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5950xCPU

Intel Core i7-13700K testing with a MSI MAG B660M MORTAR MAX WIFI DDR4 (MS-7D97) v1.0 (1.30 BIOS) and nouveaudrmfb on Debian GNU/Linux 11 via the Phoronix Test Suite.

Automated Executive Summary

AMD Ryzen 9 5950X 16-Core had the most wins, coming in first place for 40% of the tests.

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

7-Zip Compression (Test: Decompression Rating) at 1.423x
NAMD (ATPase Simulation - 327,506 Atoms) at 1.379x
Sysbench (Test: CPU) at 1.356x
Rodinia (Test: OpenMP CFD Solver) at 1.346x
Timed GCC Compilation (Time To Compile) at 1.325x
Kvazaar (Video Input: Bosphorus 4K - Video Preset: Slow) at 1.299x
Timed Linux Kernel Compilation (Build: defconfig) at 1.297x
Kvazaar (Video Input: Bosphorus 4K - Video Preset: Medium) at 1.294x
Timed Linux Kernel Compilation (Build: allmodconfig) at 1.25x
ctx_clock (Context Switch Time) at 1.25x.

Test Systems:

dajeCPU

Processor: AMD Ryzen 9 5950X 16-Core @ 3.40GHz (16 Cores / 32 Threads), Motherboard: MSI MAG B550M MORTAR (MS-7C94) v1.0 (1.70 BIOS), Chipset: AMD Starship/Matisse, Memory: 2 x 8 GB DDR4-3200MT/s LD4BU008G-3200XG, Disk: 1000GB Sabrent Rocket 4.0 1TB + 1000GB Western Digital WDS100T1B0A-, Graphics: Zotac NVIDIA GeForce GT 710 2GB, Audio: NVIDIA GK208 HDMI/DP, Monitor: DELL P1917S, Network: Realtek RTL8125 2.5GbE

OS: Debian GNU/Linux 11, Kernel: 5.15.83-1-pve (x86_64), Display Server: X Server, Vulkan: 1.0.2, Compiler: GCC 10.2.1 20210110, File-System: ext4, Screen Resolution: 1280x1024

Kernel Notes: Transparent Huge Pages: madvise
Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --enable-bootstrap --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++,m2 --enable-libphobos-checking=release --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-link-mutex --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none=/build/gcc-10-Km9U7s/gcc-10-10.2.1/debian/tmp-nvptx/usr,amdgcn-amdhsa=/build/gcc-10-Km9U7s/gcc-10-10.2.1/debian/tmp-gcn/usr, hsa --enable-plugin --enable-shared --enable-threads=posix --host=x86_64-linux-gnu --program-prefix=x86_64-linux-gnu- --target=x86_64-linux-gnu --with-abi=m64 --with-arch-32=i686 --with-build-config=bootstrap-lto-lean --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 performance (Boost: Enabled) - CPU Microcode: 0x0
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 and seccomp + 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

AMD Ryzen 9 5950X 16-Core

Processor: AMD Ryzen 9 5950X 16-Core @ 4.60GHz (16 Cores / 32 Threads), Motherboard: MSI MAG B550M MORTAR (MS-7C94) v1.0 (1.70 BIOS), Chipset: AMD Starship/Matisse, Memory: 2 x 8 GB DDR4-3200MT/s LD4BU008G-3200XG, Disk: 1000GB Sabrent Rocket 4.0 1TB + 1000GB Western Digital WDS100T1B0A-, Graphics: Zotac NVIDIA GeForce GT 710 2GB, Audio: NVIDIA GK208 HDMI/DP, Monitor: DELL P1917S, Network: Realtek RTL8125 2.5GbE

OS: Debian GNU/Linux 11, Kernel: 5.15.83-1-pve (x86_64), Display Server: X Server, Vulkan: 1.0.2, Compiler: GCC 10.2.1 20210110, File-System: ext4, Screen Resolution: 1280x1024

Kernel Notes: Transparent Huge Pages: madvise
Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --enable-bootstrap --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++,m2 --enable-libphobos-checking=release --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-link-mutex --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none=/build/gcc-10-Km9U7s/gcc-10-10.2.1/debian/tmp-nvptx/usr,amdgcn-amdhsa=/build/gcc-10-Km9U7s/gcc-10-10.2.1/debian/tmp-gcn/usr, hsa --enable-plugin --enable-shared --enable-threads=posix --host=x86_64-linux-gnu --program-prefix=x86_64-linux-gnu- --target=x86_64-linux-gnu --with-abi=m64 --with-arch-32=i686 --with-build-config=bootstrap-lto-lean --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 performance (Boost: Enabled) - CPU Microcode: 0x0
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 and seccomp + 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

stabile

Processor: AMD Ryzen 9 5950X 16-Core @ 3.40GHz (16 Cores / 32 Threads), Motherboard: MSI MAG B550M MORTAR (MS-7C94) v1.0 (1.70 BIOS), Chipset: AMD Starship/Matisse, Memory: 2 x 8 GB DDR4-3200MT/s LD4BU008G-3200XG, Disk: 1000GB Sabrent Rocket 4.0 1TB + 1000GB Western Digital WDS100T1B0A-, Graphics: Zotac NVIDIA GeForce GT 710 2GB, Audio: NVIDIA GK208 HDMI/DP, Monitor: DELL P1917S, Network: Realtek RTL8125 2.5GbE

OS: Debian GNU/Linux 11, Kernel: 5.15.83-1-pve (x86_64), Display Server: X Server, Vulkan: 1.0.2, Compiler: GCC

10.2.1 20210110, File-System: ext4, Screen Resolution: 1280x1024

Kernel Notes: Transparent Huge Pages: madvise
Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --enable-bootstrap --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++,m2 --enable-libphobos-checking=release --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-link-mutex --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none=/build/gcc-10-Km9U7s/gcc-10-10.2.1/debian/tmp-nvptx/usr,amdgcn-amdhsa=/build/gcc-10-Km9U7s/gcc-10-10.2.1/debian/tmp-gcn/usr, hsa --enable-plugin --enable-shared --enable-threads=posix --host=x86_64-linux-gnu --program-prefix=x86_64-linux-gnu- --target=x86_64-linux-gnu --with-abi=m64 --with-arch-32=i686 --with-build-config=bootstrap-lto-lean --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 performance (Boost: Enabled) - CPU Microcode: 0x0
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 and seccomp + 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

13700k

13700k_Daily

13700_Daily

13700k_Offset_Pump75

Processor: Intel Core i7-13700K @ 5.30GHz (16 Cores / 24 Threads), Motherboard: MSI MAG B660M MORTAR MAX WIFI DDR4 (MS-7D97) v1.0 (1.30 BIOS), Chipset: Intel Device 7aa7, Memory: 2 x 8 GB DDR4-3600MT/s, Disk: 2000GB Samsung SSD 980 PRO 2TB + 1000GB 00T1B0A-00H9, Graphics: nouveaudrmfb, Audio: Realtek ALC897, Monitor: BenQ EW3270U, Network: Realtek RTL8125 2.5GbE + Intel Device 7af0

OS: Debian GNU/Linux 11, Kernel: 5.15.83-1-pve (x86_64), Display Server: X Server, Vulkan: 1.0.2, Compiler: GCC 10.2.1 20210110, 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-bootstrap --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++,m2 --enable-libphobos-checking=release --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-link-mutex --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none=/build/gcc-10-Km9U7s/gcc-10-10.2.1/debian/tmp-nvptx/usr,amdgcn-amdhsa=/build/gcc-10-Km9U7s/gcc-10-10.2.1/debian/tmp-gcn/usr, hsa --enable-plugin --enable-shared --enable-threads=posix --host=x86_64-linux-gnu --program-prefix=x86_64-linux-gnu- --target=x86_64-linux-gnu --with-abi=m64 --with-arch-32=i686 --with-build-config=bootstrap-lto-lean --with-default-libstdcxx-abi=new --with-gcc-major-version-only --with-multilib-list=m32,m64,mx32 --with-target-system-zlib=auto --with-tune=generic --without-cuda-driver -v
Processor Notes: Scaling Governor: intel_pstate performance (EPP: performance) - CPU Microcode: 0x10f
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 and seccomp + spectre_v1: Mitigation of usercopy/swapgs barriers and __user pointer sanitization + spectre_v2: Mitigation of Enhanced IBRS IBPB: conditional RSB filling PBRSB-eIBRS: SW sequence + srbds: Not affected + tsx_async_abort: Not affected

Intel Core i7-13700K

Processor: Intel Core i7-13700K @ 5.30GHz (16 Cores / 24 Threads), Motherboard: MSI MAG B660M MORTAR MAX WIFI DDR4 (MS-7D97) v1.0 (1.30 BIOS), Chipset: Intel Device 7aa7, Memory: 2 x 8 GB DDR4-3600MT/s, Disk: 2000GB Samsung SSD 980 PRO 2TB + 1000GB 00T1B0A-00H9 + 123GB SanDisk 3.2Gen1, Graphics: nouveaudrmfb, Audio: Realtek ALC897, Monitor: BenQ EW3270U, Network: Realtek RTL8125 2.5GbE + Intel Device 7af0

OS: Debian GNU/Linux 11, Kernel: 5.15.83-1-pve (x86_64), Display Server: X Server, Vulkan: 1.0.2, Compiler: GCC 10.2.1 20210110, 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-bootstrap --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++,m2 --enable-libphobos-checking=release --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-link-mutex --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none=/build/gcc-10-Km9U7s/gcc-10-10.2.1/debian/tmp-nvptx/usr,amdgcn-amdhsa=/build/gcc-10-Km9U7s/gcc-10-10.2.1/debian/tmp-gcn/usr, hsa --enable-plugin --enable-shared --enable-threads=posix --host=x86_64-linux-gnu --program-prefix=x86_64-linux-gnu- --target=x86_64-linux-gnu --with-abi=m64 --with-arch-32=i686 --with-build-config=bootstrap-lto-lean --with-default-libstdcxx-abi=new --with-gcc-major-version-only --with-multilib-list=m32,m64,mx32 --with-target-system-zlib=auto --with-tune=generic --without-cuda-driver -v
Processor Notes: Scaling Governor: intel_pstate performance (EPP: performance) - CPU Microcode: 0x10f

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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 and seccomp + spectre_v1: Mitigation of usercopy/swapgs barriers and __user pointer sanitization + spectre_v2: Mitigation of Enhanced IBRS IBPB: conditional RSB filling PBRSB-eIBRS: SW sequence + srbds: Not affected + tsx_async_abort: Not affected

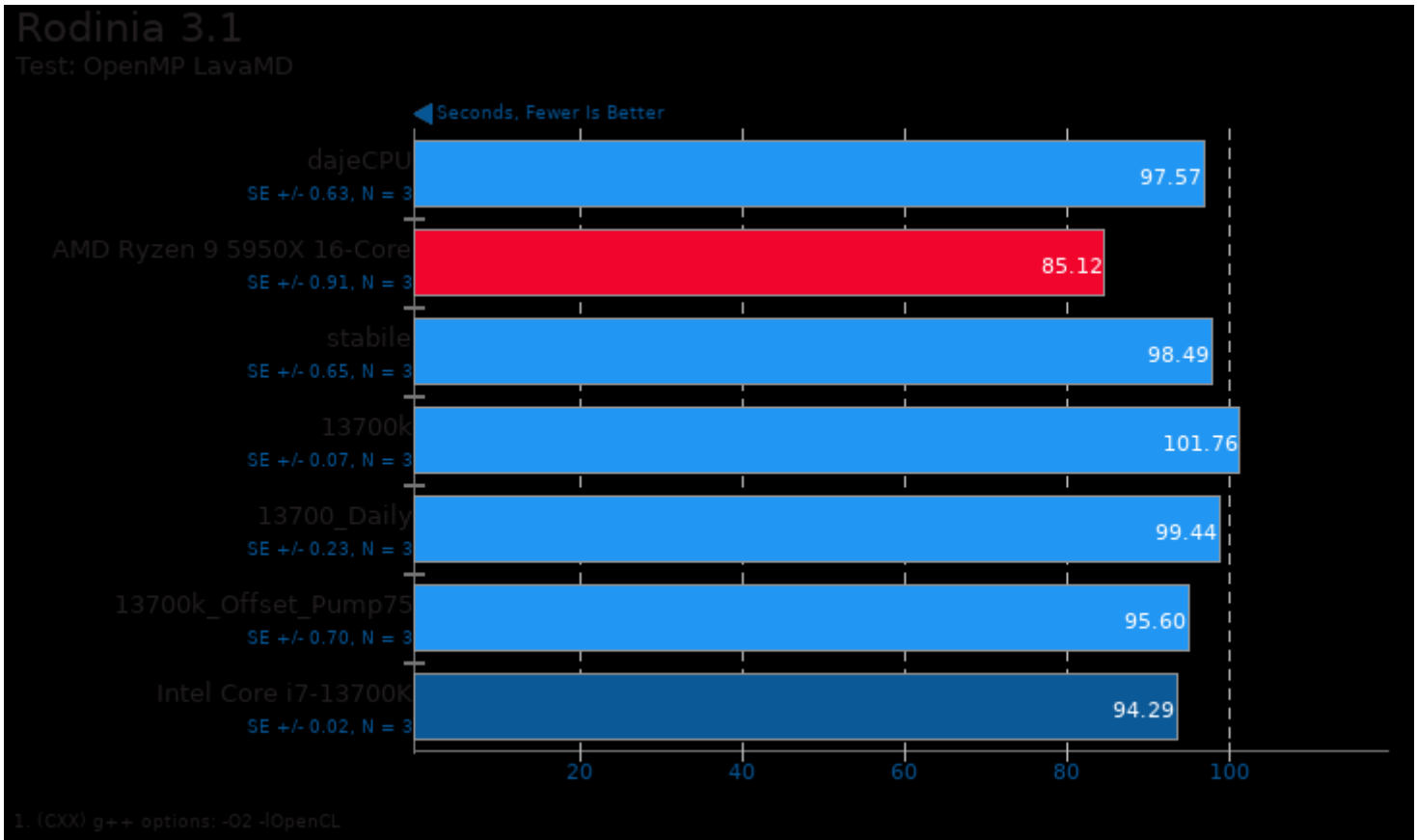
	dajeCPU	AMD Ryzen 9 5950X	stabile	13700k	13700k_Daily	13700_Daily	13700k_Offset_Pump75	Intel Core i7-13700K
Rodinia - OpenMP LavaMD (sec)	97.565	**85.116**	98.492	**101.762**		99.435	95.596	94.292
Normalized	87.24%	100%	86.42%	83.64%		85.6%	89.04%	90.27%
Standard Deviation	1.1%	1.9%	1.1%	0.1%		0.4%	1.3%	0%
Rodinia - OpenMP CFD Solver (sec)	**11.104**	10.746	11.028	8.425		8.538	8.318	**8.247**
Normalized	74.27%	76.74%	74.78%	97.89%		96.59%	99.15%	100%
Standard Deviation	0.8%	0.7%	0.6%	1.9%		3.2%	2%	0.1%
NAMD - ATPase Simulation - 327,506 Atoms (days/ns)	**1.00772**	0.92787	0.99973	0.78731			**0.73101**	0.73328
Normalized	72.54%	78.78%	73.12%	92.85%			100%	99.69%
Standard Deviation	0.3%	0.6%	0.6%	0.1%			0.8%	0.5%
Kvazaar - Bosphorus 4K - Slow (FPS)	16.98	**18.57**	16.6	**14.30**			14.77	14.72
Normalized	91.44%	100%	89.39%	77.01%			79.54%	79.27%
Standard Deviation	1.6%	1.7%	1%	1.7%			2.2%	4.6%
Kvazaar - Bosphorus 4K - Medium (FPS)	17.55	**19.29**	17.18	**14.91**			15.43	15.44
Normalized	90.98%	100%	89.06%	77.29%			79.99%	80.04%
Standard Deviation	0.1%	0.1%	0.1%	0.2%			0.1%	0.1%
Kvazaar - Bosphorus 1080p - Slow (FPS)	69.66	**71.99**	66.44	61.37			61.52	**60.94**
Normalized	96.76%	100%	92.29%	85.25%			85.46%	84.65%
Standard Deviation	0.1%	2.4%	2.4%	4.3%			4.1%	6.4%
Kvazaar - Bosphorus 1080p - Medium (FPS)	72.48	**75.43**	69.80	**64.32**			64.75	64.76
Normalized	96.09%	100%	92.54%	85.27%			85.84%	85.85%
Standard Deviation	0.1%	0.1%	0%	0.1%			0.6%	0.6%
Kvazaar - Bosphorus 4K - Very Fast (FPS)	38.46	**41.53**	37.16	**36.13**			37.08	37.15
Normalized	92.61%	100%	89.48%	87%			89.28%	89.45%
Standard Deviation	0.3%	0.3%	0%	0%			0%	0.1%
Kvazaar - Bosphorus 4K - Ultra Fast (FPS)	62.58	**67.62**	**55.39**	59.56			60.56	60.77
Normalized	92.55%	100%	81.91%	88.08%			89.56%	89.87%
Standard Deviation	0.3%	0.3%	1%	0.4%			0.2%	0.2%
Kvazaar - Bosphorus 1080p - Very Fast (FPS)	150.89	**158.01**	145.70	**130.24**			131.36	131.82
Normalized	95.49%	100%	92.21%	82.43%			83.13%	83.43%
Standard Deviation	0.2%	0.3%	0.3%	0.5%			0.4%	0.6%

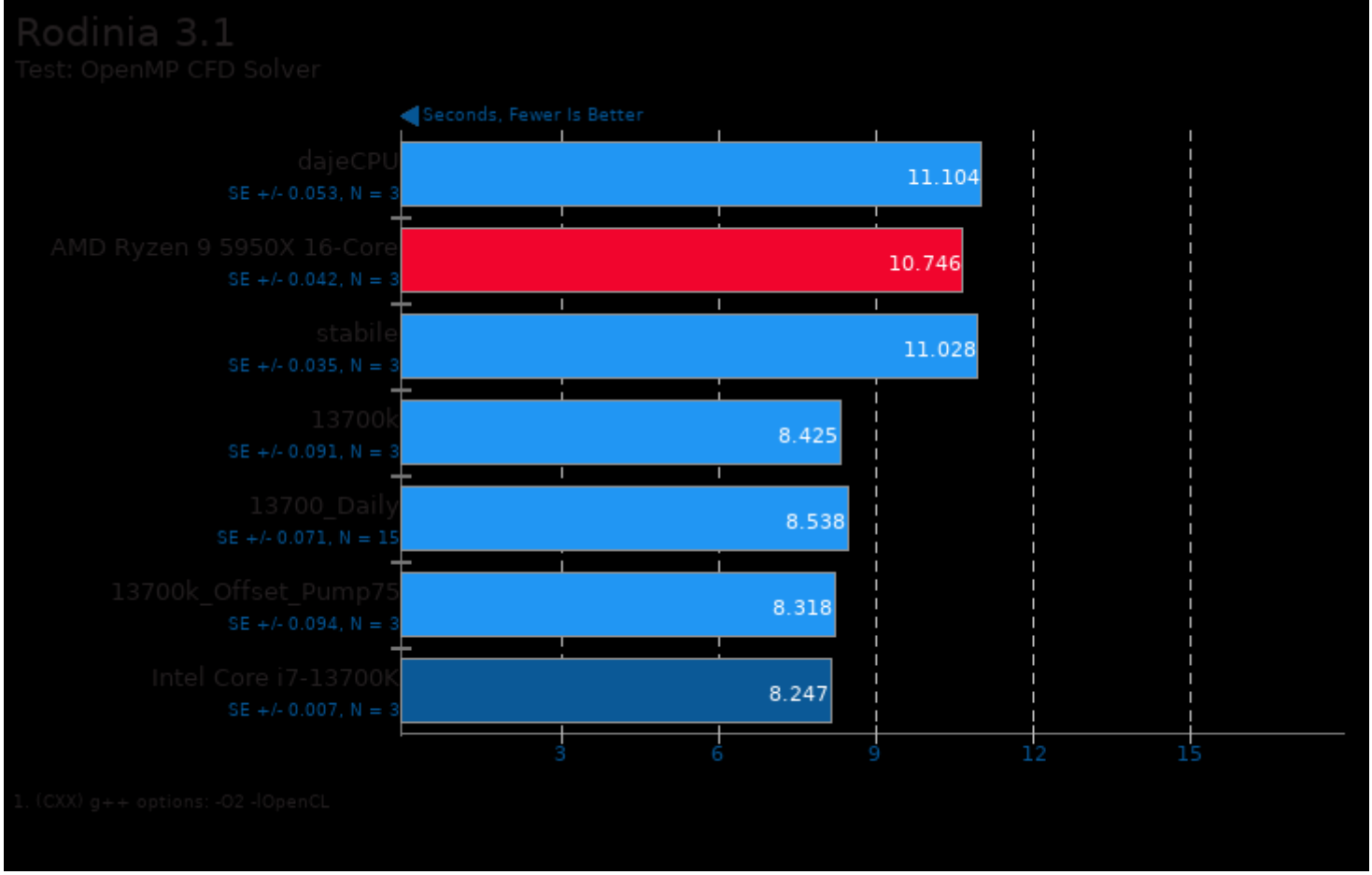
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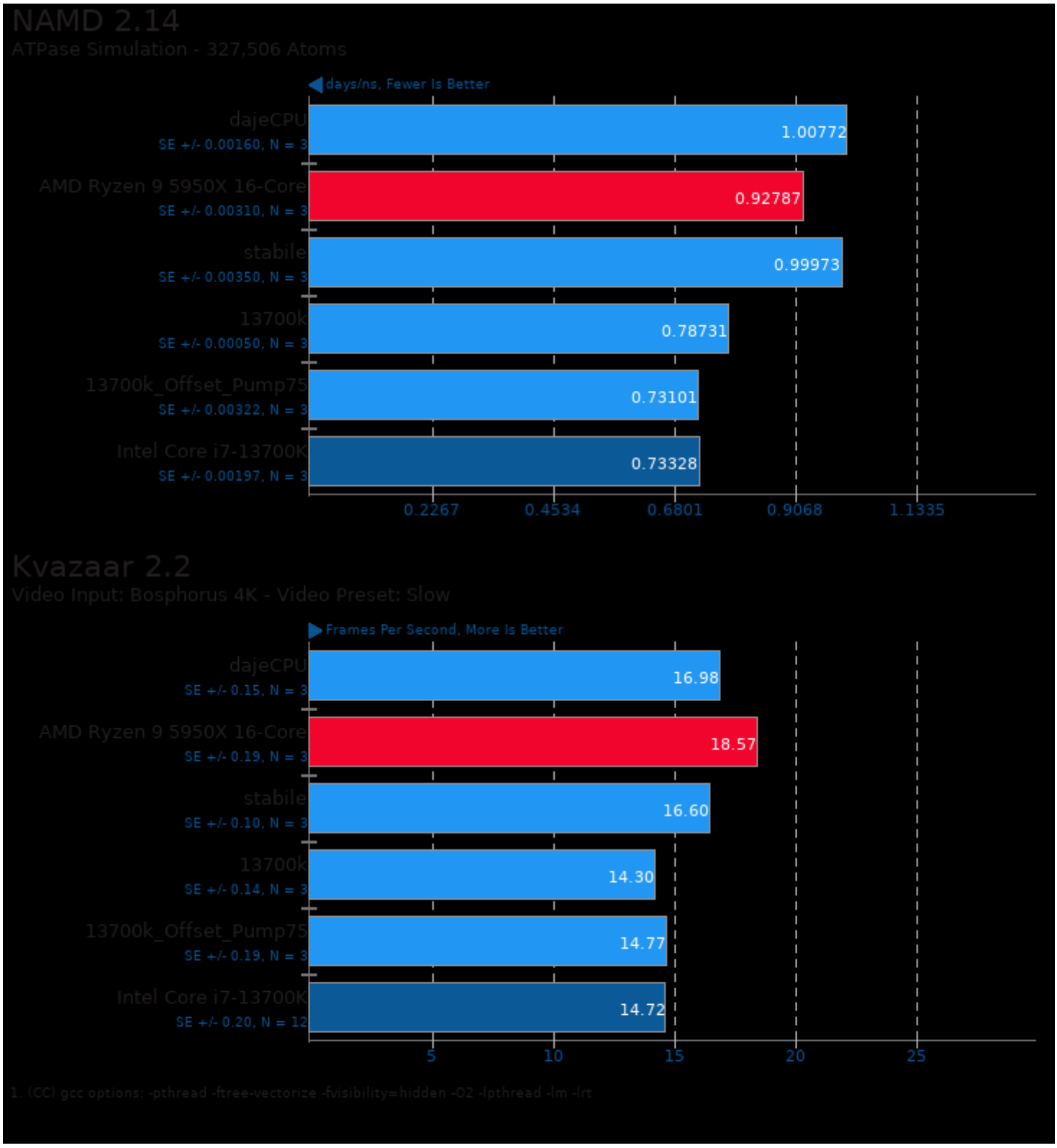
Kvazaar - Bosphorus 1080p - Ultra Fast (FPS)	237.15	**248.33**	**229.75**	233.05	233.44	233.07
Normalized	95.5%	100%	92.52%	93.85%	94%	93.85%
Standard Deviation	0.2%	0.2%	0.5%	0%	0.4%	0.2%
x264 - Bosphorus 4K (FPS)	52.29	**53.15**	50.44	51.61	52.50	**49.12**
Normalized	98.38%	100%	94.9%	97.1%	98.78%	92.42%
Standard Deviation	15.9%	20.1%	18.1%	17%	19.7%	36.5%
x264 - Bosphorus 1080p (FPS)	213.15	**222.54**	**205.67**	217.97	219.77	212.77
Normalized	95.78%	100%	92.42%	97.95%	98.76%	95.61%
Standard Deviation	16.3%	16.5%	15.6%	12.1%	12.3%	25.7%
x265 - Bosphorus 4K (FPS)	28.10	28.92	**27.17**	30.35	**31.34**	29.38
Normalized	89.66%	92.28%	86.69%	96.84%	100%	93.75%
Standard Deviation	3.2%	2.6%	2.4%	1.5%	1.8%	23.6%
x265 - Bosphorus 1080p (FPS)	**93.29**	93.23	91.45	91.77	91.82	**89.66**
Normalized	100%	99.94%	98.03%	98.37%	98.42%	96.11%
Standard Deviation	0.9%	1.1%	1%	3.4%	3.8%	11.3%
7-Zip Compression - Compression Rating (MIPS)	95850	95612	**96404**	93857	93916	**93496**
Normalized	99.43%	99.18%	100%	97.36%	97.42%	96.98%
Standard Deviation	0.2%	0.1%	0.6%	0%	0%	0.1%
7-Zip Compression - D.R (MIPS)	149990	**153966**	148858	108519	**108216**	108605
Normalized	97.42%	100%	96.68%	70.48%	70.29%	70.54%
Standard Deviation	0.2%	0.2%	0.2%	1.4%	1.4%	1.1%
Stockfish - Total Time (Nodes/s)	56065368		**56557496**	**52568946**	55283704	53225104
Normalized	99.13%		100%	92.95%	97.75%	94.11%
Standard Deviation	1.8%		3.9%	2.3%	1.8%	1.5%
asmFish - 1.H.M.2.D (Nodes/s)	**63855244**		63665759	**58404154**	60236310	60229242
Normalized	100%		99.7%	91.46%	94.33%	94.32%
Standard Deviation	1.6%		0.9%	0.7%	1.5%	0.5%
Timed GCC Compilation - Time To	**637.364**		633.159	**481.095**		557.288
Normalized	75.48%		75.98%	100%		86.33%
Standard Deviation	0.4%		0.4%	0.9%		0.4%
Timed Linux Kernel Compilation - defconfig (sec)	52.493		52.252	**47.403**		**61.473**
Normalized	90.3%		90.72%	100%		77.11%
Standard Deviation	1.5%		2%	2.1%		0.3%
Timed Linux Kernel Compilation - allmodconfig (sec)	659.635		658.430	**592.649**		**740.830**
Normalized	89.84%		90.01%	100%		80%
Standard Deviation	0.5%		0.5%	0.2%		0.3%

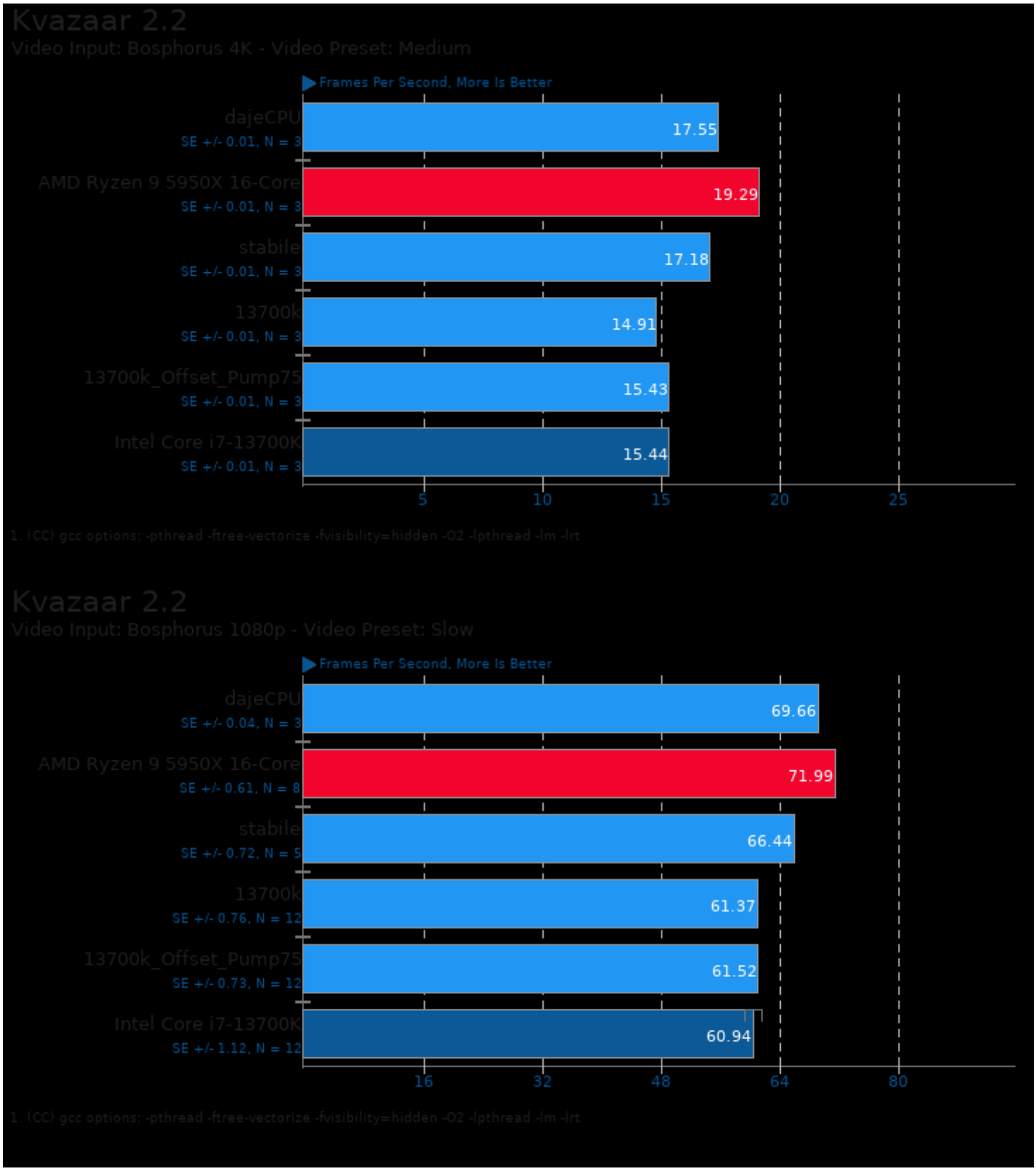
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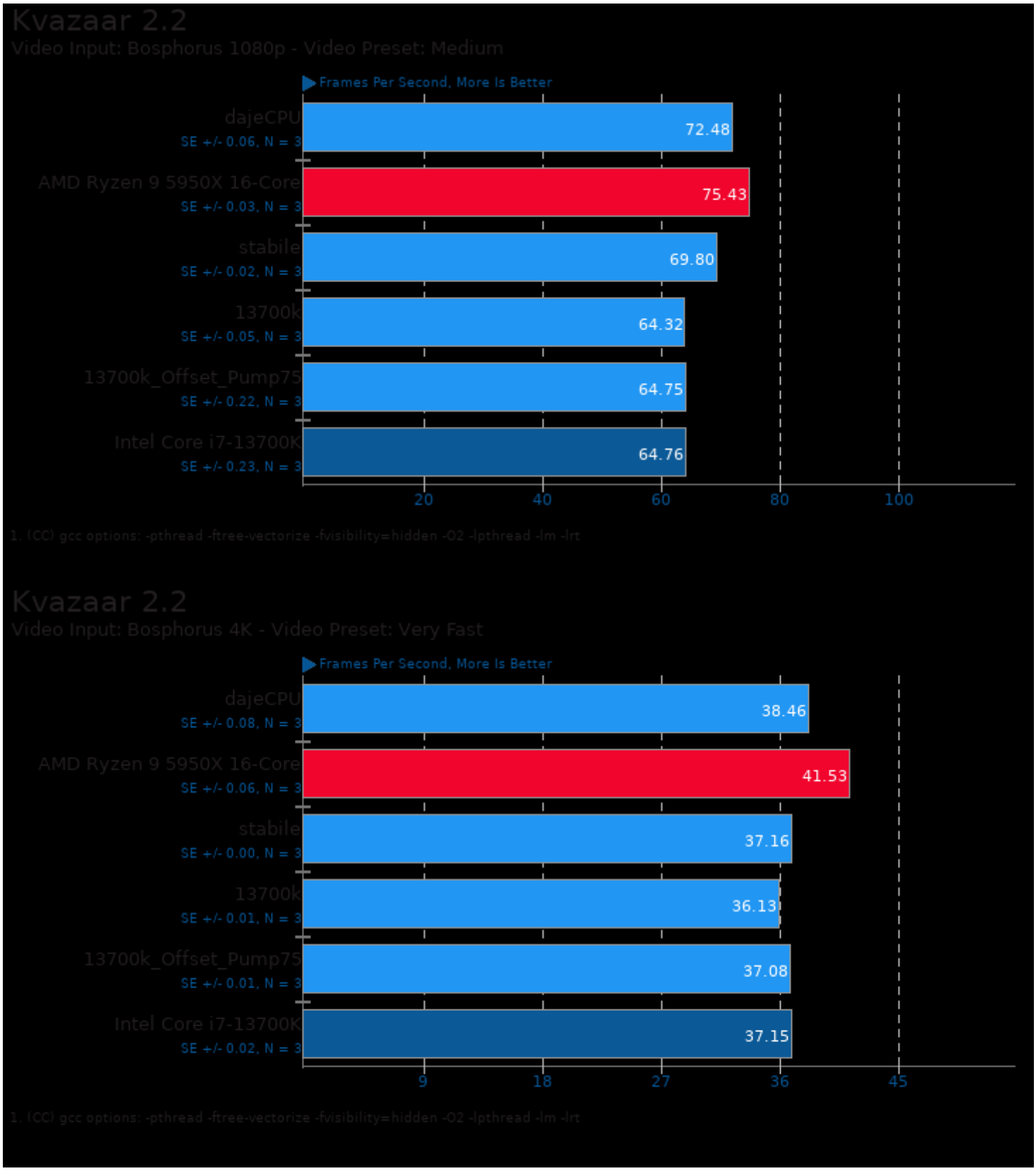
POV-Ray - Trace Time (sec)	20.951	20.690	20.247	18.956
Normalized	90.48%	91.62%	93.62%	100%
Standard Deviation	0.9%	0.6%	0.1%	0.3%
Radiance Benchmark - Serial (sec)	421.588	420.959	369.127	369.708
Normalized	87.56%	87.69%	100%	99.84%
Radiance Benchmark - SMP Parallel (sec)	133.619	129.061	117.184	116.692
Normalized	87.33%	90.42%	99.58%	100%
OpenSSL - SHA256 (byte/s)	288312284 30	296296297 50	256538146 43	263948171 33
Normalized	97.31%	100%	86.58%	89.08%
Standard Deviation	0.2%	0.2%	0.4%	0.2%
OpenSSL - RSA4096 (sign/s)	5198	5136	4557	4695
Normalized	100%	98.81%	87.66%	90.31%
Standard Deviation	0.3%	0.1%	0.2%	0.1%
OpenSSL - RSA4096 (verify/s)	339156	333254	297817	304559
Normalized	100%	98.26%	87.81%	89.8%
Standard Deviation	0.1%	0.1%	0%	0.1%
ctx_clock - C.S.T (Clocks)	170	136	157	157
Normalized	80%	100%	86.62%	86.62%
Standard Deviation			0.4%	
Sysbench - CPU (Events/sec)	94434	96497	71344	71140
Normalized	97.86%	100%	73.93%	73.72%
Standard Deviation	0.1%	0.1%	0%	0%

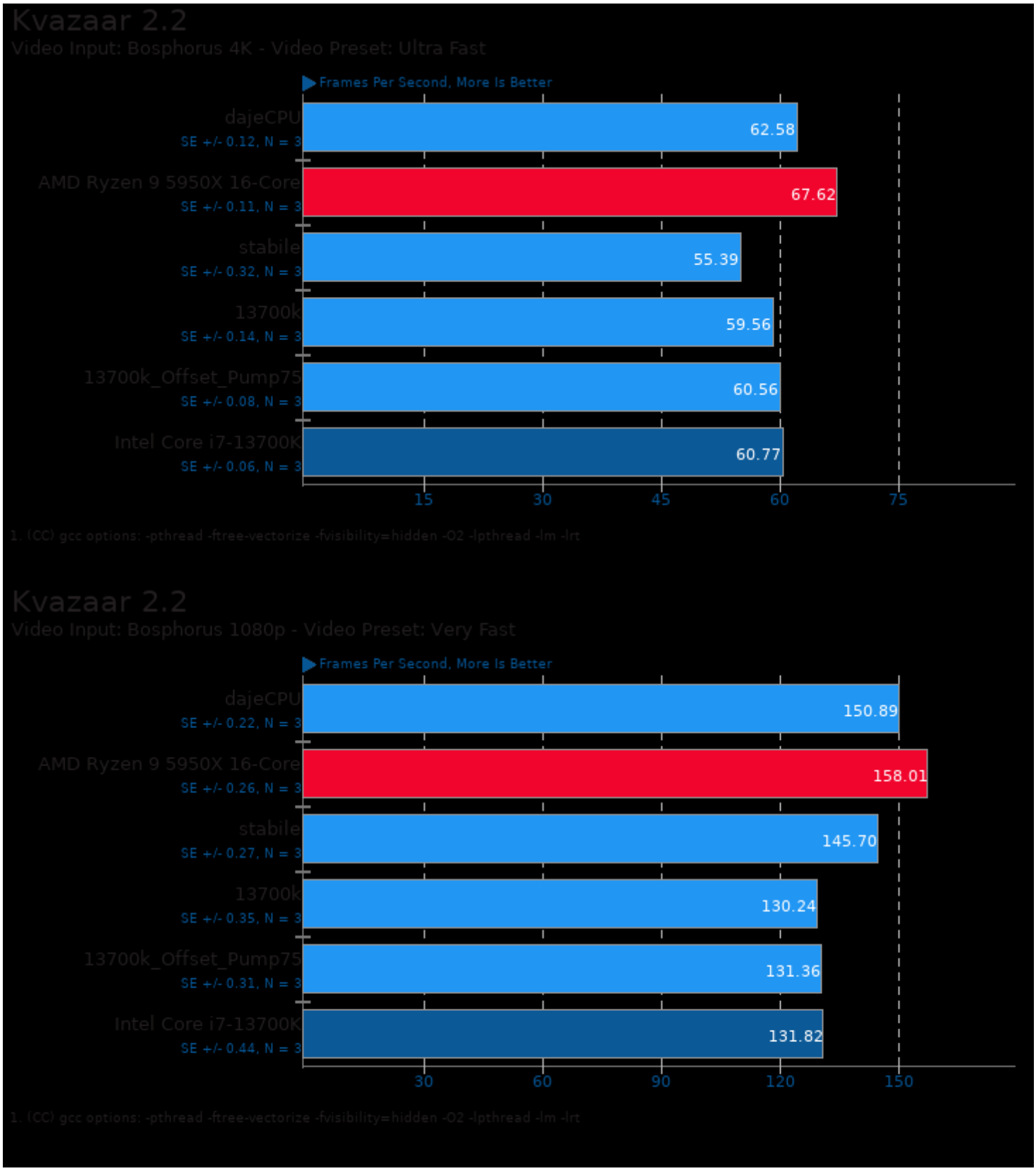

Rodinia 3.1
Test: OpenMP LavaMD
Seconds, Fewer Is Better
dajeCPU
SE +/- 0.63, N = 3
97.57
AMD Ryzen 9 5950X 16-Core
SE +/- 0.91, N = 3
85.12
stabile
SE +/- 0.65, N = 3
98.49
13700k
SE +/- 0.07, N = 3
101.76
13700_Daily
SE +/- 0.23, N = 3
99.44
13700k_Offset_Pump75
SE +/- 0.70, N = 3
95.60
Intel Core i7-13700K
SE +/- 0.02, N = 3
94.29
20
40
60
80
100
1. (CXX) g++ options: -O2 -lOpenCL

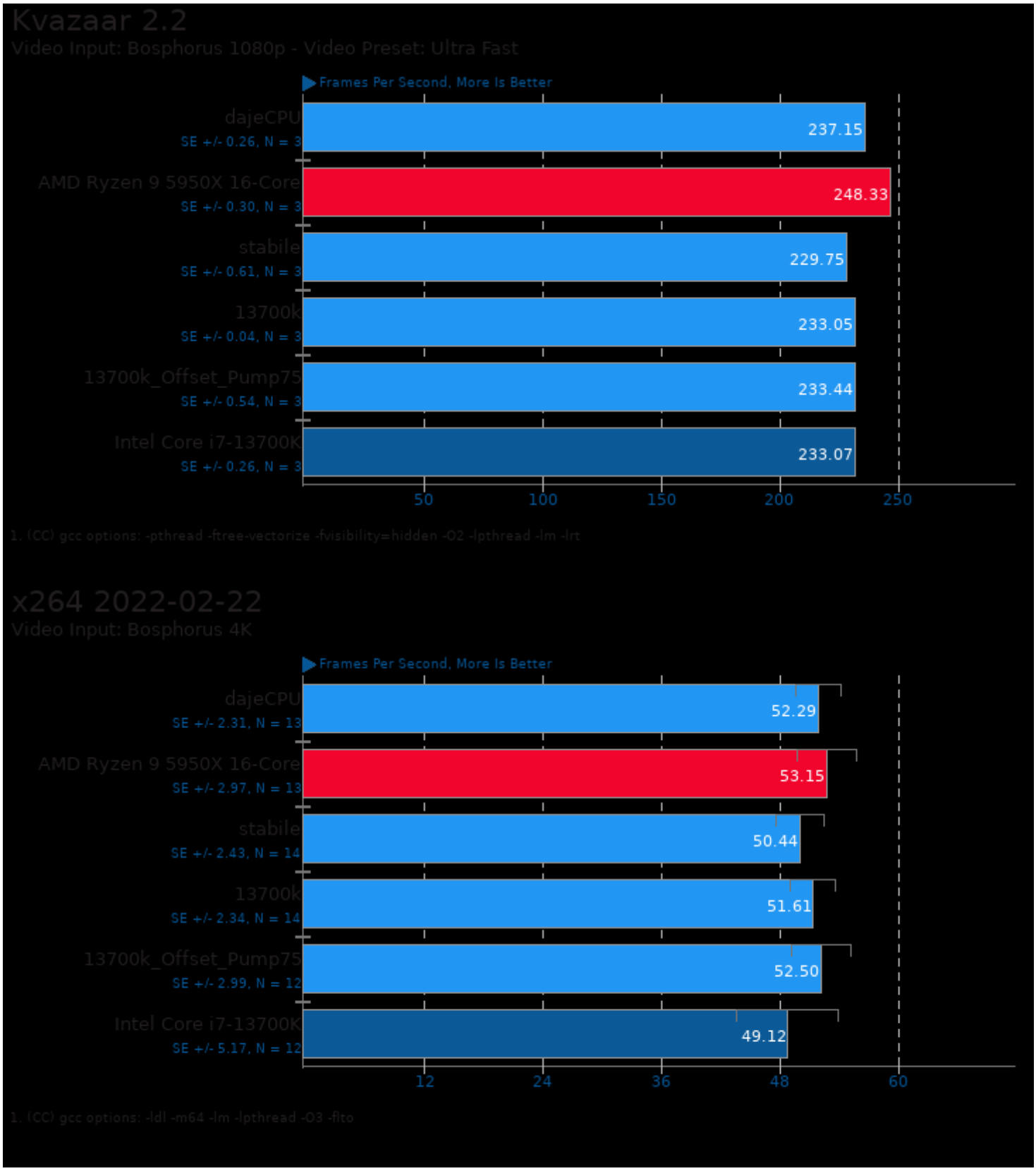

Rodinia 3.1
Test: OpenMP CFD Solver
Seconds, Fewer Is Better
dajeCPU
SE +/- 0.053, N = 3
11.104
AMD Ryzen 9 5950X 16-Core
SE +/- 0.042, N = 3
10.746
stabile
SE +/- 0.035, N = 3
11.028
13700k
SE +/- 0.091, N = 3
8.425
13700_Daily
SE +/- 0.071, N = 15
8.538
13700k_Offset_Pump75
SE +/- 0.094, N = 3
8.318
Intel Core i7-13700K
SE +/- 0.007, N = 3
8.247
3
6
9
12
15
1. (CXX) g++ options: -O2 -lOpenCL

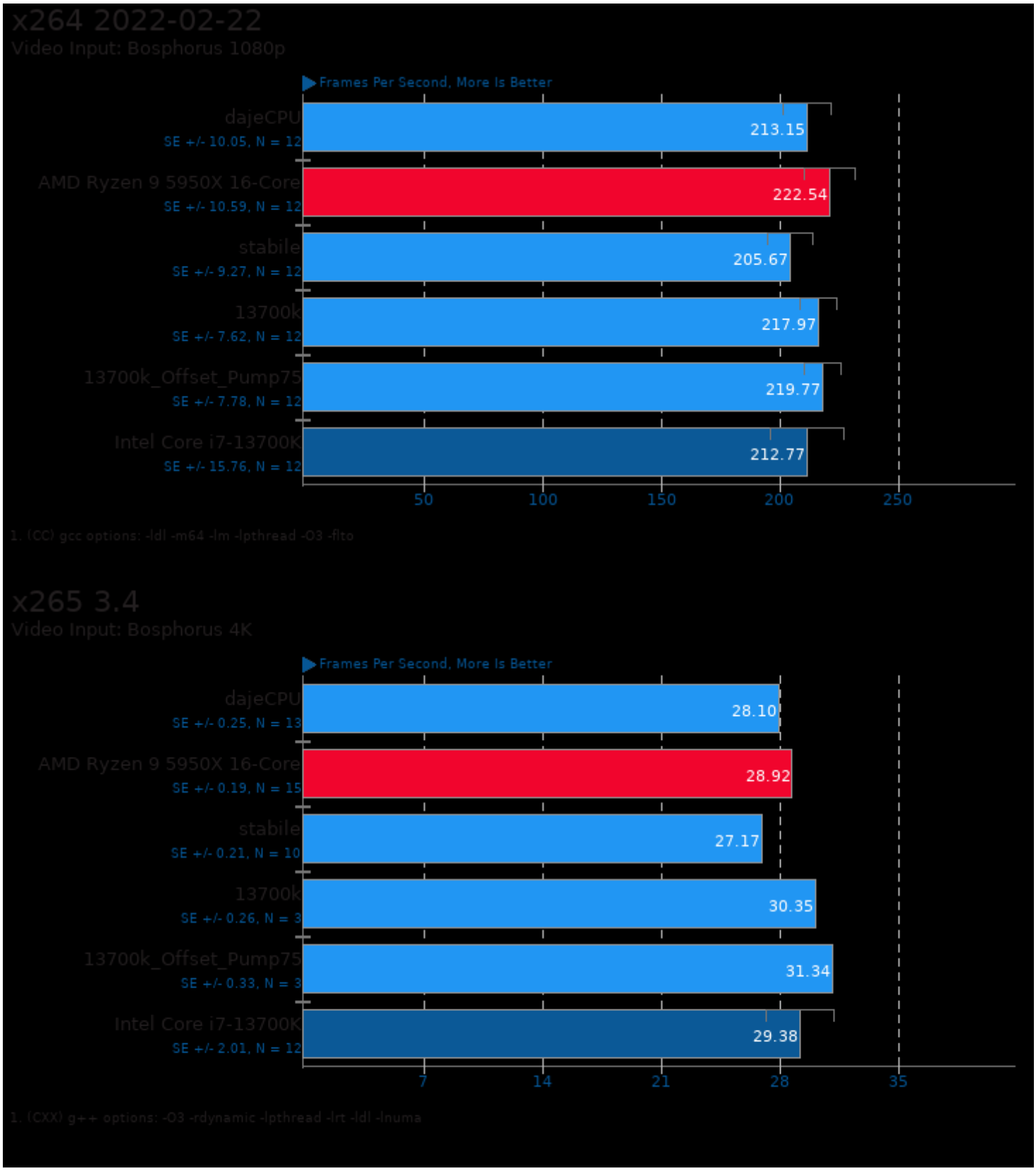

NAMD 2.14
ATPase Simulation - 327,506 Atoms
days/ns, Fewer Is Better
dajeCPU
SE +/- 0.00160, N = 3
1.00772
AMD Ryzen 9 5950X 16-Core
SE +/- 0.00310, N = 3
0.92787
stabile
SE +/- 0.00350, N = 3
0.99973
13700k
SE +/- 0.00050, N = 3
0.78731
13700k_Offset_Pump75
SE +/- 0.00322, N = 3
0.73101
Intel Core i7-13700K
SE +/- 0.00197, N = 3
0.73328
0.2267
0.4534
0.6801
0.9068
1.1335
Kvazaar 2.2
Video Input: Bosphorus 4K - Video Preset: Slow
Frames Per Second, More Is Better
dajeCPU
SE +/- 0.15, N = 3
16.98
AMD Ryzen 9 5950X 16-Core
SE +/- 0.19, N = 3
18.57
stabile
SE +/- 0.10, N = 3
16.60
13700k
SE +/- 0.14, N = 3
14.30
13700k_Offset_Pump75
SE +/- 0.19, N = 3
14.77
Intel Core i7-13700K
SE +/- 0.20, N = 12
14.72
5
10
15
20
25
1. (CC) gcc options: -pthread -ftree-vectorize -fvisibility=hidden -O2 -lpthread -lm -lrt

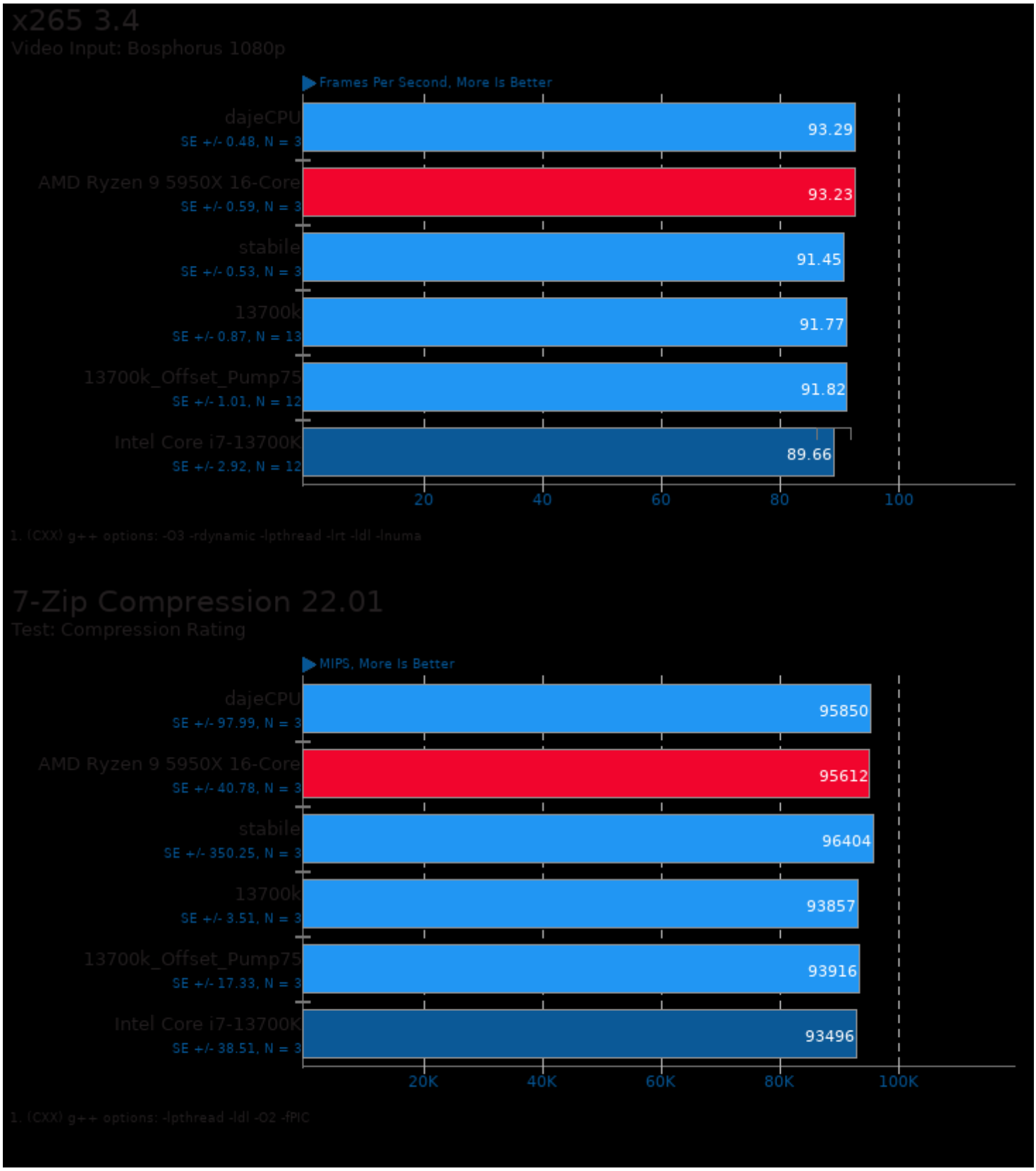

Kvazaar 2.2
Video Input: Bosphorus 4K - Video Preset: Medium
Frames Per Second, More Is Better
dajeCPU
SE +/- 0.01, N = 3
17.55
AMD Ryzen 9 5950X 16-Core
SE +/- 0.01, N = 3
19.29
stabile
SE +/- 0.01, N = 3
17.18
13700k
SE +/- 0.01, N = 3
14.91
13700k_Offset_Pump75
SE +/- 0.01, N = 3
15.43
Intel Core i7-13700K
SE +/- 0.01, N = 3
15.44
5
10
15
20
25
1. (CC) gcc options: -pthread -ftree-vectorize -fvisibility=hidden -O2 -lpthread -lm -lrt
Kvazaar 2.2
Video Input: Bosphorus 1080p - Video Preset: Slow
Frames Per Second, More Is Better
dajeCPU
SE +/- 0.04, N = 3
69.66
AMD Ryzen 9 5950X 16-Core
SE +/- 0.61, N = 8
71.99
stabile
SE +/- 0.72, N = 5
66.44
13700k
SE +/- 0.76, N = 12
61.37
13700k_Offset_Pump75
SE +/- 0.73, N = 12
61.52
Intel Core i7-13700K
SE +/- 1.12, N = 12
60.94
16
32
48
64
80
1. (CC) gcc options: -pthread -ftree-vectorize -fvisibility=hidden -O2 -lpthread -lm -lrt

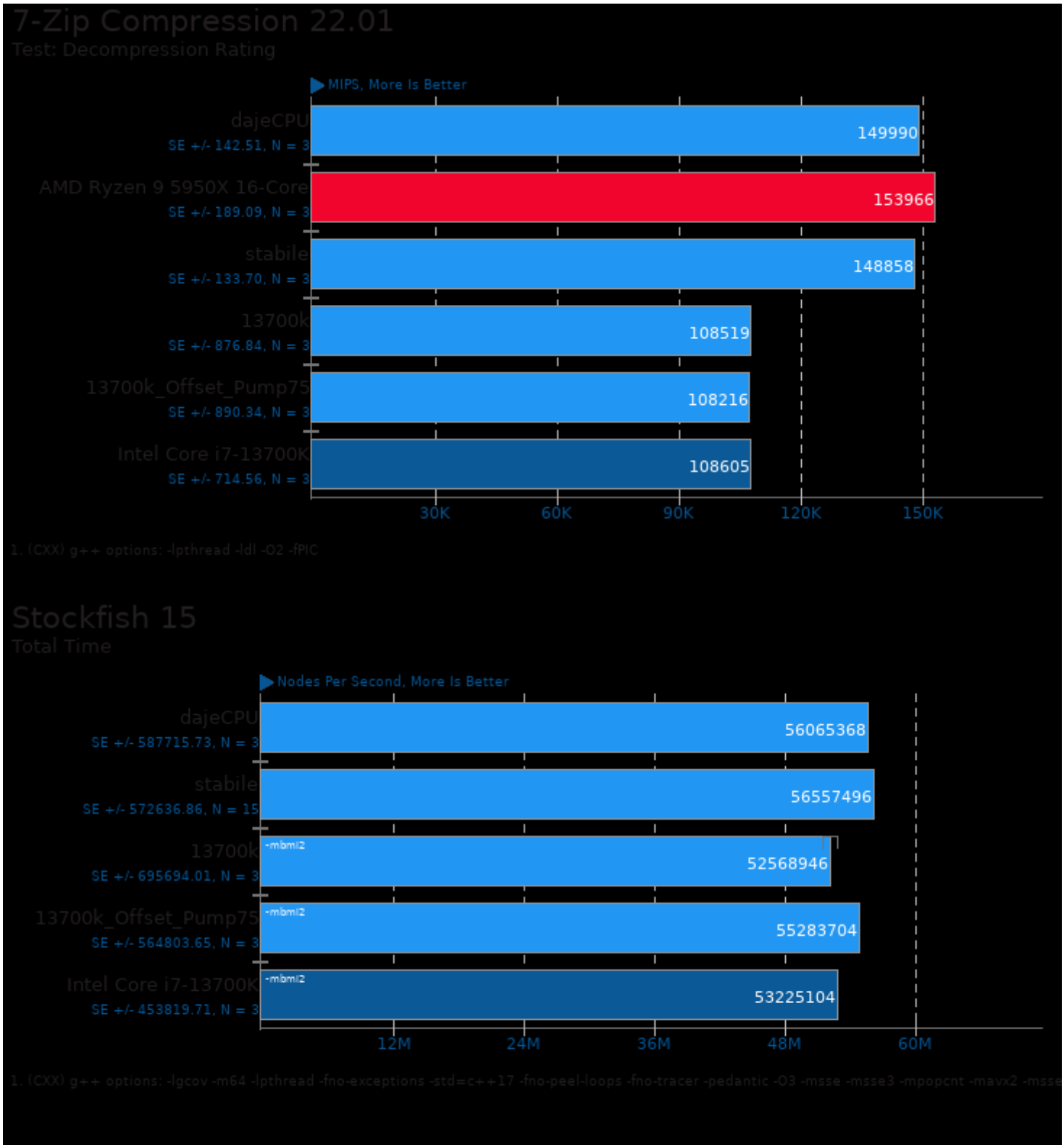

Kvazaar 2.2
Video Input: Bosphorus 1080p - Video Preset: Medium
Frames Per Second, More Is Better
dajeCPU
SE +/- 0.06, N = 3
72.48
AMD Ryzen 9 5950X 16-Core
SE +/- 0.03, N = 3
75.43
stabile
SE +/- 0.02, N = 3
69.80
13700k
SE +/- 0.05, N = 3
64.32
13700k_Offset_Pump75
SE +/- 0.22, N = 3
64.75
Intel Core i7-13700K
SE +/- 0.23, N = 3
64.76
20
40
60
80
100
1. (CC) gcc options: -pthread -ftree-vectorize -fvisibility=hidden -O2 -lpthread -lm -lrt
Kvazaar 2.2
Video Input: Bosphorus 4K - Video Preset: Very Fast
Frames Per Second, More Is Better
dajeCPU
SE +/- 0.08, N = 3
38.46
AMD Ryzen 9 5950X 16-Core
SE +/- 0.06, N = 3
41.53
stabile
SE +/- 0.00, N = 3
37.16
13700k
SE +/- 0.01, N = 3
36.13
13700k_Offset_Pump75
SE +/- 0.01, N = 3
37.08
Intel Core i7-13700K
SE +/- 0.02, N = 3
37.15
9
18
27
36
45
1. (CC) gcc options: -pthread -ftree-vectorize -fvisibility=hidden -O2 -lpthread -lm -lrt

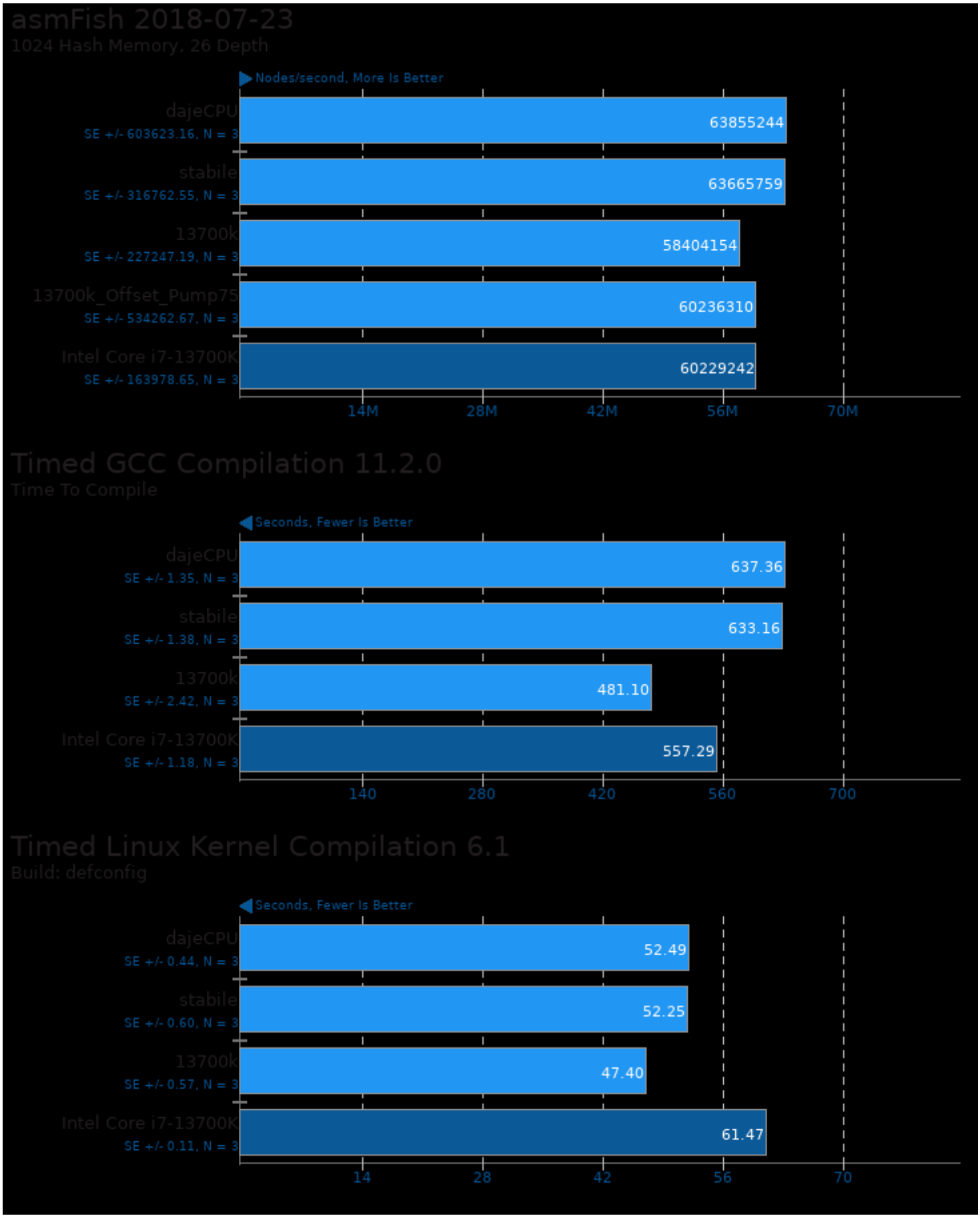

Kvazaar 2.2
Video Input: Bosphorus 4K - Video Preset: Ultra Fast
Frames Per Second, More Is Better
dajeCPU
SE +/- 0.12, N = 3
62.58
AMD Ryzen 9 5950X 16-Core
SE +/- 0.11, N = 3
67.62
stabile
SE +/- 0.32, N = 3
55.39
13700k
SE +/- 0.14, N = 3
59.56
13700k_Offset_Pump75
SE +/- 0.08, N = 3
60.56
Intel Core i7-13700K
SE +/- 0.06, N = 3
60.77
15
30
45
60
75
1. (CC) gcc options: -pthread -ftree-vectorize -fvisibility=hidden -O2 -lpthread -lm -lrt
Kvazaar 2.2
Video Input: Bosphorus 1080p - Video Preset: Very Fast
Frames Per Second, More Is Better
dajeCPU
SE +/- 0.22, N = 3
150.89
AMD Ryzen 9 5950X 16-Core
SE +/- 0.26, N = 3
158.01
stabile
SE +/- 0.27, N = 3
145.70
13700k
SE +/- 0.35, N = 3
130.24
13700k_Offset_Pump75
SE +/- 0.31, N = 3
131.36
Intel Core i7-13700K
SE +/- 0.44, N = 3
131.82
30
60
90
120
150
1. (CC) gcc options: -pthread -ftree-vectorize -fvisibility=hidden -O2 -lpthread -lm -lrt


Kvazaar 2.2
Video Input: Bosphorus 1080p - Video Preset: Ultra Fast
Frames Per Second, More Is Better
dajeCPU
SE +/- 0.26, N = 3
237.15
AMD Ryzen 9 5950X 16-Core
SE +/- 0.30, N = 3
248.33
stabile
SE +/- 0.61, N = 3
229.75
13700k
SE +/- 0.04, N = 3
233.05
13700k_Offset_Pump75
SE +/- 0.54, N = 3
233.44
Intel Core i7-13700K
SE +/- 0.26, N = 3
233.07
50
100
150
200
250
1. (CC) gcc options: -pthread -ftree-vectorize -fvisibility=hidden -O2 -lpthread -lm -lrt
x264 2022-02-22
Video Input: Bosphorus 4K
Frames Per Second, More Is Better
dajeCPU
SE +/- 2.31, N = 13
52.29
AMD Ryzen 9 5950X 16-Core
SE +/- 2.97, N = 13
53.15
stabile
SE +/- 2.43, N = 14
50.44
13700k
SE +/- 2.34, N = 14
51.61
13700k_Offset_Pump75
SE +/- 2.99, N = 12
52.50
Intel Core i7-13700K
SE +/- 5.17, N = 12
49.12
12
24
36
48
60
1. (CC) gcc options: -ldl -m64 -lm -lpthread -O3 -flto


x264 2022-02-22
Video Input: Bosphorus 1080p
Frames Per Second, More Is Better
dajeCPU
SE +/- 10.05, N = 12
213.15
AMD Ryzen 9 5950X 16-Core
SE +/- 10.59, N = 12
222.54
stabile
SE +/- 9.27, N = 12
205.67
13700k
SE +/- 7.62, N = 12
217.97
13700k_Offset_Pump75
SE +/- 7.78, N = 12
219.77
Intel Core i7-13700K
SE +/- 15.76, N = 12
212.77
50
100
150
200
250
1. (CC) gcc options: -ldl -m64 -lm -lpthread -O3 -flto
x265 3.4
Video Input: Bosphorus 4K
Frames Per Second, More Is Better
dajeCPU
SE +/- 0.25, N = 13
28.10
AMD Ryzen 9 5950X 16-Core
SE +/- 0.19, N = 15
28.92
stabile
SE +/- 0.21, N = 10
27.17
13700k
SE +/- 0.26, N = 3
30.35
13700k_Offset_Pump75
SE +/- 0.33, N = 3
31.34
Intel Core i7-13700K
SE +/- 2.01, N = 12
29.38
7
14
21
28
35
1. (CXX) g++ options: -O3 -rdynamic -lpthread -lrt -ldl -lnuma

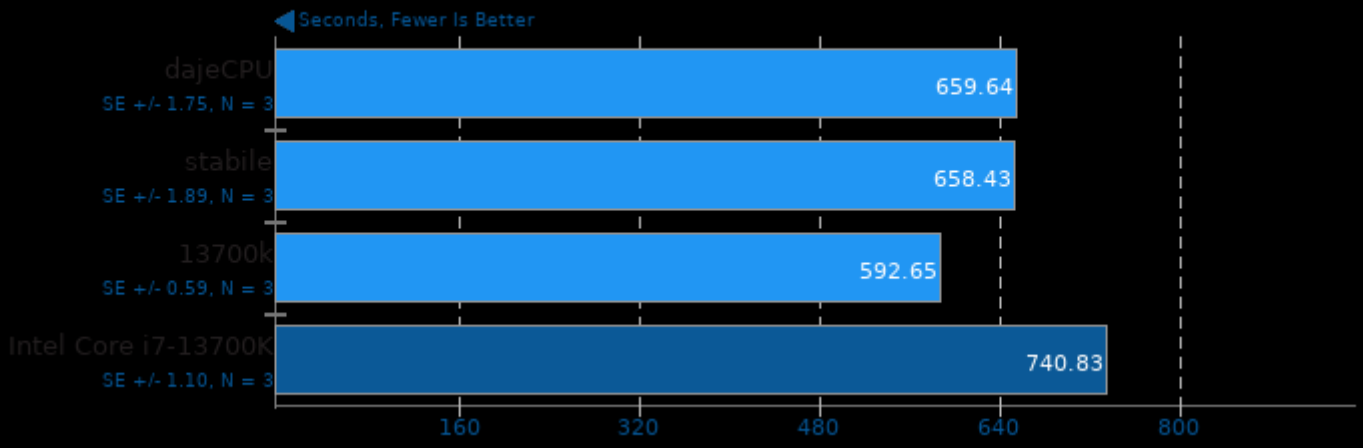

x265 3.4
Video Input: Bosphorus 1080p
Frames Per Second, More Is Better
dajeCPU
SE +/- 0.48, N = 3
93.29
AMD Ryzen 9 5950X 16-Core
SE +/- 0.59, N = 3
93.23
stabile
SE +/- 0.53, N = 3
91.45
13700k
SE +/- 0.87, N = 13
91.77
13700k_Offset_Pump75
SE +/- 1.01, N = 12
91.82
Intel Core i7-13700K
SE +/- 2.92, N = 12
89.66
20
40
60
80
100
1. (CXX) g++ options: -O3 -rdynamic -lpthread -lrt -ldl -lnuma
7-Zip Compression 22.01
Test: Compression Rating
MIPS, More Is Better
dajeCPU
SE +/- 97.99, N = 3
95850
AMD Ryzen 9 5950X 16-Core
SE +/- 40.78, N = 3
95612
stabile
SE +/- 350.25, N = 3
96404
13700k
SE +/- 3.51, N = 3
93857
13700k_Offset_Pump75
SE +/- 17.33, N = 3
93916
Intel Core i7-13700K
SE +/- 38.51, N = 3
93496
20K
40K
60K
80K
100K
1. (CXX) g++ options: -lpthread -ldl -O2 -fPIC


7-Zip Compression 22.01
Test: Decompression Rating
MIPS, More Is Better
dajeCPU
SE +/- 142.51, N = 3
149990
AMD Ryzen 9 5950X 16-Core
SE +/- 189.09, N = 3
153966
stabile
SE +/- 133.70, N = 3
148858
13700k
SE +/- 876.84, N = 3
108519
13700k_Offset_Pump75
SE +/- 890.34, N = 3
108216
Intel Core i7-13700K
SE +/- 714.56, N = 3
108605
30K
60K
90K
120K
150K
1. (CXX) g++ options: -lpthread -ldl -O2 -fPIC
Stockfish 15
Total Time
Nodes Per Second, More Is Better
dajeCPU
SE +/- 587715.73, N = 3
56065368
stabile
SE +/- 572636.86, N = 15
56557496
13700k
SE +/- 695694.01, N = 3
-mbmi2
52568946
13700k_Offset_Pump75
SE +/- 564803.65, N = 3
-mbmi2
55283704
Intel Core i7-13700K
SE +/- 453819.71, N = 3
-mbmi2
53225104
12M
24M
36M
48M
60M
1. (CXX) g++ options: -lgcov -m64 -lpthread -fno-exceptions -std=c++17 -fno-peel-loops -fno-tracer -pedantic -O3 -msse -msse3 -mpopcnt -mavx2 -msse


asmFish 2018-07-23
1024 Hash Memory, 26 Depth
Nodes/second, More Is Better
dajeCPU
SE +/- 603623.16, N = 3
63855244
stabile
SE +/- 316762.55, N = 3
63665759
13700k
SE +/- 227247.19, N = 3
58404154
13700k_Offset_Pump75
SE +/- 534262.67, N = 3
60236310
Intel Core i7-13700K
SE +/- 163978.65, N = 3
60229242
14M
28M
42M
56M
70M
Timed GCC Compilation 11.2.0
Time To Compile
Seconds, Fewer Is Better
dajeCPU
SE +/- 1.35, N = 3
637.36
stabile
SE +/- 1.38, N = 3
633.16
13700k
SE +/- 2.42, N = 3
481.10
Intel Core i7-13700K
SE +/- 1.18, N = 3
557.29
140
280
420
560
700
Timed Linux Kernel Compilation 6.1
Build: defconfig
Seconds, Fewer Is Better
dajeCPU
SE +/- 0.44, N = 3
52.49
stabile
SE +/- 0.60, N = 3
52.25
13700k
SE +/- 0.57, N = 3
47.40
Intel Core i7-13700K
SE +/- 0.11, N = 3
61.47
14
28
42
56
70

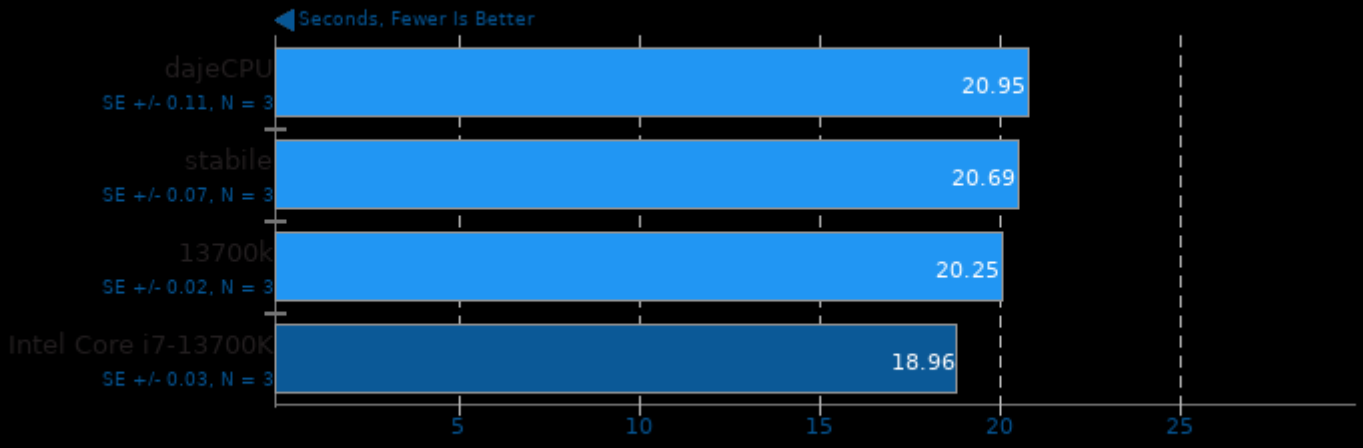
Timed Linux Kernel Compilation 6.1

Build: allmodconfig



POV-Ray 3.7.0.7

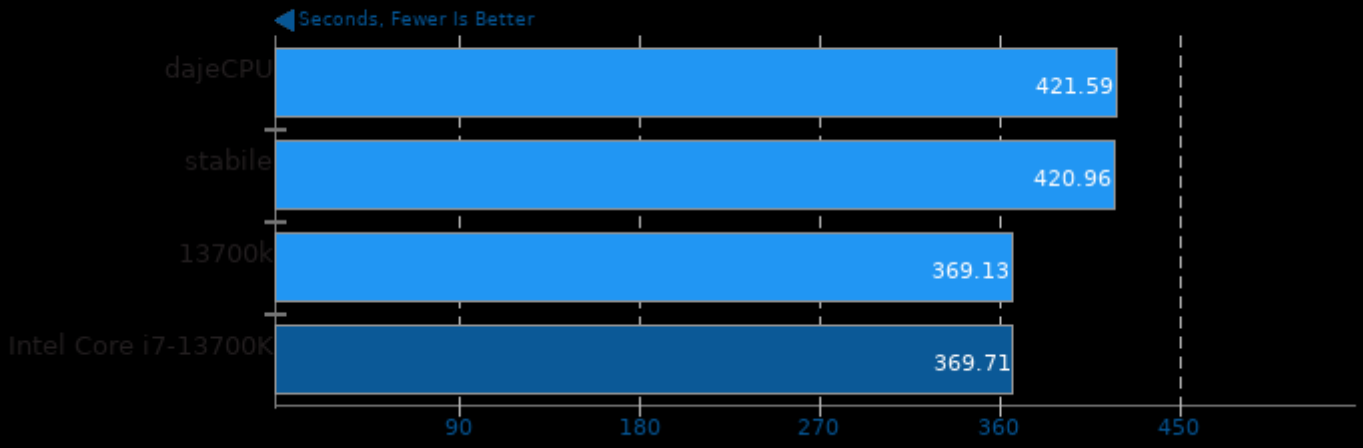
Trace Time

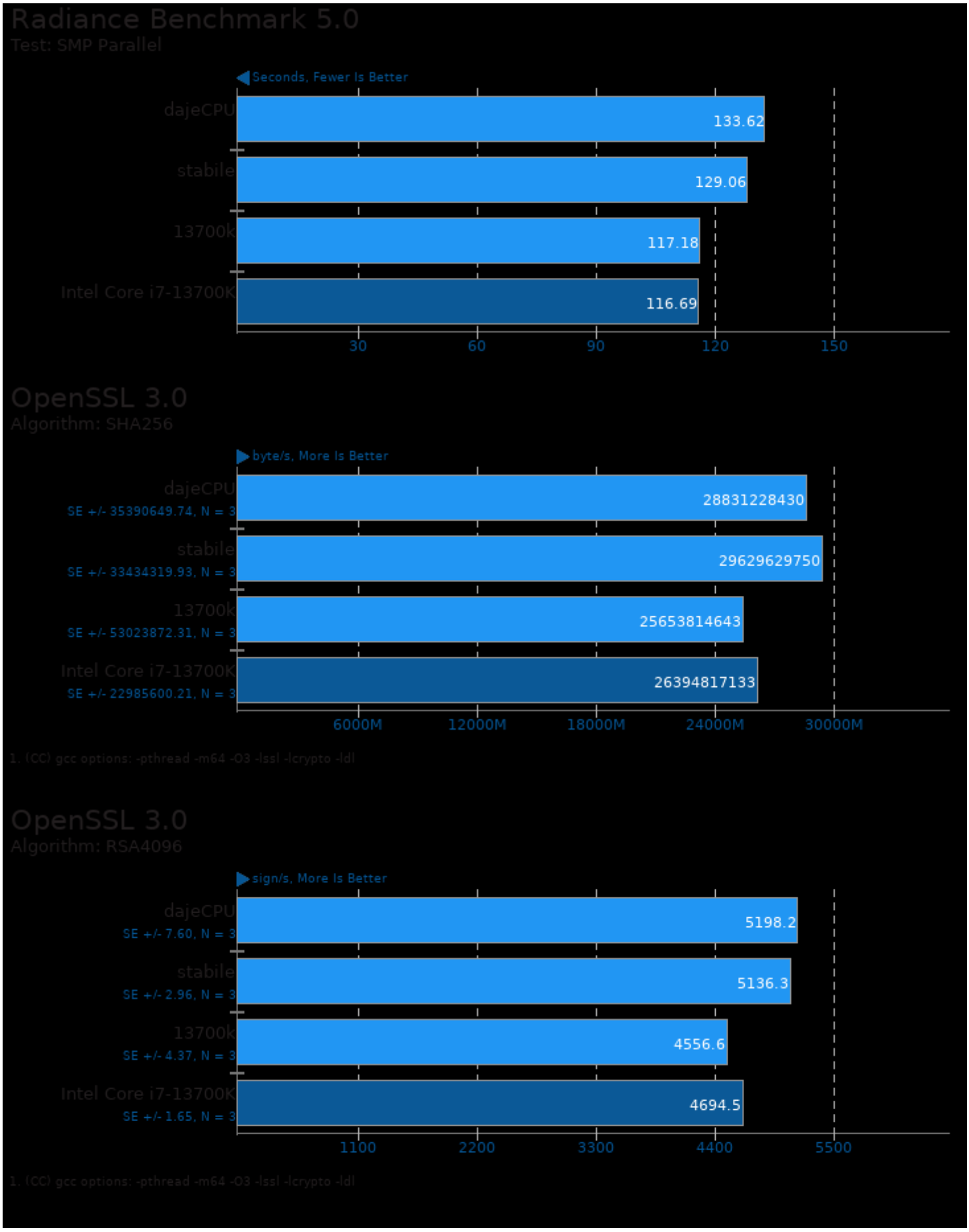


1. (CXX) g++ options: -pipe -O3 -ffast-math -march=native -pthread -lSM -lICE -lX11 -ltiff -ljpeg -lpng -lz -lrt -lm -lboost_thread -lboost_system

Radiance Benchmark 5.0

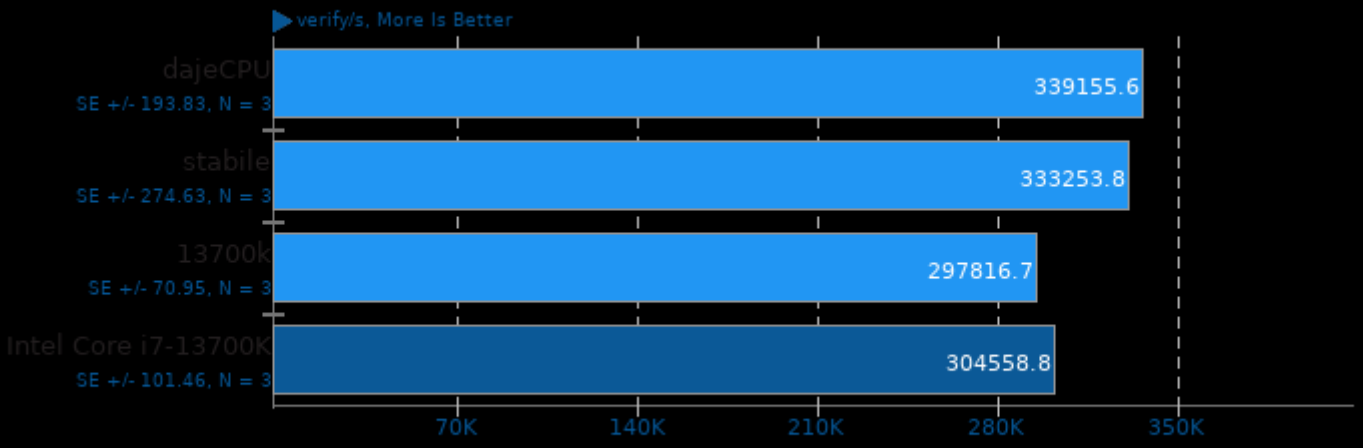
Test: Serial




Radiance Benchmark 5.0
Test: SMP Parallel
Seconds, Fewer Is Better
dajeCPU
133.62
stabile
129.06
13700k
117.18
Intel Core i7-13700K
116.69
30
60
90
120
150
OpenSSL 3.0
Algorithm: SHA256
byte/s, More Is Better
dajeCPU
SE +/- 35390649.74, N = 3
28831228430
stabile
SE +/- 33434319.93, N = 3
29629629750
13700k
SE +/- 53023872.31, N = 3
25653814643
Intel Core i7-13700K
SE +/- 22985600.21, N = 3
26394817133
6000M
12000M
18000M
24000M
30000M
1. (CC) gcc options: -pthread -m64 -O3 -lssl -lcrypto -ldl
OpenSSL 3.0
Algorithm: RSA4096
sign/s, More Is Better
dajeCPU
SE +/- 7.60, N = 3
5198.2
stabile
SE +/- 2.96, N = 3
5136.3
13700k
SE +/- 4.37, N = 3
4556.6
Intel Core i7-13700K
SE +/- 1.65, N = 3
4694.5
1100
2200
3300
4400
5500
1. (CC) gcc options: -pthread -m64 -O3 -lssl -lcrypto -ldl

OpenSSL 3.0

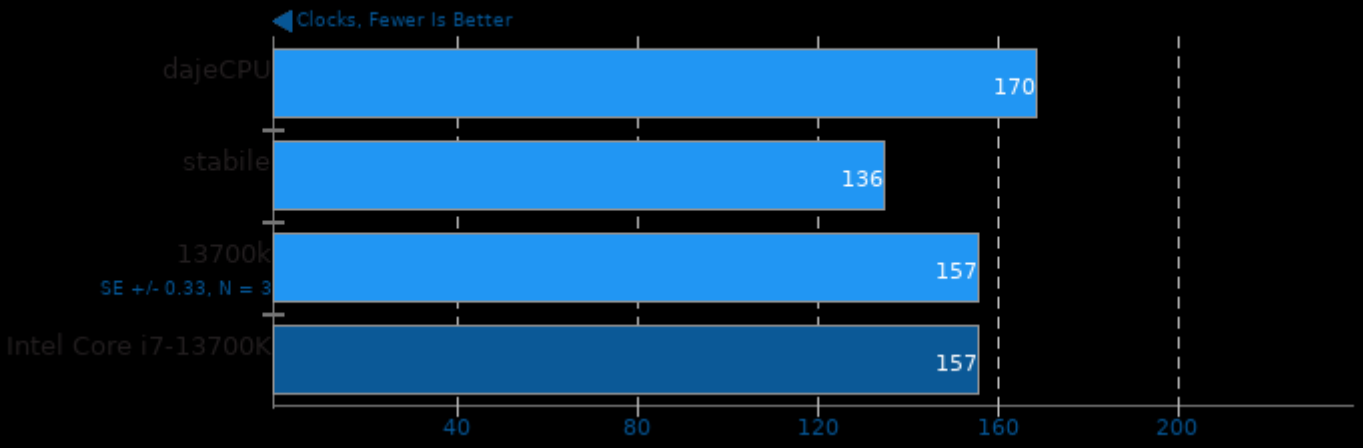
Algorithm: RSA4096



1. (CC) gcc options: -pthread -m64 -O3 -lssl -lcrypto -ldl

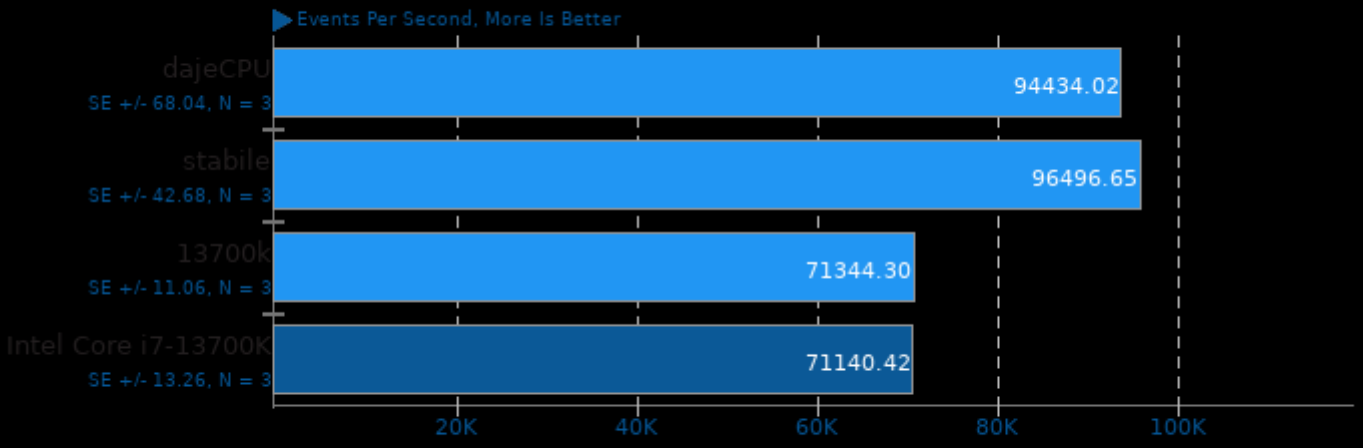
ctx_clock

Context Switch Time



Sysbench 1.0.20

Test: CPU



1. (CC) gcc options: -pthread -O2 -funroll-loops -rdynamic -ldl -laio -lm

5950xCPU

This file was automatically generated via the Phoronix Test Suite benchmarking software on Friday, 29 March 2024 04:29.