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Acer C720 Chromebook Haswell Ubuntu

Acer C720 Peppy Chromebook running Ubuntu 13.10 with Intel Haswell Celeron processor. Benchmarks by Michael Larabel for a future article on Phoronix.com.

Automated Executive Summary

ThinkPad W510 - Core i7 720QM had the most wins, coming in first place for 43% of the tests.

Based on the geometric mean of all complete results, the fastest (EliteBook 161C - Core i5 2520M) was 3.309x the speed of the slowest (ThinkPad T60 - Core Duo T2400). ThinkPad W510 - Core i7 720QM was 0.949x the speed of EliteBook 161C - Core i5 2520M, ASUS S56C - Core i3 3217U was 0.8x the speed of ThinkPad W510 - Core i7 720QM, Acer C720P Chromebook - Celeron 2955U - Fedora 20 was 0.835x the speed of ASUS S56C - Core i3 3217U, Acer C720 Chromebook - Celeron 2955U was 0.979x the speed of Acer C720P Chromebook - Celeron 2955U - Fedora 20, ThinkPad T61 - Core 2 Duo T9300 was 0.856x the speed of Acer C720 Chromebook - Celeron 2955U, MacBook Pro - Core i5 520M was 0.924x the speed of ThinkPad T61 - Core 2 Duo T9300, ThinkPad T60 - Core Duo T2400 was 0.615x the speed of MacBook Pro - Core i5 520M.

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

OpenArena (Resolution: 1024 x 768 - Total Frame Time) at 29.667x
GpuTest (Test: Furmark - Resolution: 1024 x 768) at 5.986x
Xonotic (Resolution: 1024 x 768 - Effects Quality: High) at 5.374x

x264 (H.264 Video Encoding) at 4.51x
Xonotic (Resolution: 1024 x 768 - Effects Quality: Ultra) at 4.349x
OpenArena (Resolution: 1024 x 768) at 4.292x
HPC Challenge (Test / Class: EP-DGEMM) at 3.95x
Opus Codec Encoding (WAV, Opus Encode, Opus Decode) at 3.898x
VP8 libvpx Encoding (vpxenc) at 3.839x
C-Ray (Total Time) at 3.574x.

Test Systems:

ThinkPad W510 - Core i7 720QM

Processor: Intel Core i7 720Q @ 1.60GHz (8 Cores), Motherboard: LENOVO 4318CTO, Chipset: Intel Core DMI, Memory: 4096MB, Disk: 160GB FUJITSU MHZ2160B, Graphics: NVIDIA Quadro FX 880M 1024MB (550/790MHz), Audio: Conexant CX20585, Network: Intel 82577LM Gigabit Connection + Intel Centrino Ultimate-N 6300

OS: Ubuntu 13.10, Kernel: 3.11.0-12-generic (x86_64), Desktop: Unity 7.1.2, Display Server: X Server 1.14.3, Display Driver: NVIDIA 304.88, OpenGL: 3.3.0 NVIDIA, Compiler: GCC 4.8, File-System: ext4, Screen Resolution: 1600x900

Compiler Notes: --build=x86_64-linux-gnu --disable-browser-plugin --disable-werror --enable-checking=release --enable-clocale=gnu --enable-gnu-unique-object --enable-gtk-cairo --enable-java-awt=gtk --enable-java-home --enable-languages=c,c++,java,go,d,fortran,objc,obj-c++ --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-nls --enable-objc-gc --enable-plugin --enable-shared --enable-threads=posix --host=x86_64-linux-gnu --target=x86_64-linux-gnu --with-abi=m64 --with-arch-32=i686 --with-arch-directory=amd64 --with-ecj-jar=/usr/share/java/eclipse-ecj.jar --with-java-home=/usr/lib/jvm/java-1.5.0-gcj-4.8-amd64/jre --with-jvm-jar-dir=/usr/lib/jvm-exports/java-1.5.0-gcj-4.8-amd64 --with-jvm-root-dir=/usr/lib/jvm/java-1.5.0-gcj-4.8-amd64 --with-multilib-list=m32,m64,mx32 --with-tune=generic -v
Disk Notes: DEADLINE / data=ordered,errors=remount-ro,relatime,rw
Processor Notes: Scaling Governor: acpi-cpufreq ondemand
System Notes: Disk Scheduler: DEADLINE. Python 2.7.5+.

ThinkPad T61 - Core 2 Duo T9300

Processor: Intel Core 2 Duo T9300 @ 2.50GHz (2 Cores), Motherboard: LENOVO 6459CTO, Chipset: Intel Mobile PM965/GM965/GL960 + ICH8M-E, Memory: 4096MB, Disk: 100GB Hitachi HTS72201, Graphics: NVIDIA Quadro NVS 140M 512MB (400/600MHz), Audio: Analog Devices AD1984, Network: Intel 82566MM Gigabit Connection + Intel PRO/Wireless

OS: Ubuntu 13.10, Kernel: 3.11.0-12-generic (x86_64), Desktop: Unity 7.1.2, Display Server: X Server 1.14.3, Display Driver: NVIDIA 304.88, OpenGL: 3.3.0 NVIDIA, Compiler: GCC 4.8, File-System: ext4, Screen Resolution: 1680x1050

Compiler Notes: --build=x86_64-linux-gnu --disable-browser-plugin --disable-werror --enable-checking=release --enable-clocale=gnu --enable-gnu-unique-object --enable-gtk-cairo --enable-java-awt=gtk --enable-java-home --enable-languages=c,c++,java,go,d,fortran,objc,obj-c++ --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-nls --enable-objc-gc --enable-plugin --enable-shared --enable-threads=posix --host=x86_64-linux-gnu --target=x86_64-linux-gnu --with-abi=m64 --with-arch-32=i686 --with-arch-directory=amd64 --with-ecj-jar=/usr/share/java/eclipse-ecj.jar --with-java-home=/usr/lib/jvm/java-1.5.0-gcj-4.8-amd64/jre --with-jvm-jar-dir=/usr/lib/jvm-exports/java-1.5.0-gcj-4.8-amd64 --with-jvm-root-dir=/usr/lib/jvm/java-1.5.0-gcj-4.8-amd64 --with-multilib-list=m32,m64,mx32 --with-tune=generic -v
Disk Notes: DEADLINE / data=ordered,errors=remount-ro,relatime,rw
Processor Notes: Scaling Governor: acpi-cpufreq ondemand
System Notes: Disk Scheduler: DEADLINE. Python 2.7.5+.

ThinkPad T60 - Core Duo T2400

Processor: Intel T2400 @ 1.83GHz (2 Cores), Motherboard: LENOVO 2613EJU, Chipset: Intel Mobile 945GM/PM/GMS + ICH7-M, Memory: 1024MB, Disk: 80GB Hitachi HTS541080G9SA00, Graphics: AMD Mobility Radeon X1400 128MB,

Audio: Analog Devices AD1981, Network: Intel 82573L Gigabit + Intel PRO/Wireless

OS: Ubuntu 13.10, Kernel: 3.11.0-12-generic (i686), Desktop: Unity 7.1.2, Display Server: X Server 1.14.3, Display Driver: radeon 7.2.0, OpenGL: 2.1 Mesa 9.2.1 Gallium 0.4, Compiler: GCC 4.8, File-System: ext4, Screen Resolution: 1400x1050

Compiler Notes: --build=i686-linux-gnu --disable-browser-plugin --disable-werror --enable-checking=release --enable-clocale=gnu --enable-gnu-unique-object --enable-gtk-cairo --enable-java-awt=gtk --enable-java-home --enable-languages=c,c++,java,go,d,fortran,objc,obj-c++ --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-nls --enable-objc-gc --enable-plugin --enable-shared --enable-targets=all --enable-threads=posix --host=i686-linux-gnu --target=i686-linux-gnu --with-arch-32=i686 --with-arch-directory=i386 --with-ecj-jar=/usr/share/java/eclipse-ecj.jar --with-java-home=/usr/lib/jvm/java-1.5.0-gcj-4.8-i386/jre --with-jvm-jar-dir=/usr/lib/jvm-exports/java-1.5.0-gcj-4.8-i386 --with-jvm-root-dir=/usr/lib/jvm/java-1.5.0-gcj-4.8-i386 --with-multilib-list=m32,m64,mx32 --with-tune=generic -v
Disk Notes: DEADLINE / data=ordered,errors=remount-ro,relatime,rw
Processor Notes: Scaling Governor: acpi-cpufreq ondemand
Graphics Notes: EXA
System Notes: Disk Scheduler: DEADLINE. Python 2.7.5+.

EliteBook 161C - Core i5 2520M

Processor: Intel Core i5-2520M @ 2.50GHz (4 Cores), Motherboard: HP 161C, Chipset: Intel 2nd Generation Core Family DRAM, Memory: 4096MB, Disk: 160GB INTEL SSDSA2M160, Graphics: Intel HD 3000 (1300MHz), Audio: IDT 92HD81B1X5, Network: Intel 82579LM Gigabit Connection + Intel Centrino Advanced-N 6205

OS: Ubuntu 13.10, Kernel: 3.11.0-12-generic (x86_64), Desktop: Unity 7.1.2, Display Server: X Server 1.14.3, Display Driver: intel 2.99.904, OpenGL: 3.1 Mesa 9.2.1, Compiler: GCC 4.8, File-System: ext4, Screen Resolution: 1600x900

Compiler Notes: --build=x86_64-linux-gnu --disable-browser-plugin --disable-werror --enable-checking=release --enable-clocale=gnu --enable-gnu-unique-object --enable-gtk-cairo --enable-java-awt=gtk --enable-java-home --enable-languages=c,c++,java,go,d,fortran,objc,obj-c++ --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-nls --enable-objc-gc --enable-plugin --enable-shared --enable-threads=posix --host=x86_64-linux-gnu --target=x86_64-linux-gnu --with-abi=m64 --with-arch-32=i686 --with-arch-directory=amd64 --with-ecj-jar=/usr/share/java/eclipse-ecj.jar --with-java-home=/usr/lib/jvm/java-1.5.0-gcj-4.8-amd64/jre --with-jvm-jar-dir=/usr/lib/jvm-exports/java-1.5.0-gcj-4.8-amd64 --with-jvm-root-dir=/usr/lib/jvm/java-1.5.0-gcj-4.8-amd64 --with-multilib-list=m32,m64,mx32 --with-tune=generic -v
Disk Notes: DEADLINE / data=ordered,errors=remount-ro,relatime,rw
Processor Notes: Scaling Governor: acpi-cpufreq ondemand
Graphics Notes: SNA
System Notes: Disk Scheduler: DEADLINE. Python 2.7.5+.

ASUS S56C - Core i3 3217U

Processor: Intel Core i3-3217U @ 1.80GHz (4 Cores), Motherboard: ASUS K56CA v1.0, Chipset: Intel 3rd Gen Core DRAM, Memory: 4096MB, Disk: 500GB Hitachi HTS54505 + 24GB SanDisk SSD i100, Graphics: Intel HD 4000 (1050MHz), Audio: Realtek ALC270, Network: Realtek RTL8111/8168/8411 + Qualcomm Atheros AR9485 Wireless

OS: Ubuntu 13.10, Kernel: 3.11.0-12-generic (x86_64), Desktop: Unity 7.1.2, Display Server: X Server 1.14.3, Display Driver: intel 2.99.904, OpenGL: 3.1 Mesa 9.2.1, Compiler: GCC 4.8, File-System: ext4, Screen Resolution: 1366x768

Compiler Notes: --build=x86_64-linux-gnu --disable-browser-plugin --disable-werror --enable-checking=release --enable-clocale=gnu --enable-gnu-unique-object --enable-gtk-cairo --enable-java-awt=gtk --enable-java-home --enable-languages=c,c++,java,go,d,fortran,objc,obj-c++ --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-nls --enable-objc-gc --enable-plugin --enable-shared --enable-threads=posix --host=x86_64-linux-gnu --target=x86_64-linux-gnu --with-abi=m64 --with-arch-32=i686 --with-arch-directory=amd64 --with-ecj-jar=/usr/share/java/eclipse-ecj.jar --with-java-home=/usr/lib/jvm/java-1.5.0-gcj-4.8-amd64/jre --with-jvm-jar-dir=/usr/lib/jvm-exports/java-1.5.0-gcj-4.8-amd64 --with-jvm-root-dir=/usr/lib/jvm/java-1.5.0-gcj-4.8-amd64 --with-multilib-list=m32,m64,mx32 --with-tune=generic -v
Disk Notes: DEADLINE / data=ordered,errors=remount-ro,relatime,rw
Processor Notes: Scaling Governor: acpi-cpufreq ondemand
Graphics Notes: SNA
System Notes: Disk Scheduler: DEADLINE. Python 2.7.5+.

MacBook Pro - Core i5 520M

Processor: Intel Core i5 520M @ 2.40GHz (4 Cores), Motherboard: Apple Mac-F22586C8, Chipset: Intel Core DRAM, Memory: 4096MB, Disk: 120GB OCZ AGILITY2, Graphics: Intel Core IGP 256MB, Audio: Cirrus Logic CS4206, Monitor: Color LCD, Network: Broadcom NetXtreme BCM5764M Gigabit PCIe + Broadcom BCM43224 802.11a/b/g/n

OS: Ubuntu 13.10, Kernel: 3.11.0-14-generic (x86_64), Desktop: Unity 7.1.2, Display Server: X Server 1.14.3, Display Driver: intel 2.99.904, OpenGL: 3.1 Mesa 9.2.1 Gallium 0.4, Compiler: GCC 4.8, File-System: ext4, Screen Resolution: 1440x900

Compiler Notes: --build=x86_64-linux-gnu --disable-browser-plugin --disable-werror --enable-checking=release --enable-clocale=gnu --enable-gnu-unique-object --enable-gtk-cairo --enable-java-awt=gtk --enable-java-home --enable-languages=c,c++,java,go,d,fortran,objc,obj-c++ --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-nls --enable-objc-gc --enable-plugin --enable-shared --enable-threads=posix --host=x86_64-linux-gnu --target=x86_64-linux-gnu --with-abi=m64 --with-arch-32=i686 --with-arch-directory=amd64 --with-ecj-jar=/usr/share/java/eclipse-ecj.jar --with-java-home=/usr/lib/jvm/java-1.5.0-gcj-4.8-amd64/jre --with-jvm-jar-dir=/usr/lib/jvm-exports/java-1.5.0-gcj-4.8-amd64 --with-jvm-root-dir=/usr/lib/jvm/java-1.5.0-gcj-4.8-amd64 --with-multilib-list=m32,m64,mx32 --with-tune=generic -v
Disk Notes: DEADLINE / data=ordered,errors=remount-ro,relatime,rw
Processor Notes: Scaling Governor: acpi-cpufreq ondemand
Graphics Notes: EXA
System Notes: Disk Scheduler: DEADLINE. Python 2.7.5+.

Acer C720 Chromebook - Celeron 2955U

Processor: Intel Celeron 2955U @ 1.40GHz (2 Cores), Motherboard: Acer Peppy v1.0, Chipset: Intel Haswell-ULT DRAM, Memory: 2048MB, Disk: 16GB KINGSTON SNS4151, Graphics: Intel Haswell-ULT IGP (1000MHz), Audio: Intel Haswell HDMI, Network: Qualcomm Atheros AR9462 Wireless

OS: Ubuntu 13.10, Kernel: 3.11.0-12-generic (x86_64), Desktop: Unity 7.1.2, Display Server: X Server 1.14.3, Display Driver: intel 2.99.904, OpenGL: 3.1 Mesa 9.2.1, Compiler: GCC 4.8, File-System: ext4, Screen Resolution: 1366x768

Compiler Notes: --build=x86_64-linux-gnu --disable-browser-plugin --disable-werror --enable-checking=release --enable-clocale=gnu --enable-gnu-unique-object --enable-gtk-cairo --enable-java-awt=gtk --enable-java-home --enable-languages=c,c++,java,go,d,fortran,objc,obj-c++ --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-nls --enable-objc-gc --enable-plugin --enable-shared --enable-threads=posix --host=x86_64-linux-gnu --target=x86_64-linux-gnu --with-abi=m64 --with-arch-32=i686 --with-arch-directory=amd64 --with-ecj-jar=/usr/share/java/eclipse-ecj.jar --with-java-home=/usr/lib/jvm/java-1.5.0-gcj-4.8-amd64/jre --with-jvm-jar-dir=/usr/lib/jvm-exports/java-1.5.0-gcj-4.8-amd64 --with-jvm-root-dir=/usr/lib/jvm/java-1.5.0-gcj-4.8-amd64 --with-multilib-list=m32,m64,mx32 --with-tune=generic -v
Processor Notes: Scaling Governor: acpi-cpufreq ondemand
Graphics Notes: SNA

Acer C720P Chromebook - Celeron 2955U - Fedora 20

Processor: Intel Celeron 2955U @ 1.40GHz (2 Cores), Motherboard: Acer Peppy v1.0, Chipset: Intel Haswell-ULT DRAM, Memory: 2048MB, Disk: 32GB KINGSTON SNS4151, Graphics: Intel Haswell-ULT IGP (1000MHz), Audio: Intel Haswell HDMI, Network: Qualcomm Atheros AR9462 Wireless

OS: Fedora 20, Kernel: 3.12.10-300.fc20.x86_64 (x86_64), Desktop: GNOME Shell 3.10.3, Display Server: X Server 1.14.4, Display Driver: intel 2.21.15, OpenGL: 3.1 Mesa 9.2.5, Compiler: GCC 4.8.2 20131212, File-System: ext4, Screen Resolution: 1366x768

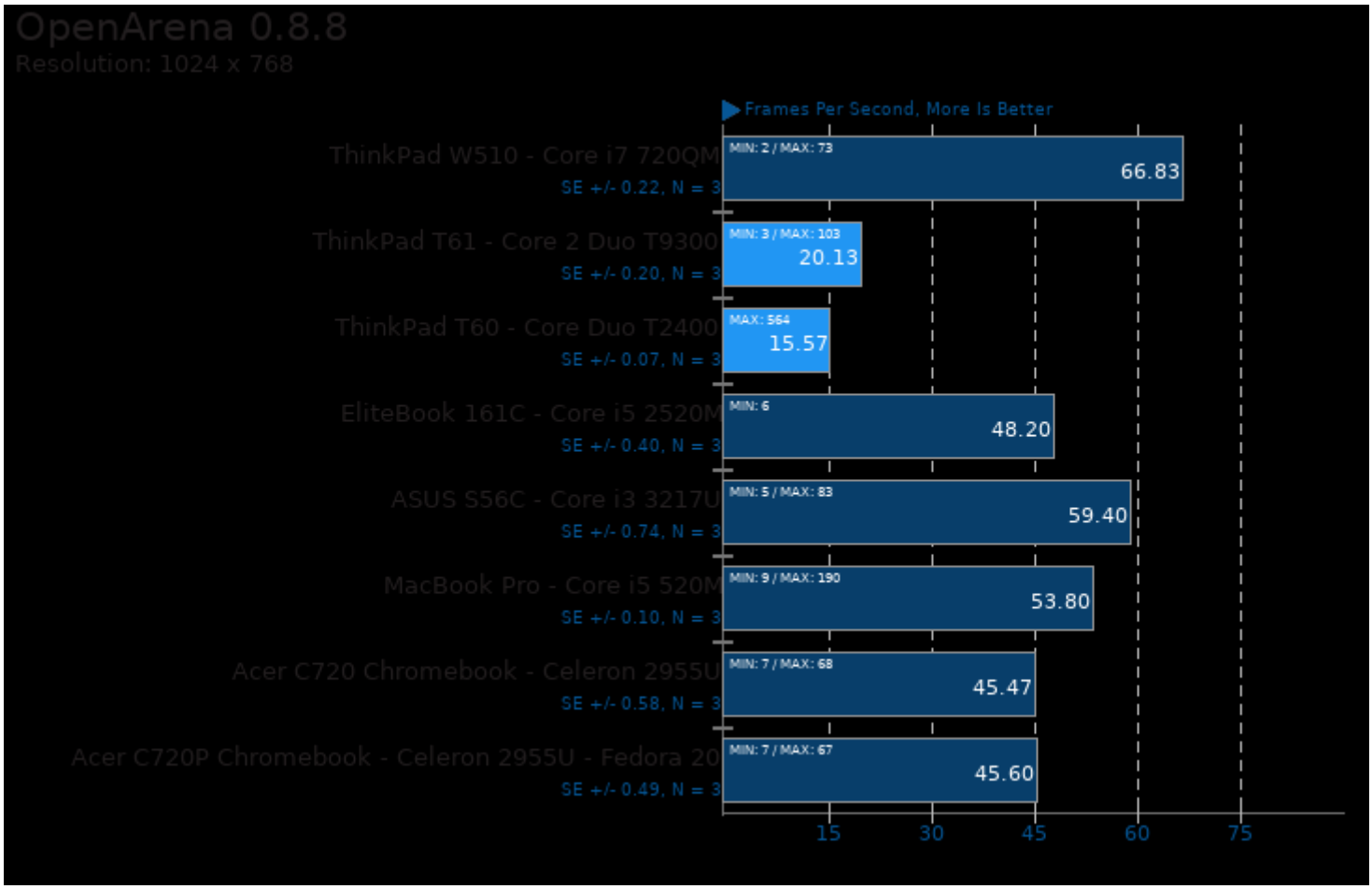
Kernel Notes: tpm_tis.force=1 tpm_tis.interrupts=0
Processor Notes: Scaling Governor: intel_pstate powersave
Graphics Notes: UXA
System Notes: SELinux: Enabled.

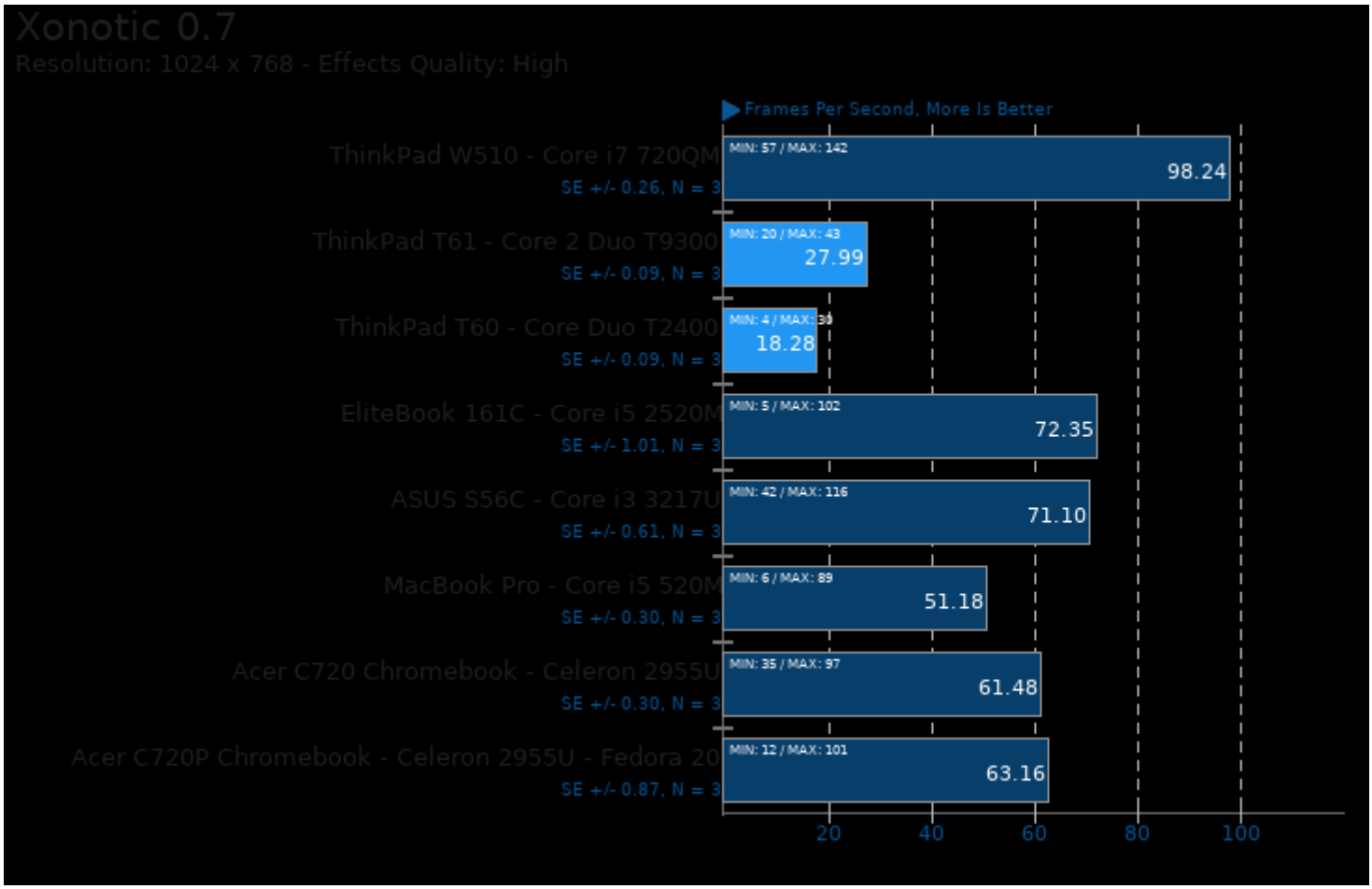
Acer C720 Chromebook Haswell Ubuntu

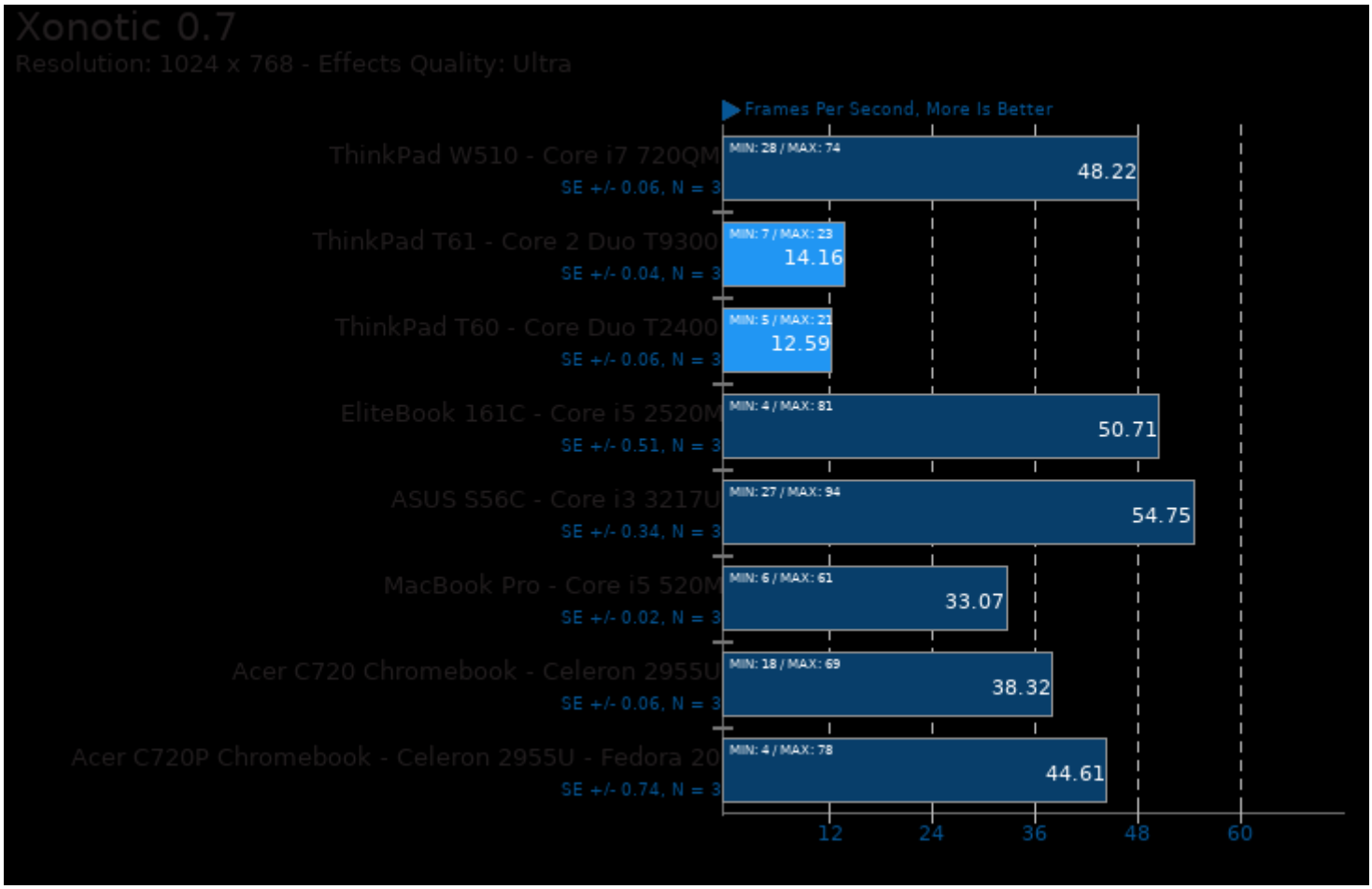
	ThinkPad W510 - Core i7 720QM	ThinkPad T61 - Core 2 Duo T9300	ThinkPad T60 - Core Duo T2400	EliteBook 161C - Core i5 2520M	ASUS S56C - Core i3 3217U	MacBook Pro - Core i5 520M	Acer C720 Chromebook - Celeron 2955U	Acer C720P Chromebook - Celeron 2955U -
OpenArena - 1024 x 768 (FPS)	66.83	20.13	15.57	48.20	59.40	53.80	45.47	45.60
Normalized	100%	30.12%	23.3%	72.12%	88.88%	80.5%	68.04%	68.23%
Standard Deviation	0.6%	1.7%	0.7%	1.5%	2.1%	0.3%	2.2%	1.9%
Xonotic - 1024 x 768 - High (FPS)	98.24	27.99	18.28	72.35	71.10	51.18	61.48	63.16
Normalized	100%	28.49%	18.61%	73.65%	72.37%	52.1%	62.58%	64.29%
Standard Deviation	0.5%	0.5%	0.9%	2.4%	1.5%	1%	0.9%	2.4%
Xonotic - 1024 x 768 - Ultra (FPS)	48.22	14.16	12.59	50.71	54.75	33.07	38.32	44.61
Normalized	88.07%	25.86%	23%	92.62%	100%	60.4%	69.99%	81.48%
Standard Deviation	0.2%	0.4%	0.9%	1.7%	1.1%	0.1%	0.3%	2.9%
VP8 libvpx Encoding - vpxenc (FPS)	10.10	10.02	4.34	16.66	10.51	5.88	8.59	8.46
Normalized	60.62%	60.14%	26.05%	100%	63.09%	35.29%	51.56%	50.78%
Standard Deviation	0.2%	2.1%	0.5%	0.3%	0.8%	0.8%	0.7%	1.7%
x264 - H.2.V.E (FPS)	61.21	31.91	13.60	61.34	40.96	23.35	29.01	
Normalized	99.79%	52.02%	22.17%	100%	66.78%	38.07%	47.29%	
Standard Deviation	2.2%	1%	0.5%	0.7%	1.1%	0.3%	1.3%	
HPC Challenge - G-Ptrans (GB/s)	1.07329	0.63220		0.37017	0.42234	0.30889	0.84095	
Normalized	100%	58.9%		34.49%	39.35%	28.78%	78.35%	
Standard Deviation	1%	5.1%		0.6%	1.4%	0.5%	0.2%	
HPC Challenge - G-HPL (GFLOPS)	16.47390	10.49070		16.80297	11.16660	6.45871	9.64205	
Normalized	98.04%	62.43%		100%	66.46%	38.44%	57.38%	
Standard Deviation	0.1%	4.5%		0.1%	0.3%	0.2%	0.1%	
HPC Challenge - G-Ffte (GFLOPS)	1.97418	0.97367		1.41069	1.43666	1.02314	1.40173	
Normalized	100%	49.32%		71.46%	72.77%	51.83%	71%	
Standard Deviation	0.5%	3.7%		0.9%	0.6%	0.9%	0.2%	
HPC Challenge - EP-DGEMM (GFLOPS)	2.31470	6.80617		4.57002	2.98475	1.72322	5.14450	
Normalized	34.01%	100%		67.15%	43.85%	25.32%	75.59%	
Standard Deviation	0.4%	17.7%		0.1%	0.3%	0%	3.8%	
HPC Challenge - G-Rand Access (GUP/s)	0.02122	0.00925		0.02047	0.01553	0.00825	0.01017	
Normalized	100%	43.59%		96.47%	73.19%	38.88%	47.93%	
Standard Deviation	3.4%	6%		0.1%	1.6%	7.7%	0.1%	
HPC Challenge - M.P.P.B (MB/s)	4538	6106		4624	4796	3006	3201	
Normalized	74.33%	100%		75.73%	78.55%	49.23%	52.42%	
Standard Deviation	0.3%	4.6%		0.6%	2.3%	0.8%	0.3%	
Himeno Benchmark - P.P.S (MFLOPS)	1140	917.45	538.67	1314	779.80	501.19	651.97	652.34
Normalized	86.79%	69.84%	41.01%	100%	59.36%	38.15%	49.63%	49.66%
Standard Deviation	0.1%	0.7%	0.1%	0.1%	0.2%	0%	0.2%	1.2%

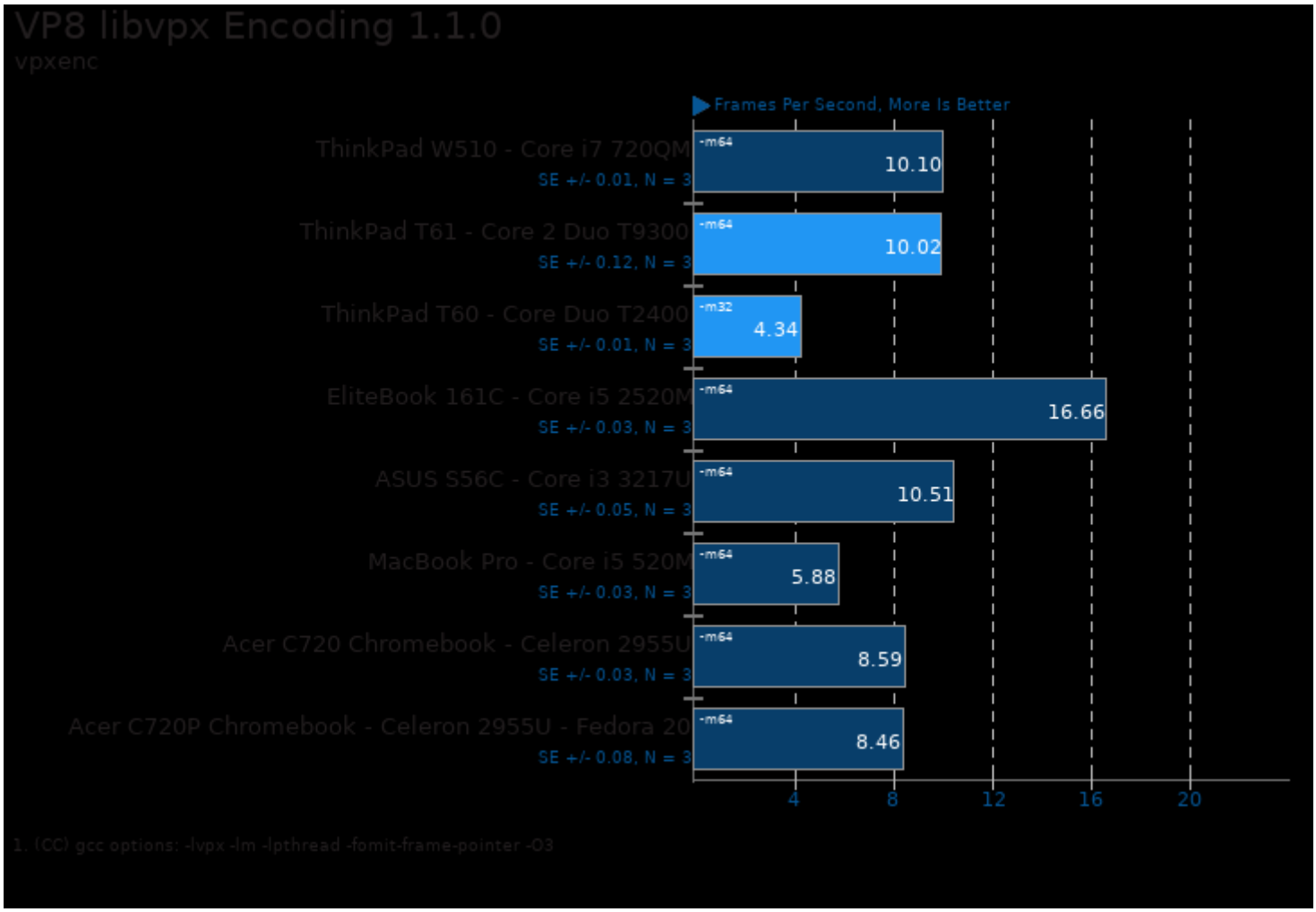
Acer C720 Chromebook Haswell Ubuntu

GpuTest - Furmark - 1024 x 768 (Points)	**443**	**74**		208	406	180	253	253
Normalized	100%	16.7%		46.95%	91.65%	40.63%	57.11%	57.11%
Standard Deviation	0%	3.1%		0%	3.5%	0%	1%	0.8%
C-Ray - Total Time	**61.49**	94.22	**219.75**	74.43	114.51	164.38	126.87	128.18
Normalized	100%	65.26%	27.98%	82.61%	53.7%	37.41%	48.47%	47.97%
Standard Deviation	0%	1.3%	0.1%	0%	0.1%	0.1%	0%	0.1%
LAME MP3 Encoding - WAV To MP3 (sec)	22.90	25.11	46.04	**17.04**	28.97	**53.24**	34.47	33.94
Normalized	74.41%	67.86%	37.01%	100%	58.82%	32.01%	49.43%	50.21%
Standard Deviation	0.3%	0.8%	0.4%	0.1%	0.1%	0.1%	0.5%	0.2%
Opus Codec Encoding - W.O.E.O.D (sec)	14.87	18.32	**44.91**	**11.52**	19.53	34.13	23.37	23.48
Normalized	77.47%	62.88%	25.65%	100%	58.99%	33.75%	49.29%	49.06%
Standard Deviation	0.3%	0.1%	0.3%	0.1%	0.3%	0.2%	0%	0.1%


OpenArena 0.8.8
Resolution: 1024 x 768
Frames Per Second, More Is Better
ThinkPad W510 - Core i7 720QM
SE +/- 0.22, N = 3
MIN: 2 / MAX: 73
66.83
ThinkPad T61 - Core 2 Duo T9300
SE +/- 0.20, N = 3
MIN: 3 / MAX: 103
20.13
ThinkPad T60 - Core Duo T2400
SE +/- 0.07, N = 3
MAX: 564
15.57
EliteBook 161C - Core i5 2520M
SE +/- 0.40, N = 3
MIN: 6
48.20
ASUS S56C - Core i3 3217U
SE +/- 0.74, N = 3
MIN: 5 / MAX: 83
59.40
MacBook Pro - Core i5 520M
SE +/- 0.10, N = 3
MIN: 9 / MAX: 190
53.80
Acer C720 Chromebook - Celeron 2955U
SE +/- 0.58, N = 3
MIN: 7 / MAX: 68
45.47
Acer C720P Chromebook - Celeron 2955U - Fedora 20
SE +/- 0.49, N = 3
MIN: 7 / MAX: 67
45.60
15
30
45
60
75

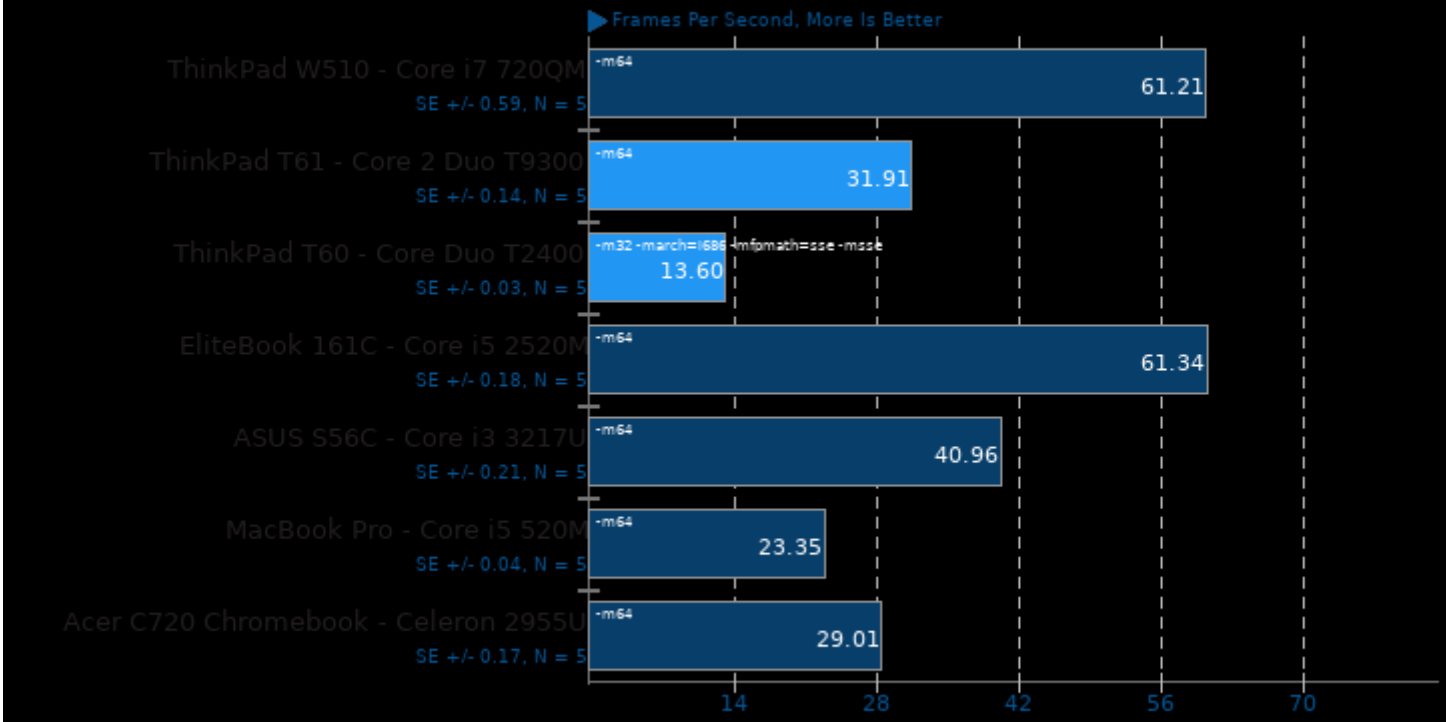

Xonotic 0.7
Resolution: 1024 x 768 - Effects Quality: High
Frames Per Second, More Is Better
ThinkPad W510 - Core i7 720QM
SE +/- 0.26, N = 3
MIN: 57 / MAX: 142
98.24
ThinkPad T61 - Core 2 Duo T9300
SE +/- 0.09, N = 3
MIN: 20 / MAX: 43
27.99
ThinkPad T60 - Core Duo T2400
SE +/- 0.09, N = 3
MIN: 4 / MAX: 30
18.28
EliteBook 161C - Core i5 2520M
SE +/- 1.01, N = 3
MIN: 5 / MAX: 102
72.35
ASUS S56C - Core i3 3217U
SE +/- 0.61, N = 3
MIN: 42 / MAX: 116
71.10
MacBook Pro - Core i5 520M
SE +/- 0.30, N = 3
MIN: 6 / MAX: 89
51.18
Acer C720 Chromebook - Celeron 2955U
SE +/- 0.30, N = 3
MIN: 35 / MAX: 97
61.48
Acer C720P Chromebook - Celeron 2955U - Fedora 20
SE +/- 0.87, N = 3
MIN: 12 / MAX: 101
63.16
20
40
60
80
100


Xonotic 0.7
Resolution: 1024 x 768 - Effects Quality: Ultra
Frames Per Second, More Is Better
ThinkPad W510 - Core i7 720QM
SE +/- 0.06, N = 3
MIN: 28 / MAX: 74
48.22
ThinkPad T61 - Core 2 Duo T9300
SE +/- 0.04, N = 3
MIN: 7 / MAX: 23
14.16
ThinkPad T60 - Core Duo T2400
SE +/- 0.06, N = 3
MIN: 5 / MAX: 21
12.59
EliteBook 161C - Core i5 2520M
SE +/- 0.51, N = 3
MIN: 4 / MAX: 81
50.71
ASUS S56C - Core i3 3217U
SE +/- 0.34, N = 3
MIN: 27 / MAX: 94
54.75
MacBook Pro - Core i5 520M
SE +/- 0.02, N = 3
MIN: 6 / MAX: 61
33.07
Acer C720 Chromebook - Celeron 2955U
SE +/- 0.06, N = 3
MIN: 18 / MAX: 69
38.32
Acer C720P Chromebook - Celeron 2955U - Fedora 20
SE +/- 0.74, N = 3
MIN: 4 / MAX: 78
44.61
12
24
36
48
60


VP8 libvpx Encoding 1.1.0
vpxenc
Frames Per Second, More Is Better
ThinkPad W510 - Core i7 720QM
SE +/- 0.01, N = 3
-m64
10.10
ThinkPad T61 - Core 2 Duo T9300
SE +/- 0.12, N = 3
-m64
10.02
ThinkPad T60 - Core Duo T2400
SE +/- 0.01, N = 3
-m32
4.34
EliteBook 161C - Core i5 2520M
SE +/- 0.03, N = 3
-m64
16.66
ASUS S56C - Core i3 3217U
SE +/- 0.05, N = 3
-m64
10.51
MacBook Pro - Core i5 520M
SE +/- 0.03, N = 3
-m64
5.88
Acer C720 Chromebook - Celeron 2955U
SE +/- 0.03, N = 3
-m64
8.59
Acer C720P Chromebook - Celeron 2955U - Fedora 20
SE +/- 0.08, N = 3
-m64
8.46
4
8
12
16
20
1. (CC) gcc options: -lvpx -lm -lpthread -fomit-frame-pointer -O3

x264 2013-06-08

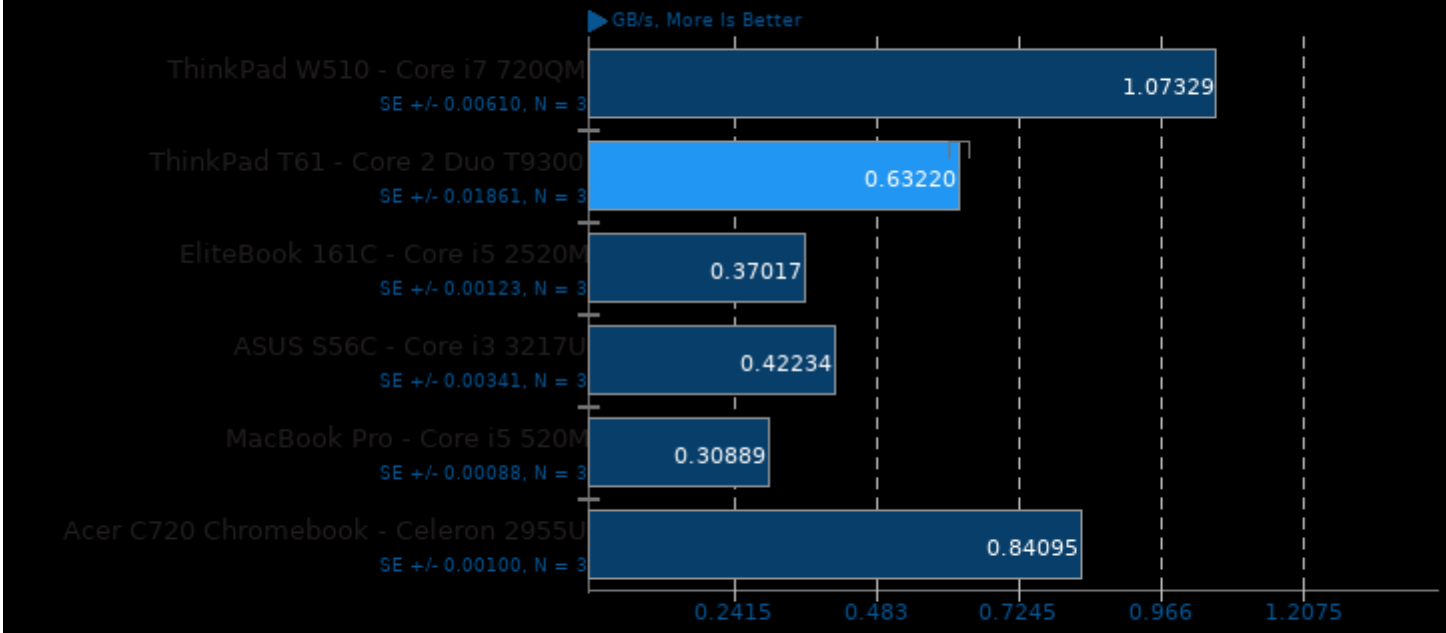
H.264 Video Encoding



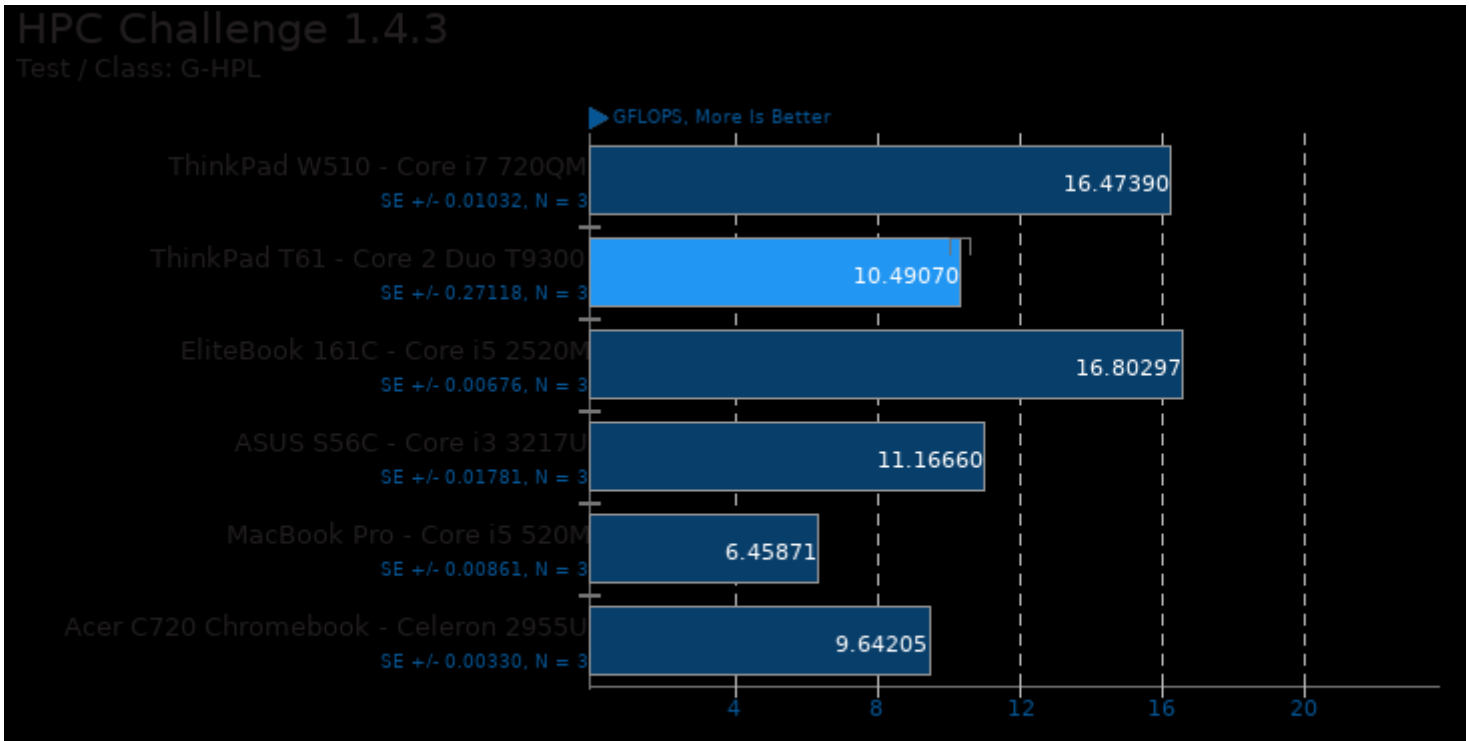
1. (CC) gcc options: -ldl -lm -lpthread -O3 -ffast-math -std=gnu99 -fomit-frame-pointer -fno-tree-vectorize

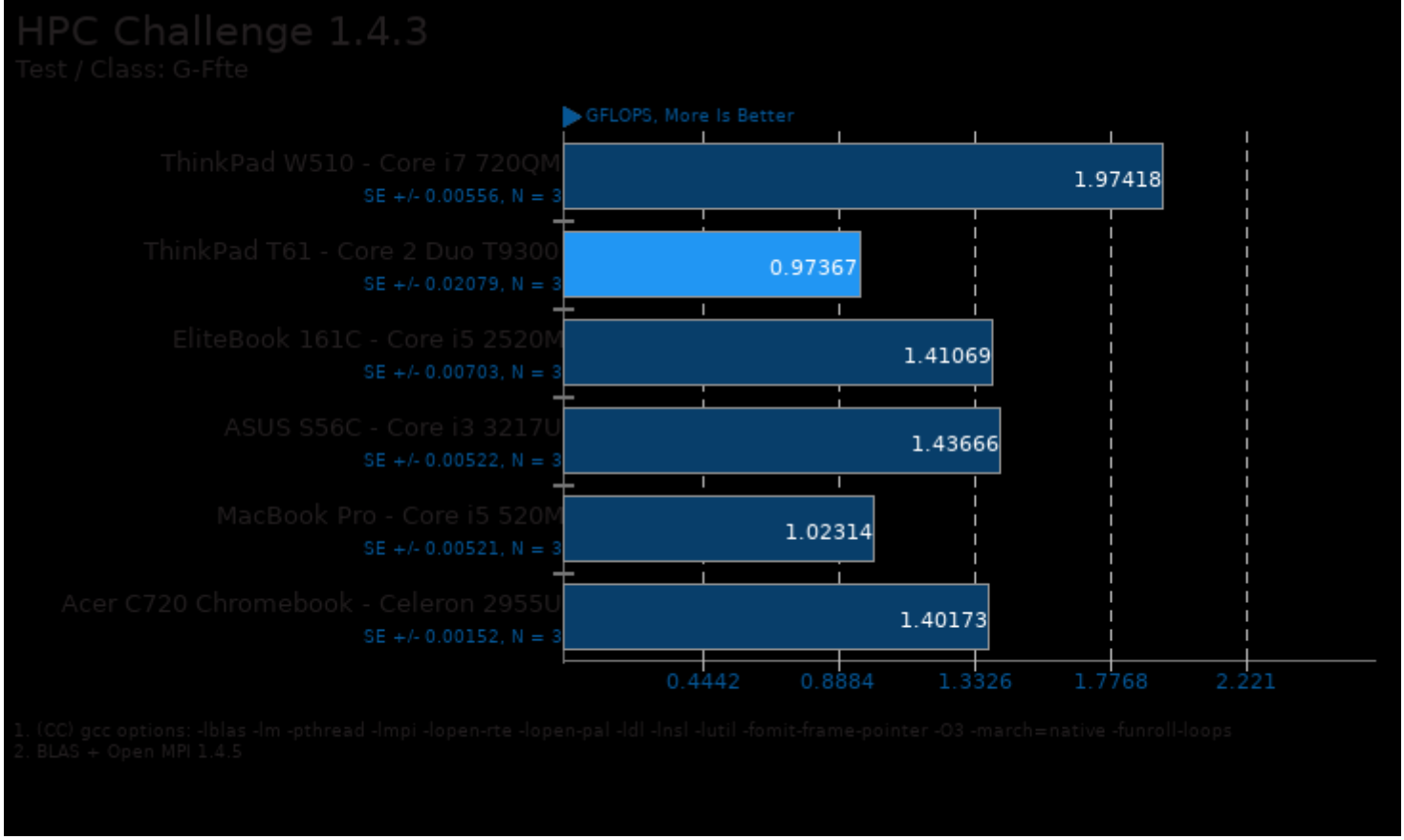
HPC Challenge 1.4.3

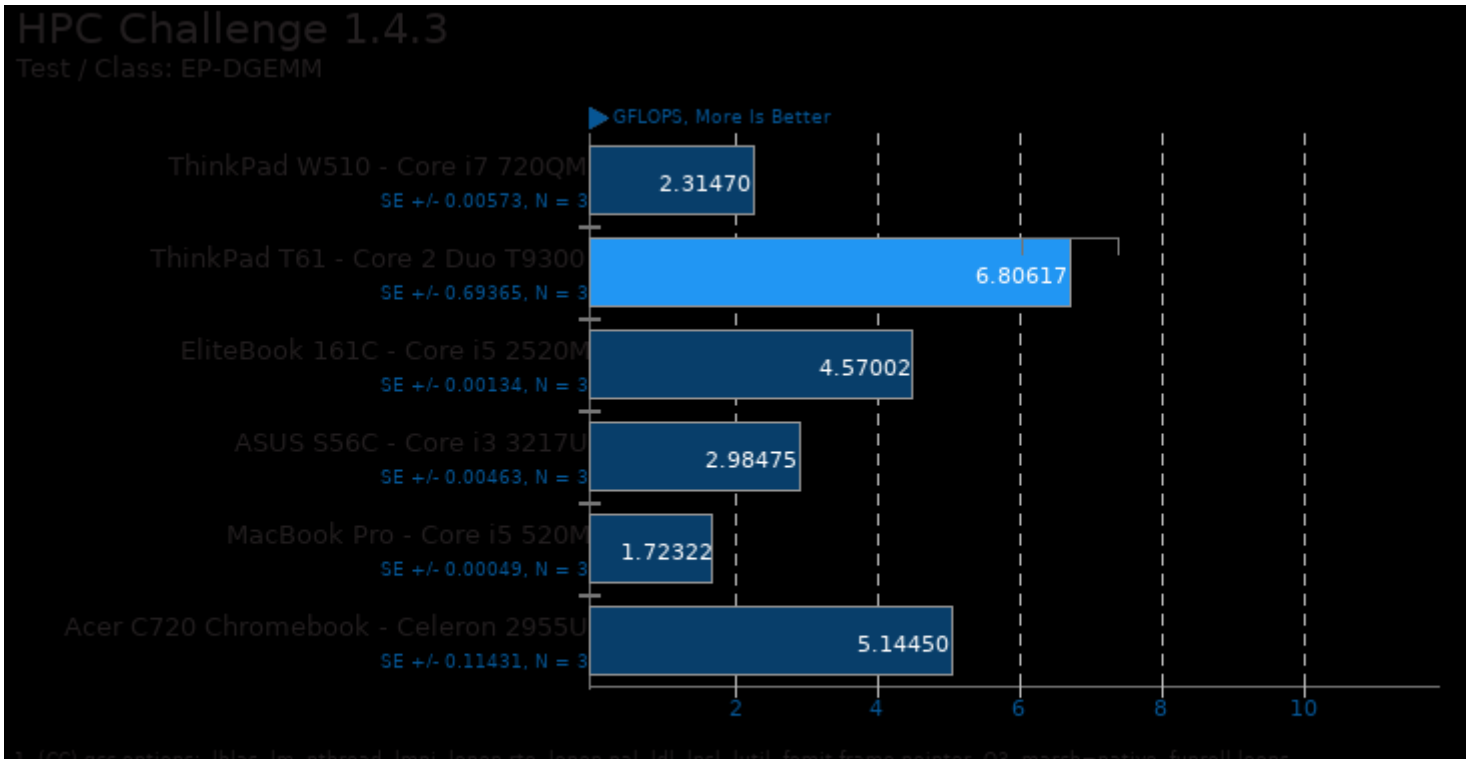
Test / Class: G-Ptrans

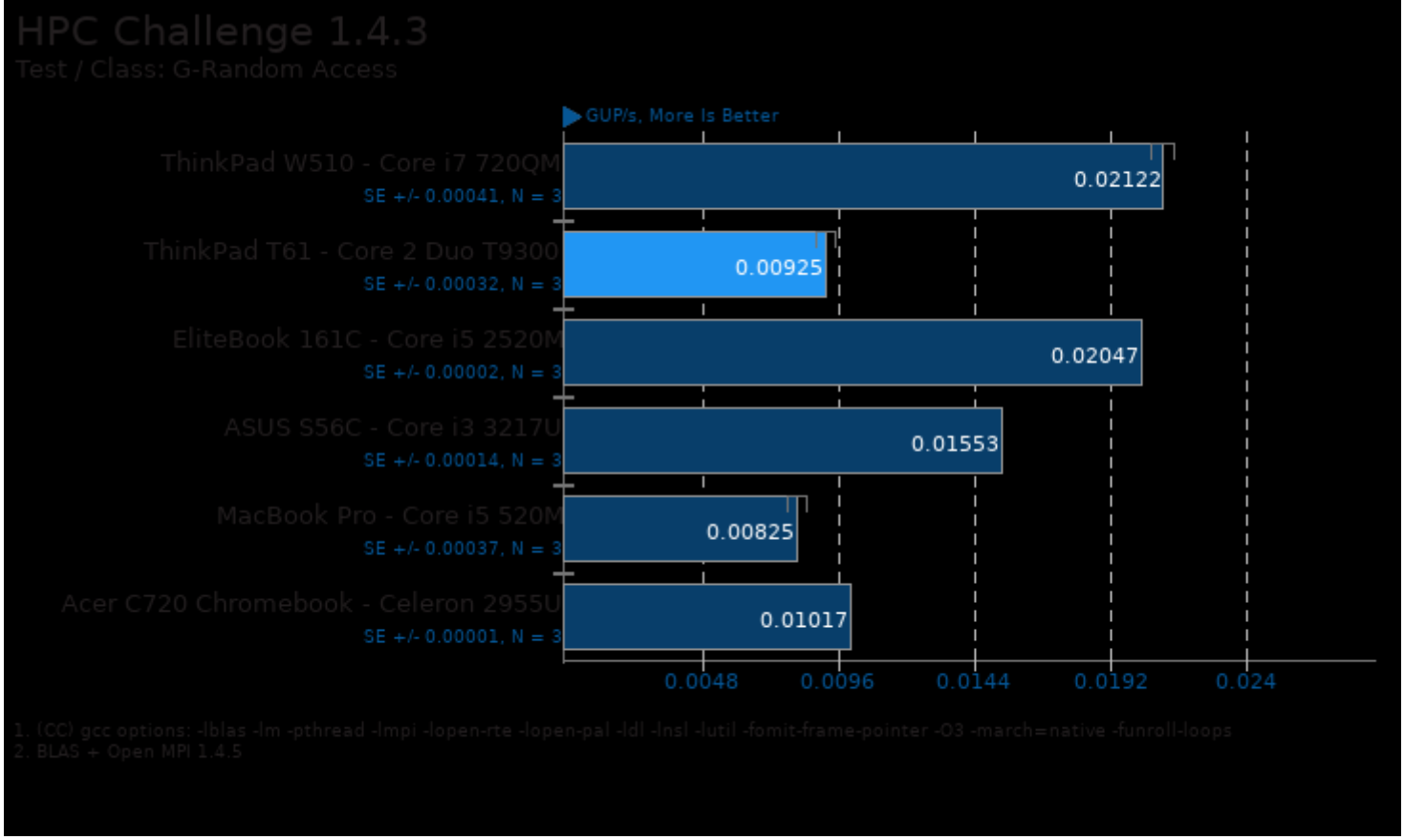


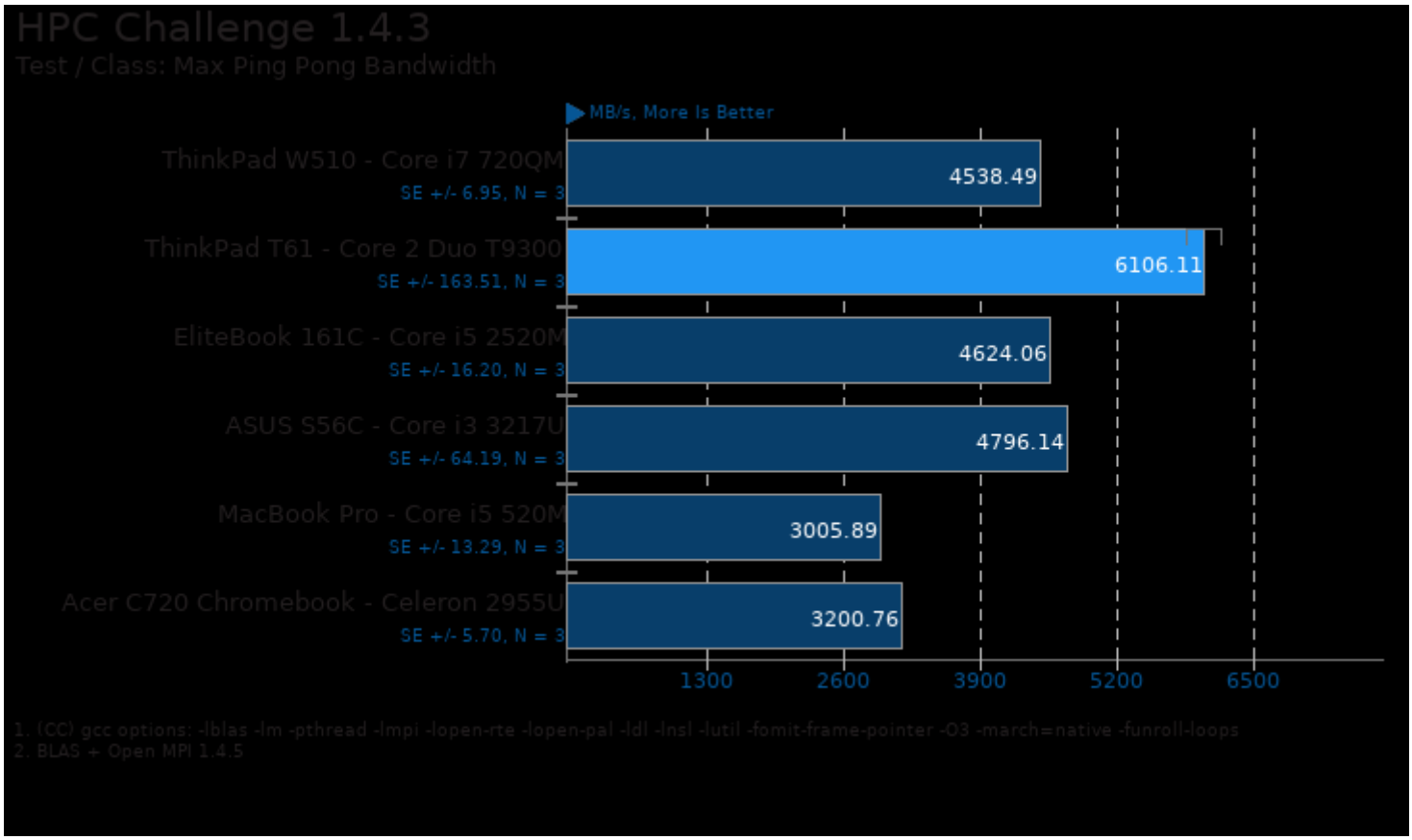
1. (CC) gcc options: -lblas -lm -pthread -lmpi -lopen-rte -lopen-pal -ldl -lnsl -lutil -fomit-frame-pointer -O3 -march=native -funroll-loops
2. BLAS + Open MPI 1.4.5

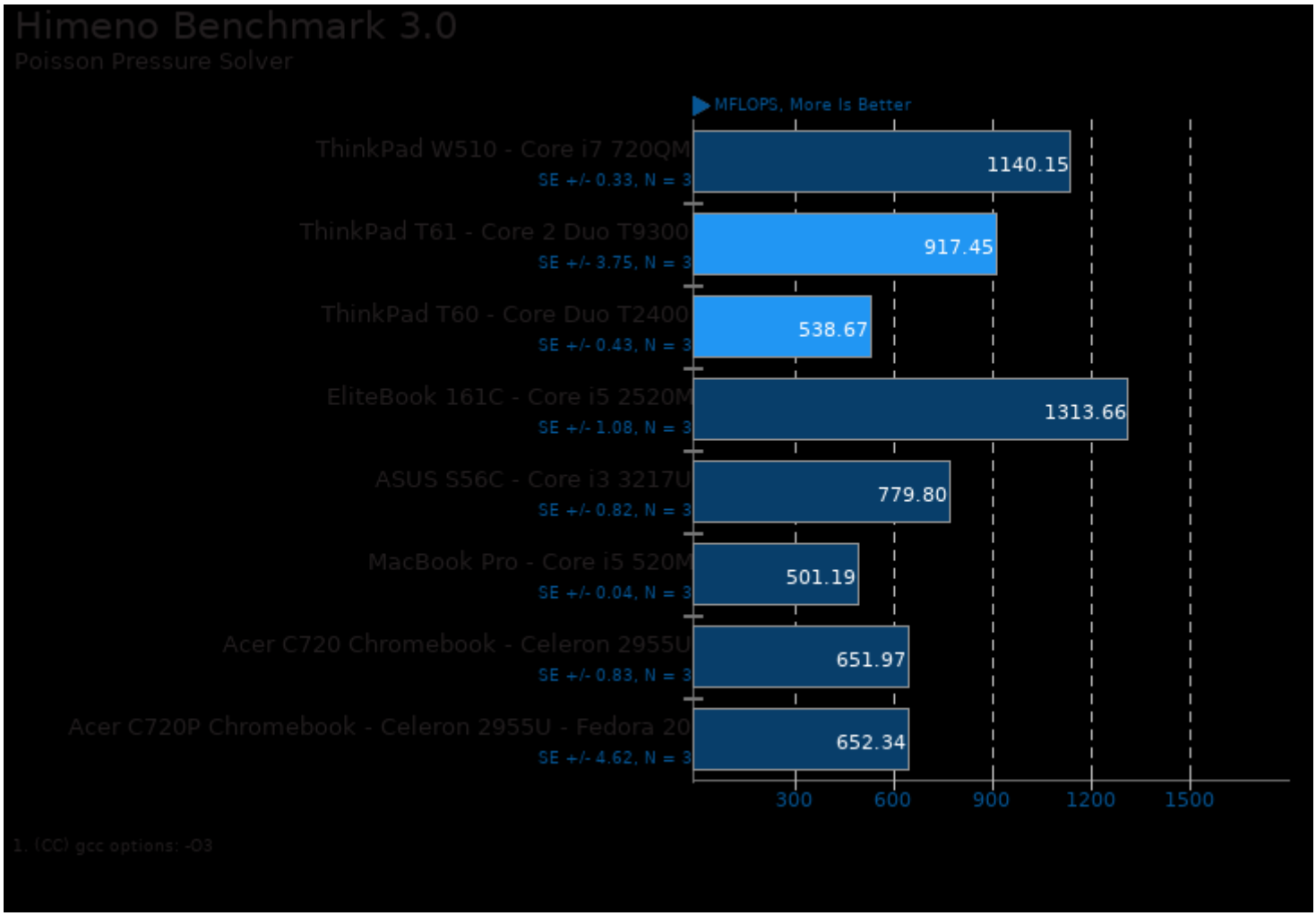

HPC Challenge 1.4.3
Test / Class: G-HPL
GFLOPS, More Is Better
ThinkPad W510 - Core i7 720QM
SE +/- 0.01032, N = 3
16.47390
ThinkPad T61 - Core 2 Duo T9300
SE +/- 0.27118, N = 3
10.49070
EliteBook 161C - Core i5 2520M
SE +/- 0.00676, N = 3
16.80297
ASUS S56C - Core i3 3217U
SE +/- 0.01781, N = 3
11.16660
MacBook Pro - Core i5 520M
SE +/- 0.00861, N = 3
6.45871
Acer C720 Chromebook - Celeron 2955U
SE +/- 0.00330, N = 3
9.64205
4
8
12
16
20
1. (CC) gcc options: -lblas -lm -pthread -lmpi -lopen-rte -lopen-pal -ldl -lnsl -lutil -fomit-frame-pointer -O3 -march=native -funroll-loops
2. BLAS + Open MPI 1.4.5

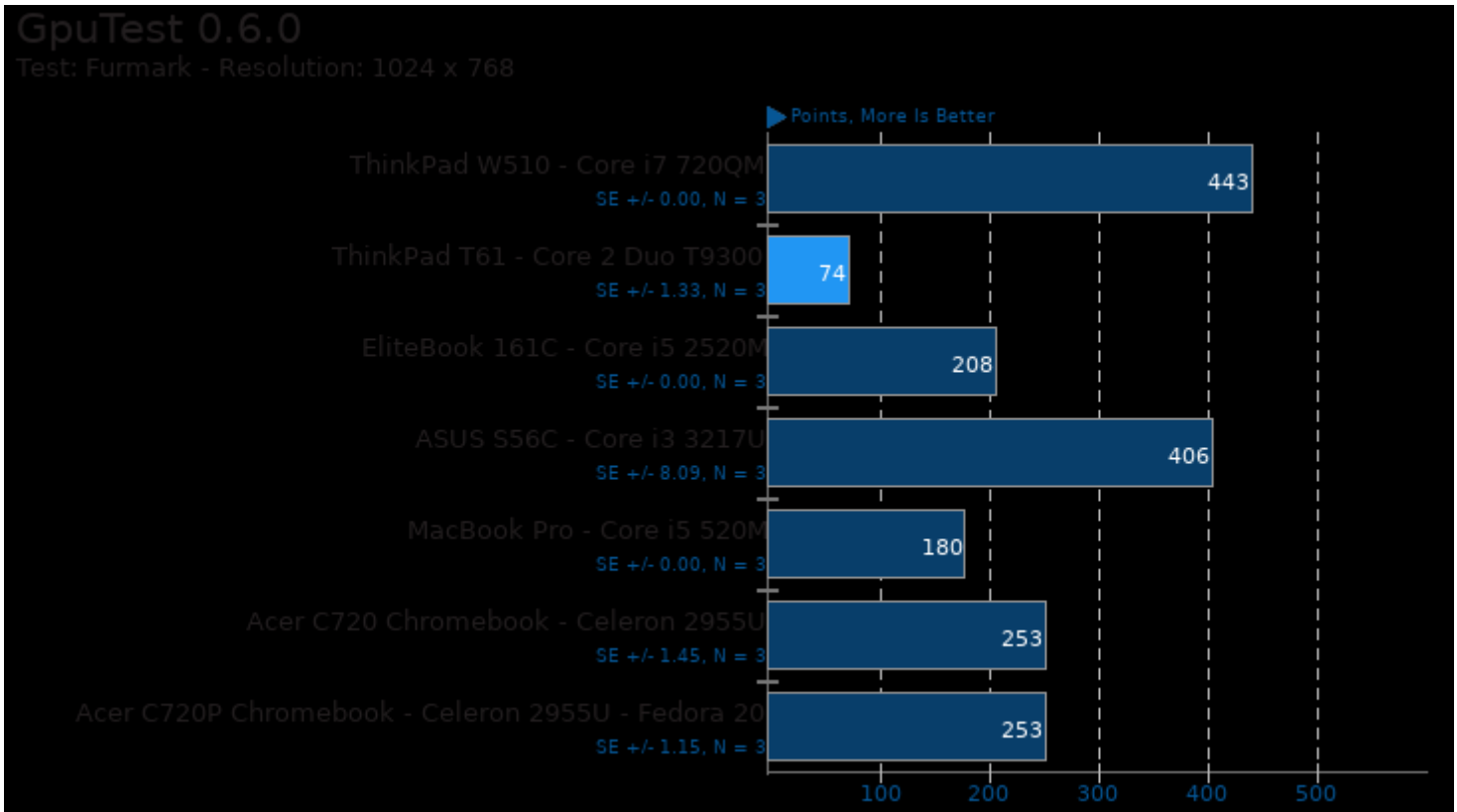

HPC Challenge 1.4.3
Test / Class: G-Ffte
GFLOPS, More Is Better
ThinkPad W510 - Core i7 720QM
SE +/- 0.00556, N = 3
1.97418
ThinkPad T61 - Core 2 Duo T9300
SE +/- 0.02079, N = 3
0.97367
EliteBook 161C - Core i5 2520M
SE +/- 0.00703, N = 3
1.41069
ASUS S56C - Core i3 3217U
SE +/- 0.00522, N = 3
1.43666
MacBook Pro - Core i5 520M
SE +/- 0.00521, N = 3
1.02314
Acer C720 Chromebook - Celeron 2955U
SE +/- 0.00152, N = 3
1.40173
0.4442
0.8884
1.3326
1.7768
2.221
1. (CC) gcc options: -lblas -lm -pthread -lmpi -lopen-rte -lopen-pal -ldl -lnsl -lutil -fomit-frame-pointer -O3 -march=native -funroll-loops
2. BLAS + Open MPI 1.4.5

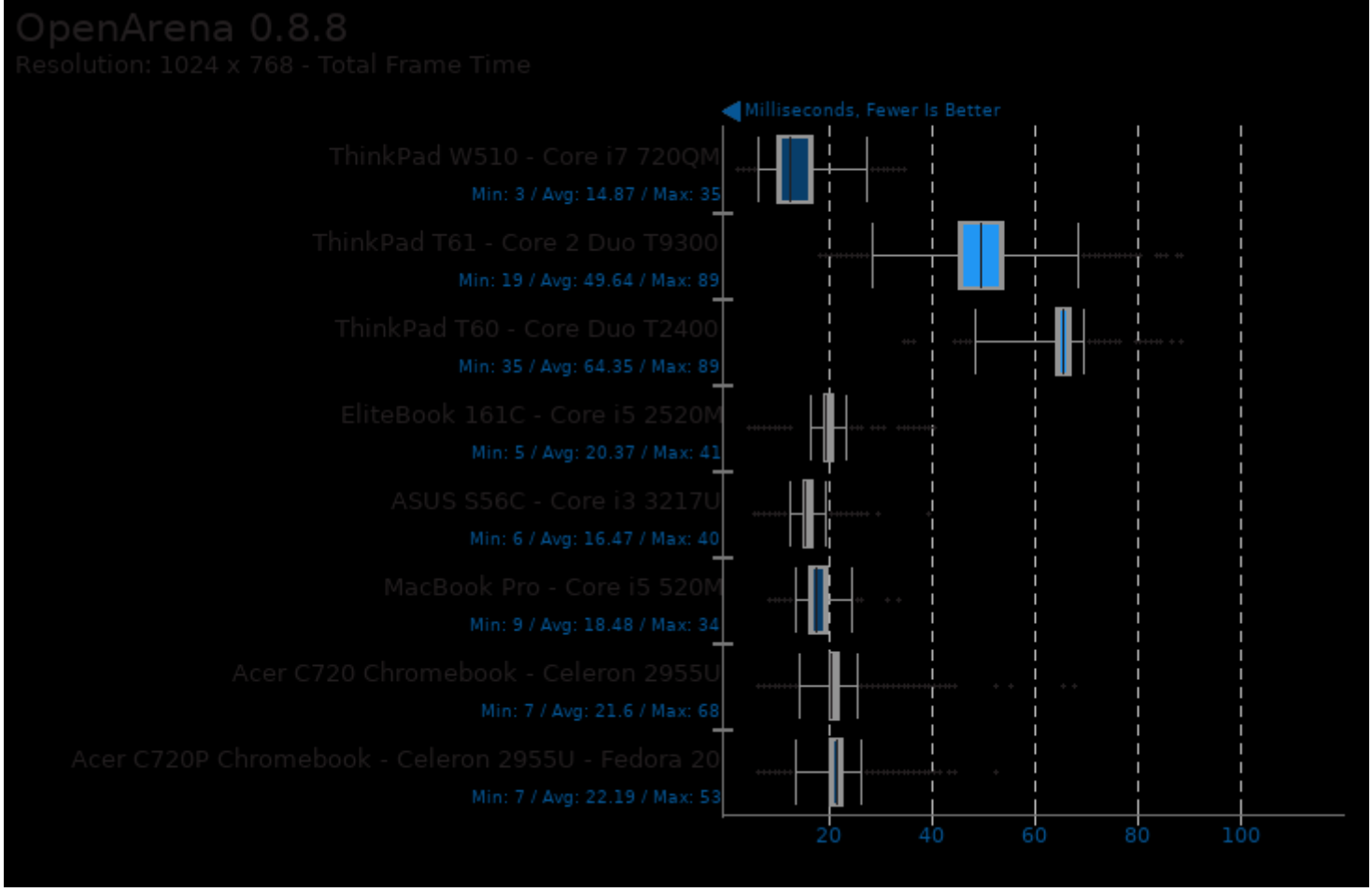

HPC Challenge 1.4.3
Test / Class: EP-DGEMM
GFLOPS, More Is Better
ThinkPad W510 - Core i7 720QM
SE +/- 0.00573, N = 3
2.31470
ThinkPad T61 - Core 2 Duo T9300
SE +/- 0.69365, N = 3
6.80617
EliteBook 161C - Core i5 2520M
SE +/- 0.00134, N = 3
4.57002
ASUS S56C - Core i3 3217U
SE +/- 0.00463, N = 3
2.98475
MacBook Pro - Core i5 520M
SE +/- 0.00049, N = 3
1.72322
Acer C720 Chromebook - Celeron 2955U
SE +/- 0.11431, N = 3
5.14450
2
4
6
8
10
1. (CC) gcc options: -lblas -lm -pthread -lmpi -lopen-rte -lopen-pal -ldl -lnsl -lutil -fomit-frame-pointer -O3 -march=native -funroll-loops
2. BLAS + Open MPI 1.4.5

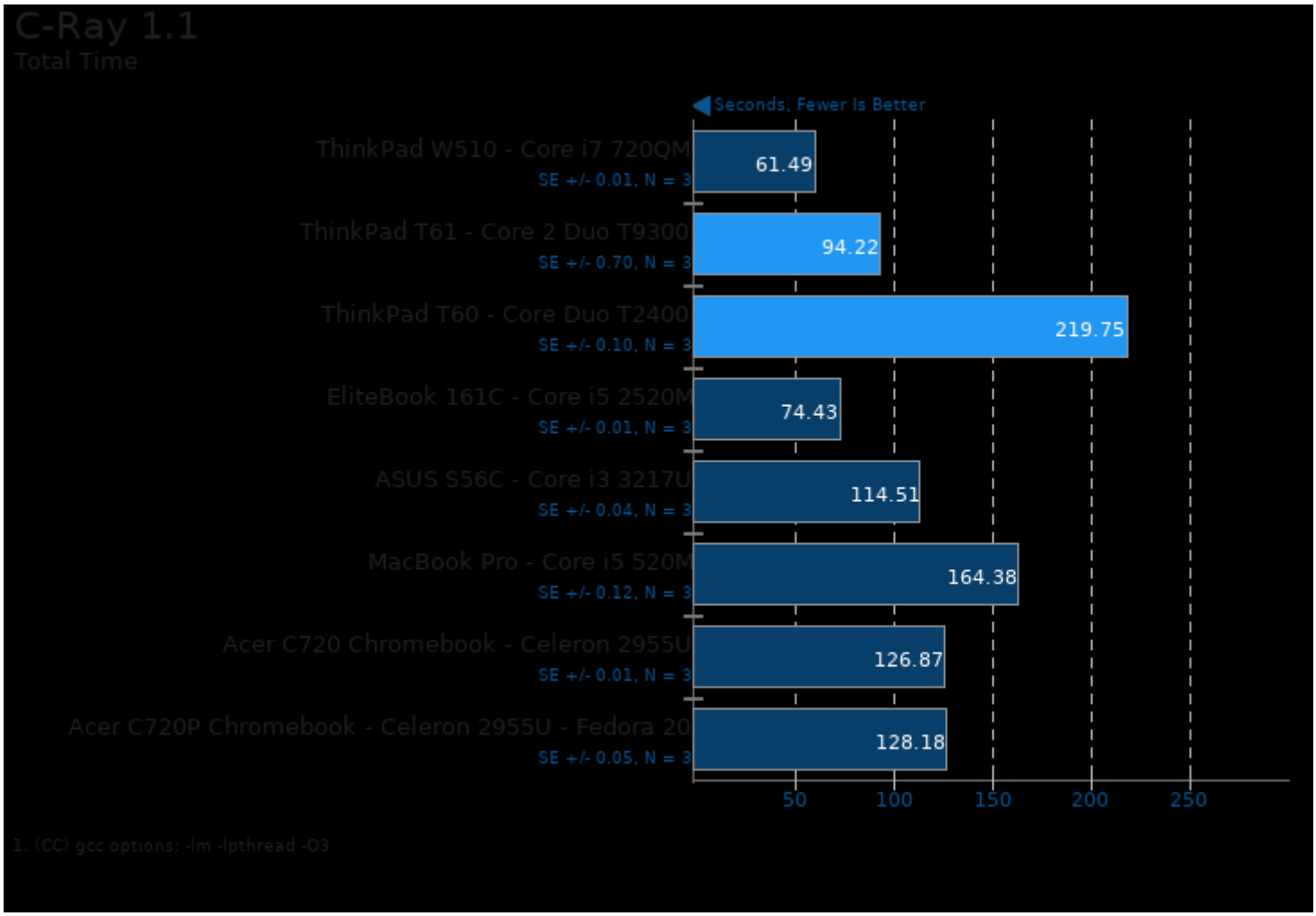

HPC Challenge 1.4.3
Test / Class: G-Random Access
GUP/s, More Is Better
ThinkPad W510 - Core i7 720QM
SE +/- 0.00041, N = 3
0.02122
ThinkPad T61 - Core 2 Duo T9300
SE +/- 0.00032, N = 3
0.00925
EliteBook 161C - Core i5 2520M
SE +/- 0.00002, N = 3
0.02047
ASUS S56C - Core i3 3217U
SE +/- 0.00014, N = 3
0.01553
MacBook Pro - Core i5 520M
SE +/- 0.00037, N = 3
0.00825
Acer C720 Chromebook - Celeron 2955U
SE +/- 0.00001, N = 3
0.01017
0.0048
0.0096
0.0144
0.0192
0.024
1. (CC) gcc options: -lblas -lm -pthread -lmpi -lopen-rte -lopen-pal -ldl -lnsl -lutil -fomit-frame-pointer -O3 -march=native -funroll-loops
2. BLAS + Open MPI 1.4.5

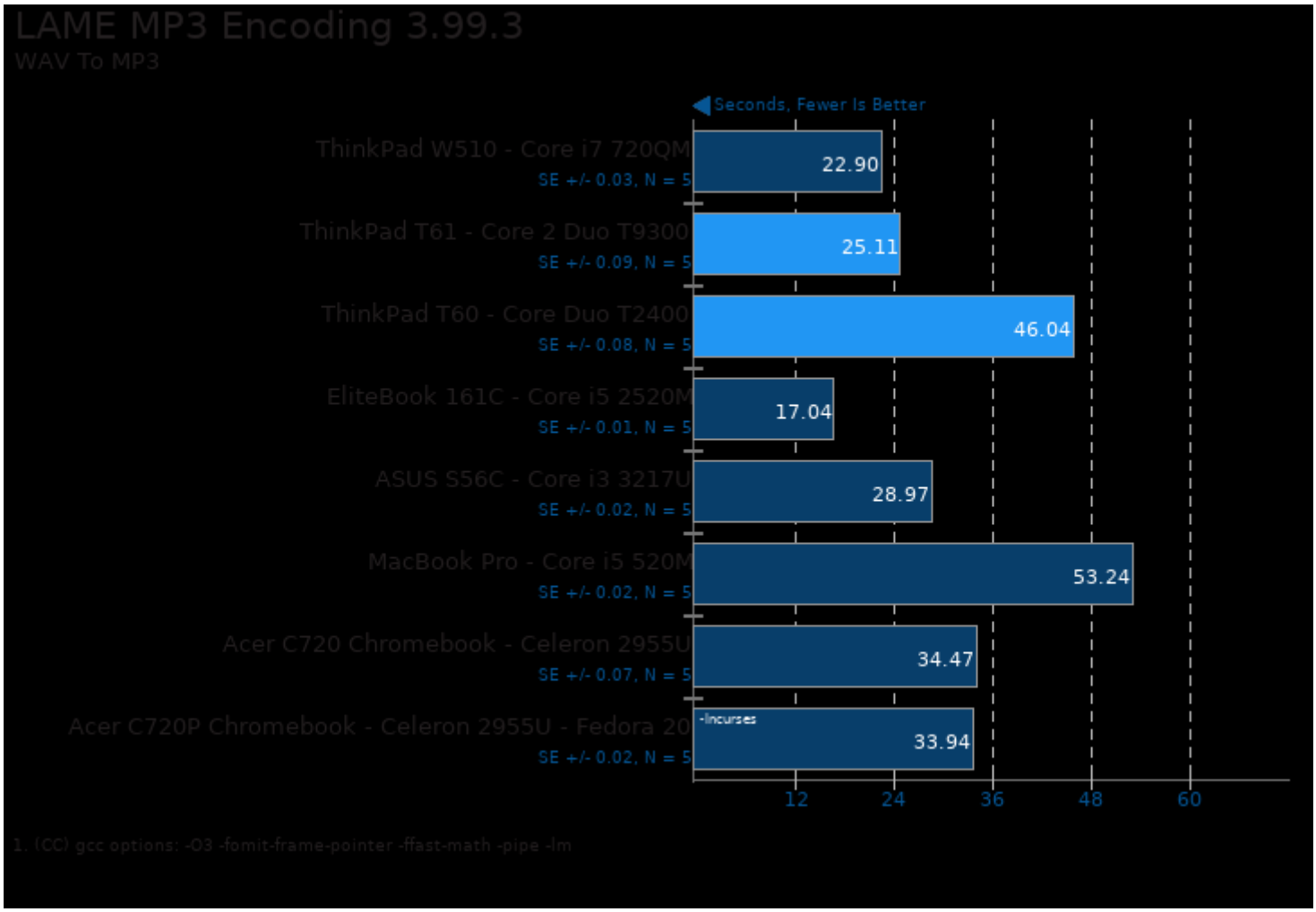

HPC Challenge 1.4.3
Test / Class: Max Ping Pong Bandwidth
MB/s, More Is Better
ThinkPad W510 - Core i7 720QM
SE +/- 6.95, N = 3
4538.49
ThinkPad T61 - Core 2 Duo T9300
SE +/- 163.51, N = 3
6106.11
EliteBook 161C - Core i5 2520M
SE +/- 16.20, N = 3
4624.06
ASUS S56C - Core i3 3217U
SE +/- 64.19, N = 3
4796.14
MacBook Pro - Core i5 520M
SE +/- 13.29, N = 3
3005.89
Acer C720 Chromebook - Celeron 2955U
SE +/- 5.70, N = 3
3200.76
1300
2600
3900
5200
6500
1. (CC) gcc options: -lblas -lm -pthread -lmpi -lopen-rte -lopen-pal -ldl -lnsl -lutil -fomit-frame-pointer -O3 -march=native -funroll-loops
2. BLAS + Open MPI 1.4.5

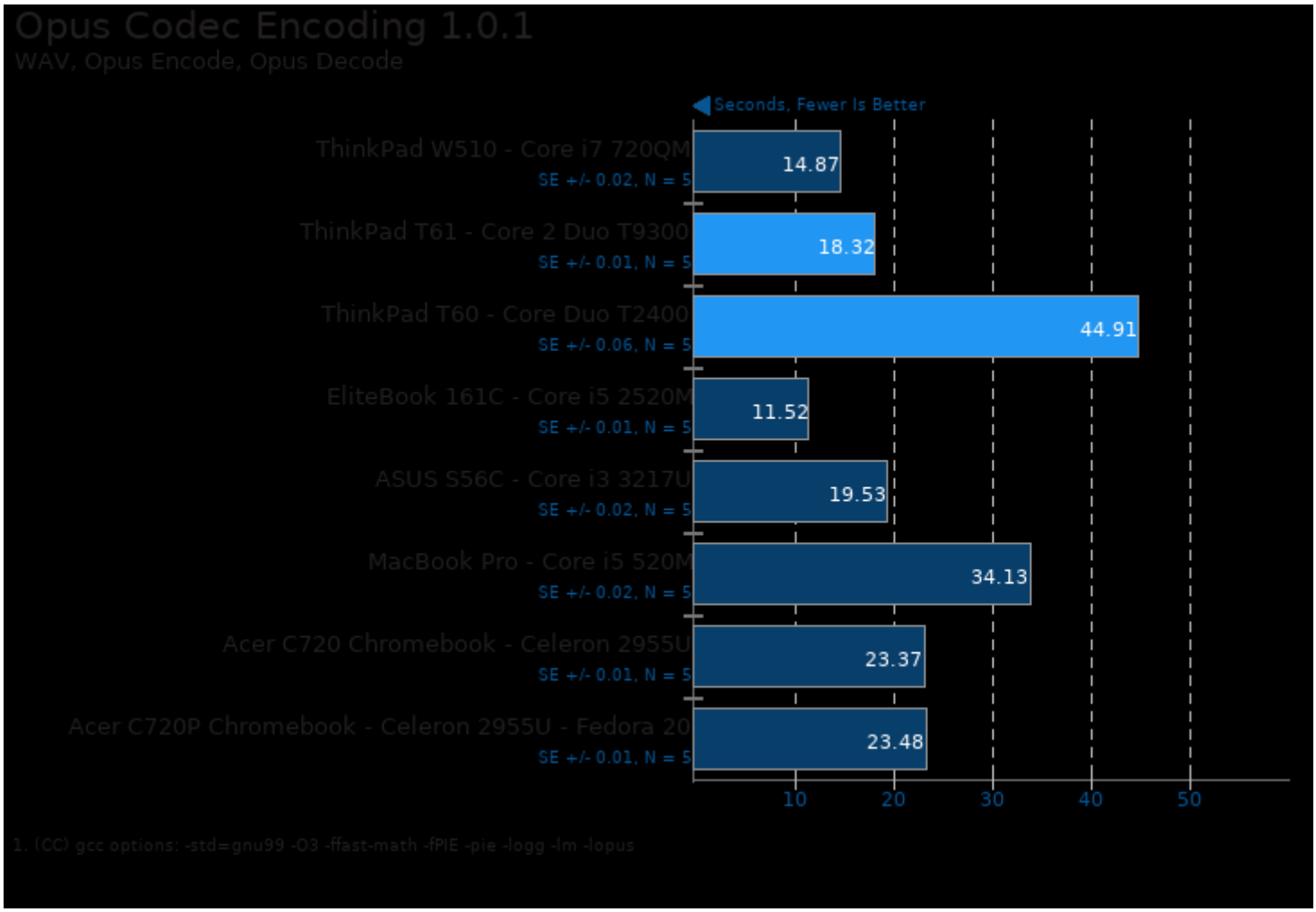

Himeno Benchmark 3.0
Poisson Pressure Solver
MFLOPS, More Is Better
ThinkPad W510 - Core i7 720QM
SE +/- 0.33, N = 3
1140.15
ThinkPad T61 - Core 2 Duo T9300
SE +/- 3.75, N = 3
917.45
ThinkPad T60 - Core Duo T2400
SE +/- 0.43, N = 3
538.67
EliteBook 161C - Core i5 2520M
SE +/- 1.08, N = 3
1313.66
ASUS S56C - Core i3 3217U
SE +/- 0.82, N = 3
779.80
MacBook Pro - Core i5 520M
SE +/- 0.04, N = 3
501.19
Acer C720 Chromebook - Celeron 2955U
SE +/- 0.83, N = 3
651.97
Acer C720P Chromebook - Celeron 2955U - Fedora 20
SE +/- 4.62, N = 3
652.34
300
600
900
1200
1500
1. (CC) gcc options: -O3


GpuTest 0.6.0
Test: Furmark - Resolution: 1024 x 768
Points, More Is Better
ThinkPad W510 - Core i7 720QM
SE +/- 0.00, N = 3
443
ThinkPad T61 - Core 2 Duo T9300
SE +/- 1.33, N = 3
74
EliteBook 161C - Core i5 2520M
SE +/- 0.00, N = 3
208
ASUS S56C - Core i3 3217U
SE +/- 8.09, N = 3
406
MacBook Pro - Core i5 520M
SE +/- 0.00, N = 3
180
Acer C720 Chromebook - Celeron 2955U
SE +/- 1.45, N = 3
253
Acer C720P Chromebook - Celeron 2955U - Fedora 20
SE +/- 1.15, N = 3
253
100
200
300
400
500

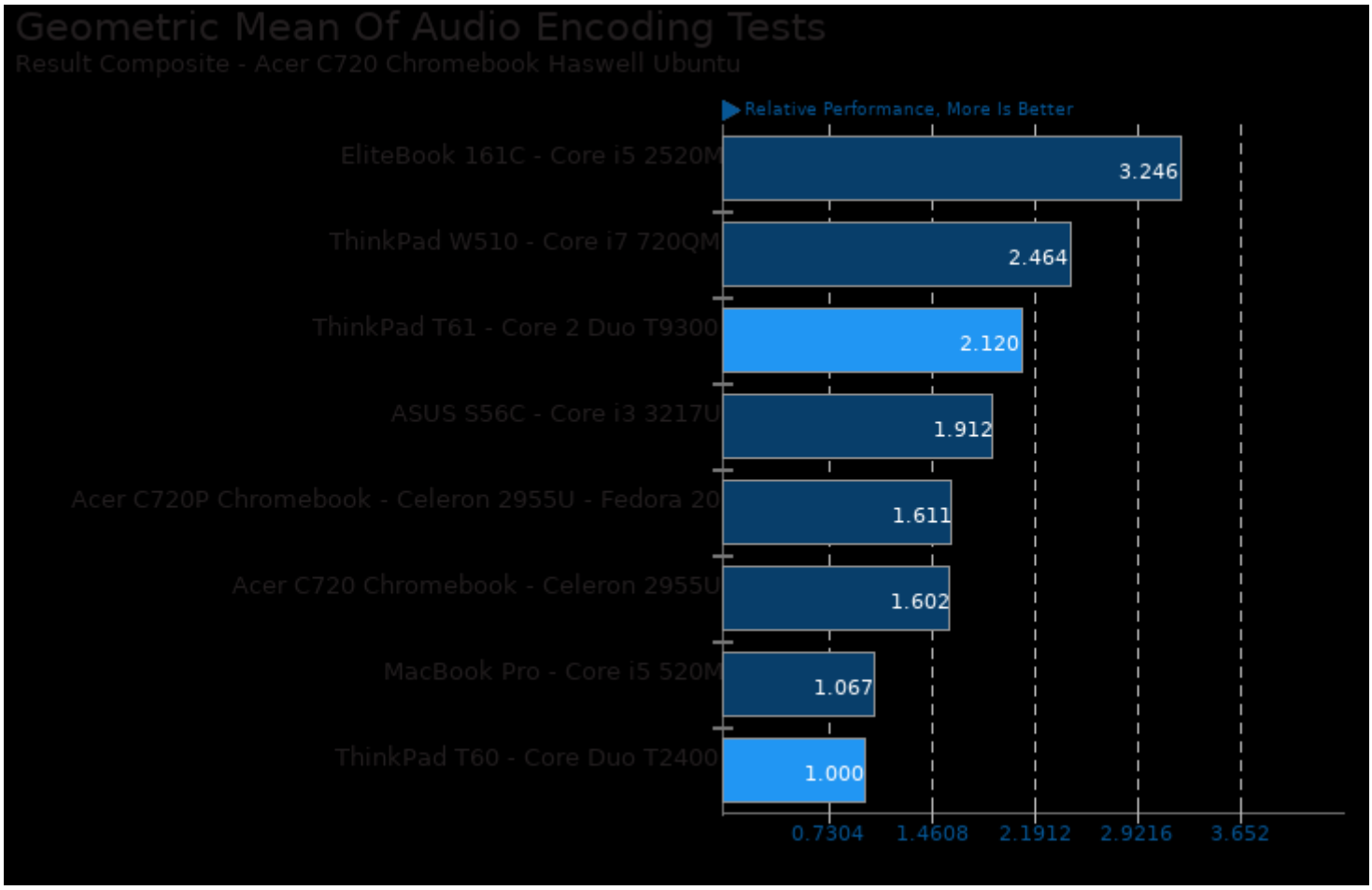

OpenArena 0.8.8
Resolution: 1024 x 768 - Total Frame Time
Milliseconds, Fewer Is Better
ThinkPad W510 - Core i7 720QM
Min: 3 / Avg: 14.87 / Max: 35
ThinkPad T61 - Core 2 Duo T9300
Min: 19 / Avg: 49.64 / Max: 89
ThinkPad T60 - Core Duo T2400
Min: 35 / Avg: 64.35 / Max: 89
EliteBook 161C - Core i5 2520M
Min: 5 / Avg: 20.37 / Max: 41
ASUS S56C - Core i3 3217U
Min: 6 / Avg: 16.47 / Max: 40
MacBook Pro - Core i5 520M
Min: 9 / Avg: 18.48 / Max: 34
Acer C720 Chromebook - Celeron 2955U
Min: 7 / Avg: 21.6 / Max: 68
Acer C720P Chromebook - Celeron 2955U - Fedora 20
Min: 7 / Avg: 22.19 / Max: 53
20
40
60
80
100


C-Ray 1.1
Total Time
Seconds, Fewer Is Better
ThinkPad W510 - Core i7 720QM
SE +/- 0.01, N = 3
61.49
ThinkPad T61 - Core 2 Duo T9300
SE +/- 0.70, N = 3
94.22
ThinkPad T60 - Core Duo T2400
SE +/- 0.10, N = 3
219.75
EliteBook 161C - Core i5 2520M
SE +/- 0.01, N = 3
74.43
ASUS S56C - Core i3 3217U
SE +/- 0.04, N = 3
114.51
MacBook Pro - Core i5 520M
SE +/- 0.12, N = 3
164.38
Acer C720 Chromebook - Celeron 2955U
SE +/- 0.01, N = 3
126.87
Acer C720P Chromebook - Celeron 2955U - Fedora 20
SE +/- 0.05, N = 3
128.18
50
100
150
200
250
1. (CC) gcc options: -lm -lpthread -O3

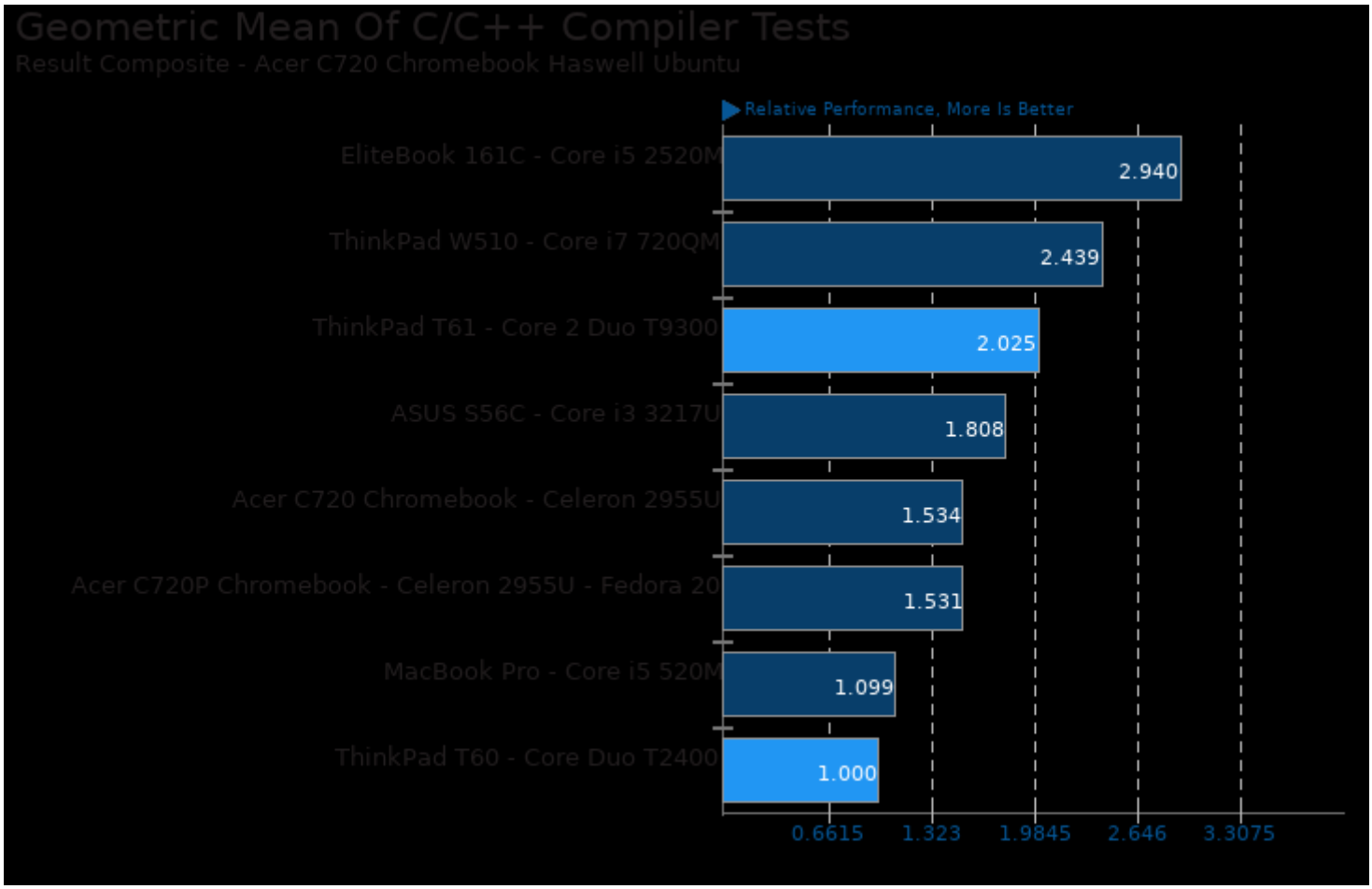

LAME MP3 Encoding 3.99.3
WAV To MP3
Seconds, Fewer Is Better
ThinkPad W510 - Core i7 720QM
SE +/- 0.03, N = 5
22.90
ThinkPad T61 - Core 2 Duo T9300
SE +/- 0.09, N = 5
25.11
ThinkPad T60 - Core Duo T2400
SE +/- 0.08, N = 5
46.04
EliteBook 161C - Core i5 2520M
SE +/- 0.01, N = 5
17.04
ASUS S56C - Core i3 3217U
SE +/- 0.02, N = 5
28.97
MacBook Pro - Core i5 520M
SE +/- 0.02, N = 5
53.24
Acer C720 Chromebook - Celeron 2955U
SE +/- 0.07, N = 5
34.47
Acer C720P Chromebook - Celeron 2955U - Fedora 20
SE +/- 0.02, N = 5
-lncurses
33.94
12
24
36
48
60
1. (CC) gcc options: -O3 -fomit-frame-pointer -ffast-math -pipe -lm


Opus Codec Encoding 1.0.1
WAV, Opus Encode, Opus Decode
Seconds, Fewer Is Better
ThinkPad W510 - Core i7 720QM
SE +/- 0.02, N = 5
14.87
ThinkPad T61 - Core 2 Duo T9300
SE +/- 0.01, N = 5
18.32
ThinkPad T60 - Core Duo T2400
SE +/- 0.06, N = 5
44.91
EliteBook 161C - Core i5 2520M
SE +/- 0.01, N = 5
11.52
ASUS S56C - Core i3 3217U
SE +/- 0.02, N = 5
19.53
MacBook Pro - Core i5 520M
SE +/- 0.02, N = 5
34.13
Acer C720 Chromebook - Celeron 2955U
SE +/- 0.01, N = 5
23.37
Acer C720P Chromebook - Celeron 2955U - Fedora 20
SE +/- 0.01, N = 5
23.48
10
20
30
40
50
1. (CC) gcc options: -std=gnu99 -O3 -ffast-math -fPIE -pie -logg -lm -lopus

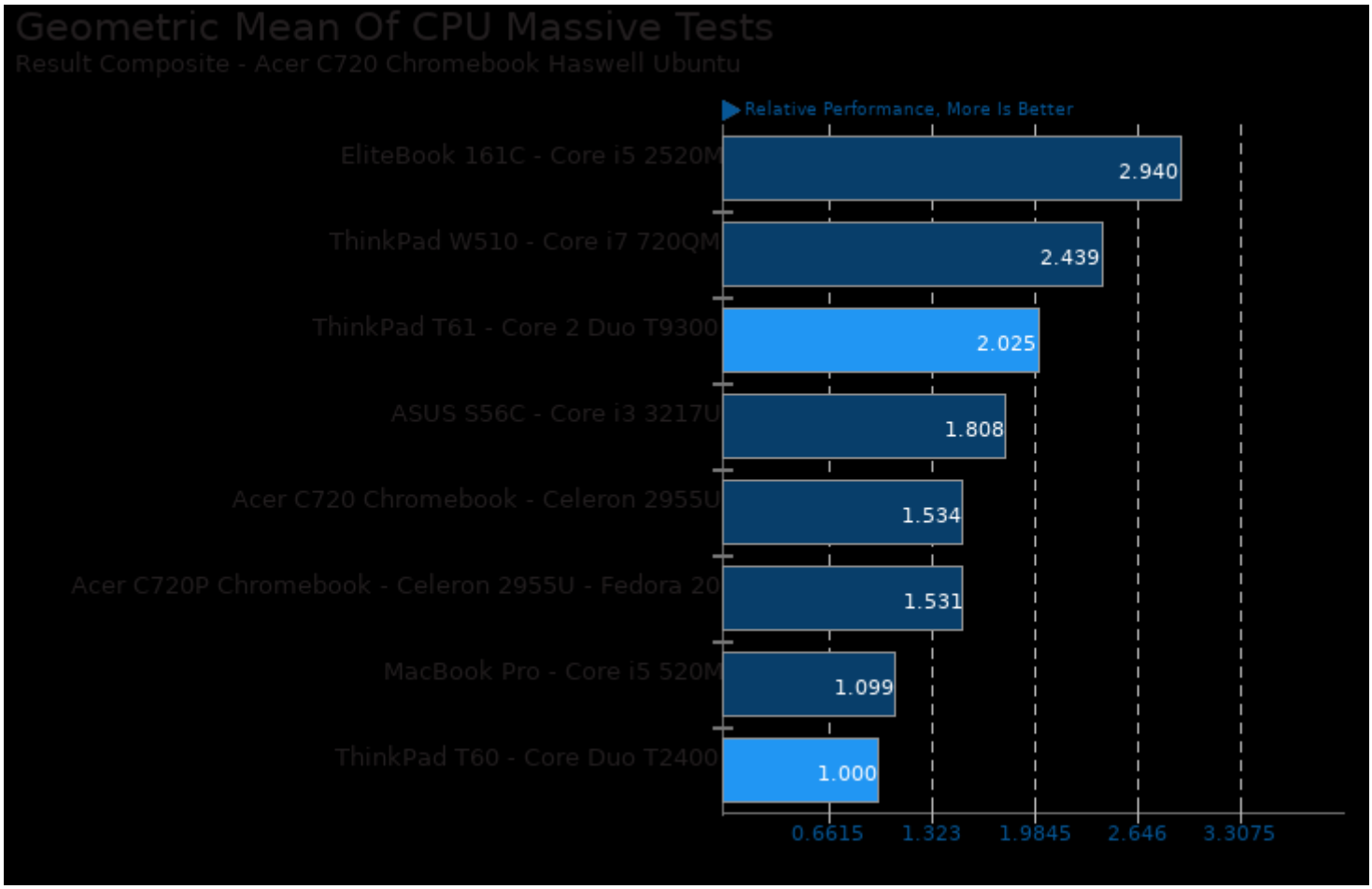
These geometric means are based upon test groupings / test suites for this result file.



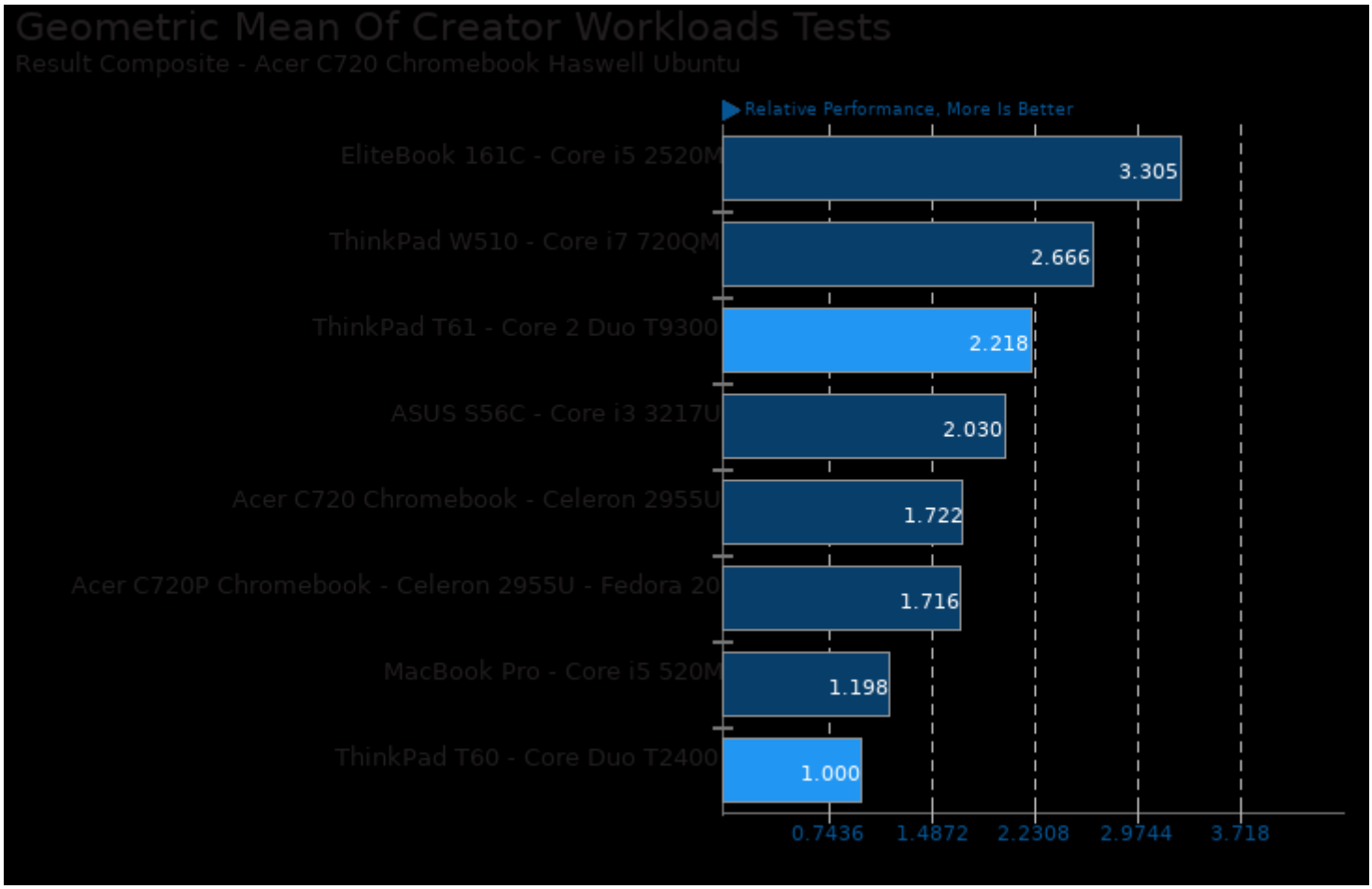
Geometric mean based upon tests: pts/encode-mp3 and pts/encode-opus



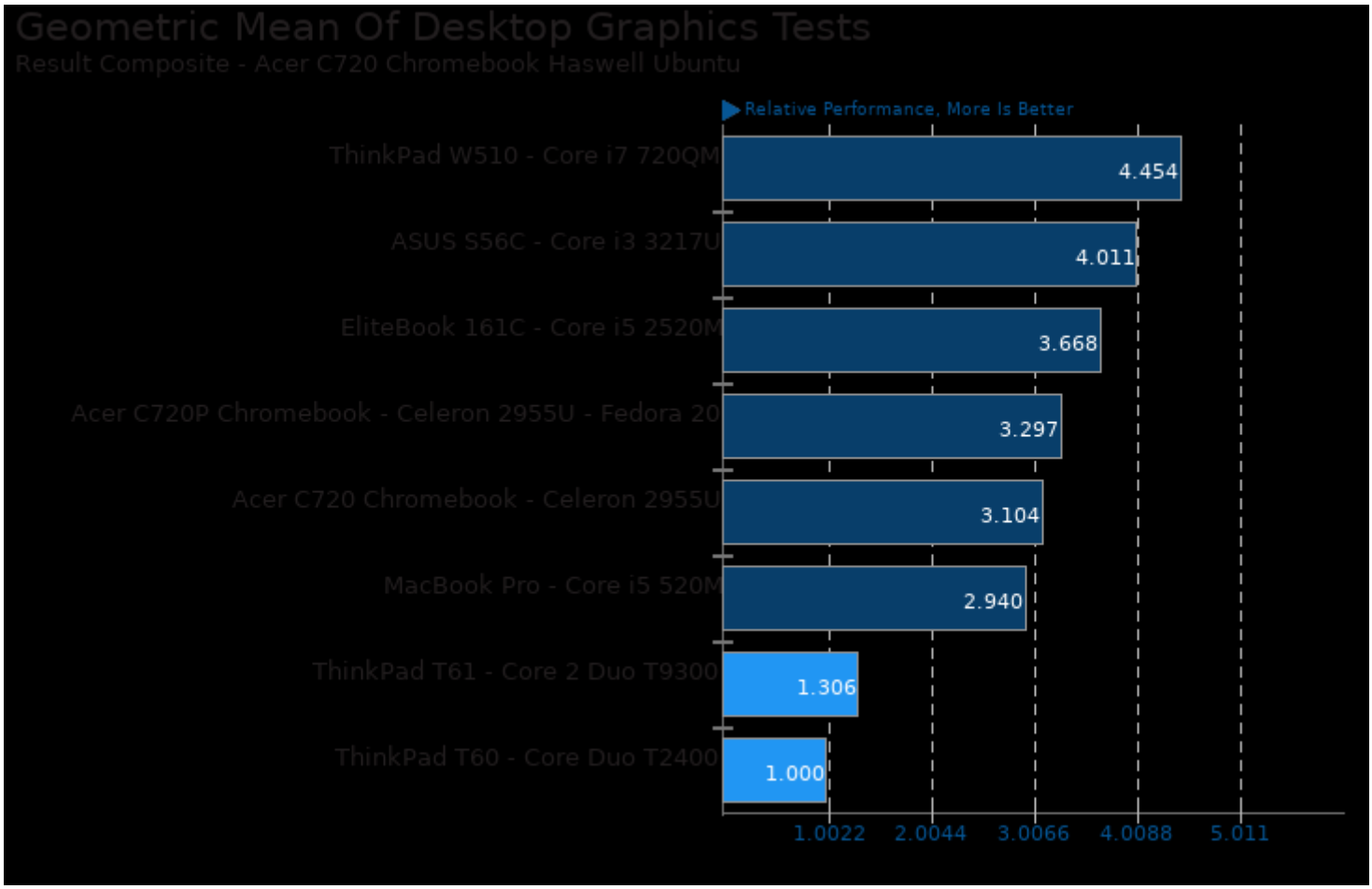
Geometric mean based upon tests: pts/vpxenc, pts/himeno, pts/c-ray, pts/encode-mp3 and pts/x264



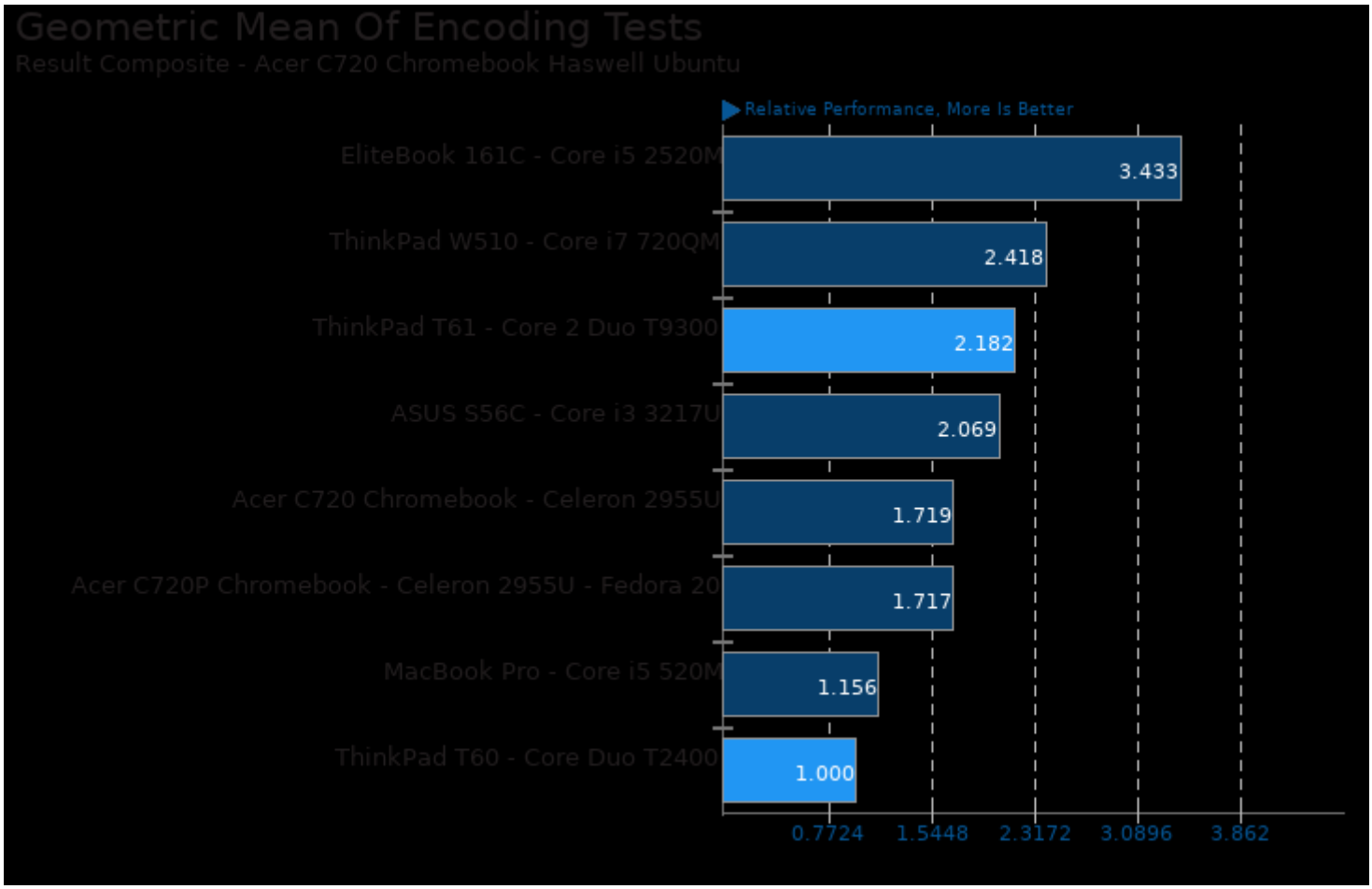
Geometric mean based upon tests: pts/c-ray, pts/vpxenc, pts/x264, pts/encode-mp3, pts/himeno and pts/hpcc



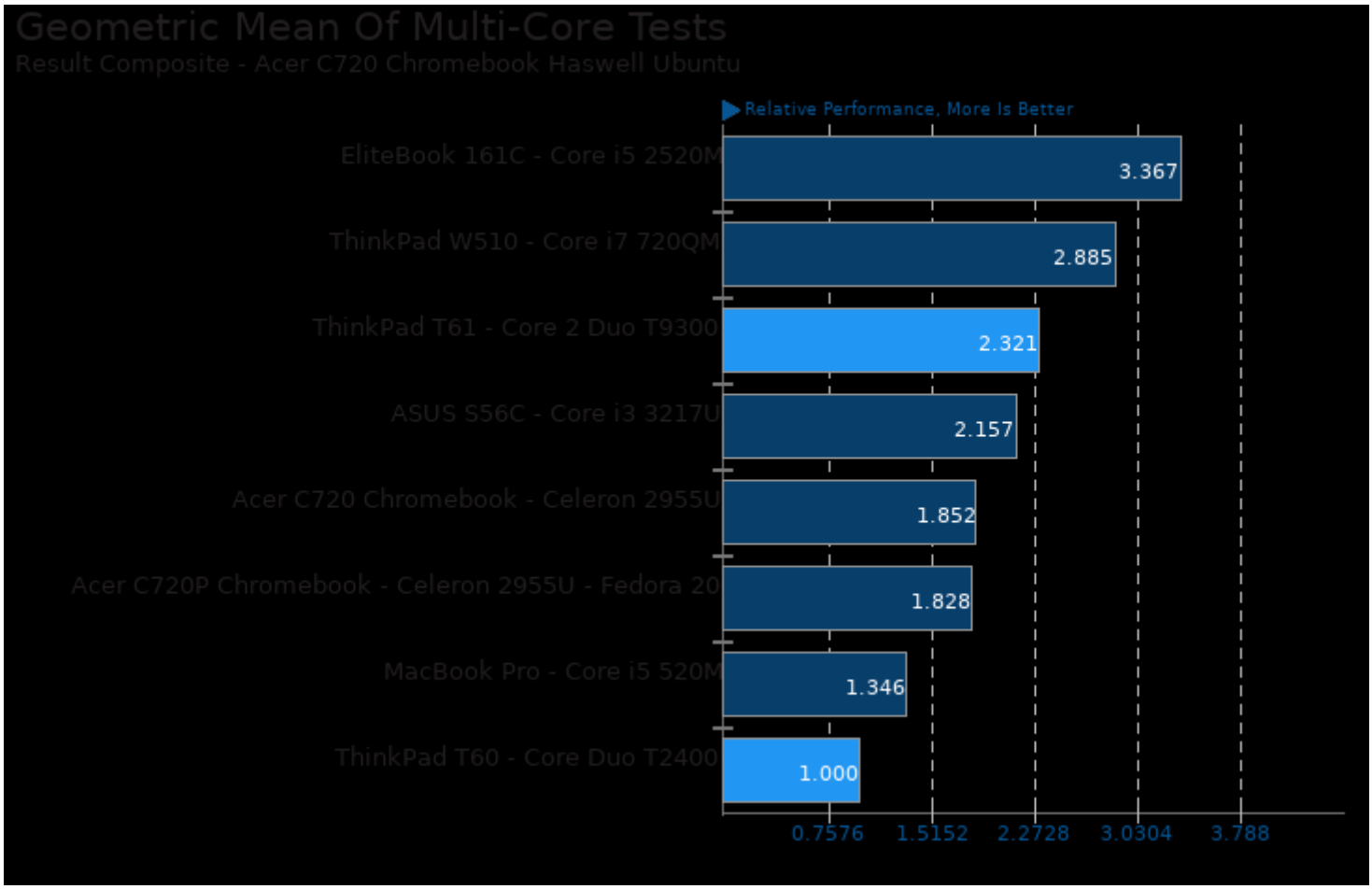
Geometric mean based upon tests: pts/c-ray, pts/x264, pts/vpxenc, pts/encode-mp3 and pts/encode-opus



Geometric mean based upon tests: pts/xonotic and pts/openarena

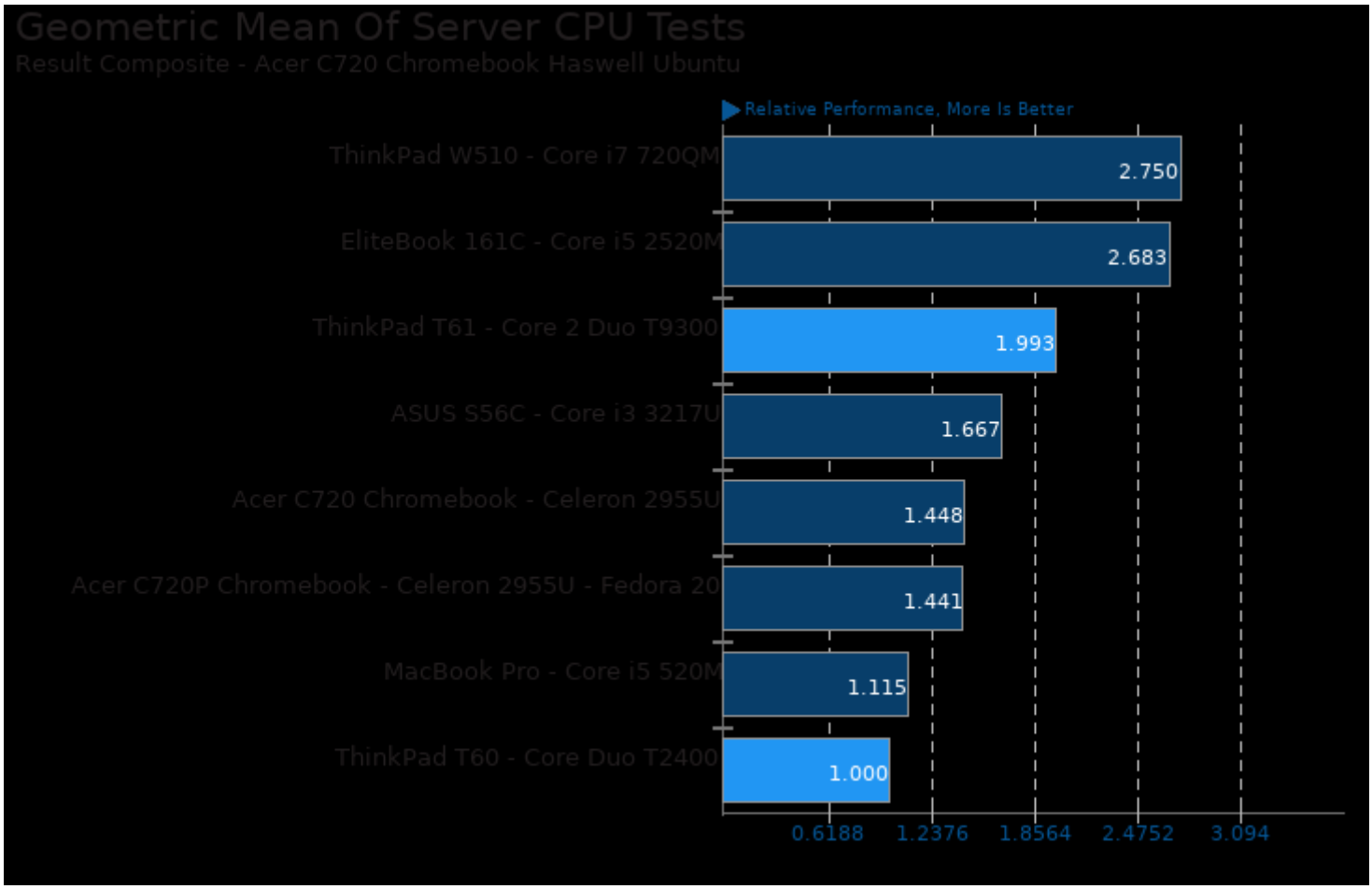


Geometric mean based upon tests: pts/encode-mp3, pts/encode-opus, pts/x264 and pts/vpxenc



Geometric mean based upon tests: pts/c-ray, pts/x264 and pts/vpxenc

Acer C720 Chromebook Haswell Ubuntu



Geometric mean based upon tests: pts/x264, pts/himeno and pts/c-ray

This file was automatically generated via the Phoronix Test Suite benchmarking software on Saturday, 21 December 2024 22:46.