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Windows vs. Linux Ryzen 5, Tiger Lake

Tests for a future article.

Automated Executive Summary

Core i7 1165G7: Windows 10 had the most wins, coming in first place for 51% of the tests.

Based on the geometric mean of all complete results, the fastest (Core i7 1165G7: Windows 10) was 1.004x the speed of the slowest (Ryzen 5 4500U: Ubuntu 20.10). Ryzen 5 4500U: Ubuntu 20.10 was 0.997x the speed of Ryzen 5 4500U: Windows 10 and Core i7 1165G7: Windows 10 was 1.004x the speed of Ryzen 5 4500U: Ubuntu 20.10.

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

Timed MrBayes Analysis (Primate Phylogeny Analysis) at 4.524x

LibRaw (Post-Processing Benchmark) at 3.234x

Selenium (Benchmark: Maze Solver - Browser: Firefox) at 2.581x

Unigine Heaven (Resolution: 1920 x 1080 - Mode: Fullscreen - Renderer: OpenGL) at 2.46x

Basis Universal (Settings: UASTC Level 2 + RDO Post-Processing) at 2.417x

LeelaChessZero (Backend: BLAS) at 2.306x

libavif avifenc (Encoder Speed: 0) at 2.143x

RealSR-NCNN (Scale: 4x - TAA: No) at 2.059x

dav1d (Video Input: Chimera 1080p 10-bit) at 1.96x

Minion (Benchmark: Solitaire) at 1.86x.

Test Systems:

Ryzen 5 4500U: Windows 10

Processor: AMD Ryzen 5 4500U @ 2.38GHz (6 Cores), Motherboard: LENOVO LNVNB161216 (EECN20WW BIOS),
Memory: 2 x 8192 MB 3200MHz Samsung M471A1G44AB0-CWE, Disk: 238GB SKHynix_HFM256GDHTNI-87A0B,
Graphics: AMD Radeon 512MB, Network: Bluetooth Device (Personal Area)

OS: Microsoft Windows 10 Pro Build 19041, Kernel: 10.0 (x86_64), Display Driver: 27.20.1020.1, OpenCL: OpenCL 2.1
AMD-APP (3075.12), File-System: NTFS, Screen Resolution: 1920x1080

Java Notes: operable program or batch file.

Python Notes: Python 2.7.15

Security Notes: __user pointer sanitization: Disabled + Retpoline: Full + IBPB: Always + IBRS: Enabled + STIBP: Enabled

Ryzen 5 4500U: Ubuntu 20.10

Processor: AMD Ryzen 5 4500U @ 2.38GHz (6 Cores), Motherboard: LENOVO LNVNB161216 (EECN20WW BIOS),
Chipset: AMD Renoir Root Complex, Memory: 16GB, Disk: 256GB SKHynix_HFM256GDHTNI-87A0B, Graphics: AMD
Renoir (1500/400MHz), Audio: AMD Device 1637, Network: Realtek RTL8822CE 802.11ac PCIe

OS: Ubuntu 20.10, Kernel: 5.8.0-23-generic (x86_64), Desktop: GNOME Shell 3.38.1, Display Server: X Server 1.20.9,
Display Driver: amdgpu 19.1.0, Vulkan: 1.2.131, Compiler: GCC 10.2.0, File-System: ext4, Screen Resolution:
1920x1080

Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --enable-checking=release --enable-clocale=gnu --enable-default-pie
--enable-gnu-unique-object --enable-languages=c,ada,c++,go,brig,d,fortran,objc,obj-c++,m2 --enable-libphobos-checking=release --enable-libstdcxx-debug
--enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto
--enable-offload-targets=nvptx-none=/build/gcc-10-JvwpWM/gcc-10-10.2.0/debian/tmp-nvptx/usr,amdgcn-amdhsa=/build/gcc-10-JvwpWM/gcc-10-10.2.0/debian/tmp-gcn/us
r,hsa --enable-plugin --enable-shared --enable-threads=posix --host=x86_64-linux-gnu --program-prefix=x86_64-linux-gnu- --target=x86_64-linux-gnu --with-abi=m64
--with-arch-32=i686 --with-default-libstdcxx-abi=new --with-gcc-major-version-only --with-multilib-list=m32,m64,mx32 --with-target-system-zlib=auto --with-tune=generic
--without-cuda-driver -v

Processor Notes: Scaling Governor: acpi-cpufreq ondemand - CPU Microcode: 0x8600102

Graphics Notes: GLAMOR

Java Notes: OpenJDK Runtime Environment (build 11.0.9+10-post-Ubuntu-0ubuntu1)

Python Notes: Python 3.8.6

Security Notes: i1lb_multithit: Not affected + l1tf: Not affected + mds: Not affected + meltdown: Not affected + spec_store_bypass: Mitigation of SSB disabled via prctl and
seccomp + spectre_v1: Mitigation of usercopy/swaps barriers and __user pointer sanitization + spectre_v2: Mitigation of Full AMD retpoline IBPB: conditional IBRS_FW
STIBP: disabled RSB filling + srbs: Not affected + tsx_async_abort: Not affected

Core i7 1165G7: Windows 10

Processor: Intel Core i7-1165G7 @ 2.80GHz (4 Cores / 8 Threads), Motherboard: Dell 0GG9PT (1.0.3 BIOS), Memory:
8 x 2048 MB 4267MHz, Disk: 238GB KBG40ZNS256G NVMe KIOXIA 256GB, Graphics: Intel Iris Xe 1GB, Network:
Killer Wi-Fi 6 AX1650s 160MHz Wireless (201D2W)

OS: Microsoft Windows 10 Pro Build 19041, Kernel: 10.0 (x86_64), Display Driver: 27.20.100.8783, Compiler: GCC
8.3.0, File-System: NTFS, Screen Resolution: 1920x1200

Java Notes: OpenJDK Runtime Environment 18.9 (build 11.0.6+10-LTS)

Python Notes: Python 3.7.1

Security Notes: __user pointer sanitization: Disabled + IBPB: Always + IBRS: Enabled + STIBP: Enabled

	Ryzen 5 4500U: Windows 10	Ryzen 5 4500U: Ubuntu 20.10	Core i7 1165G7: Windows 10
RealSR-NCNN - 4x - No (sec)	112.577	85.544	54.680
Normalized	48.57%	63.92%	100%
Standard Deviation	1.4%	0.2%	2.9%
RealSR-NCNN - 4x - Yes (sec)	844.172	664.100	457.116
Normalized	54.15%	68.83%	100%
Standard Deviation	0.9%	0.1%	1.1%
Unigine Heaven - 1920 x 1080 - Fullscreen - OpenGL (FPS)	16.9106	13.3876	32.9310
Normalized	51.35%	40.65%	100%
Standard Deviation	0.6%	0.3%	1%
LeelaChessZero - BLAS (Nodes/s)	611	265	360
Normalized	100%	43.37%	58.92%
Standard Deviation	0.7%	1.2%	2.4%
LeelaChessZero - Eigen (Nodes/s)	779	455	485
Normalized	100%	58.41%	62.26%
Standard Deviation	0.5%	2%	1.6%
FFTE - N.2.3.C.F.R (MFLOPS)	21556	21514	15631
Normalized	100%	99.8%	72.51%
Standard Deviation	0.9%	0.6%	11.7%
Timed MrBayes Analysis - P.P.A (sec)	427.280	94.457	298.707
Normalized	22.11%	100%	31.62%
Standard Deviation	0.1%	0.9%	1.8%
BLAKE2 (Cycles/Byte)	3.72	3.71	3.66
Normalized	98.39%	98.65%	100%
Standard Deviation	0.2%	0%	0.5%
WebP Image Encode - Default (Encode Time - sec)	1.674	1.489	1.427
Normalized	85.24%	95.84%	100%
Standard Deviation	0.9%	0.6%	0.3%
WebP Image Encode - Quality 100 (Encode Time - sec)	2.576	2.376	2.220
Normalized	86.18%	93.43%	100%
Standard Deviation	0%	0.1%	0.4%
WebP Image Encode - Q.1.L (Encode Time - sec)	21.654	21.790	14.989
Normalized	69.22%	68.79%	100%
Standard Deviation	0.2%	0.9%	0.2%
WebP Image Encode - Q.1.H.C (Encode Time - sec)	7.875	7.903	6.302
Normalized	80.03%	79.74%	100%
Standard Deviation	0.1%	0.1%	0%
WebP Image Encode - Q.1.L.H.C (Encode Time - sec)	49.876	46.736	38.636
Normalized	77.46%	82.67%	100%
Standard Deviation	1.1%	0.9%	5.8%
DaCapo Benchmark - H2 (msec)	3395	4566	2790

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	Normalized	82.18%	61.1%	100%
	Standard Deviation	5.6%	4.5%	10.3%
DaCapo Benchmark - Jython (msec)	5379		5186	4827
	Normalized	89.74%	93.08%	100%
	Standard Deviation		1.5%	8.9%
DaCapo Benchmark - Tradesoap (msec)	11342		9210	13292
	Normalized	81.2%	100%	69.29%
	Standard Deviation	1%	1.2%	6.7%
DaCapo Benchmark - Tradebeans (msec)	3598		6035	4457
	Normalized	100%	59.62%	80.73%
	Standard Deviation	2.2%	2.3%	9.2%
Zstd Compression - 3 (MB/s)	2702		2406	3360
	Normalized	80.41%	71.61%	100%
	Standard Deviation	0.6%	1%	1.2%
Zstd Compression - 19 (MB/s)	16.0		16.1	22.1
	Normalized	72.4%	72.85%	100%
	Standard Deviation	0.6%	0%	1.5%
LibRaw - P.P.B (Mpix/sec)	8.42		27.23	10.61
	Normalized	30.92%	100%	38.96%
	Standard Deviation	0.2%	0.4%	0.2%
TSCP - A.C.P (Nodes/s)	1146575		1190102	1679245
	Normalized	68.28%	70.87%	100%
	Standard Deviation	0.9%	0.2%	0.6%
dav1d - Chimera 1080p (FPS)	264.470625		240.39	224.137396
	Normalized	100%	90.89%	84.75%
	Standard Deviation	0.7%	0.7%	13.8%
dav1d - Summer Nature 4K (FPS)	80.841458		77.88	63.463292
	Normalized	100%	96.34%	78.5%
	Standard Deviation	0.5%	0.2%	5.8%
dav1d - S.N.1 (FPS)	323.951042		237.81	300.573125
	Normalized	100%	73.41%	92.78%
	Standard Deviation	0.5%	1.1%	2.9%
dav1d - C.1.1.b (FPS)	63.036250		77.52	39.55083
	Normalized	81.32%	100%	51.02%
	Standard Deviation	1%	0.7%	0.5%
Embree - Pathtracer - Crown (FPS)	3.6715		3.9149	3.1343
	Normalized	93.78%	100%	80.06%
	Standard Deviation	1.5%	1.4%	0.9%
Embree - Pathtracer ISPC - Crown (FPS)	3.6388		3.7433	4.0783
	Normalized	89.22%	91.79%	100%
	Standard Deviation	0.7%	0.6%	1%
Embree - Pathtracer - Asian Dragon (FPS)	4.3017		4.5797	3.8800
	Normalized	93.93%	100%	84.72%
	Standard Deviation	0.5%	0.6%	1.3%
Embree - Pathtracer - Asian Dragon Obj	3.8711		4.2021	3.4835
	Normalized	92.12%	100%	82.9%
	Standard Deviation	0.2%	0.3%	2.8%
Embree - Pathtracer ISPC - Asian Dragon (FPS)	4.5171		4.5578	5.2258
	Normalized	86.44%	87.22%	100%
	Standard Deviation	0.5%	0.2%	2.9%
Embree - Pathtracer ISPC - Asian Dragon Obj (FPS)	3.9485		4.1123	4.5063
	Normalized	87.62%	91.26%	100%
	Standard Deviation	0.1%	0.3%	2.8%

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SVT-AV1 - Enc Mode 0 - 1080p (FPS)	0.083	0.073	0.069
Normalized	100%	87.95%	83.13%
Standard Deviation	1.4%	1.6%	1.4%
SVT-AV1 - Enc Mode 4 - 1080p (FPS)	1.714	1.349	1.341
Normalized	100%	78.7%	78.24%
Standard Deviation	0.7%	0.6%	5.9%
SVT-AV1 - Enc Mode 8 - 1080p (FPS)	14.451	10.744	11.734
Normalized	100%	74.35%	81.2%
Standard Deviation	0.3%	0.5%	8.7%
SVT-HEVC - 1.8.b.Y.T.H.V.E (FPS)	25.33	24.61	17.71
Normalized	100%	97.16%	69.92%
Standard Deviation	0.5%	0.2%	6.7%
SVT-VP9 - VMAF Optimized - Bosphorus	81.46	82.67	82.85
1080p (FPS)			
Normalized	98.32%	99.78%	100%
Standard Deviation	1.5%	2.2%	11.4%
SVT-VP9 - P.S.O - Bosphorus 1080p (FPS)	81.94	85.66	83.11
Normalized	95.66%	100%	97.02%
Standard Deviation	0.8%	0.5%	10.6%
SVT-VP9 - V.Q.O - Bosphorus 1080p (FPS)	67.45	70.93	61.34
Normalized	95.09%	100%	86.48%
Standard Deviation	2.6%	0.3%	8.2%
x264 - H.2.V.E (FPS)	46.80	45.08	32.44
Normalized	100%	96.32%	69.32%
Standard Deviation	0.4%	2.2%	6.4%
Intel Open Image Denoise - Memorial	4.52	4.51	5.91
(Images / Sec)			
Normalized	76.48%	76.31%	100%
Standard Deviation	0.8%	1.2%	4.9%
LuxCoreRender - DLSC (M samples/sec)	0.68	0.73	0.54
Normalized	93.15%	100%	73.97%
Standard Deviation	0.5%	1.1%	7.4%
LuxCoreRender - R.C.a.P (M samples/sec)	0.65	0.82	0.51
Normalized	79.27%	100%	62.2%
Standard Deviation	1.2%	0.6%	7.4%
Stockfish - Total Time (Nodes/s)	11266179	11082784	8017337
Normalized	100%	98.37%	71.16%
Standard Deviation	1.2%	1%	1.2%
asmFish - 1.H.M.2.D (Nodes/s)	11445185	11302689	9040725
Normalized	100%	98.75%	78.99%
Standard Deviation	0.4%	1.6%	1.5%
libavif avifenc - 0 (sec)	251.833	161.371	345.898
Normalized	64.08%	100%	46.65%
Standard Deviation	0.6%	0.2%	1.7%
libavif avifenc - 2 (sec)	92.988	94.109	126.133
Normalized	100%	98.81%	73.72%
Standard Deviation	0.1%	0.5%	3.9%
libavif avifenc - 8 (sec)	6.918	6.886	6.456
Normalized	93.32%	93.76%	100%
Standard Deviation	0.4%	0.2%	3%
libavif avifenc - 10 (sec)	6.403	6.301	5.733
Normalized	89.54%	90.99%	100%
Standard Deviation	0.5%	0.2%	0.4%
C-Ray - Total Time - 4.1.R.P.P (sec)	116.154	117.953	199.763
Normalized	100%	98.47%	58.15%

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	Standard Deviation	0.6%	1.1%	2.8%
XZ Compression - C.u.1.0.3.s.i.i.C.L.9 (sec)	Normalized	70.410	70.203	60.652
	Standard Deviation	0.2%	0.5%	4.5%
FLAC Audio Encoding - WAV To FLAC (sec)	Normalized	8.508	8.588	7.590
	Standard Deviation	0.3%	0.3%	0.1%
LAME MP3 Encoding - WAV To MP3 (sec)	Normalized	9.610	7.983	8.174
	Standard Deviation	0.3%	0.2%	3%
Minion - Graceful (sec)	Normalized	52.008	45.761422	41.116
	Standard Deviation	0.1%	1.3%	0.4%
Minion - Solitaire (sec)	Normalized	51.817	71.185610	38.276
	Standard Deviation	2.1%	4.1%	0.3%
Minion - Quasigroup (sec)	Normalized	117.644	112.592311	105.573
	Standard Deviation	0.3%	0.7%	0.2%
libjpeg-turbo tjbench - D.T (Megapixels/sec)	Normalized	195.443130	201.531610	212.611725
	Standard Deviation	0.1%	0.1%	0.7%
Basis Universal - ETC1S (sec)	Normalized	83.184	60.311	94.799
	Standard Deviation	0.1%	0.1%	6.9%
Basis Universal - UASTC Level 0 (sec)	Normalized	9.873	9.123	9.309
	Standard Deviation	0.2%	0.5%	1.3%
Basis Universal - UASTC Level 2 (sec)	Normalized	61.284	56.836	82.323
	Standard Deviation	0%	0.4%	6.7%
Basis Universal - UASTC Level 3 (sec)	Normalized	125.189	114.337	174.266
	Standard Deviation	0.5%	0.6%	0.9%
Basis Universal - U.L.2.R.P.P (sec)	Normalized	1124	771.076	1863
	Standard Deviation	1.1%	1.1%	2.8%
Chaos Group V-RAY - CPU (Ksamples)	Normalized	5429	5694	4455
	Standard Deviation	1.2%	1.1%	6.3%
Blender - BMW27 - CPU-Only (sec)	Normalized	461.76	390.05	588.41
	Standard Deviation	0.8%	0.7%	0.8%
PyBench - T.F.A.T.T (Milliseconds)	Normalized	1508	1004	1054
	Standard Deviation	0.5%	0.3%	0.5%
Appleseed - Emily (sec)	Normalized	967.459	976.18222	1200
	Standard Deviation	100%	99.11%	80.6%
Appleseed - Disney Material (sec)	Normalized	506.265	510.94209	697.98
	Standard Deviation	100%	99.08%	72.53%
Appleseed - Material Tester (sec)	Normalized	503.713	514.667289	649.6
	Standard Deviation	100%	97.87%	77.54%
Maxon Cinebench - Multi-Core (Score)	Normalized	2050		1647
	Standard Deviation	0.2%		0.9%

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Maxon Cinebench - Single-Core (Score)	445.73	557.67
Normalized	79.93%	100%
Standard Deviation	0.3%	0.3%
Selenium - ARES-6 - Firefox (ms)	39.21	47.88
Normalized	91.35%	74.81%
Standard Deviation	1.1%	1.2%
Selenium - Kraken - Firefox (ms)	795.8	896.2
Normalized	89.97%	79.89%
Standard Deviation	1%	0.8%
Selenium - Octane - Firefox (Geometric)	37276	30423
Normalized	87.08%	71.07%
Standard Deviation	1.6%	1.2%
Selenium - WebXPRT - Firefox (Score)	245	206
Normalized	91.76%	77.15%
Standard Deviation		0.3%
Selenium - Basemark - Firefox (Overall)	545.67	470.98
Normalized	91.66%	79.12%
Standard Deviation	5.4%	5.2%
Selenium - Jetstream - Firefox (Score)	220.11	176.84
Normalized	91.49%	73.5%
Standard Deviation	0.4%	0.3%
Selenium - CanvasMark - Firefox (Score)	8003	9808
Normalized	74.56%	91.37%
Standard Deviation	1.4%	1.6%
Selenium - MotionMark - Firefox (Score)	155.88	23.52
Normalized	100%	15.09%
Standard Deviation	25.8%	26.5%
Selenium - StyleBench - Firefox (Runs /	61.8	59.9
Normalized	100%	96.93%
Standard Deviation	1.6%	1.2%
Selenium - Jetstream 2 - Firefox (Score)	104.533	83.400
Normalized	97.95%	78.14%
Standard Deviation	1.8%	0.9%
Selenium - Maze Solver - Firefox (sec)	15	6.2
Normalized	41.33%	100%
Standard Deviation		0%
Selenium - Speedometer - Firefox (Runs/min)	84.1	63.5
Normalized	83.85%	63.31%
Standard Deviation	1.7%	0.7%
Selenium - ARES-6 - Google Chrome (ms)	21.35	21.78
Normalized	93.77%	91.92%
Standard Deviation	0.7%	0.4%
Selenium - Kraken - Google Chrome (ms)	845.5	688.4
Normalized	81.42%	100%
Standard Deviation	0.5%	0.5%
Selenium - Octane - Google Chrome (Geometric Mean)	46499	46684
Normalized	81.95%	82.27%
Standard Deviation	1.2%	0.7%
Selenium - PSPDFKit WASM - Firefox (Score)	1457	1801
Normalized	86.55%	70.02%
Standard Deviation	2.8%	1.5%
Selenium - WebXPRT - Google Chrome	210	200
Normalized	90.13%	85.84%
Standard Deviation	0.5%	100%

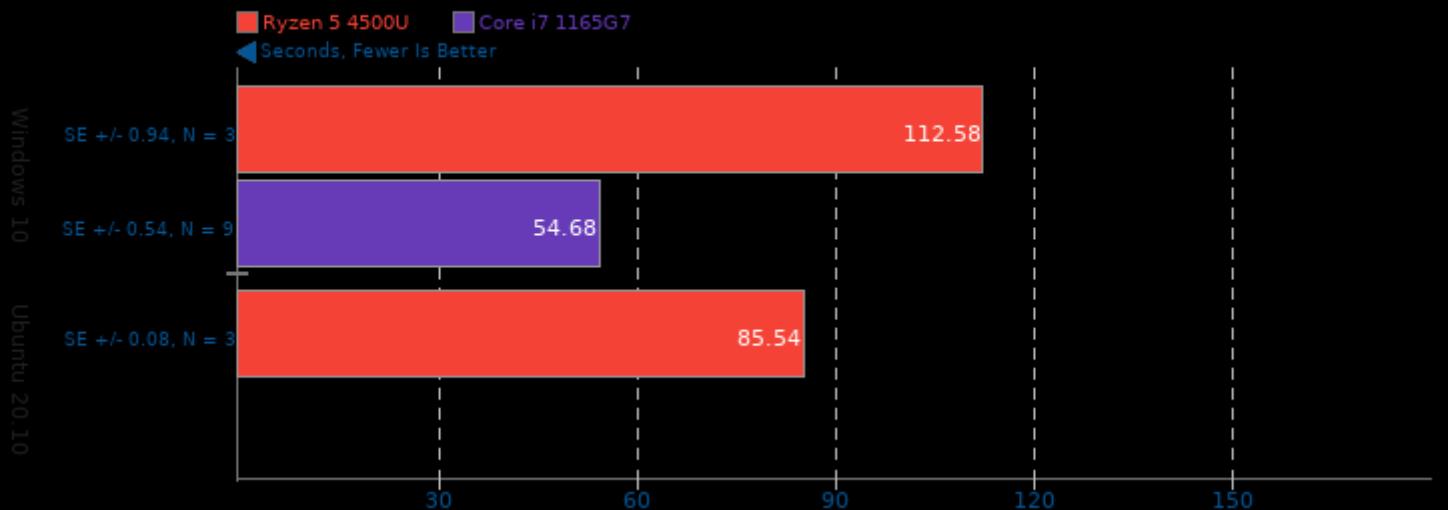
Windows vs. Linux Ryzen 5, Tiger Lake

Selenium - Basemark - Google Chrome	866.51	764.74	944.62
(Overall Score)			
Normalized	91.73%	80.96%	100%
Standard Deviation	2.3%	5.7%	6.9%
Selenium - Jetstream - Google Chrome	217.55	211.90	248.69
Normalized	87.48%	85.21%	100%
Standard Deviation	0.3%	0.6%	0.2%
Selenium - CanvasMark - Google Chrome	11525	9727	13753
(Score)			
Normalized	83.8%	70.73%	100%
Standard Deviation	2.9%	2.8%	2.5%
Selenium - MotionMark - Google Chrome	288.74	306.63	439.03
(Score)			
Normalized	65.77%	69.84%	100%
Standard Deviation	7.8%	9.9%	10.2%
Selenium - StyleBench - Google Chrome	33.29	28.7	35.6
(Runs / Minute)			
Normalized	93.51%	80.62%	100%
Standard Deviation	0.1%	0.5%	1.7%
Selenium - Jetstream 2 - Google Chrome	129.789	126.629	146.033
(Score)			
Normalized	88.88%	86.71%	100%
Standard Deviation	0.9%	0.6%	4.7%
Selenium - Maze Solver - Google Chrome	4.2	5.5	5
Normalized	100%	76.36%	84%
Standard Deviation	1.4%	1%	
Selenium - Speedometer - Google Chrome	115.5	100	138
(Runs/min)			
Normalized	83.7%	72.46%	100%
Standard Deviation	0.4%	2.7%	
Selenium - PSPDFKit WASM - Google Chrome (Score)	3104	2691	2360
Normalized	76.03%	87.7%	100%
Standard Deviation	1.5%	0.7%	1.8%
Selenium - W.i - Firefox (ms)	28.1	29.3	24.9
Normalized	88.61%	84.98%	100%
Standard Deviation	0.7%	0.2%	1.6%
Selenium - W.c - Firefox (ms)	390.7	399.8	399.4
Normalized	100%	97.72%	97.82%
Standard Deviation	0.1%	0.9%	5.5%
Selenium - W.i - Google Chrome (ms)	31.297	31.1708	38.6928
Normalized	99.6%	100%	80.56%
Standard Deviation	1.2%	0.3%	9.7%
Selenium - W.c - Google Chrome (ms)	309.1437	307.8768	336.1263
Normalized	99.59%	100%	91.6%
Standard Deviation	0.3%	0.1%	6%
Sunflow Rendering System - G.I.I.S (sec)	2.430	1.944	2.691
Normalized	80%	100%	72.24%
Standard Deviation	2.7%	1.2%	14.6%

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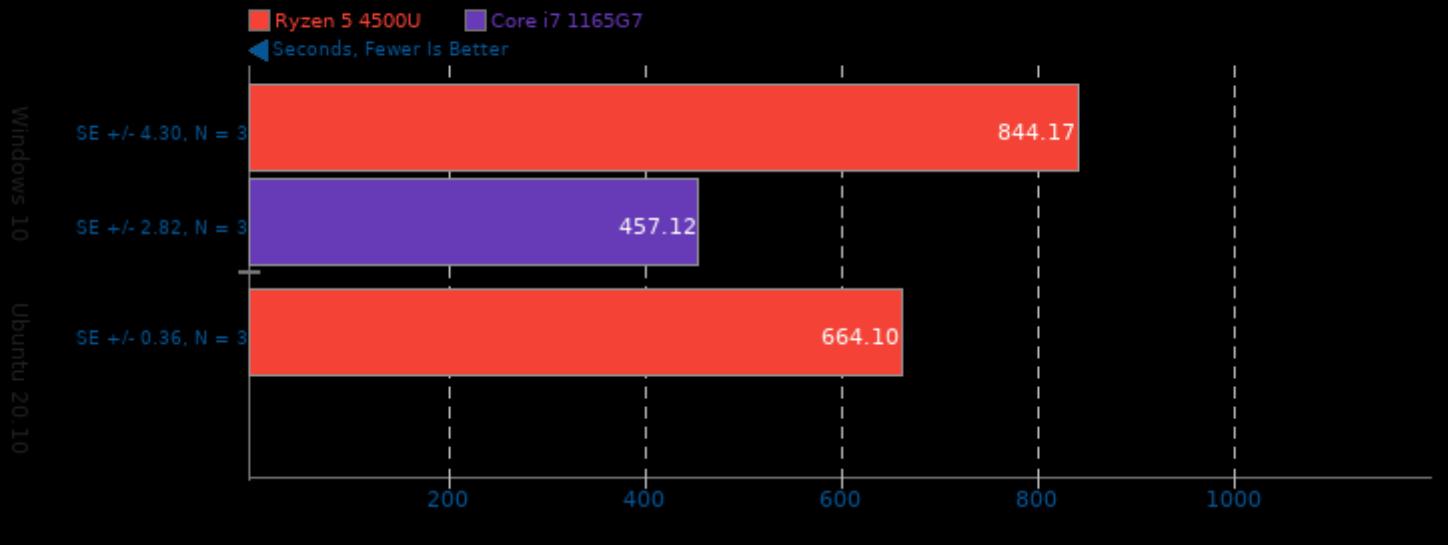
RealSR-NCNN 20200818

Scale: 4x - TAA: No



RealSR-NCNN 20200818

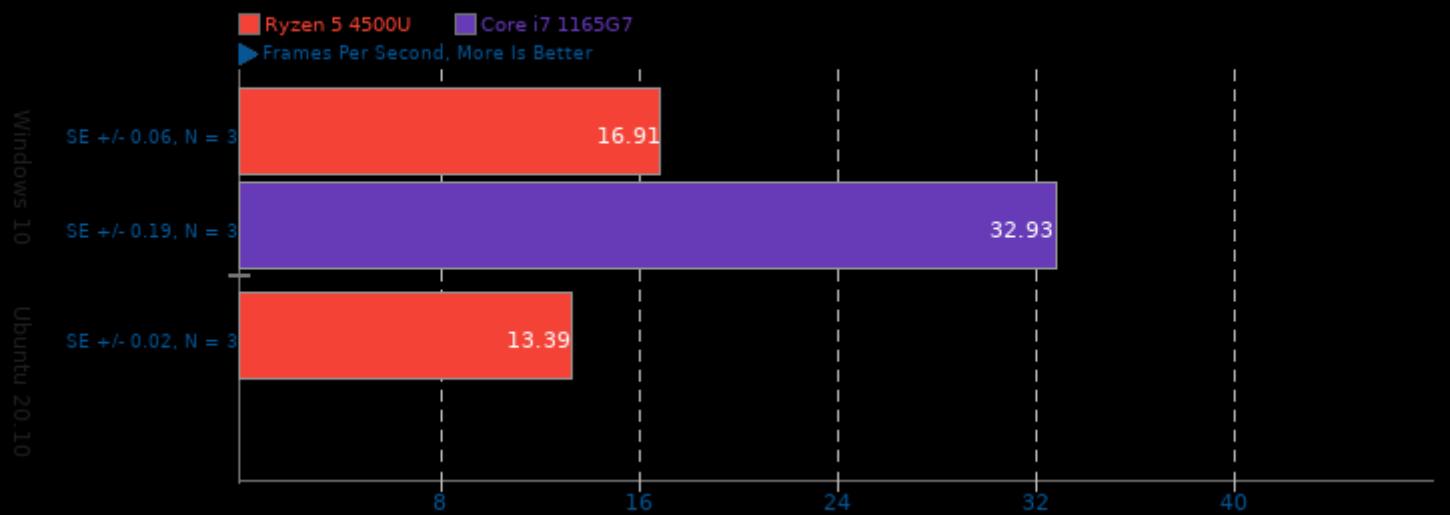
Scale: 4x - TAA: Yes



Windows vs. Linux Ryzen 5, Tiger Lake

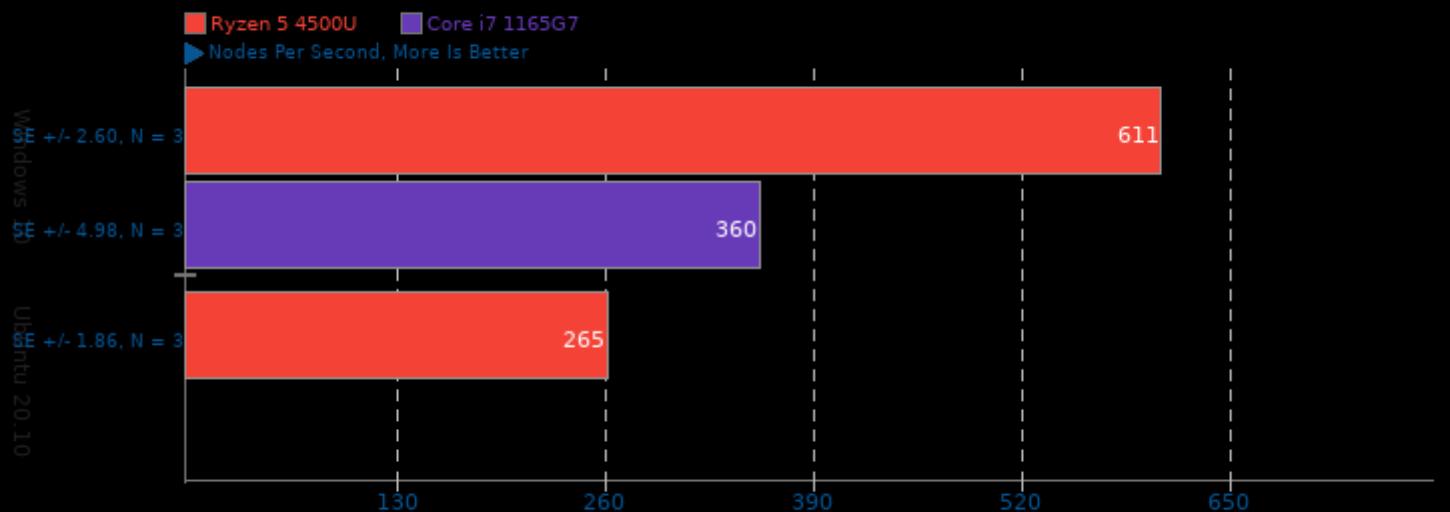
Unigine Heaven 4.0

Resolution: 1920 x 1080 - Mode: Fullscreen - Renderer: OpenGL



LeelaChessZero 0.26

Backend: BLAS

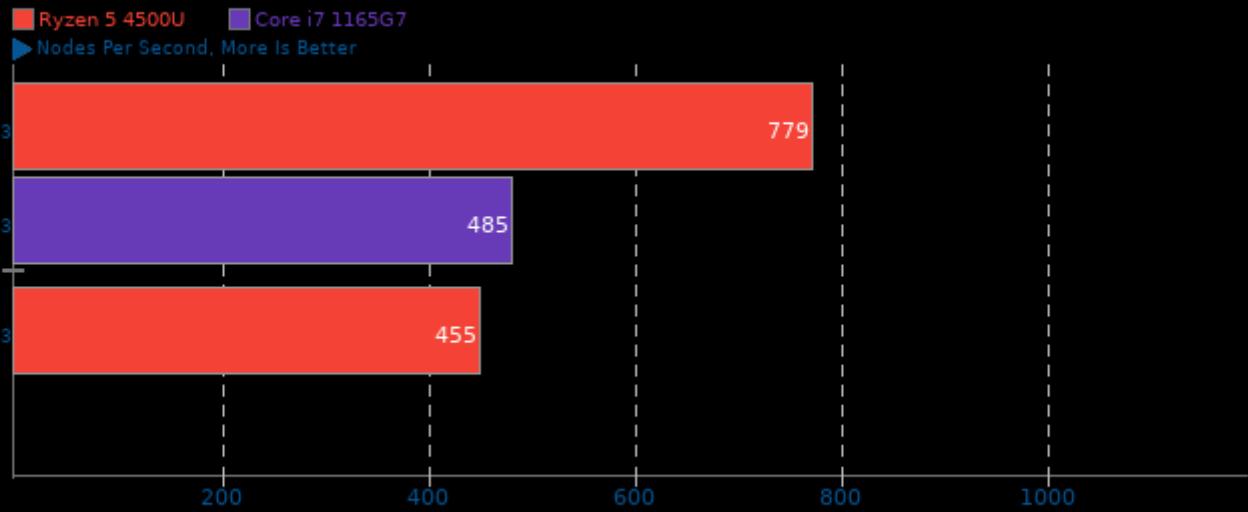


1. (CXX) g++ options: -fno -pthread

Windows vs. Linux Ryzen 5, Tiger Lake

LeelaChessZero 0.26

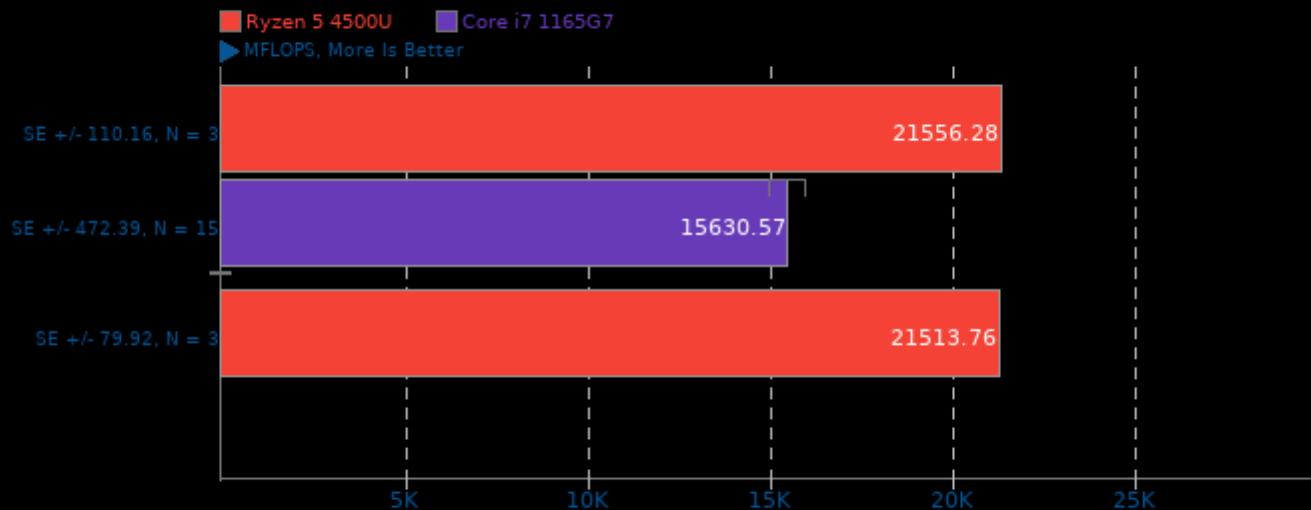
Backend: Eigen



1. (CXX) g++ options: -fno -pthread

FFTE 7.0

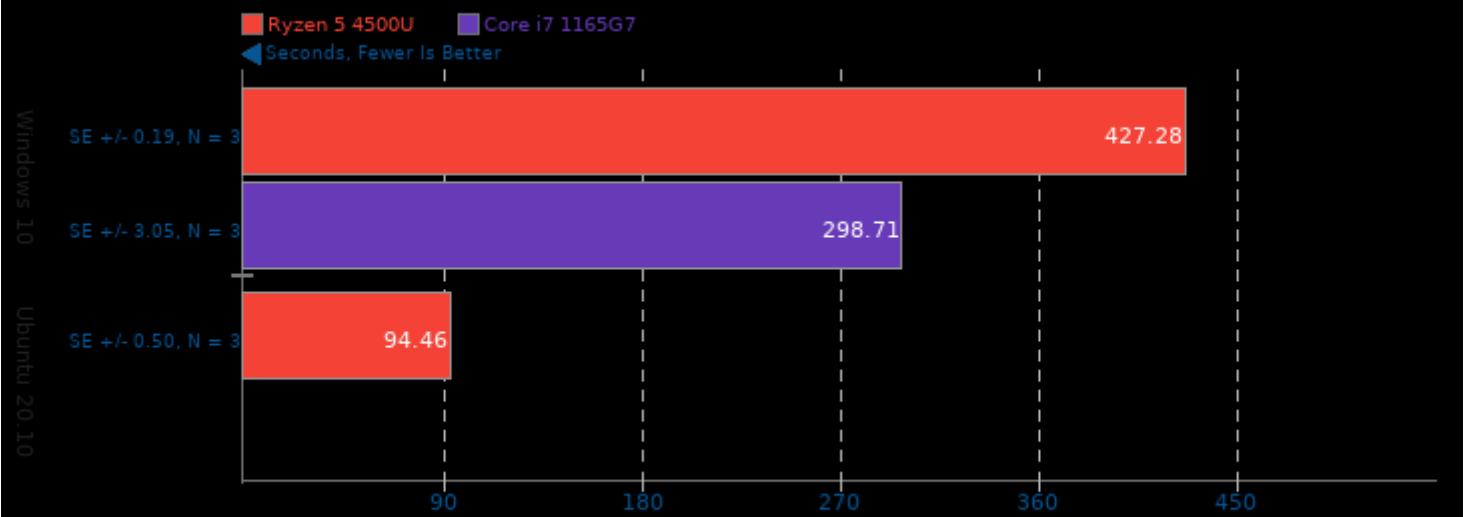
N=256, 3D Complex FFT Routine



1. (F9X) gfortran options: -O3 -fomit-frame-pointer -fopenmp

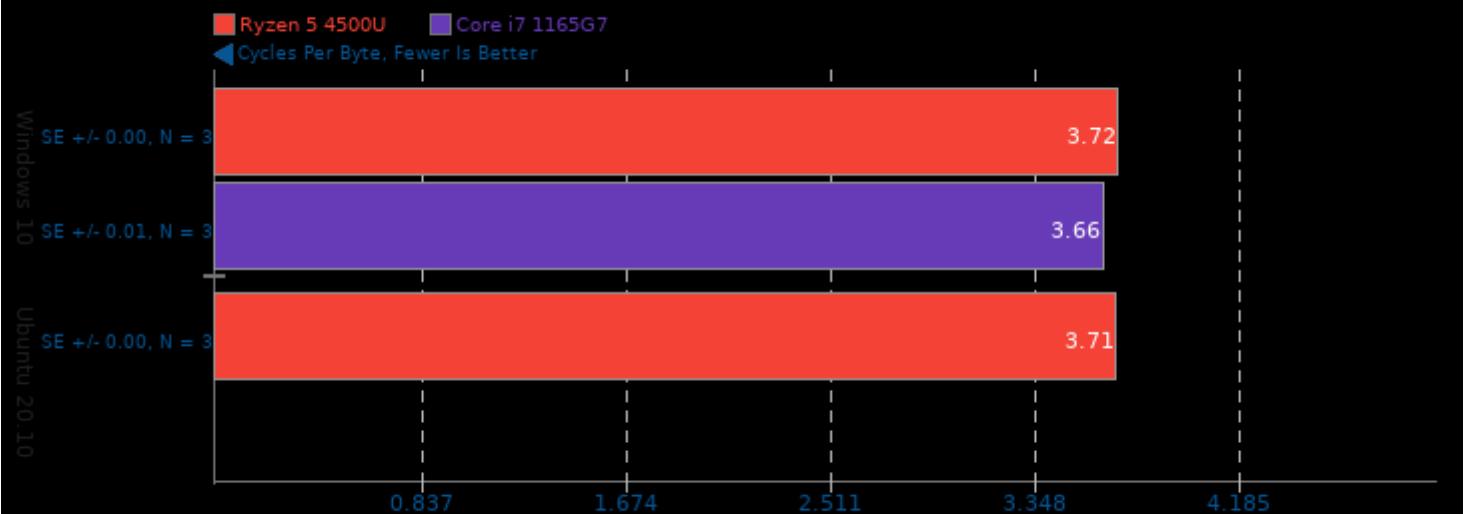
Timed MrBayes Analysis 3.2.7

Primate Phylogeny Analysis



1. (CC) gcc options: -mmmx -msse -msse2 -msse3 -msse3 -msse4.1 -msse4.2 -msse4a -msha -maes -mavx -mfma -mavx2 -mrdrnd -mbmi -mbmi2 -madx

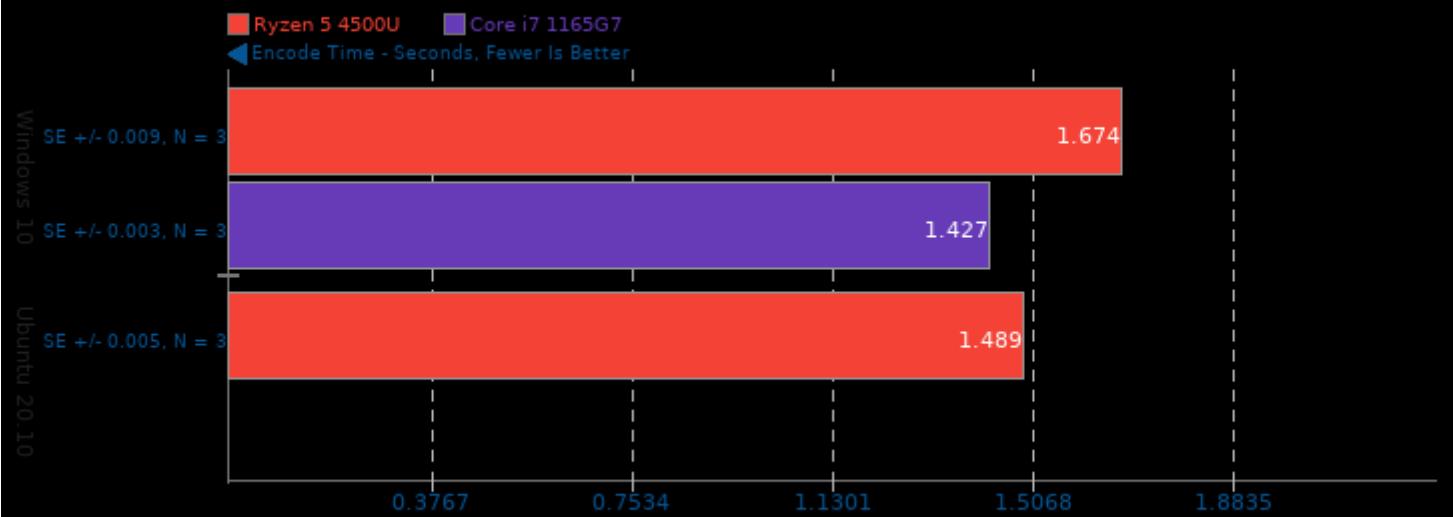
BLAKE2 20170307



1. (CC) gcc options: -O3 -march=native -lcrypto -lz

WebP Image Encode 1.1

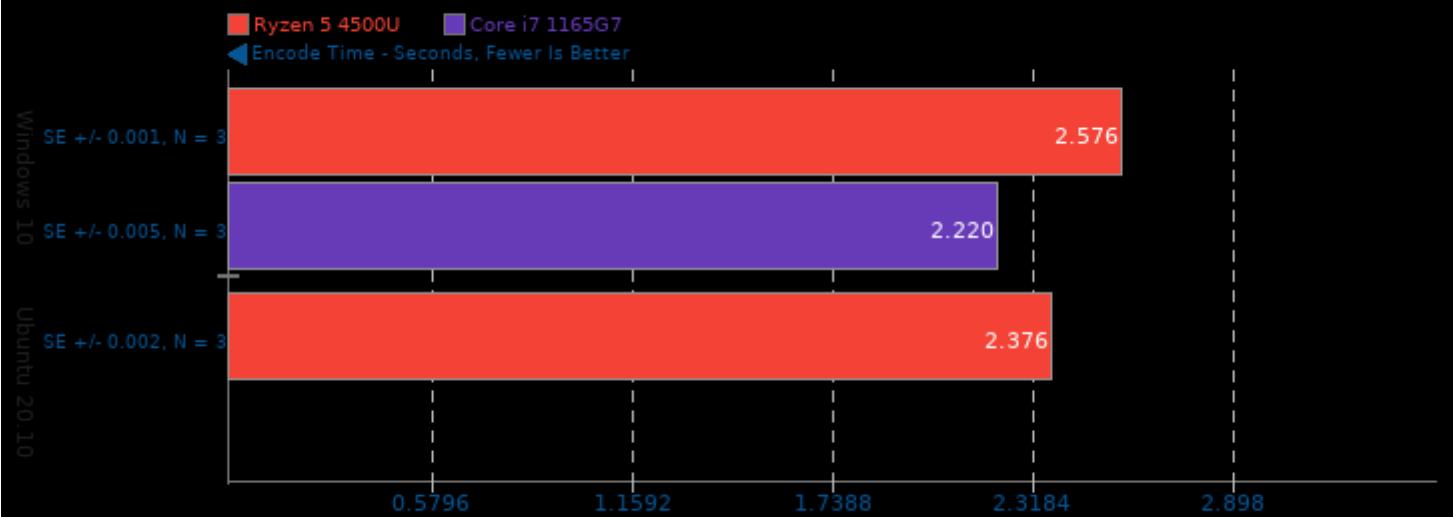
Encode Settings: Default



1. (CC) gcc options: -fvisibility=hidden -O2 -pthread -lm -ljpeg -lpng16

WebP Image Encode 1.1

Encode Settings: Quality 100

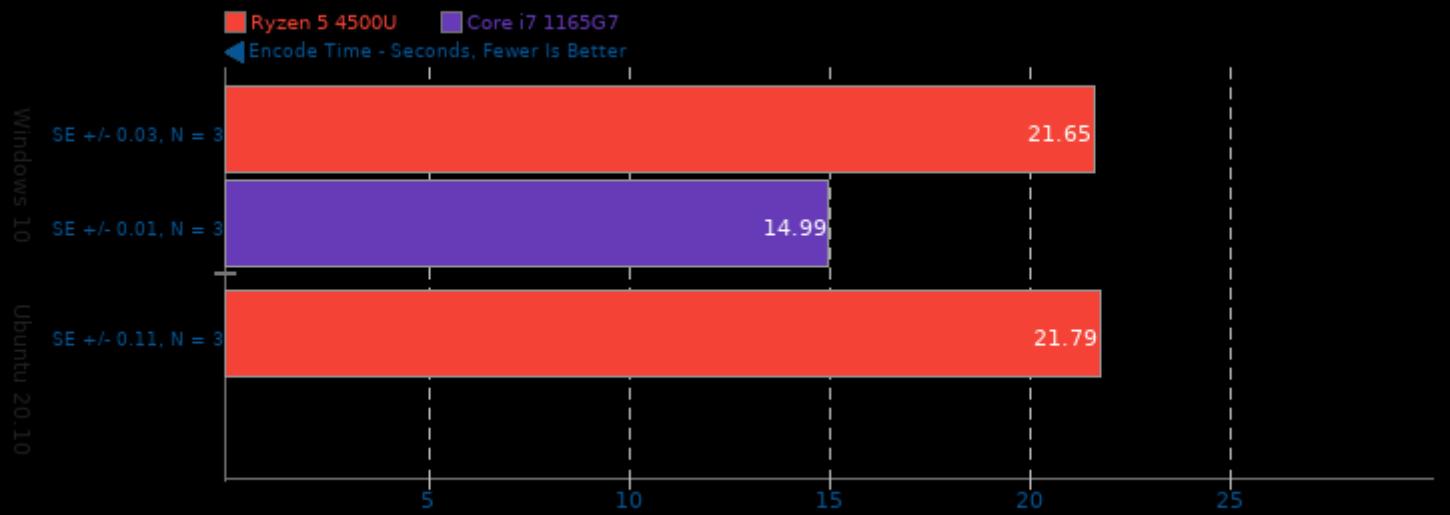


1. (CC) gcc options: -fvisibility=hidden -O2 -pthread -lm -ljpeg -lpng16

Windows vs. Linux Ryzen 5, Tiger Lake

WebP Image Encode 1.1

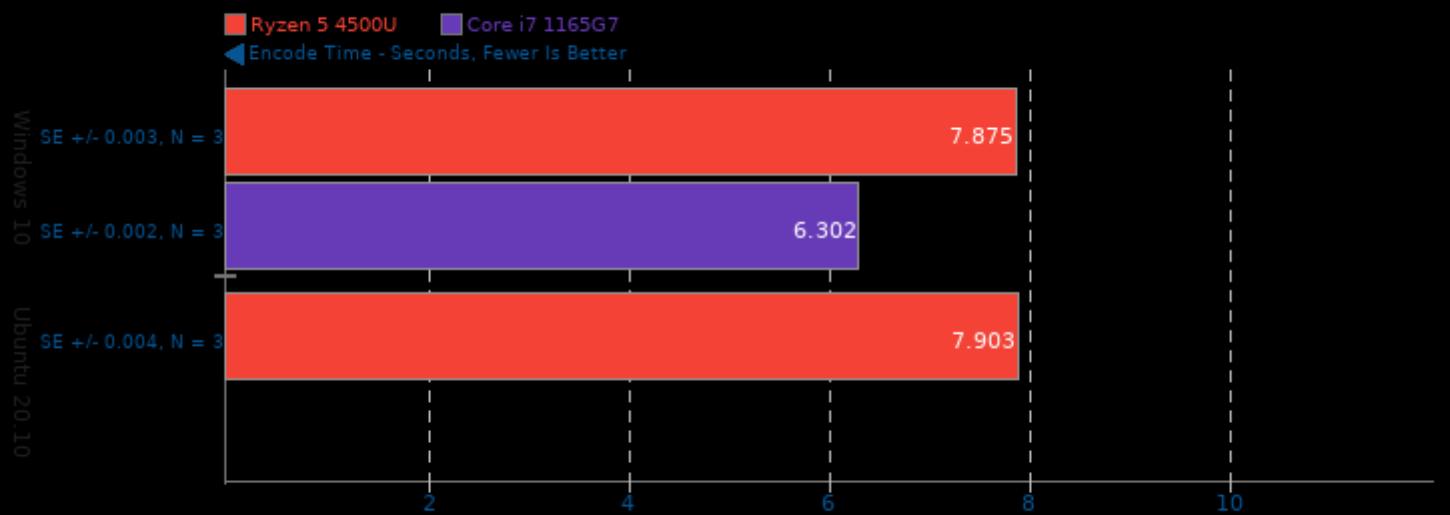
Encode Settings: Quality 100, Lossless



1. (CC) gcc options: -fvisibility=hidden -O2 -pthread -lm -ljpeg -lpng16

WebP Image Encode 1.1

Encode Settings: Quality 100, Highest Compression

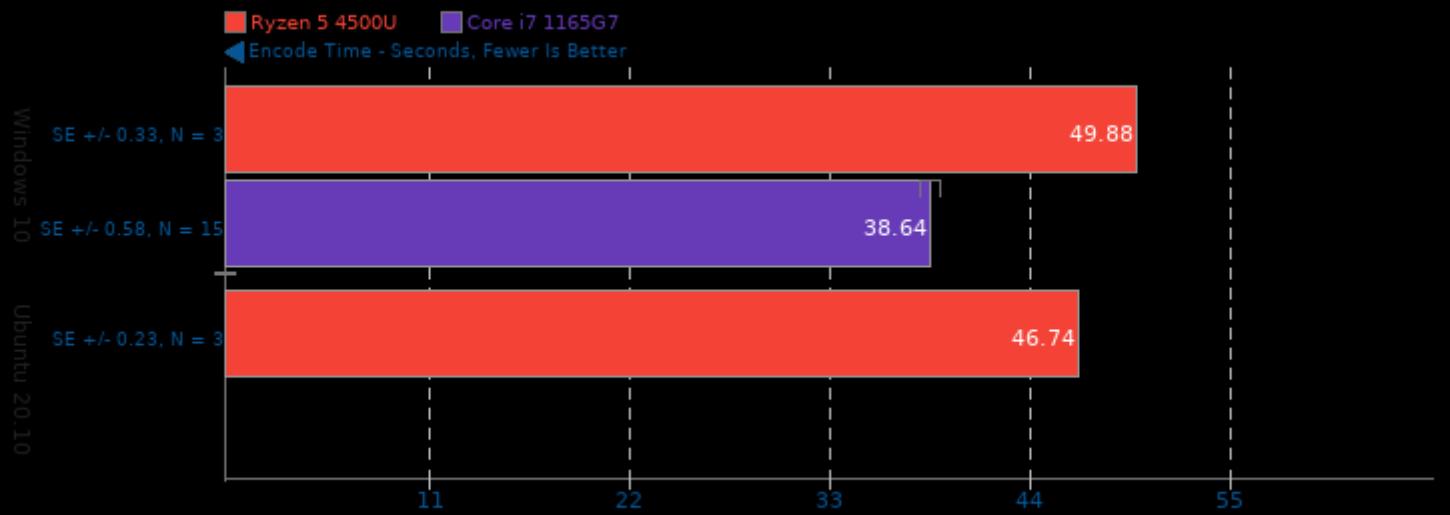


1. (CC) gcc options: -fvisibility=hidden -O2 -pthread -lm -ljpeg -lpng16

Windows vs. Linux Ryzen 5, Tiger Lake

WebP Image Encode 1.1

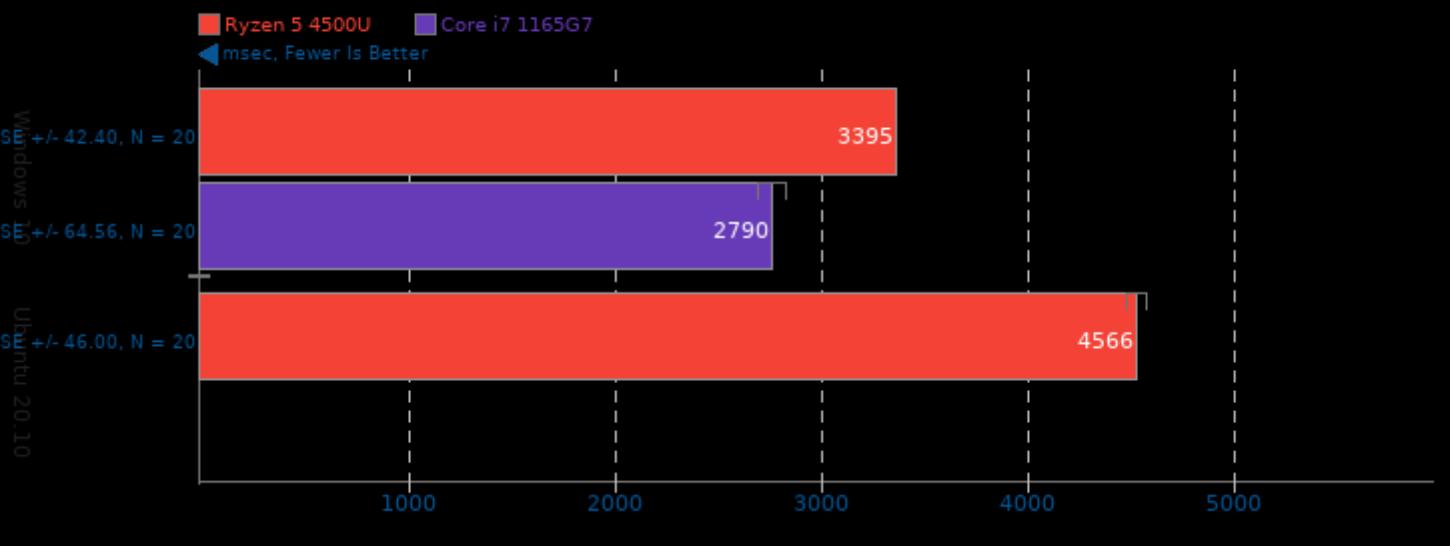
Encode Settings: Quality 100, Lossless, Highest Compression



1. (CC) gcc options: -fvisibility=hidden -O2 -pthread -lm -ljpeg -lpng16

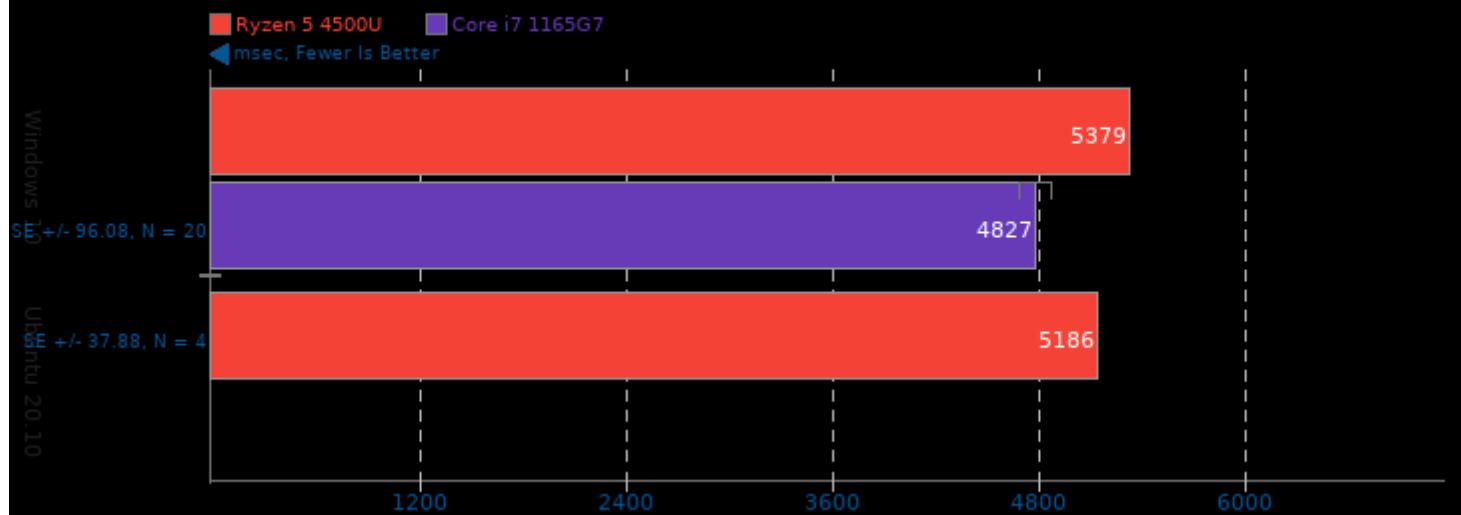
DaCapo Benchmark 9.12-MR1

Java Test: H2



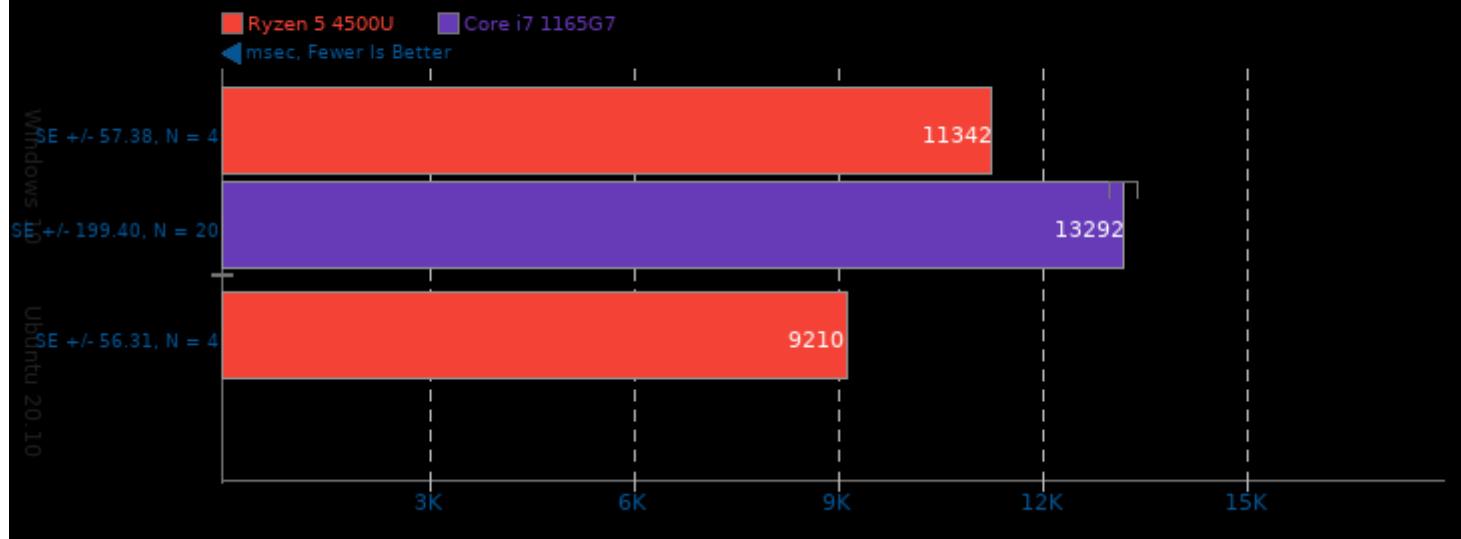
DaCapo Benchmark 9.12-MR1

Java Test: Jython



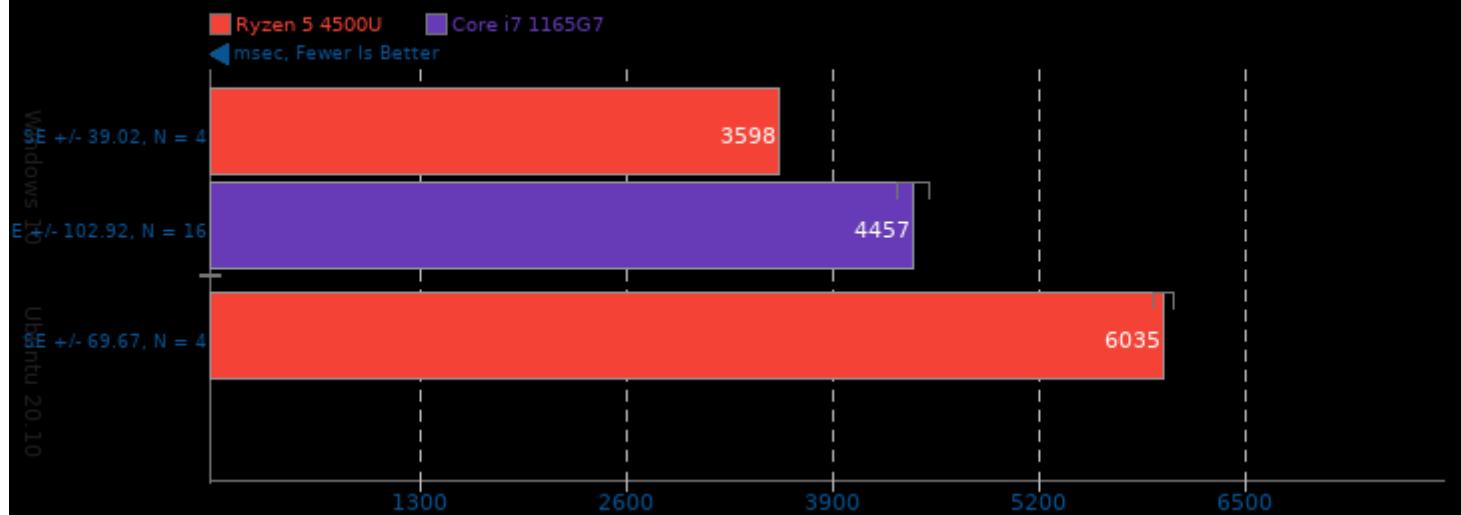
DaCapo Benchmark 9.12-MR1

Java Test: Tradesoap



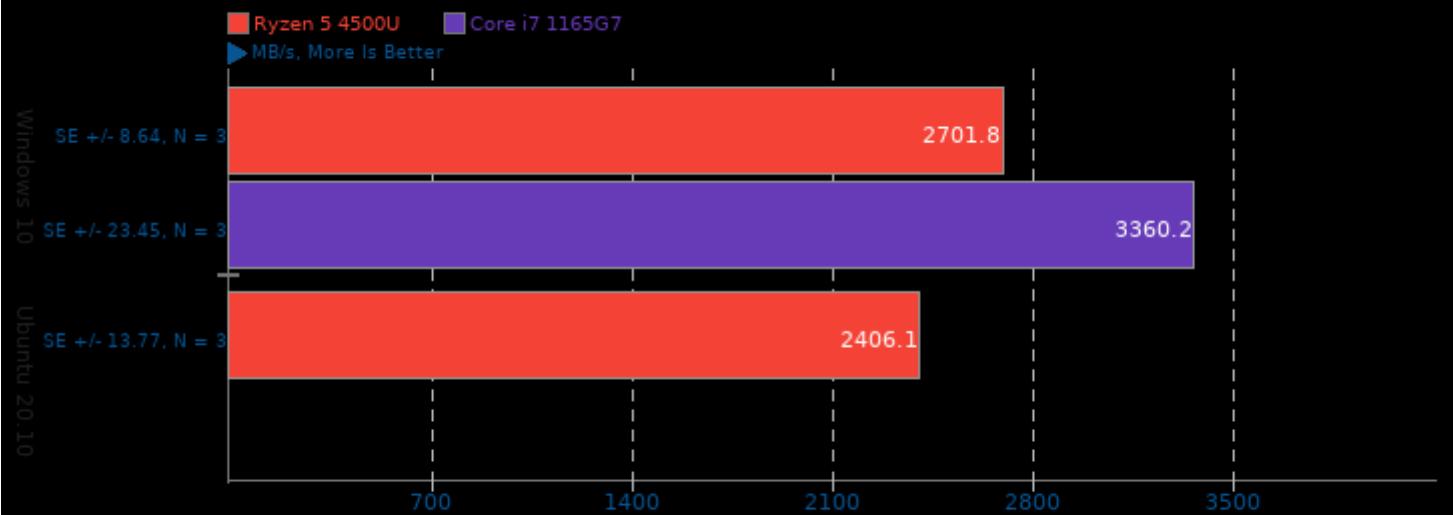
DaCapo Benchmark 9.12-MR1

Java Test: Tradebeans



Zstd Compression 1.4.5

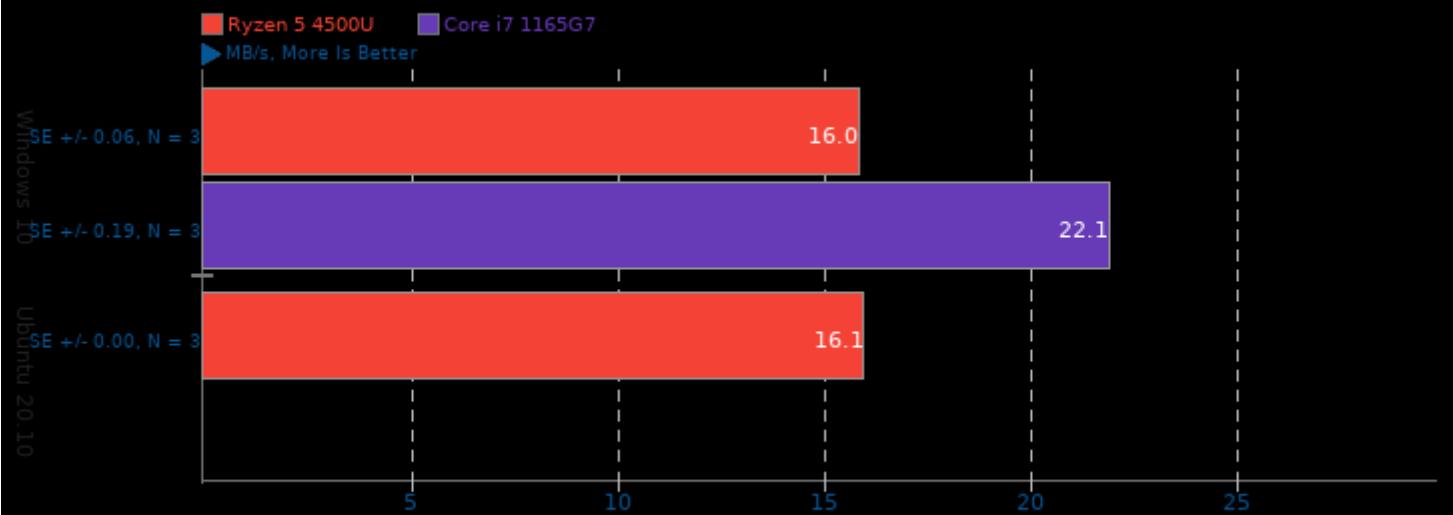
Compression Level: 3



1. (CC) gcc options: -O3 -pthread -lz

Zstd Compression 1.4.5

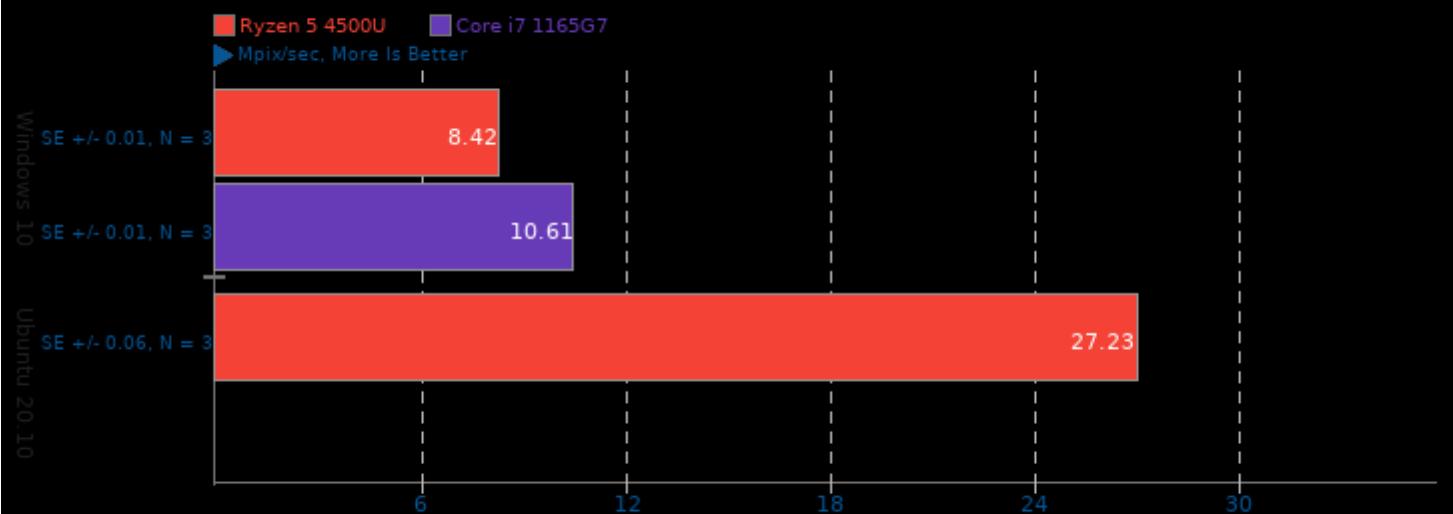
Compression Level: 19



1. (CC) gcc options: -O3 -pthread -lz

LibRaw 0.20

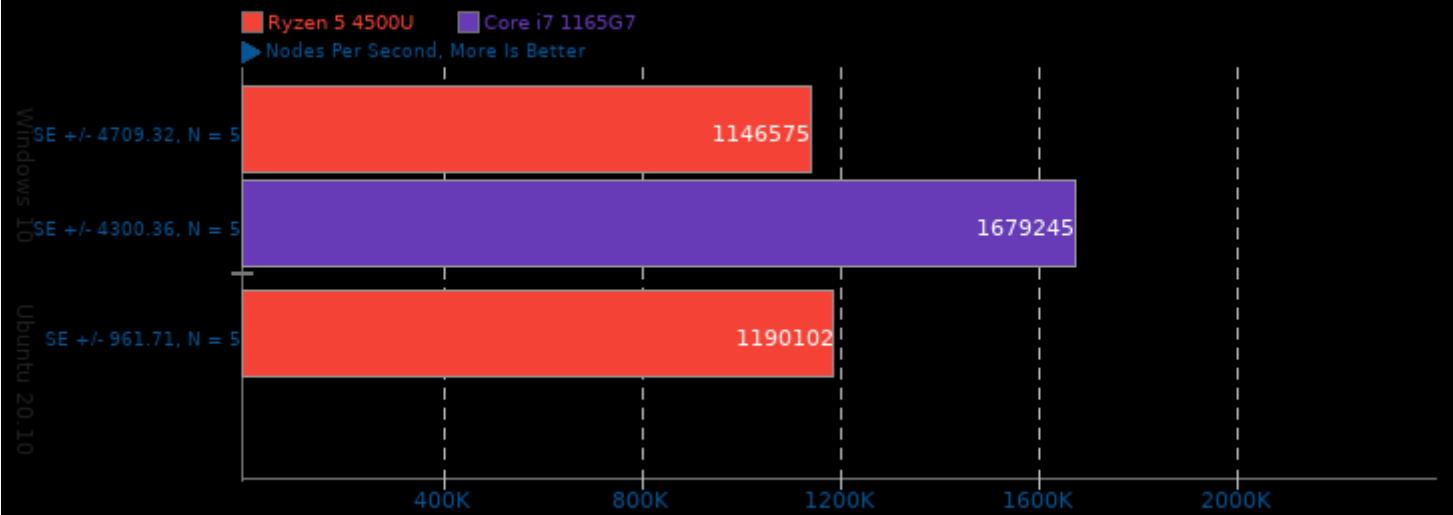
Post-Processing Benchmark



1. (CXX) g++ options: -O2 -fopenmp -ljpeg -lz -lm

TSCP 1.81

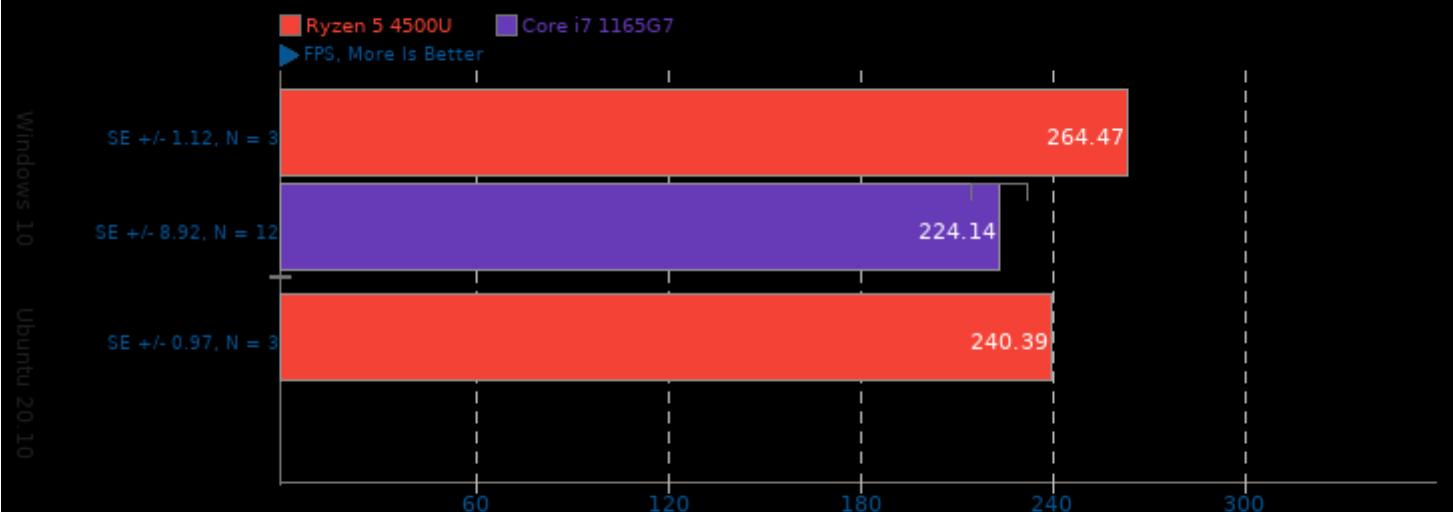
AI Chess Performance



1. (CC) gcc options: -O3 -march=native

dav1d 0.7.0

Video Input: Chimera 1080p

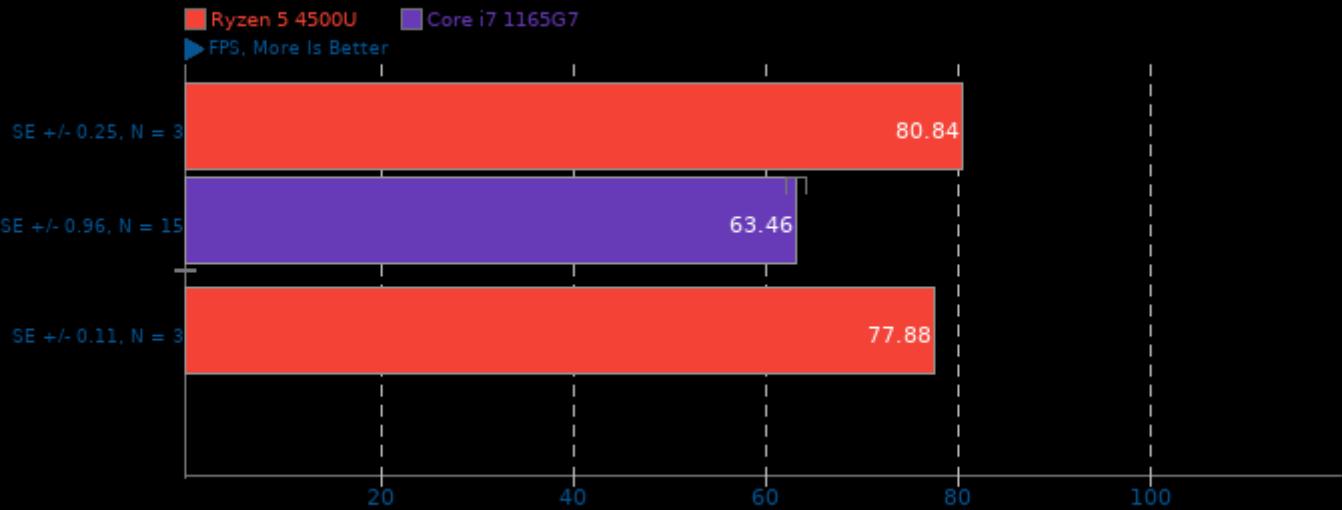


1. (CC) gcc options: -pthread

Windows vs. Linux Ryzen 5, Tiger Lake

dav1d 0.7.0

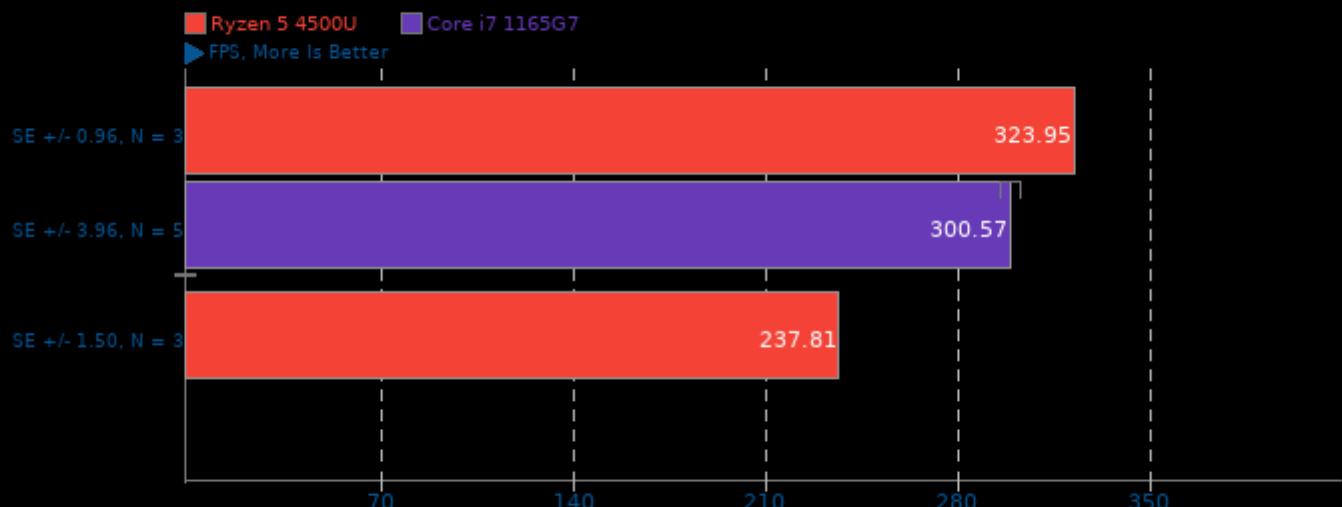
Video Input: Summer Nature 4K



1. (CC) gcc options: -pthread

dav1d 0.7.0

Video Input: Summer Nature 1080p

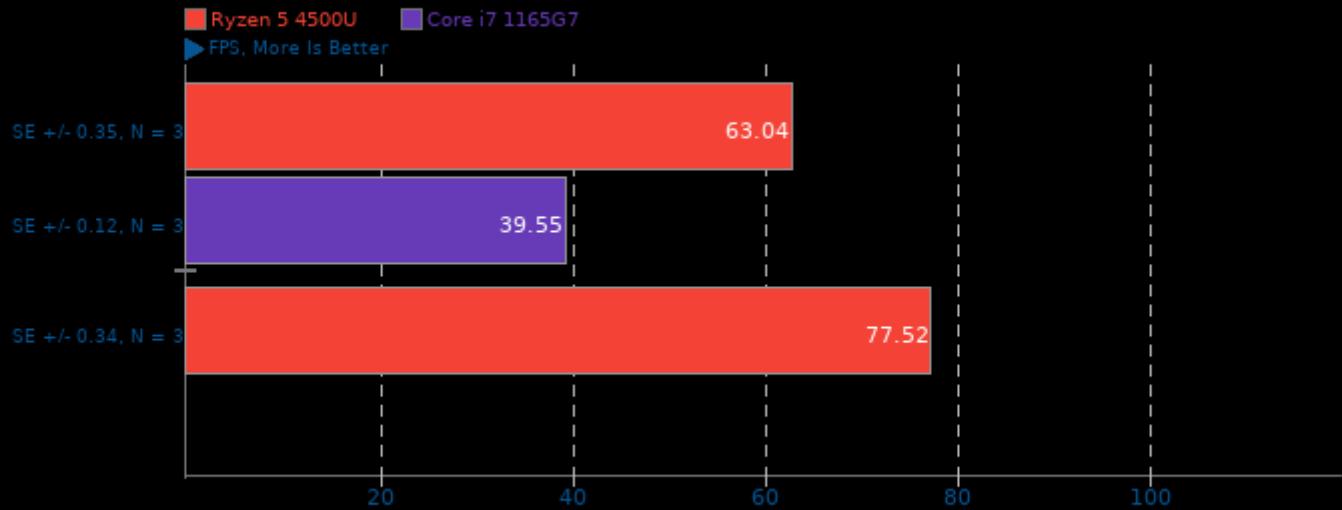


1. (CC) gcc options: -pthread

Windows vs. Linux Ryzen 5, Tiger Lake

dav1d 0.7.0

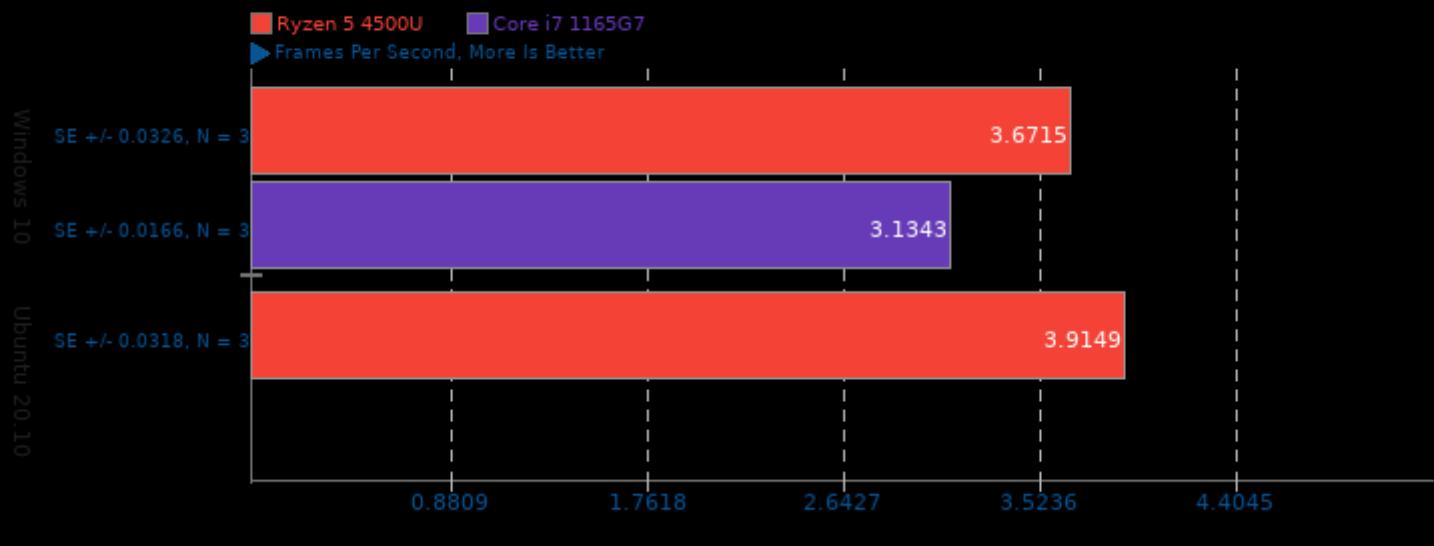
Video Input: Chimera 1080p 10-bit



1. (CC) gcc options: -pthread

Embree 3.9.0

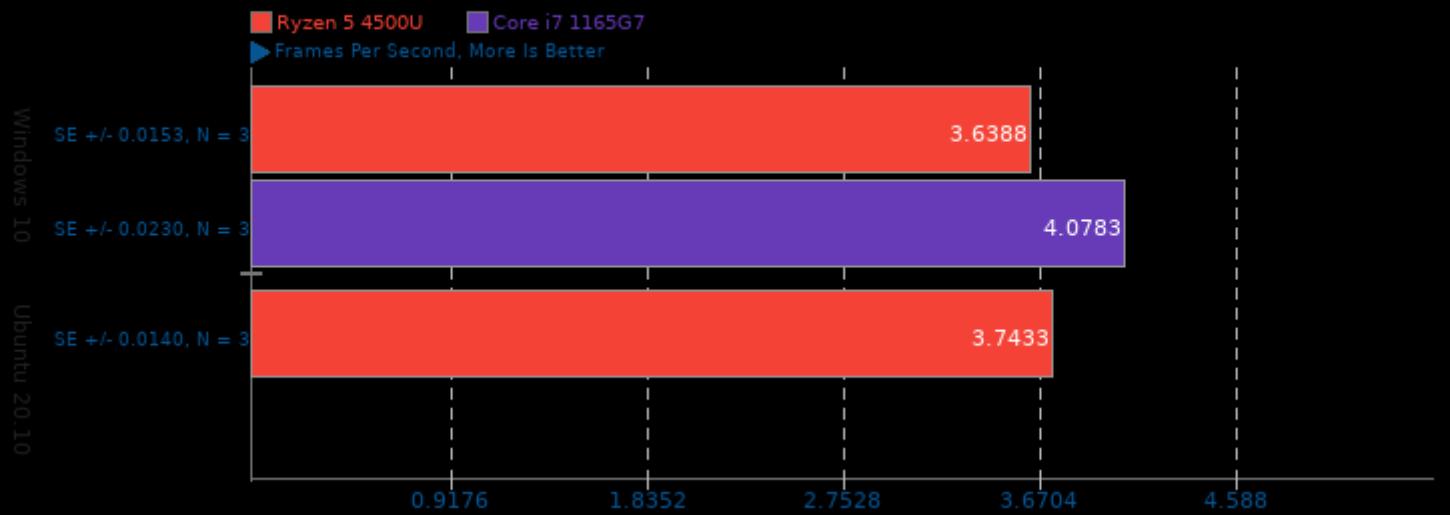
Binary: Pathtracer - Model: Crown



Windows vs. Linux Ryzen 5, Tiger Lake

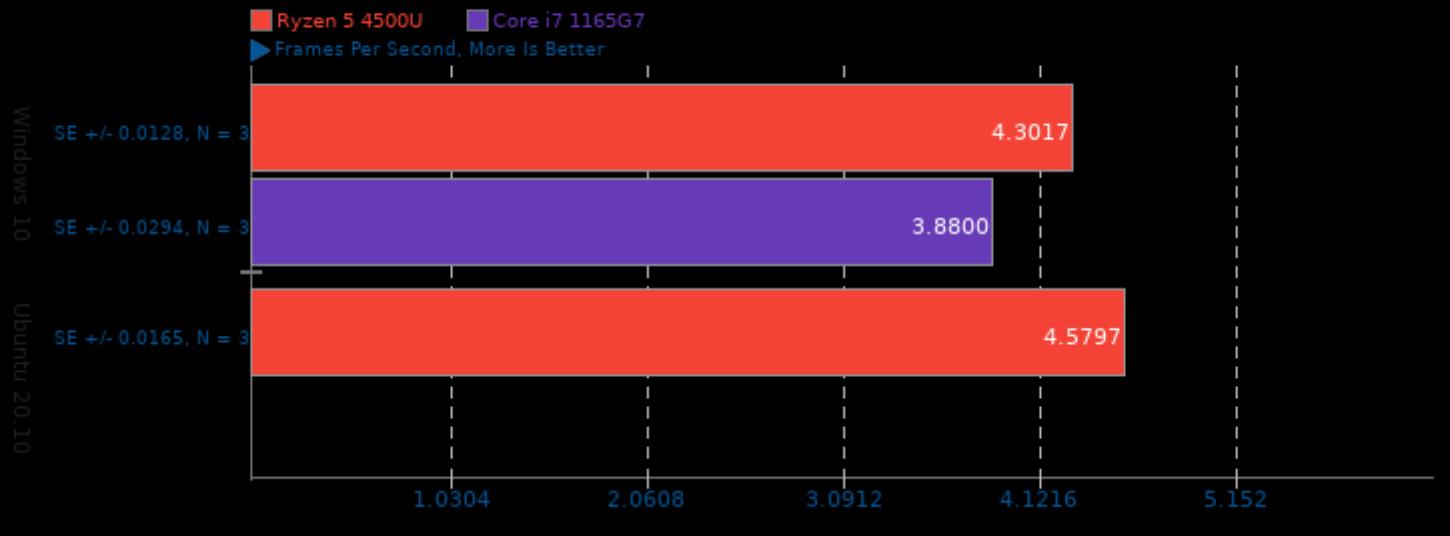
Embree 3.9.0

Binary: Pathtracer ISPC - Model: Crown



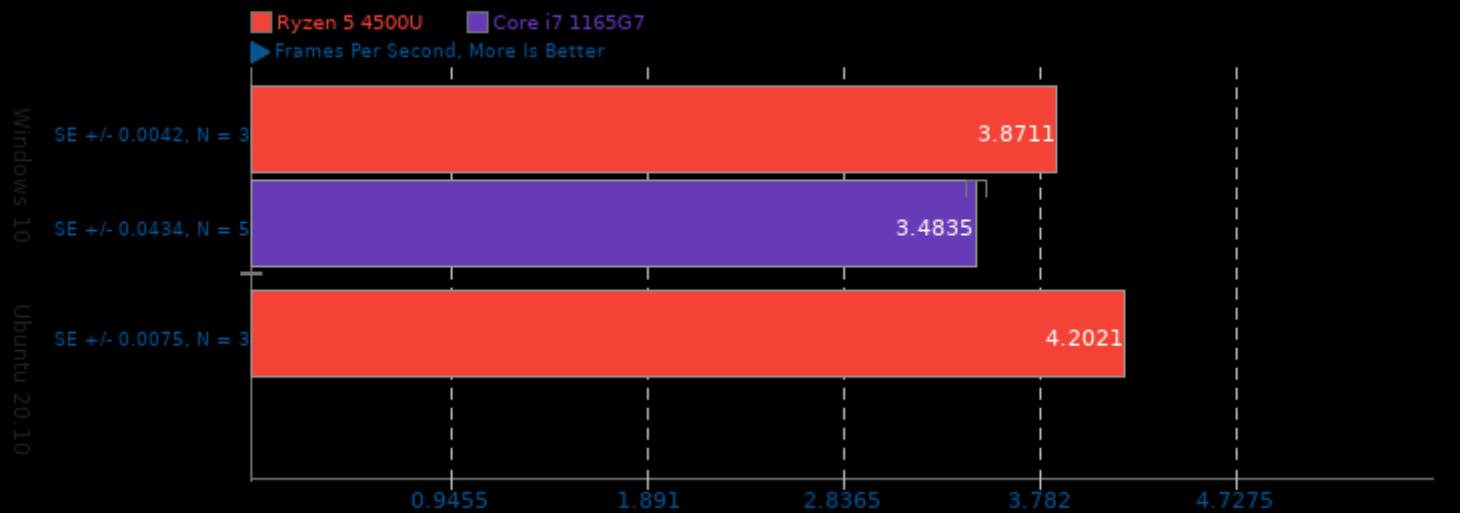
Embree 3.9.0

Binary: Pathtracer - Model: Asian Dragon



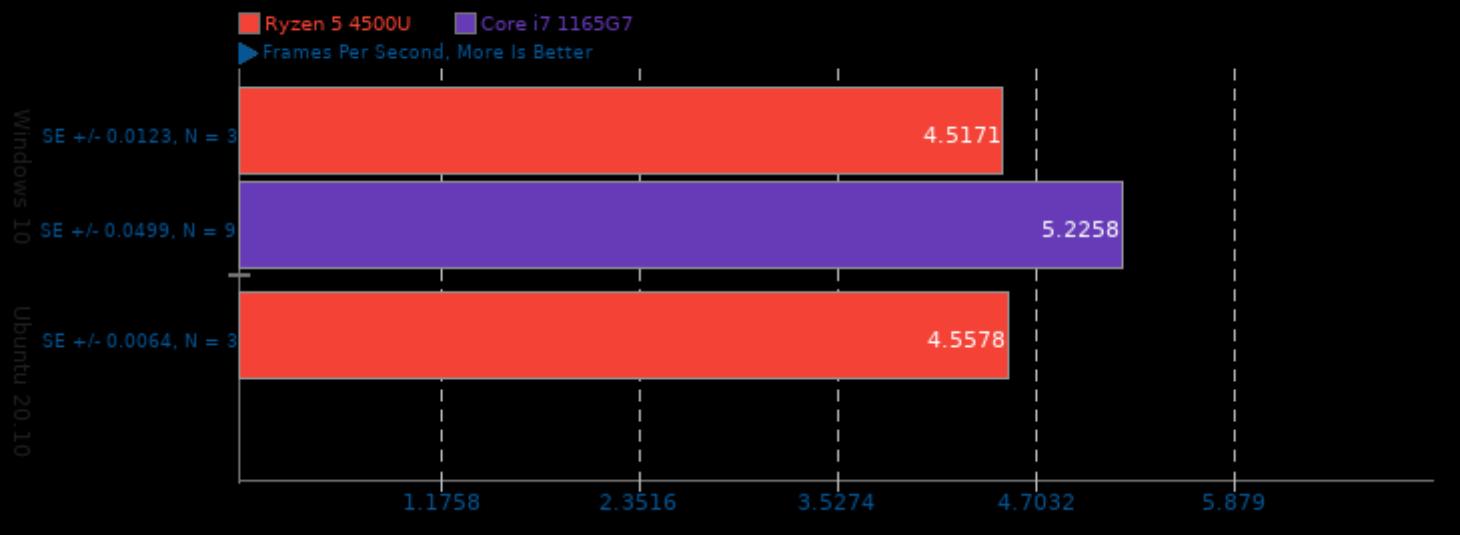
Embree 3.9.0

Binary: Pathtracer - Model: Asian Dragon Obj



Embree 3.9.0

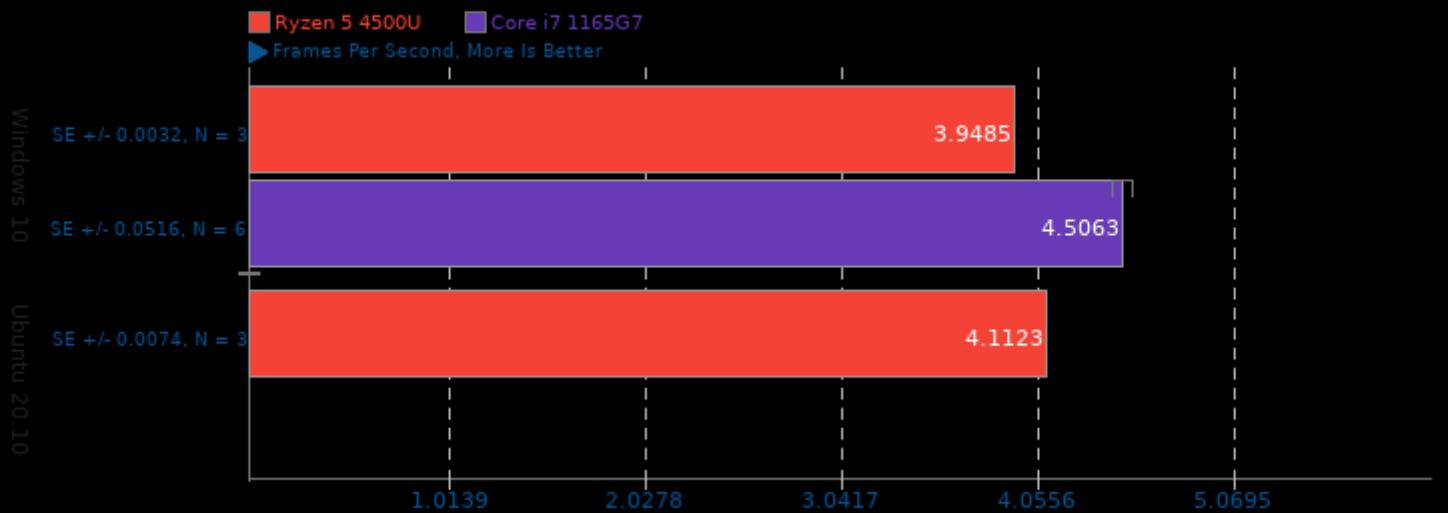
Binary: Pathtracer ISPC - Model: Asian Dragon



Windows vs. Linux Ryzen 5, Tiger Lake

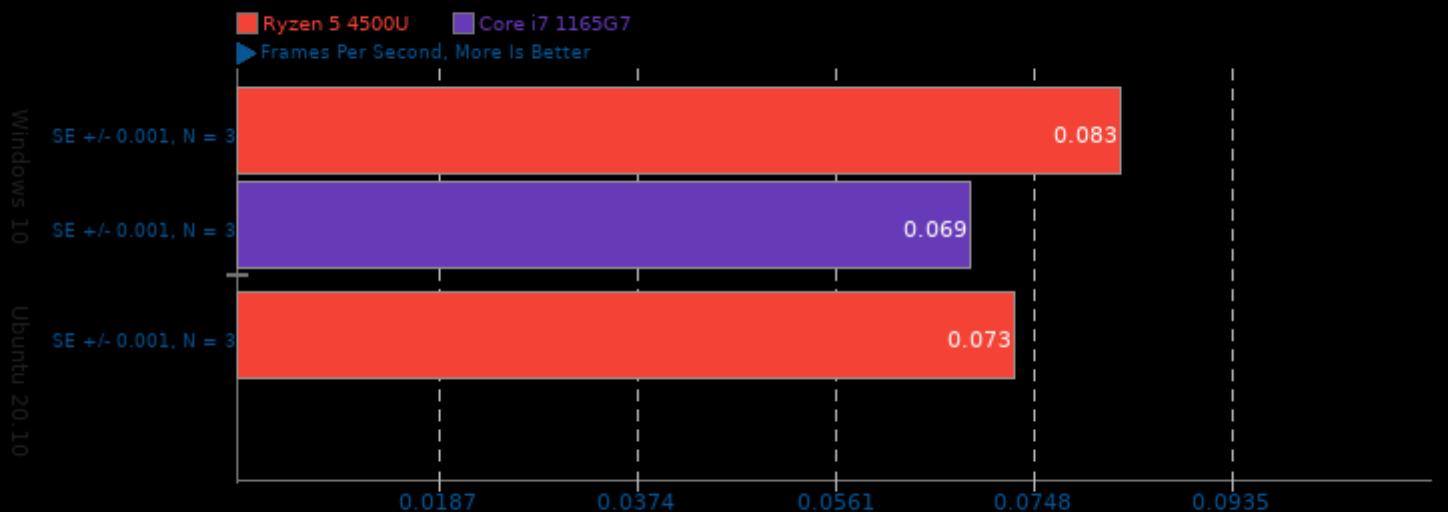
Embree 3.9.0

Binary: Pathtracer ISPC - Model: Asian Dragon Obj



SVT-AV1 0.8

Encoder Mode: Enc Mode 0 - Input: 1080p

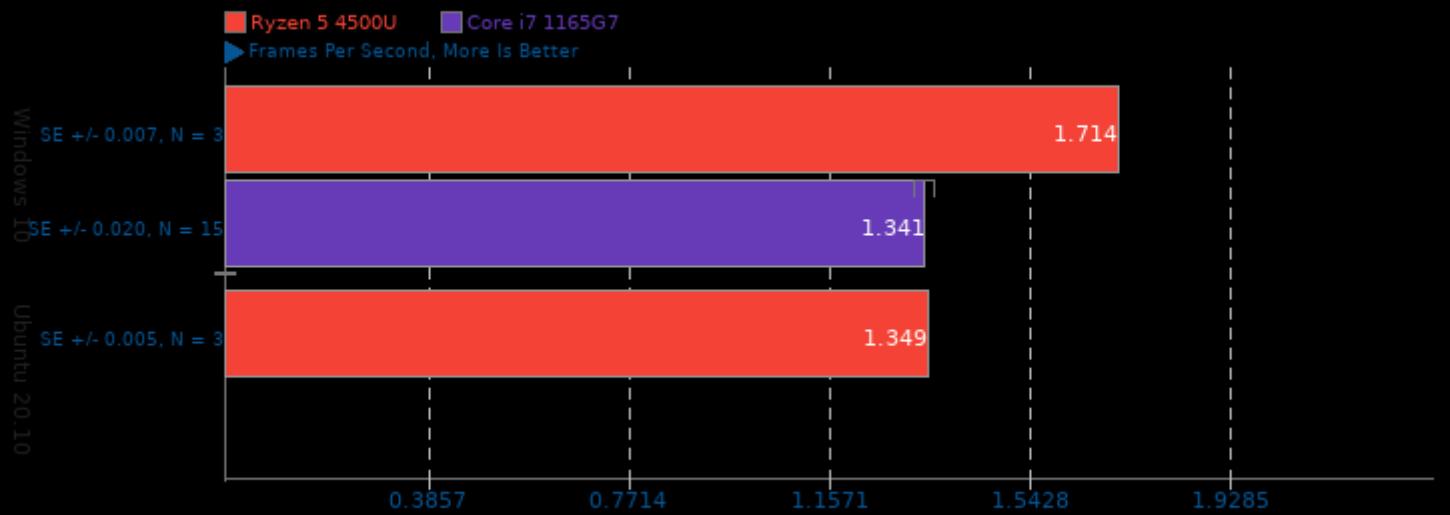


1. (CXX) g++ options: -O3 -fcommon -fPIE -fPIC -pie

Windows vs. Linux Ryzen 5, Tiger Lake

SVT-AV1 0.8

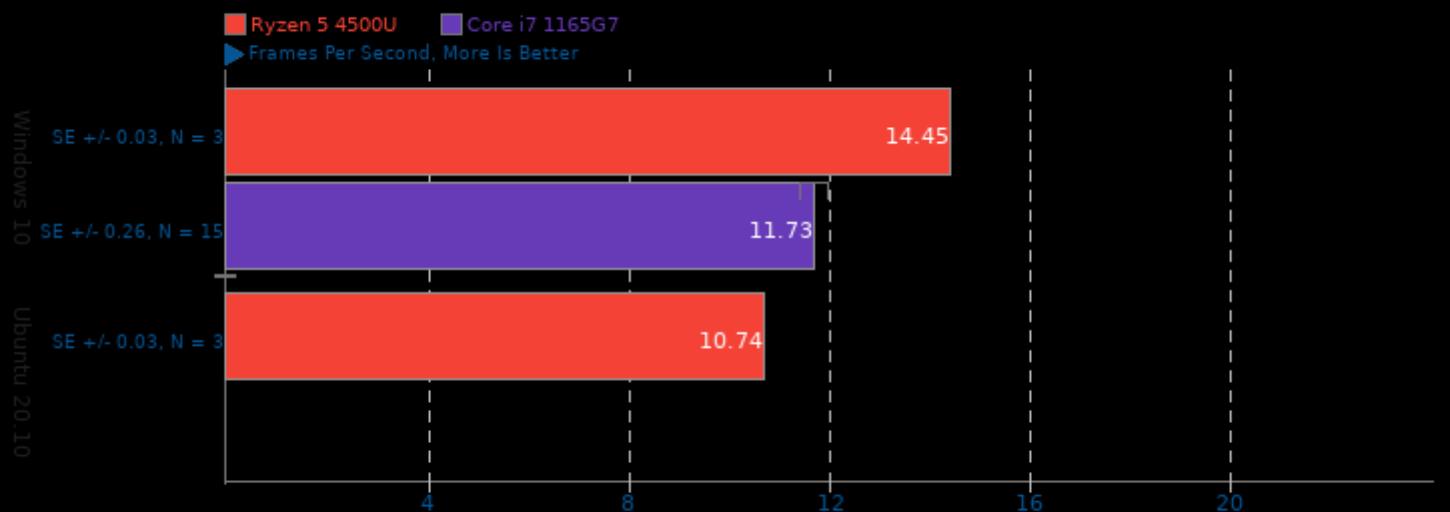
Encoder Mode: Enc Mode 4 - Input: 1080p



1. (CXX) g++ options: -O3 -fcommon -fPIE -fPIC -pie

SVT-AV1 0.8

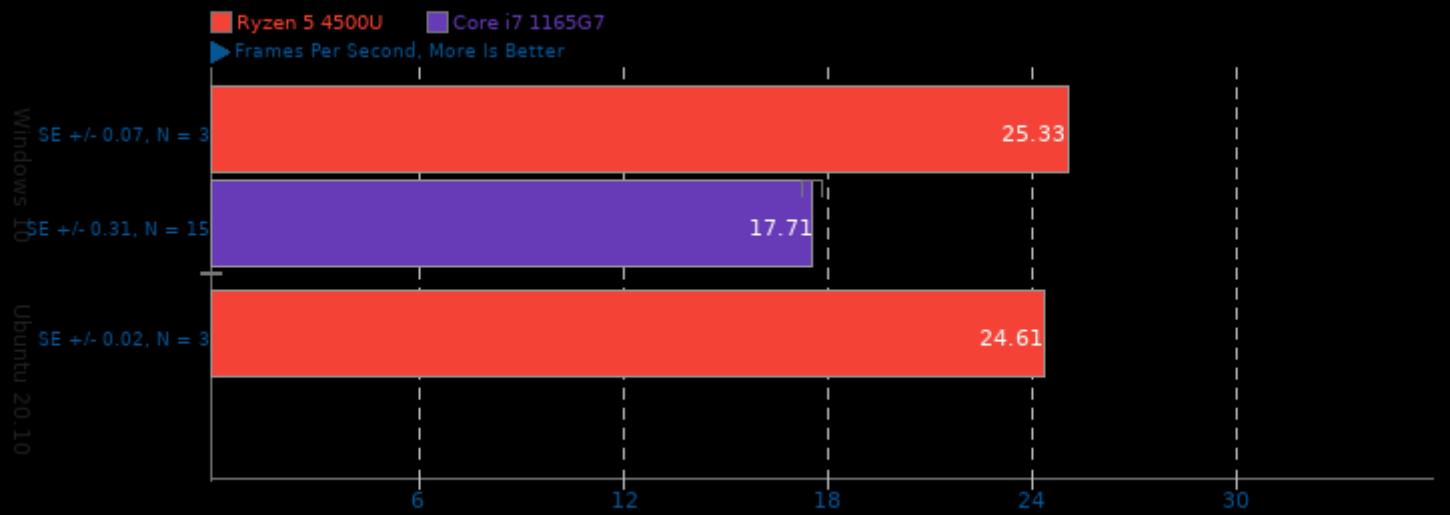
Encoder Mode: Enc Mode 8 - Input: 1080p



1. (CXX) g++ options: -O3 -fcommon -fPIE -fPIC -pie

SVT-HEVC 1.4.1

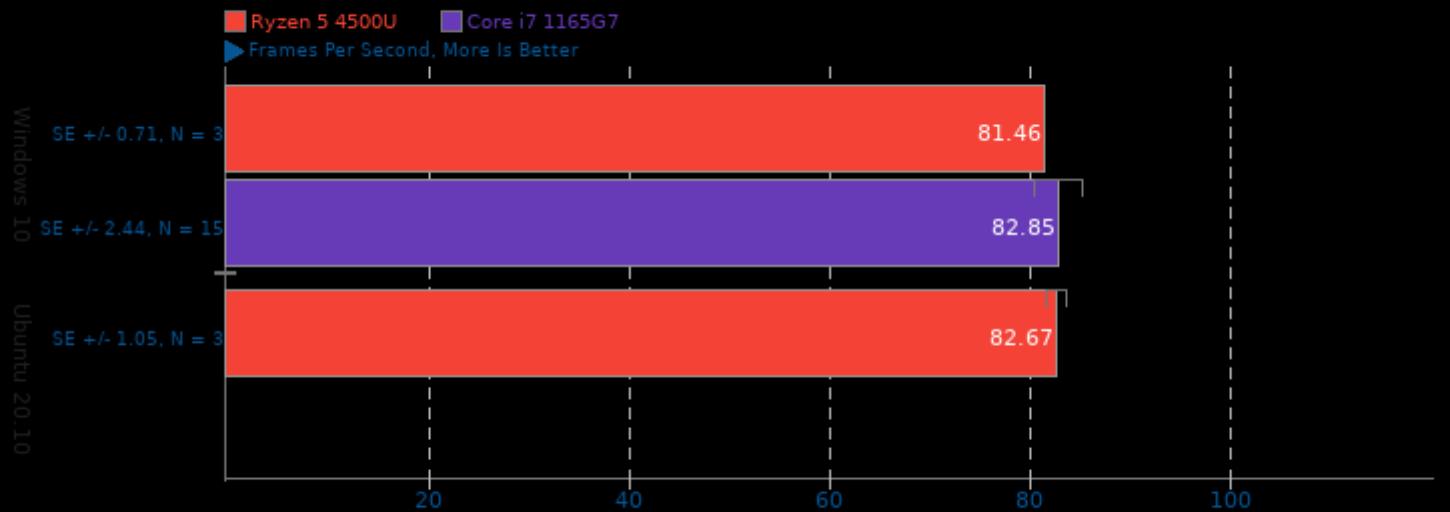
1080p 8-bit YUV To HEVC Video Encode



1. (CC) gcc options: -fPIE -fPIC -O3 -O2 -pie -rdynamic -lpthread -lrt

SVT-VP9 0.1

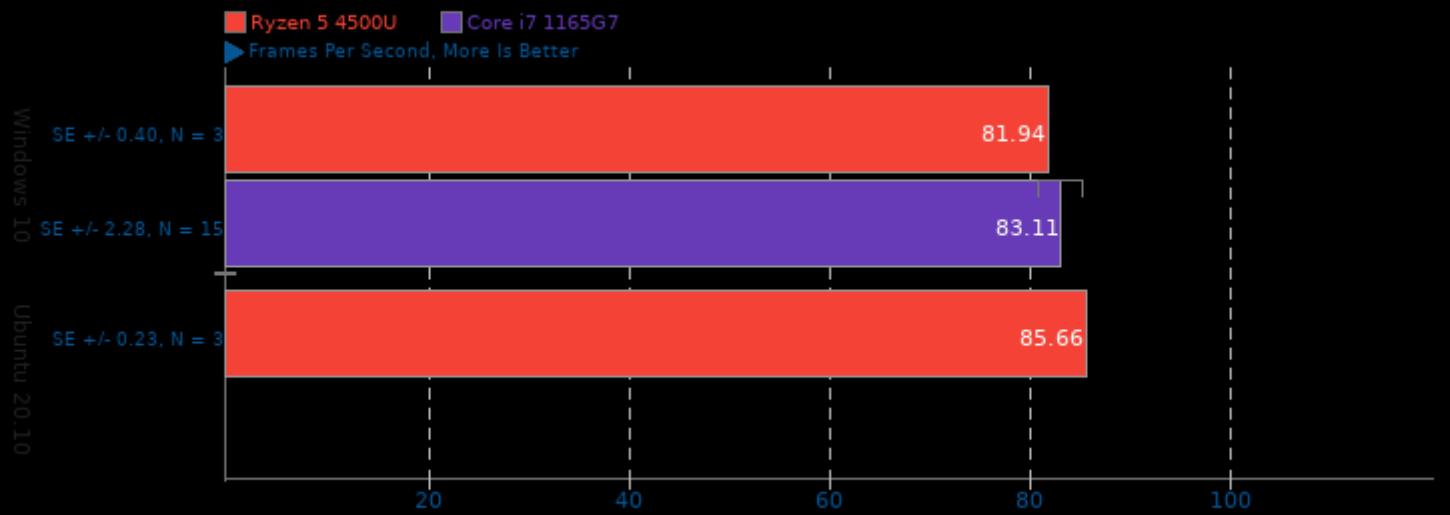
Tuning: VMAF Optimized - Input: Bosphorus 1080p



1. (CC) gcc options: -O3 -fcommon -fPIE -fPIC -fvisibility=hidden -pie -rdynamic -lpthread -lrt -lm

SVT-VP9 0.1

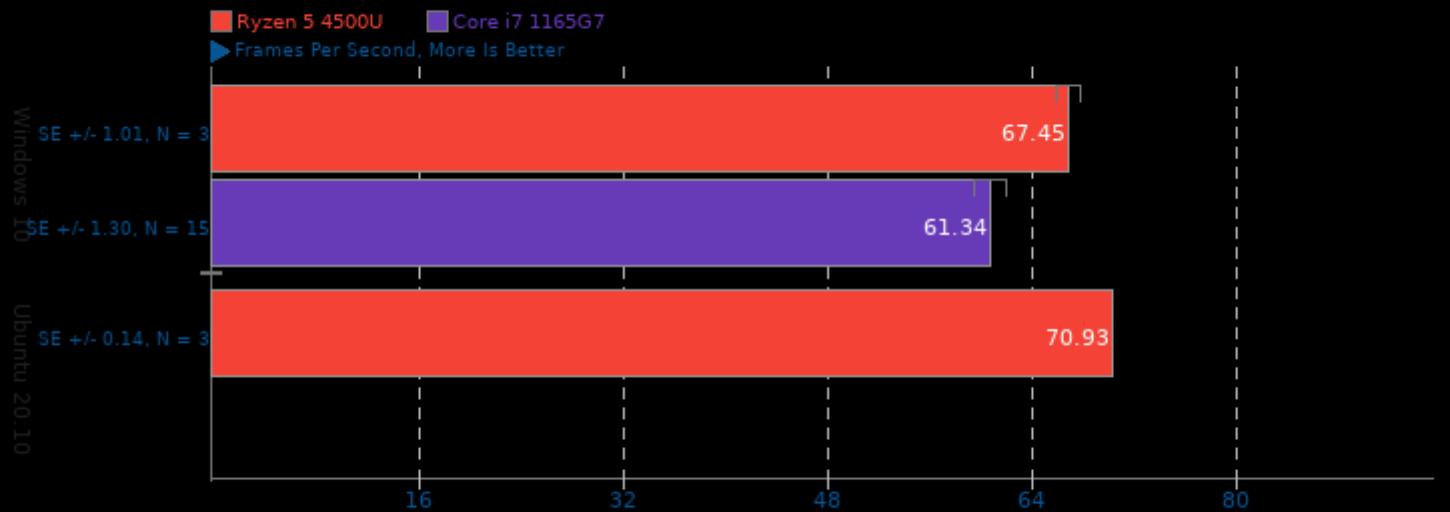
Tuning: PSNR/SSIM Optimized - Input: Bosphorus 1080p



1. (CC) gcc options: -O3 -fcommon -fPIE -fPIC -fvisibility=hidden -pie -rdynamic -lpthread -lrt -lm

SVT-VP9 0.1

Tuning: Visual Quality Optimized - Input: Bosphorus 1080p

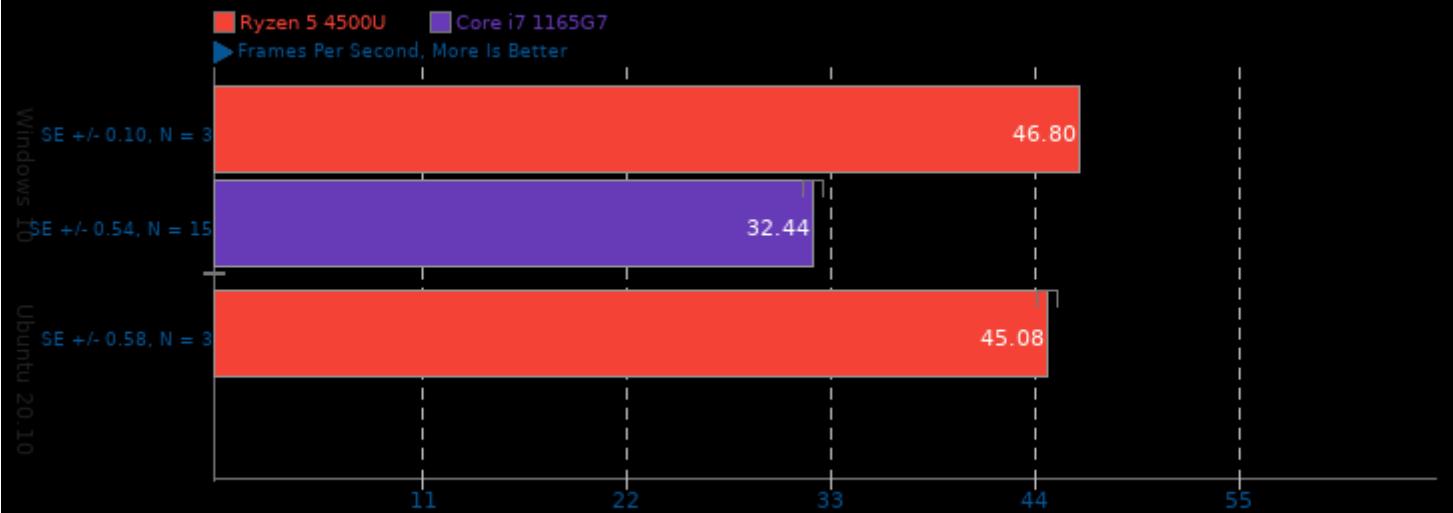


1. (CC) gcc options: -O3 -fcommon -fPIE -fPIC -fvisibility=hidden -pie -rdynamic -lpthread -lrt -lm

Windows vs. Linux Ryzen 5, Tiger Lake

x264 2019-12-17

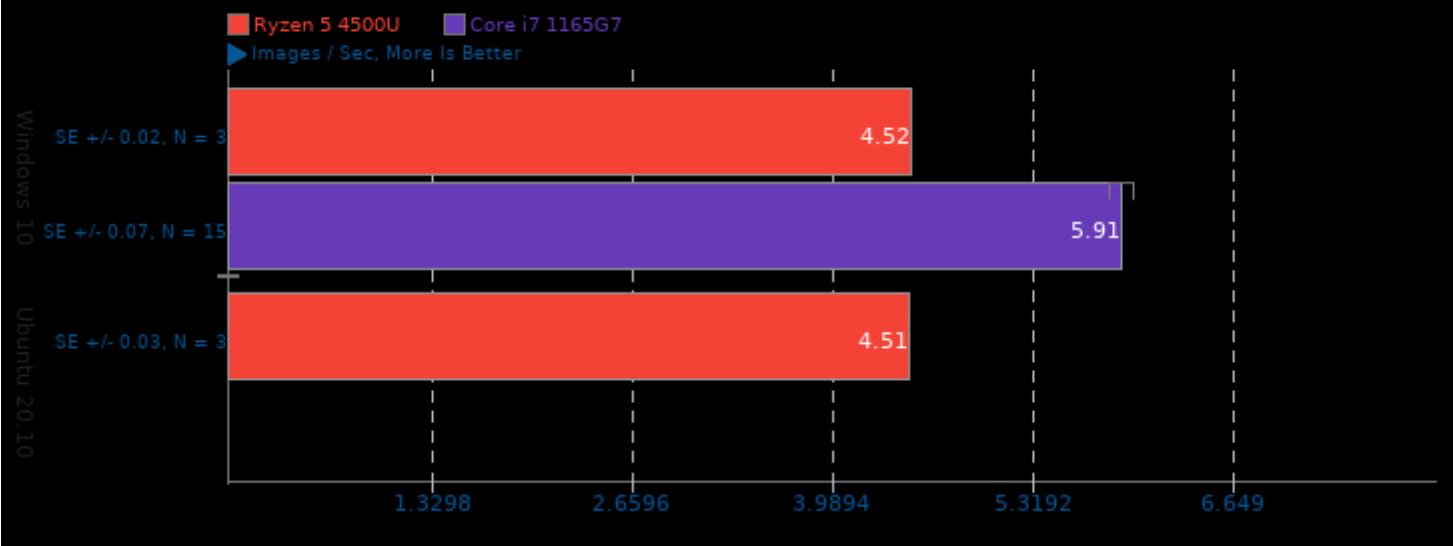
H.264 Video Encoding



1. (CC) gcc options: -fno-ldl -m64 -lm -lpthread -O3 -ffast-math -std=gnu99 -fPIC -fomit-frame-pointer -fno-tree-vectorize

Intel Open Image Denoise 1.2.0

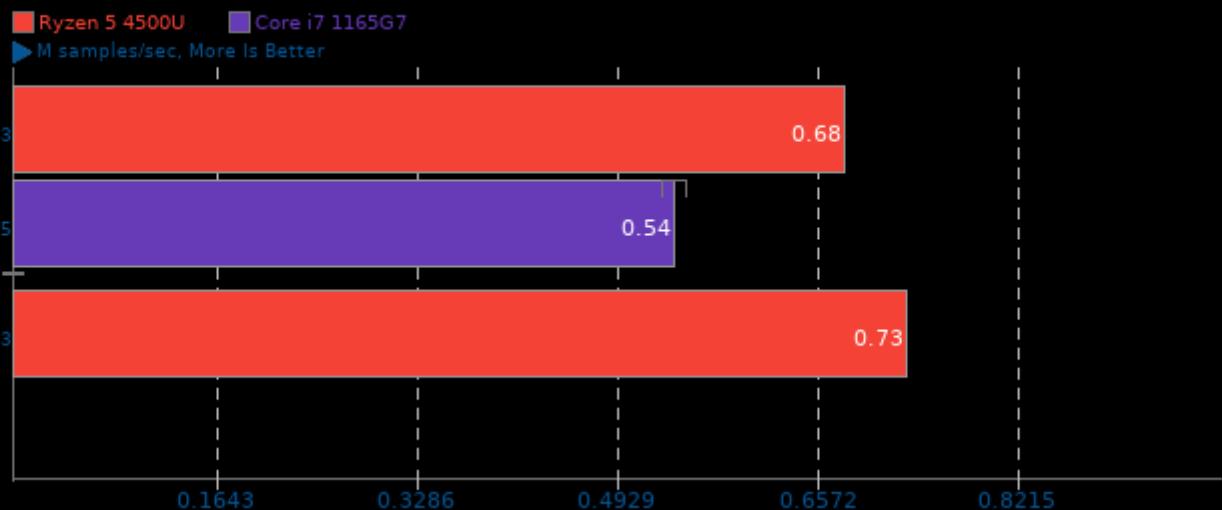
Scene: Memorial



Windows vs. Linux Ryzen 5, Tiger Lake

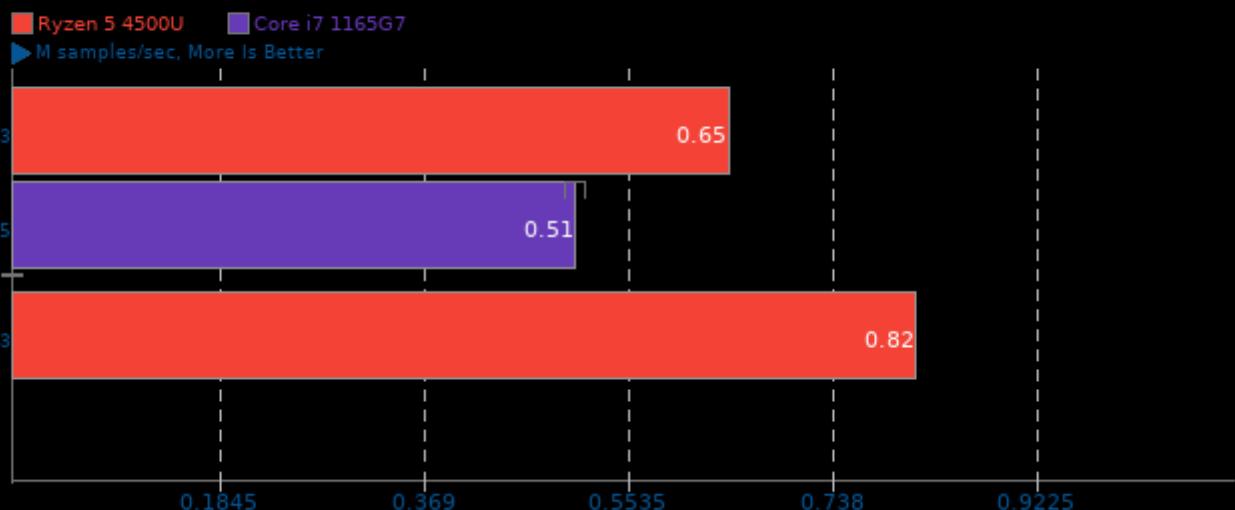
LuxCoreRender 2.3

Scene: DLSC



LuxCoreRender 2.3

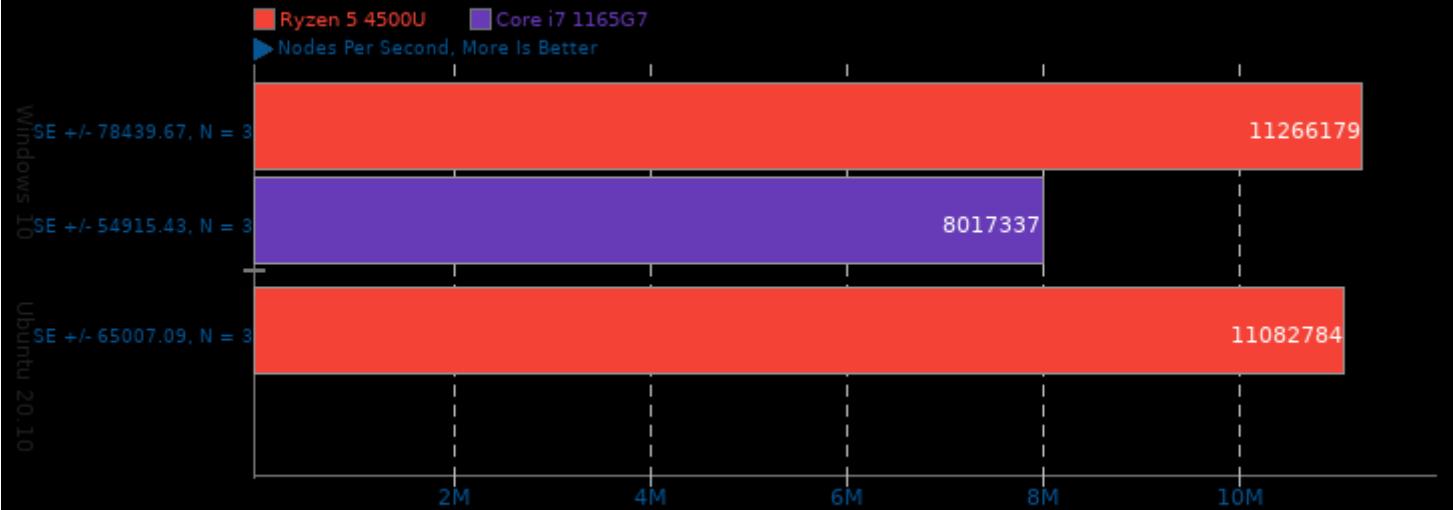
Scene: Rainbow Colors and Prism



Windows vs. Linux Ryzen 5, Tiger Lake

Stockfish 9

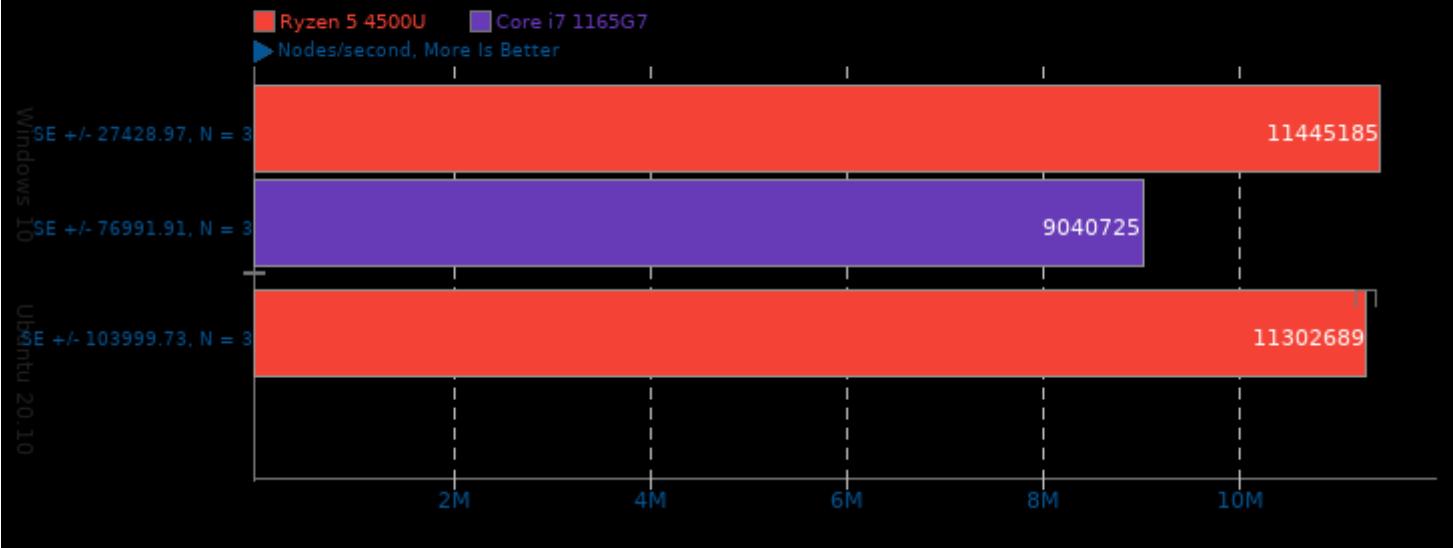
Total Time



1. (CXX) g++ options: -m64 -lpthread -fno-exceptions -std=c++11 -pedantic -O3 -msse -msse3 -mpopcnt -fno-

asmFish 2018-07-23

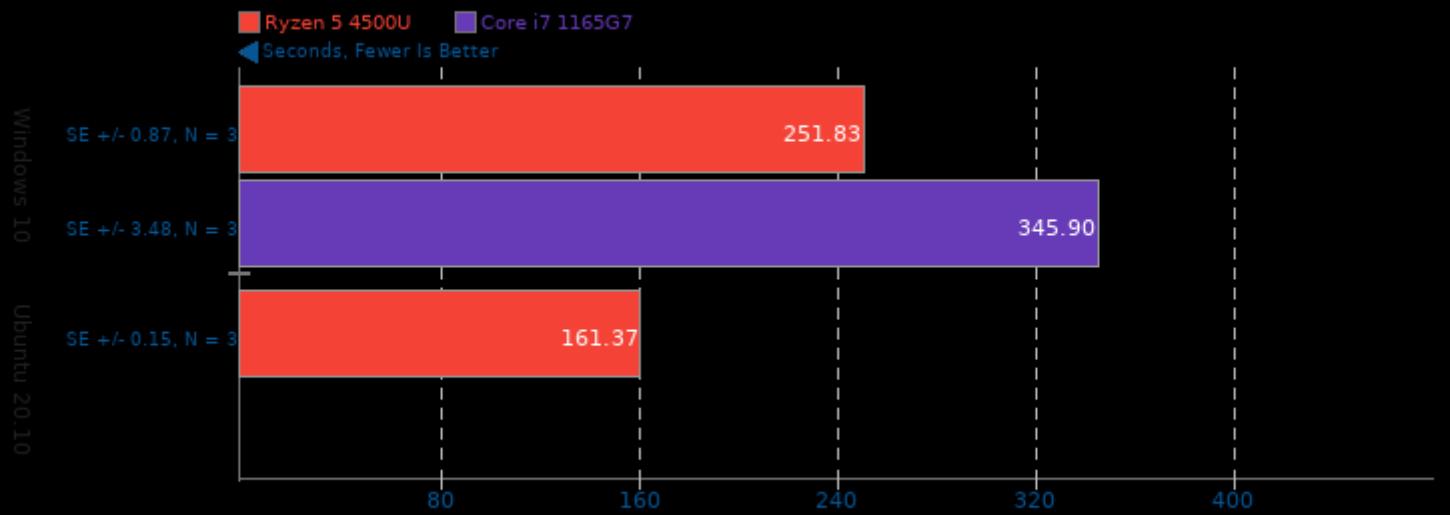
1024 Hash Memory, 26 Depth



Windows vs. Linux Ryzen 5, Tiger Lake

libavif avifenc 0.7.3

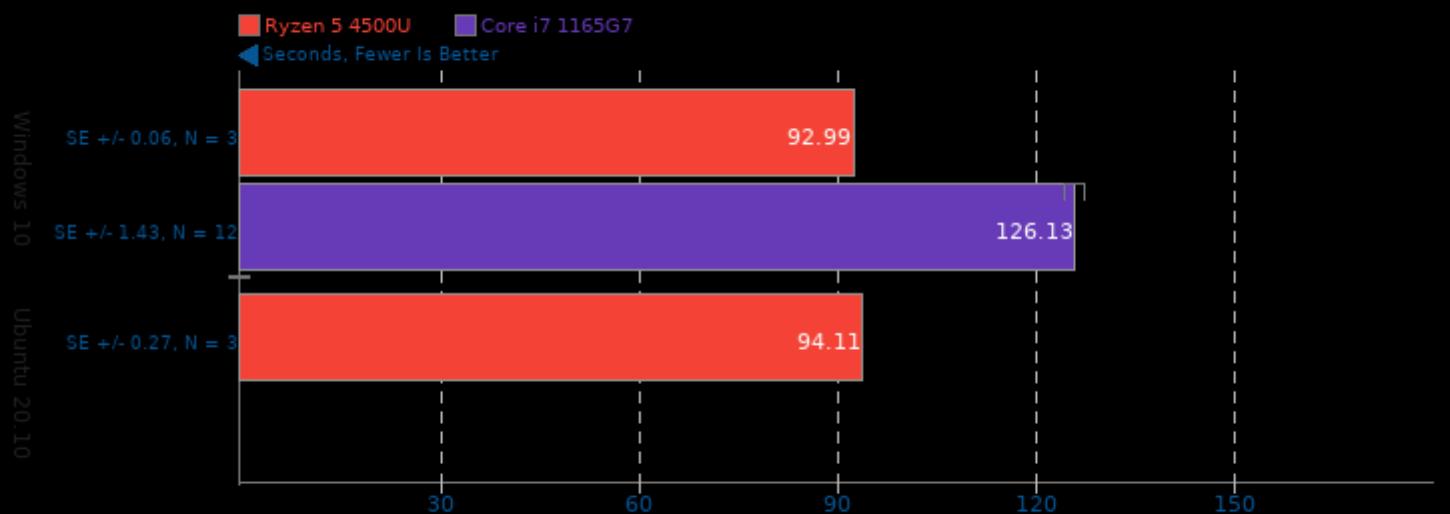
Encoder Speed: 0



1. (CXX) g++ options: -O3 -fPIC

libavif avifenc 0.7.3

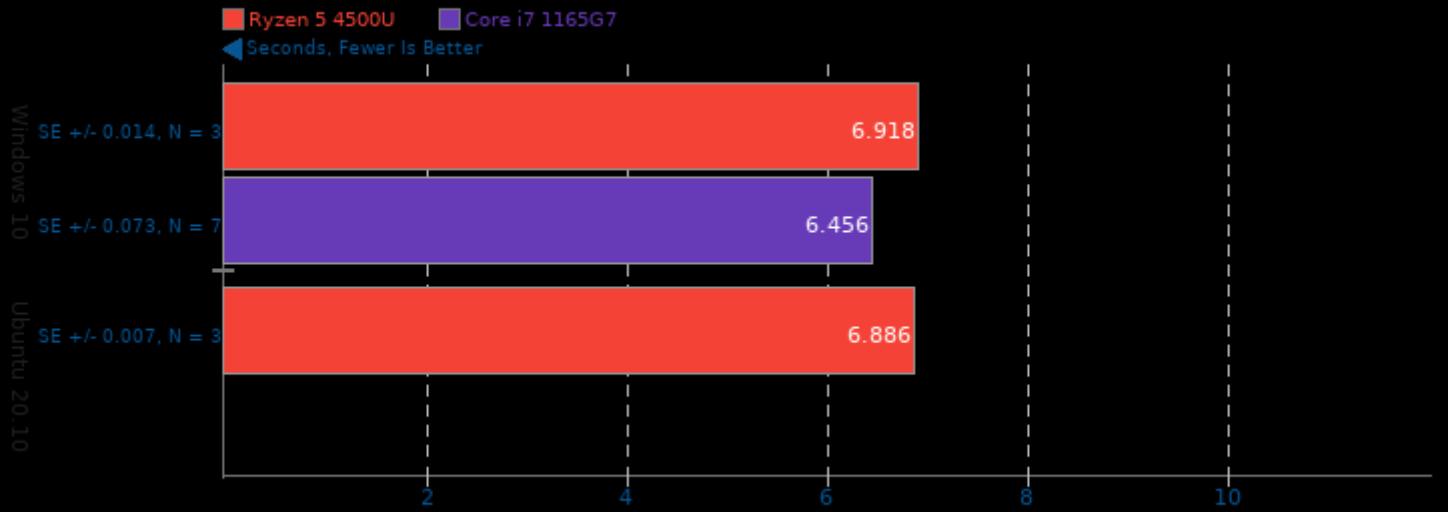
Encoder Speed: 2



1. (CXX) g++ options: -O3 -fPIC

libavif avifenc 0.7.3

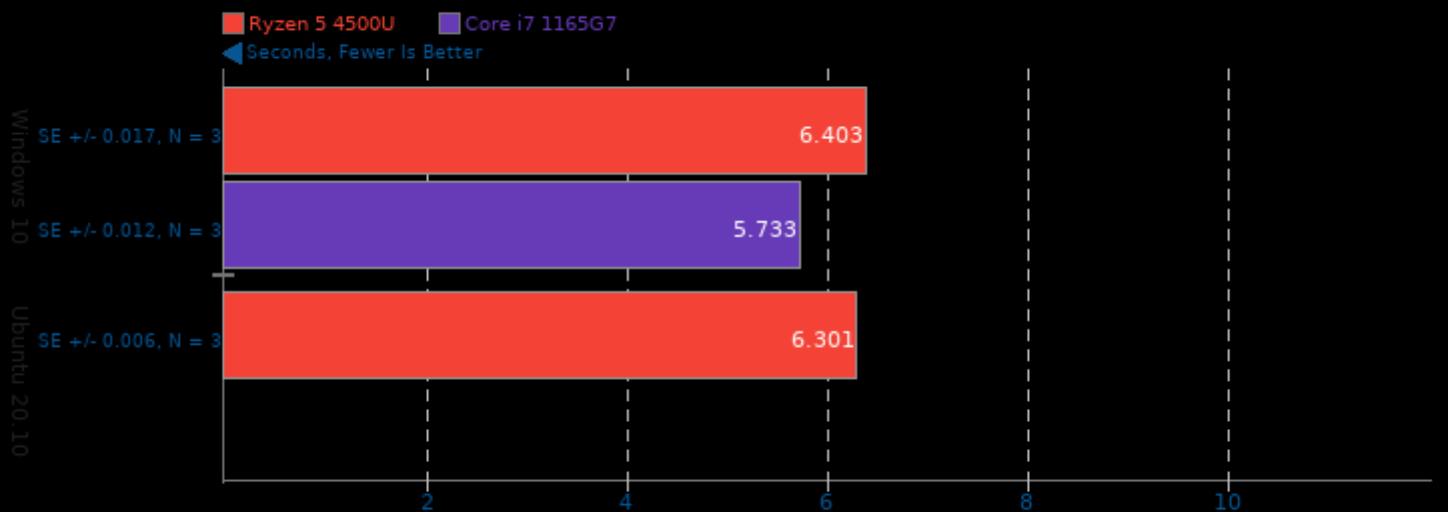
Encoder Speed: 8



1. (CXX) g++ options: -O3 -fPIC

libavif avifenc 0.7.3

Encoder Speed: 10

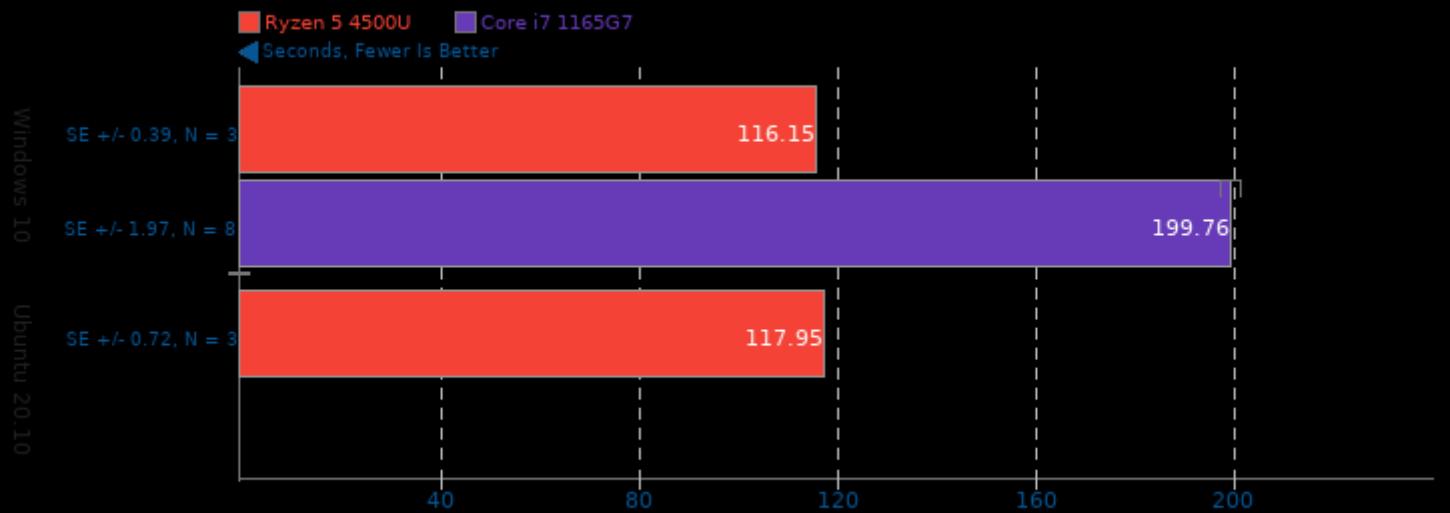


1. (CXX) g++ options: -O3 -fPIC

Windows vs. Linux Ryzen 5, Tiger Lake

C-Ray 1.1

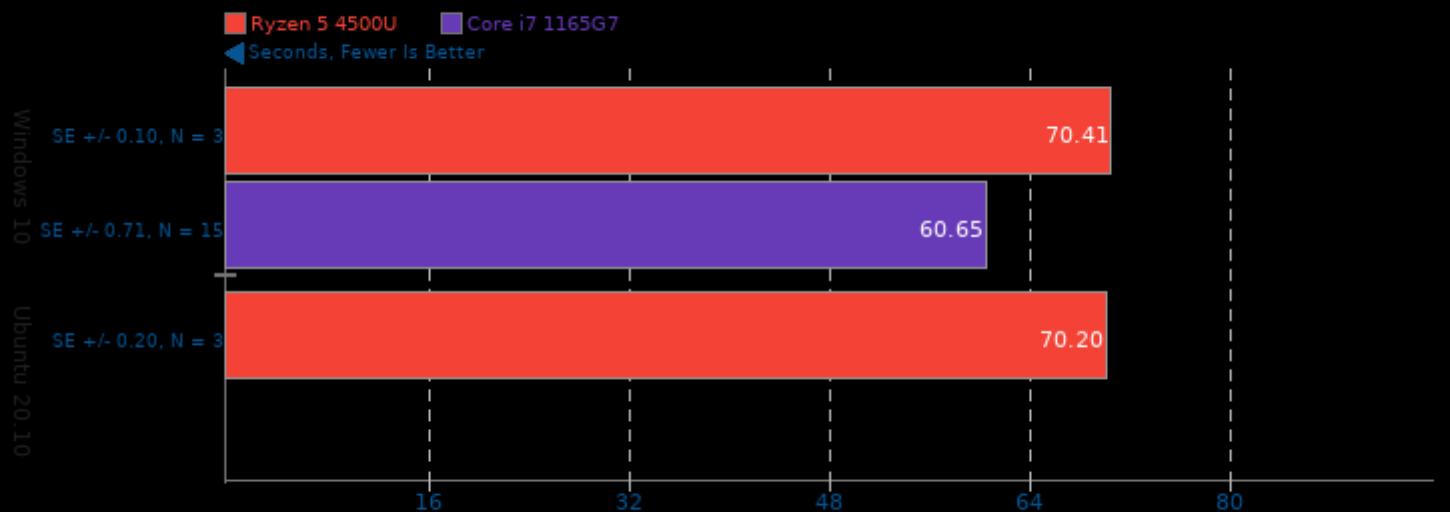
Total Time - 4K, 16 Rays Per Pixel



1. (CC) gcc options: -lm -lpthread -O3

XZ Compression 5.2.4

Compressing ubuntu-16.04.3-server-i386.img, Compression Level 9

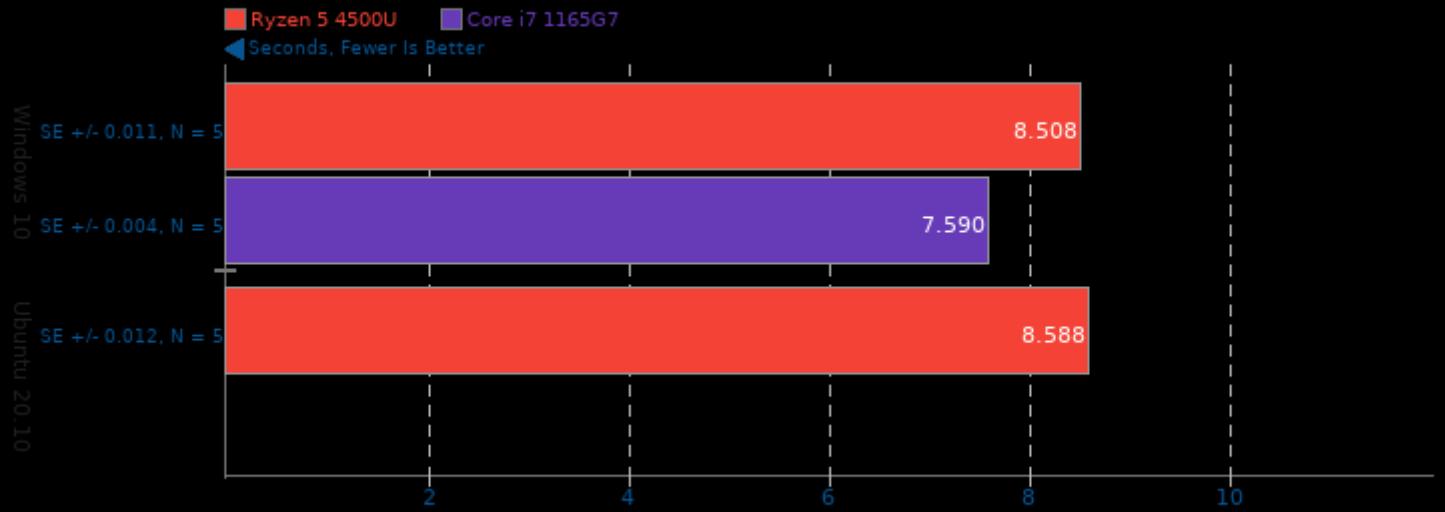


1. (CC) gcc options: -pthread -fvisibility=hidden -O2

Windows vs. Linux Ryzen 5, Tiger Lake

FLAC Audio Encoding 1.3.2

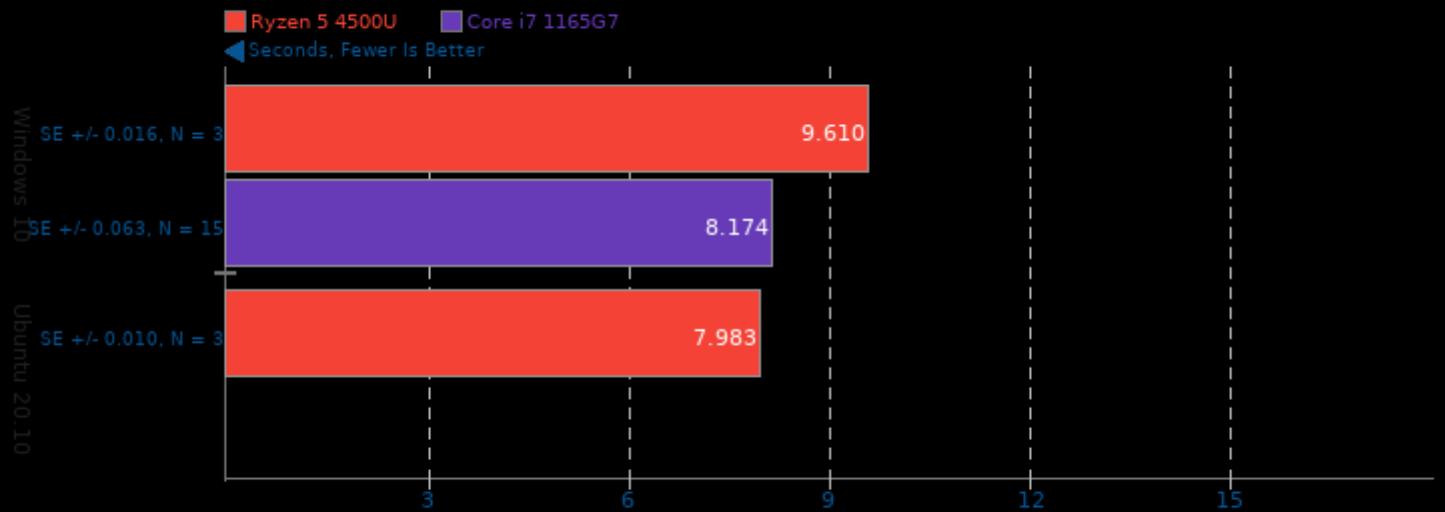
WAV To FLAC



1. (CXX) g++ options: -O2 -fvisibility=hidden -lm

LAME MP3 Encoding 3.100

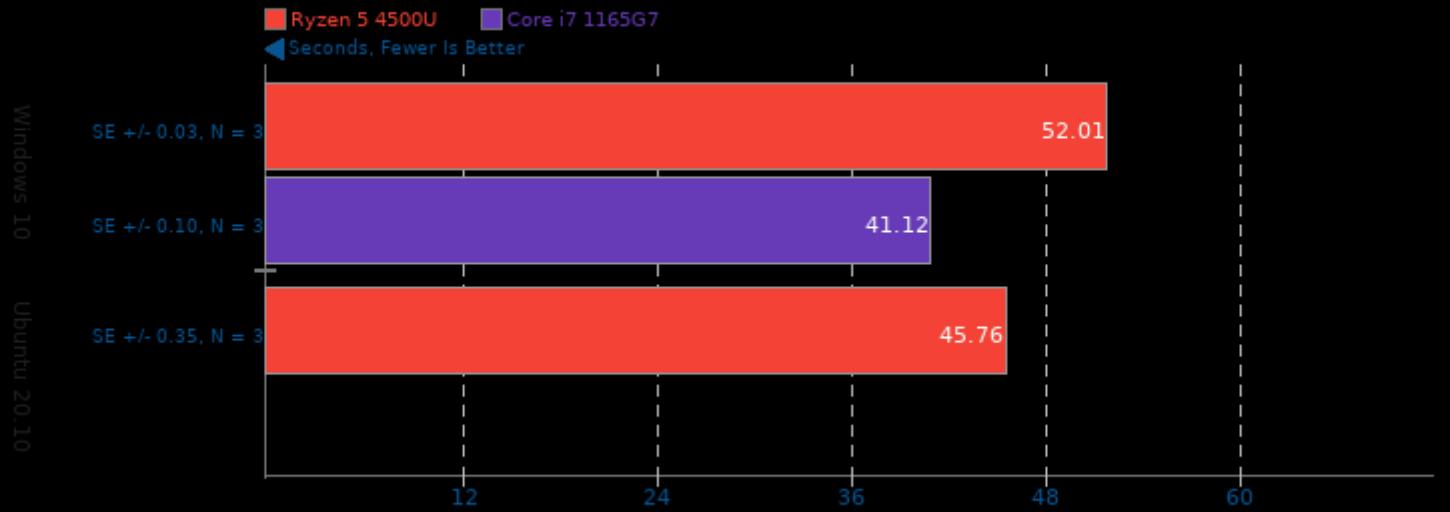
WAV To MP3



1. (CC) gcc options: -O3 -ffast-math -funroll-loops -fschedule-insns2 -fbranch-count-reg -fforce-addr -pipe -lm

Minion 1.8

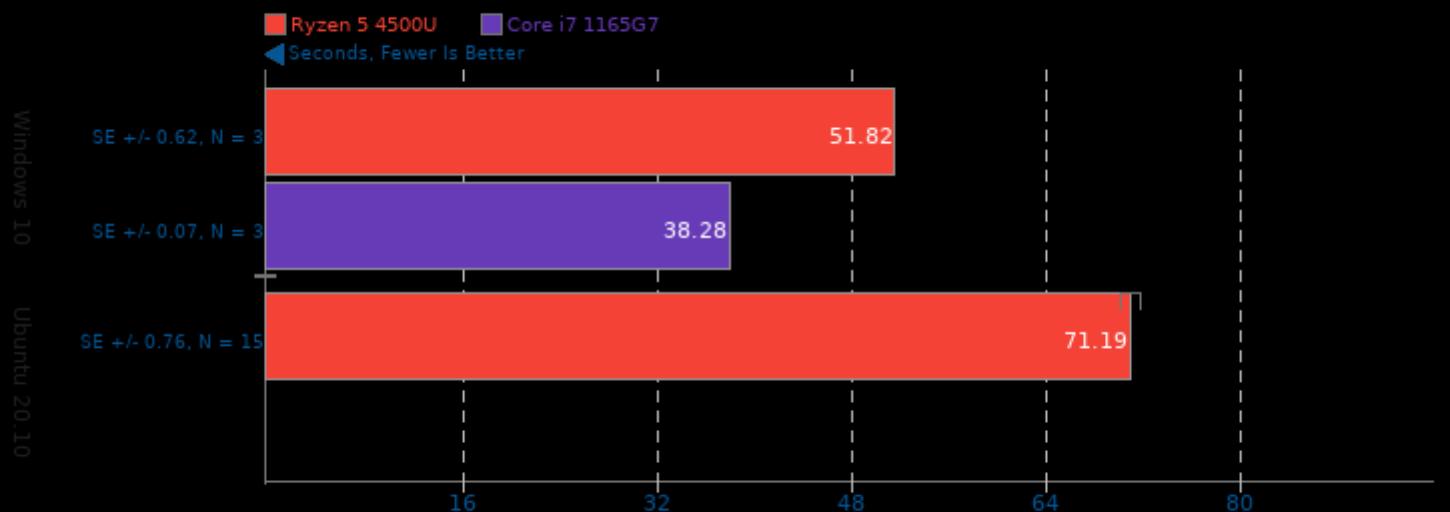
Benchmark: Graceful



1. (CXX) g++ options: -std=gnu++11 -O3 -fomit-frame-pointer -rdynamic

Minion 1.8

Benchmark: Solitaire

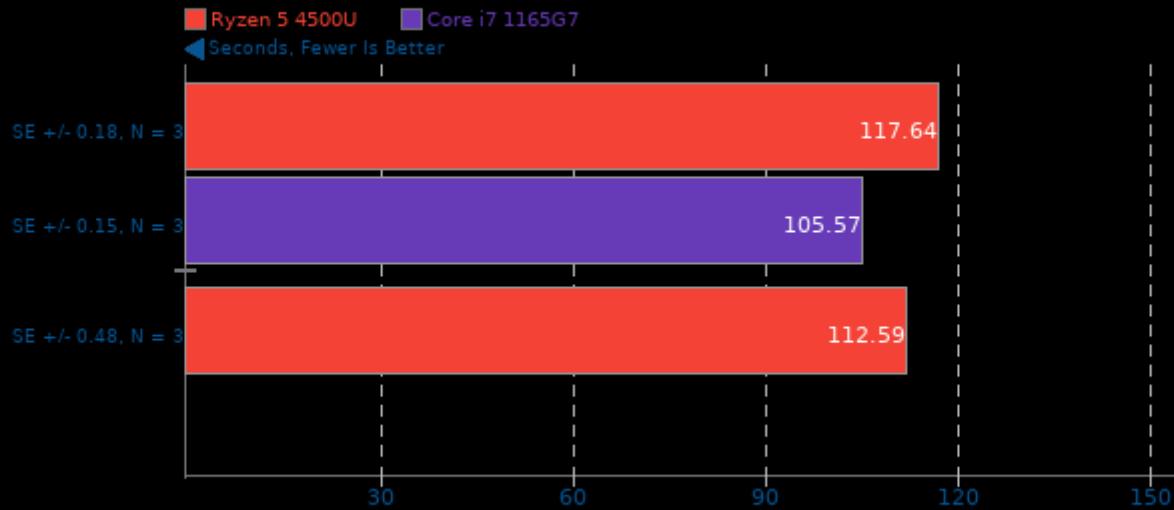


1. (CXX) g++ options: -std=gnu++11 -O3 -fomit-frame-pointer -rdynamic

Windows vs. Linux Ryzen 5, Tiger Lake

Minion 1.8

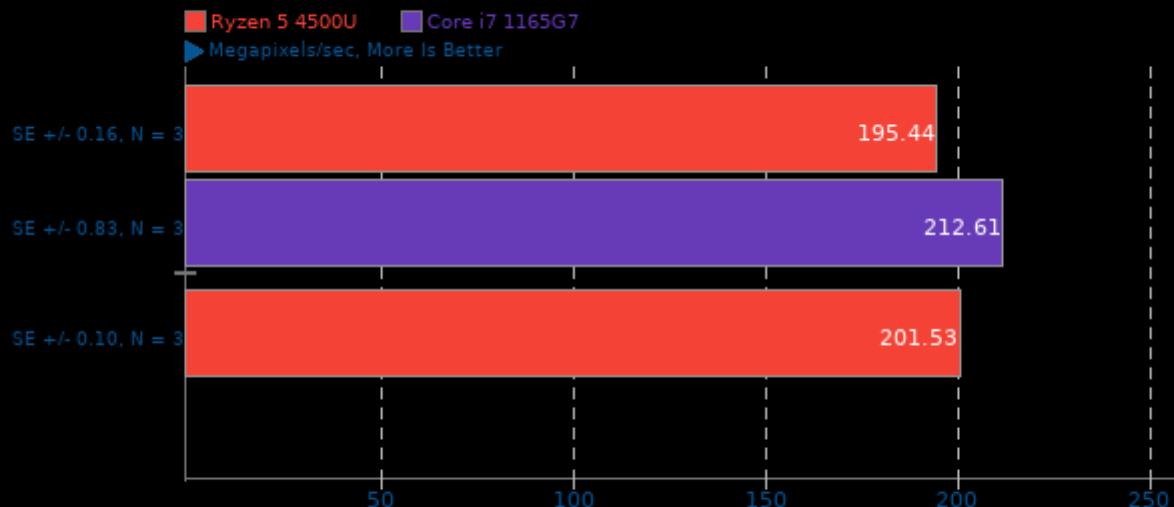
Benchmark: Quasigroup



1. (CXX) g++ options: -std=gnu++11 -O3 -fomit-frame-pointer -rdynamic

libjpeg-turbo tjbench 2.0.2

Test: Decompression Throughput

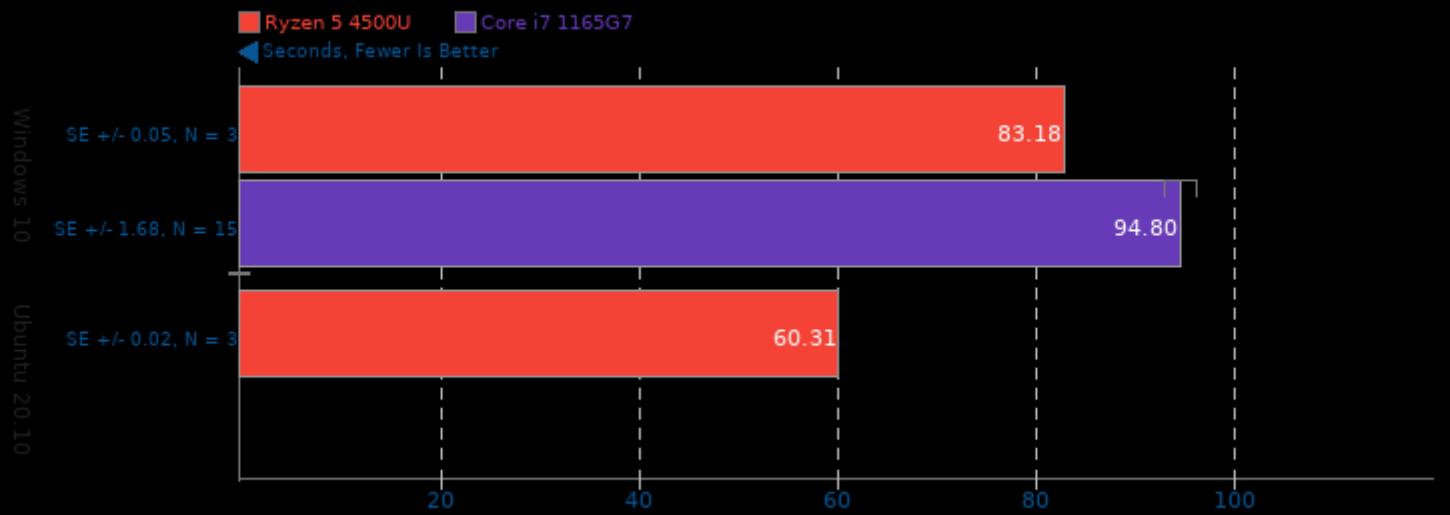


1. (CC) gcc options: -O3 -rdynamic

Windows vs. Linux Ryzen 5, Tiger Lake

Basis Universal 1.12

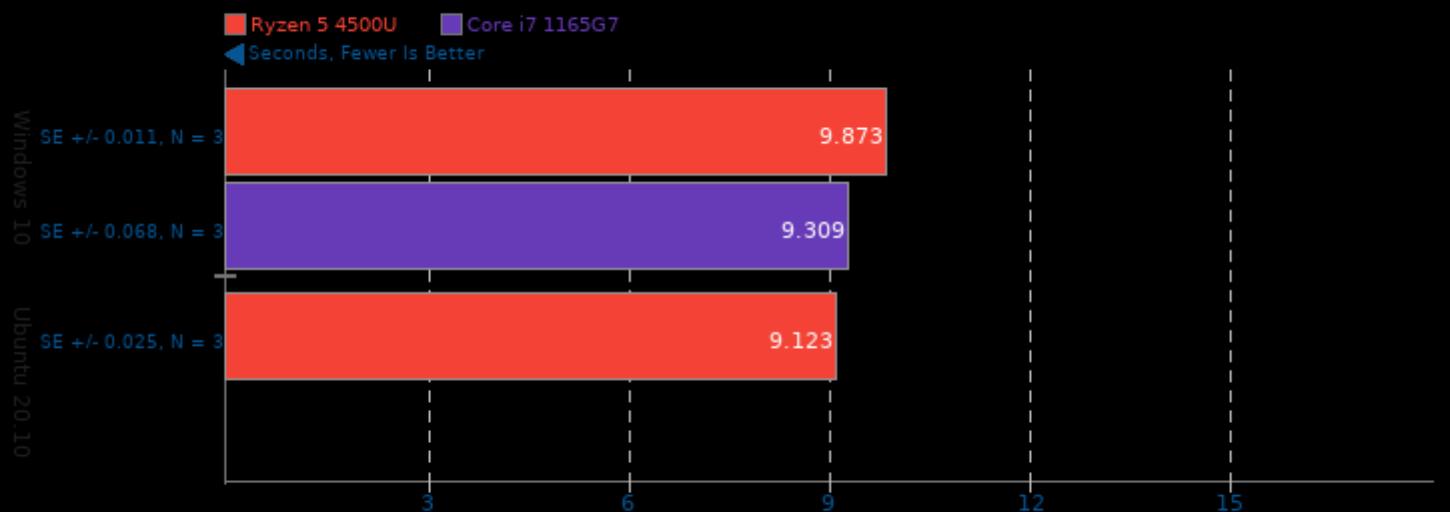
Settings: ETC1S



1. (CXX) g++ options: -std=c++11 -fvisibility=hidden -fPIC -fno-strict-aliasing -O3 -rdynamic -lm -lpthread

Basis Universal 1.12

Settings: UASTC Level 0

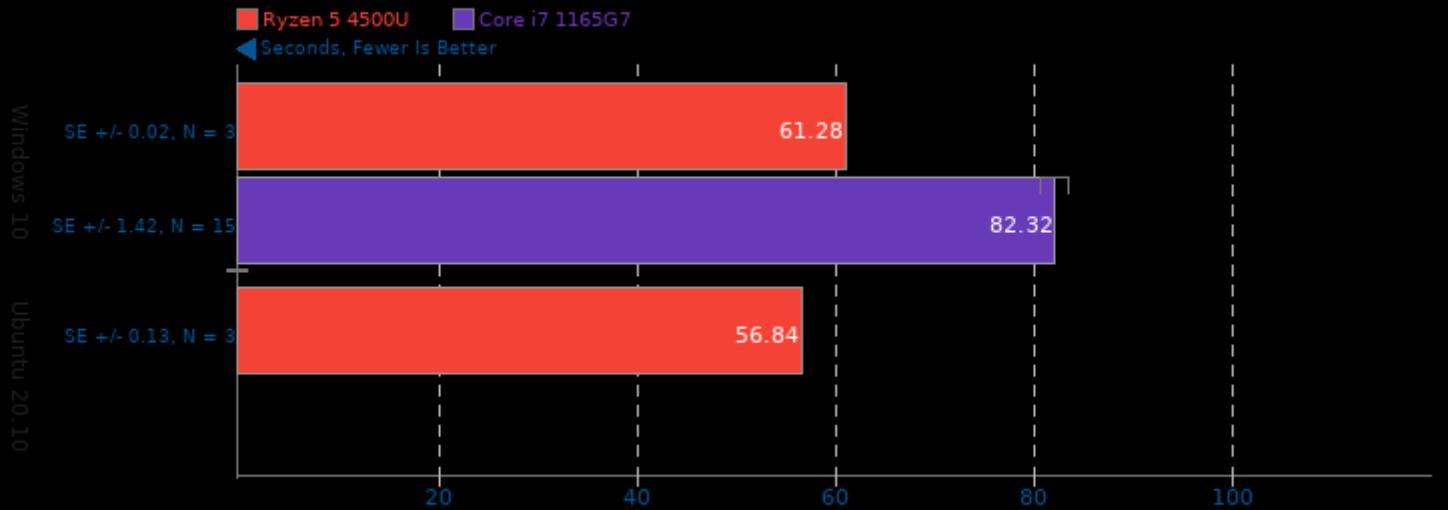


1. (CXX) g++ options: -std=c++11 -fvisibility=hidden -fPIC -fno-strict-aliasing -O3 -rdynamic -lm -lpthread

Windows vs. Linux Ryzen 5, Tiger Lake

Basis Universal 1.12

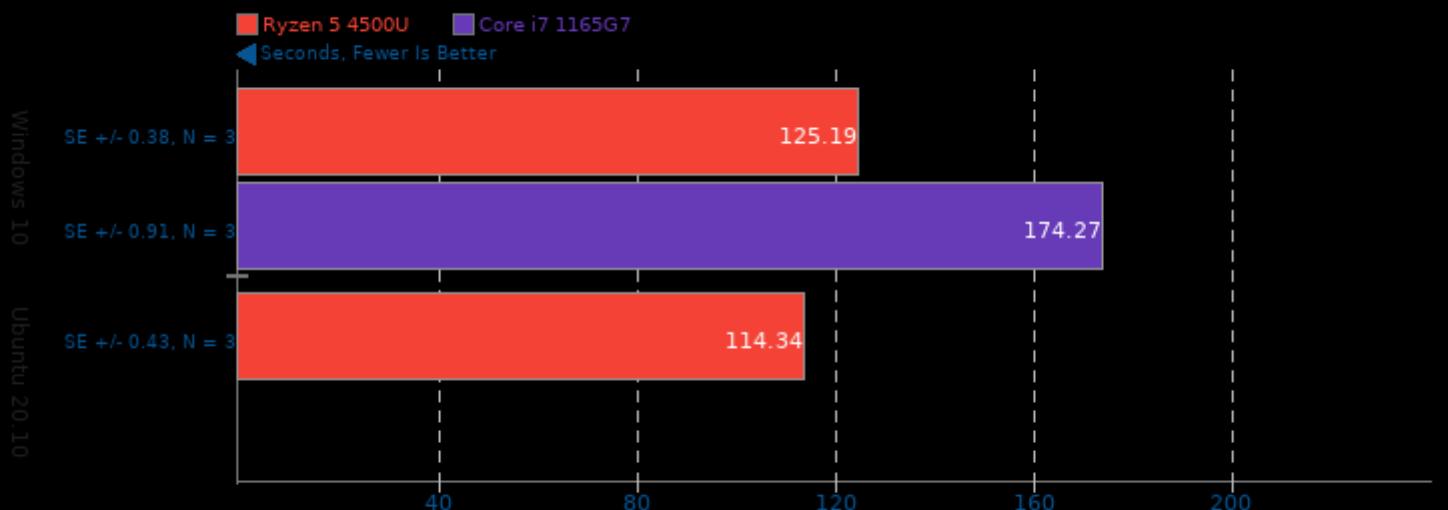
Settings: UASTC Level 2



1. (CXX) g++ options: -std=c++11 -fvisibility=hidden -fPIC -fno-strict-aliasing -O3 -rdynamic -lm -lpthread

Basis Universal 1.12

Settings: UASTC Level 3

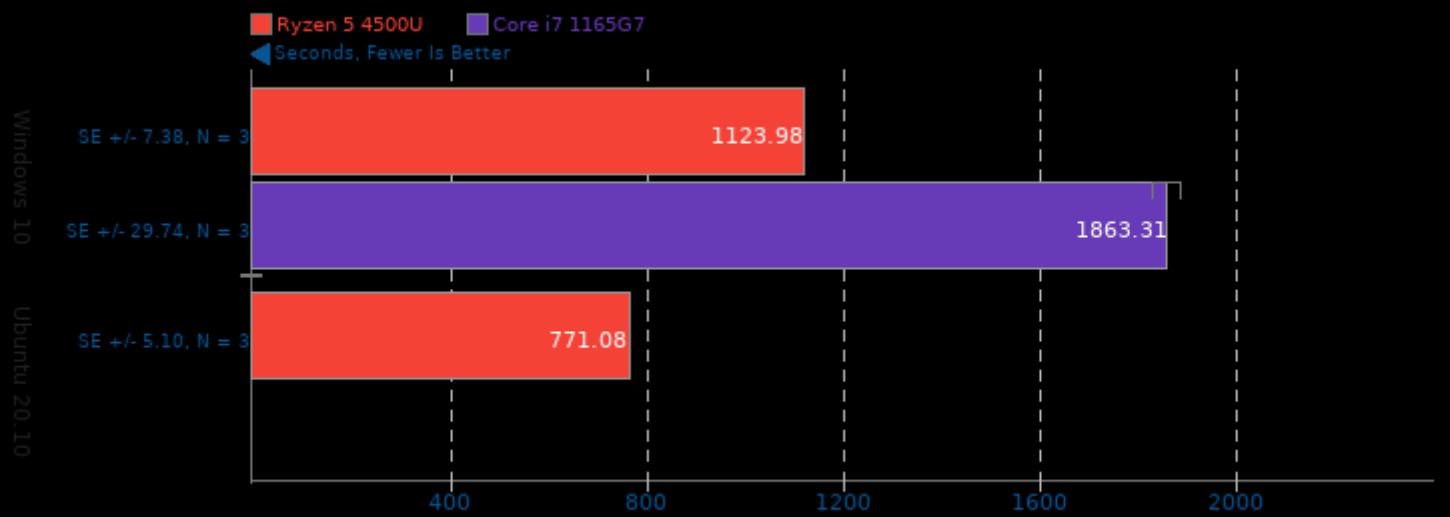


1. (CXX) g++ options: -std=c++11 -fvisibility=hidden -fPIC -fno-strict-aliasing -O3 -rdynamic -lm -lpthread

Windows vs. Linux Ryzen 5, Tiger Lake

Basis Universal 1.12

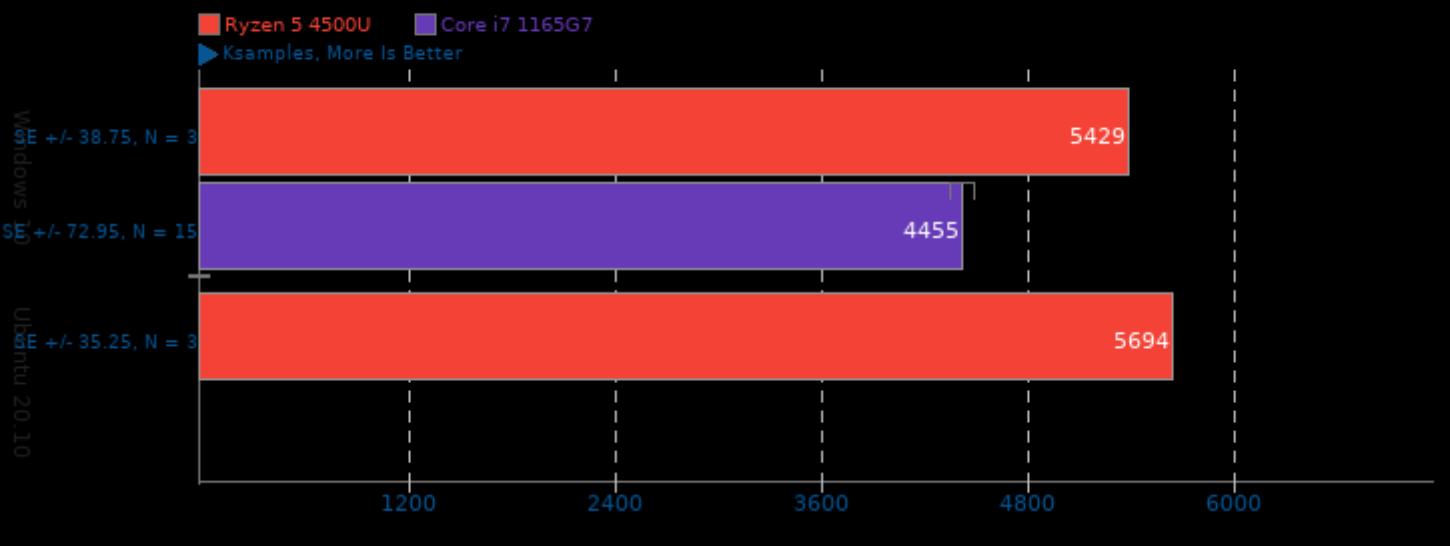
Settings: UASTC Level 2 + RDO Post-Processing



1. (CXX) g++ options: -std=c++11 -fvisibility=hidden -fPIC -fno-strict-aliasing -O3 -rdynamic -lm -lpthread

Chaos Group V-RAY 4.10.07

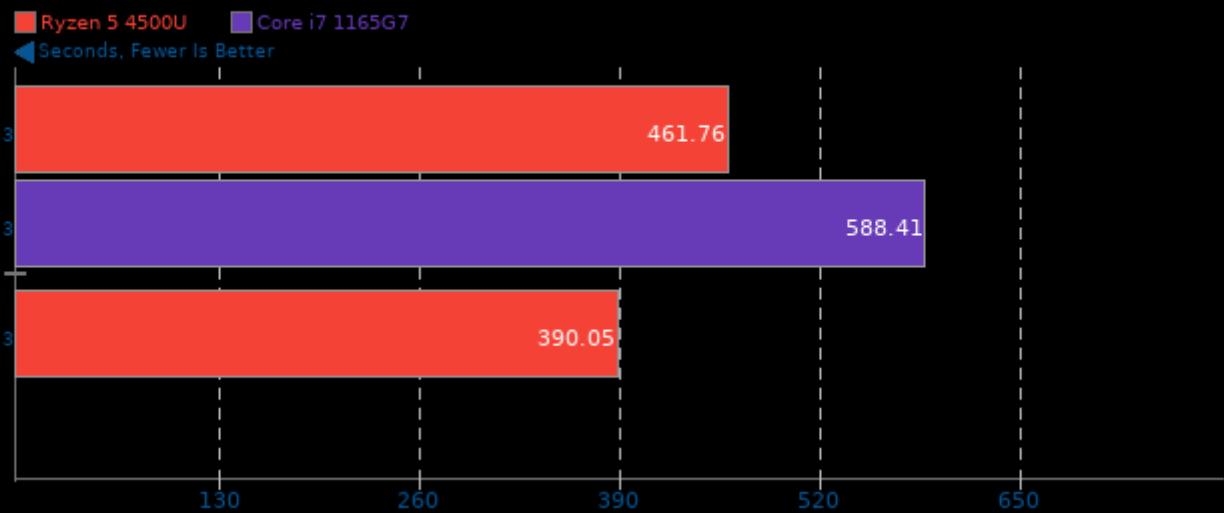
Mode: CPU



Windows vs. Linux Ryzen 5, Tiger Lake

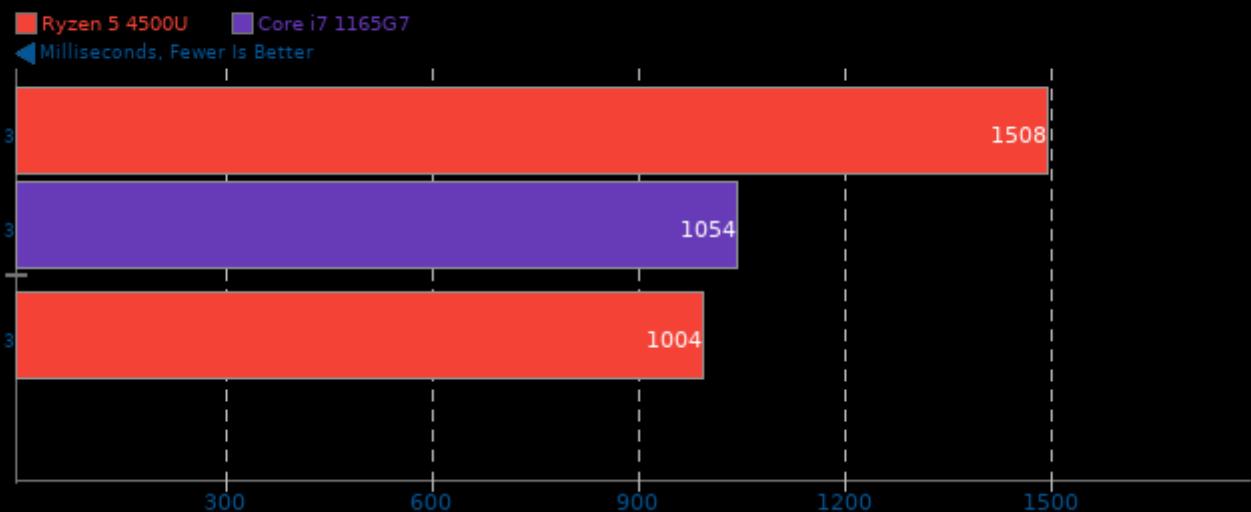
Blender 2.90

Blend File: BMW27 - Compute: CPU-Only



PyBench 2018-02-16

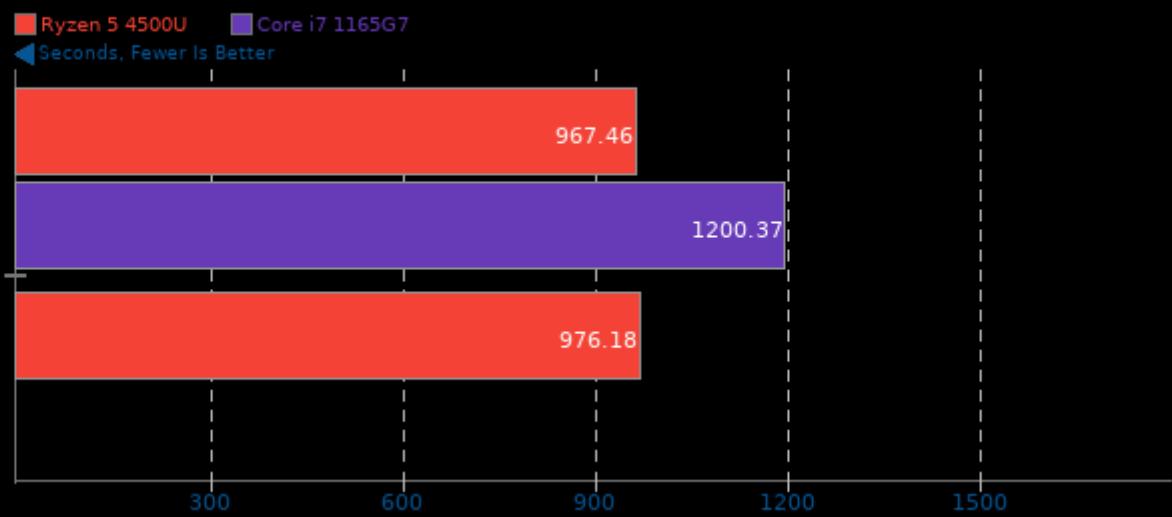
Total For Average Test Times



Windows vs. Linux Ryzen 5, Tiger Lake

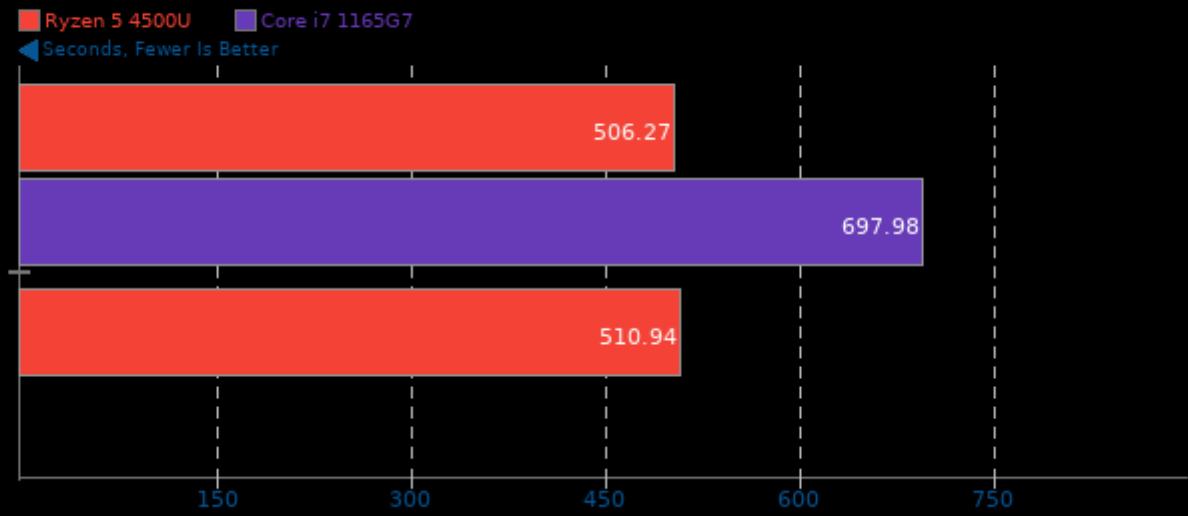
Appleseed 2.0 Beta

Scene: Emily



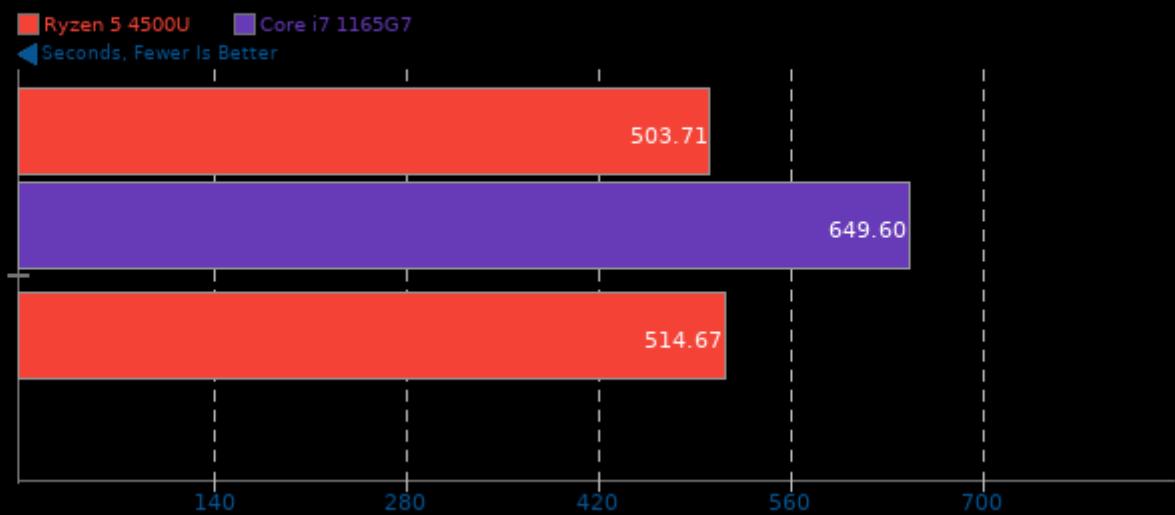
Appleseed 2.0 Beta

Scene: Disney Material



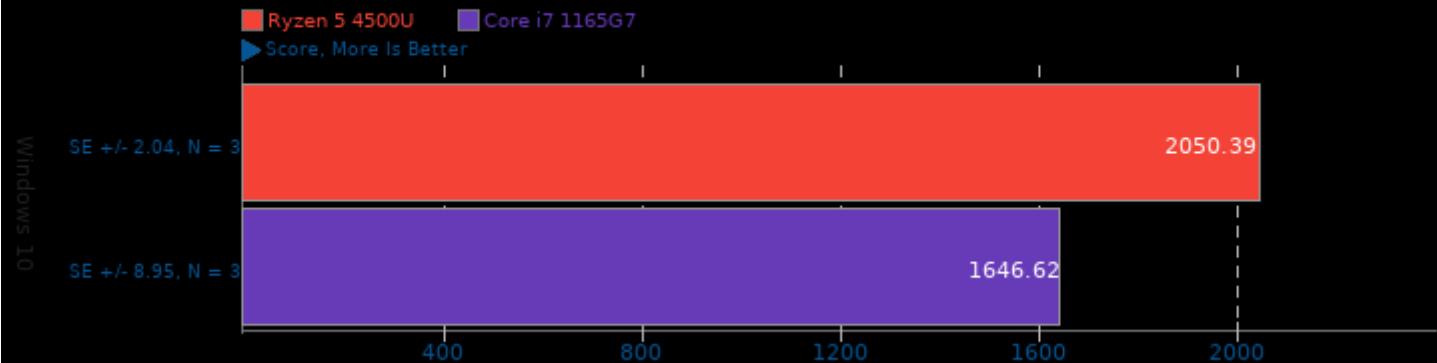
Appleseed 2.0 Beta

Scene: Material Tester



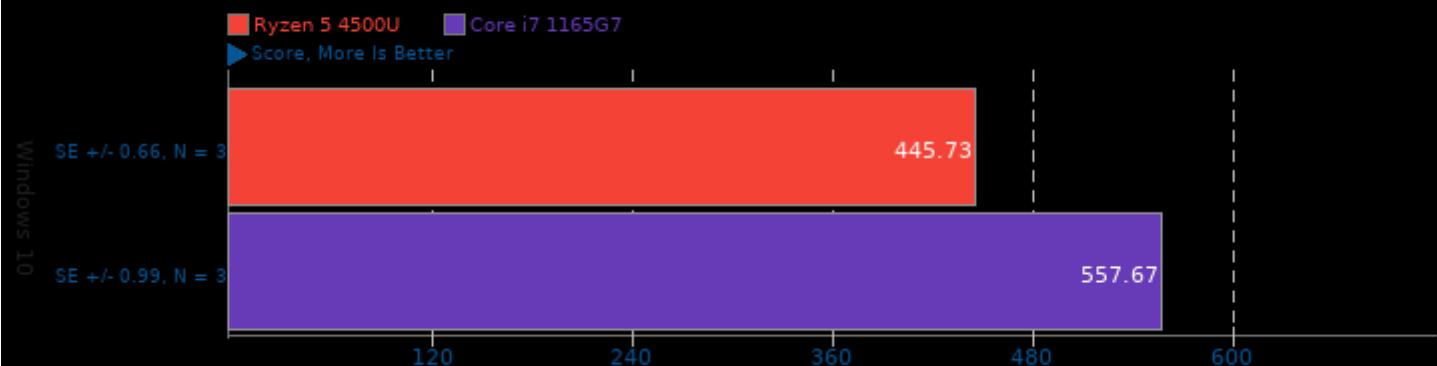
Maxon Cinebench 20

Test: Multi-Core



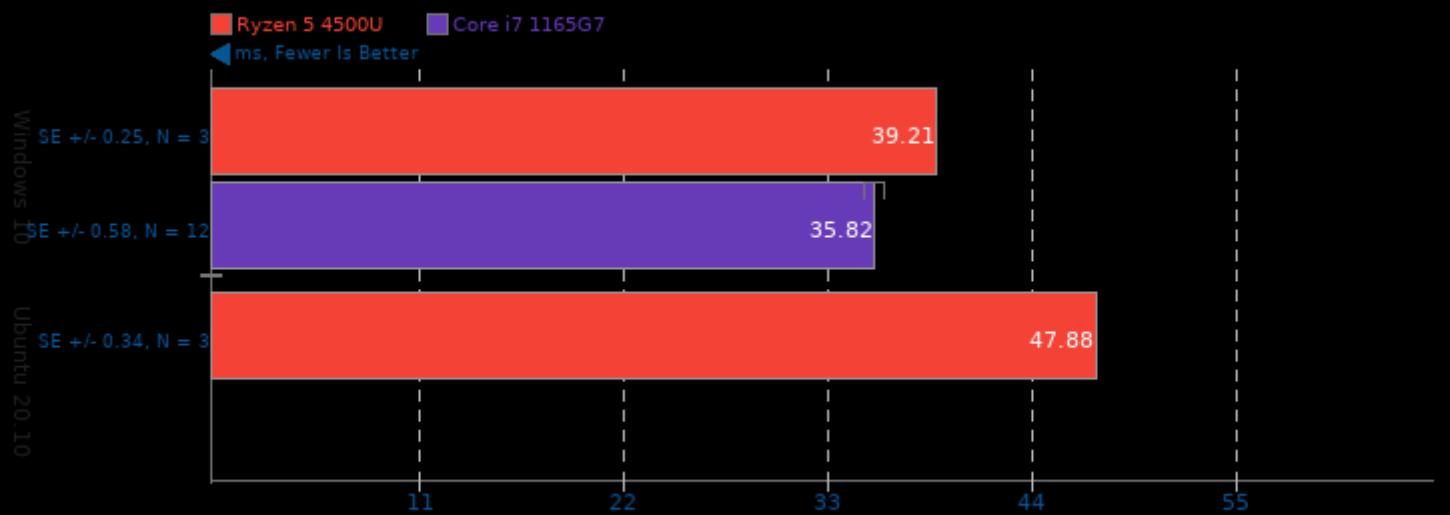
Maxon Cinebench 20

Test: Single-Core



Selenium

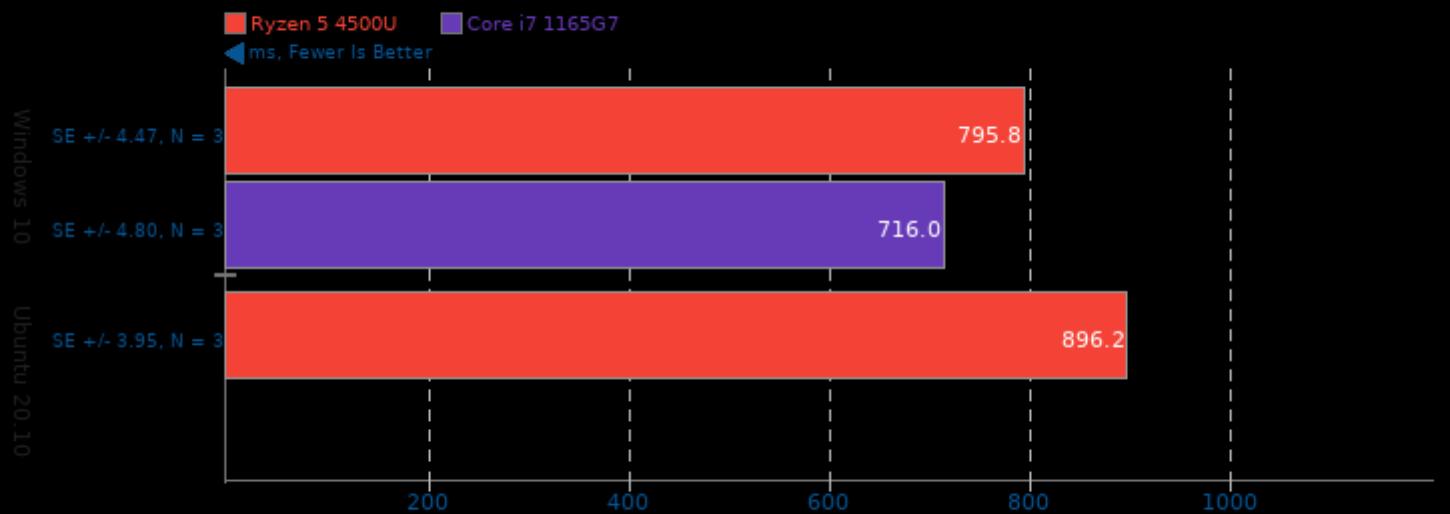
Benchmark: ARES-6 - Browser: Firefox



1. firefox 81.0.2

Selenium

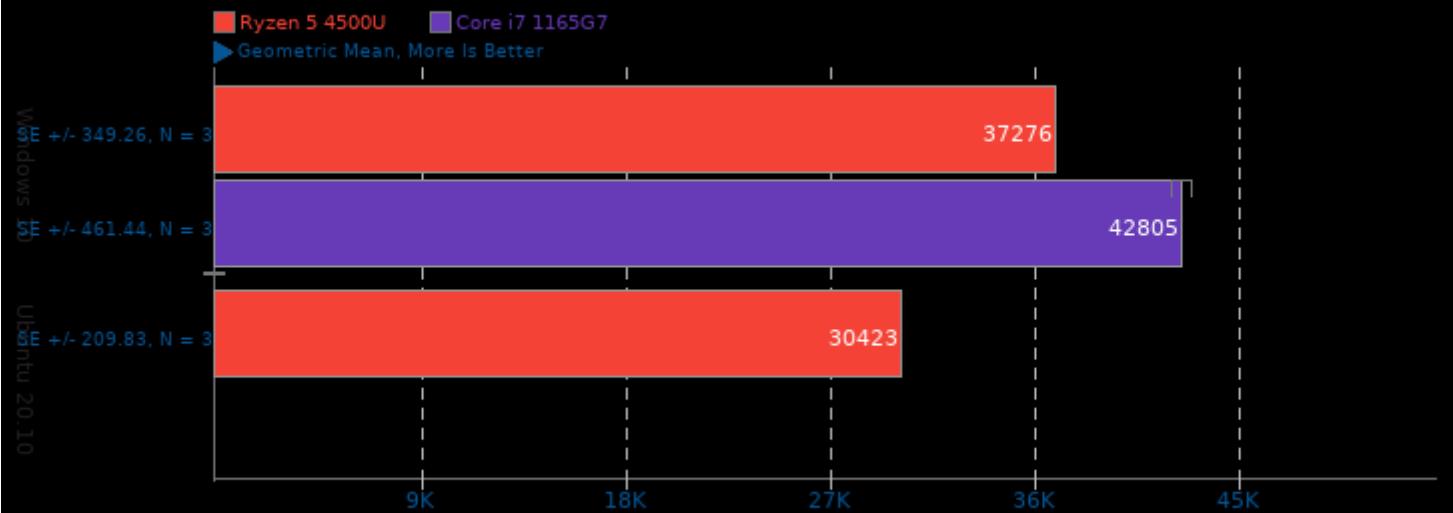
Benchmark: Kraken - Browser: Firefox



1. firefox 81.0.2

Selenium

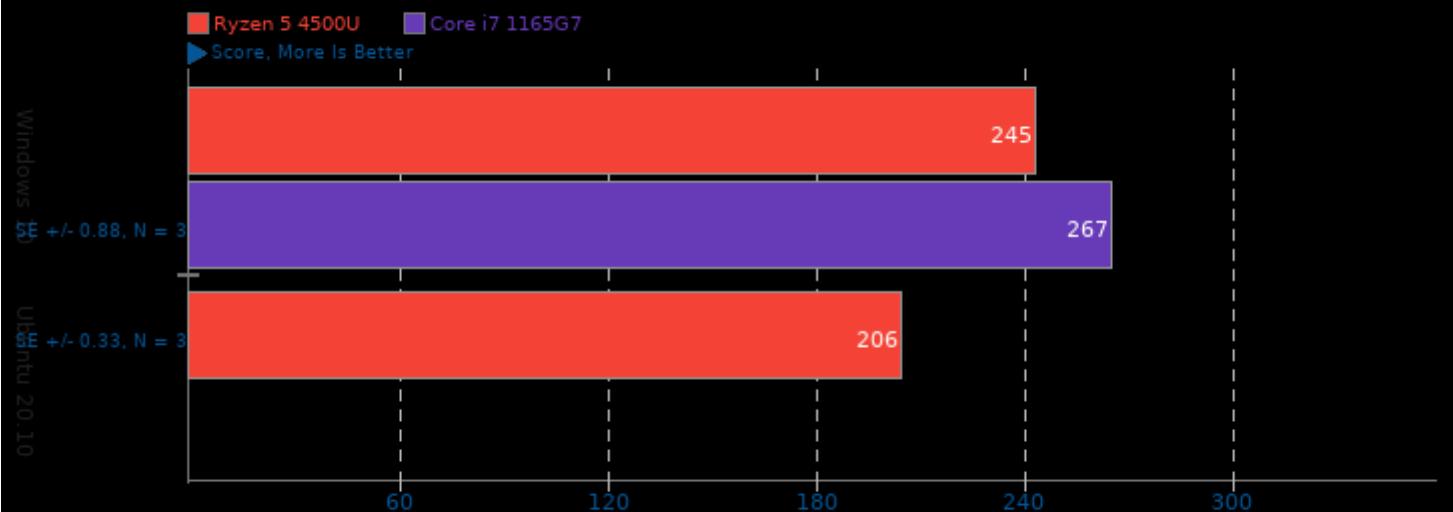
Benchmark: Octane - Browser: Firefox



1. firefox 81.0.2

Selenium

Benchmark: WebXPRT - Browser: Firefox

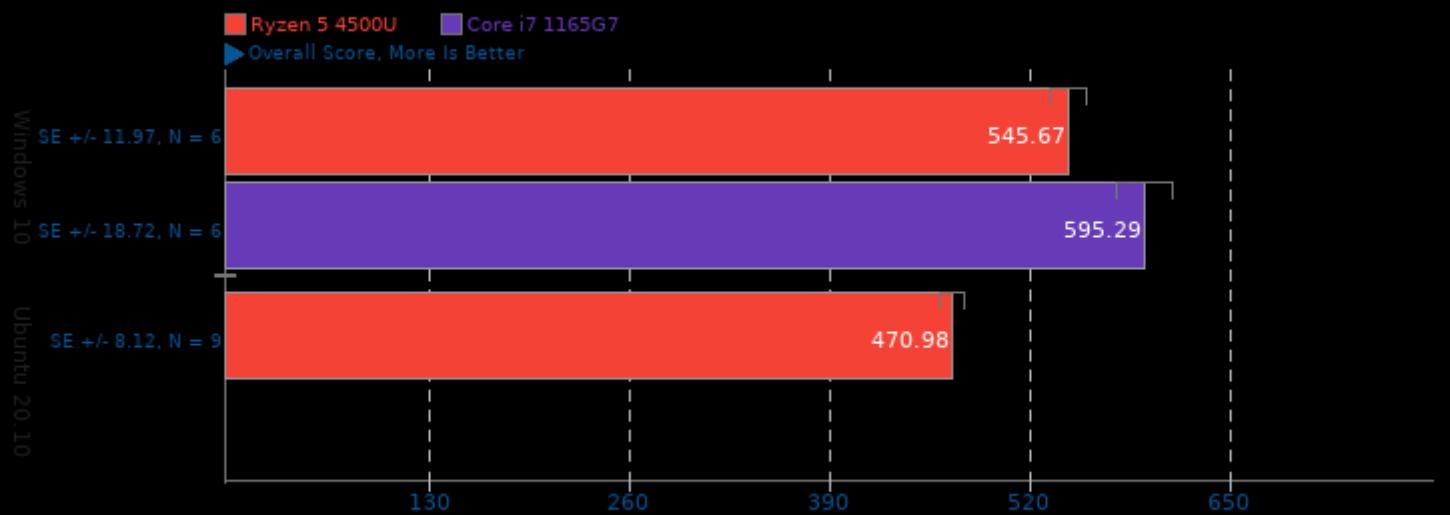


1. firefox 81.0.2

Windows vs. Linux Ryzen 5, Tiger Lake

Selenium

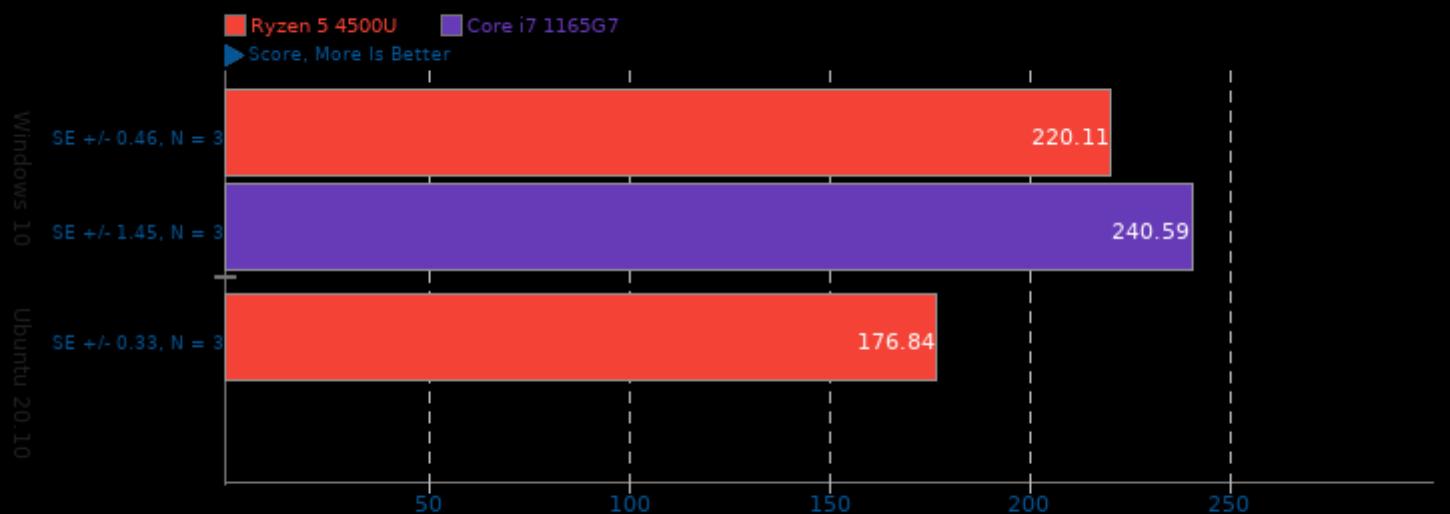
Benchmark: Basemark - Browser: Firefox



1. firefox 81.0.2

Selenium

Benchmark: Jetstream - Browser: Firefox

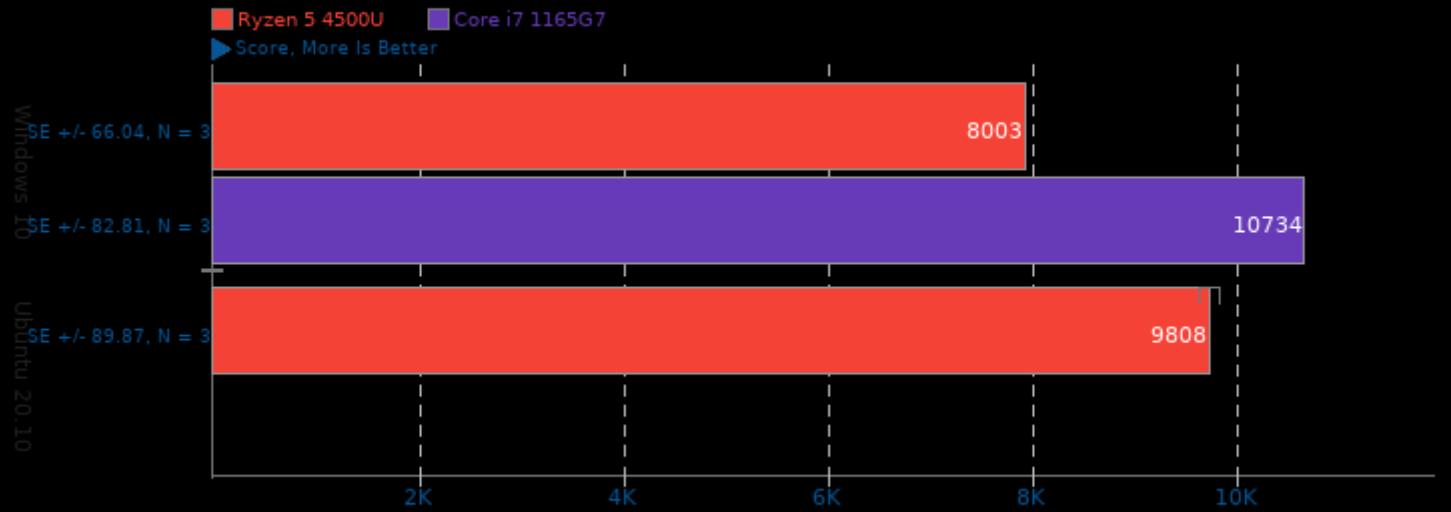


1. firefox 81.0.2

Windows vs. Linux Ryzen 5, Tiger Lake

Selenium

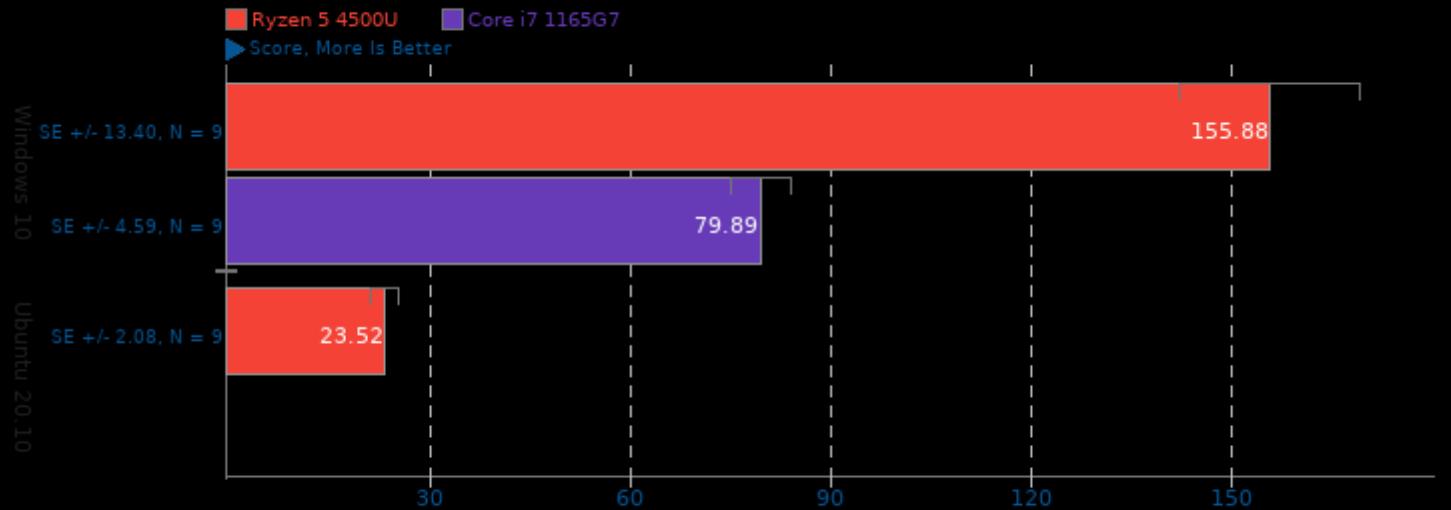
Benchmark: CanvasMark - Browser: Firefox



1. firefox 81.0.2

Selenium

Benchmark: MotionMark - Browser: Firefox

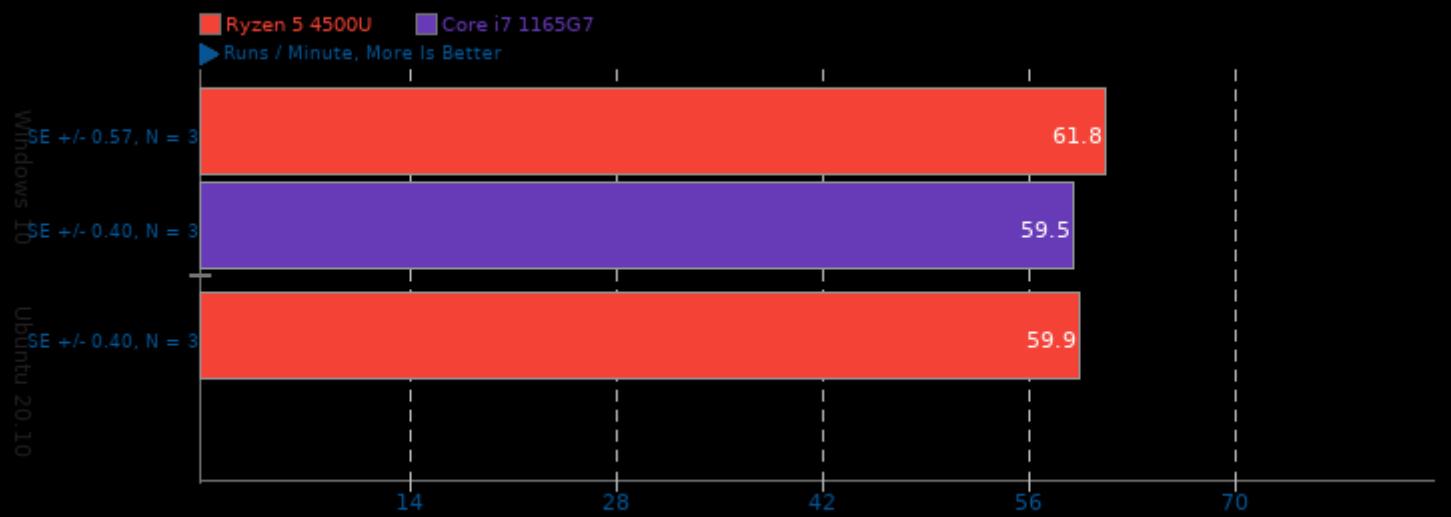


1. firefox 81.0.2

Windows vs. Linux Ryzen 5, Tiger Lake

Selenium

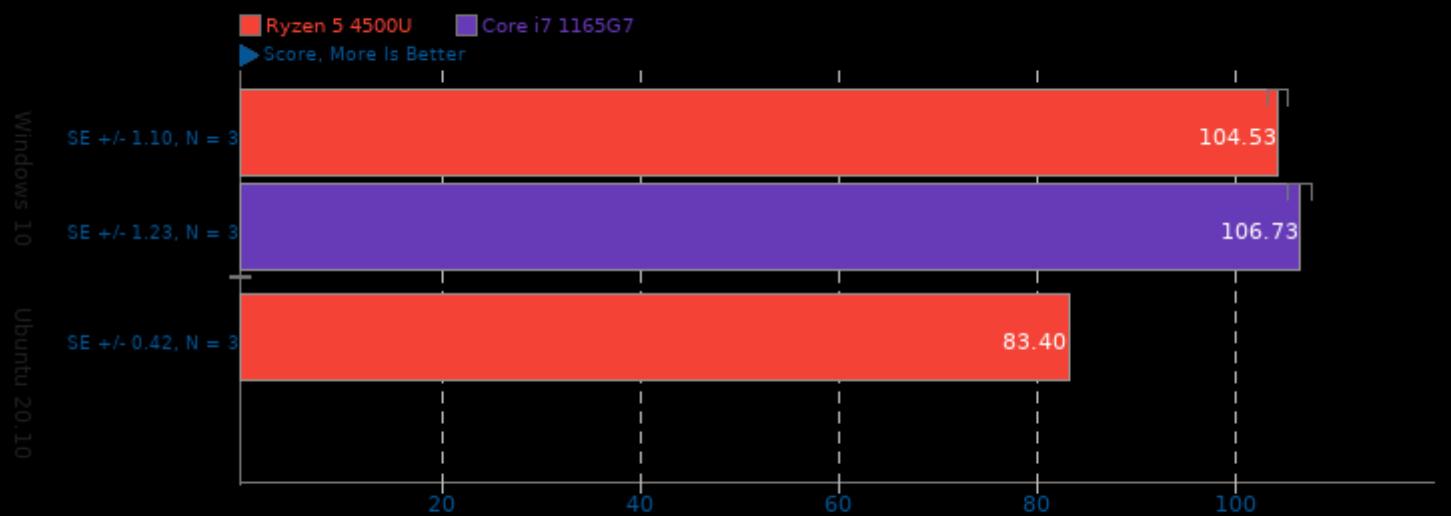
Benchmark: StyleBench - Browser: Firefox



1. firefox 81.0.2

Selenium

Benchmark: Jetstream 2 - Browser: Firefox

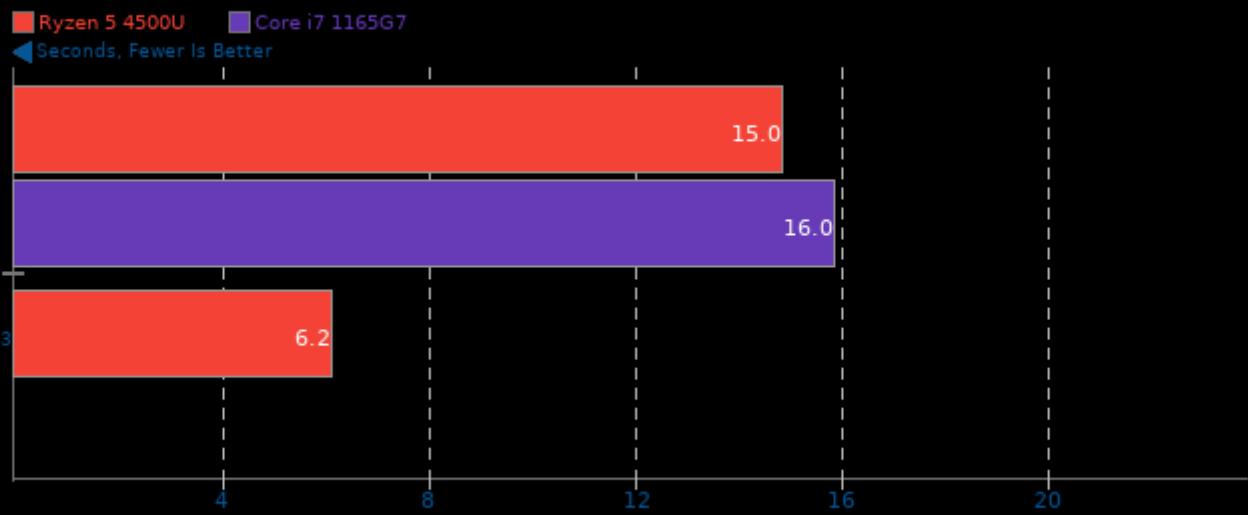


1. firefox 81.0.2

Windows vs. Linux Ryzen 5, Tiger Lake

Selenium

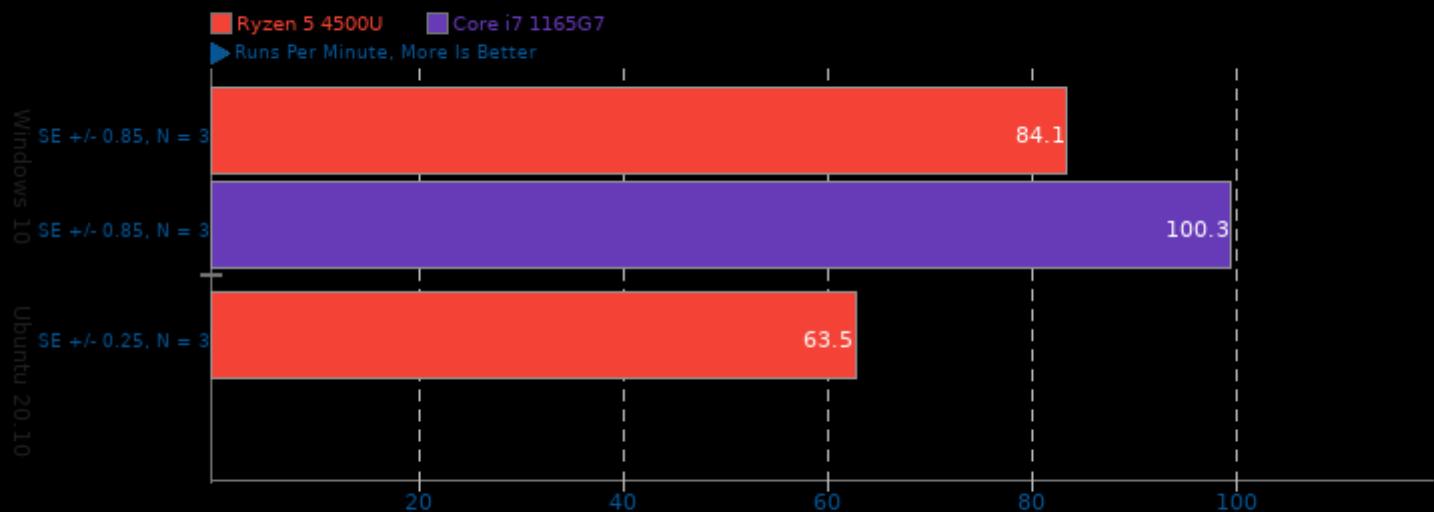
Benchmark: Maze Solver - Browser: Firefox



1. firefox 81.0.2

Selenium

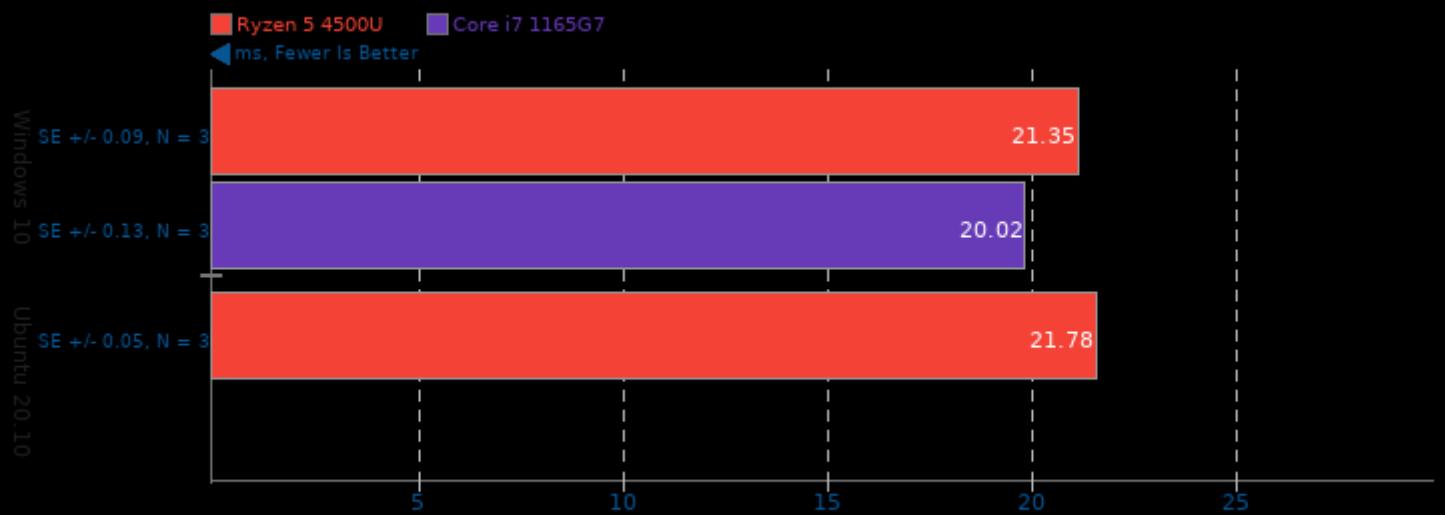
Benchmark: Speedometer - Browser: Firefox



1. firefox 81.0.2

Selenium

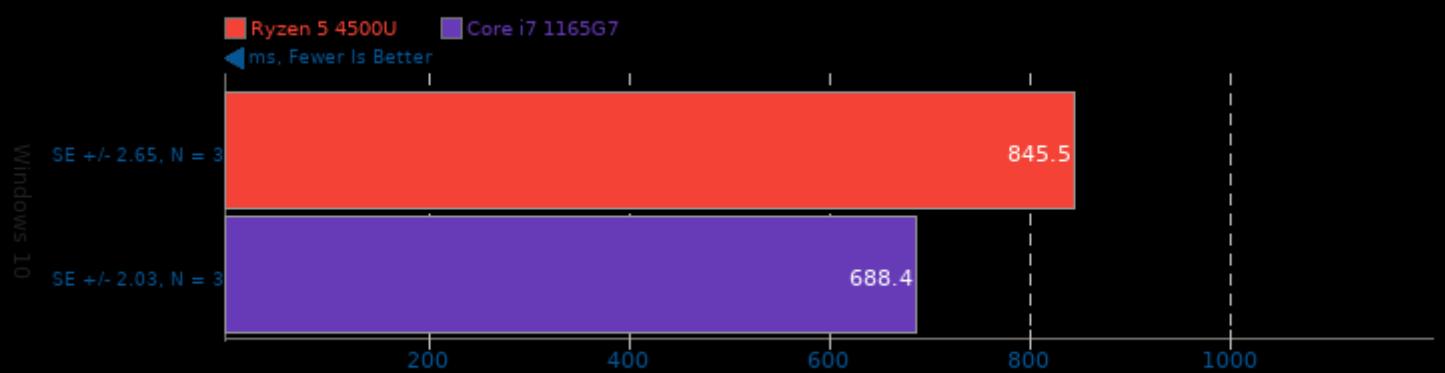
Benchmark: ARES-6 - Browser: Google Chrome



1. chrome 86.0.4240.75

Selenium

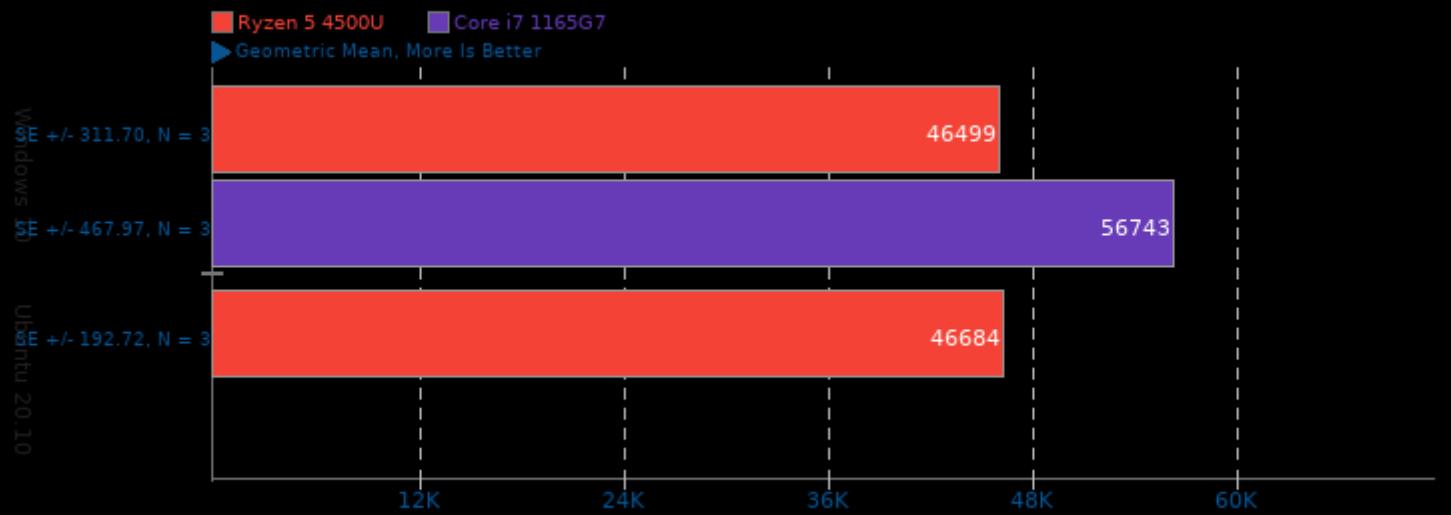
Benchmark: Kraken - Browser: Google Chrome



1. chrome 86.0.4240.75

Selenium

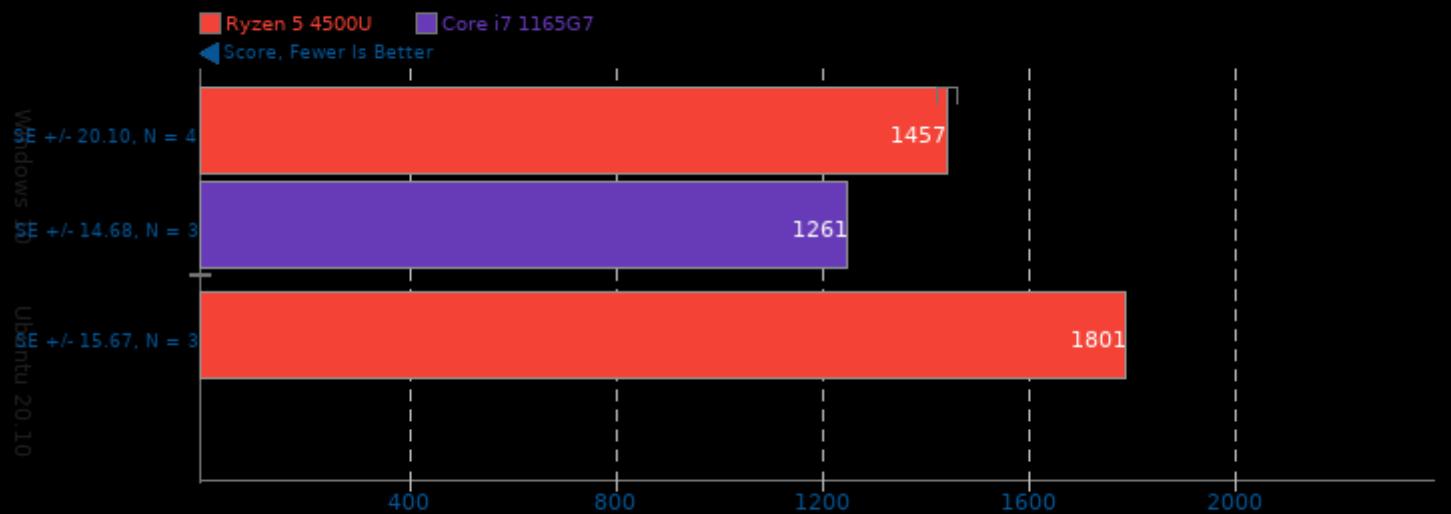
Benchmark: Octane - Browser: Google Chrome



1. chrome 86.0.4240.75

Selenium

Benchmark: PSPDFKit WASM - Browser: Firefox

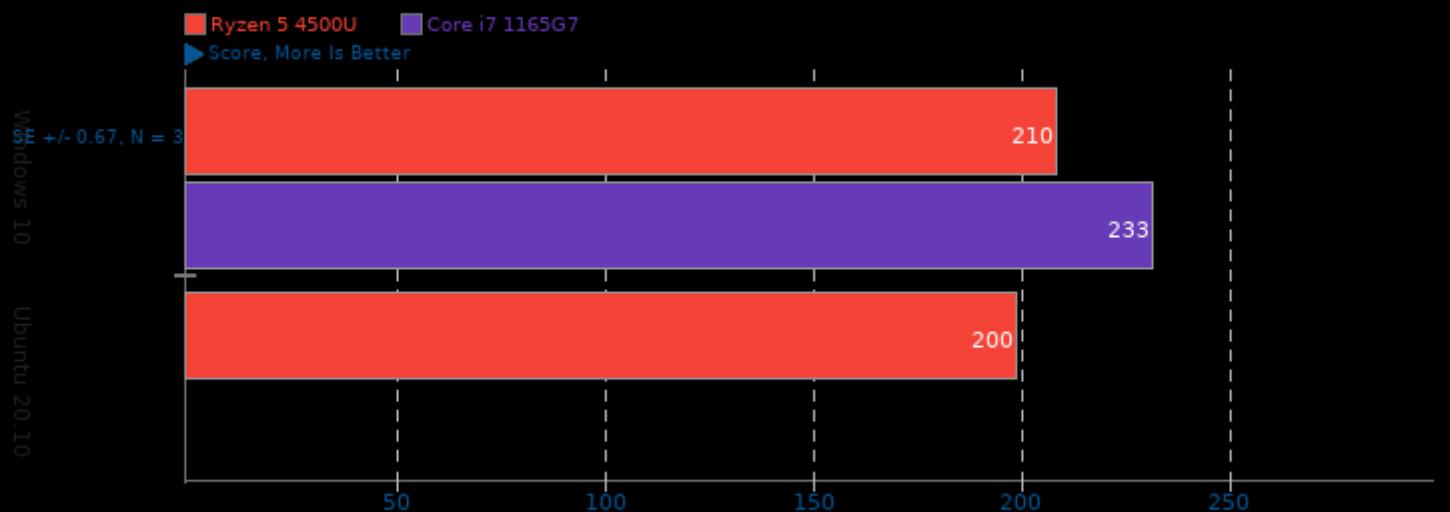


1. firefox 81.0.2

Windows vs. Linux Ryzen 5, Tiger Lake

Selenium

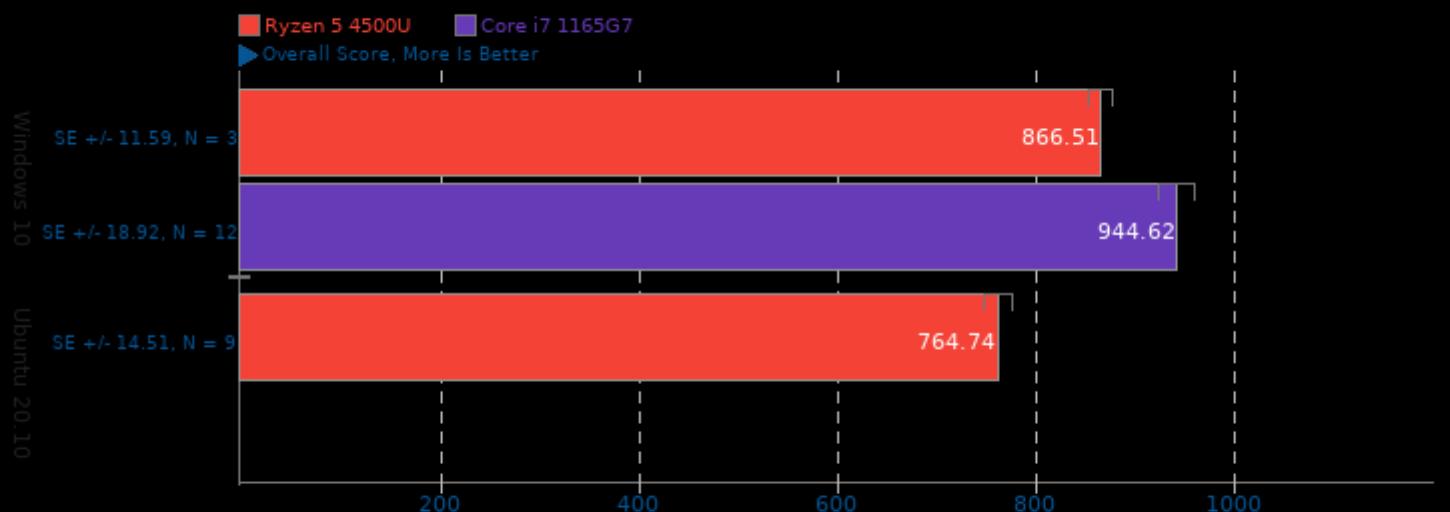
Benchmark: WebXPRT - Browser: Google Chrome



1. chrome 86.0.4240.75

Selenium

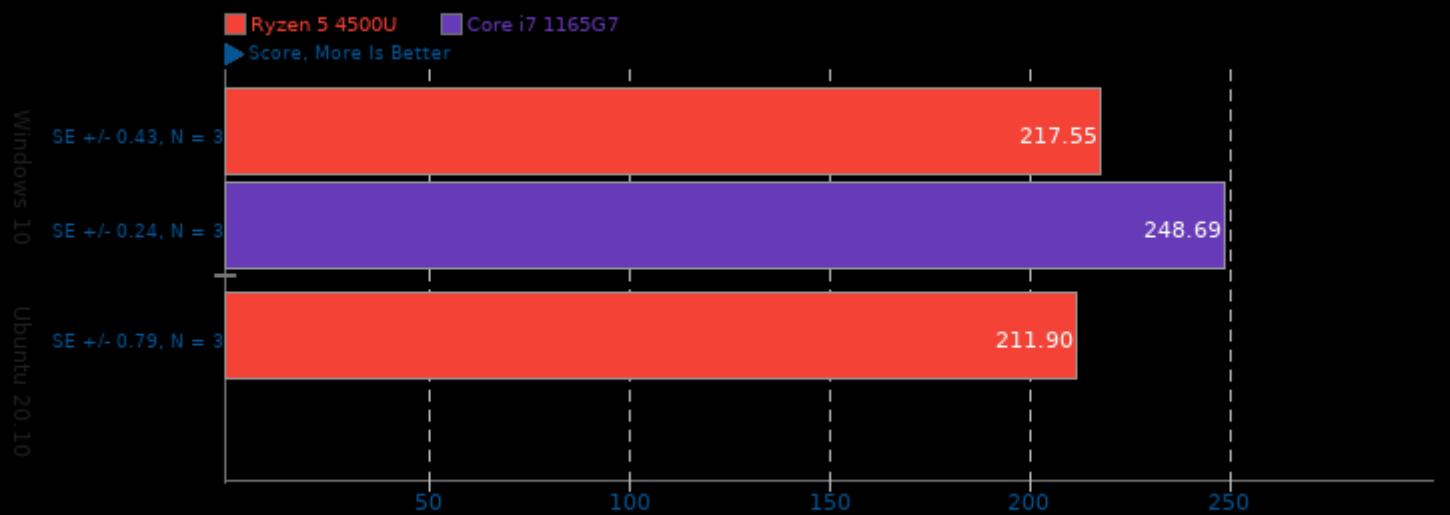
Benchmark: Basemark - Browser: Google Chrome



1. chrome 86.0.4240.75

Selenium

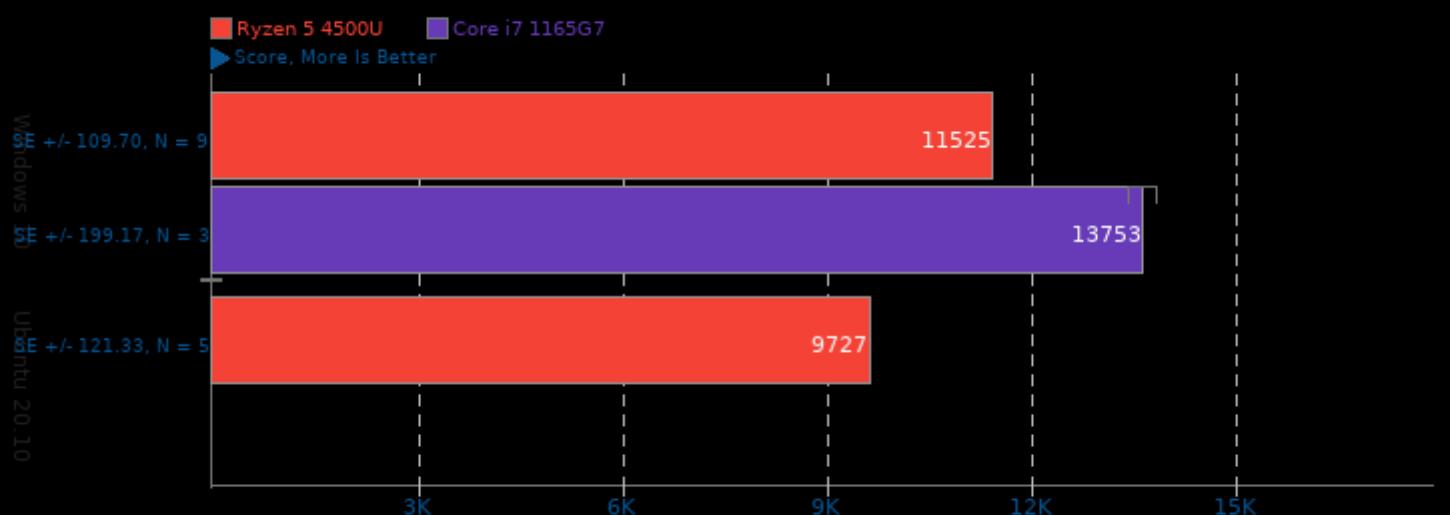
Benchmark: Jetstream - Browser: Google Chrome



1. chrome 86.0.4240.75

Selenium

Benchmark: CanvasMark - Browser: Google Chrome

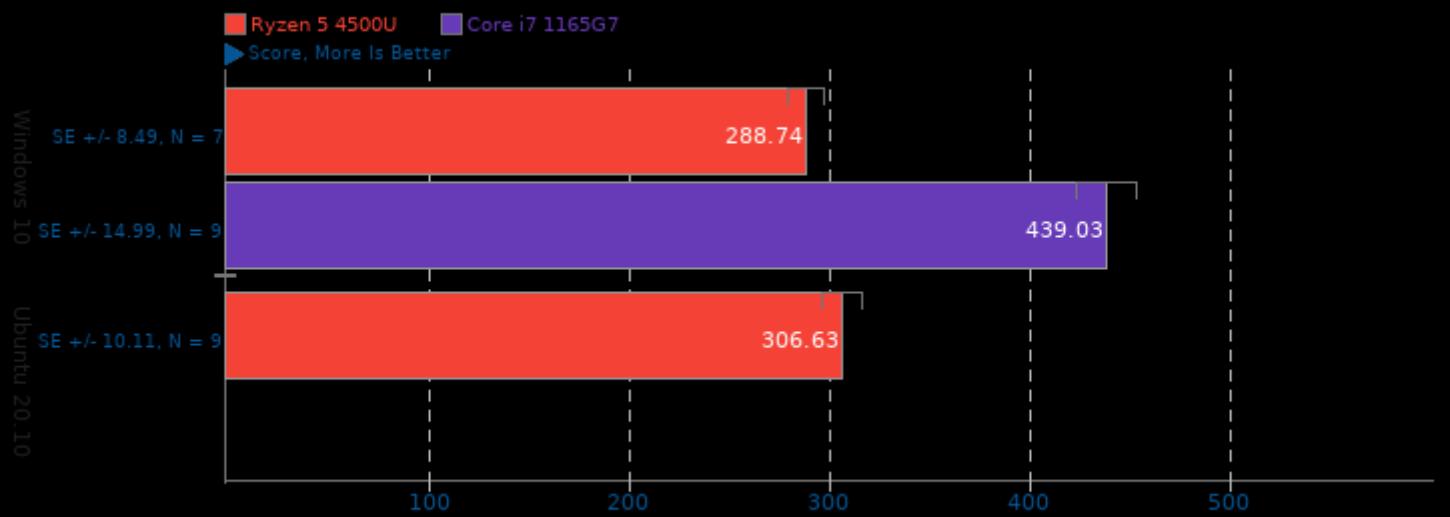


1. chrome 86.0.4240.75

Windows vs. Linux Ryzen 5, Tiger Lake

Selenium

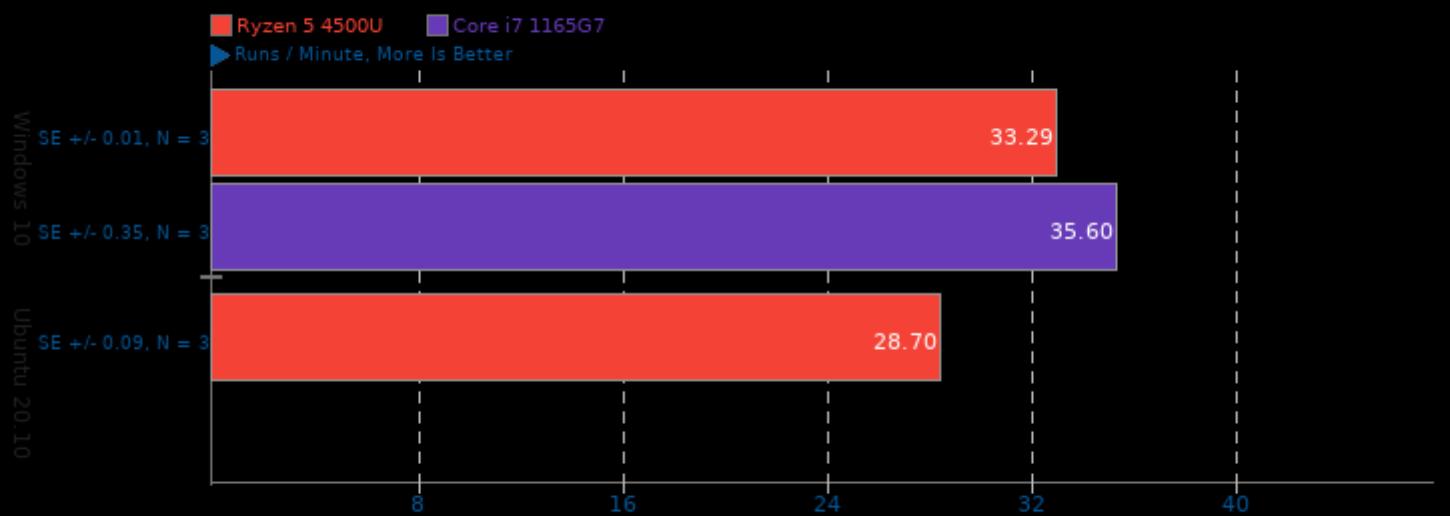
Benchmark: MotionMark - Browser: Google Chrome



1. chrome 86.0.4240.75

Selenium

Benchmark: StyleBench - Browser: Google Chrome

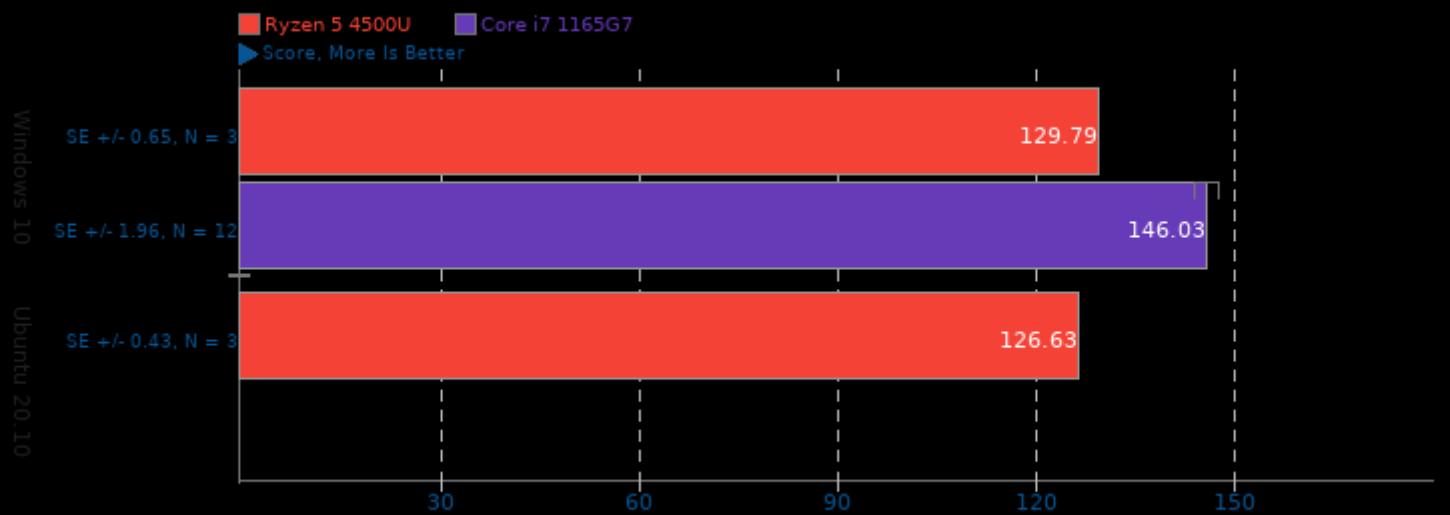


1. chrome 86.0.4240.75

Windows vs. Linux Ryzen 5, Tiger Lake

Selenium

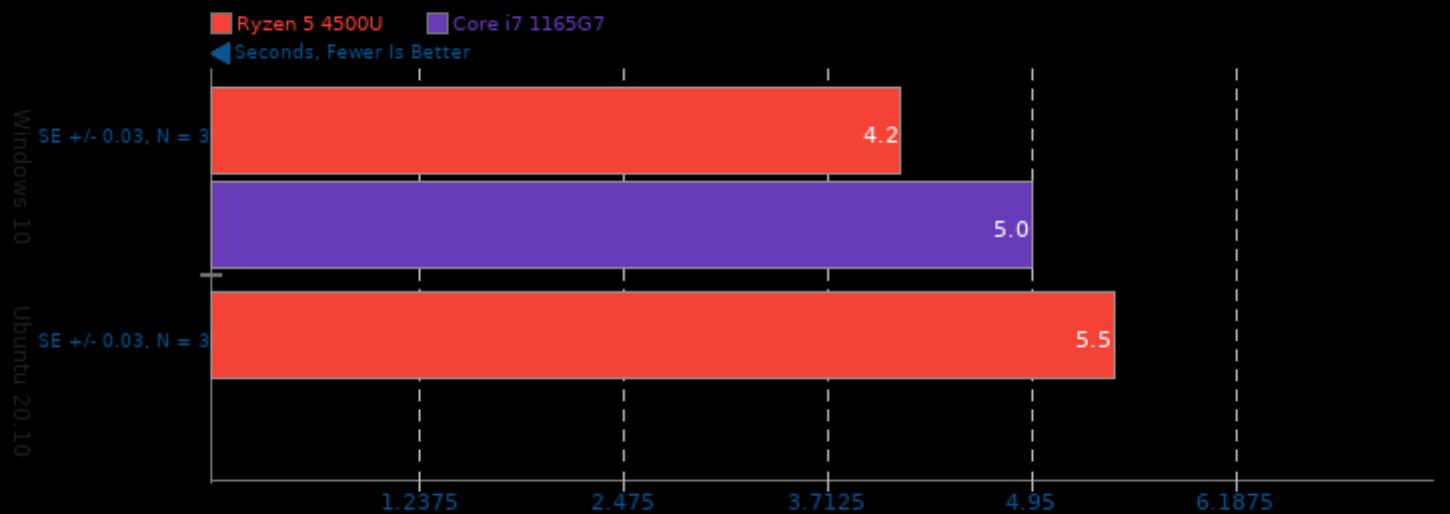
Benchmark: Jetstream 2 - Browser: Google Chrome



1. chrome 86.0.4240.75

Selenium

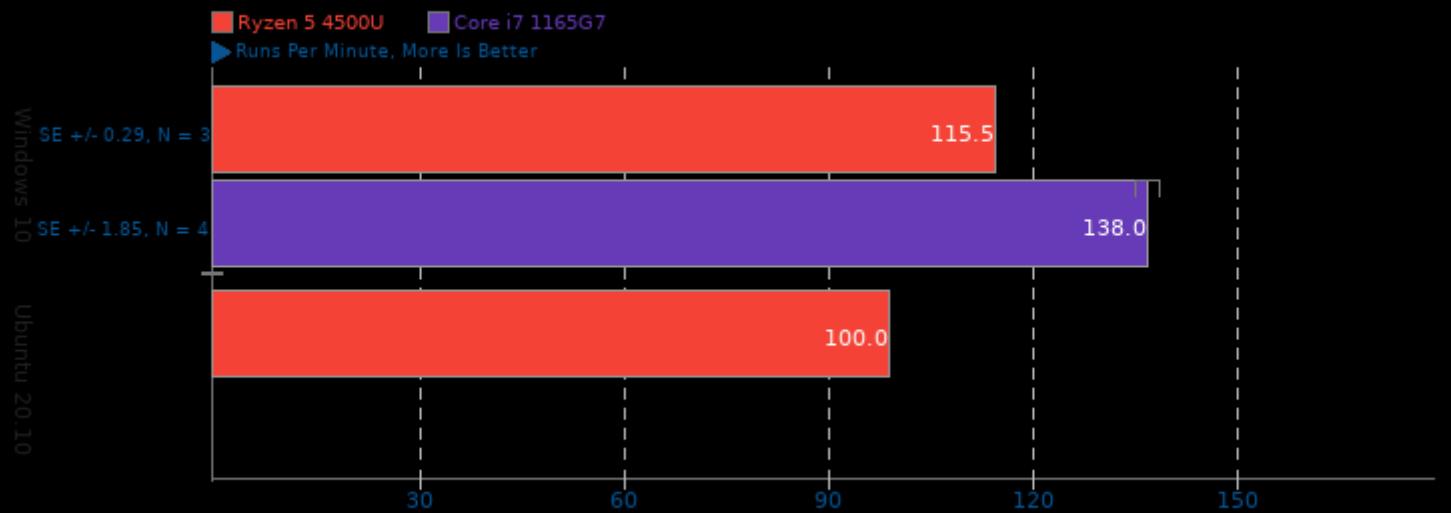
Benchmark: Maze Solver - Browser: Google Chrome



1. chrome 86.0.4240.75

Selenium

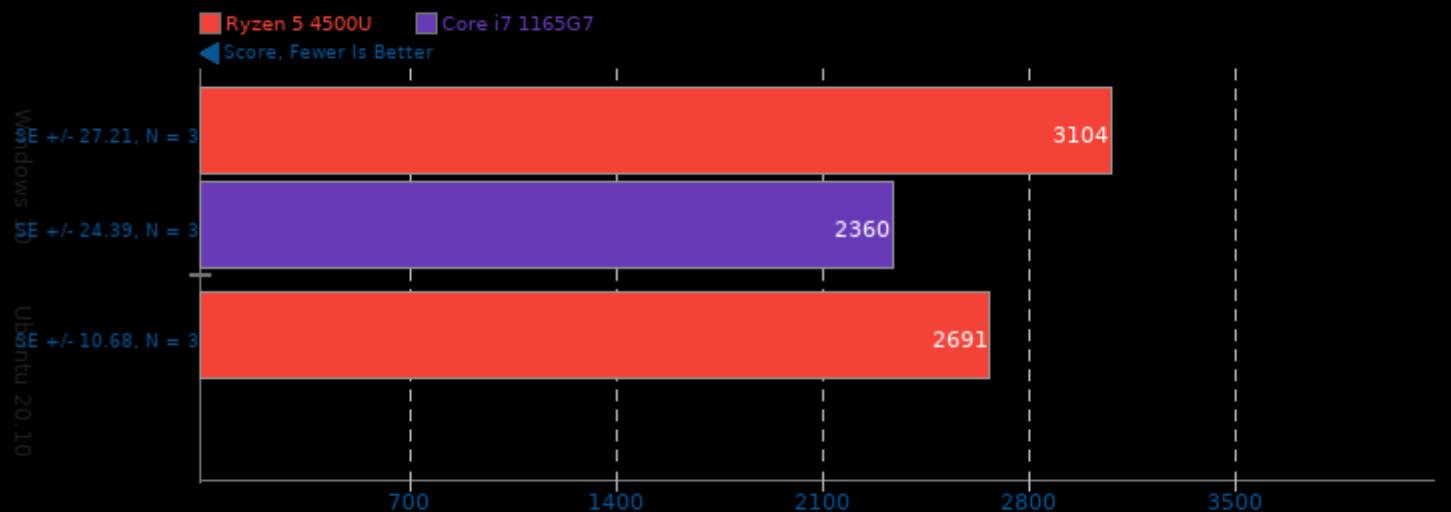
Benchmark: Speedometer - Browser: Google Chrome



1. chrome 86.0.4240.75

Selenium

Benchmark: PSPDFKit WASM - Browser: Google Chrome

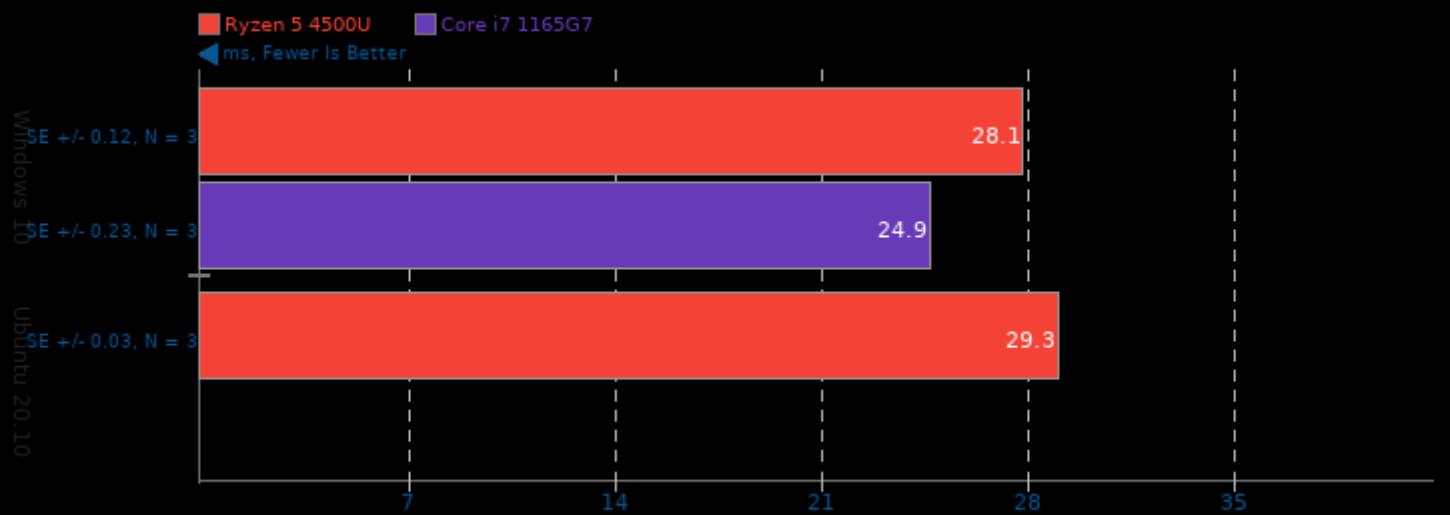


1. chrome 86.0.4240.75

Windows vs. Linux Ryzen 5, Tiger Lake

Selenium

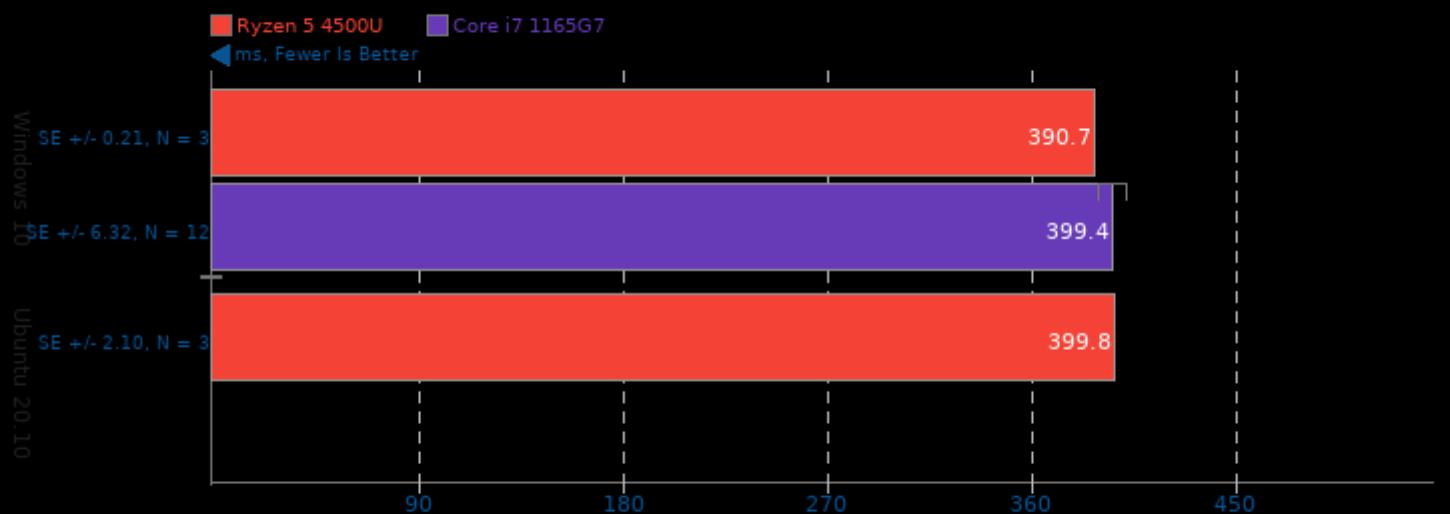
Benchmark: WASM imageConvolute - Browser: Firefox



1. firefox 81.0.2

Selenium

Benchmark: WASM collisionDetection - Browser: Firefox

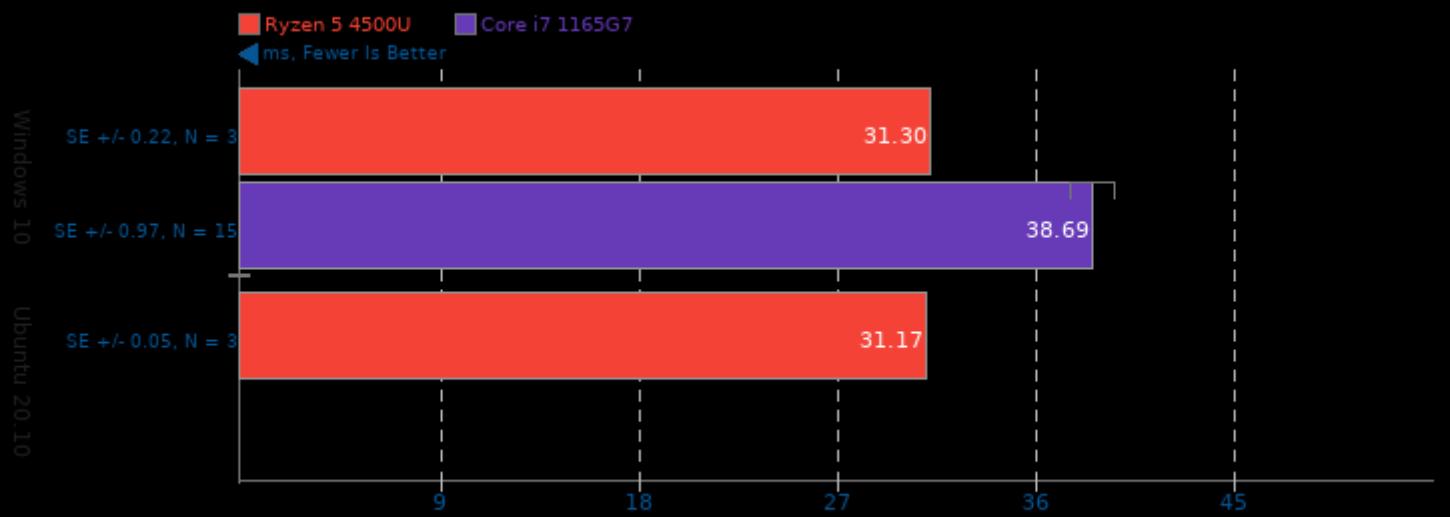


1. firefox 81.0.2

Windows vs. Linux Ryzen 5, Tiger Lake

Selenium

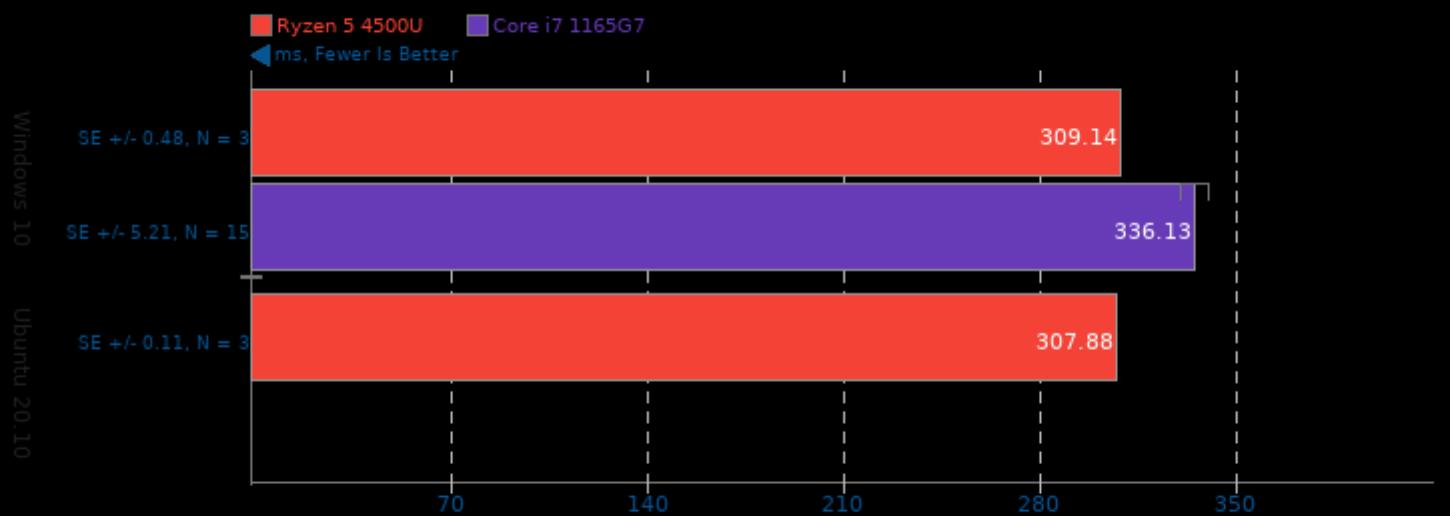
Benchmark: WASM imageConvolute - Browser: Google Chrome



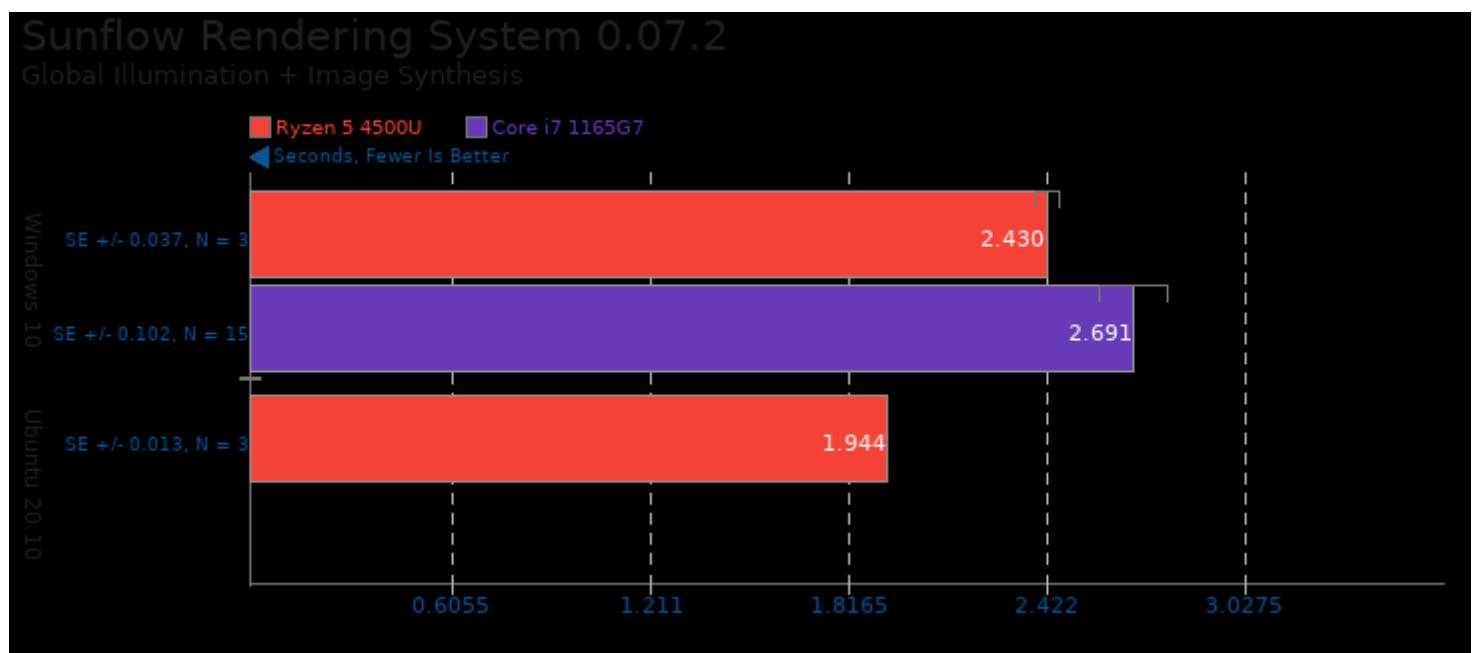
1. chrome 86.0.4240.75

Selenium

Benchmark: WASM collisionDetection - Browser: Google Chrome

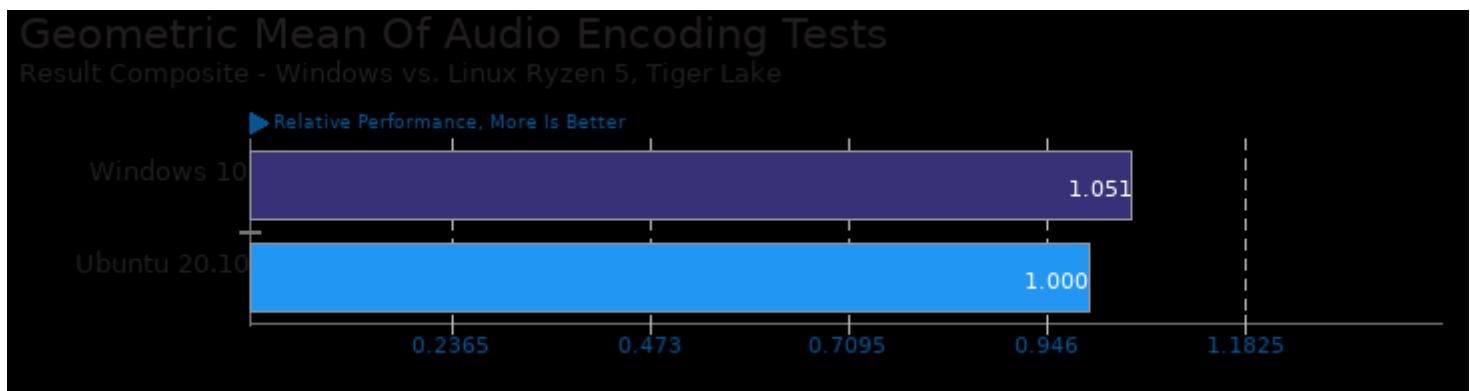


1. chrome 86.0.4240.75

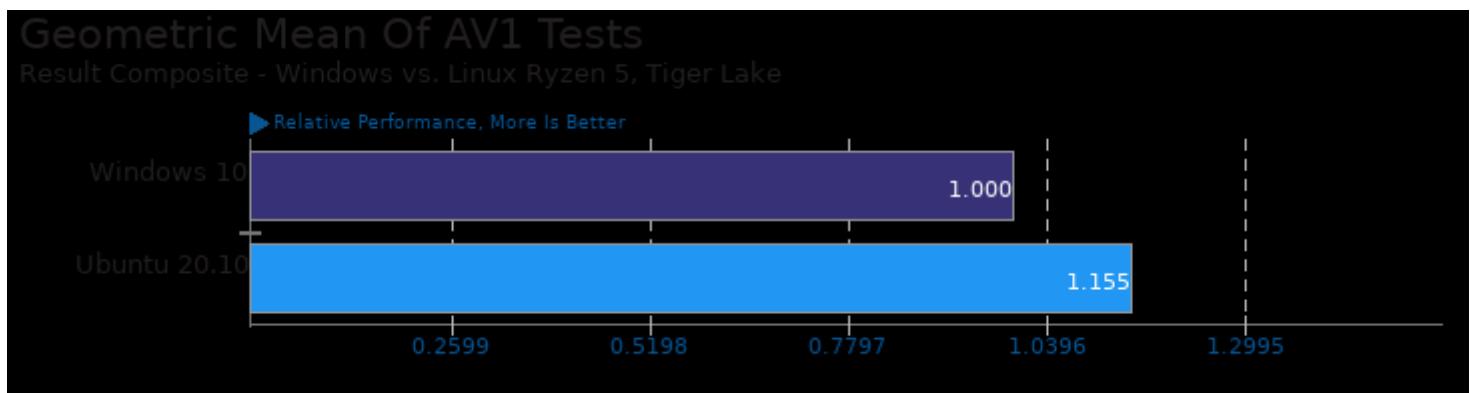


Windows vs. Linux Ryzen 5, Tiger Lake

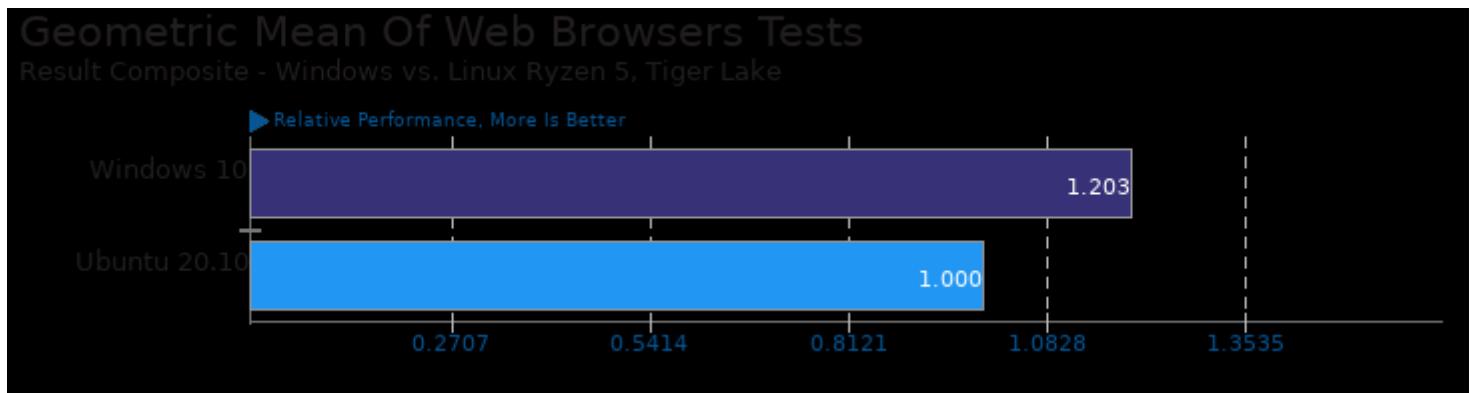
These geometric means are based upon test groupings / test suites for this result file.



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



Geometric mean based upon tests: pts/dav1d, pts/svt-av1 and pts/avifenc

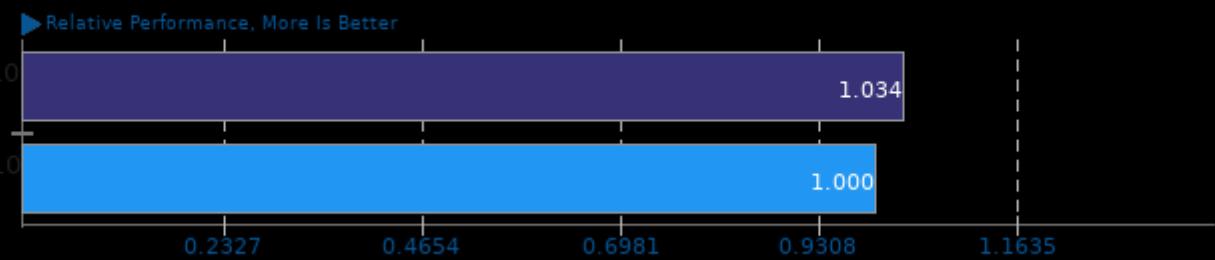


Geometric mean based upon tests: system/selenium

Windows vs. Linux Ryzen 5, Tiger Lake

Geometric Mean Of Chess Test Suite

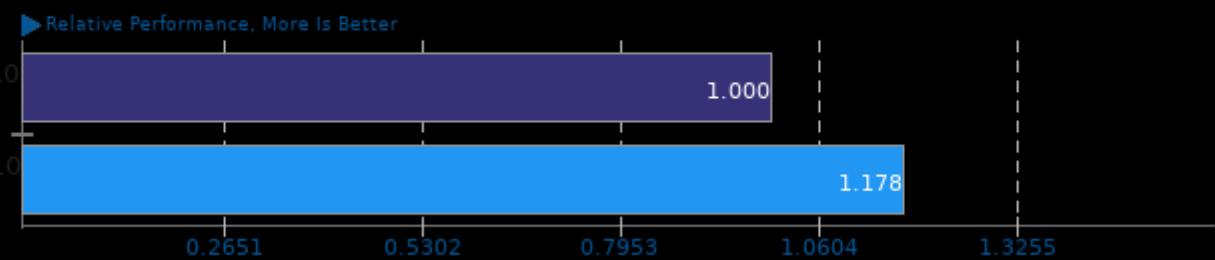
Result Composite - Windows vs. Linux Ryzen 5, Tiger Lake



Geometric mean based upon tests: pts/tscp, pts/lczero, pts/stockfish and pts/asmfish

Geometric Mean Of C/C++ Compiler Tests

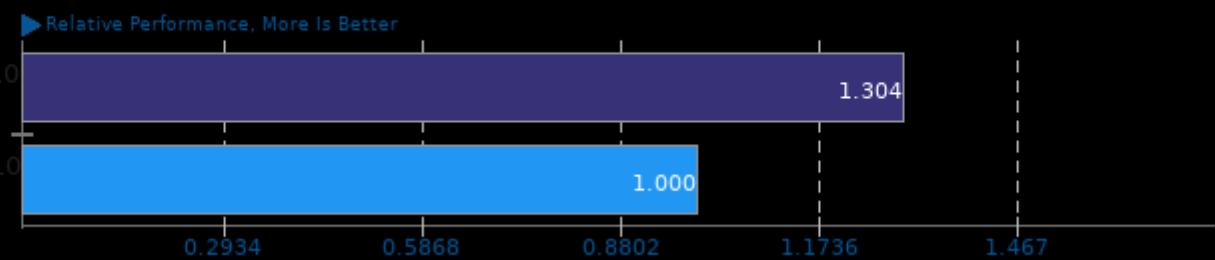
Result Composite - Windows vs. Linux Ryzen 5, Tiger Lake



Geometric mean based upon tests: pts/tscp, pts/stockfish, pts/c-ray, pts/encode-mp3, pts/encode-flac, pts/mrbayes, pts/dav1d, pts/x264, pts/compress-xz, pts/compress-zstd, pts/svt-av1, pts/svt-vp9 and pts/basis

Geometric Mean Of Compression Tests

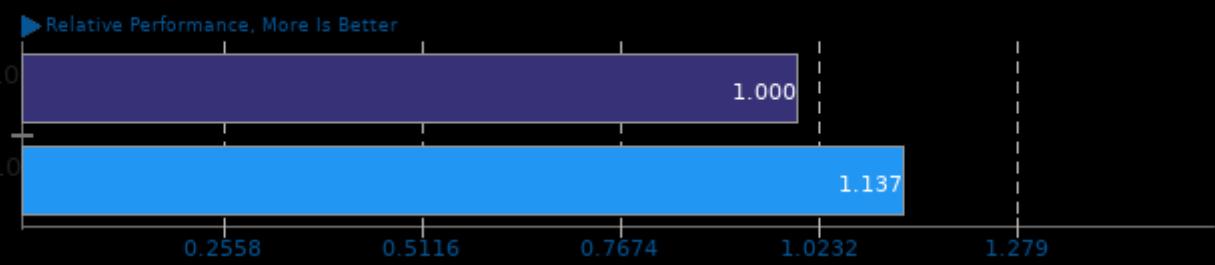
Result Composite - Windows vs. Linux Ryzen 5, Tiger Lake



Geometric mean based upon tests: pts/compress-zstd and pts/compress-xz

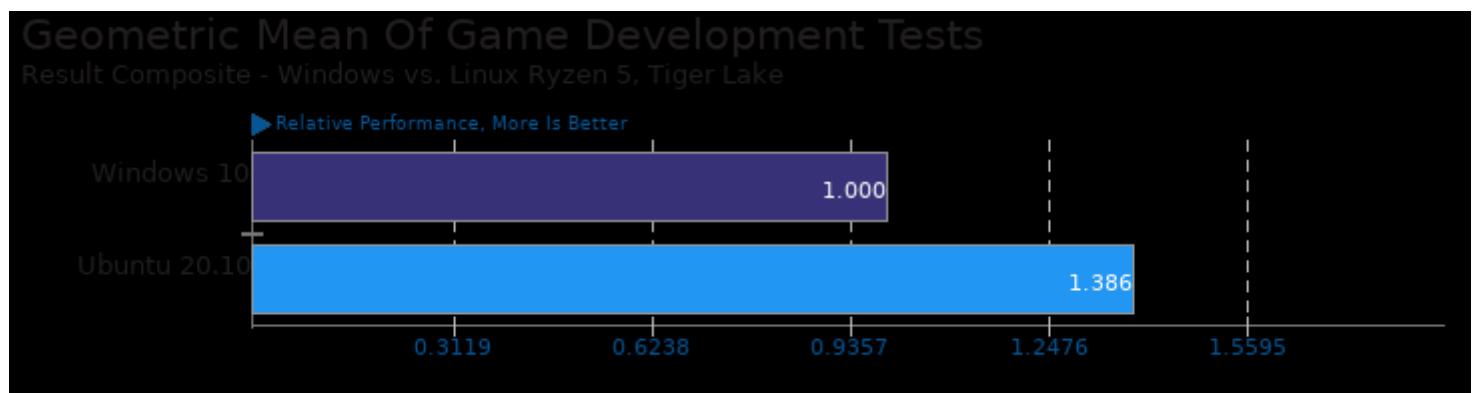
Geometric Mean Of Encoding Tests

Result Composite - Windows vs. Linux Ryzen 5, Tiger Lake

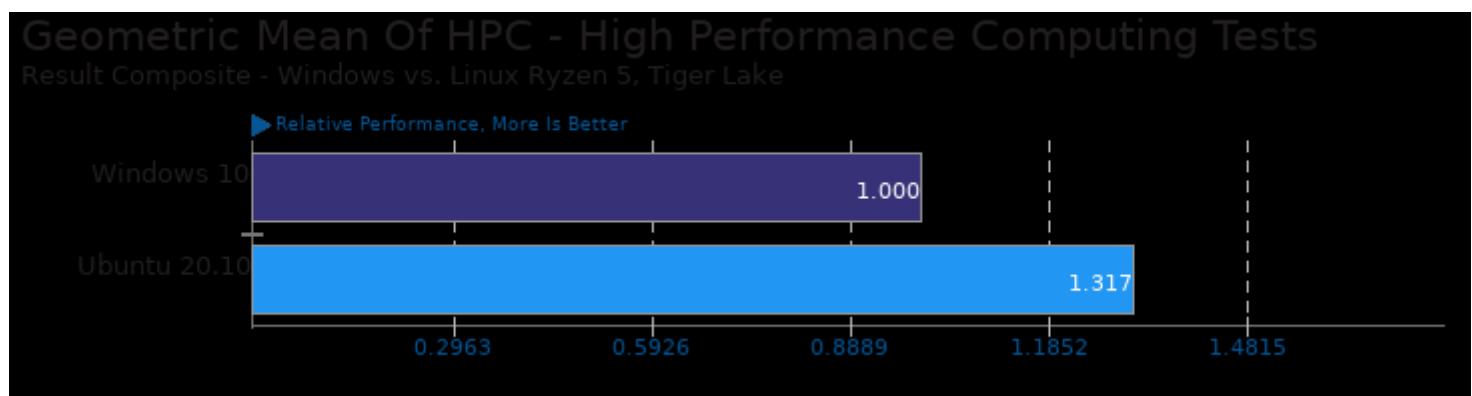


Windows vs. Linux Ryzen 5, Tiger Lake

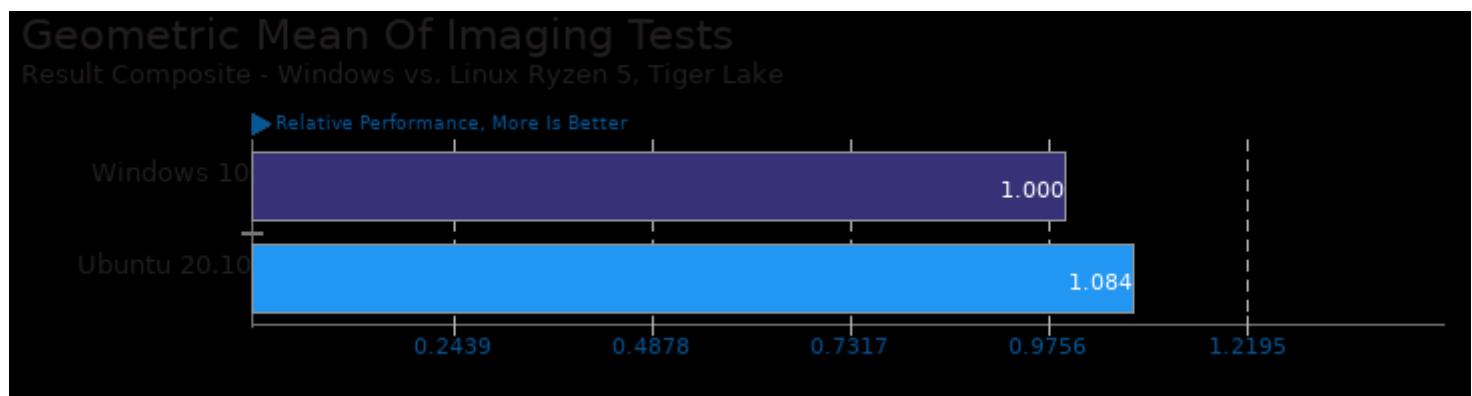
Geometric mean based upon tests: pts/encode-mp3, pts/encode-flac, pts/svt-vp9, pts/svt-hevc, pts/x264, pts/dav1d, pts/svt-av1 and pts/avifenc



Geometric mean based upon tests: pts/basis, pts/blender and pts/oidn



Geometric mean based upon tests: pts/ffte, pts/mrbayes and pts/lczero

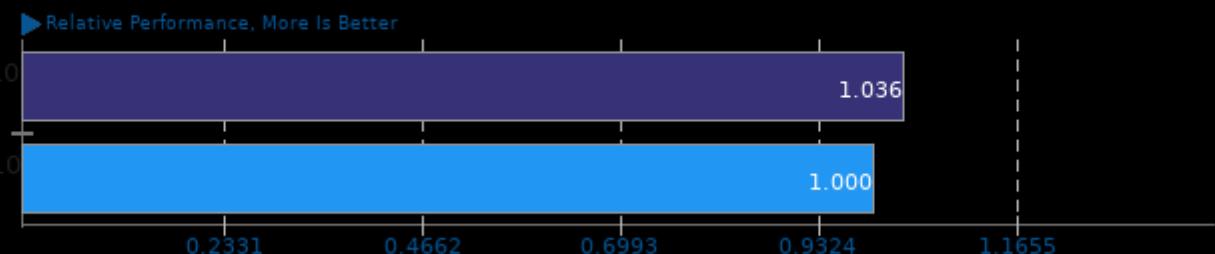


Geometric mean based upon tests: pts/libraw, pts/webp, pts/tjbench and pts/avifenc

Windows vs. Linux Ryzen 5, Tiger Lake

Geometric Mean Of Java Tests

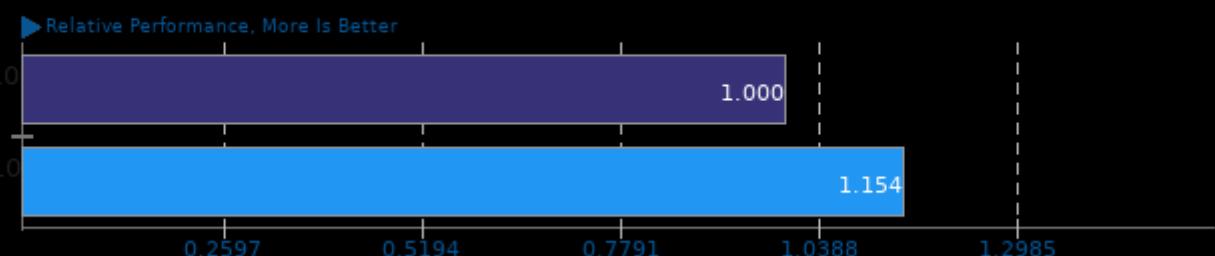
Result Composite - Windows vs. Linux Ryzen 5, Tiger Lake



Geometric mean based upon tests: pts/sunflow and pts/dacapobench

Geometric Mean Of Multi-Core Tests

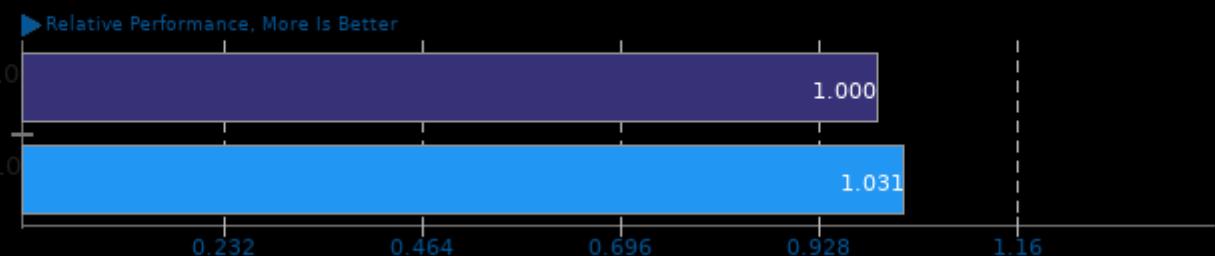
Result Composite - Windows vs. Linux Ryzen 5, Tiger Lake



Geometric mean based upon tests: pts/blender, pts/c-ray, pts/stockfish, pts/svt-vp9, pts/svt-hevc, pts/x264, pts/dav1d, pts/svt-av1, pts/avifenc, pts/asmfish, pts/compress-zstd, pts/appleseed, pts/luxcorerender, pts/v-ray, pts/cinebench, pts/embree and pts/oidn

Geometric Mean Of NVIDIA GPU Compute Tests

Result Composite - Windows vs. Linux Ryzen 5, Tiger Lake

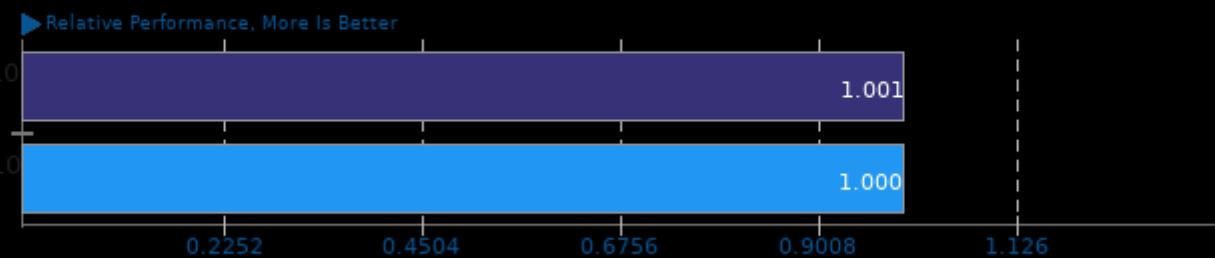


Geometric mean based upon tests: pts/luxcorerender, pts/lczero, pts/v-ray, pts/blender and pts/realsr-ncnn

Windows vs. Linux Ryzen 5, Tiger Lake

Geometric Mean Of Intel oneAPI Tests

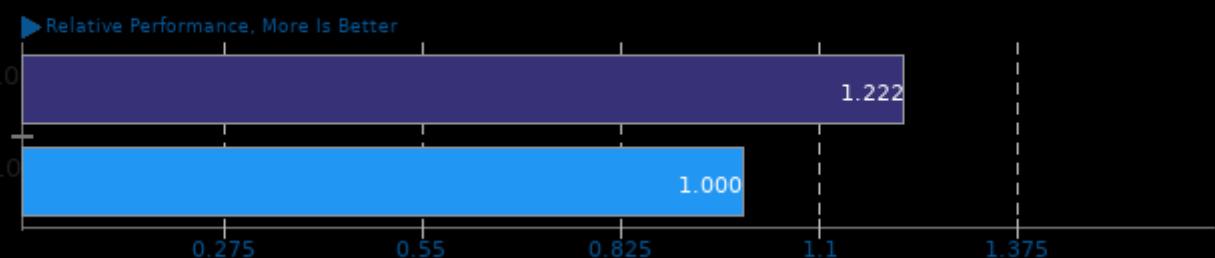
Result Composite - Windows vs. Linux Ryzen 5, Tiger Lake



Geometric mean based upon tests: pts/embree and pts/oidn

Geometric Mean Of Programmer / Developer System Benchmarks Tests

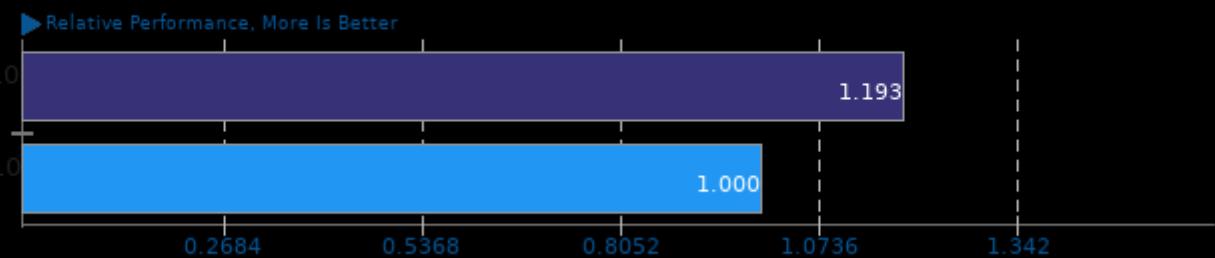
Result Composite - Windows vs. Linux Ryzen 5, Tiger Lake



Geometric mean based upon tests: pts/compress-zstd and pts/pybench

Geometric Mean Of Python Tests

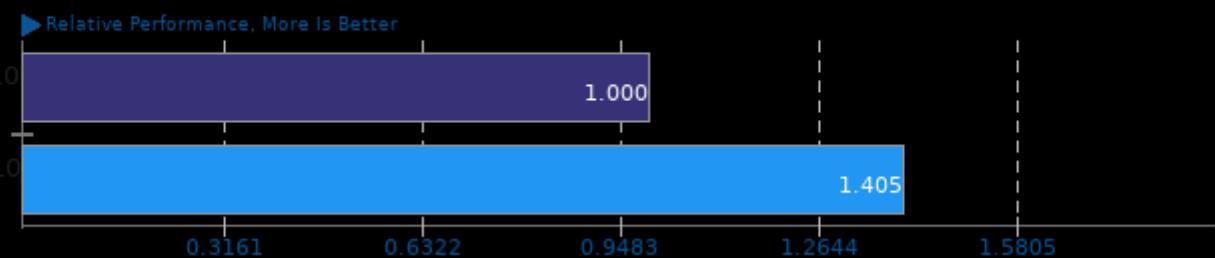
Result Composite - Windows vs. Linux Ryzen 5, Tiger Lake



Geometric mean based upon tests: pts/pybench and system/selenium

Geometric Mean Of Renderers Tests

Result Composite - Windows vs. Linux Ryzen 5, Tiger Lake

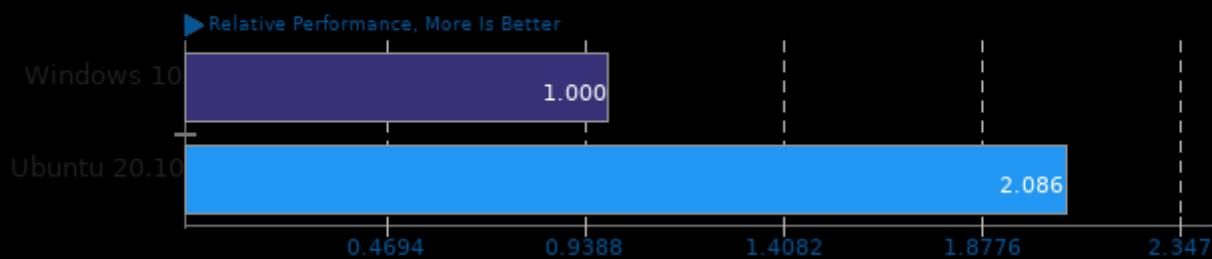


Geometric mean based upon tests: pts/c-ray, pts/blender, pts/appleseed, pts/luxcorerender, pts/v-ray and pts/cinebench

Windows vs. Linux Ryzen 5, Tiger Lake

Geometric Mean Of Scientific Computing Tests

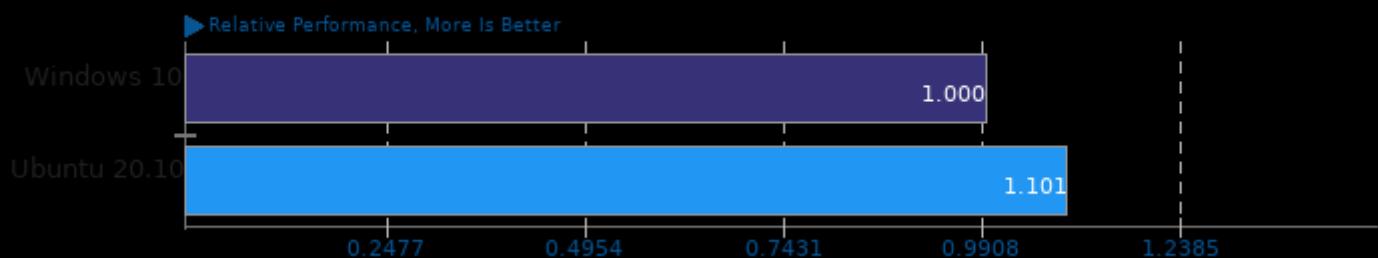
Result Composite - Windows vs. Linux Ryzen 5, Tiger Lake



Geometric mean based upon tests: pts/ffte and pts/mrbayes

Geometric Mean Of Server CPU Tests

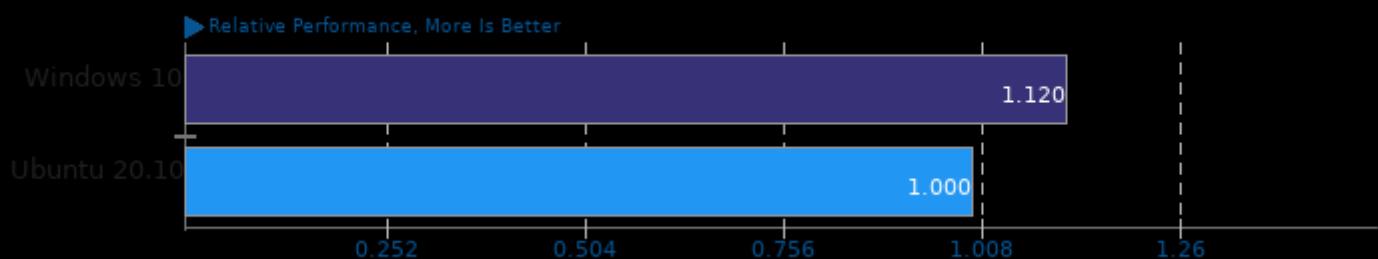
Result Composite - Windows vs. Linux Ryzen 5, Tiger Lake



Geometric mean based upon tests: pts/dacapobench, pts/svt-av1, pts/svt-hevc, pts/svt-vp9, pts/x264, pts/dav1d, pts/stockfish, pts/asmfish, pts/c-ray, pts/compress-zstd, pts/tjbench, pts/blender, pts/appleseed and pts/pybench

Geometric Mean Of Single-Threaded Tests

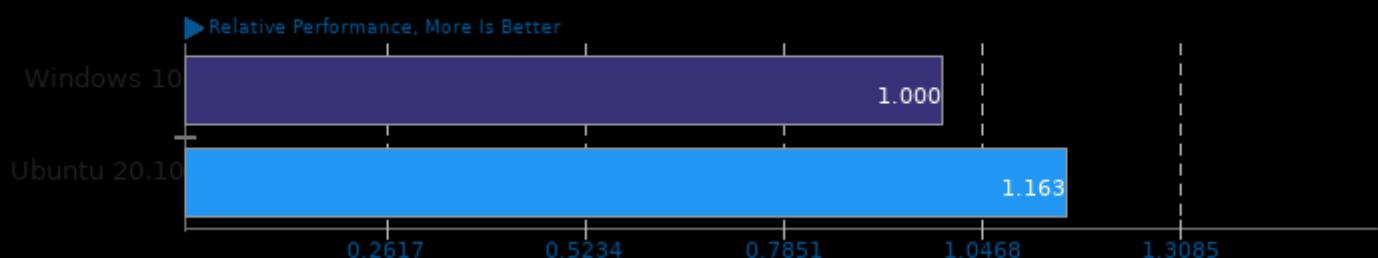
Result Composite - Windows vs. Linux Ryzen 5, Tiger Lake



Geometric mean based upon tests: pts/blake2, pts/encode-flac, pts/encode-mp3, pts/minion, pts/tjbench and pts/pybench

Geometric Mean Of Video Encoding Tests

Result Composite - Windows vs. Linux Ryzen 5, Tiger Lake



Geometric mean based upon tests: pts/svt-vp9, pts/svt-hevc, pts/x264, pts/dav1d, pts/svt-av1 and pts/avifenc

This file was automatically generated via the Phoronix Test Suite benchmarking software on Thursday, 28 March 2024 11:55.