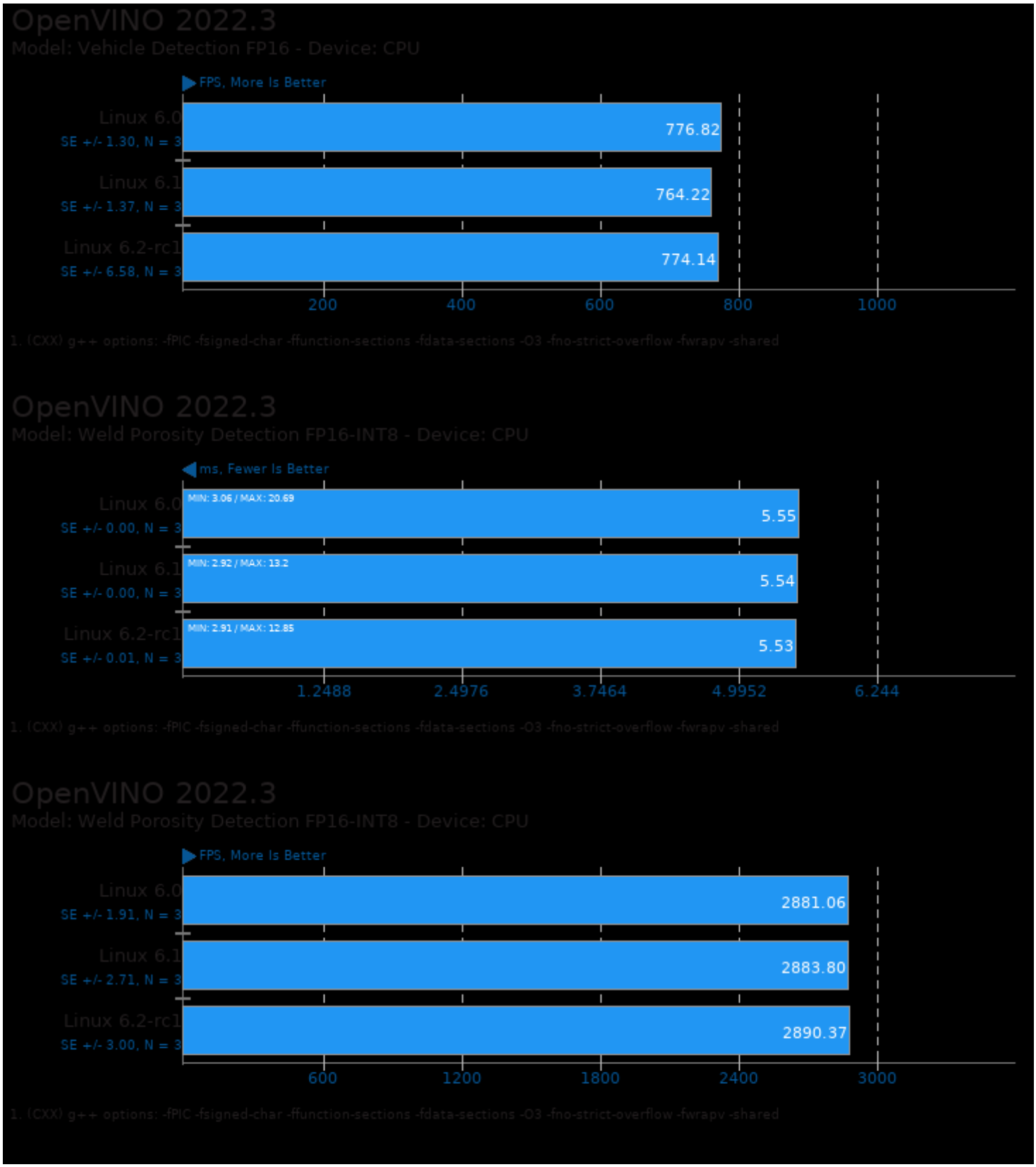


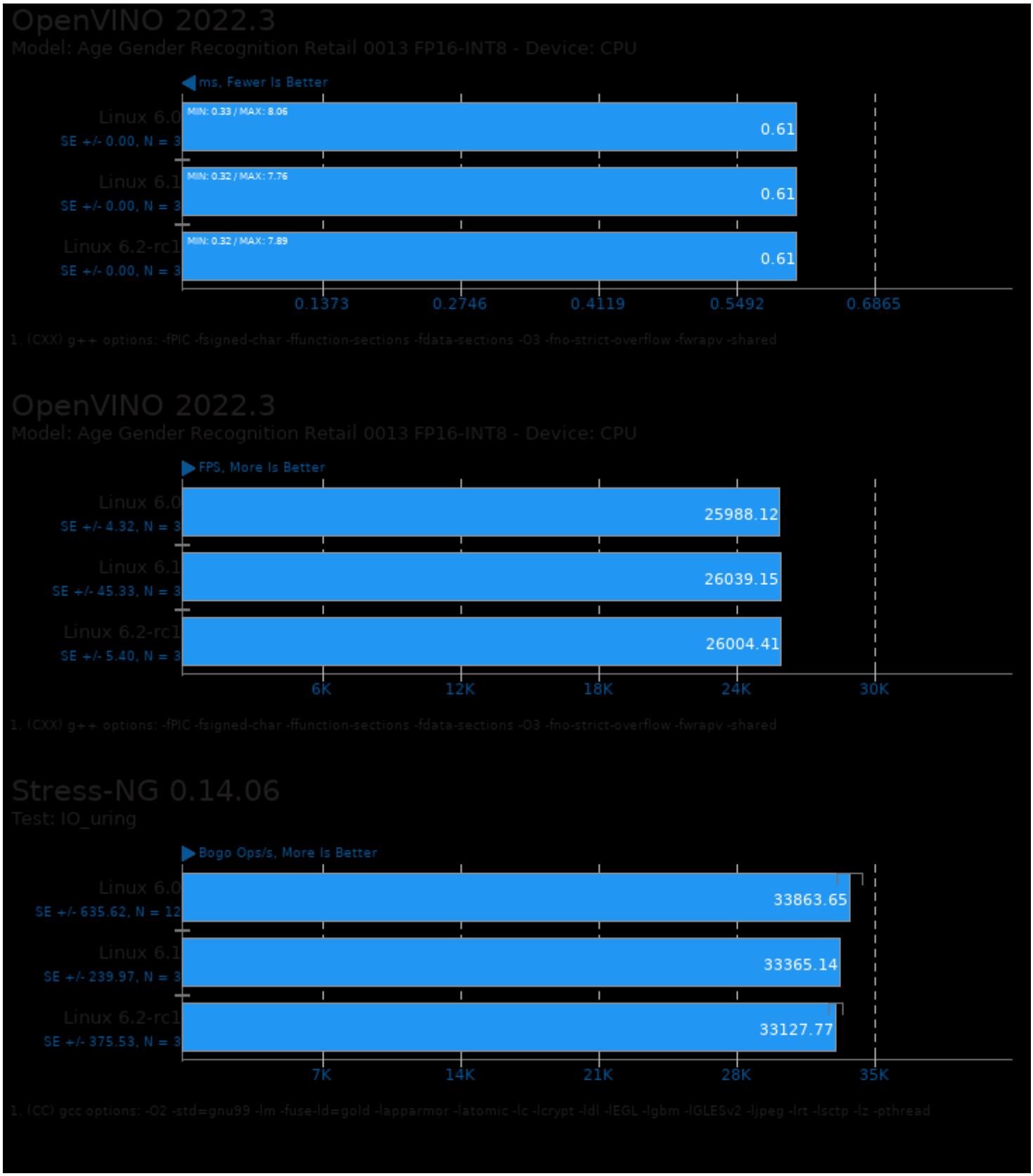
1. (CXX) g++ options: -O3 -lrt -ldl -lvulkan -lnotify -lgdk_pixbuf-2.0 -lgio-2.0 -lgobject-2.0 -lglib-2.0 -fuse-ld=gold

Linux 6.2 Kernel Benchmark Ryzen 9 7950X

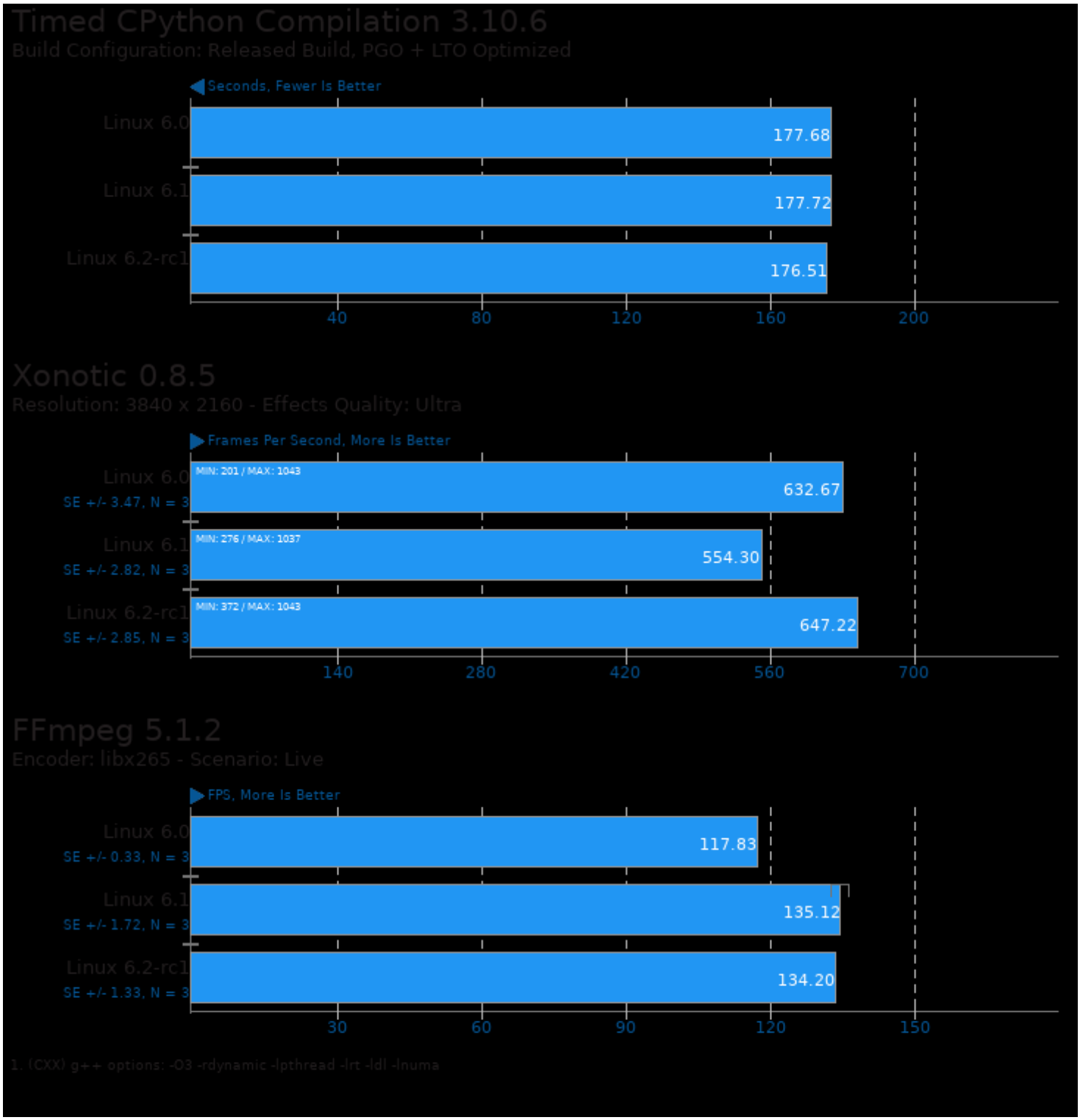


Linux 6.2 Kernel Benchmark Ryzen 9 7950X

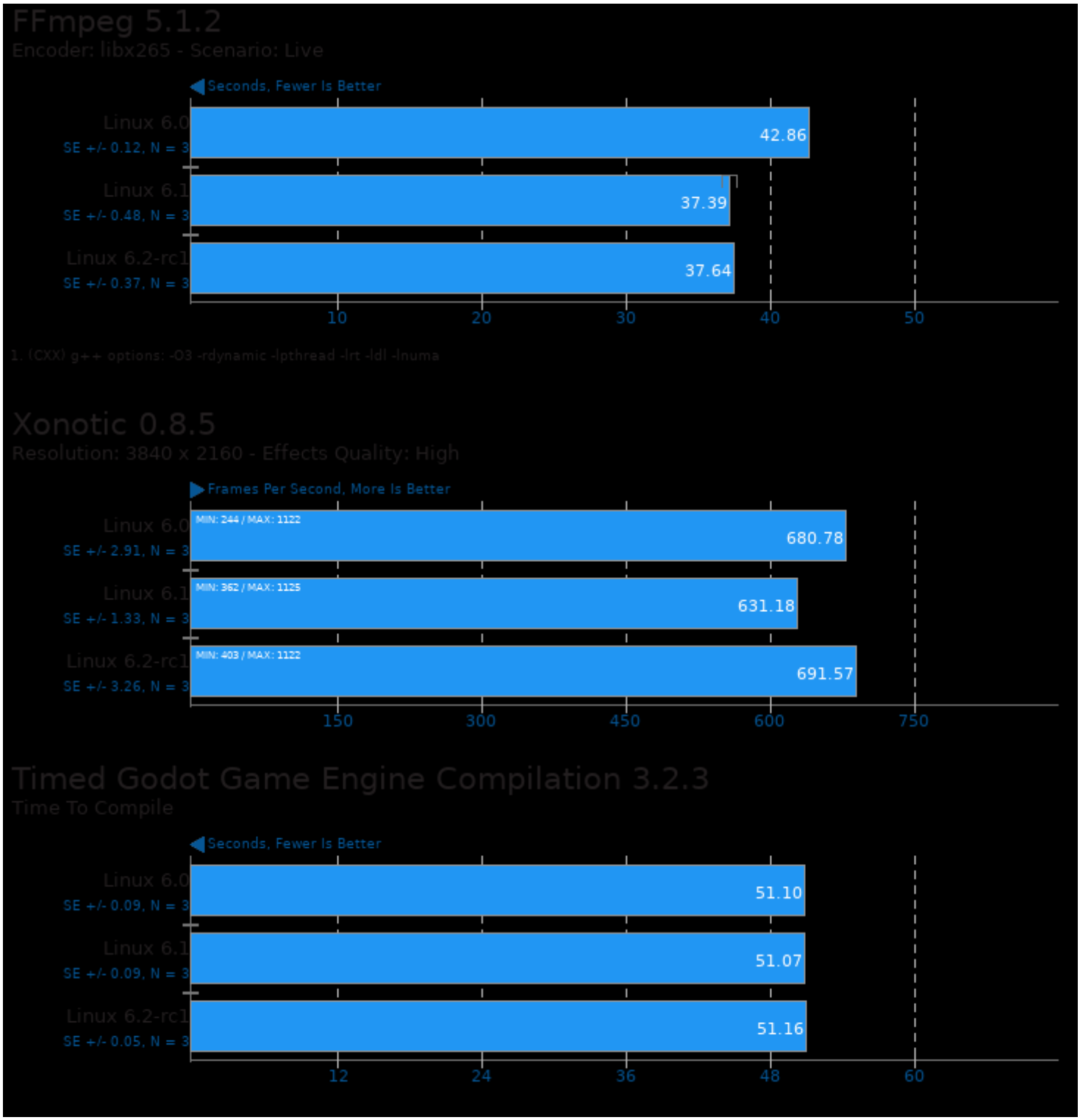



OpenVINO 2022.3
Model: Age Gender Recognition Retail 0013 FP16-INT8 - Device: CPU
ms, Fewer Is Better
Linux 6.0
SE +/- 0.00, N = 3
MIN: 0.33 / MAX: 8.06
0.61
Linux 6.1
SE +/- 0.00, N = 3
MIN: 0.32 / MAX: 7.76
0.61
Linux 6.2-rc1
SE +/- 0.00, N = 3
MIN: 0.32 / MAX: 7.89
0.61
0.1373
0.2746
0.4119
0.5492
0.6865
1. (CXX) g++ options: -fPIC -fsigned-char -ffunction-sections -fdata-sections -O3 -fno-strict-overflow -fwrapv -shared
OpenVINO 2022.3
Model: Age Gender Recognition Retail 0013 FP16-INT8 - Device: CPU
FPS, More Is Better
Linux 6.0
SE +/- 4.32, N = 3
25988.12
Linux 6.1
SE +/- 45.33, N = 3
26039.15
Linux 6.2-rc1
SE +/- 5.40, N = 3
26004.41
6K
12K
18K
24K
30K
1. (CXX) g++ options: -fPIC -fsigned-char -ffunction-sections -fdata-sections -O3 -fno-strict-overflow -fwrapv -shared
Stress-NG 0.14.06
Test: IO_uring
Bogo Ops/s, More Is Better
Linux 6.0
SE +/- 635.62, N = 12
33863.65
Linux 6.1
SE +/- 239.97, N = 3
33365.14
Linux 6.2-rc1
SE +/- 375.53, N = 3
33127.77
7K
14K
21K
28K
35K
1. (CC) gcc options: -O2 -std=gnu99 -lm -fuse-ld=gold -lapparmor -latomic -lc -lcrypt -ldl -lEGL -lgbm -lGLESv2 -ljpeg -lrt -lsctp -lz -pthread

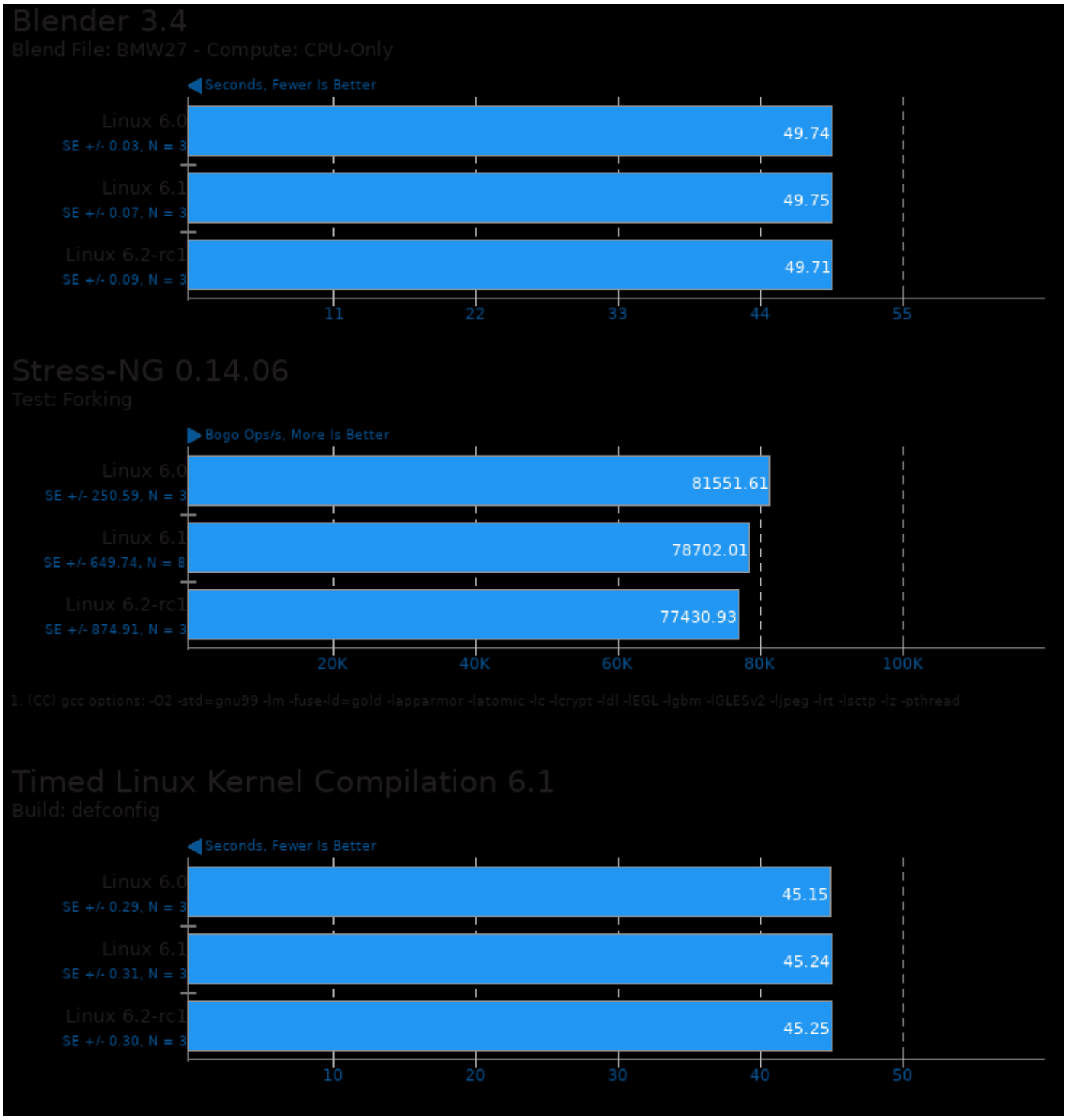
Linux 6.2 Kernel Benchmark Ryzen 9 7950X



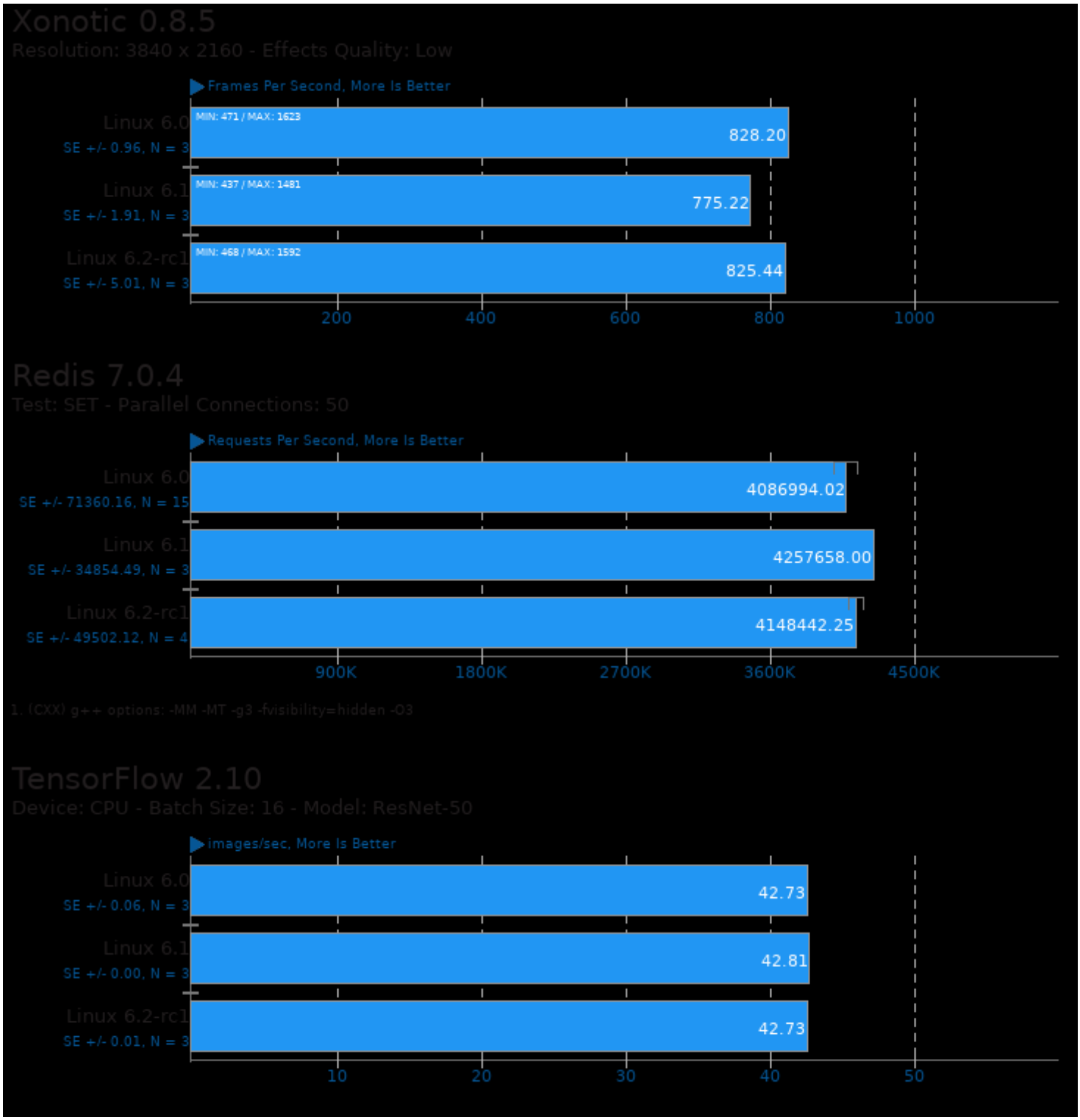
Linux 6.2 Kernel Benchmark Ryzen 9 7950X

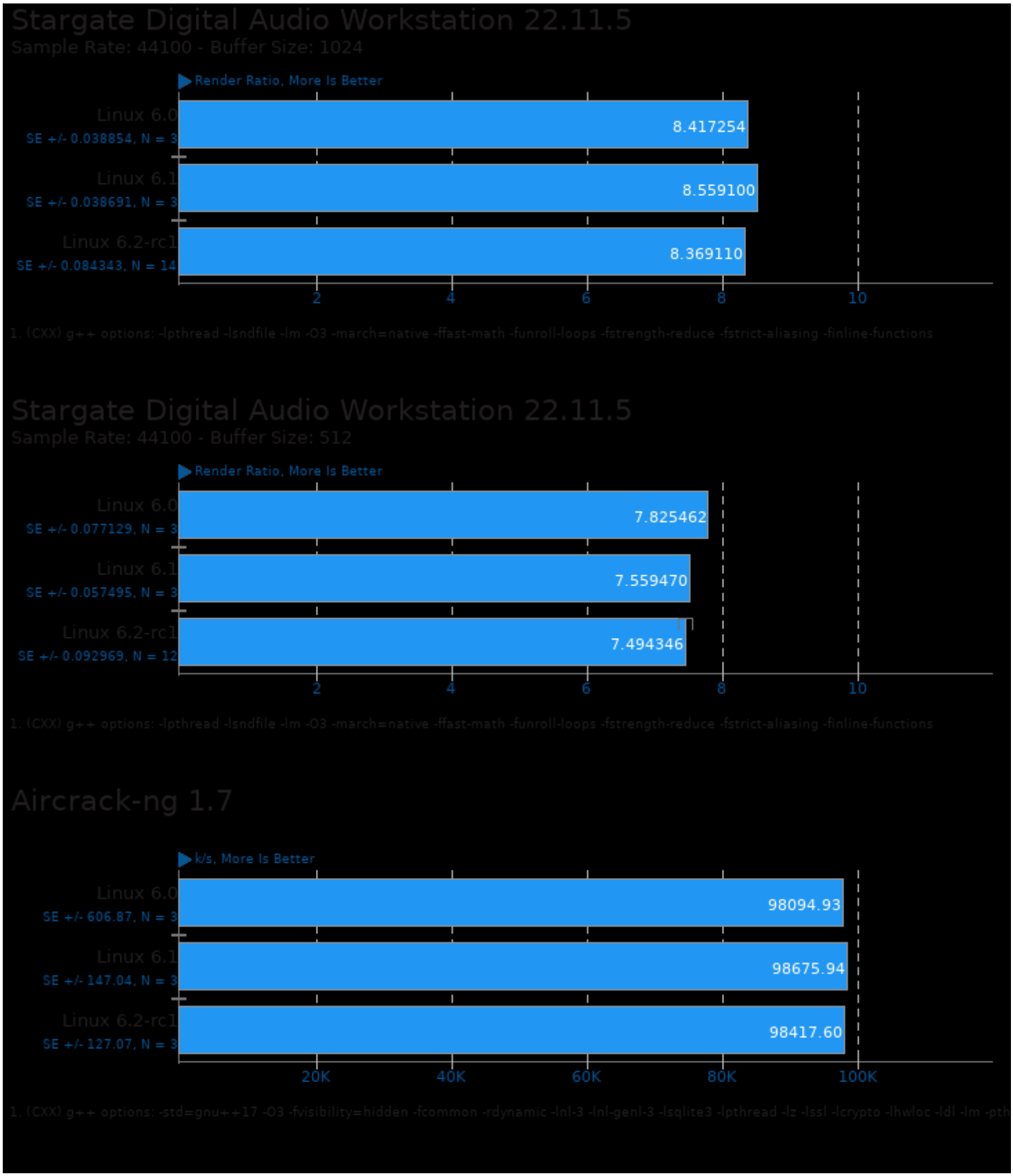


Linux 6.2 Kernel Benchmark Ryzen 9 7950X

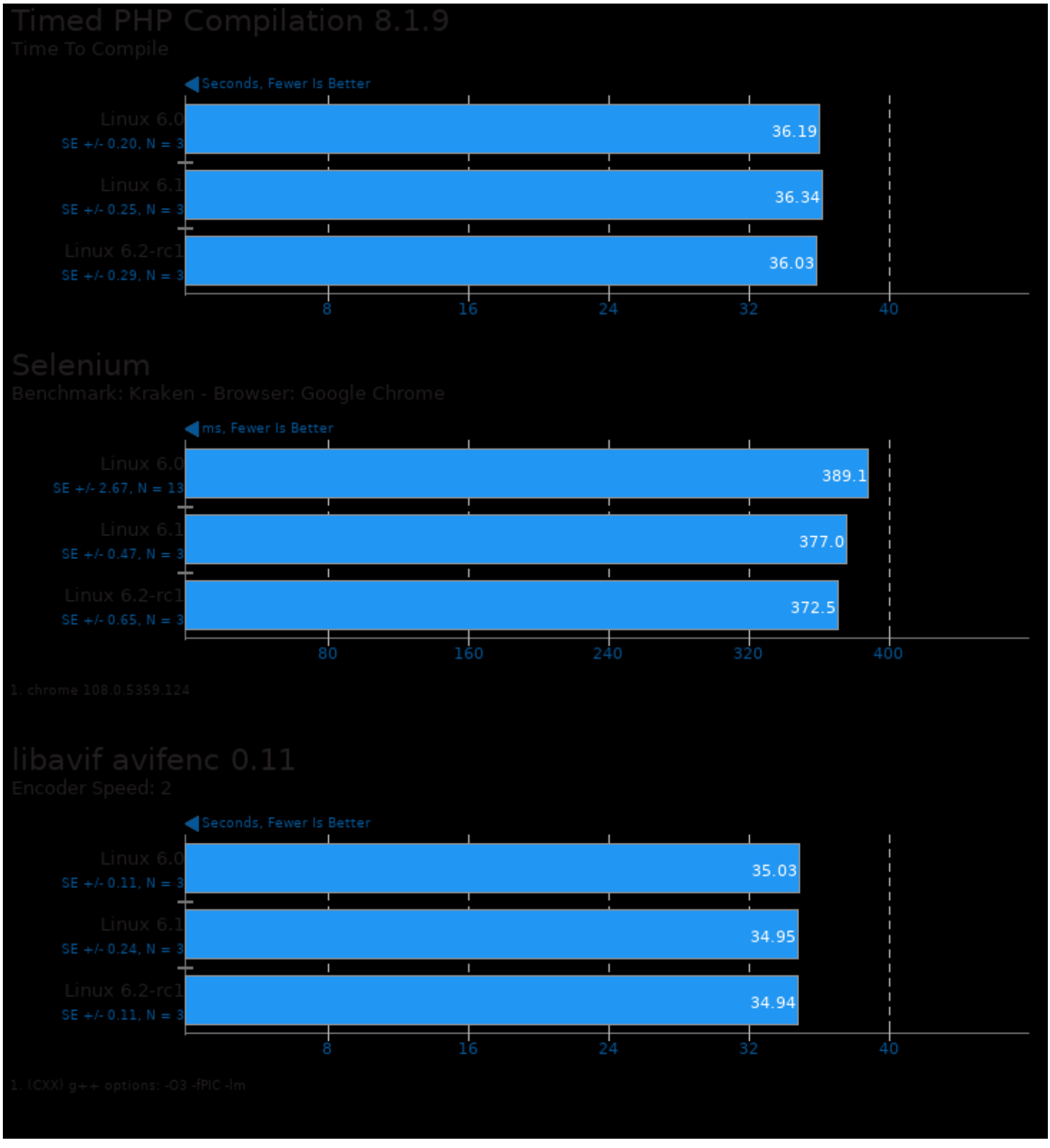


Linux 6.2 Kernel Benchmark Ryzen 9 7950X




Stargate Digital Audio Workstation 22.11.5
Sample Rate: 44100 - Buffer Size: 1024
Render Ratio, More Is Better
Linux 6.0
SE +/- 0.038854, N = 3
8.417254
Linux 6.1
SE +/- 0.038691, N = 3
8.559100
Linux 6.2-rc1
SE +/- 0.084343, N = 14
8.369110
2
4
6
8
10
1. (CXX) g++ options: -lpthread -lsndfile -lm -O3 -march=native -ffast-math -funroll-loops -fstrength-reduce -fstrict-aliasing -finline-functions
Stargate Digital Audio Workstation 22.11.5
Sample Rate: 44100 - Buffer Size: 512
Render Ratio, More Is Better
Linux 6.0
SE +/- 0.077129, N = 3
7.825462
Linux 6.1
SE +/- 0.057495, N = 3
7.559470
Linux 6.2-rc1
SE +/- 0.092969, N = 12
7.494346
2
4
6
8
10
1. (CXX) g++ options: -lpthread -lsndfile -lm -O3 -march=native -ffast-math -funroll-loops -fstrength-reduce -fstrict-aliasing -finline-functions
Aircrack-ng 1.7
k/s, More Is Better
Linux 6.0
SE +/- 606.87, N = 3
98094.93
Linux 6.1
SE +/- 147.04, N = 3
98675.94
Linux 6.2-rc1
SE +/- 127.07, N = 3
98417.60
20K
40K
60K
80K
100K
1. (CXX) g++ options: -std=gnu++17 -O3 -fvisibility=hidden -fcommon -rdynamic -lnl-3 -lnl-genl-3 -lsqlite3 -lpthread -lz -lssl -lcrypto -lhwloc -ldl -lm -pt

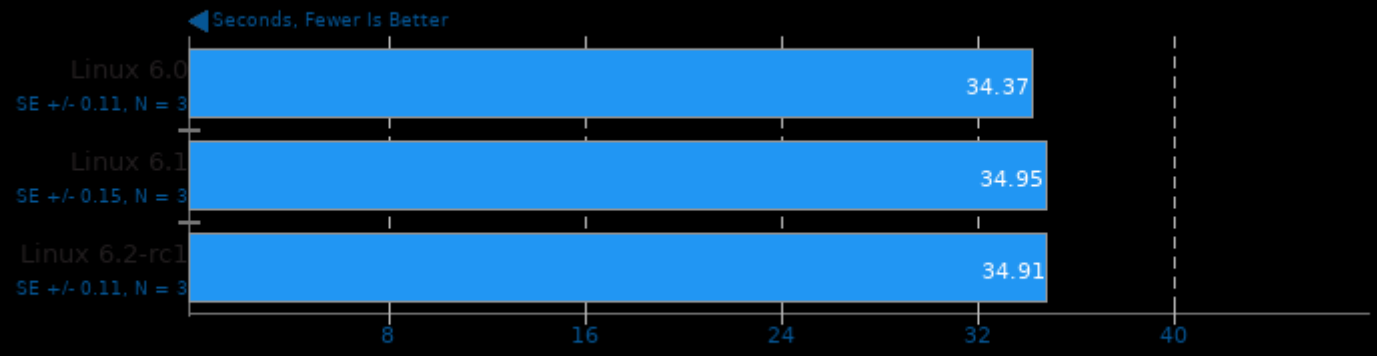
Linux 6.2 Kernel Benchmark Ryzen 9 7950X



Linux 6.2 Kernel Benchmark Ryzen 9 7950X

SQLite Speedtest 3.30

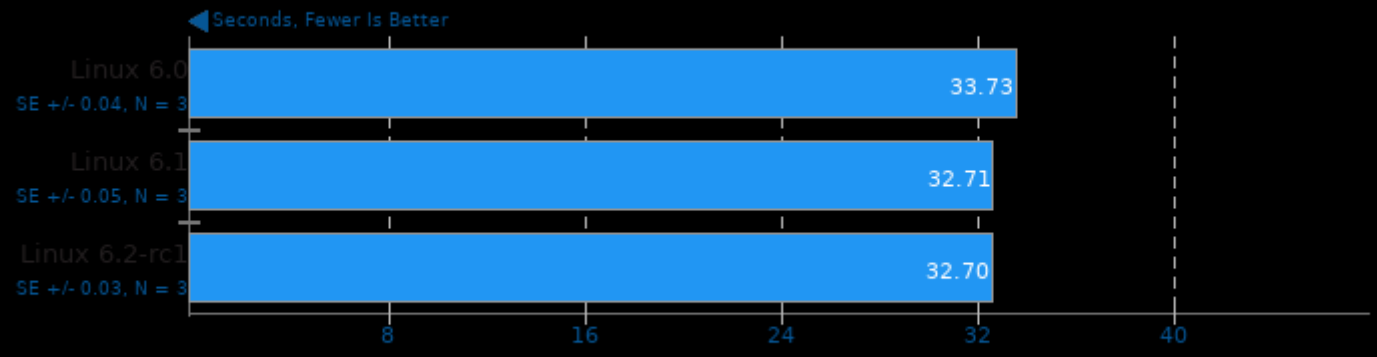
Timed Time - Size 1,000



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

RawTherapee

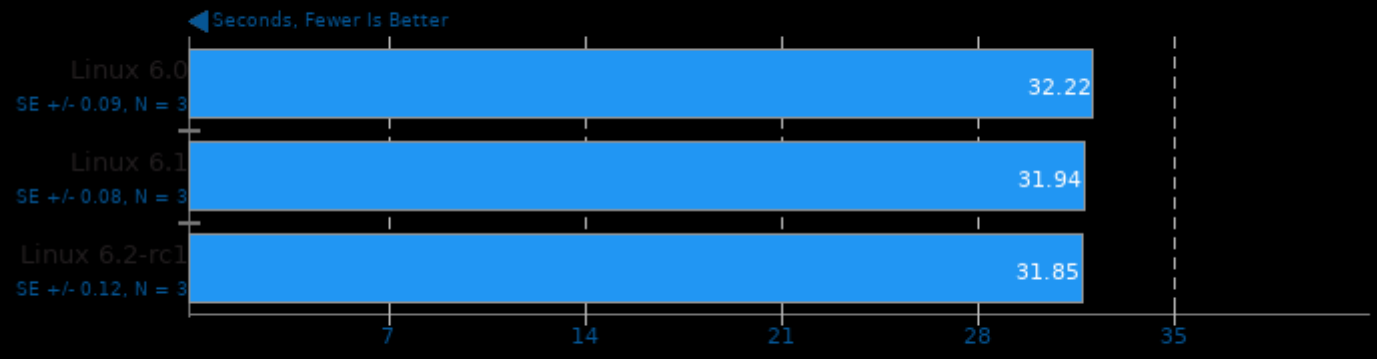
Total Benchmark Time



1. RawTherapee, version 5.8, command line.

Timed Wasmer Compilation 2.3

Time To Compile

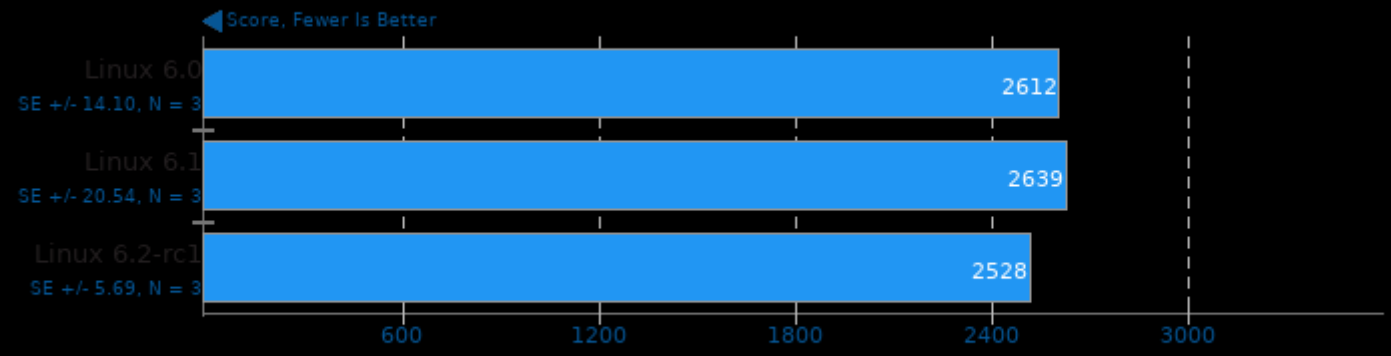


1. (CC) gcc options: -m64 -ldl -lgcc_s -lutil -lrt -lpthread -lm -lc -pie -nodefaultlibs

Linux 6.2 Kernel Benchmark Ryzen 9 7950X

Selenium

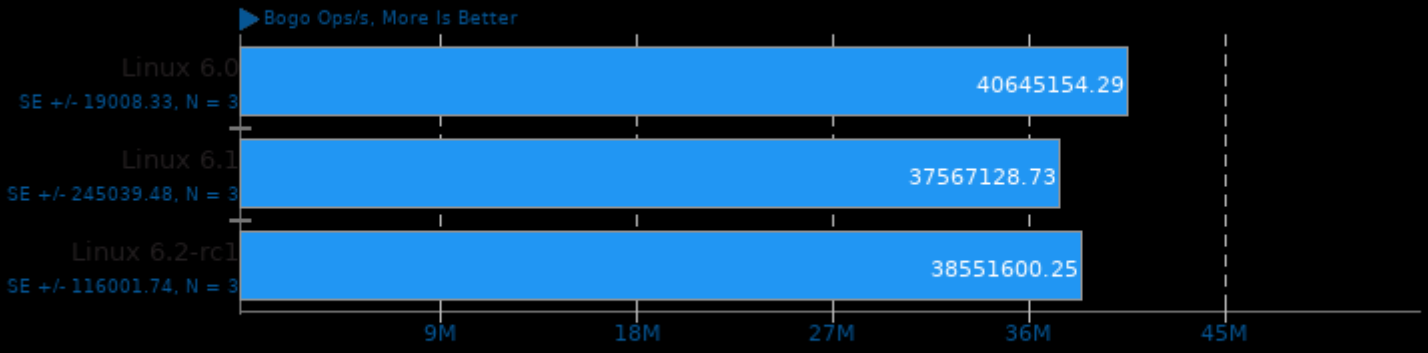
Benchmark: PSPDFKit WASM - Browser: Google Chrome



1. chrome 108.0.5359.124

Stress-NG 0.14.06

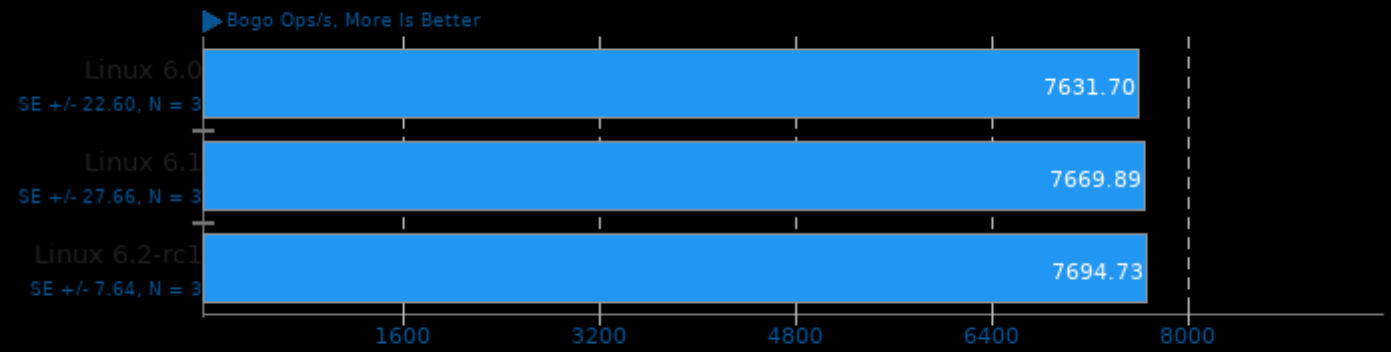
Test: Malloc



1. (CC) gcc options: -O2 -std=gnu99 -lm -fuse-ld=gold -lapparmor -latomic -lc -lcrypt -ldl -lEGL -lgbm -lGLESv2 -ljpeg -lrt -lsctp -lz -pthread

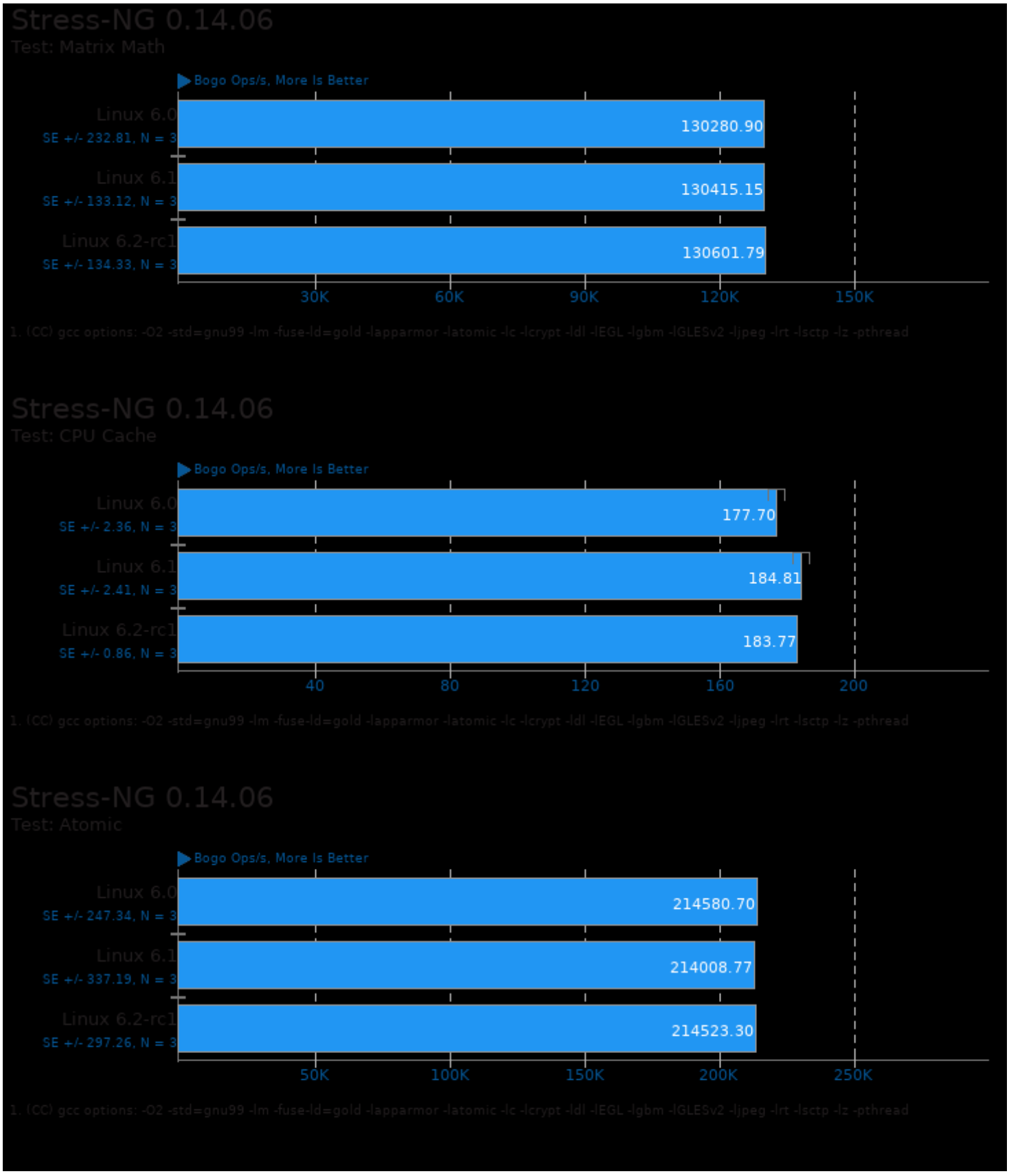
Stress-NG 0.14.06

Test: Memory Copying

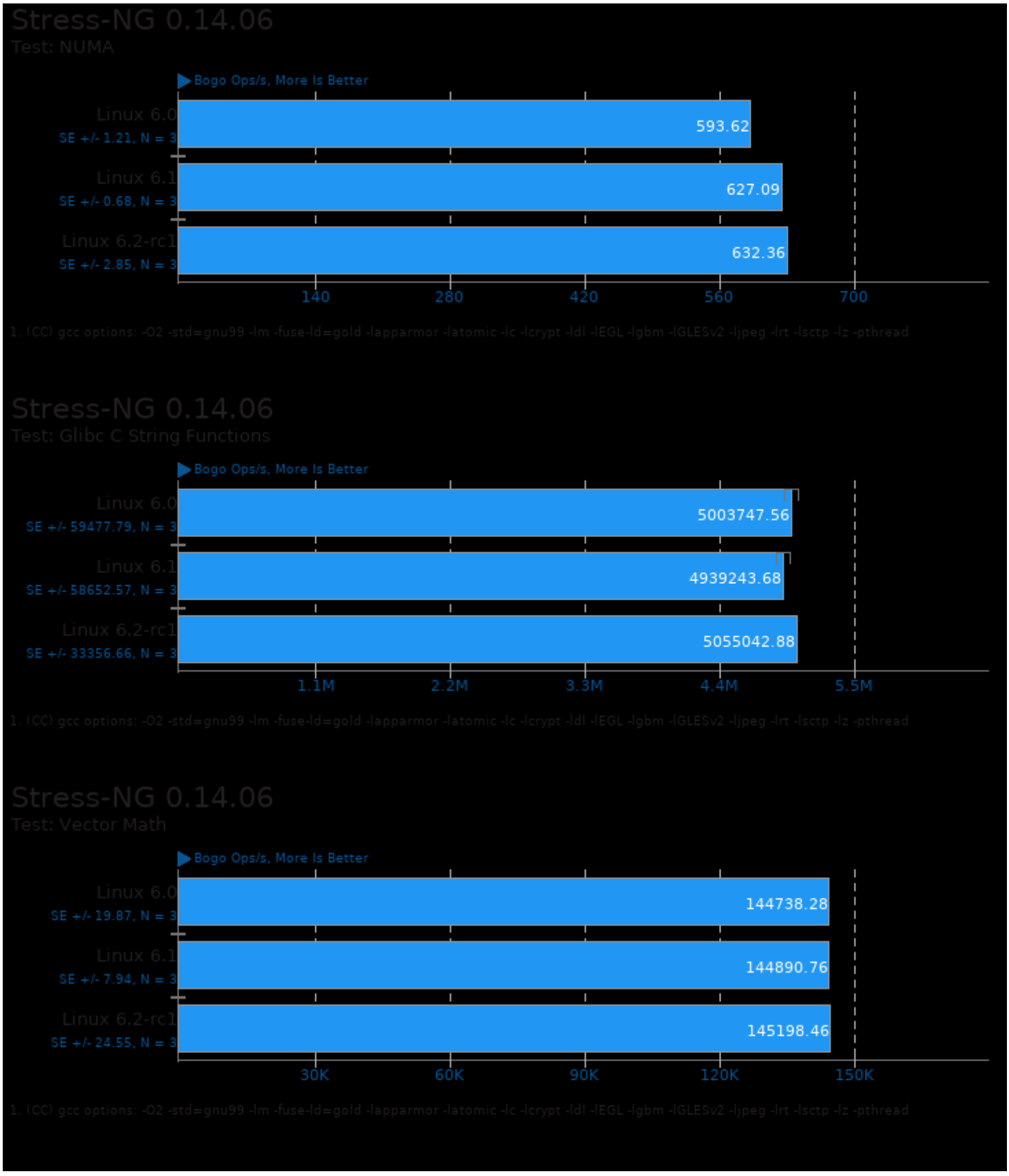


1. (CC) gcc options: -O2 -std=gnu99 -lm -fuse-ld=gold -lapparmor -latomic -lc -lcrypt -ldl -lEGL -lgbm -lGLESv2 -ljpeg -lrt -lsctp -lz -pthread

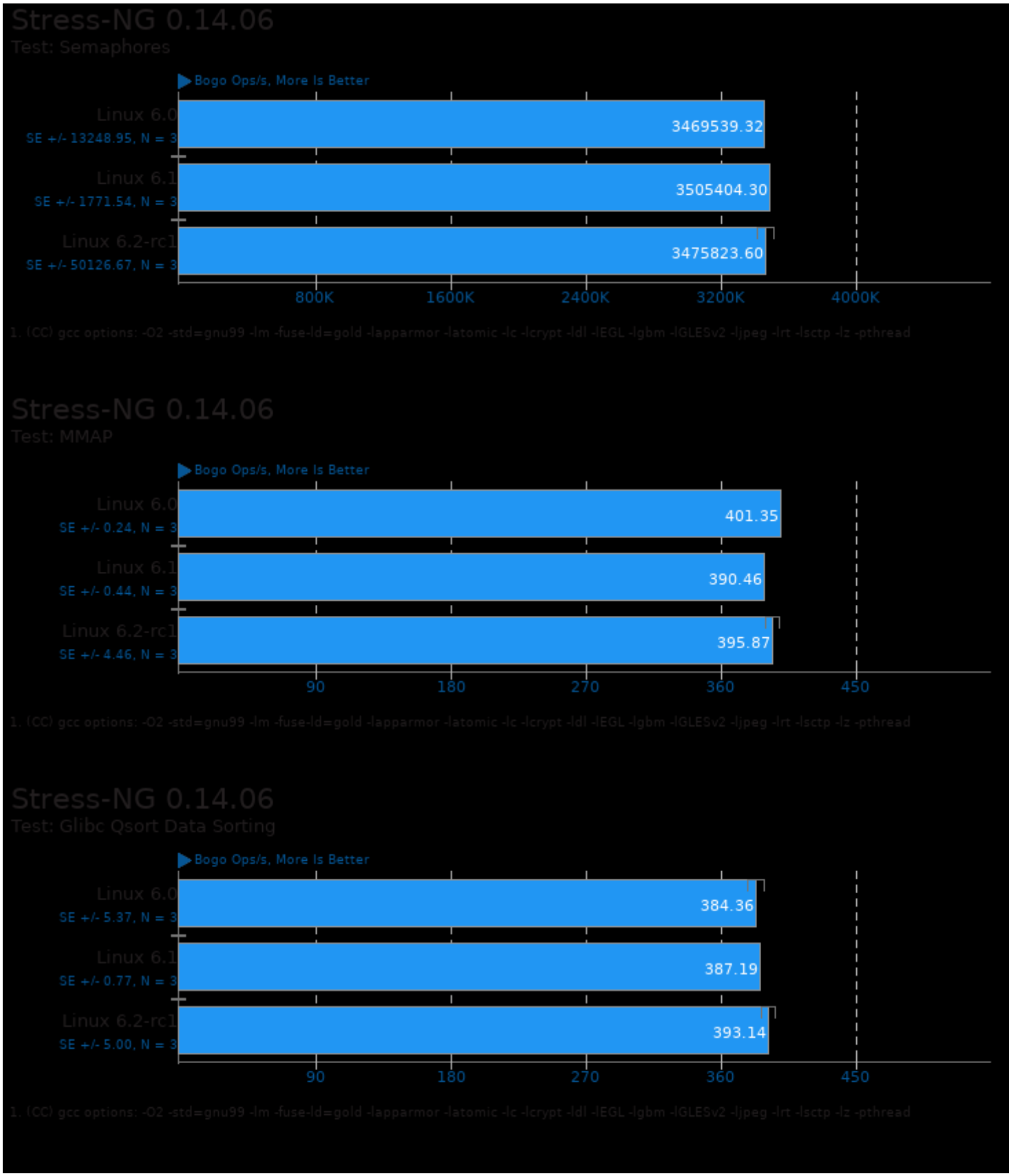
Linux 6.2 Kernel Benchmark Ryzen 9 7950X



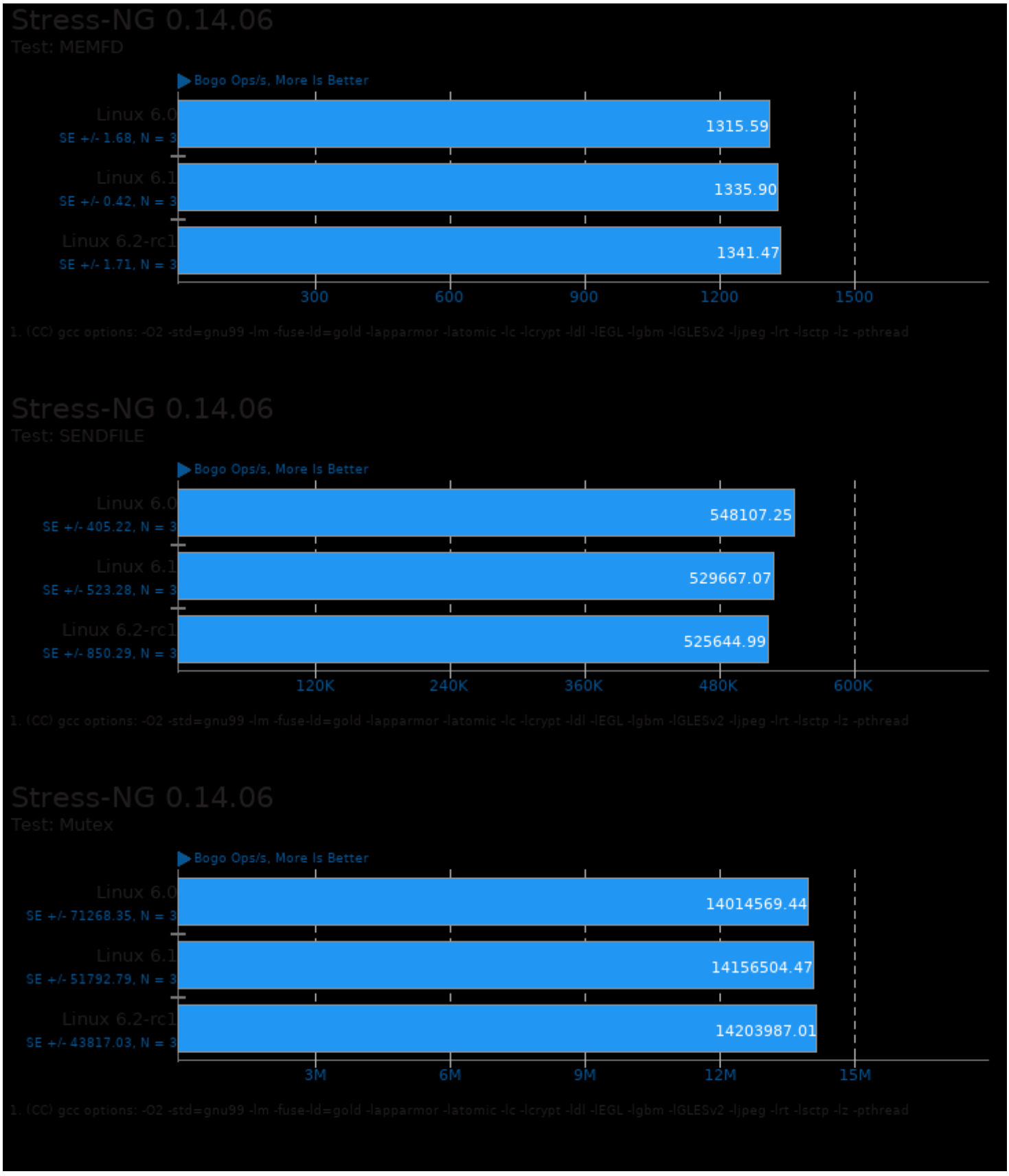
Linux 6.2 Kernel Benchmark Ryzen 9 7950X



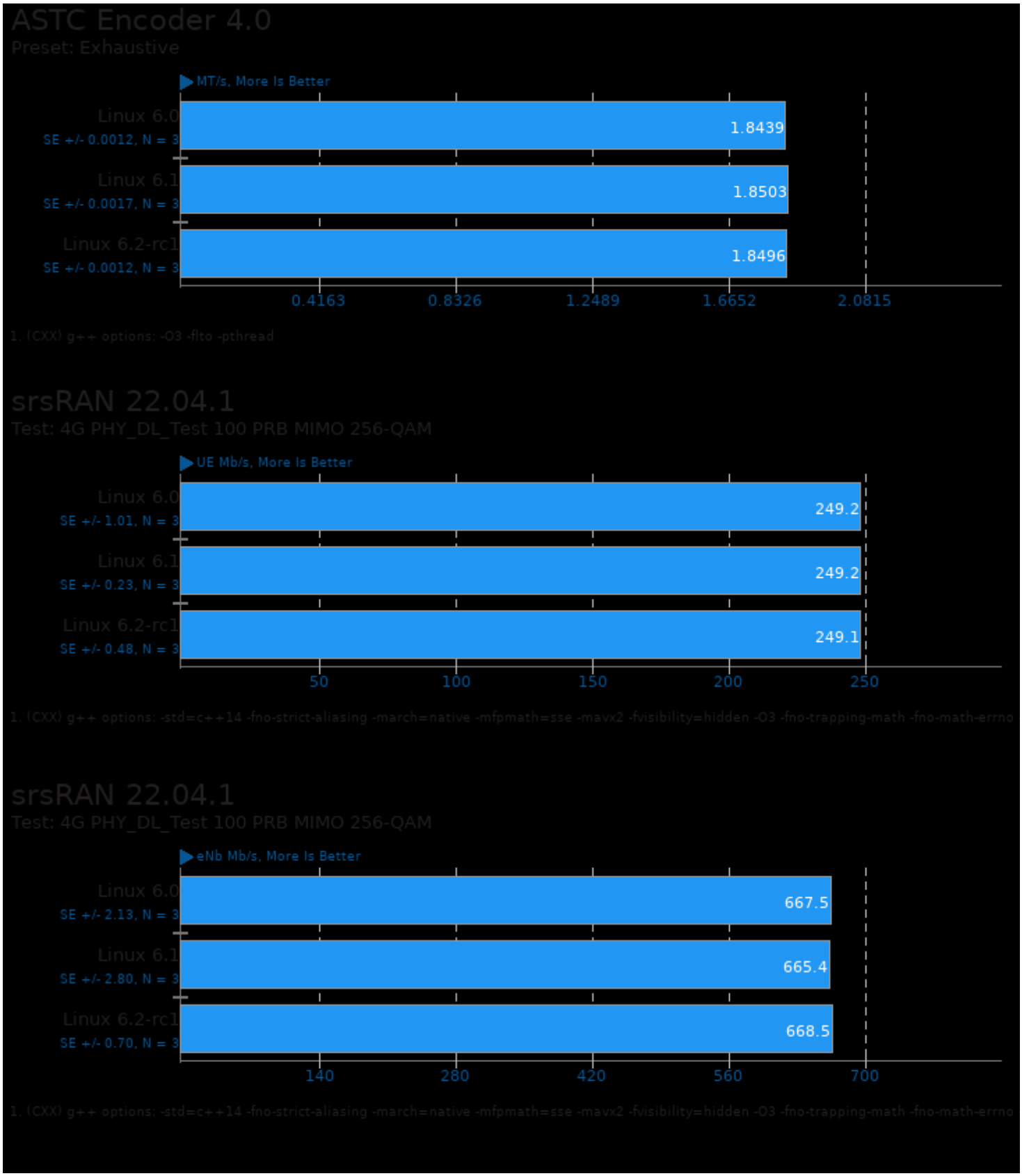
Linux 6.2 Kernel Benchmark Ryzen 9 7950X

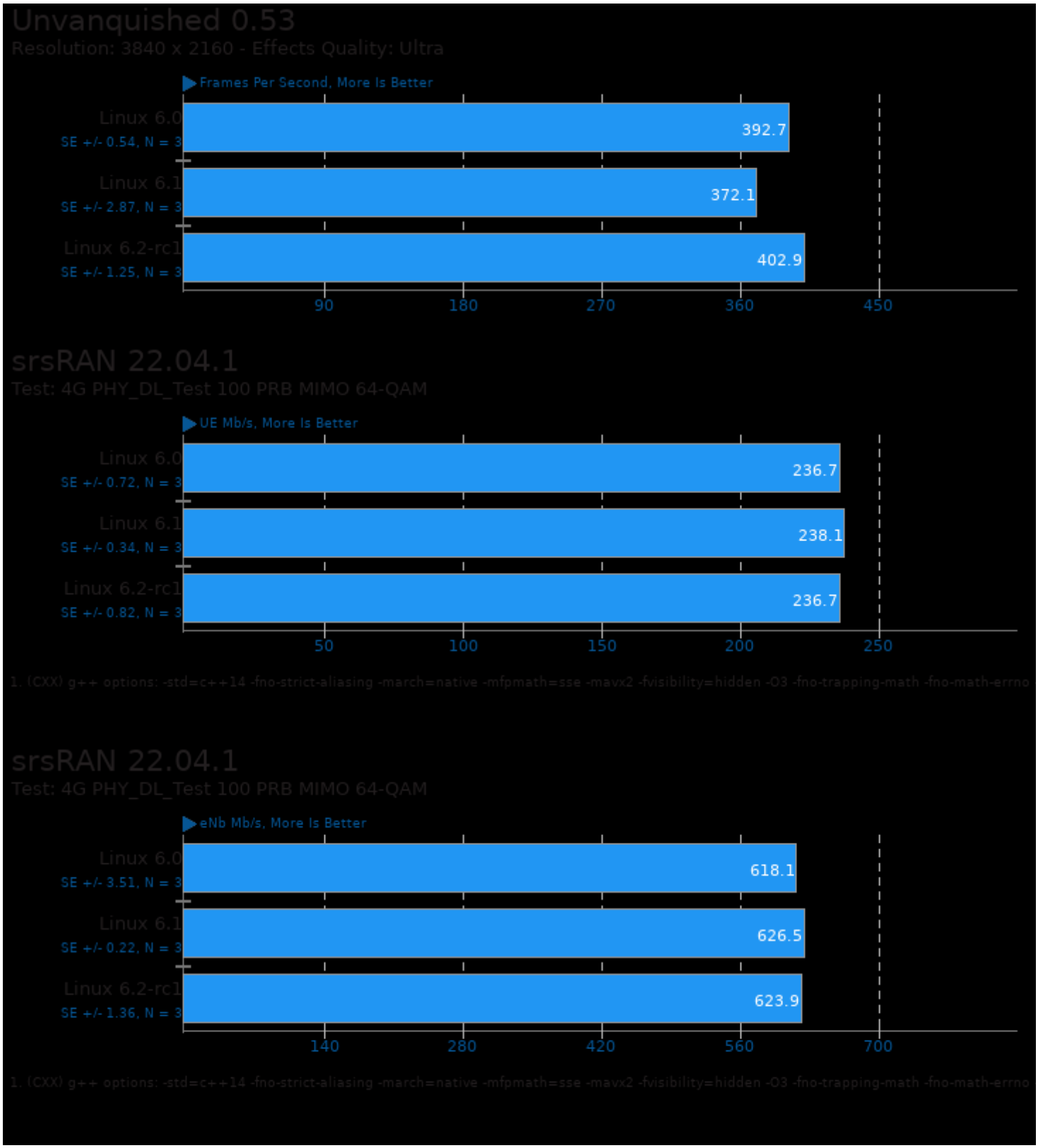


Linux 6.2 Kernel Benchmark Ryzen 9 7950X

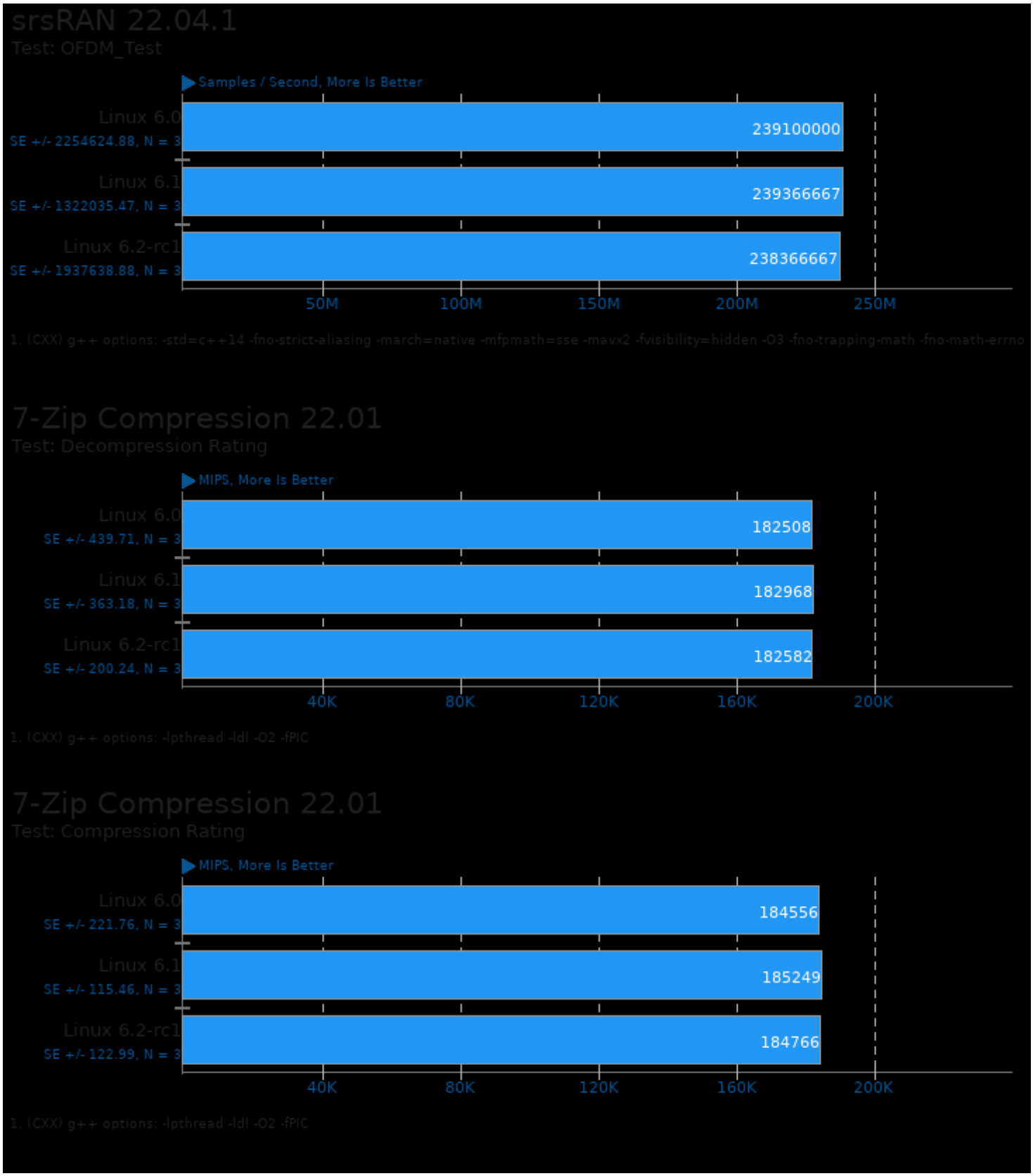


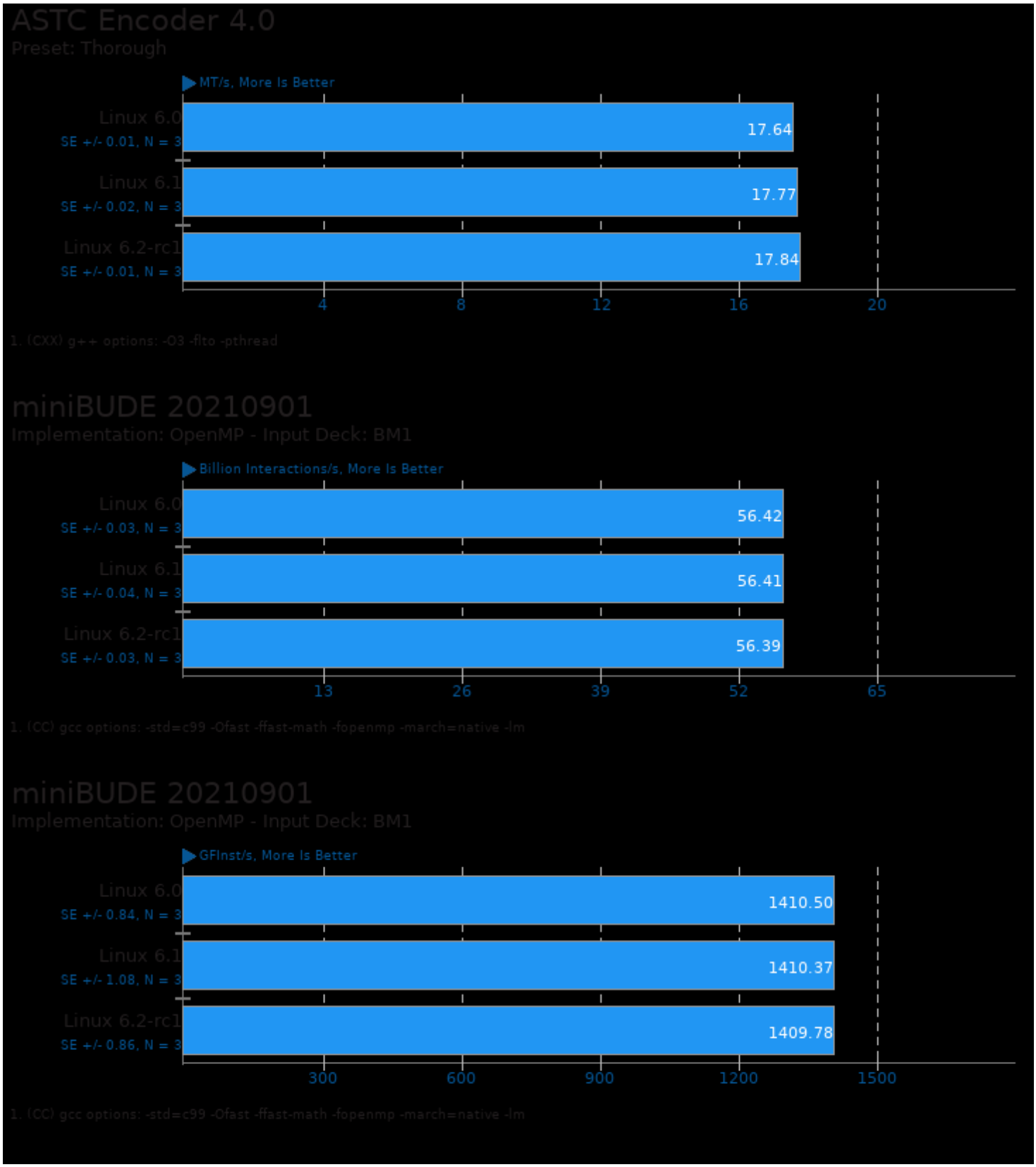
Linux 6.2 Kernel Benchmark Ryzen 9 7950X



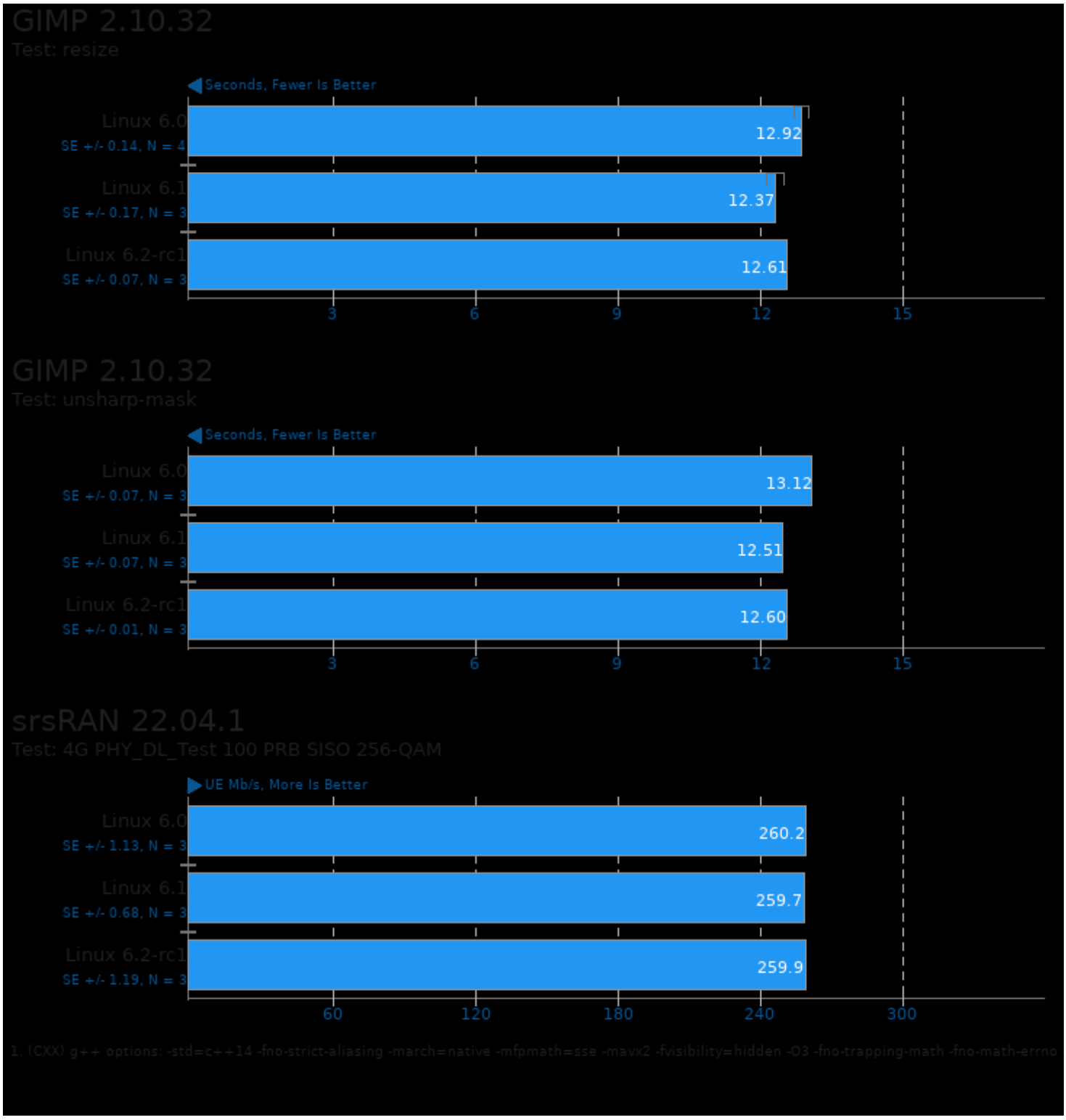

Unvanquished 0.53
Resolution: 3840 x 2160 - Effects Quality: Ultra
Frames Per Second, More Is Better
Linux 6.0
SE +/- 0.54, N = 3
392.7
Linux 6.1
SE +/- 2.87, N = 3
372.1
Linux 6.2-rc1
SE +/- 1.25, N = 3
402.9
90
180
270
360
450
srsRAN 22.04.1
Test: 4G PHY_DL_Test 100 PRB MIMO 64-QAM
UE Mb/s, More Is Better
Linux 6.0
SE +/- 0.72, N = 3
236.7
Linux 6.1
SE +/- 0.34, N = 3
238.1
Linux 6.2-rc1
SE +/- 0.82, N = 3
236.7
50
100
150
200
250
1. (CXX) g++ options: -std=c++14 -fno-strict-aliasing -march=native -mfpmath=sse -mavx2 -fvisibility=hidden -O3 -fno-trapping-math -fno-math-errno
srsRAN 22.04.1
Test: 4G PHY_DL_Test 100 PRB MIMO 64-QAM
eNb Mb/s, More Is Better
Linux 6.0
SE +/- 3.51, N = 3
618.1
Linux 6.1
SE +/- 0.22, N = 3
626.5
Linux 6.2-rc1
SE +/- 1.36, N = 3
623.9
140
280
420
560
700
1. (CXX) g++ options: -std=c++14 -fno-strict-aliasing -march=native -mfpmath=sse -mavx2 -fvisibility=hidden -O3 -fno-trapping-math -fno-math-errno

Linux 6.2 Kernel Benchmark Ryzen 9 7950X

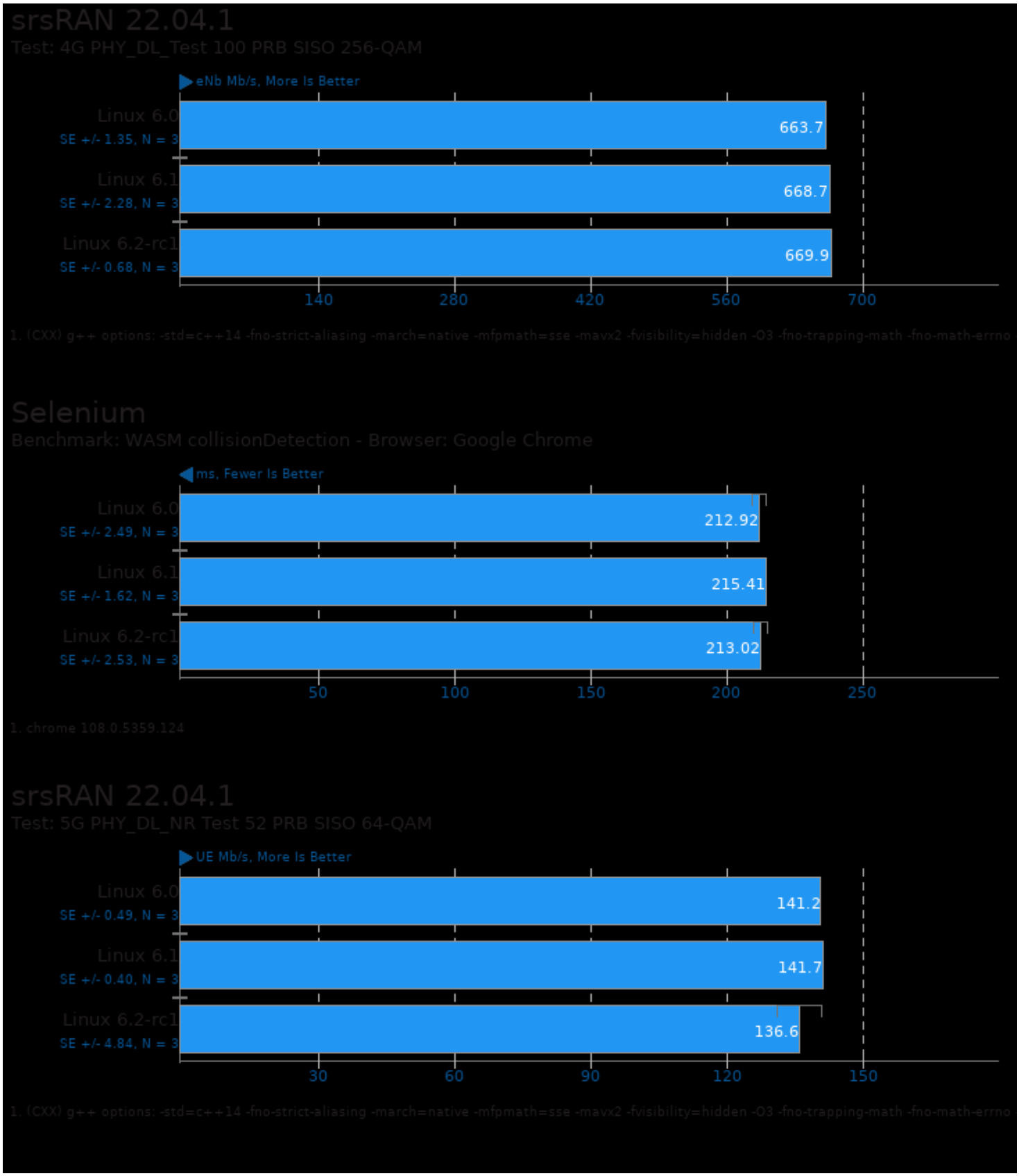


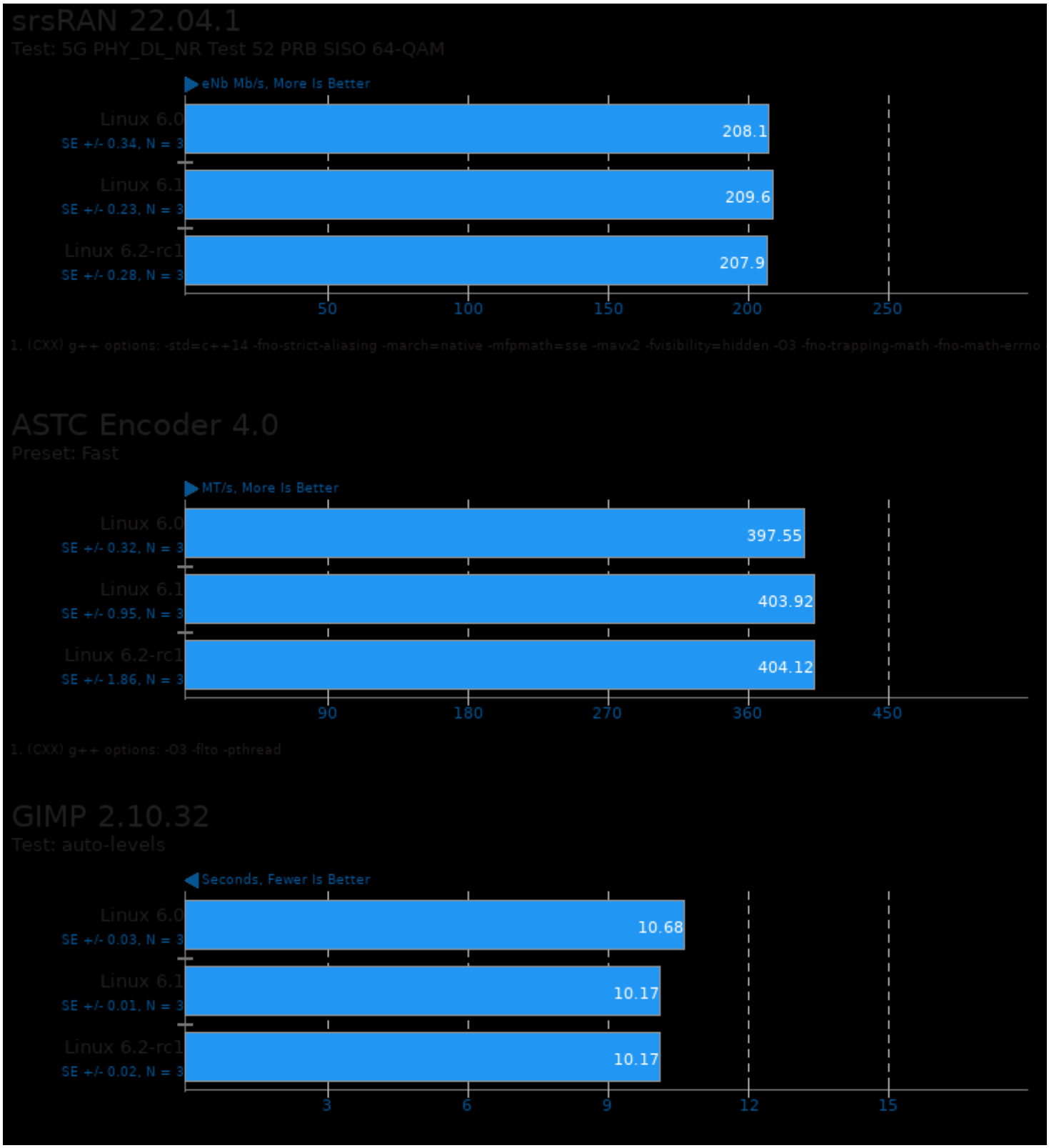

ASTC Encoder 4.0
Preset: Thorough
MT/s, More Is Better
Linux 6.0
SE +/- 0.01, N = 3
17.64
Linux 6.1
SE +/- 0.02, N = 3
17.77
Linux 6.2-rc1
SE +/- 0.01, N = 3
17.84
4
8
12
16
20
1. (CXX) g++ options: -O3 -flto -pthread
miniBUDE 20210901
Implementation: OpenMP - Input Deck: BM1
Billion Interactions/s, More Is Better
Linux 6.0
SE +/- 0.03, N = 3
56.42
Linux 6.1
SE +/- 0.04, N = 3
56.41
Linux 6.2-rc1
SE +/- 0.03, N = 3
56.39
13
26
39
52
65
1. (CC) gcc options: -std=c99 -Ofast -ffast-math -fopenmp -march=native -lm
miniBUDE 20210901
Implementation: OpenMP - Input Deck: BM1
GFInst/s, More Is Better
Linux 6.0
SE +/- 0.84, N = 3
1410.50
Linux 6.1
SE +/- 1.08, N = 3
1410.37
Linux 6.2-rc1
SE +/- 0.86, N = 3
1409.78
300
600
900
1200
1500
1. (CC) gcc options: -std=c99 -Ofast -ffast-math -fopenmp -march=native -lm

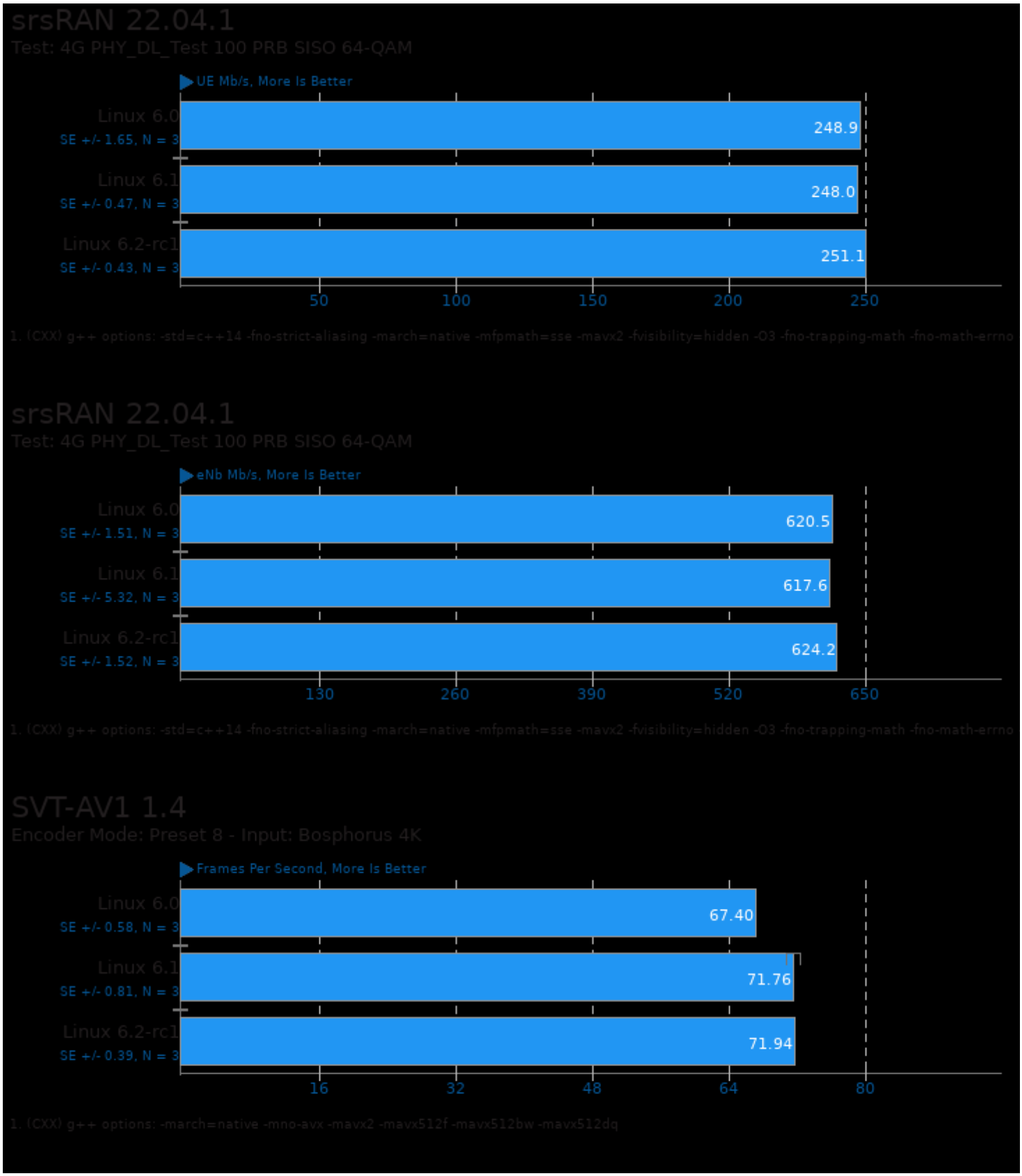
Linux 6.2 Kernel Benchmark Ryzen 9 7950X



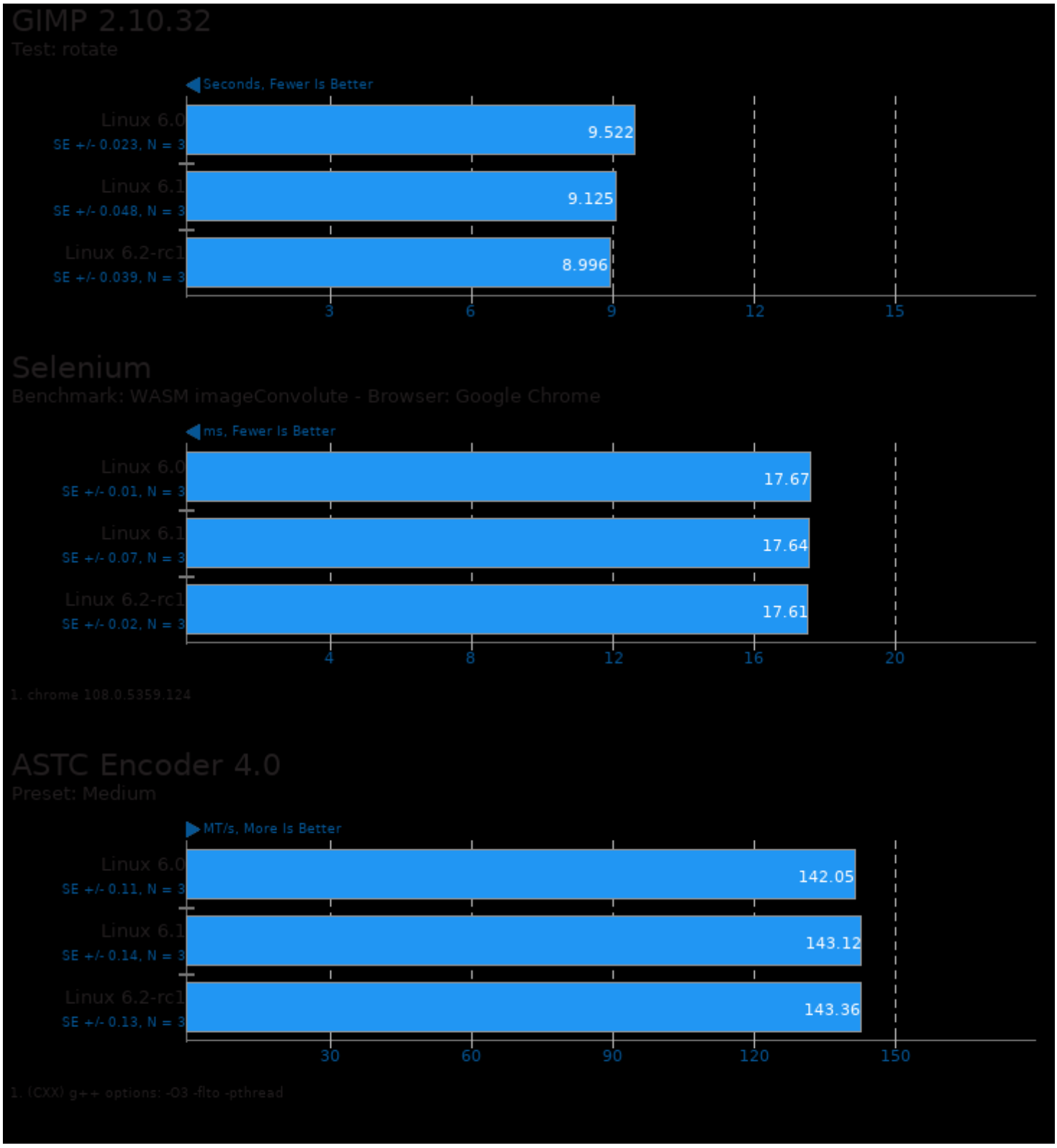
Linux 6.2 Kernel Benchmark Ryzen 9 7950X



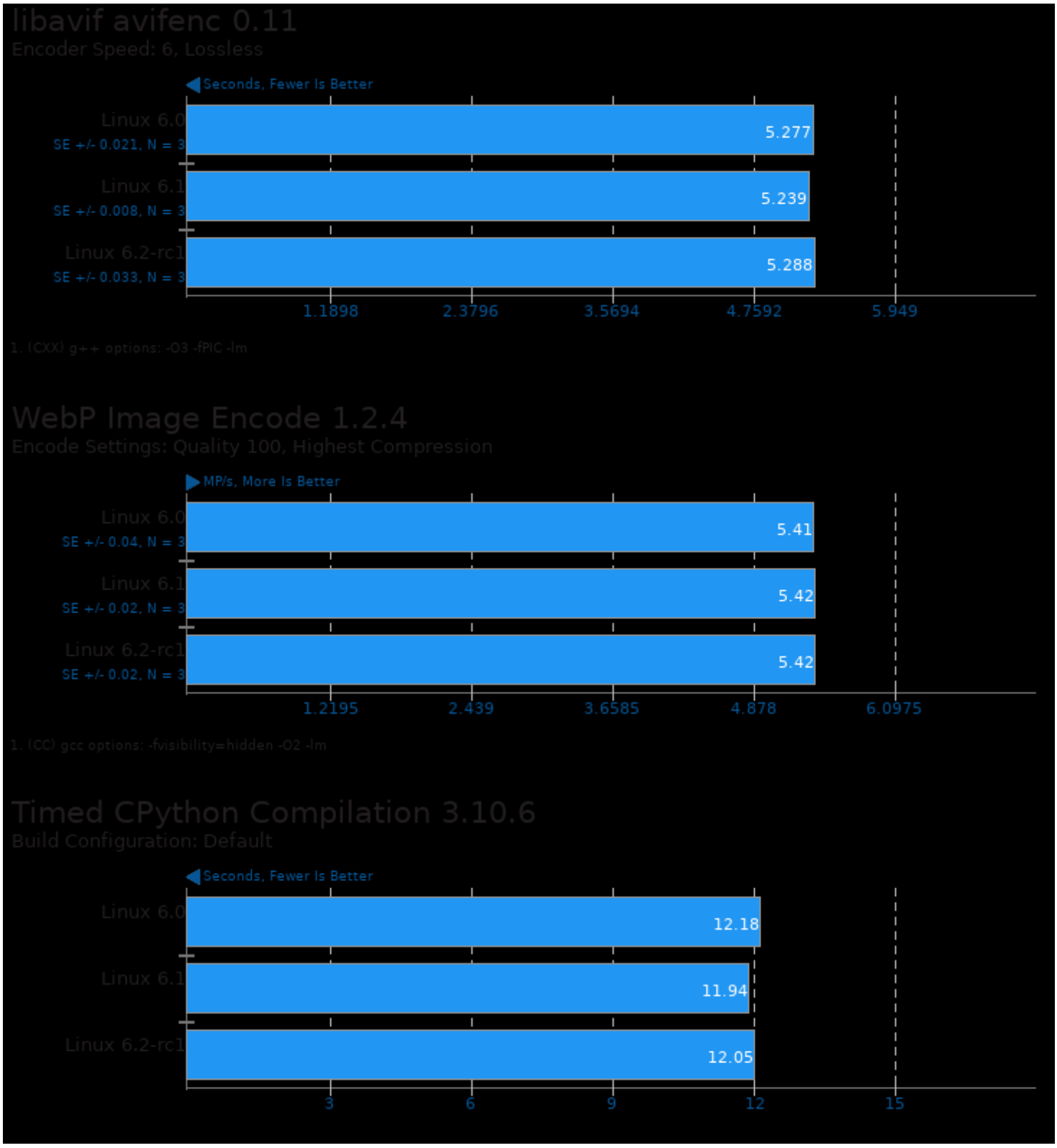

srsRAN 22.04.1
Test: 5G PHY_DL_NR Test 52 PRB SISO 64-QAM
eNb Mb/s, More Is Better
Linux 6.0
SE +/- 0.34, N = 3
208.1
Linux 6.1
SE +/- 0.23, N = 3
209.6
Linux 6.2-rc1
SE +/- 0.28, N = 3
207.9
50
100
150
200
250
1. (CXX) g++ options: -std=c++14 -fno-strict-aliasing -march=native -mfpmath=sse -mavx2 -fvisibility=hidden -O3 -fno-trapping-math -fno-math-errno
ASTC Encoder 4.0
Preset: Fast
MT/s, More Is Better
Linux 6.0
SE +/- 0.32, N = 3
397.55
Linux 6.1
SE +/- 0.95, N = 3
403.92
Linux 6.2-rc1
SE +/- 1.86, N = 3
404.12
90
180
270
360
450
1. (CXX) g++ options: -O3 -flto -pthread
GIMP 2.10.32
Test: auto-levels
Seconds, Fewer Is Better
Linux 6.0
SE +/- 0.03, N = 3
10.68
Linux 6.1
SE +/- 0.01, N = 3
10.17
Linux 6.2-rc1
SE +/- 0.02, N = 3
10.17
3
6
9
12
15

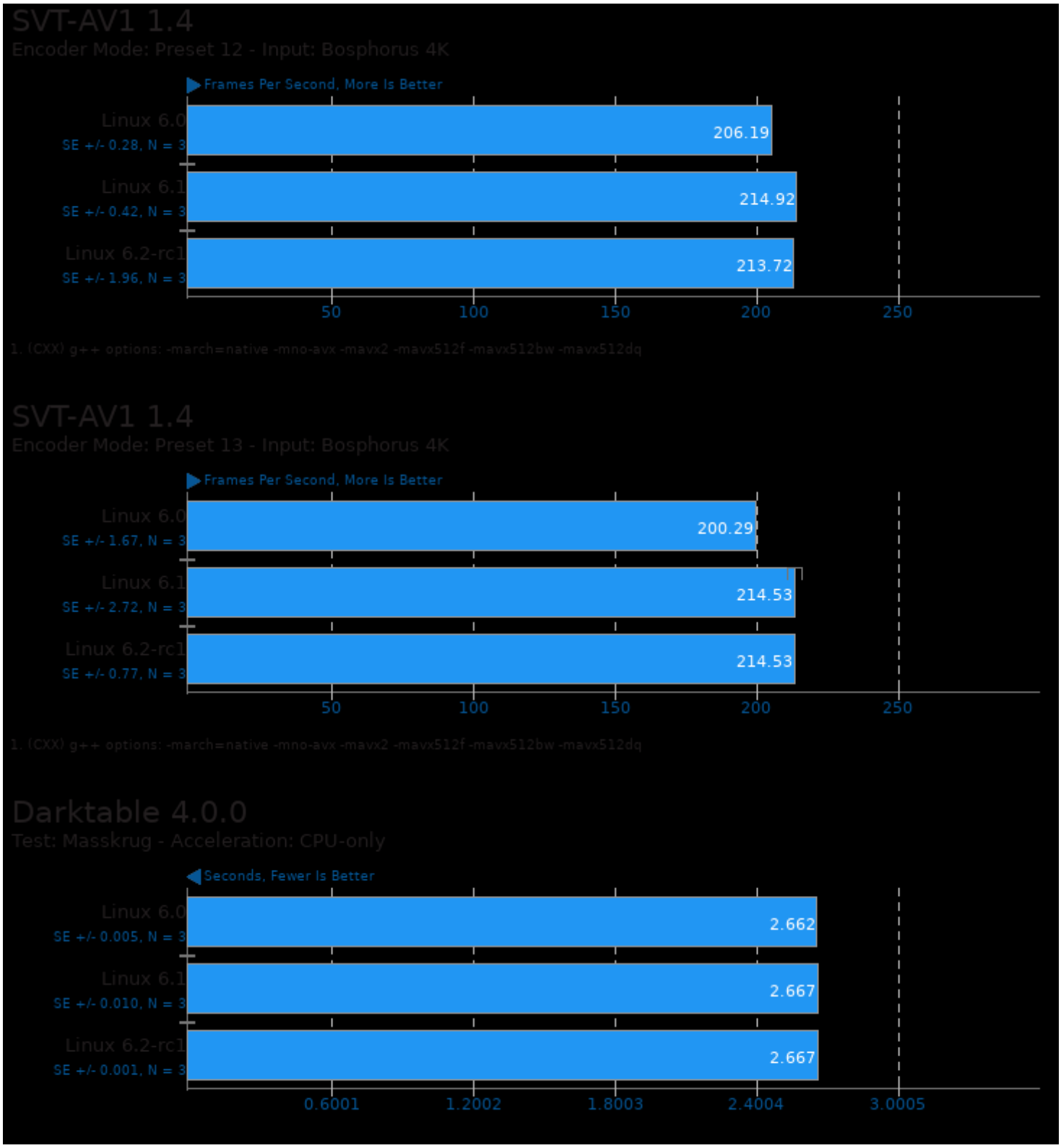

srsRAN 22.04.1
Test: 4G PHY_DL_Test 100 PRB SISO 64-QAM
UE Mb/s, More Is Better
Linux 6.0
SE +/- 1.65, N = 3
248.9
Linux 6.1
SE +/- 0.47, N = 3
248.0
Linux 6.2-rc1
SE +/- 0.43, N = 3
251.1
50
100
150
200
250
1. (CXX) g++ options: -std=c++14 -fno-strict-aliasing -march=native -mfpmath=sse -mavx2 -fvisibility=hidden -O3 -fno-trapping-math -fno-math-errno
srsRAN 22.04.1
Test: 4G PHY_DL_Test 100 PRB SISO 64-QAM
eNb Mb/s, More Is Better
Linux 6.0
SE +/- 1.51, N = 3
620.5
Linux 6.1
SE +/- 5.32, N = 3
617.6
Linux 6.2-rc1
SE +/- 1.52, N = 3
624.2
130
260
390
520
650
1. (CXX) g++ options: -std=c++14 -fno-strict-aliasing -march=native -mfpmath=sse -mavx2 -fvisibility=hidden -O3 -fno-trapping-math -fno-math-errno
SVT-AV1 1.4
Encoder Mode: Preset 8 - Input: Bosphorus 4K
Frames Per Second, More Is Better
Linux 6.0
SE +/- 0.58, N = 3
67.40
Linux 6.1
SE +/- 0.81, N = 3
71.76
Linux 6.2-rc1
SE +/- 0.39, N = 3
71.94
16
32
48
64
80
1. (CXX) g++ options: -march=native -mno-avx -mavx2 -mavx512f -mavx512bw -mavx512dq

Linux 6.2 Kernel Benchmark Ryzen 9 7950X

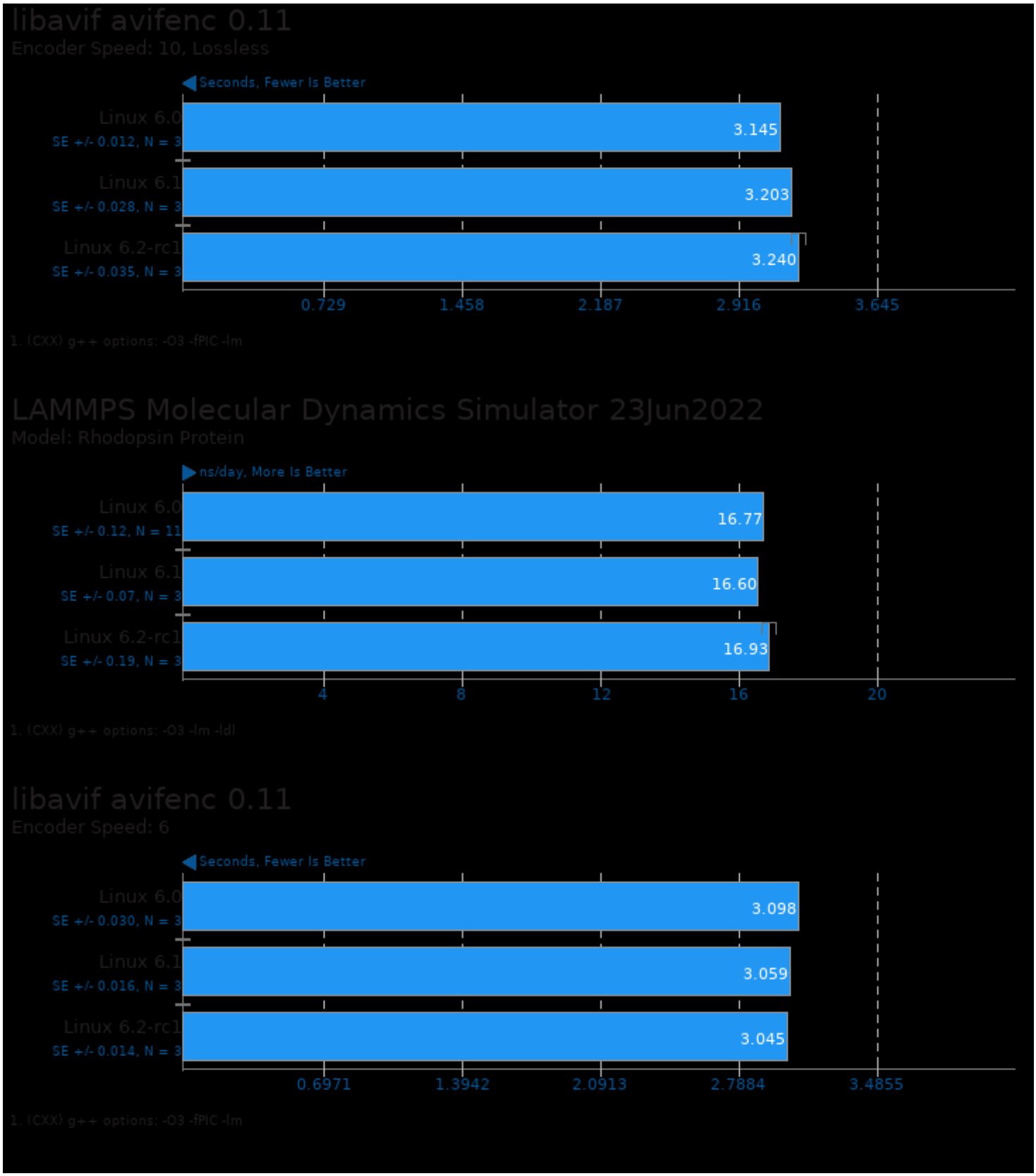


Linux 6.2 Kernel Benchmark Ryzen 9 7950X

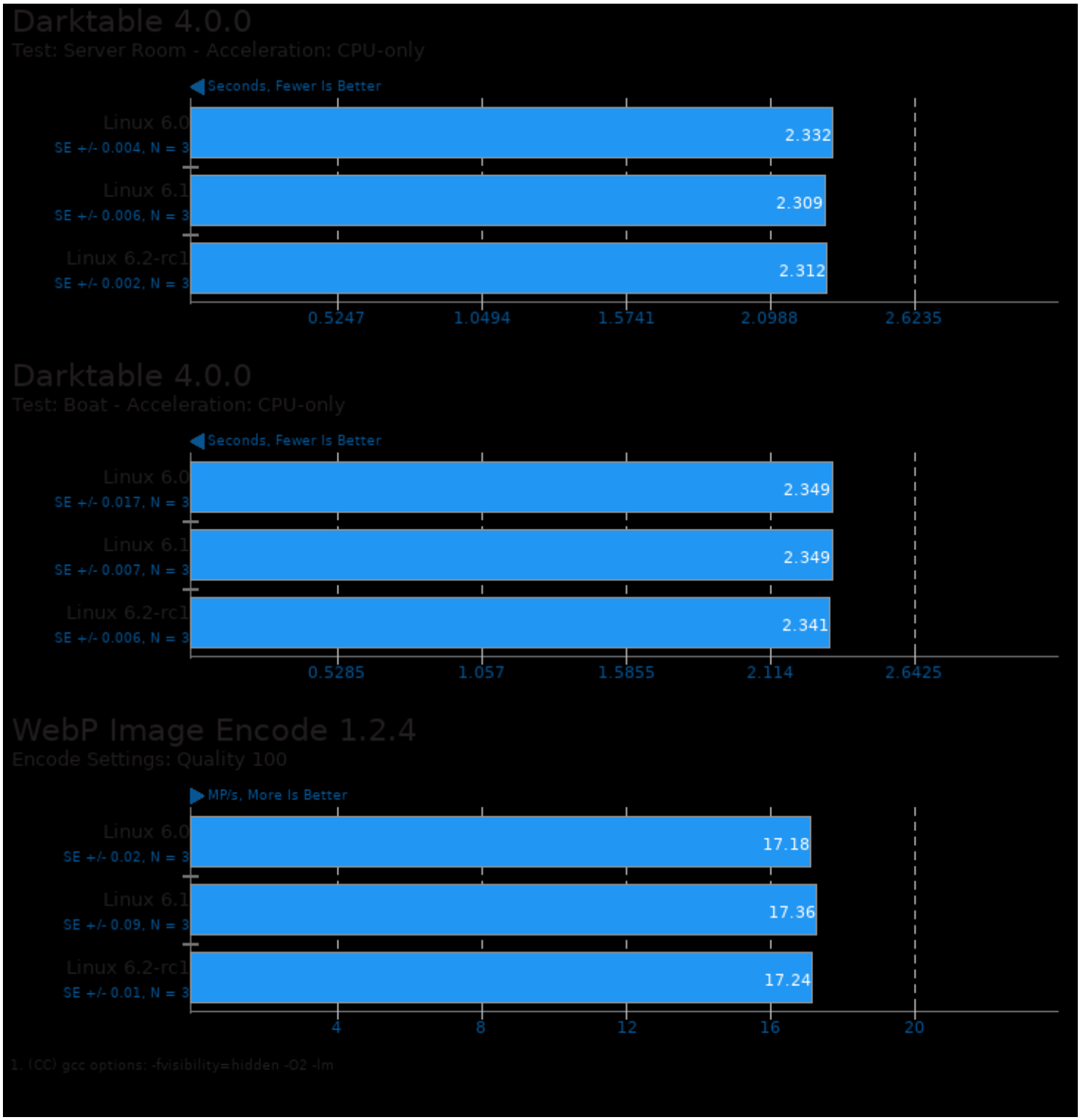



SVT-AV1 1.4
Encoder Mode: Preset 12 - Input: Bosphorus 4K
Frames Per Second, More Is Better
Linux 6.0
SE +/- 0.28, N = 3
206.19
Linux 6.1
SE +/- 0.42, N = 3
214.92
Linux 6.2-rc1
SE +/- 1.96, N = 3
213.72
50
100
150
200
250
1. (CXX) g++ options: -march=native -mno-avx -mavx2 -mavx512f -mavx512bw -mavx512dq
SVT-AV1 1.4
Encoder Mode: Preset 13 - Input: Bosphorus 4K
Frames Per Second, More Is Better
Linux 6.0
SE +/- 1.67, N = 3
200.29
Linux 6.1
SE +/- 2.72, N = 3
214.53
Linux 6.2-rc1
SE +/- 0.77, N = 3
214.53
50
100
150
200
250
1. (CXX) g++ options: -march=native -mno-avx -mavx2 -mavx512f -mavx512bw -mavx512dq
Darktable 4.0.0
Test: Masskrug - Acceleration: CPU-only
Seconds, Fewer Is Better
Linux 6.0
SE +/- 0.005, N = 3
2.662
Linux 6.1
SE +/- 0.010, N = 3
2.667
Linux 6.2-rc1
SE +/- 0.001, N = 3
2.667
0.6001
1.2002
1.8003
2.4004
3.0005

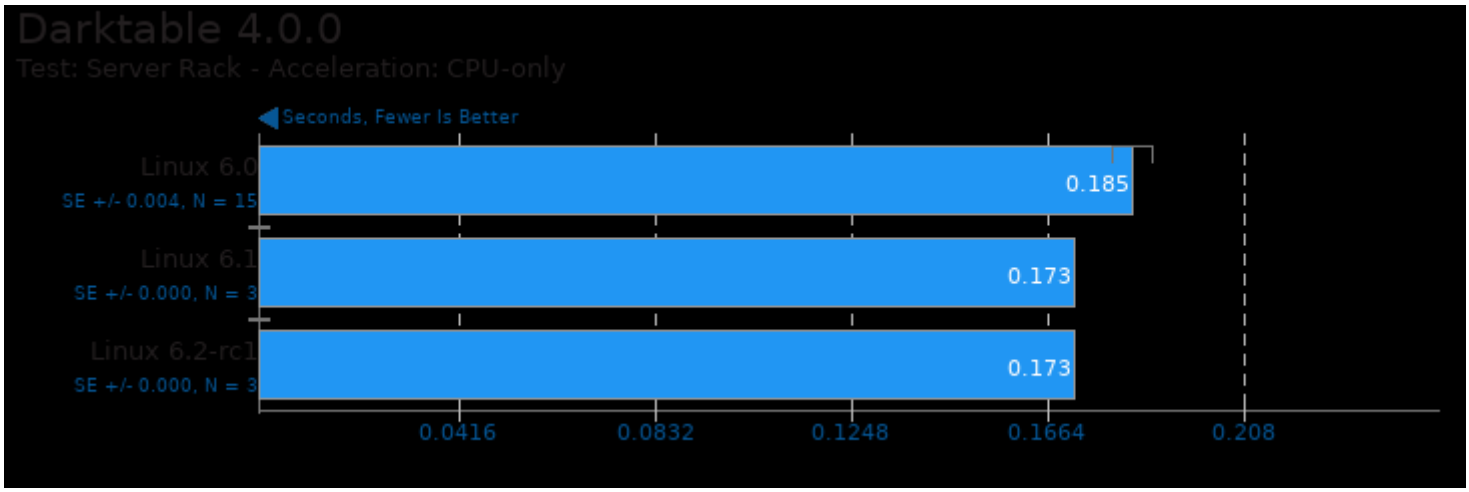
Linux 6.2 Kernel Benchmark Ryzen 9 7950X



Linux 6.2 Kernel Benchmark Ryzen 9 7950X

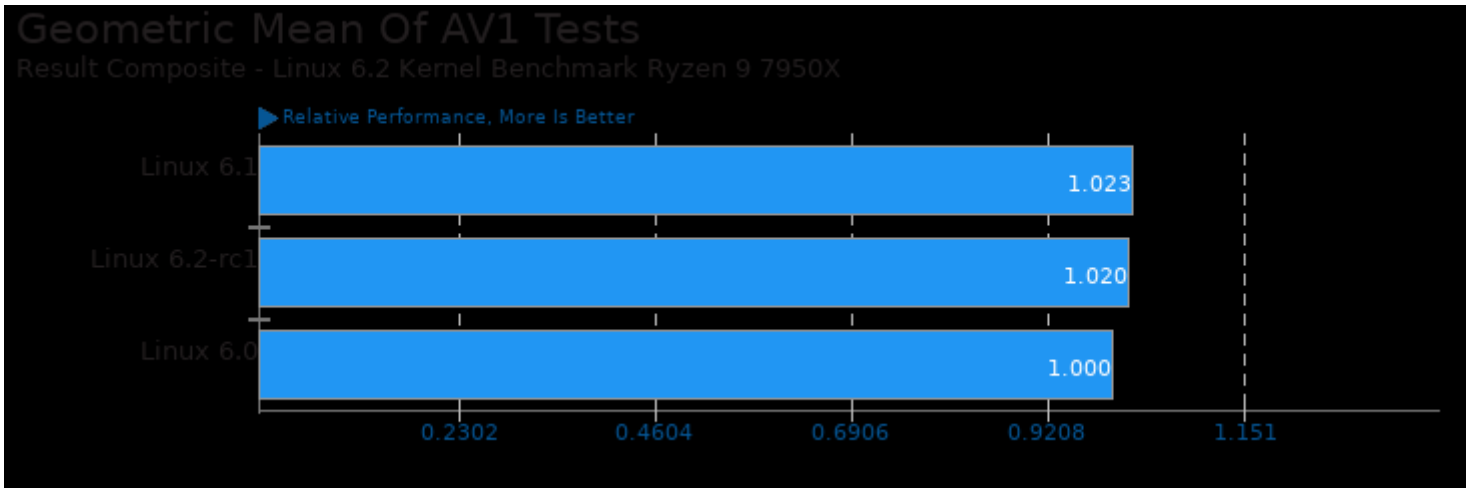


Linux 6.2 Kernel Benchmark Ryzen 9 7950X

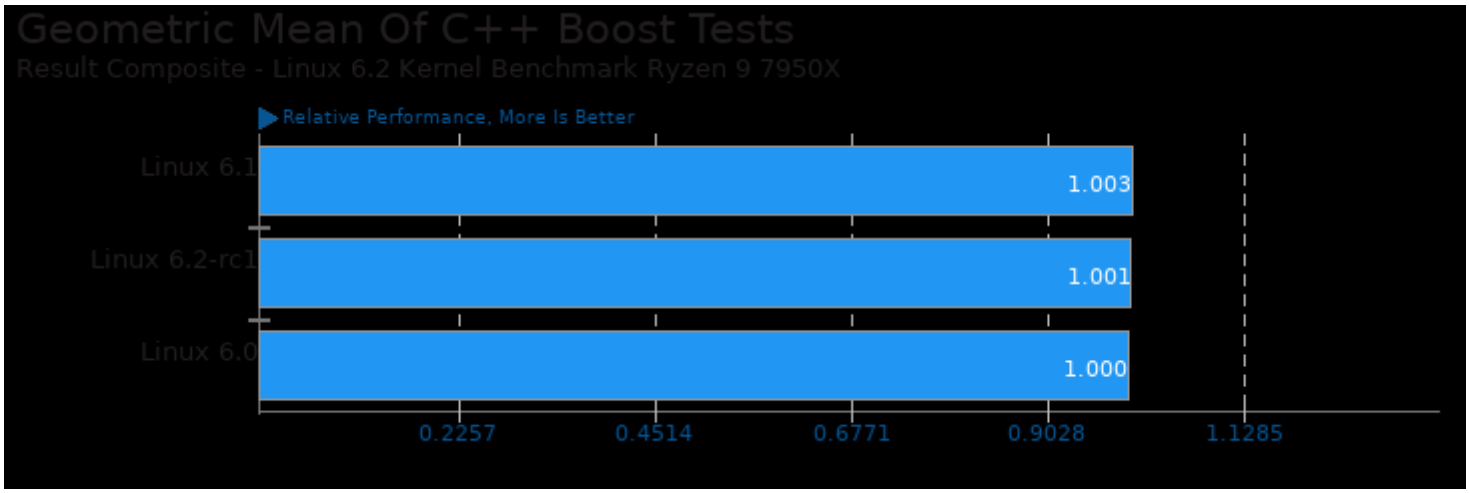


Linux 6.2 Kernel Benchmark Ryzen 9 7950X

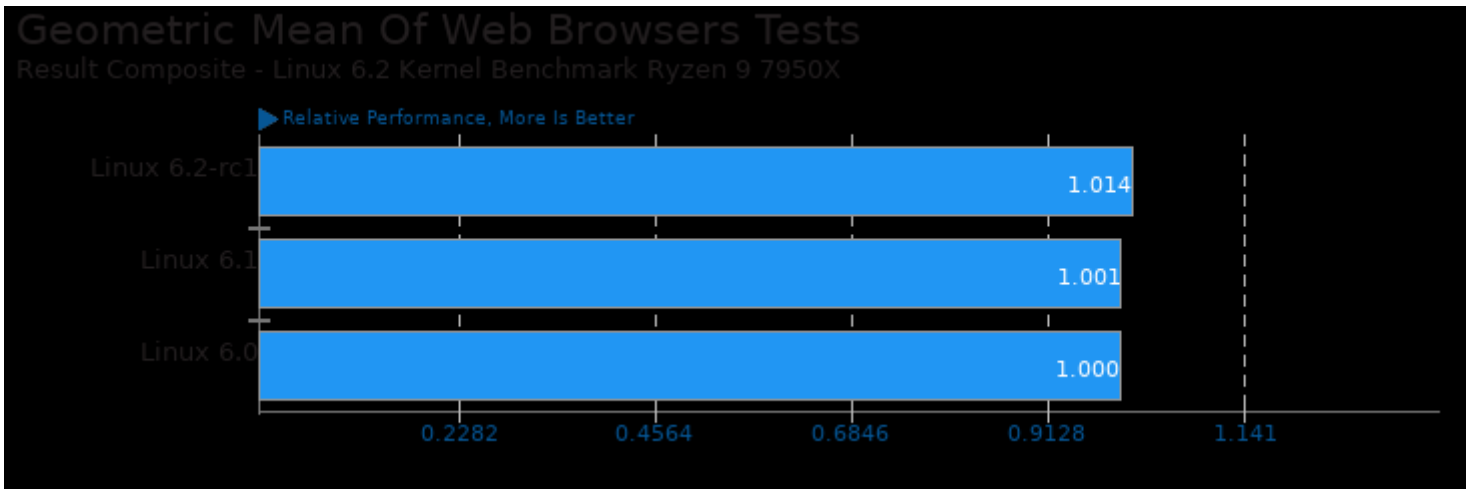
These geometric means are based upon test groupings / test suites for this result file.



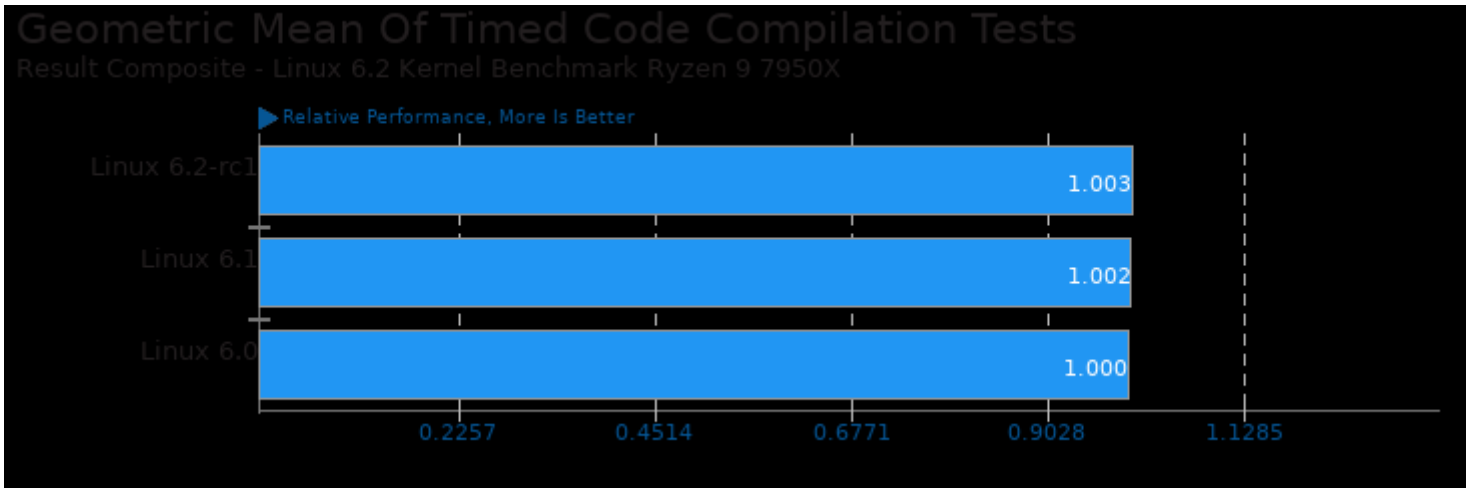
Geometric mean based upon tests: pts/svt-av1 and pts/avifenc



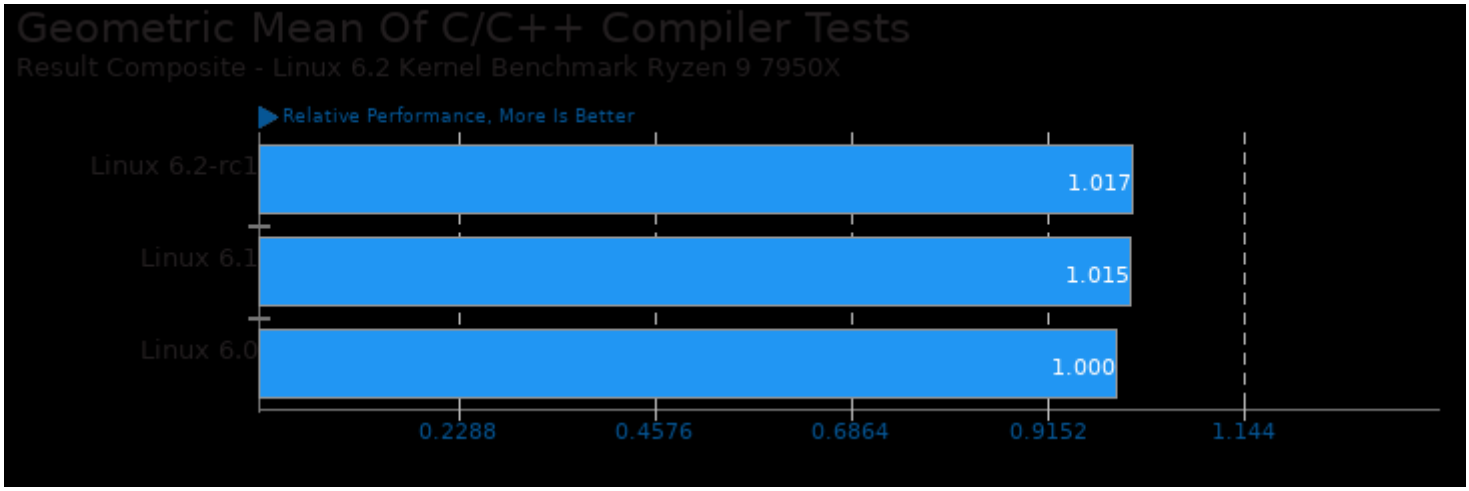
Geometric mean based upon tests: pts/openfoam and pts/srsran



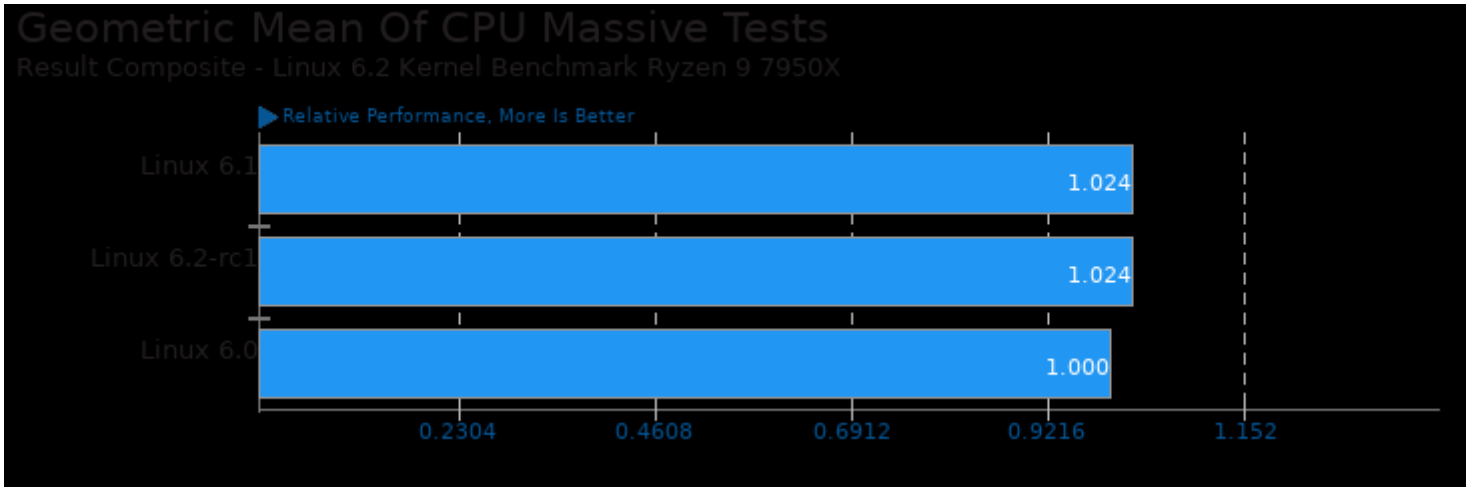
Geometric mean based upon tests: system/selenium



Geometric mean based upon tests: pts/build-php, pts/build-linux-kernel, pts/build-python, pts/build-godot, pts/build-wasmer and pts/build-nodejs



Geometric mean based upon tests: pts/build-php, pts/compress-7zip, pts/sqlite-speedtest, pts/lammps, pts/aircrack-ng and pts/svt-av1



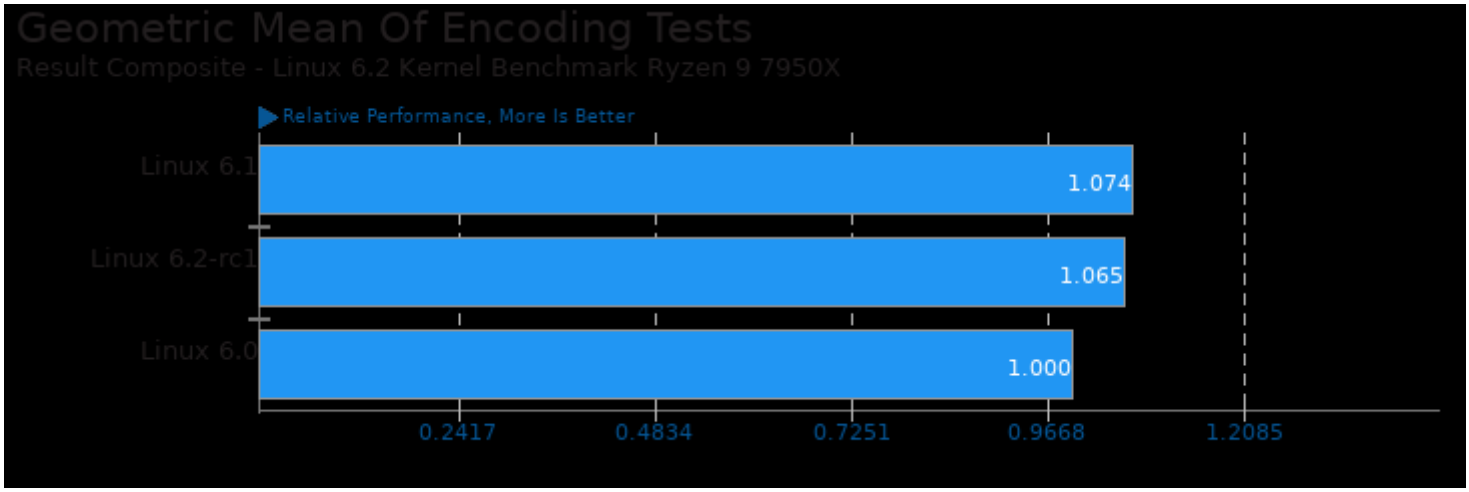
Geometric mean based upon tests: pts/build-linux-kernel, pts/build-php, pts/compress-7zip, pts/svt-av1, pts/lammps, pts/redis, pts/stress-ng, pts/tensorflow, pts/blender and system/darktable



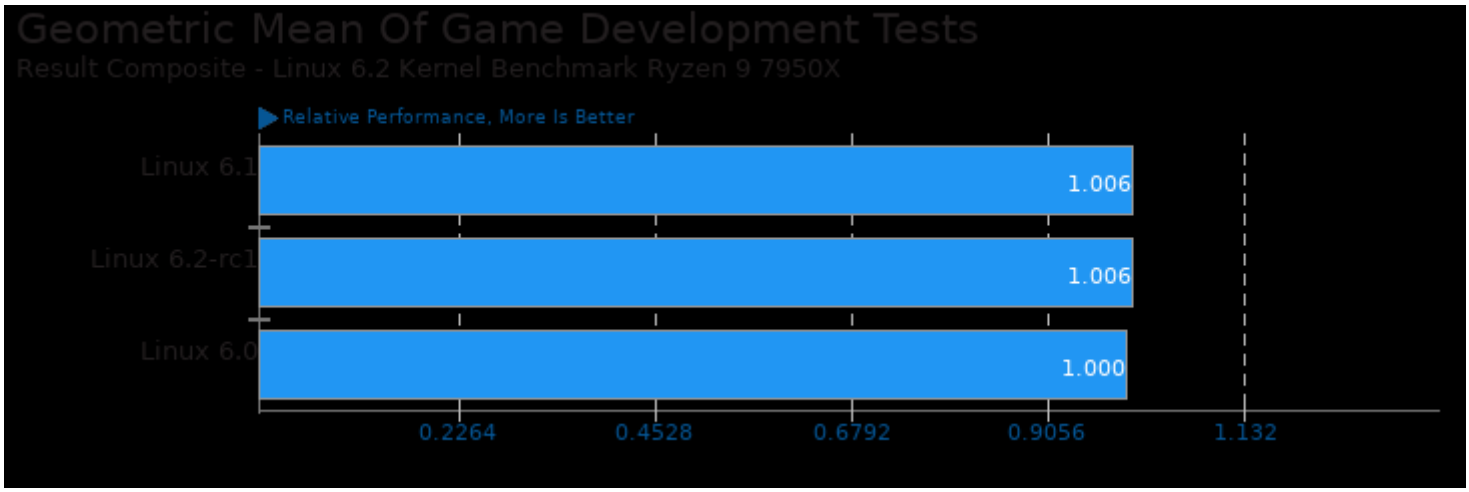
Geometric mean based upon tests: pts/blender, pts/ffmpeg, pts/svt-av1, pts/avifenc, pts/stargate, pts/webp, pts/jpegxl, system/rawtherapee, system/gimp, system/darktable, pts/openvkl, pts/openvino, pts/astcenc and pts/build-godot



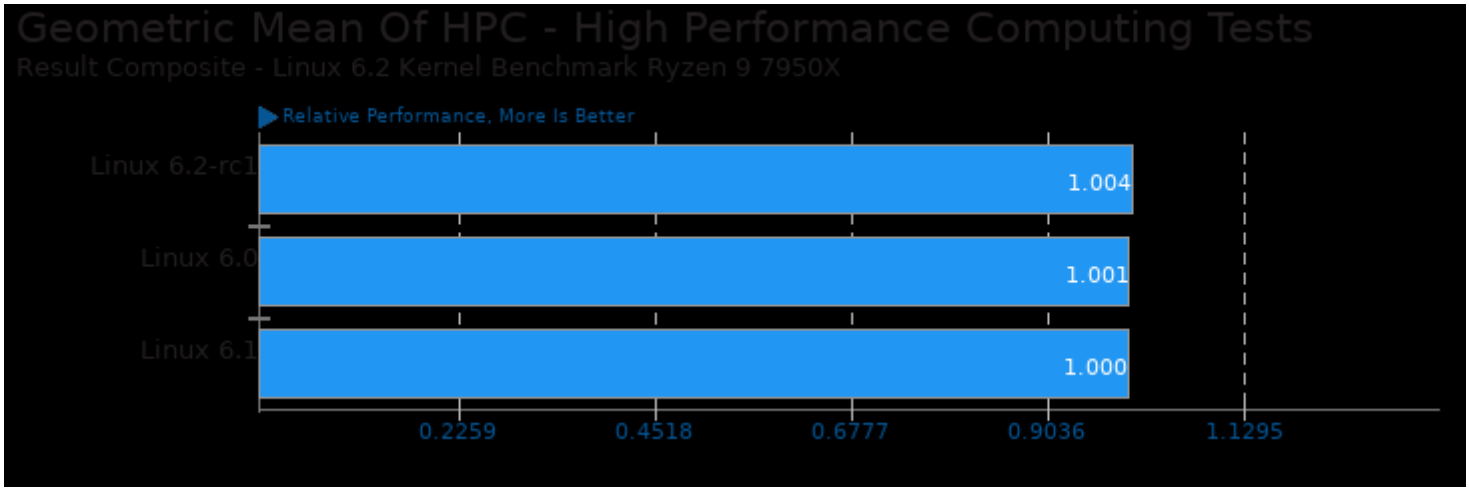
Geometric mean based upon tests: pts/sqlite-speedtest, pts/redis, pts/clickhouse, pts/spark and pts/cockroach



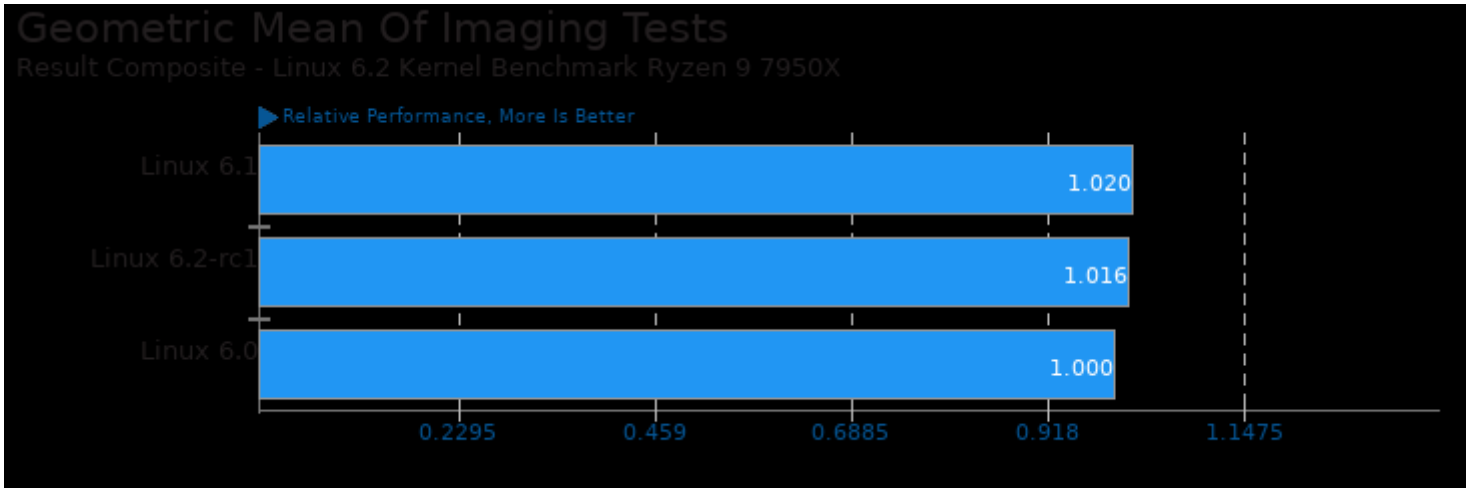
Geometric mean based upon tests: pts/stargate, pts/ffmpeg, pts/svt-av1 and pts/avifenc



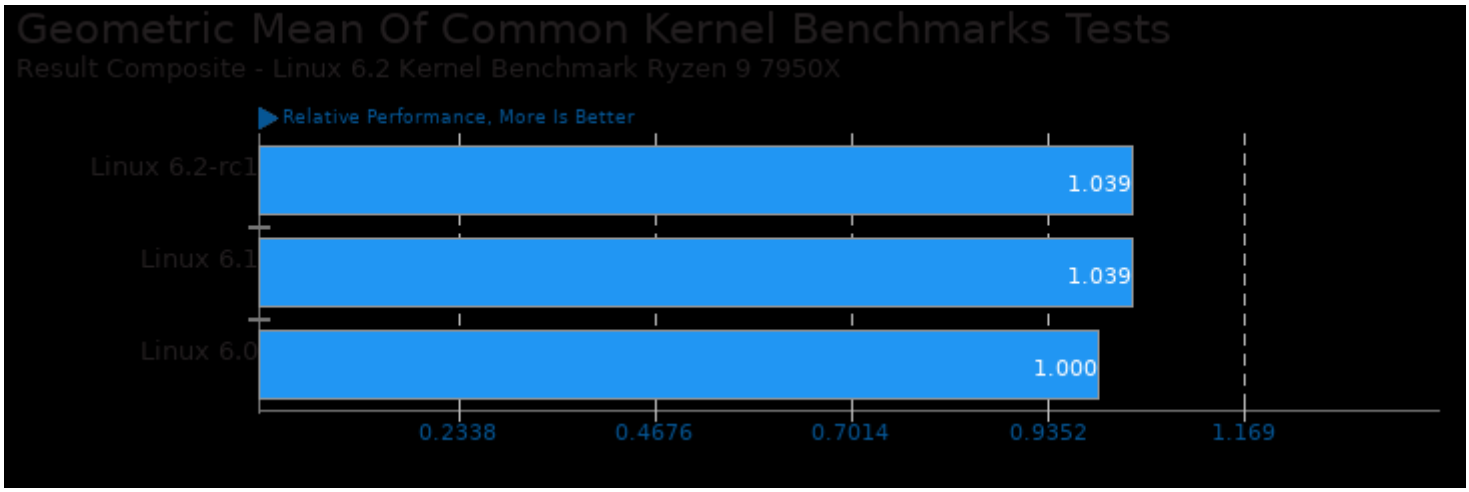
Geometric mean based upon tests: pts/astcenc, pts/build-godot, pts/blender and pts/openvkl



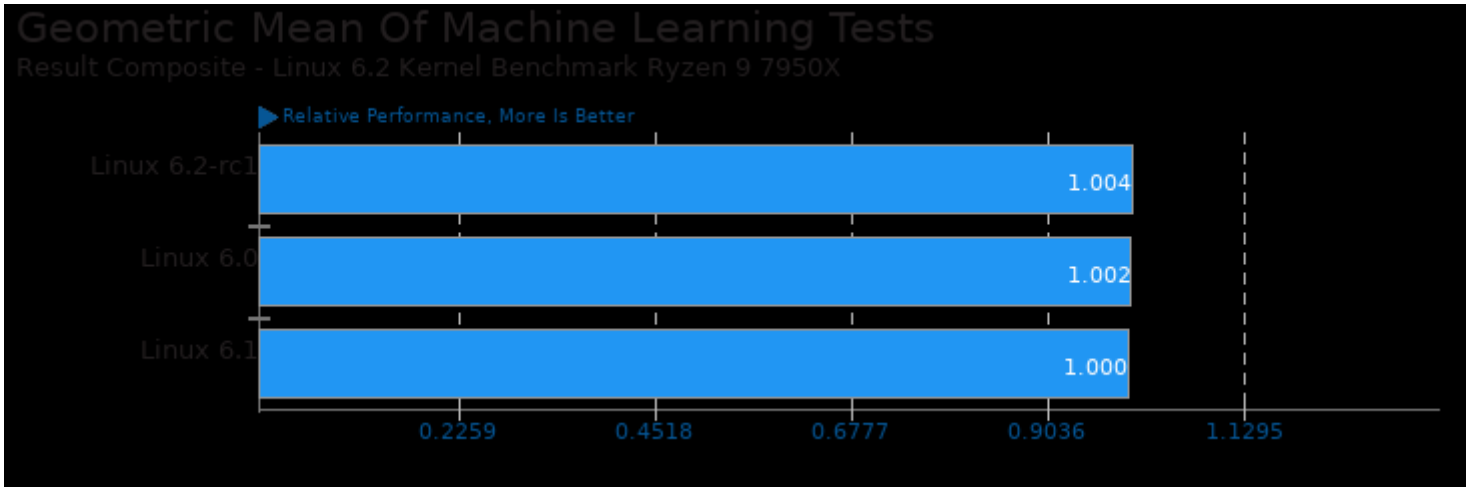
Geometric mean based upon tests: pts/lammps, pts/openfoam, pts/tensorflow, pts/openvino, pts/openradioss and pts/minibude



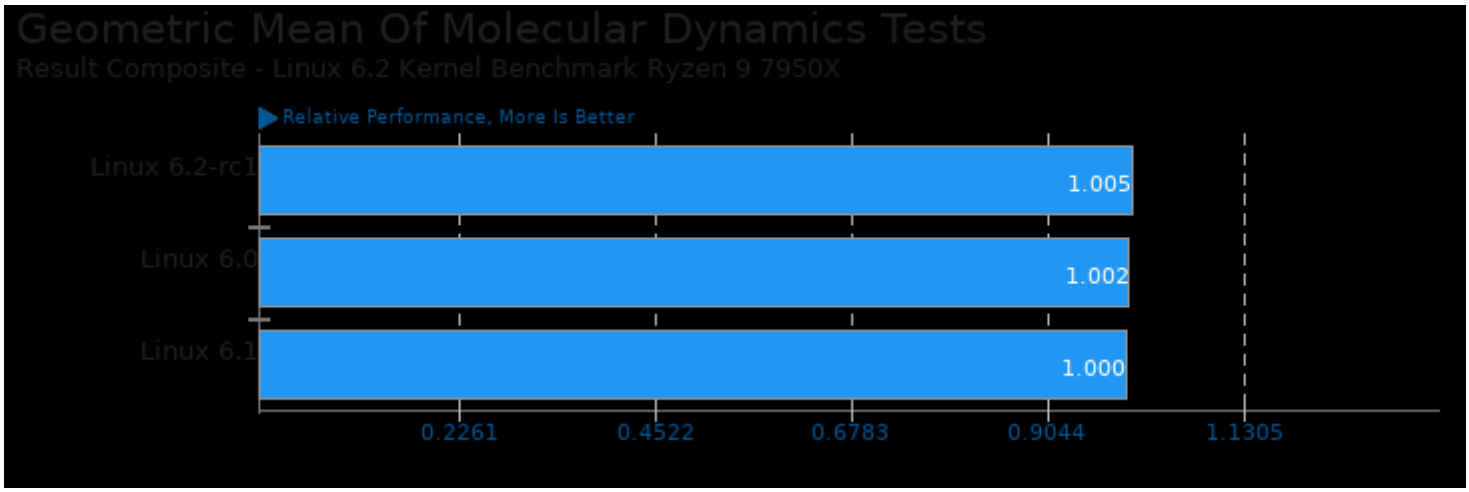
Geometric mean based upon tests: pts/webp, pts/jpegxl, system/rawtherapee, system/gimp, system/darktable and pts/avifenc



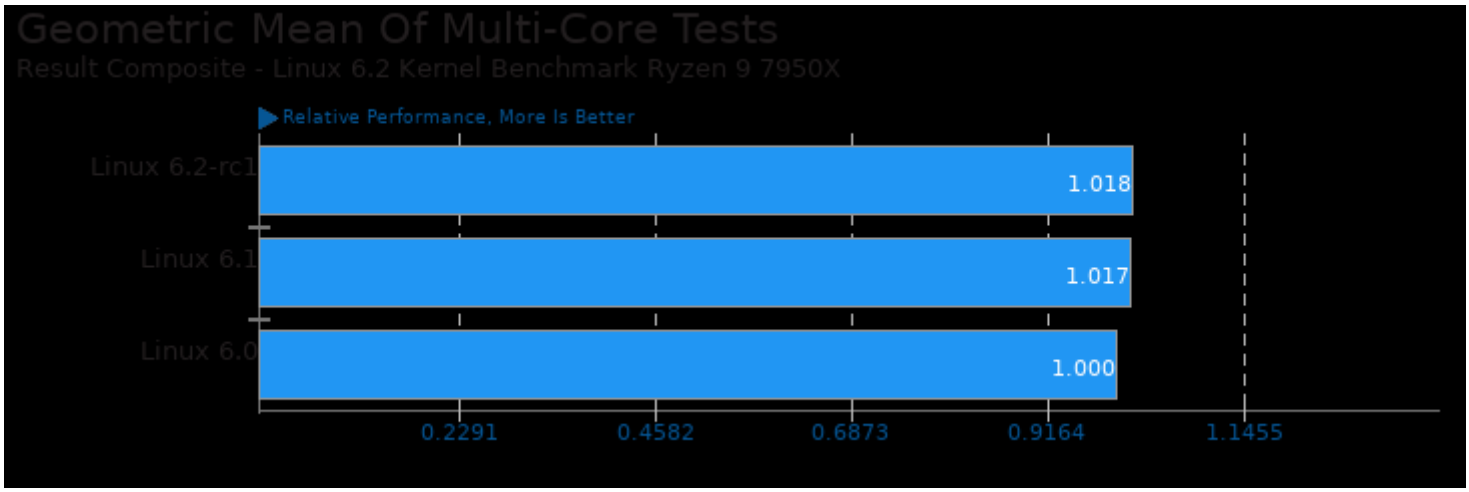
Geometric mean based upon tests: pts/sqlite-speedtest and pts/stress-ng



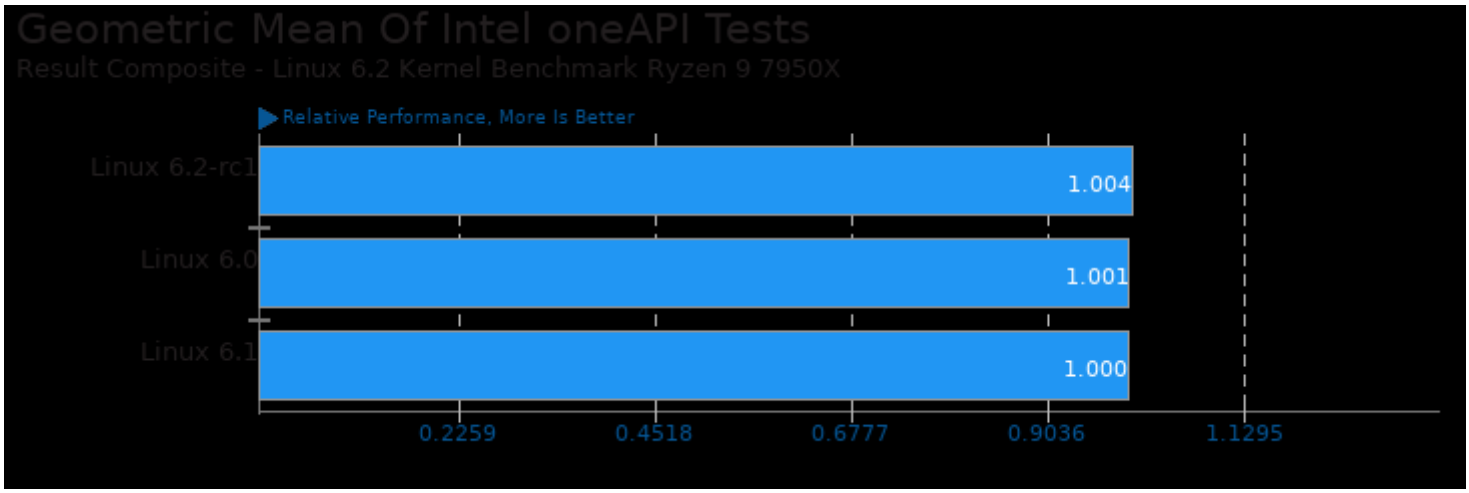
Geometric mean based upon tests: pts/tensorflow and pts/openvino



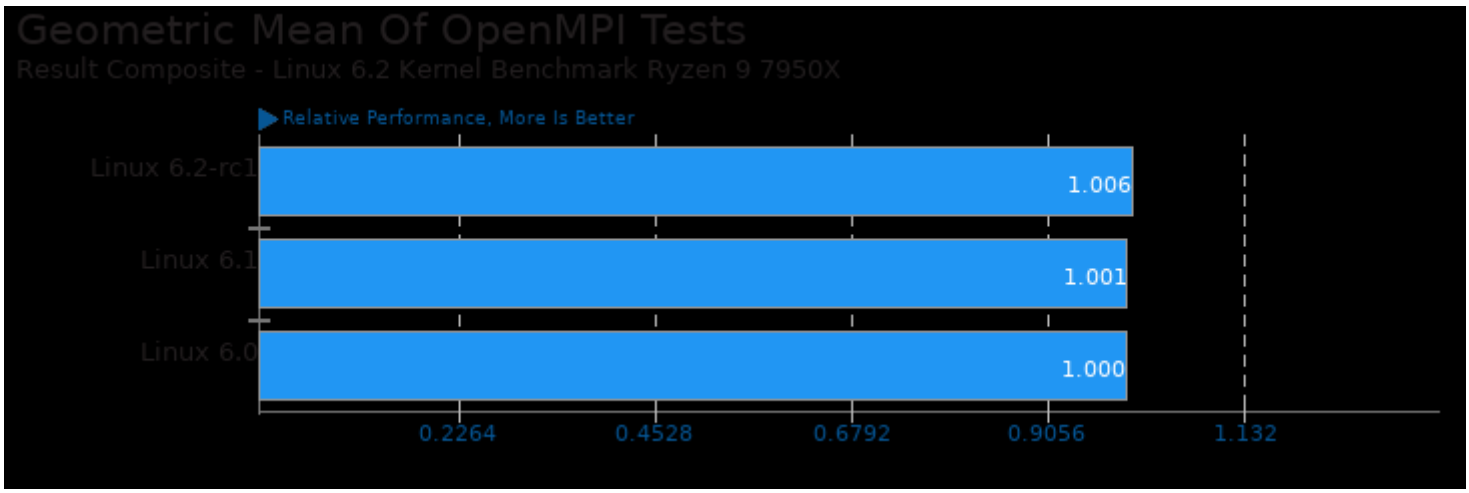
Geometric mean based upon tests: pts/lammps and pts/openfoam



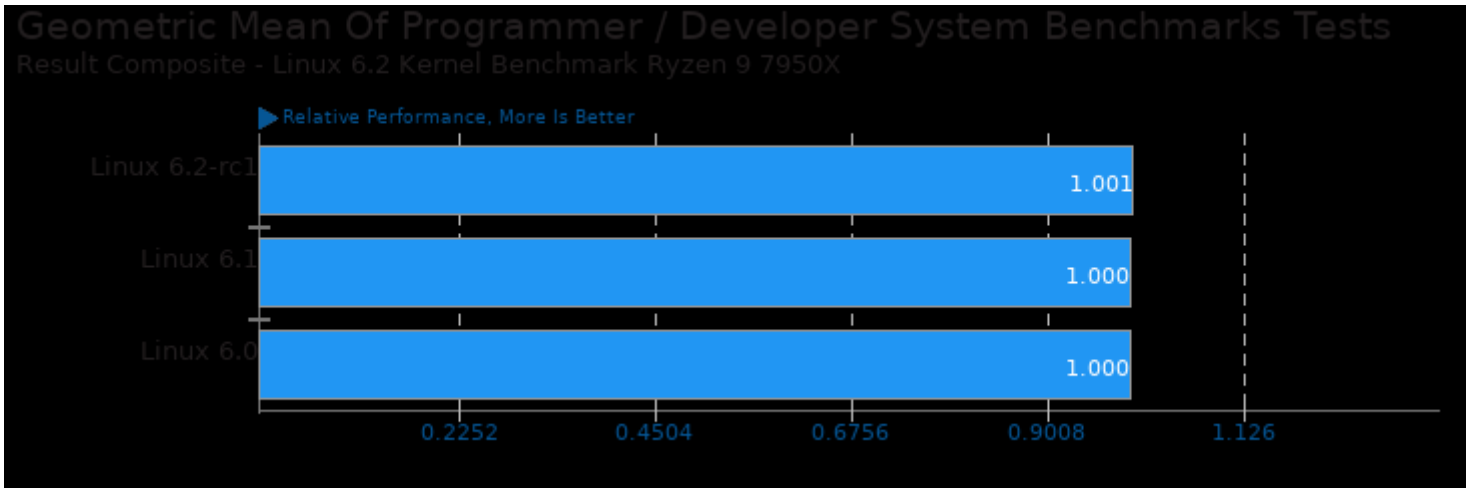
Geometric mean based upon tests: pts/blender, pts/aircrack-ng, pts/ffmpeg, pts/svt-av1, pts/avifenc, pts/lammps, pts/compress-7zip, pts/build-php, pts/build-linux-kernel, pts/build-python, pts/build-godot, pts/build-wasmer, pts/build-nodejs, pts/openvkl and pts/openvino



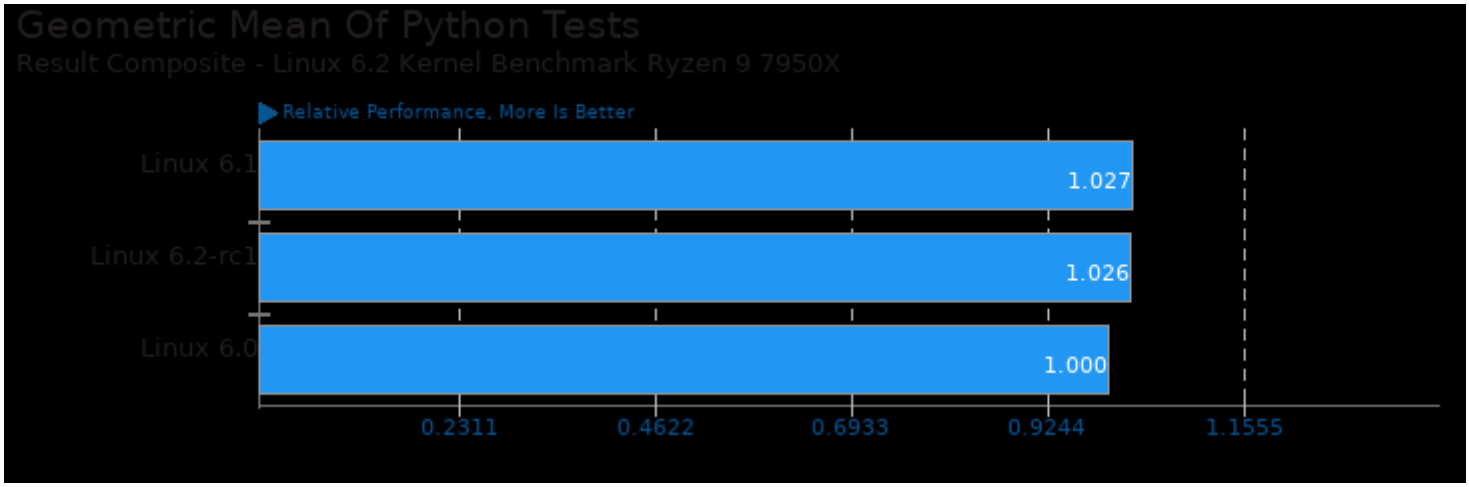
Geometric mean based upon tests: pts/openvkl and pts/openvino



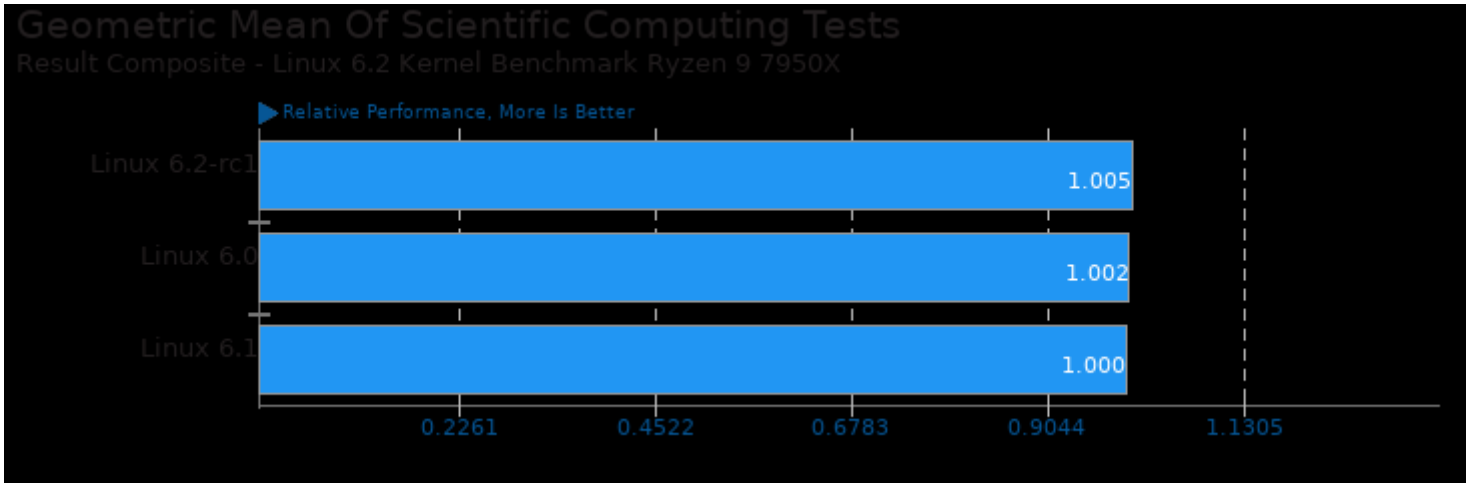
Geometric mean based upon tests: pts/lammps, pts/openradioss and pts/openfoam



Geometric mean based upon tests: pts/sqlite-speedtest, pts/build-php, pts/build-linux-kernel, pts/build-python, pts/build-godot, pts/build-wasmer and pts/build-nodejs

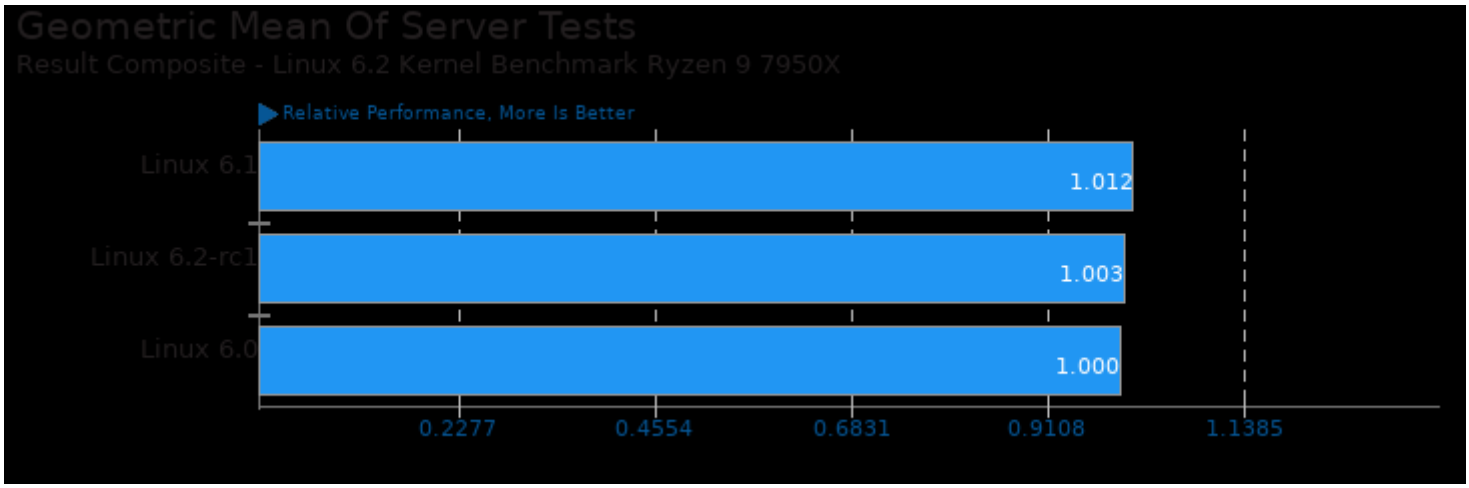


Geometric mean based upon tests: system/selenium, pts/build-nodejs, pts/ffmpeg, pts/stargate, pts/spark, pts/openvino, pts/build-godot and pts/tensorflow

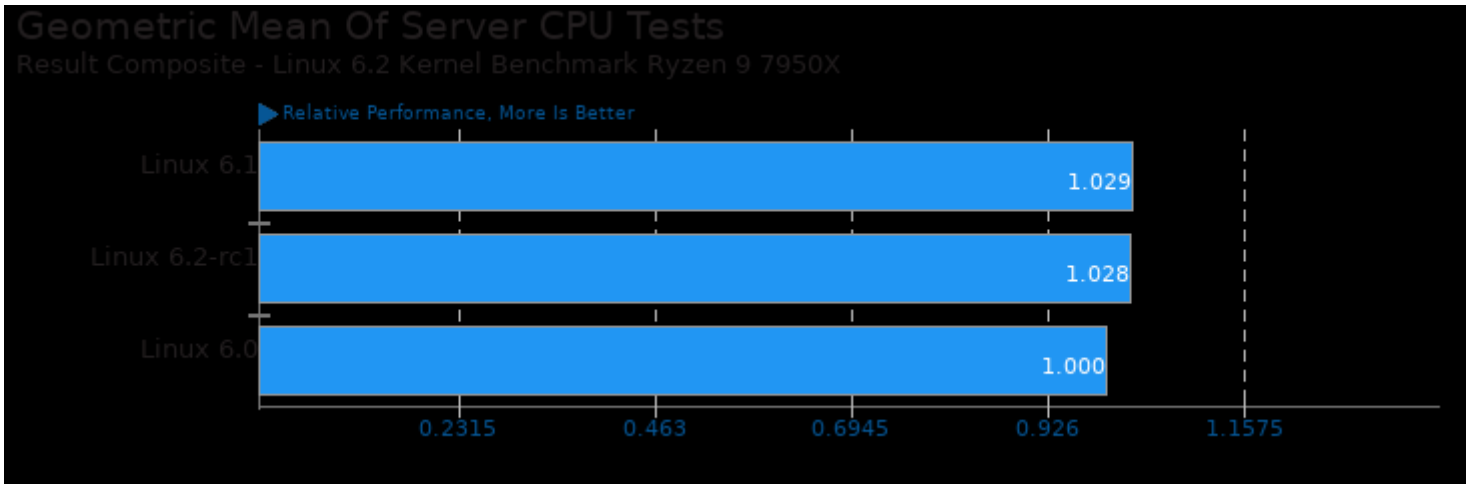


Geometric mean based upon tests: pts/lammps and pts/openfoam

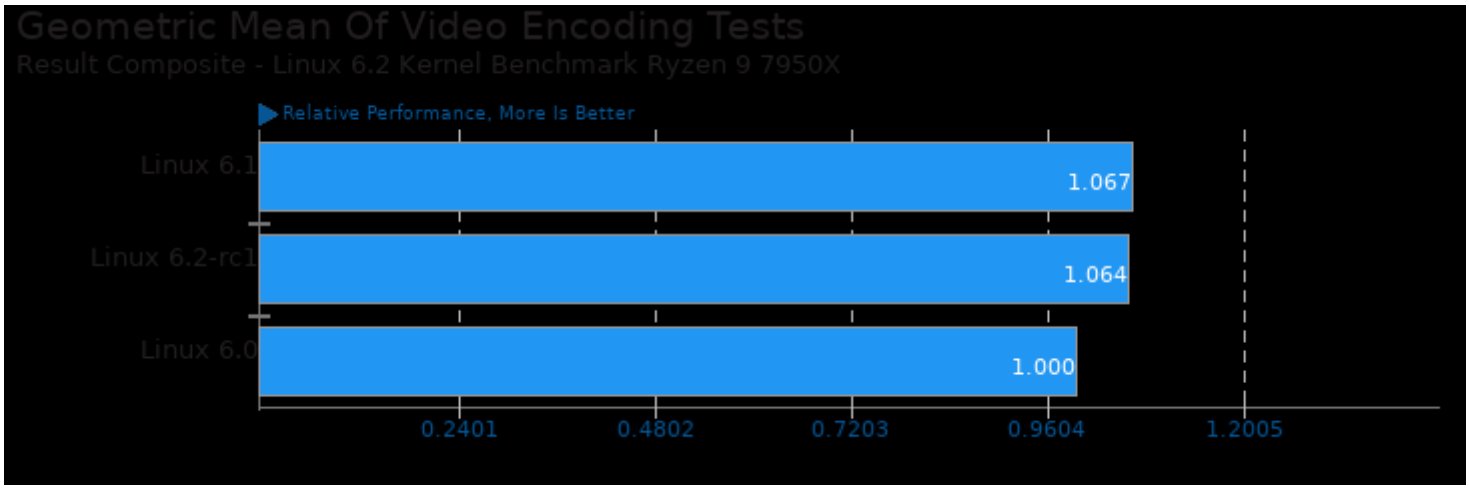
Linux 6.2 Kernel Benchmark Ryzen 9 7950X



Geometric mean based upon tests: pts/redis, pts/sqlite-speedtest, pts/clickhouse, pts/spark and pts/cockroach



Geometric mean based upon tests: pts/svt-av1, pts/compress-7zip, pts/build-linux-kernel, pts/build-php, system/gimp, pts/redis, pts/stress-ng and pts/blender



Geometric mean based upon tests: pts/ffmpeg, pts/svt-av1 and pts/avifenc

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