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AMD AM1 Athlon Sempron Phenom APUs Ubuntu Linux

A Processor comparison of the AMD Sempron 2650, Sempron 3850, Athlon 5150, and Athlon 5150 AM1 FS1b APUs. Benchmarking by Michael Larabel for a future article on Phoronix.com looking at the AMD APU ubuntu 14.04 Linux performance for the processor and graphics tests. Compared to a Phenom 9500 and Phenom II X3 710.

Automated Executive Summary

i7-4700MQ had the most wins, coming in first place for 85% of the tests.

Based on the geometric mean of all complete results, the fastest (i7-4700MQ) was 4.994x the speed of the slowest (AMD Sempron 2650). AMD Phenom II X3 710 was 0.376x the speed of i7-4700MQ, AMD Athlon 5350 was 0.984x the speed of AMD Phenom II X3 710, Celeron J1900 was 0.88x the speed of AMD Athlon 5350, AMD Athlon 5150 was 0.952x the speed of Celeron J1900, AMD Phenom 9500 was 0.997x the speed of AMD Athlon 5150, AMD Sempron 3850 was 0.844x the speed of AMD Phenom 9500, AMD Sempron 2650 was 0.767x the speed of AMD Sempron 3850.

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

Reaction Quake 3 (Resolution: 1024 x 768 - Total Frame Time) at 49.5x
OpenArena (Resolution: 1024 x 768 - Total Frame Time) at 32.667x
Timed ImageMagick Compilation (Time To Compile) at 10.583x
Reaction Quake 3 (Resolution: 1024 x 768) at 9.954x
Timed Apache Compilation (Time To Compile) at 9.52x

OpenSSL (RSA 4096-bit Performance) at 8.992x
TTSIOD 3D Renderer (Phong Rendering With Soft-Shadow Mapping) at 8.989x
Timed MAFFT Alignment (Multiple Sequence Alignment) at 8.775x
John The Ripper (Test: Blowfish) at 7.728x
C-Ray (Total Time) at 7.687x.

Test Systems:

AMD Phenom 9500

Processor: AMD Phenom 9500 @ 2.20GHz (4 Cores), Motherboard: ECS A790GXM-A v1.0, Chipset: AMD RS780 + SB7x0/SB8x0/SB9x0, Memory: 3584MB, Disk: 250GB Seagate ST3250310AS, Graphics: ECS AMD Radeon HD 3300 640MB, Audio: Realtek ALC888, Monitor: DELL S2409W, Network: Realtek RTL8111/8168/8411

OS: Ubuntu 14.04, Kernel: 3.14.0-031400-generic (x86_64), Desktop: Unity 7.2.0, Display Server: X Server 1.15.1, Display Driver: radeon 7.3.99, OpenGL: 3.3 Mesa 10.2.0-devel (git-4d64180 trusty-oibaf-ppa) Gallium 0.4, Compiler: GCC 4.8.2, File-System: ext4, Screen Resolution: 1920x1080

Compiler Notes: --build=x86_64-linux-gnu --disable-browser-plugin --disable-libmudflap --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-multilib-list=m32,m64,mx32 --with-tune=generic -v
Processor Notes: Scaling Governor: acpi-cpufreq ondemand
Graphics Notes: EXA

AMD Phenom II X3 710

Processor: AMD Phenom II X3 710 @ 2.60GHz (3 Cores), Motherboard: MSI 890GXM-G65 (MS-7642) v1.0, Chipset: AMD RS880, Memory: 3584MB, Disk: 250GB Seagate ST3250310AS, Graphics: MSI AMD Radeon HD 4290 576MB, Audio: Realtek ALC889, Monitor: DELL S2409W, Network: Realtek RTL8111/8168/8411

OS: Ubuntu 14.04, Kernel: 3.14.0-031400-generic (x86_64), Desktop: Unity 7.2.0, Display Server: X Server 1.15.1, Display Driver: radeon 7.3.99, OpenGL: 3.3 Mesa 10.2.0-devel (git-4d64180 trusty-oibaf-ppa) Gallium 0.4, Compiler: GCC 4.8.2, File-System: ext4, Screen Resolution: 1920x1080

Compiler Notes: --build=x86_64-linux-gnu --disable-browser-plugin --disable-libmudflap --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-multilib-list=m32,m64,mx32 --with-tune=generic -v
Processor Notes: Scaling Governor: acpi-cpufreq ondemand
Graphics Notes: EXA

AMD Sempron 2650

Processor: AMD Sempron 2650 APU with Radeon R3 @ 1.45GHz (2 Cores), Motherboard: ASUS AM1I-A, Chipset: AMD Family 16h Root Complex, Memory: 3584MB, Disk: 240GB OCZ VERTEX3, Graphics: ASUS AMD Radeon HD 8240 512MB, Audio: AMD Device 9840, Monitor: VE228, Network: Realtek RTL8111/8168/8411

OS: Ubuntu 14.04, Kernel: 3.14.0-031400-generic (x86_64), Desktop: Unity 7.2.0, Display Server: X Server 1.15.0, Display Driver: radeon 7.3.99, OpenGL: 3.1 Mesa 10.2.0-devel (git-4d64180 trusty-oibaf-ppa) Gallium 0.4, Compiler:

GCC 4.8.2, File-System: ext4, Screen Resolution: 1920x1080

Compiler Notes: --build=x86_64-linux-gnu --disable-browser-plugin --disable-libmudflap --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-multilib-list=m32,m64,mx32 --with-tune=generic -v
Processor Notes: Scaling Governor: acpi-cpufreq ondemand
Graphics Notes: GLAMOR

AMD Sempron 3850

Processor: AMD Sempron 3850 APU with Radeon R3 @ 1.30GHz (4 Cores), Motherboard: ASUS AM1I-A, Chipset: AMD Family 16h Root Complex, Memory: 3584MB, Disk: 240GB OCZ VERTEX3, Graphics: ASUS AMD Radeon HD 8280 512MB, Audio: AMD Device 9840, Monitor: VE228, Network: Realtek RTL8111/8168/8411

OS: Ubuntu 14.04, Kernel: 3.14.0-031400-generic (x86_64), Desktop: Unity 7.2.0, Display Server: X Server 1.15.0, Display Driver: radeon 7.3.99, OpenGL: 3.1 Mesa 10.2.0-devel (git-4d64180 trusty-oibaf-ppa) Gallium 0.4, Compiler: GCC 4.8.2, File-System: ext4, Screen Resolution: 1920x1080

Compiler Notes: --build=x86_64-linux-gnu --disable-browser-plugin --disable-libmudflap --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-multilib-list=m32,m64,mx32 --with-tune=generic -v
Processor Notes: Scaling Governor: acpi-cpufreq ondemand
Graphics Notes: GLAMOR

AMD Athlon 5150

Processor: AMD Athlon 5150 APU with Radeon R3 @ 1.60GHz (4 Cores), Motherboard: ASUS AM1I-A, Chipset: AMD Family 16h Root Complex, Memory: 3584MB, Disk: 240GB OCZ VERTEX3, Graphics: ASUS AMD Radeon HD 8400 512MB, Audio: AMD Device 9840, Monitor: VE228, Network: Realtek RTL8111/8168/8411

OS: Ubuntu 14.04, Kernel: 3.14.0-031400-generic (x86_64), Desktop: Unity 7.2.0, Display Server: X Server 1.15.0, Display Driver: radeon 7.3.99, OpenGL: 3.1 Mesa 10.2.0-devel (git-4d64180 trusty-oibaf-ppa) Gallium 0.4, Compiler: GCC 4.8.2, File-System: ext4, Screen Resolution: 1920x1080

Compiler Notes: --build=x86_64-linux-gnu --disable-browser-plugin --disable-libmudflap --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-multilib-list=m32,m64,mx32 --with-tune=generic -v
Processor Notes: Scaling Governor: acpi-cpufreq ondemand
Graphics Notes: GLAMOR

AMD Athlon 5350

Processor: AMD Athlon 5350 APU with Radeon R3 @ 2.05GHz (4 Cores), Motherboard: ASUS AM1I-A, Chipset: AMD Family 16h Root Complex, Memory: 3584MB, Disk: 240GB OCZ VERTEX3, Graphics: ASUS AMD Radeon HD 8400 512MB, Audio: AMD Device 9840, Monitor: VE228, Network: Realtek RTL8111/8168/8411

OS: Ubuntu 14.04, Kernel: 3.14.0-031400-generic (x86_64), Desktop: Unity 7.2.0, Display Server: X Server 1.15.0, Display Driver: radeon 7.3.99, OpenGL: 3.1 Mesa 10.2.0-devel (git-4d64180 trusty-oibaf-ppa) Gallium 0.4, Compiler: GCC 4.8.2, File-System: ext4, Screen Resolution: 1920x1080

Compiler Notes: --build=x86_64-linux-gnu --disable-browser-plugin --disable-libmudflap --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-multilib-list=m32,m64,mx32 --with-tune=generic -v
Processor Notes: Scaling Governor: acpi-cpufreq ondemand
Graphics Notes: GLAMOR

i7-4700MQ

Processor: Intel Core i7-4700MQ @ 2.40GHz (8 Cores), Motherboard: MSI MS-1758, Chipset: Intel Xeon E3-1200 v3/4th, Memory: 16384MB, Disk: 120GB INTEL SSDSC2CT12 + 1000GB HGST HTS721010A9, Graphics: Intel HD 4600 2048MB (1150MHz), Audio: Intel Haswell HDMI, Network: Qualcomm Atheros AR8161 Gigabit + Realtek RTL8723AE PCIe Wireless

OS: Ubuntu 14.04, Kernel: 3.13.0-24-generic (x86_64), Desktop: KDE 4.13.0, Display Server: X Server 1.15.1, Display Driver: intel 2.99.911, OpenGL: 3.3 Mesa 10.2.0-devel (git-b45f65e trusty-oibaf-ppa), Compiler: GCC 4.8, File-System: ext4, Screen Resolution: 1920x1080

Compiler Notes: --build=x86_64-linux-gnu --disable-browser-plugin --disable-libmudflap --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

Celeron J1900

Processor: Intel Celeron J1900 @ 1.99GHz (4 Cores), Motherboard: ASRock Q1900B-ITX, Chipset: Intel ValleyView SSA-CUnit, Memory: 16384MB, Disk: 120GB GOODRAM C50, Graphics: Intel ValleyView Gen7 (860MHz), Audio: Realtek ALC662 rev1, Network: Realtek RTL8111/8168/8411

OS: Ubuntu 14.04, Kernel: 3.13.0-24-generic (x86_64), Desktop: Xfce 4.10, Display Server: X Server 1.15.1, Display Driver: intel 2.99.910, OpenGL: 3.3 Mesa 10.1.0, Compiler: GCC 4.8.2, File-System: ext4, Screen Resolution: 1920x1080

Compiler Notes: --build=x86_64-linux-gnu --disable-browser-plugin --disable-libmudflap --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-multilib-list=m32,m64,mx32 --with-tune=generic -v
Processor Notes: Scaling Governor: acpi-cpufreq ondemand
Graphics Notes: SNA

	AMD Phenom 9500	AMD Phenom II X3 710	AMD Sempron 2650	AMD Sempron 3850	AMD Athlon 5150	AMD Athlon 5350	i7-4700MQ	Celeron J1900
TTSIOD 3D Renderer - P.R.W.S.S.M (FPS)	24.92	43.72	**15.83**	28.90	34.01	40.06	**142.29**	38.04
Normalized	65.51%	114.93%	41.61%	75.97%	89.41%	105.31%	374.05%	100%
Standard Deviation	5.4%	0.4%	0.3%	0.3%	0.5%	0.3%	1.4%	0.4%
OpenArena - 1024 x 768 (FPS)	**21.60**	24.13	29.47	32.97	37.23	37.70	**81.83**	35.10
Normalized	61.54%	68.75%	83.96%	93.93%	106.07%	107.41%	233.13%	100%
Standard Deviation	0%	2.8%	1.4%	1.4%	1.7%	2.2%	0.3%	0.6%
Reaction Quake 3 - 1024 x 768 (FPS)	**11.48**	21.20	21.93	25.67	27.27	27.30	**114.27**	29.30
Normalized	39.18%	72.35%	74.85%	87.61%	93.07%	93.17%	390%	100%
Standard Deviation	44.2%	6.7%	0.3%	0.2%	0.2%	0%	0.3%	0%

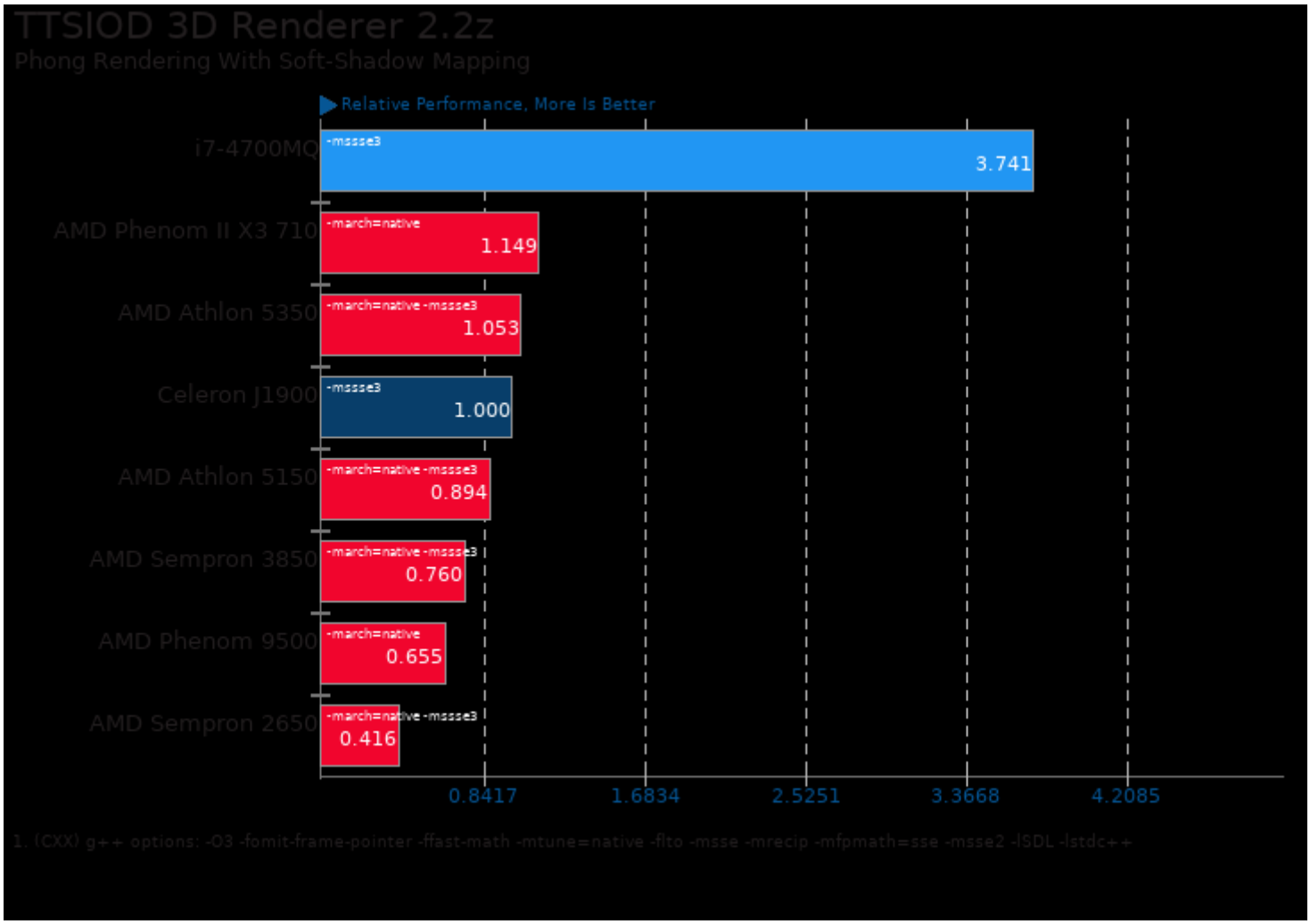
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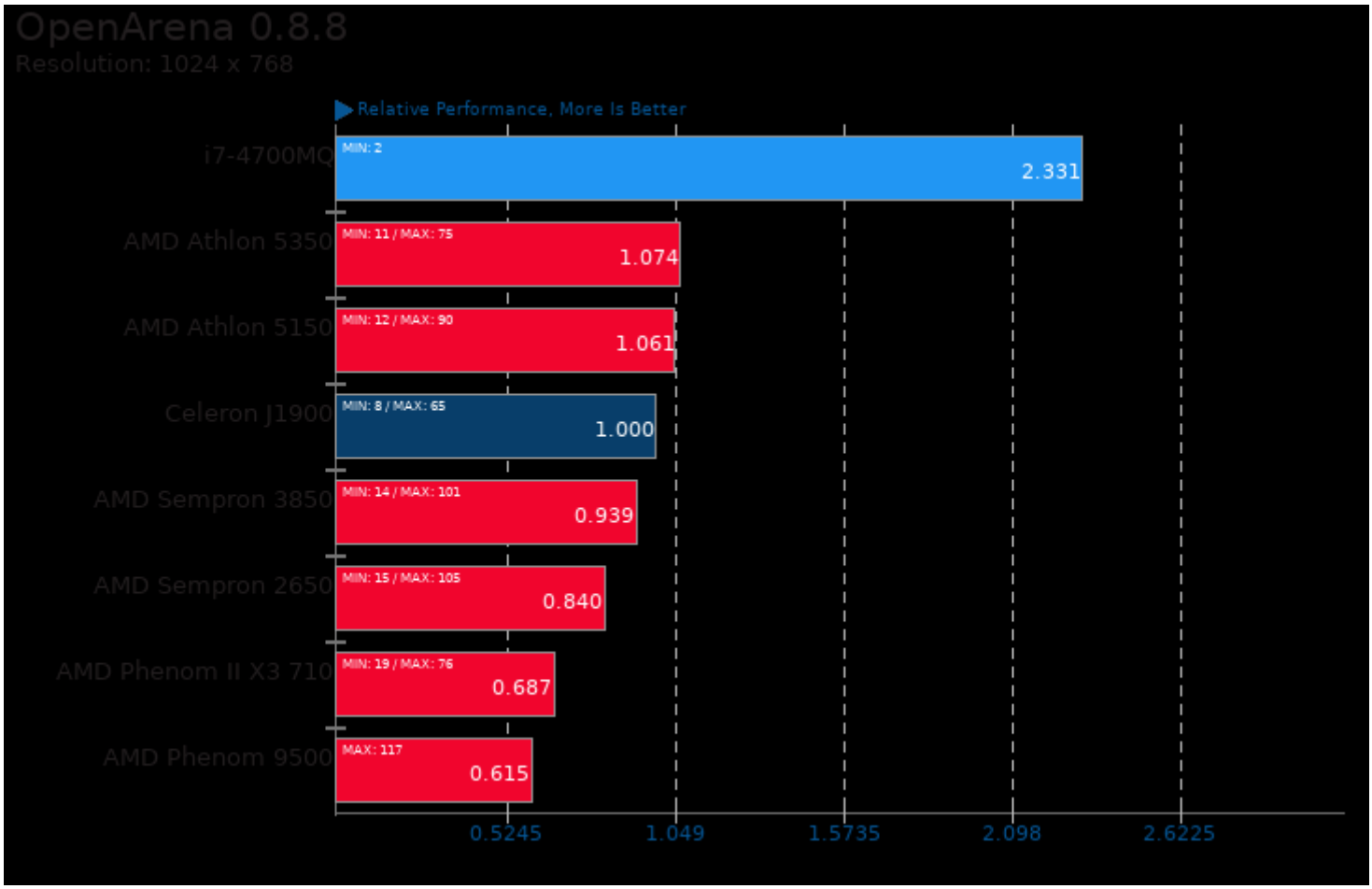
Unvanquished - 1024 x 768 - High (FPS)	4.27	5.50	7.60	8.47	9.50	9.93	27.23	13.80
Normalized	30.94%	39.86%	55.07%	61.38%	68.84%	71.96%	197.32%	100%
Standard Deviation	15.3%	0%	1.3%	0.7%	1.1%	0.6%	0.2%	0%
Unvanquished - 1024 x 768 - Intermediate	8.40	12.07	20.10	23.33	26.03	26.30	50.37	24.47
Normalized	34.33%	49.33%	82.14%	95.34%	106.38%	107.48%	205.84%	100%
Standard Deviation	24.1%	1.3%	0%	0.9%	0.6%	0.7%	0.3%	0.5%
Xonotic - 1024 x 768 - Low (FPS)	67.16	88.44	55.67	56.75	66.97	79.63	240.92	75.82
Normalized	88.58%	116.64%	73.42%	74.85%	88.33%	105.03%	317.75%	100%
Standard Deviation	9.1%	5.7%	1.2%	0.1%	0.2%	0.3%	0.3%	0.2%
Xonotic - 1024 x 768 - High (FPS)	22.22	31.65	34.54	37.96	44.47	48.60	149.18	46.58
Normalized	47.7%	67.95%	74.15%	81.49%	95.47%	104.34%	320.27%	100%
Standard Deviation	33.3%	2.1%	0.7%	0.7%	0.3%	1.4%	0.8%	0.3%
VP8 libvpx Encoding - vpxenc (FPS)	10.85	11.46	4.81	6.77	8.26	10.56		9.32
Normalized	116.42%	122.96%	51.61%	72.64%	88.63%	113.3%		100%
Standard Deviation	0.9%	0.7%	0.8%	0.9%	0.9%	0.5%		0.7%
x264 - H.2.V.E (FPS)	47.09	48.14	14.72	26.08	31.74	39.73		34.44
Normalized	136.73%	139.78%	42.74%	75.73%	92.16%	115.36%		100%
Standard Deviation	1.5%	0.4%	0.8%	0.2%	0.4%	0.5%		0.3%
SciMark - Composite (Mflops)	309.74	519.27	287.63	277.27	329.68	399.01	1247	368.50
Normalized	84.05%	140.91%	78.05%	75.24%	89.47%	108.28%	338.32%	100%
Standard Deviation	0.4%	0.2%	0%	0.2%	0%	0.2%	0.8%	0.2%
SciMark - Monte Carlo (Mflops)	262.65	308.60	142.77	129.17	157.49	201.92	533.27	178.74
Normalized	146.95%	172.65%	79.88%	72.27%	88.11%	112.97%	298.35%	100%
Standard Deviation	1.7%	2.4%	0%	2%	0%	0%	0.1%	0%
SciMark - S.M.M	364.86	621.88	424.90	427.25	500.98	589.00	2016	528.01
Normalized	69.1%	117.78%	80.47%	80.92%	94.88%	111.55%	381.78%	100%
Standard Deviation	0.1%	0.2%	0%	0.1%	0%	0.2%	0.7%	0.3%
SciMark - J.S.O.R (Mflops)	462.27	583.97	398.96	362.72	444.95	566.67	1011	634.63
Normalized	72.84%	92.02%	62.86%	57.15%	70.11%	89.29%	159.36%	100%
Standard Deviation	0.1%	0.1%	0.1%	0%	0%	0.1%	0.5%	0%
Hierarchical INTegration - FLOAT	119601909	143236323	94704055	84905699	104598540	134231671	311119774	
Normalized	38.44%	46.04%	30.44%	27.29%	33.62%	43.14%	100%	
Standard Deviation	0.1%	0.1%	0.2%	0.2%	0.1%	0%	1.2%	
John The Ripper - Blowfish (Real C/S)	2403	2153	736	1322	1627	2083	5688	2051
Normalized	117.16%	104.97%	35.88%	64.46%	79.33%	101.56%	277.33%	100%
Standard Deviation	0.1%	0.1%	0.2%	0%	0%	0%	0.1%	0.3%
John The Ripper - Traditional DES (Real C/S)	6774667	6886667	2377000	4316667	5317000	6782333	8882000	6666667
Normalized	101.62%	103.3%	35.65%	64.75%	79.75%	101.73%	133.23%	100%
Standard Deviation	0.4%	0.2%	1.1%	0.1%	0.2%	0.1%	0.1%	0.1%

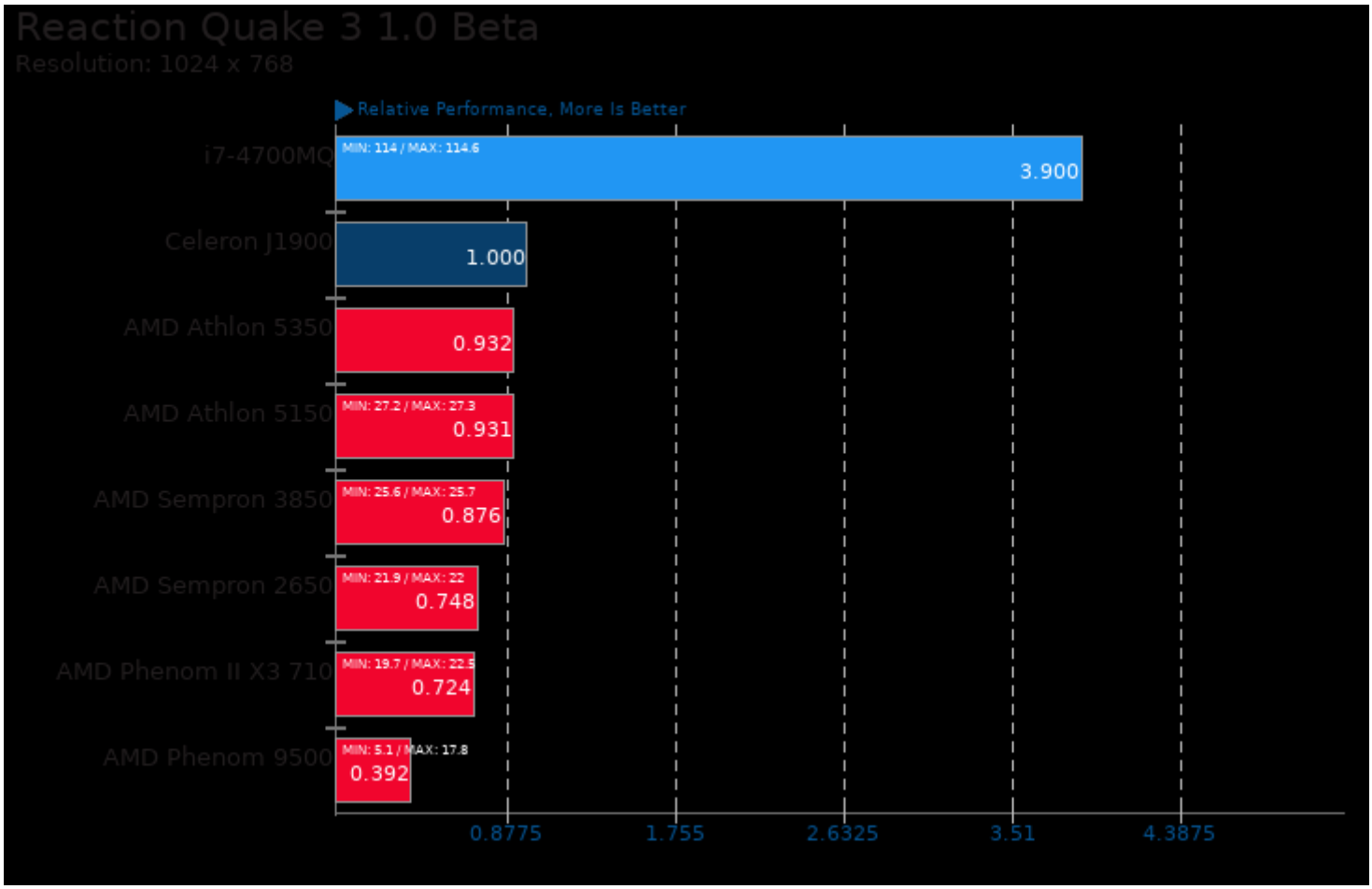
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Phoronix Test Suite

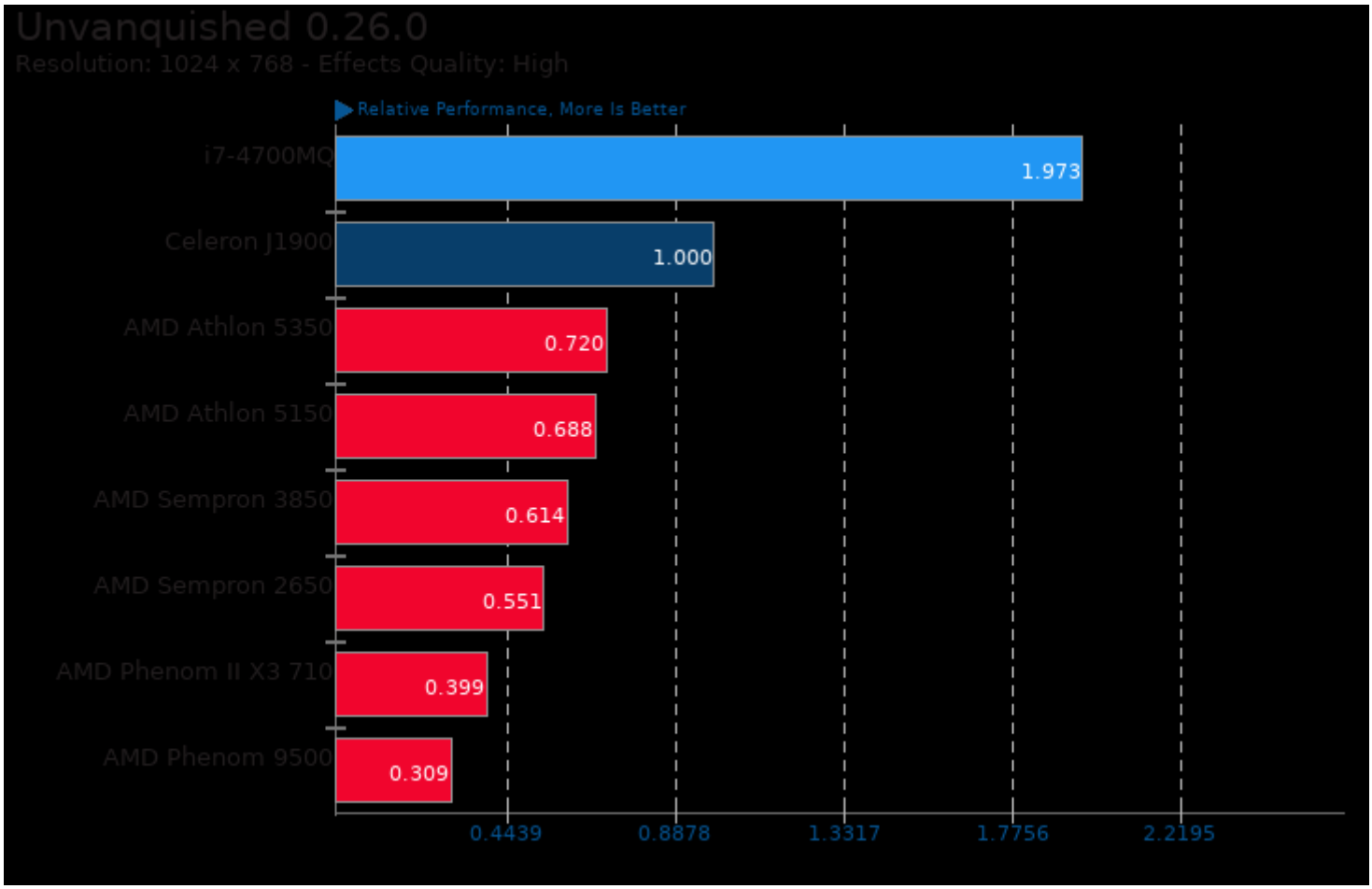
John The Ripper - MD5 (Real C/S)	39269	34704	**9860**	17688	21753	27927	**71993**	24527
Normalized	160.11%	141.49%	40.2%	72.12%	88.69%	113.86%	293.53%	100%
Standard Deviation	0.1%	0.5%	0.2%	0.1%	0.1%	0.1%	0.1%	0.2%
OpenSSL - R.4.b.P (Signs/sec)	251.50	223.93	**57.23**	102.83	126.63	162.47	**514.63**	108.37
Normalized	232.08%	206.63%	52.81%	94.89%	116.85%	149.92%	474.88%	100%
Standard Deviation	0.1%	0.1%	0.1%	0.1%	0%	0%	3.3%	0.1%
LAMMPS Molecular Dynamics Simulator - Rhodopsin Protein (Loop Time)	152.20	**85.87**	**214.51**	214.22	175.86	142.51		173.64
Normalized	114.09%	202.21%	80.95%	81.06%	98.74%	121.84%		100%
Standard Deviation	5.8%	0.2%	0.6%	1%	1.3%	3.4%		0.2%
Dolfyn - C.F.D (sec)	91.53	**59.20**	116.74	**120.43**	99.74	79.99		
Normalized	64.68%	100%	50.71%	49.16%	59.35%	74.01%		
Standard Deviation	3%	1.1%	0.2%	0.2%	0.2%	0.3%		
Timed HMMer Search - P.D.S (sec)	32.26	28.47	**77.16**	45.08	37.64	31.06	**11.13**	36.26
Normalized	112.4%	127.36%	46.99%	80.43%	96.33%	116.74%	325.79%	100%
Standard Deviation	2.7%	1.1%	0.3%	0.7%	0.5%	0.4%	0.1%	0.8%
Timed MAFFT Alignment - M.S.A (sec)	21.33	16.25	**48.35**	29.62	23.96	19.34	**5.51**	
Normalized	25.83%	33.91%	11.4%	18.6%	23%	28.49%	100%	
Standard Deviation	7%	8.4%	0.1%	0%	5.3%	5.5%	0.7%	
Timed Apache Compilation - Time To Compile (sec)	109.88	76.70	**285.40**	190.03	158.81	129.09	**29.98**	133.84
Normalized	121.81%	174.5%	46.9%	70.43%	84.28%	103.68%	446.43%	100%
Standard Deviation	0.3%	0.5%	0.2%	0.1%	0.2%	0.2%	0.2%	0.4%
Timed ImageMagick Compilation - Time To Compile (sec)	240.88	245.96	**641.12**	363.74	310.91	262.52	**60.58**	253.44
Normalized	105.21%	103.04%	39.53%	69.68%	81.52%	96.54%	418.36%	100%
Standard Deviation	1%	0.3%	0.1%	0.1%	0.5%	0.2%	0.6%	0.2%
C-Ray - Total Time	67.85	74.90	**204.16**	114.00	92.49	72.15	**26.56**	125.15
Normalized	184.45%	167.09%	61.3%	109.78%	135.31%	173.46%	471.2%	100%
Standard Deviation	0.1%	0%	0.1%	0%	0.1%	0%	0.1%	0%
Smallpt - G.I.R.1.S (sec)	103	112	308	170	139	109	**101**	**389**
Normalized	377.67%	347.32%	126.3%	228.82%	279.86%	356.88%	385.15%	100%
Standard Deviation	0%	0%	0.3%	0.7%	1.7%	0%	0.6%	0.1%
FLAC Audio Encoding - WAV To FLAC (sec)	13.53	11.31	24.58	**27.39**	22.25	17.35	**5.24**	18.33
Normalized	135.48%	162.07%	74.57%	66.92%	82.38%	105.65%	349.81%	100%
Standard Deviation	0.5%	0.1%	0.2%	0.1%	0.1%	0.1%	0.2%	0.1%
LAME MP3 Encoding - WAV To MP3 (sec)	35.13	28.69	53.33	**59.33**	48.34	37.61	**14.20**	42.36
Normalized	120.58%	147.65%	79.43%	71.4%	87.63%	112.63%	298.31%	100%
Standard Deviation	0.3%	0.2%	0.4%	0.2%	0.4%	0.5%	0.3%	0.1%

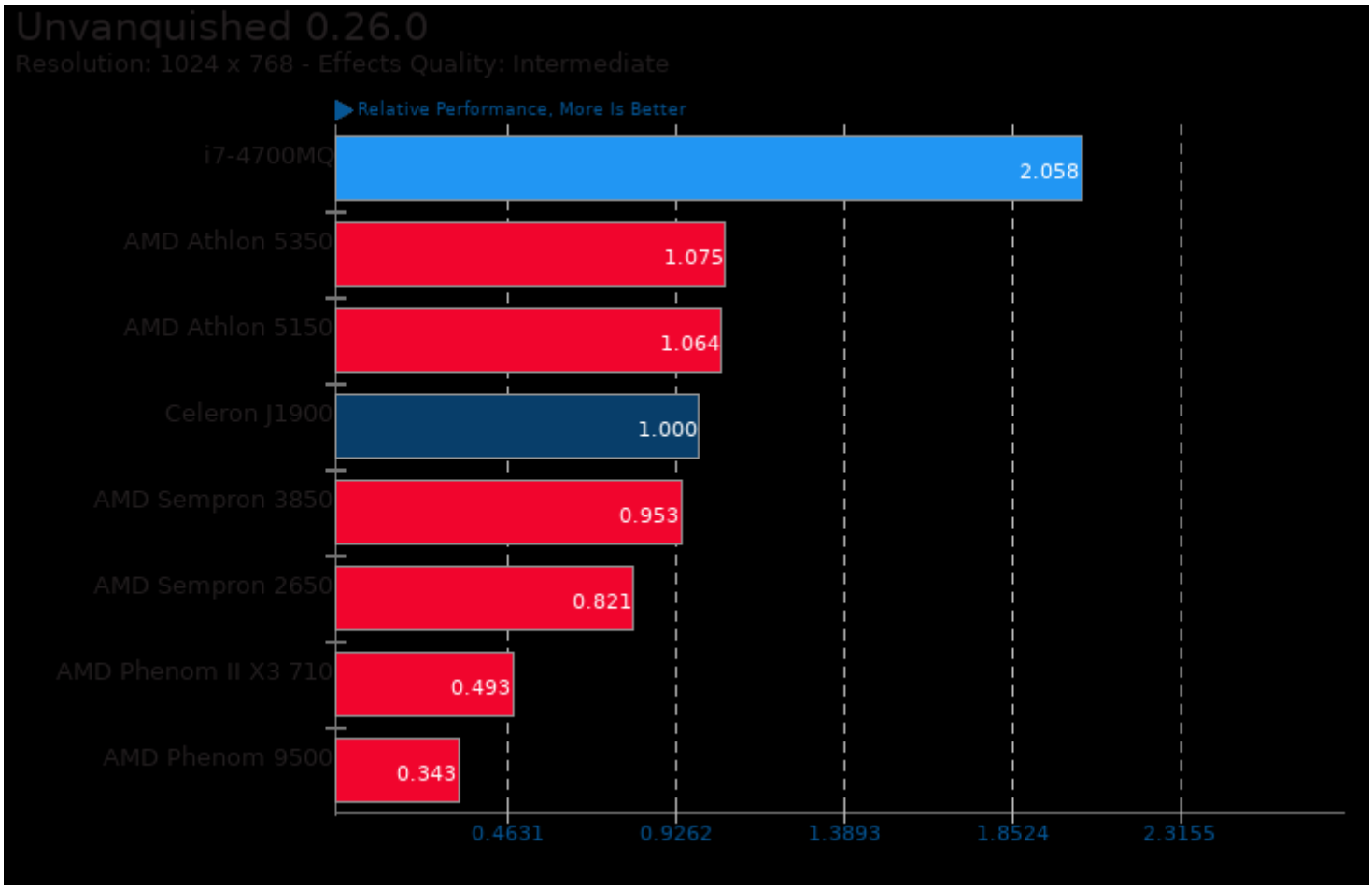

TTSIOD 3D Renderer 2.2z
Phong Rendering With Soft-Shadow Mapping
Relative Performance, More Is Better
i7-4700MQ
-msse3
3.741
AMD Phenom II X3 710
-march=native
1.149
AMD Athlon 5350
-march=native -msse3
1.053
Celeron J1900
-msse3
1.000
AMD Athlon 5150
-march=native -msse3
0.894
AMD Sempron 3850
-march=native -msse3
0.760
AMD Phenom 9500
-march=native
0.655
AMD Sempron 2650
-march=native -msse3
0.416
0.8417
1.6834
2.5251
3.3668
4.2085
1. (CXX) g++ options: -O3 -fomit-frame-pointer -ffast-math -mtune=native -flto -msse -mrecip -mfpmath=sse -msse2 -lSDL -lstdc++

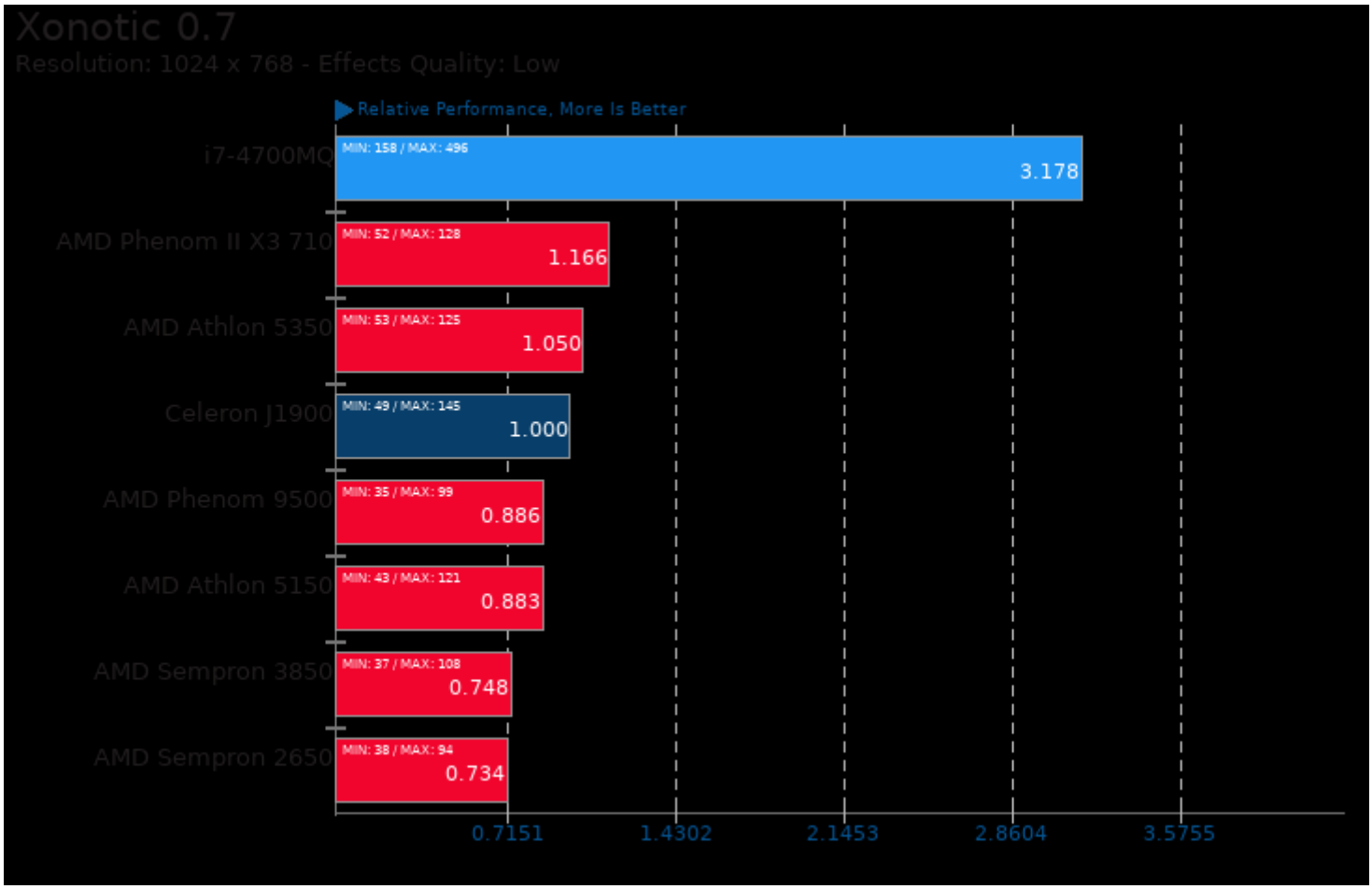

OpenArena 0.8.8
Resolution: 1024 x 768
Relative Performance, More Is Better
i7-4700MQ
MIN: 2
2.331
AMD Athlon 5350
MIN: 11 / MAX: 75
1.074
AMD Athlon 5150
MIN: 12 / MAX: 90
1.061
Celeron J1900
MIN: 8 / MAX: 65
1.000
AMD Sempron 3850
MIN: 14 / MAX: 101
0.939
AMD Sempron 2650
MIN: 15 / MAX: 105
0.840
AMD Phenom II X3 710
MIN: 19 / MAX: 76
0.687
AMD Phenom 9500
MAX: 117
0.615
0.5245
1.049
1.5735
2.098
2.6225

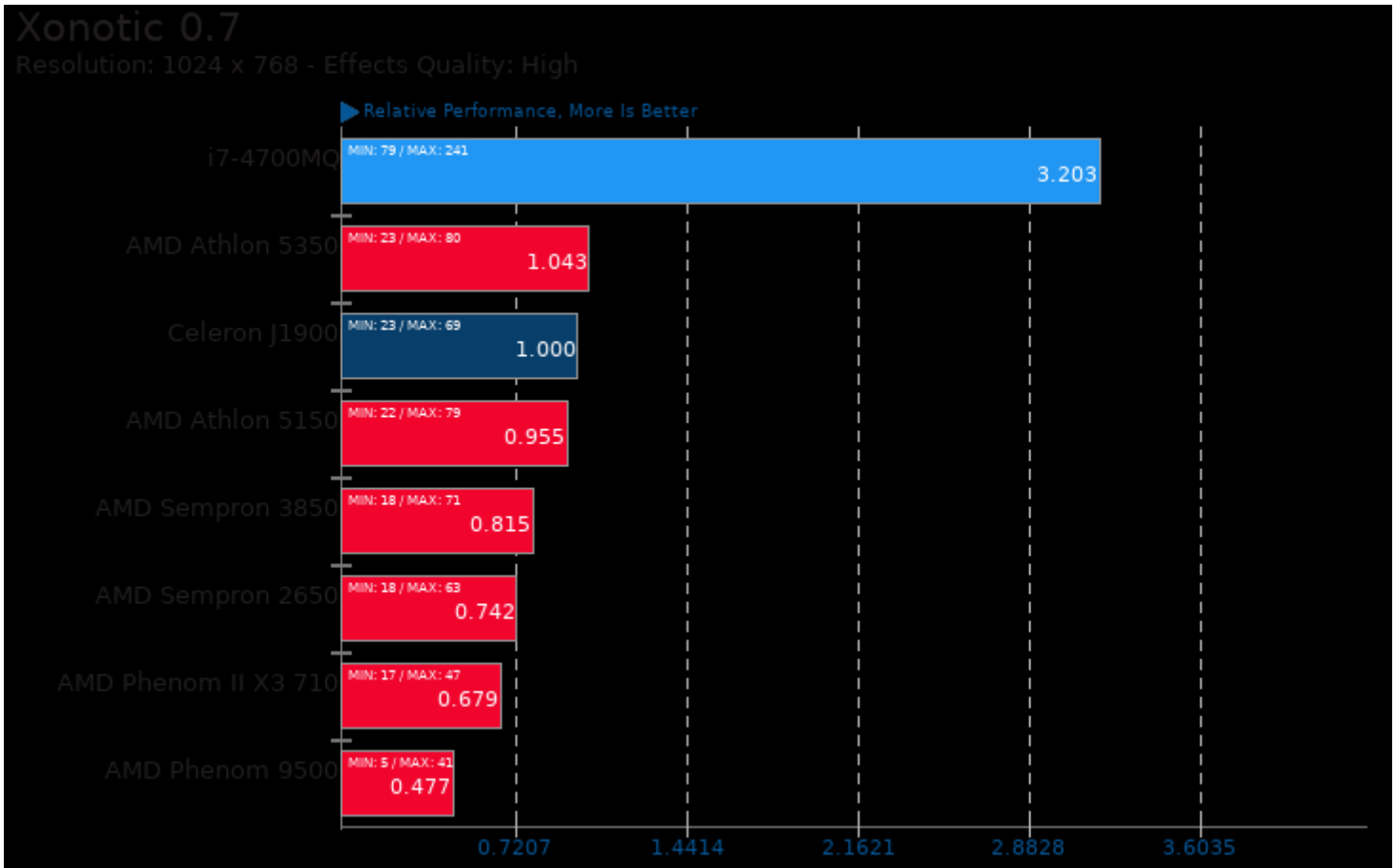

Reaction Quake 3 1.0 Beta
Resolution: 1024 x 768
Relative Performance, More Is Better
i7-4700MQ
MIN: 114 / MAX: 114.6
3.900
Celeron J1900
1.000
AMD Athlon 5350
0.932
AMD Athlon 5150
MIN: 27.2 / MAX: 27.3
0.931
AMD Sempron 3850
MIN: 25.6 / MAX: 25.7
0.876
AMD Sempron 2650
MIN: 21.9 / MAX: 22
0.748
AMD Phenom II X3 710
MIN: 19.7 / MAX: 22.5
0.724
AMD Phenom 9500
MIN: 5.1 / MAX: 17.8
0.392
0.8775
1.755
2.6325
3.51
4.3875

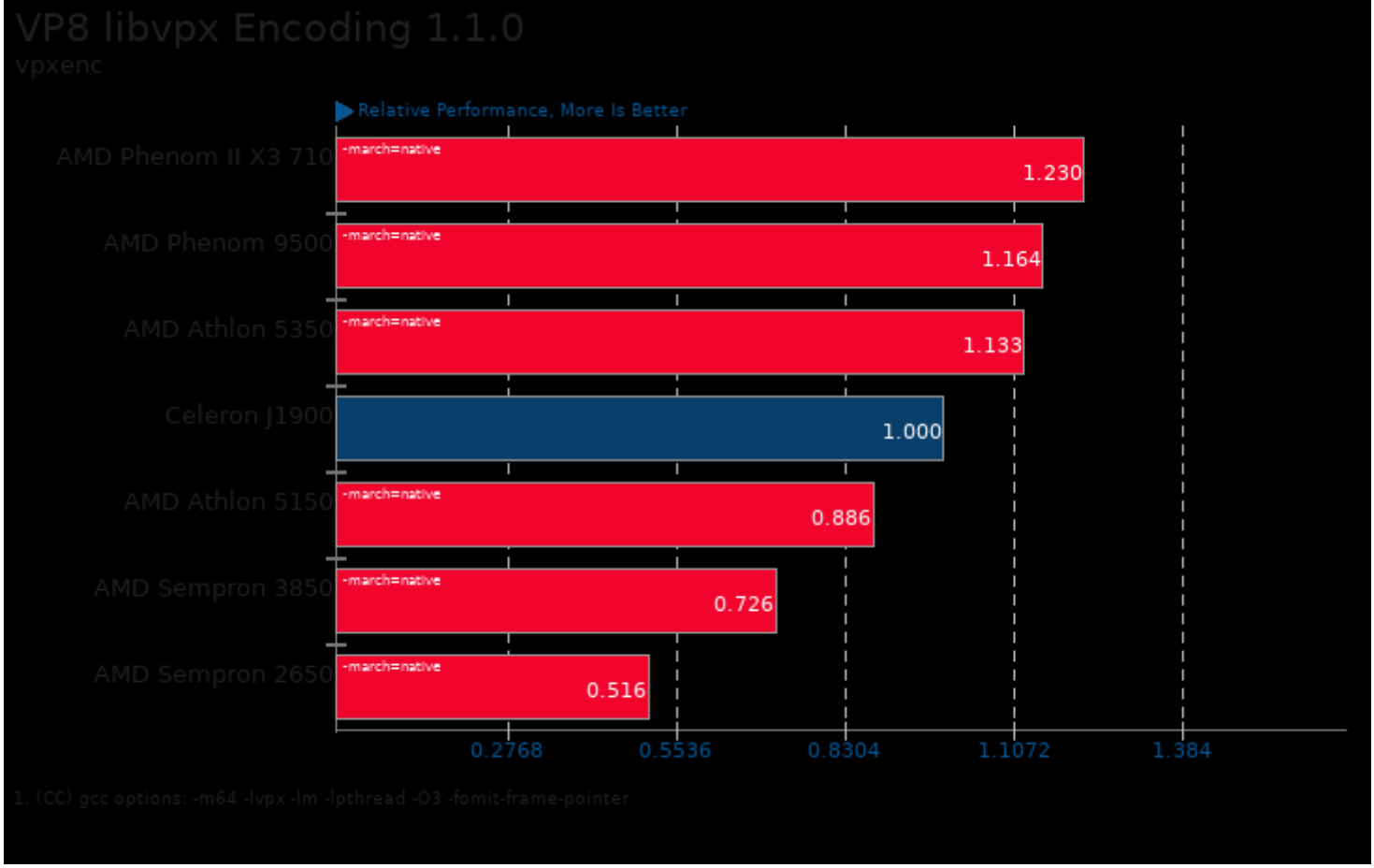
AMD AM1 Athlon Sempron Phenom APUs Ubuntu Linux

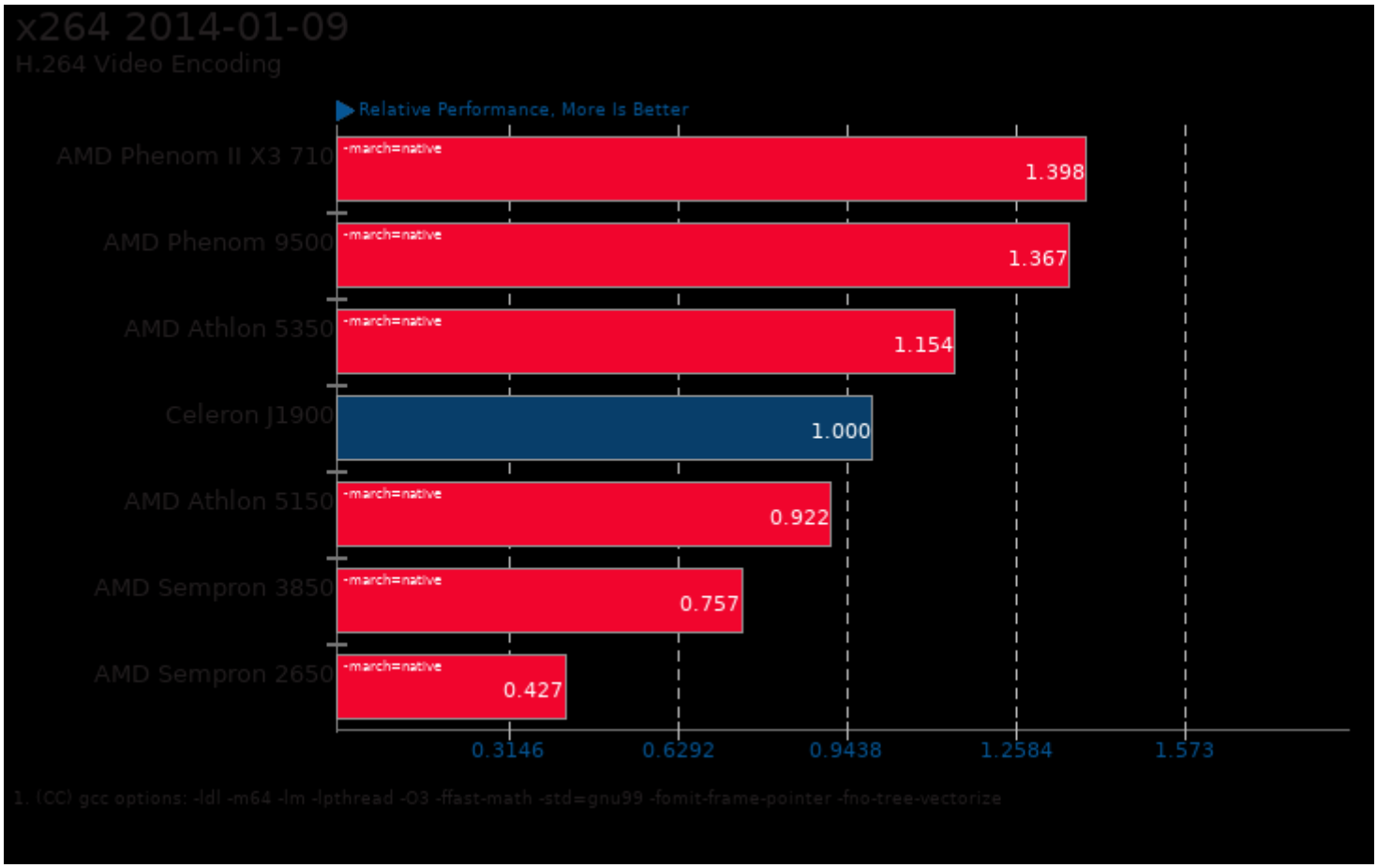


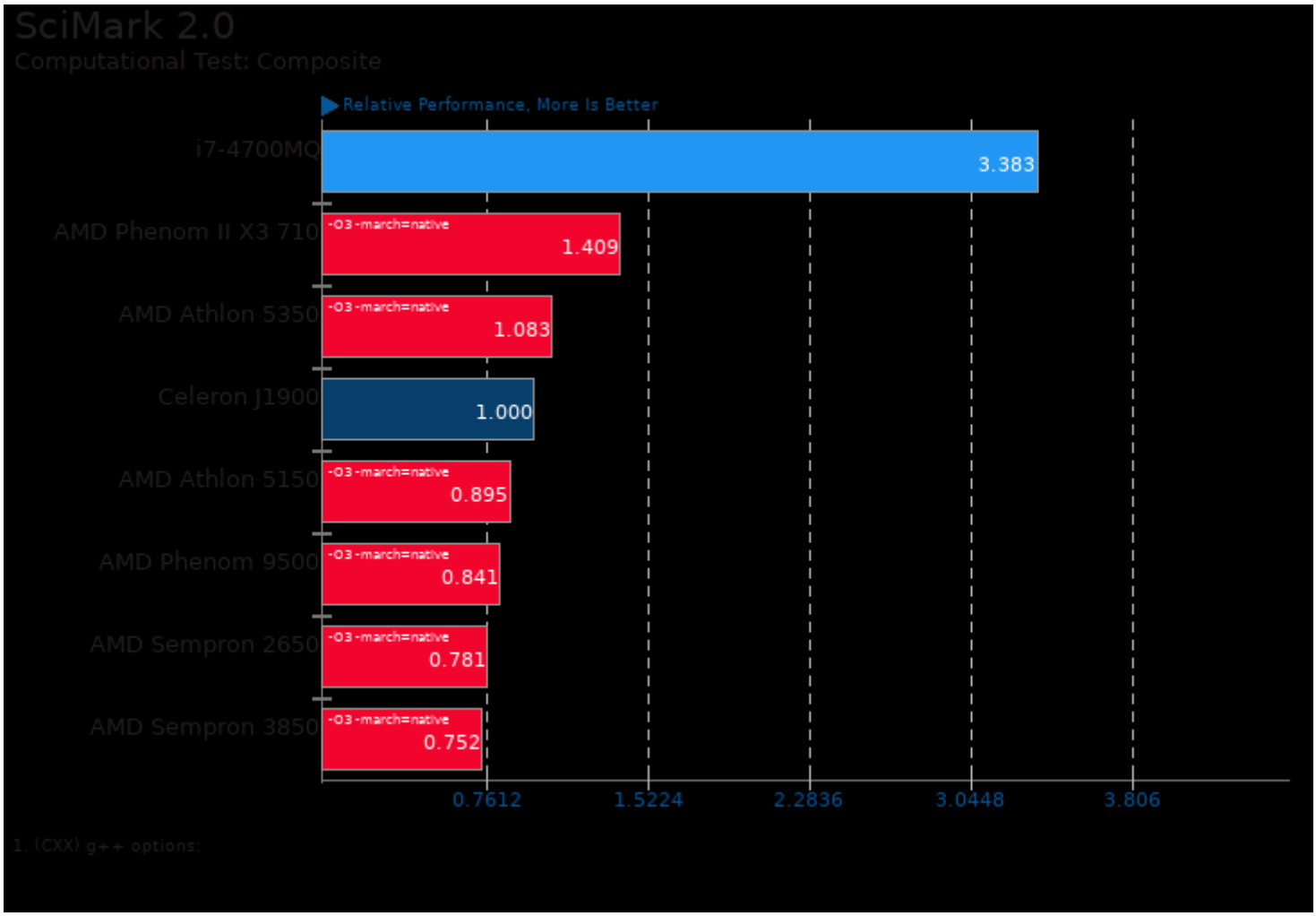

Unvanquished 0.26.0
Resolution: 1024 x 768 - Effects Quality: Intermediate
Relative Performance, More Is Better
i7-4700MQ
AMD Athlon 5350
AMD Athlon 5150
Celeron J1900
AMD Sempron 3850
AMD Sempron 2650
AMD Phenom II X3 710
AMD Phenom 9500
2.058
1.075
1.064
1.000
0.953
0.821
0.493
0.343
0.4631
0.9262
1.3893
1.8524
2.3155

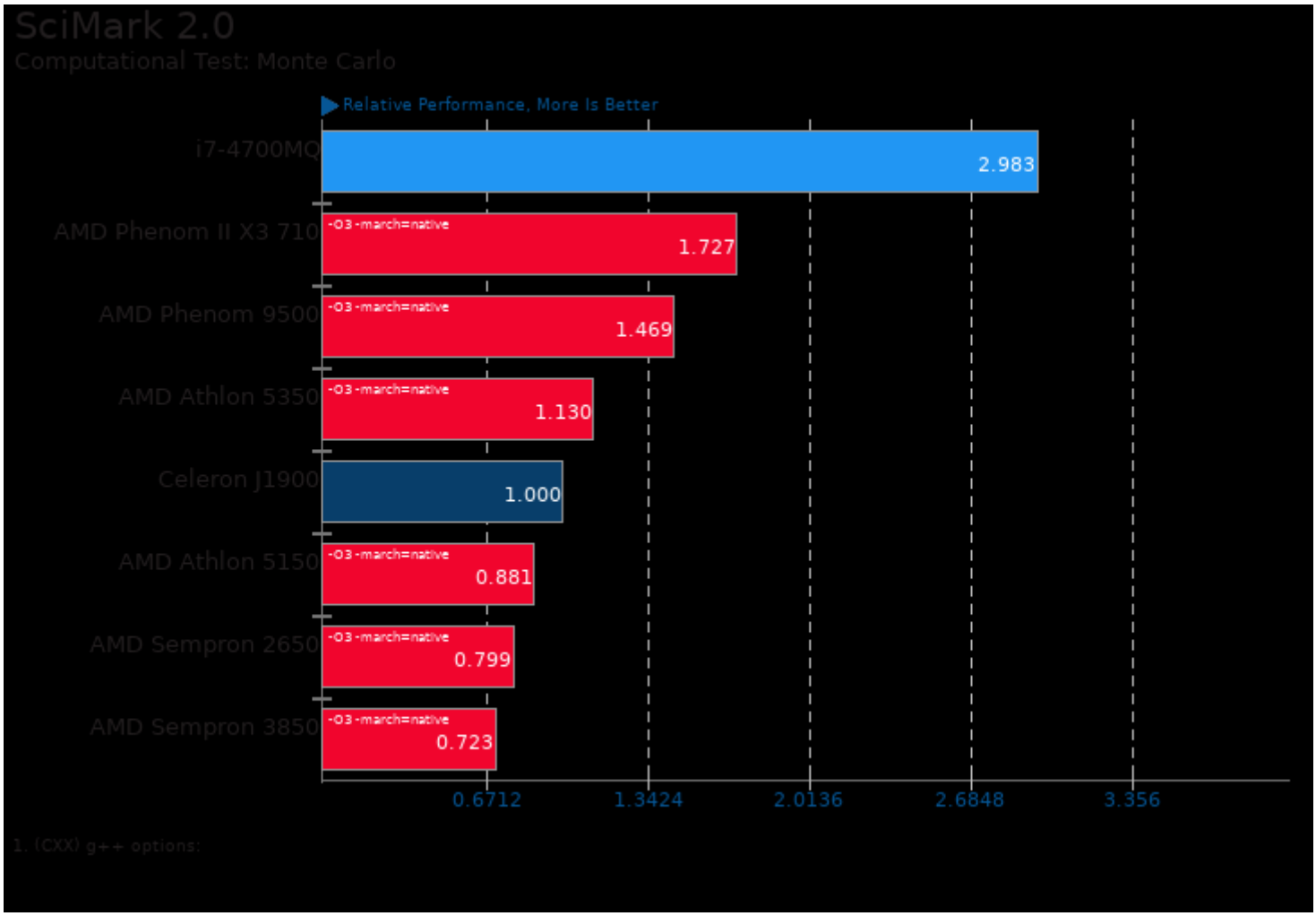

Xonotic 0.7
Resolution: 1024 x 768 - Effects Quality: Low
Relative Performance, More Is Better
i7-4700MQ
MIN: 158 / MAX: 496
3.178
AMD Phenom II X3 710
MIN: 52 / MAX: 128
1.166
AMD Athlon 5350
MIN: 53 / MAX: 125
1.050
Celeron J1900
MIN: 49 / MAX: 145
1.000
AMD Phenom 9500
MIN: 35 / MAX: 99
0.886
AMD Athlon 5150
MIN: 43 / MAX: 121
0.883
AMD Sempron 3850
MIN: 37 / MAX: 108
0.748
AMD Sempron 2650
MIN: 38 / MAX: 94
0.734
0.7151
1.4302
2.1453
2.8604
3.5755


Xonotic 0.7
Resolution: 1024 x 768 - Effects Quality: High
Relative Performance, More Is Better
i7-4700MQ
MIN: 79 / MAX: 241
3.203
AMD Athlon 5350
MIN: 23 / MAX: 80
1.043
Celeron J1900
MIN: 23 / MAX: 69
1.000
AMD Athlon 5150
MIN: 22 / MAX: 79
0.955
AMD Sempron 3850
MIN: 18 / MAX: 71
0.815
AMD Sempron 2650
MIN: 18 / MAX: 63
0.742
AMD Phenom II X3 710
MIN: 17 / MAX: 47
0.679
AMD Phenom 9500
MIN: 5 / MAX: 41
0.477
0.7207
1.4414
2.1621
2.8828
3.6035

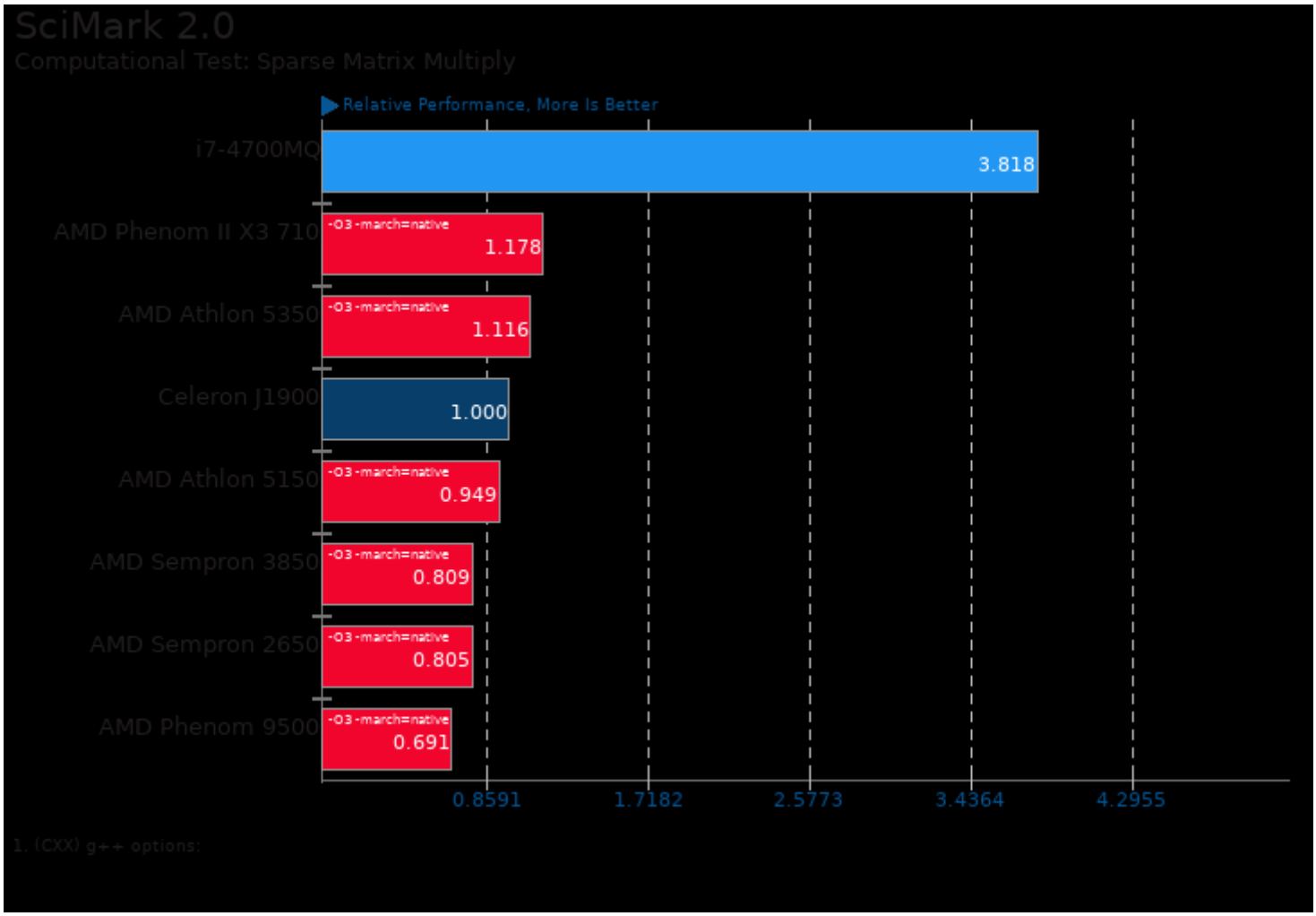

VP8 libvpx Encoding 1.1.0
vpxenc
Relative Performance, More Is Better
AMD Phenom II X3 710
-march=native
1.230
AMD Phenom 9500
-march=native
1.164
AMD Athlon 5350
-march=native
1.133
Celeron J1900
1.000
AMD Athlon 5150
-march=native
0.886
AMD Sempron 3850
-march=native
0.726
AMD Sempron 2650
-march=native
0.516
0.2768
0.5536
0.8304
1.1072
1.384
1. (CC) gcc options: -m64 -lvpx -lm -lpthread -O3 -fomit-frame-pointer

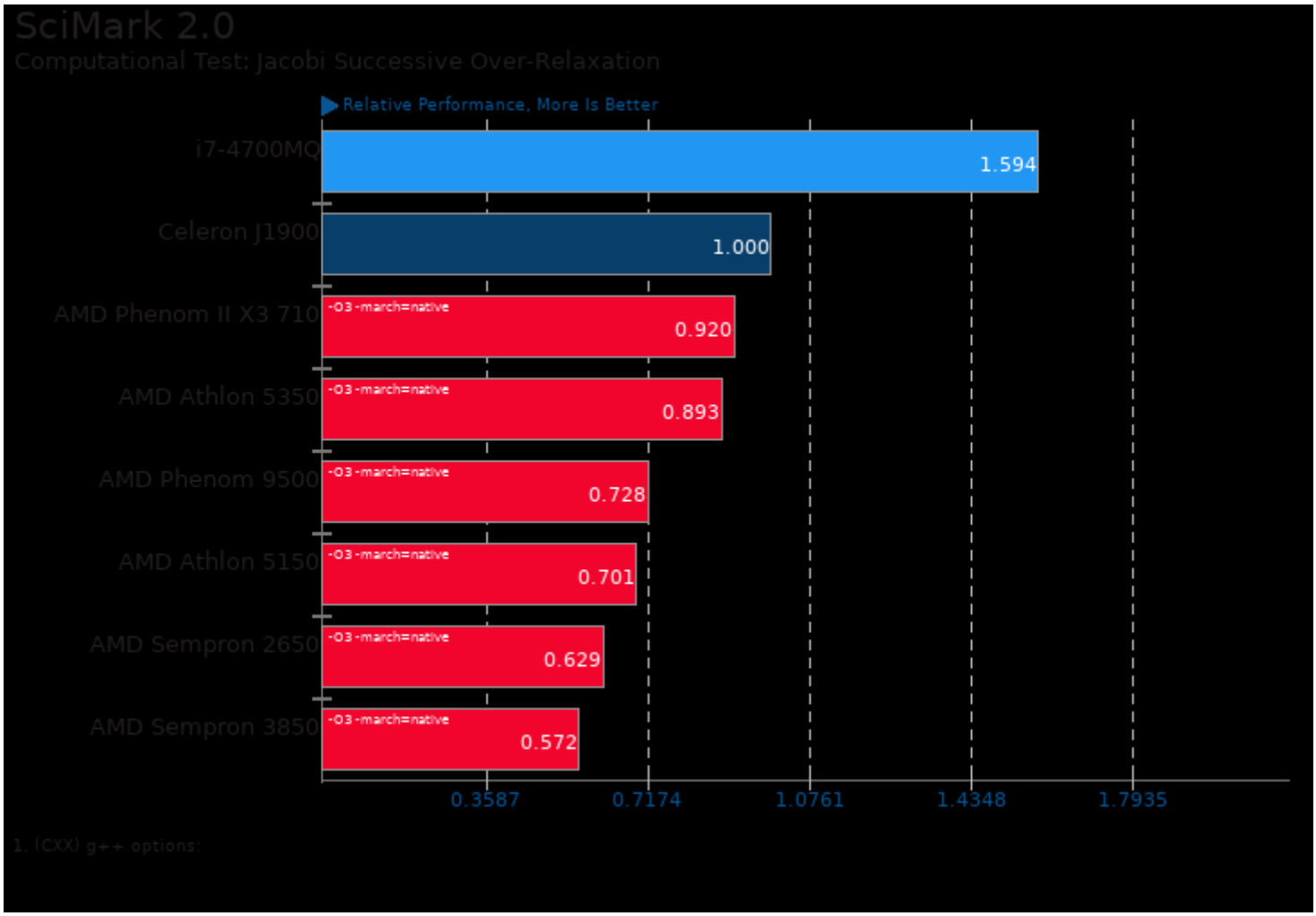

x264 2014-01-09
H.264 Video Encoding
Relative Performance, More Is Better
AMD Phenom II X3 710
AMD Phenom 9500
AMD Athlon 5350
Celeron J1900
AMD Athlon 5150
AMD Sempron 3850
AMD Sempron 2650
-march=native
1.398
1.367
1.154
1.000
0.922
0.757
0.427
0.3146
0.6292
0.9438
1.2584
1.573
1. (CC) gcc options: -ldl -m64 -lm -lpthread -O3 -ffast-math -std=gnu99 -fomit-frame-pointer -fno-tree-vectorize

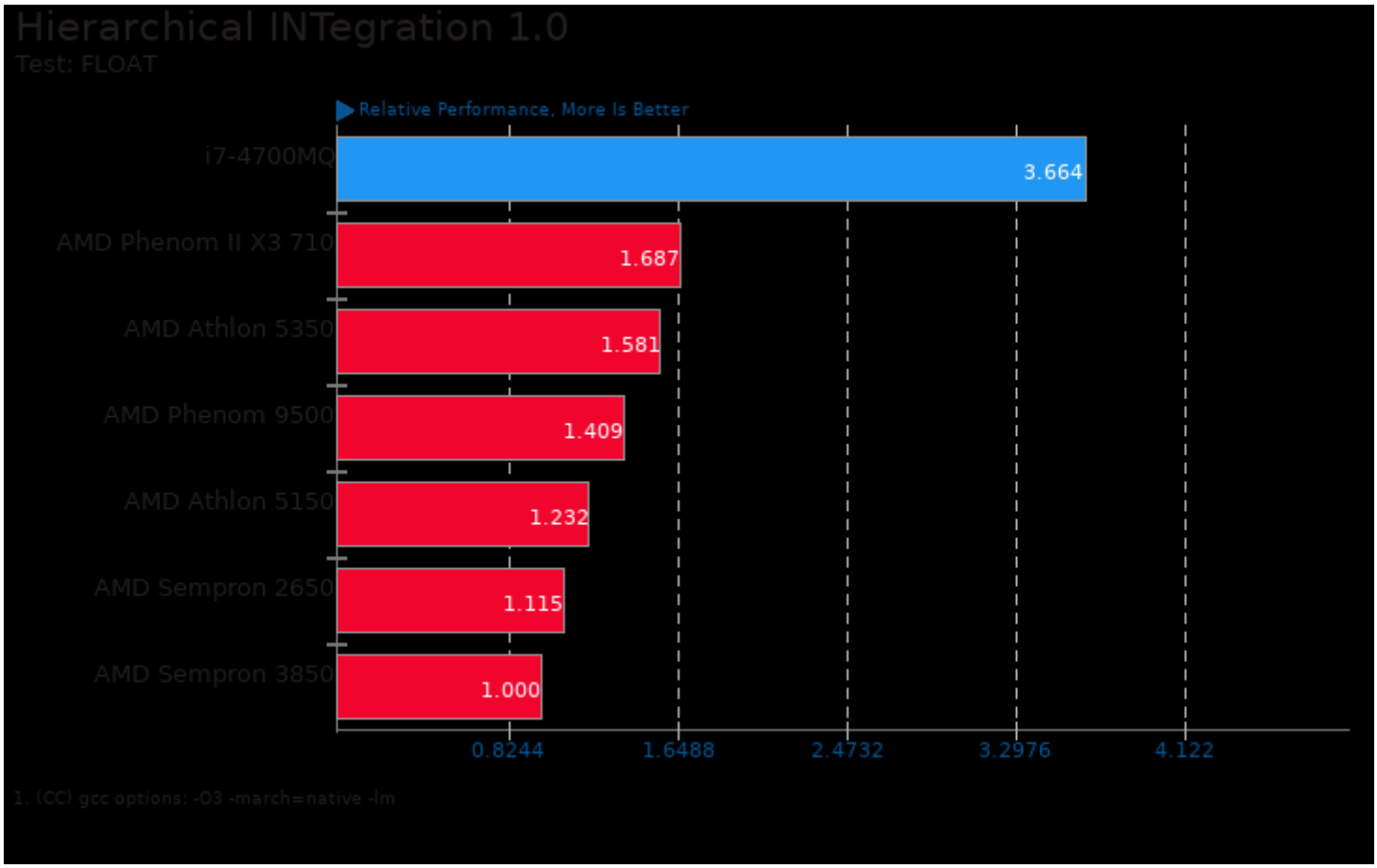

SciMark 2.0
Computational Test: Composite
Relative Performance, More Is Better
i7-4700MQ
3.383
AMD Phenom II X3 710
-O3 -march=native
1.409
AMD Athlon 5350
-O3 -march=native
1.083
Celeron J1900
1.000
AMD Athlon 5150
-O3 -march=native
0.895
AMD Phenom 9500
-O3 -march=native
0.841
AMD Sempron 2650
-O3 -march=native
0.781
AMD Sempron 3850
-O3 -march=native
0.752
0.7612
1.5224
2.2836
3.0448
3.806
1. (CXX) g++ options:

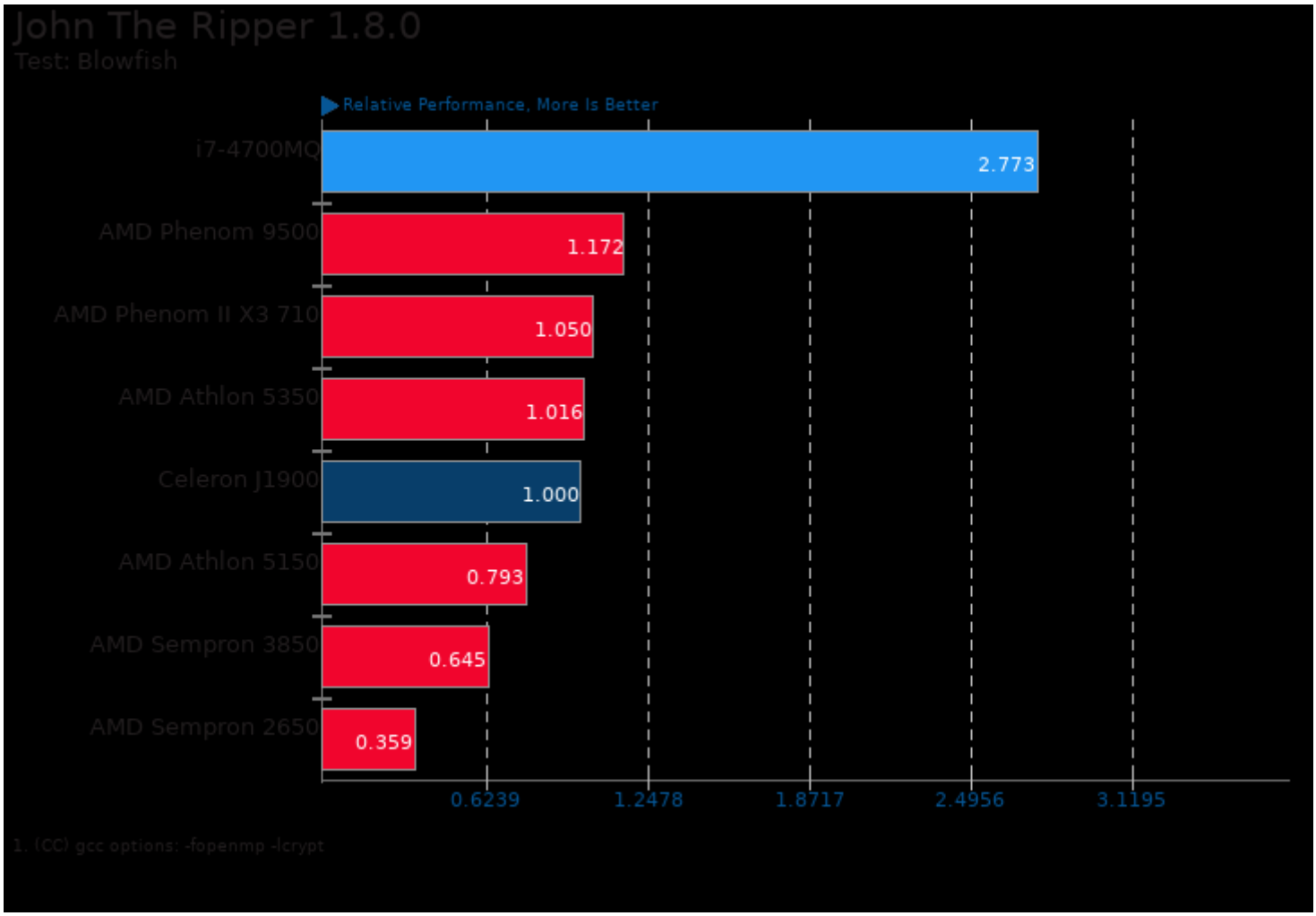

SciMark 2.0
Computational Test: Monte Carlo
Relative Performance, More Is Better
i7-4700MQ
AMD Phenom II X3 710
AMD Phenom 9500
AMD Athlon 5350
Celeron J1900
AMD Athlon 5150
AMD Sempron 2650
AMD Sempron 3850
2.983
-O3 -march=native
1.727
-O3 -march=native
1.469
-O3 -march=native
1.130
1.000
-O3 -march=native
0.881
-O3 -march=native
0.799
-O3 -march=native
0.723
0.6712
1.3424
2.0136
2.6848
3.356
1. (CXX) g++ options:

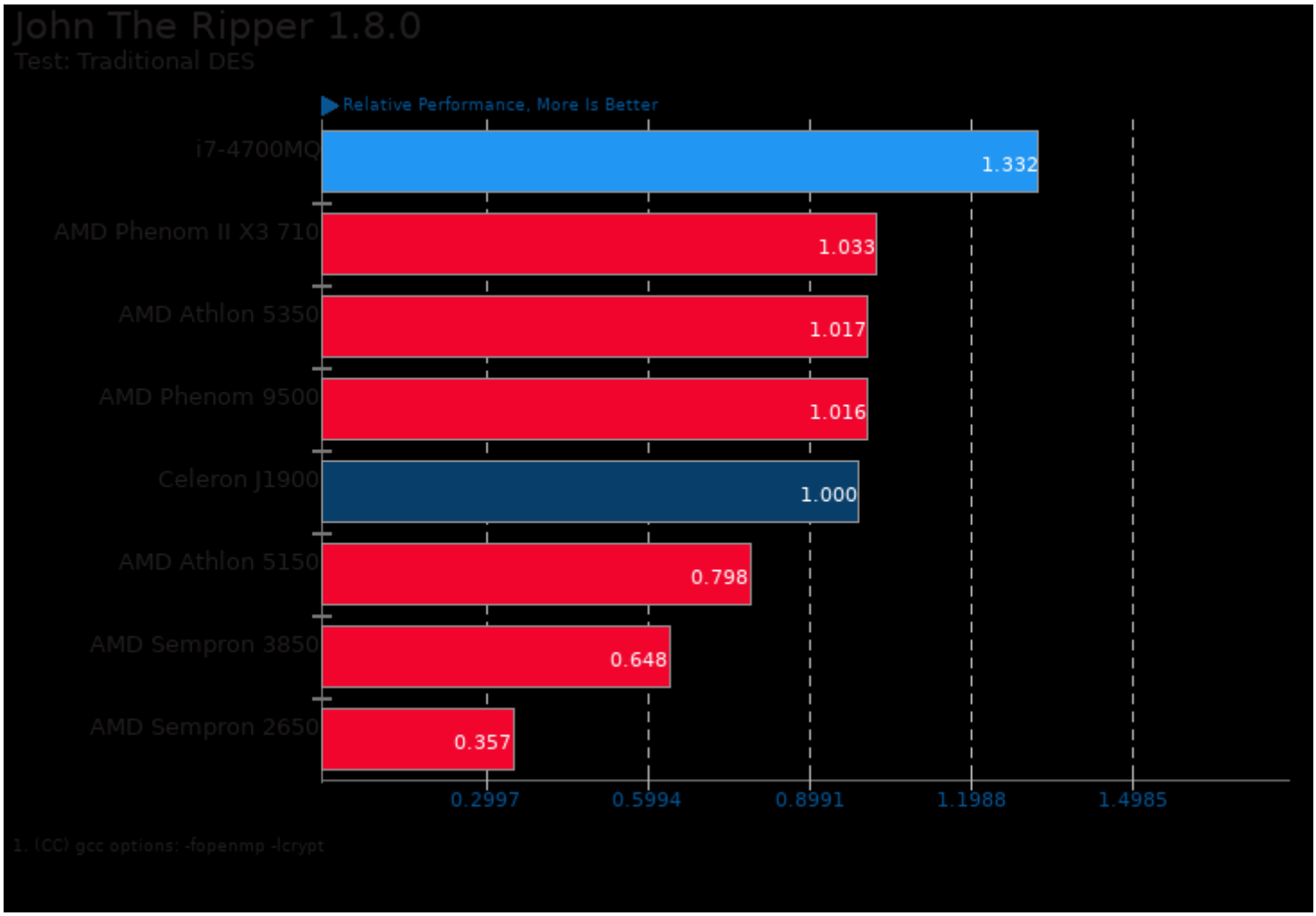
AMD AM1 Athlon Sempron Phenom APUs Ubuntu Linux

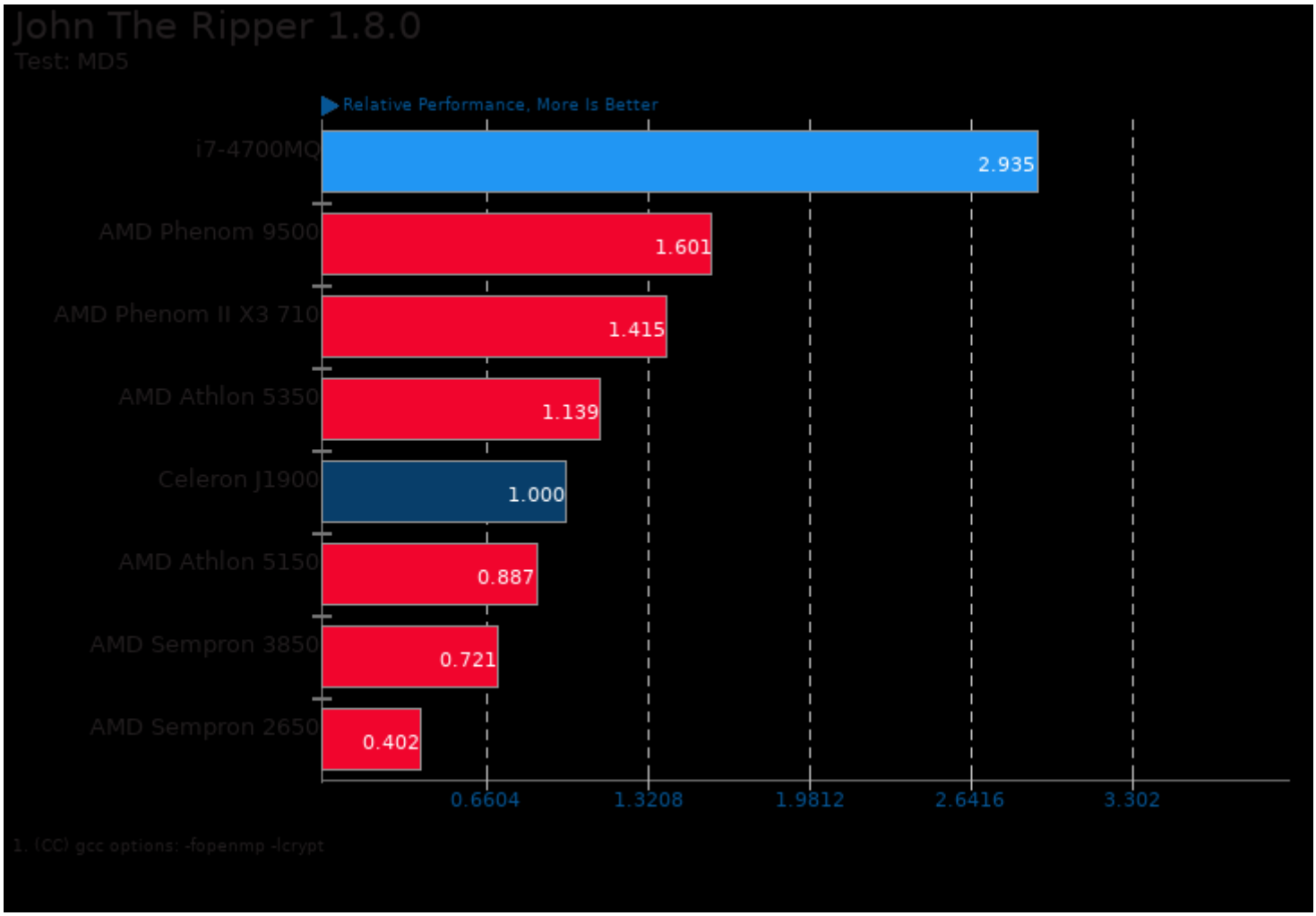



SciMark 2.0
Computational Test: Jacobi Successive Over-Relaxation
Relative Performance, More Is Better
i7-4700MQ
1.594
Celeron J1900
1.000
AMD Phenom II X3 710
-O3 -march=native
0.920
AMD Athlon 5350
-O3 -march=native
0.893
AMD Phenom 9500
-O3 -march=native
0.728
AMD Athlon 5150
-O3 -march=native
0.701
AMD Sempron 2650
-O3 -march=native
0.629
AMD Sempron 3850
-O3 -march=native
0.572
0.3587
0.7174
1.0761
1.4348
1.7935
1. (CXX) g++ options:

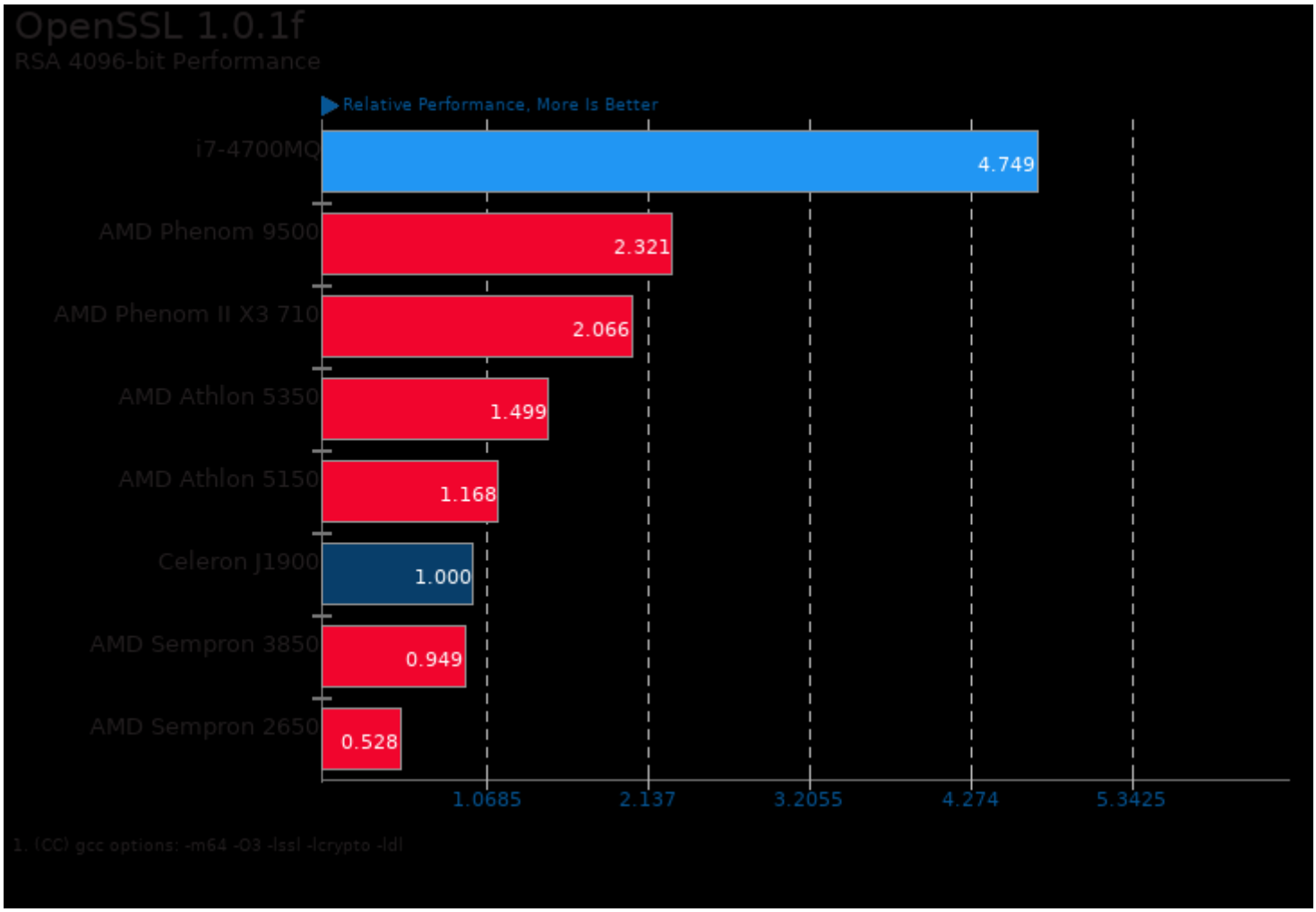

Hierarchical INTegration 1.0
Test: FLOAT
Relative Performance, More Is Better
i7-4700MQ
AMD Phenom II X3 710
AMD Athlon 5350
AMD Phenom 9500
AMD Athlon 5150
AMD Sempron 2650
AMD Sempron 3850
3.664
1.687
1.581
1.409
1.232
1.115
1.000
0.8244
1.6488
2.4732
3.2976
4.122
1. (CC) gcc options: -O3 -march=native -lm

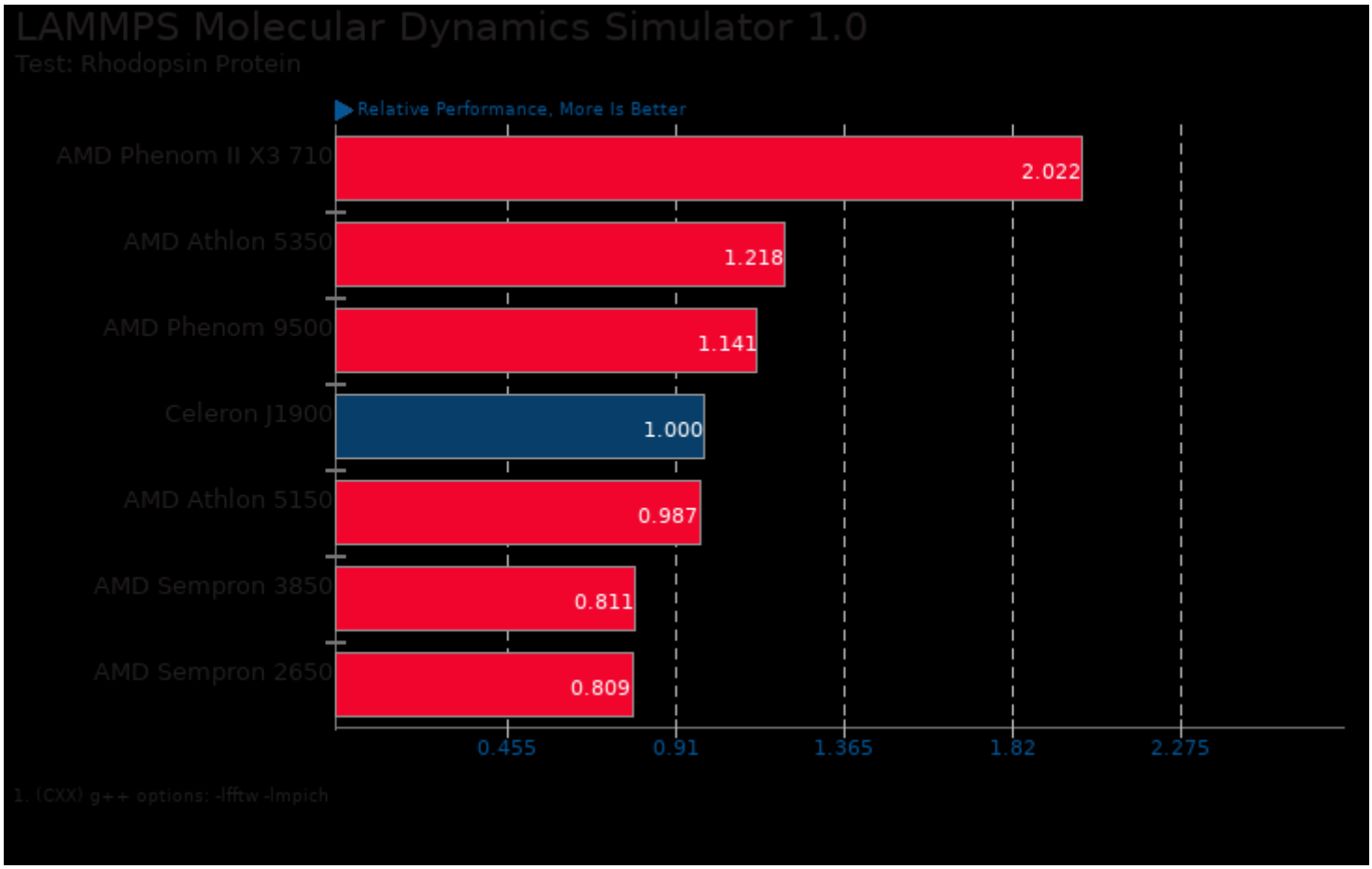

John The Ripper 1.8.0
Test: Blowfish
Relative Performance, More Is Better
i7-4700MQ
2.773
AMD Phenom 9500
1.172
AMD Phenom II X3 710
1.050
AMD Athlon 5350
1.016
Celeron J1900
1.000
AMD Athlon 5150
0.793
AMD Sempron 3850
0.645
AMD Sempron 2650
0.359
0.6239
1.2478
1.8717
2.4956
3.1195
1. (CC) gcc options: -fopenmp -lcrypt

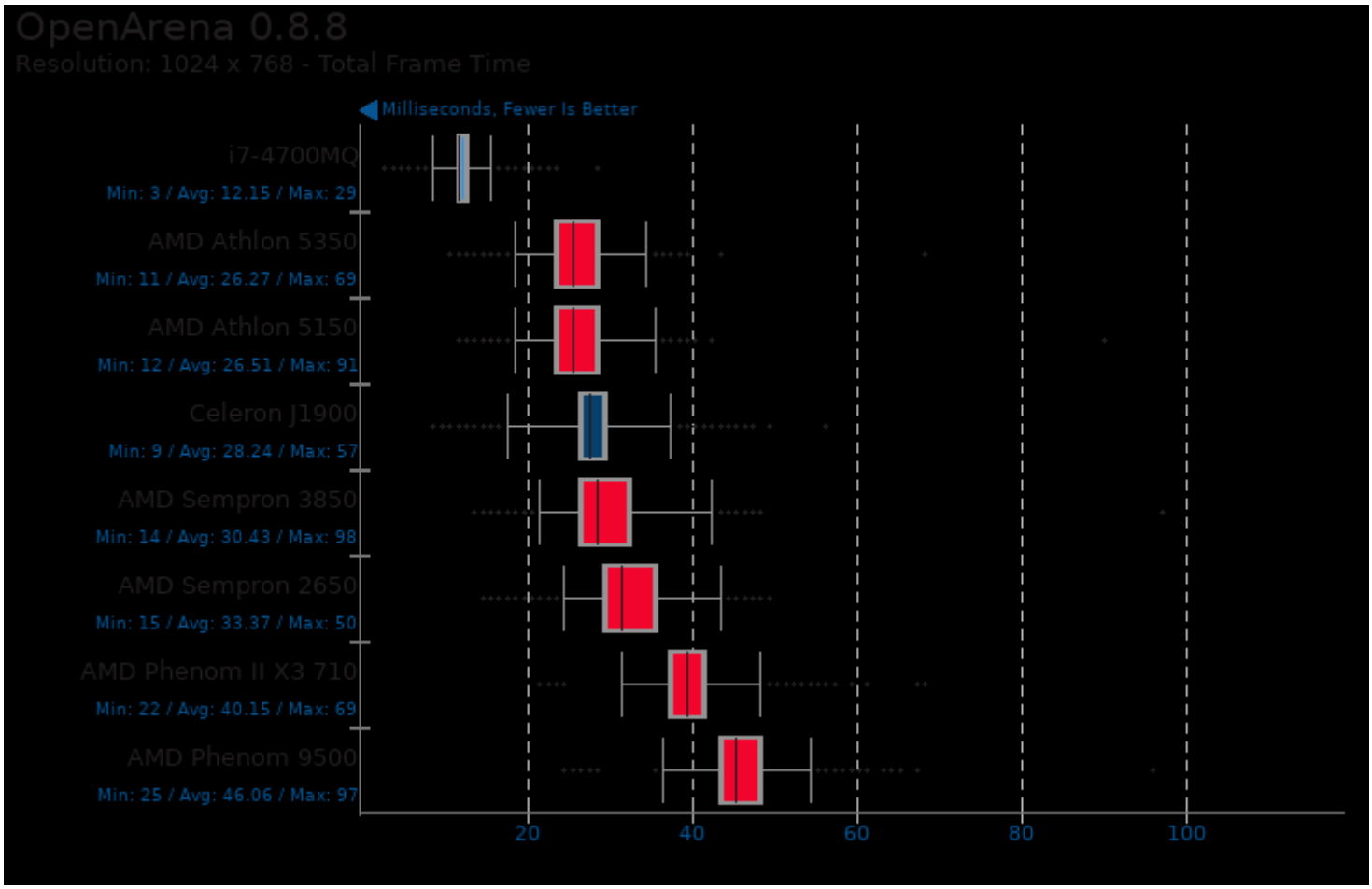

John The Ripper 1.8.0
Test: Traditional DES
Relative Performance, More Is Better
i7-4700MQ
AMD Phenom II X3 710
AMD Athlon 5350
AMD Phenom 9500
Celeron J1900
AMD Athlon 5150
AMD Sempron 3850
AMD Sempron 2650
1.332
1.033
1.017
1.016
1.000
0.798
0.648
0.357
0.2997
0.5994
0.8991
1.1988
1.4985
1. (CC) gcc options: -fopenmp -lcrypt


John The Ripper 1.8.0
Test: MD5
Relative Performance, More Is Better
i7-4700MQ
AMD Phenom 9500
AMD Phenom II X3 710
AMD Athlon 5350
Celeron J1900
AMD Athlon 5150
AMD Sempron 3850
AMD Sempron 2650
2.935
1.601
1.415
1.139
1.000
0.887
0.721
0.402
0.6604
1.3208
1.9812
2.6416
3.302
1. (CC) gcc options: -fopenmp -lcrypt

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LAMMPS Molecular Dynamics Simulator 1.0
Test: Rhodopsin Protein
Relative Performance, More Is Better
AMD Phenom II X3 710
2.022
AMD Athlon 5350
1.218
AMD Phenom 9500
1.141
Celeron J1900
1.000
AMD Athlon 5150
0.987
AMD Sempron 3850
0.811
AMD Sempron 2650
0.809
0.455
0.91
1.365
1.82
2.275
1. (CXX) g++ options: -lfftw -lmpich

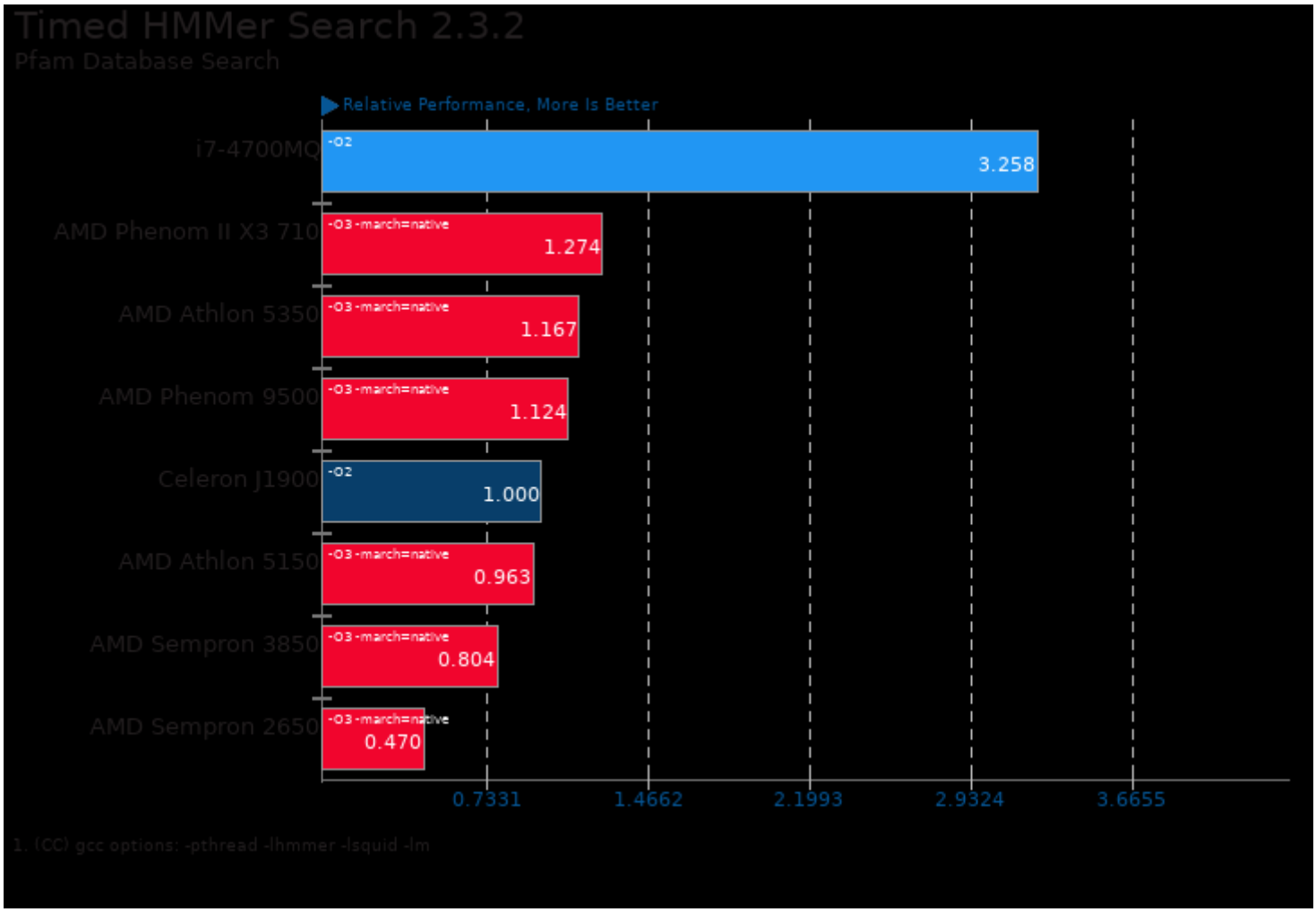

OpenArena 0.8.8
Resolution: 1024 x 768 - Total Frame Time
Milliseconds, Fewer Is Better
i7-4700MQ
Min: 3 / Avg: 12.15 / Max: 29
AMD Athlon 5350
Min: 11 / Avg: 26.27 / Max: 69
AMD Athlon 5150
Min: 12 / Avg: 26.51 / Max: 91
Celeron J1900
Min: 9 / Avg: 28.24 / Max: 57
AMD Sempron 3850
Min: 14 / Avg: 30.43 / Max: 98
AMD Sempron 2650
Min: 15 / Avg: 33.37 / Max: 50
AMD Phenom II X3 710
Min: 22 / Avg: 40.15 / Max: 69
AMD Phenom 9500
Min: 25 / Avg: 46.06 / Max: 97
20
40
60
80
100

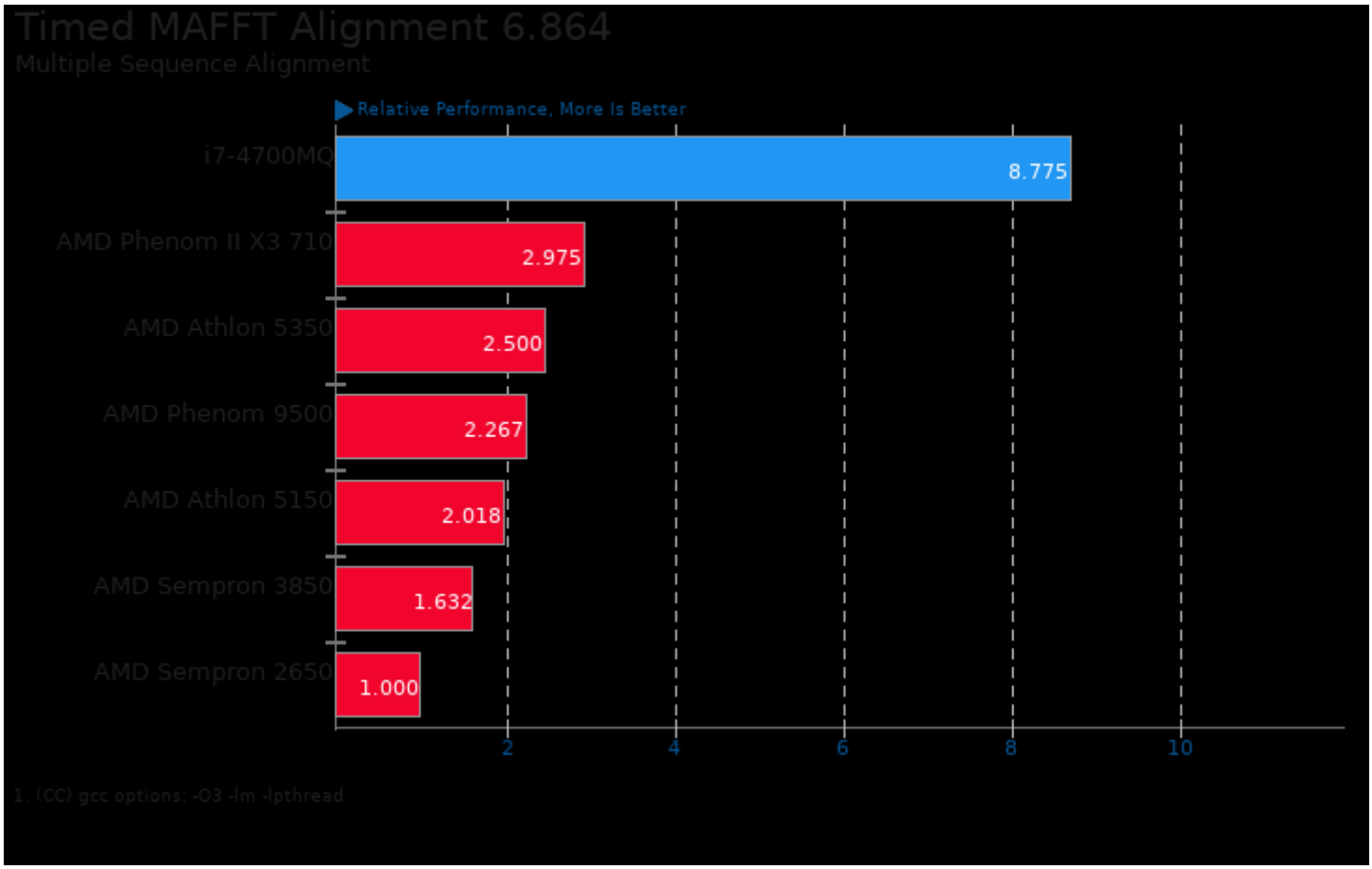
AMD AM1 Athlon Sempron Phenom APUs Ubuntu Linux



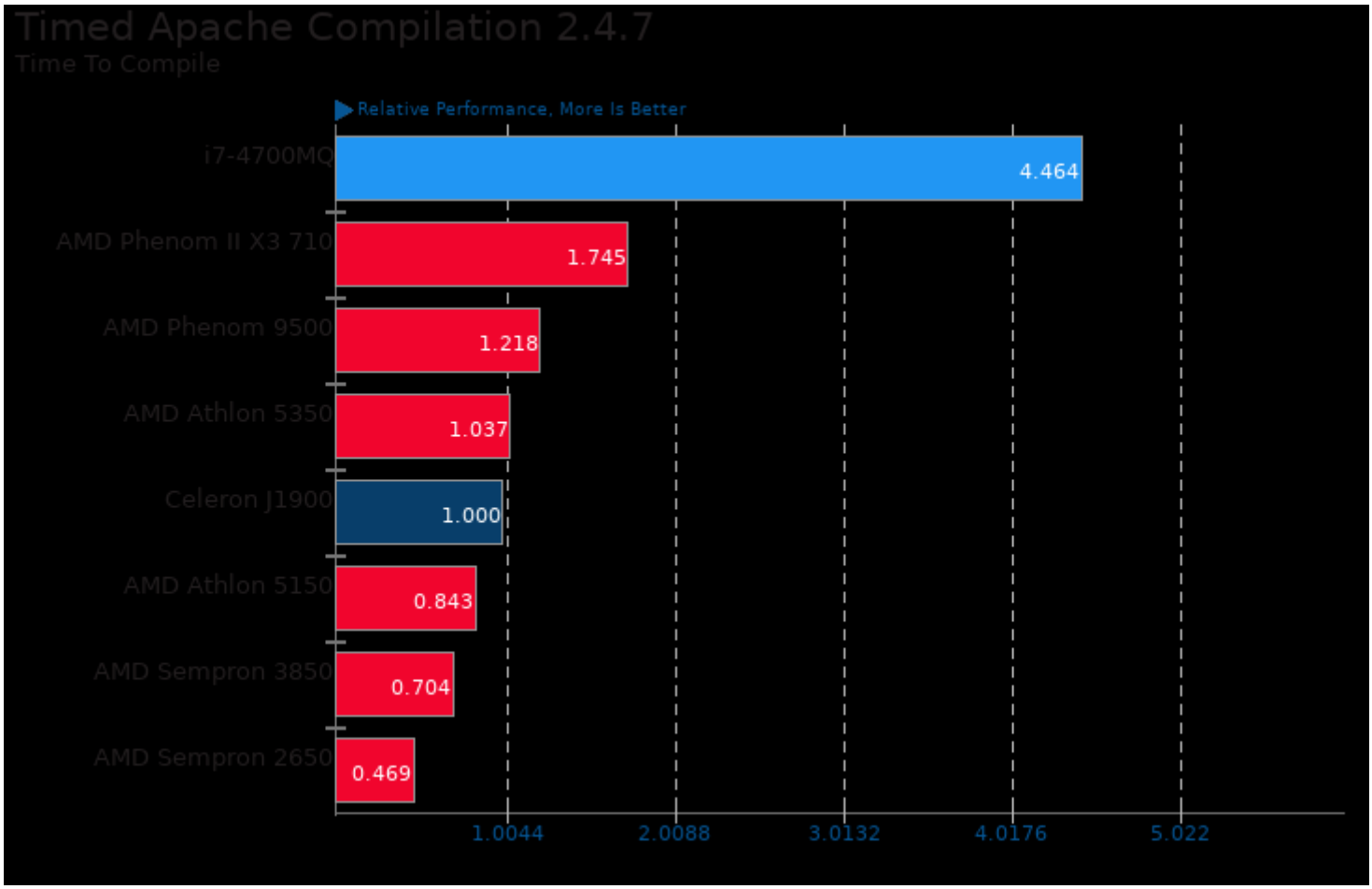
AMD AM1 Athlon Sempron Phenom APUs Ubuntu Linux

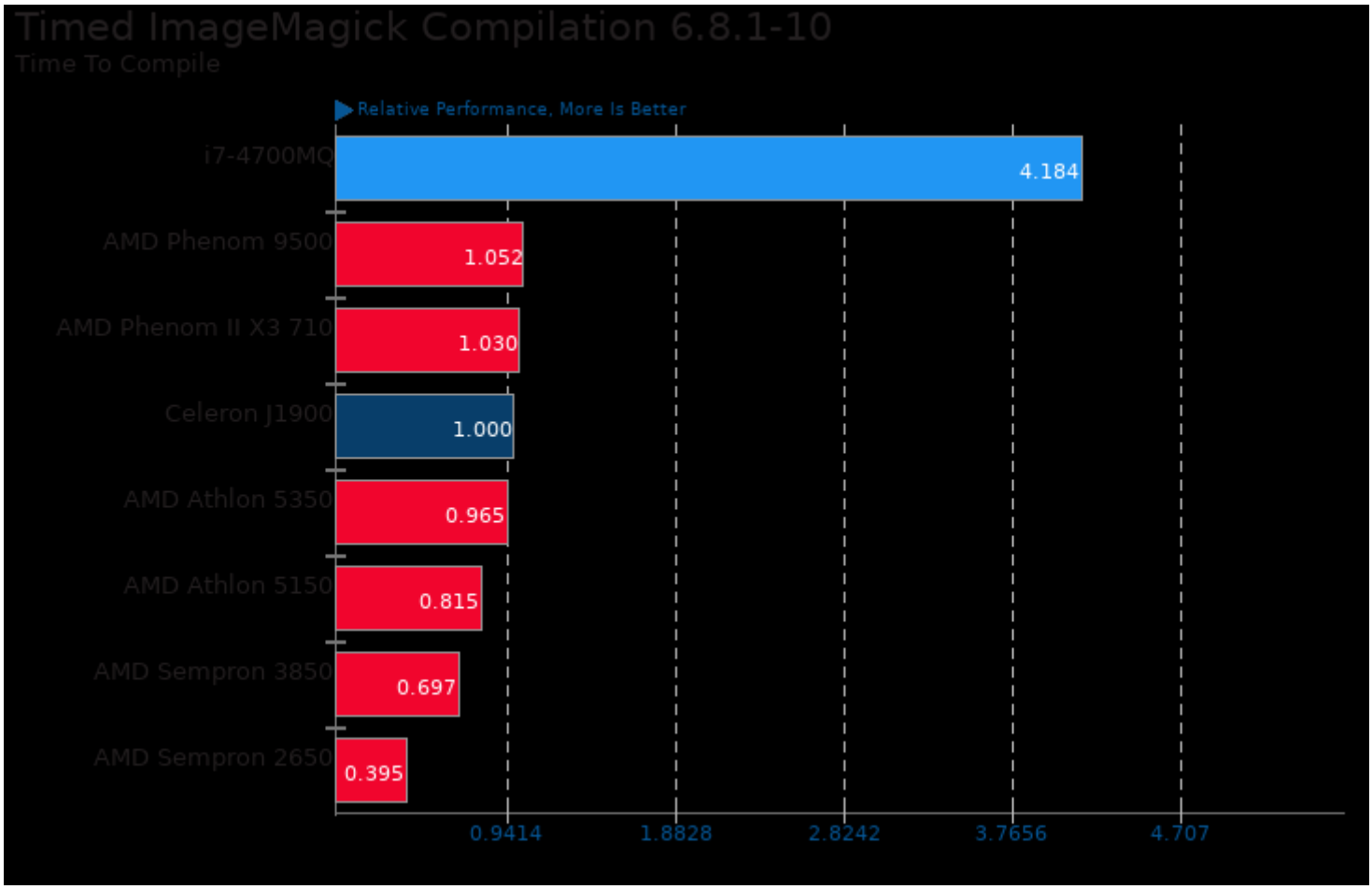


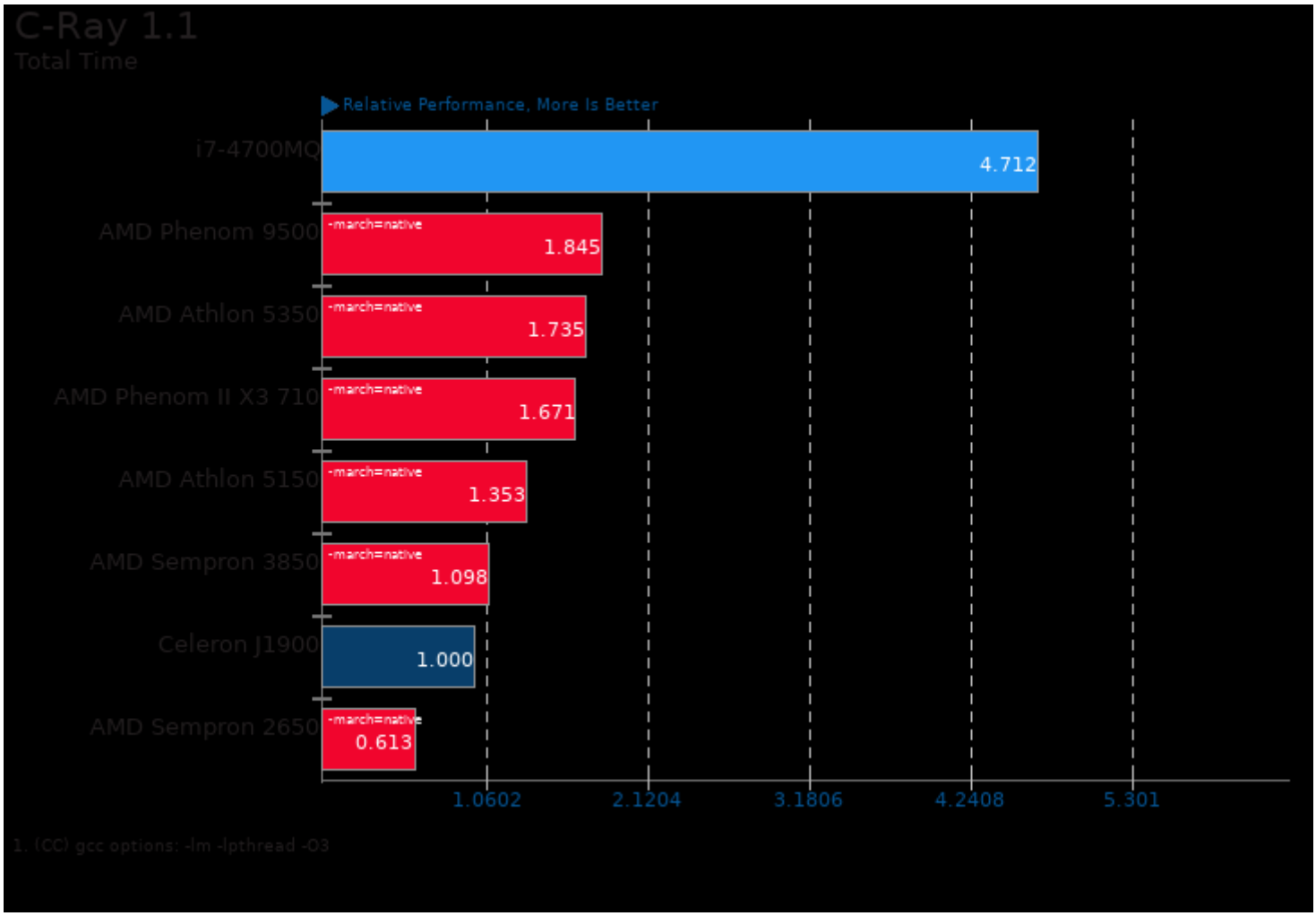

Timed HMMer Search 2.3.2
Pfam Database Search
Relative Performance, More Is Better
i7-4700MQ
-O2
3.258
AMD Phenom II X3 710
-O3 -march=native
1.274
AMD Athlon 5350
-O3 -march=native
1.167
AMD Phenom 9500
-O3 -march=native
1.124
Celeron J1900
-O2
1.000
AMD Athlon 5150
-O3 -march=native
0.963
AMD Sempron 3850
-O3 -march=native
0.804
AMD Sempron 2650
-O3 -march=native
0.470
0.7331
1.4662
2.1993
2.9324
3.6655
1. (CC) gcc options: -pthread -lhmmer -lsquid -lm

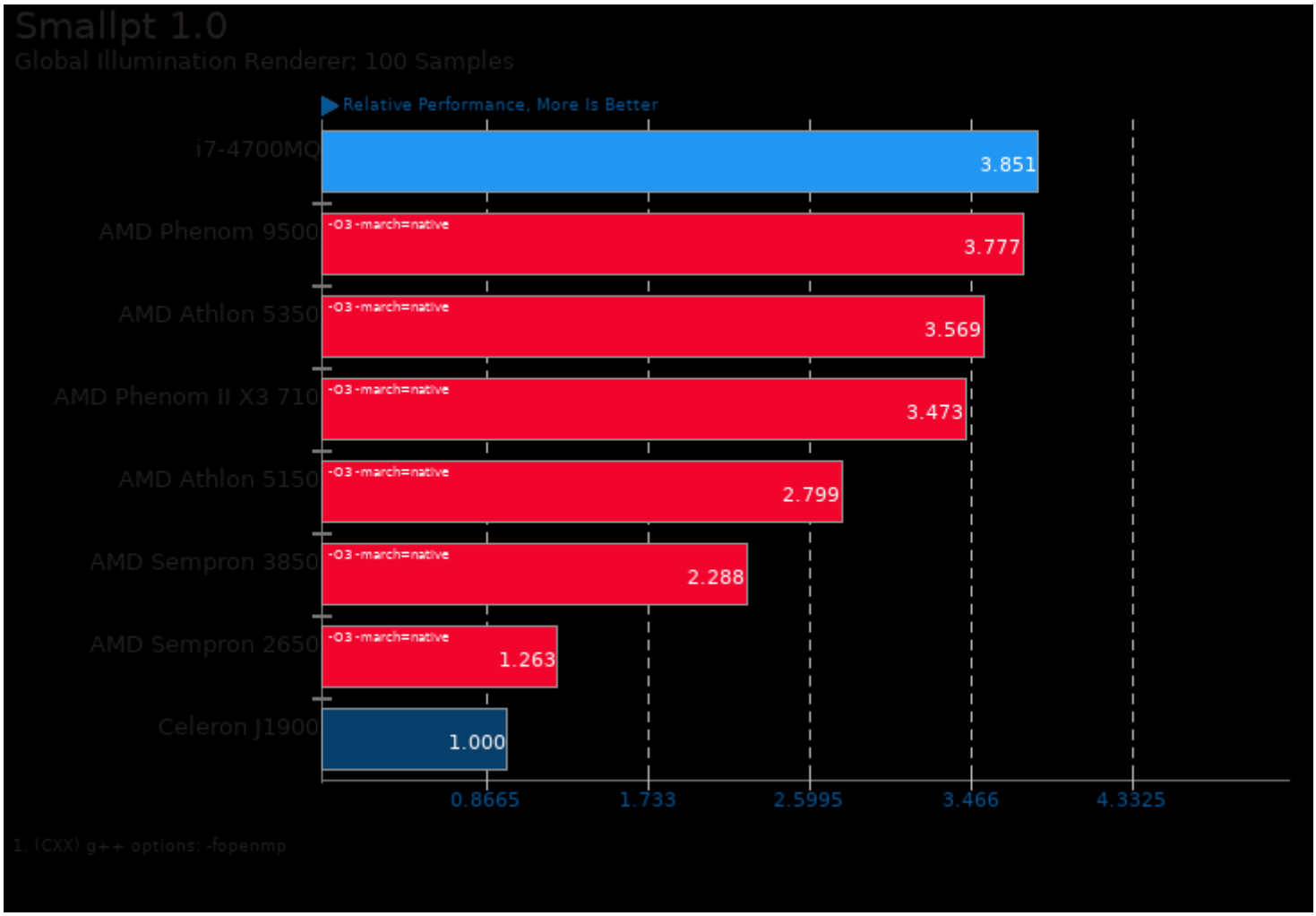

Timed MAFFT Alignment 6.864
Multiple Sequence Alignment
Relative Performance, More Is Better
i7-4700MQ
AMD Phenom II X3 710
AMD Athlon 5350
AMD Phenom 9500
AMD Athlon 5150
AMD Sempron 3850
AMD Sempron 2650
8.775
2.975
2.500
2.267
2.018
1.632
1.000
2
4
6
8
10
1. (CC) gcc options: -O3 -lm -lpthread

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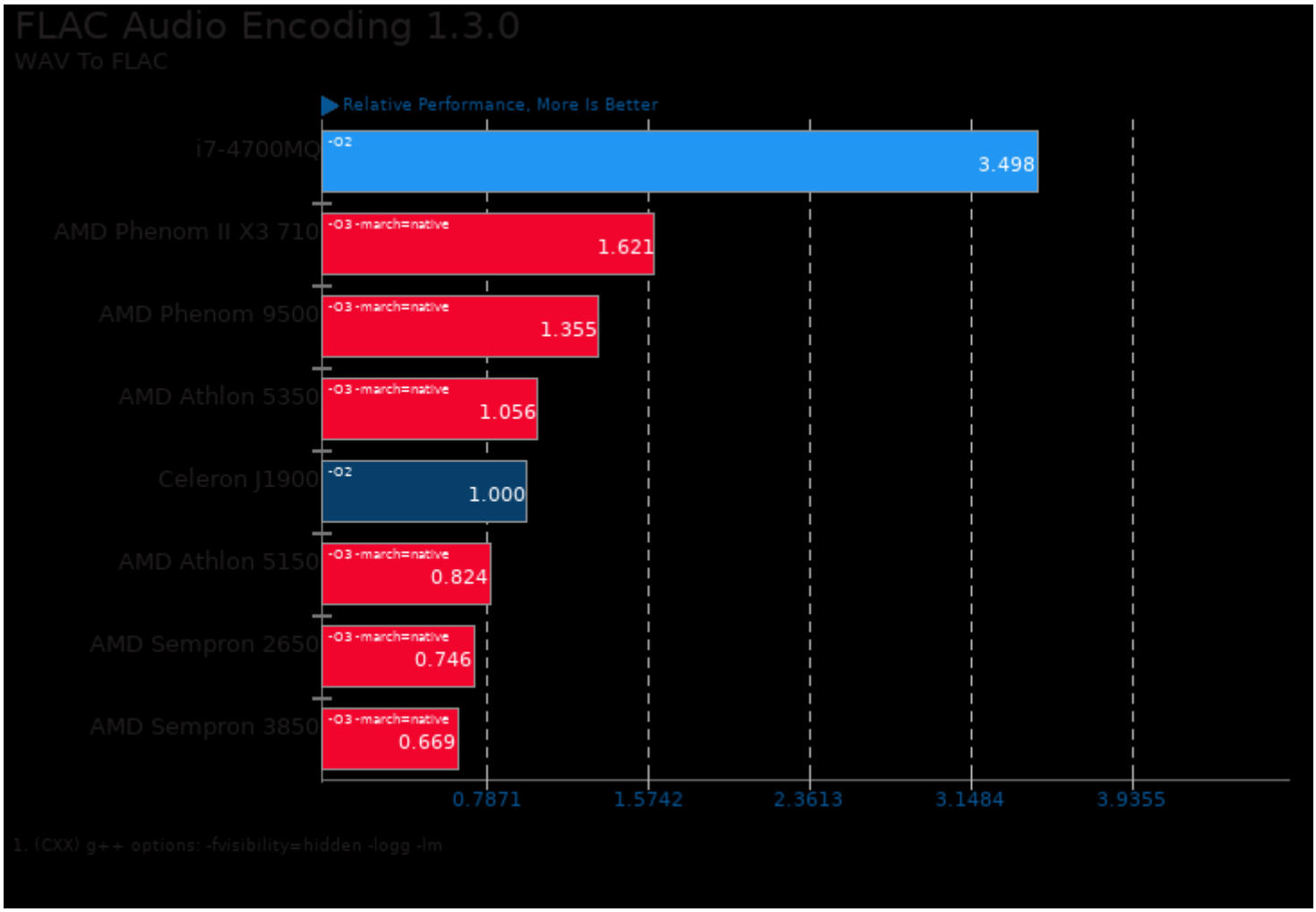


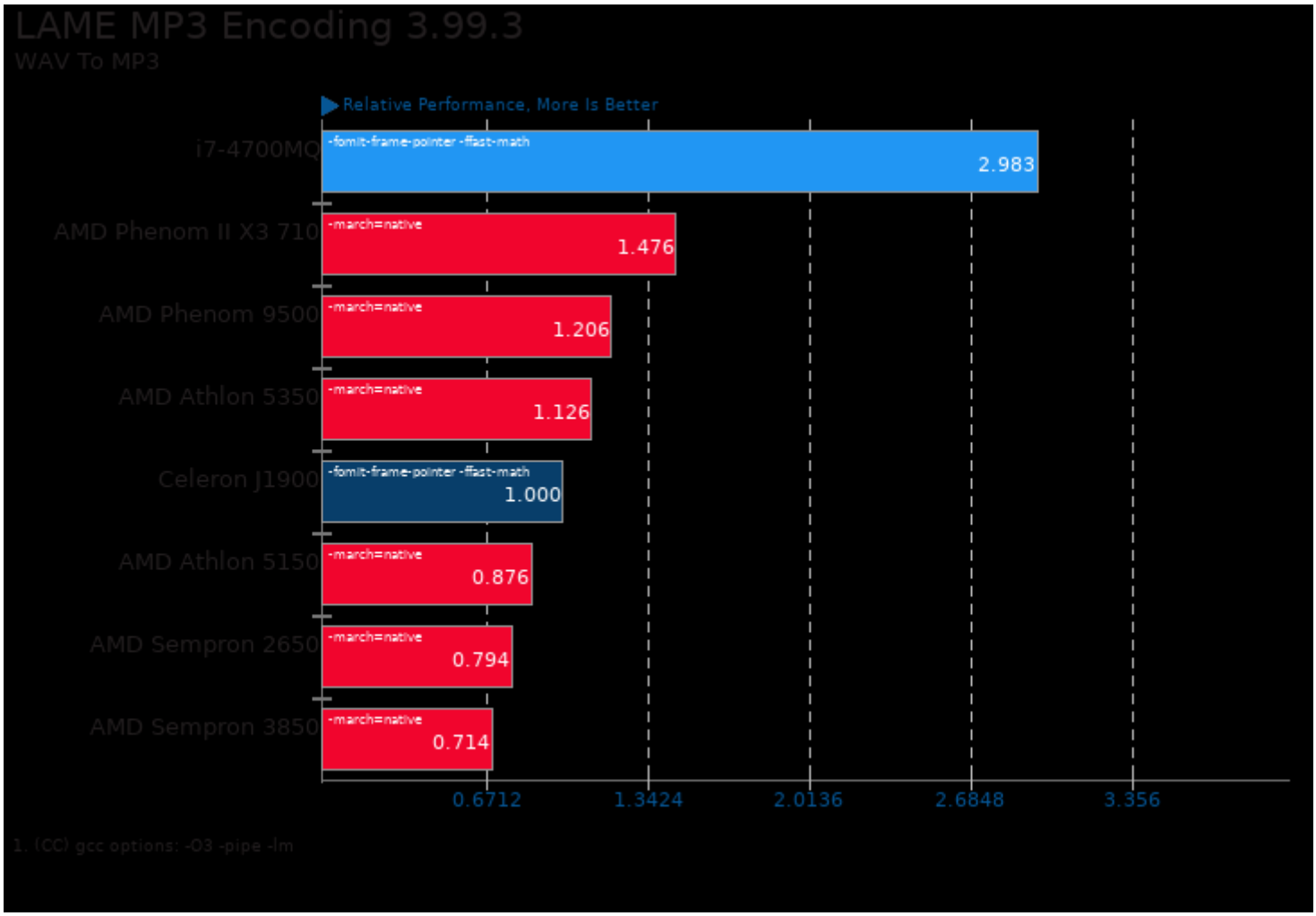

Timed ImageMagick Compilation 6.8.1-10
Time To Compile
Relative Performance, More Is Better
i7-4700MQ
4.184
AMD Phenom 9500
1.052
AMD Phenom II X3 710
1.030
Celeron J1900
1.000
AMD Athlon 5350
0.965
AMD Athlon 5150
0.815
AMD Sempron 3850
0.697
AMD Sempron 2650
0.395
0.9414
1.8828
2.8242
3.7656
4.707


C-Ray 1.1
Total Time
Relative Performance, More Is Better
i7-4700MQ
4.712
AMD Phenom 9500
-march=native
1.845
AMD Athlon 5350
-march=native
1.735
AMD Phenom II X3 710
-march=native
1.671
AMD Athlon 5150
-march=native
1.353
AMD Sempron 3850
-march=native
1.098
Celeron J1900
1.000
AMD Sempron 2650
-march=native
0.613
1.0602
2.1204
3.1806
4.2408
5.301
1. (CC) gcc options: -lm -lpthread -O3

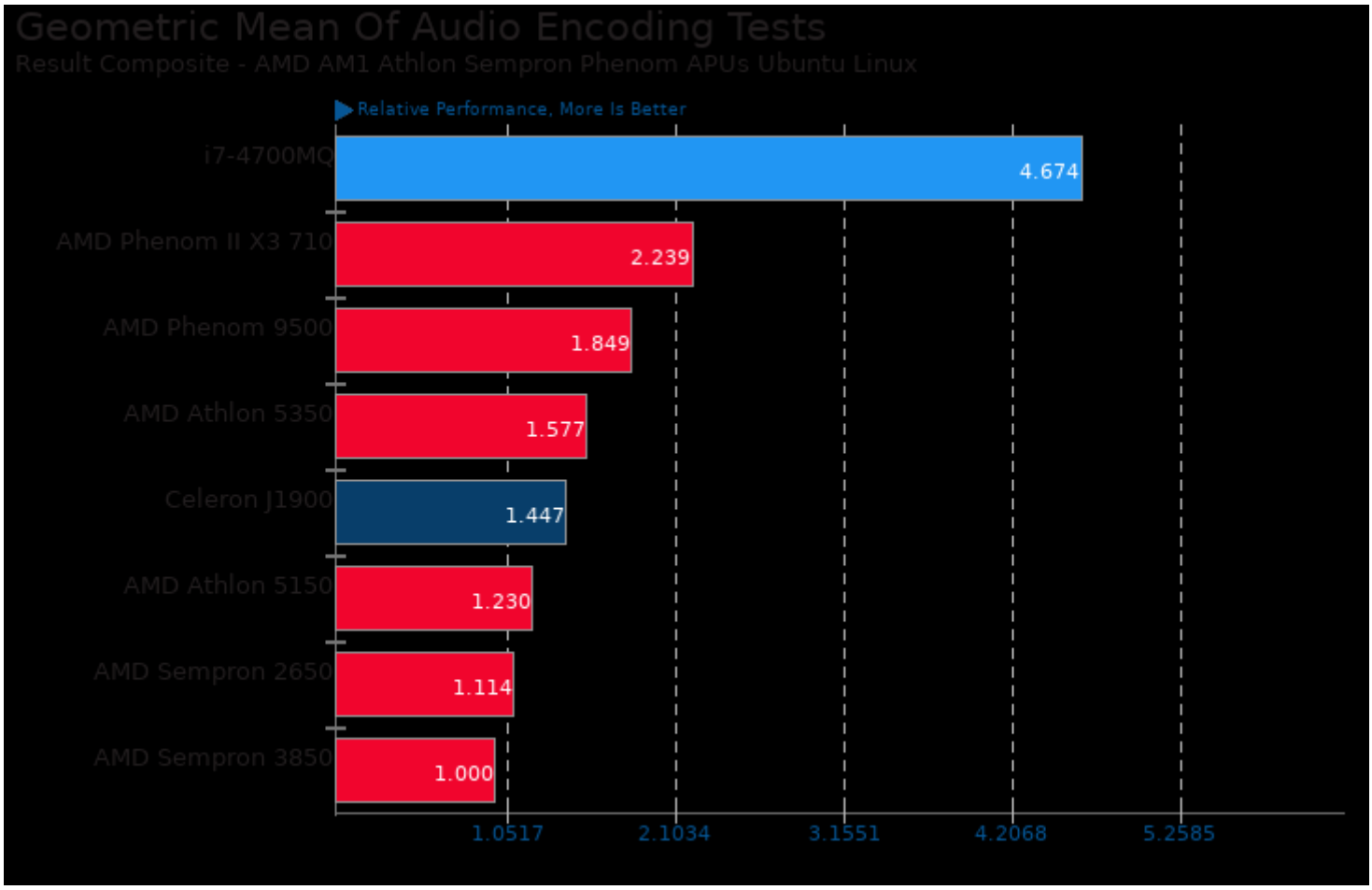

Smallpt 1.0
Global Illumination Renderer; 100 Samples
Relative Performance, More Is Better
i7-4700MQ
3.851
AMD Phenom 9500
-O3 -march=native
3.777
AMD Athlon 5350
-O3 -march=native
3.569
AMD Phenom II X3 710
-O3 -march=native
3.473
AMD Athlon 5150
-O3 -march=native
2.799
AMD Sempron 3850
-O3 -march=native
2.288
AMD Sempron 2650
-O3 -march=native
1.263
Celeron J1900
1.000
0.8665
1.733
2.5995
3.466
4.3325
1. (CXX) g++ options: -fopenmp

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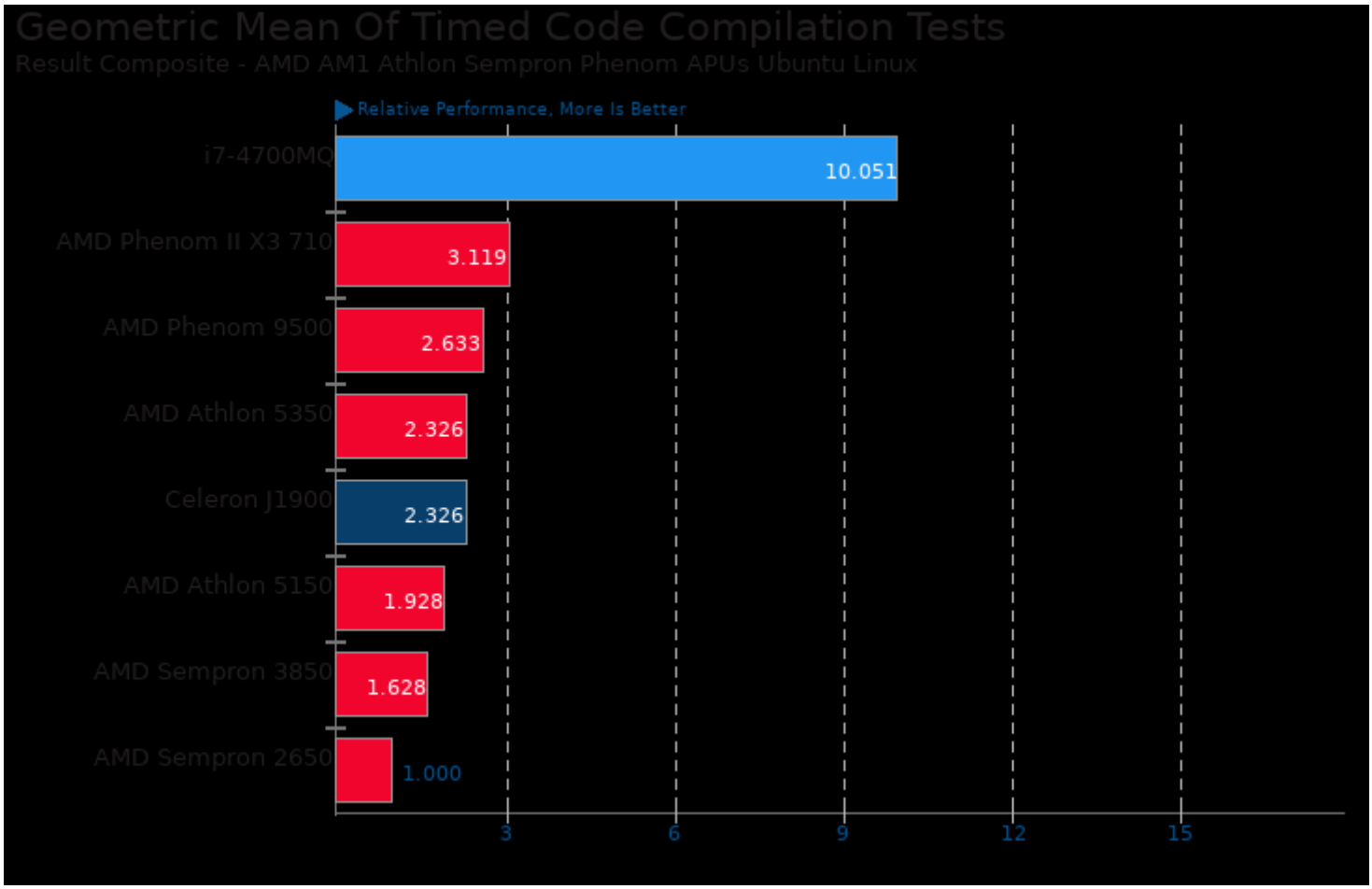



LAME MP3 Encoding 3.99.3
WAV To MP3
Relative Performance, More Is Better
i7-4700MQ
-fomit-frame-pointer -ffast-math
2.983
AMD Phenom II X3 710
-march=native
1.476
AMD Phenom 9500
-march=native
1.206
AMD Athlon 5350
-march=native
1.126
Celeron J1900
-fomit-frame-pointer -ffast-math
1.000
AMD Athlon 5150
-march=native
0.876
AMD Sempron 2650
-march=native
0.794
AMD Sempron 3850
-march=native
0.714
0.6712
1.3424
2.0136
2.6848
3.356
1. (CC) gcc options: -O3 -pipe -lm

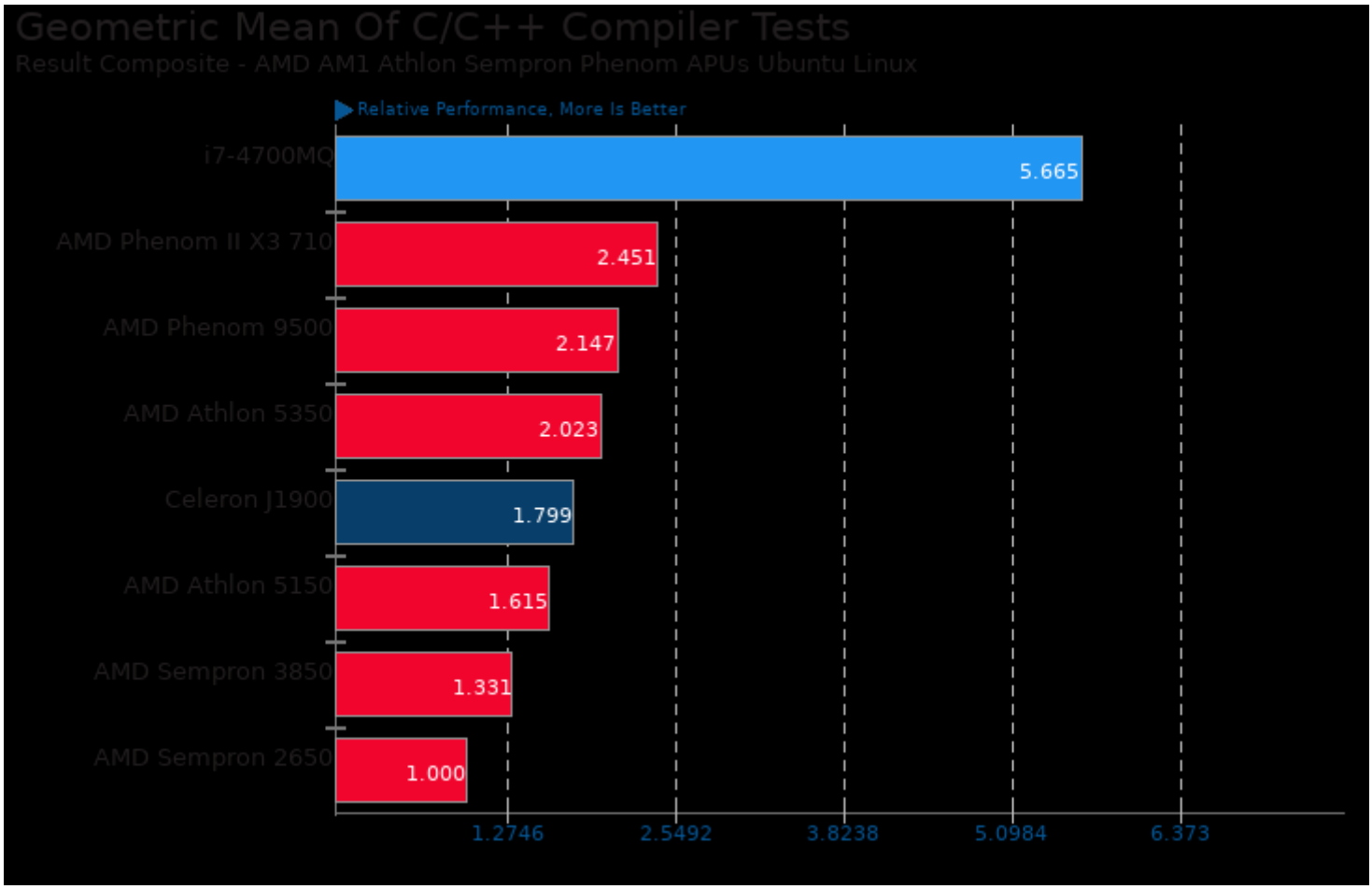
These geometric means are based upon test groupings / test suites for this result file.



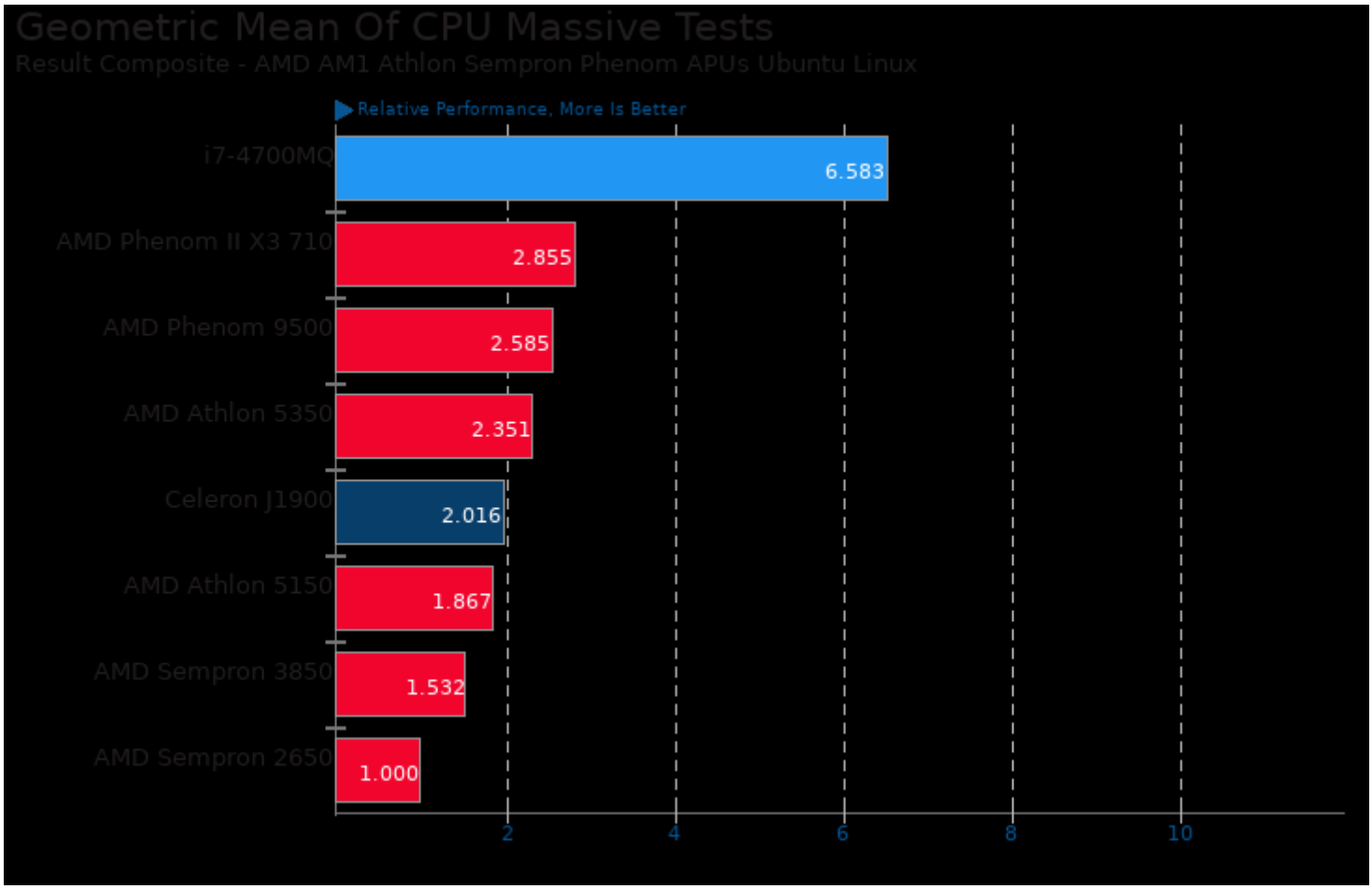
Geometric mean based upon tests: pts/encode-mp3 and pts/encode-flac



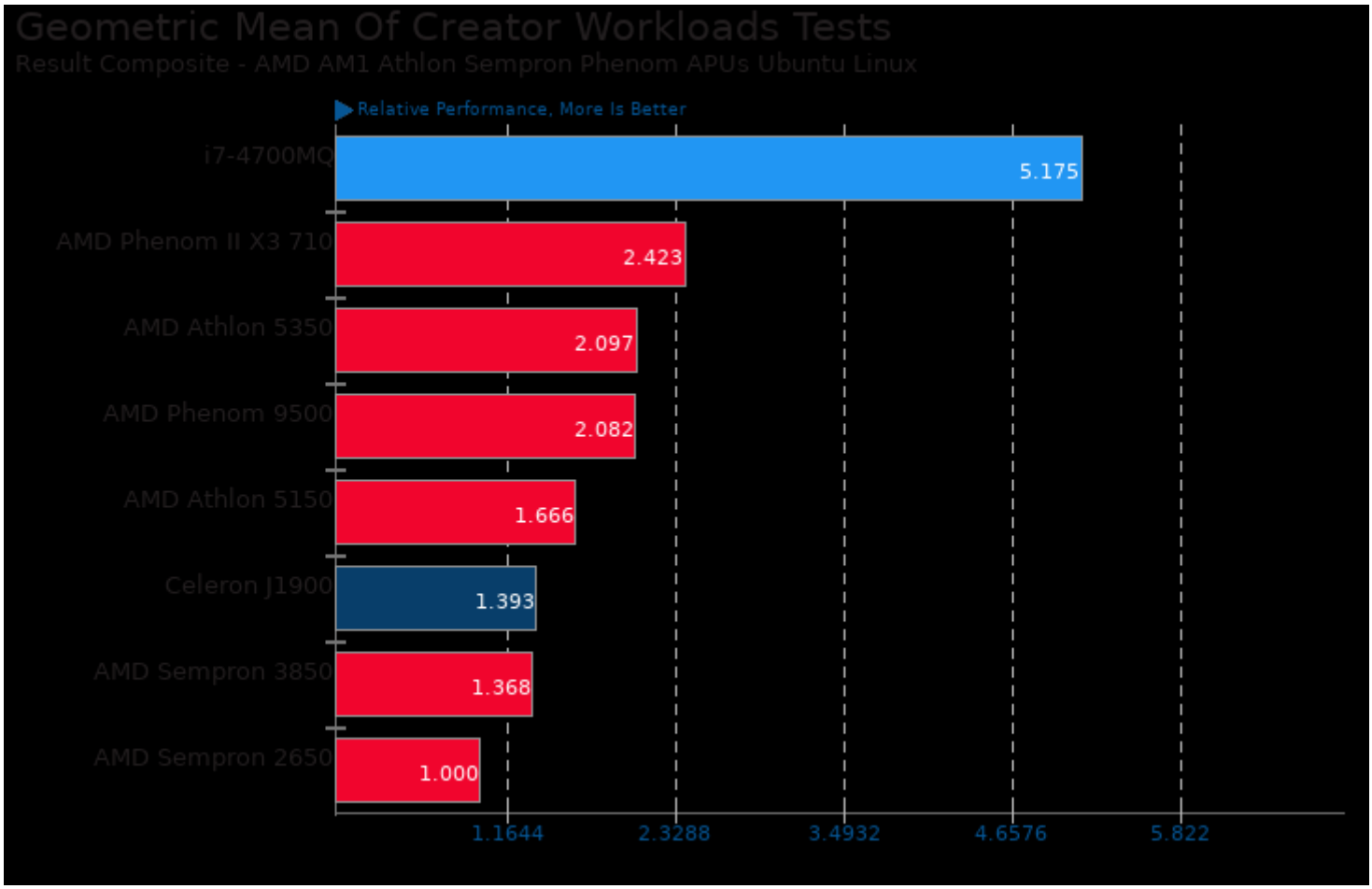
Geometric mean based upon tests: pts/build-apache and pts/build-imagemagick



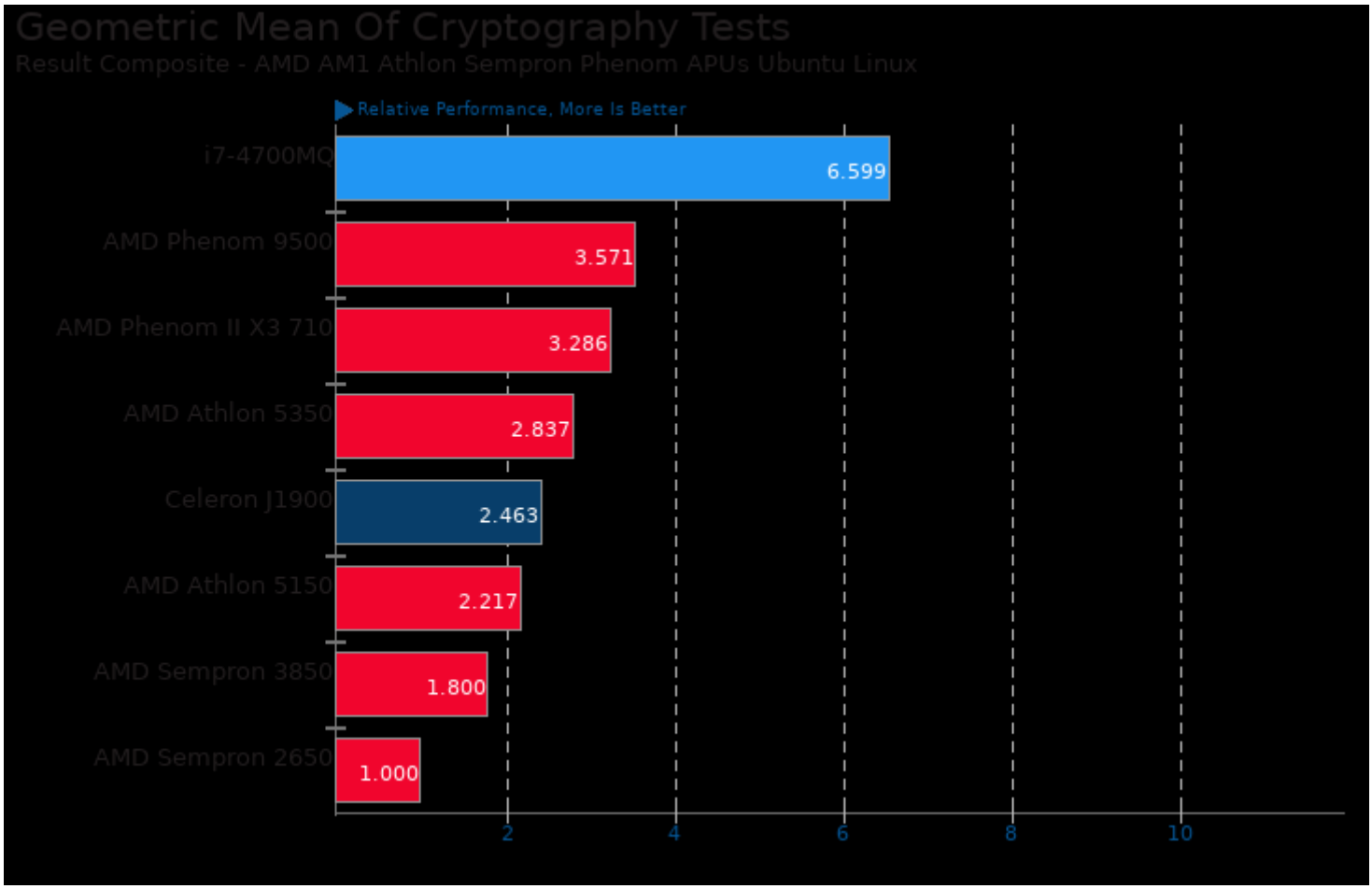
Geometric mean based upon tests: pts/mafft, pts/scimark2, pts/vpxenc, pts/hmmer, pts/build-imagemagick, pts/c-ray, pts/encode-mp3, pts/encode-flac, pts/john-the-ripper, pts/x264, pts/openssl, pts/lammps and pts/build-apache



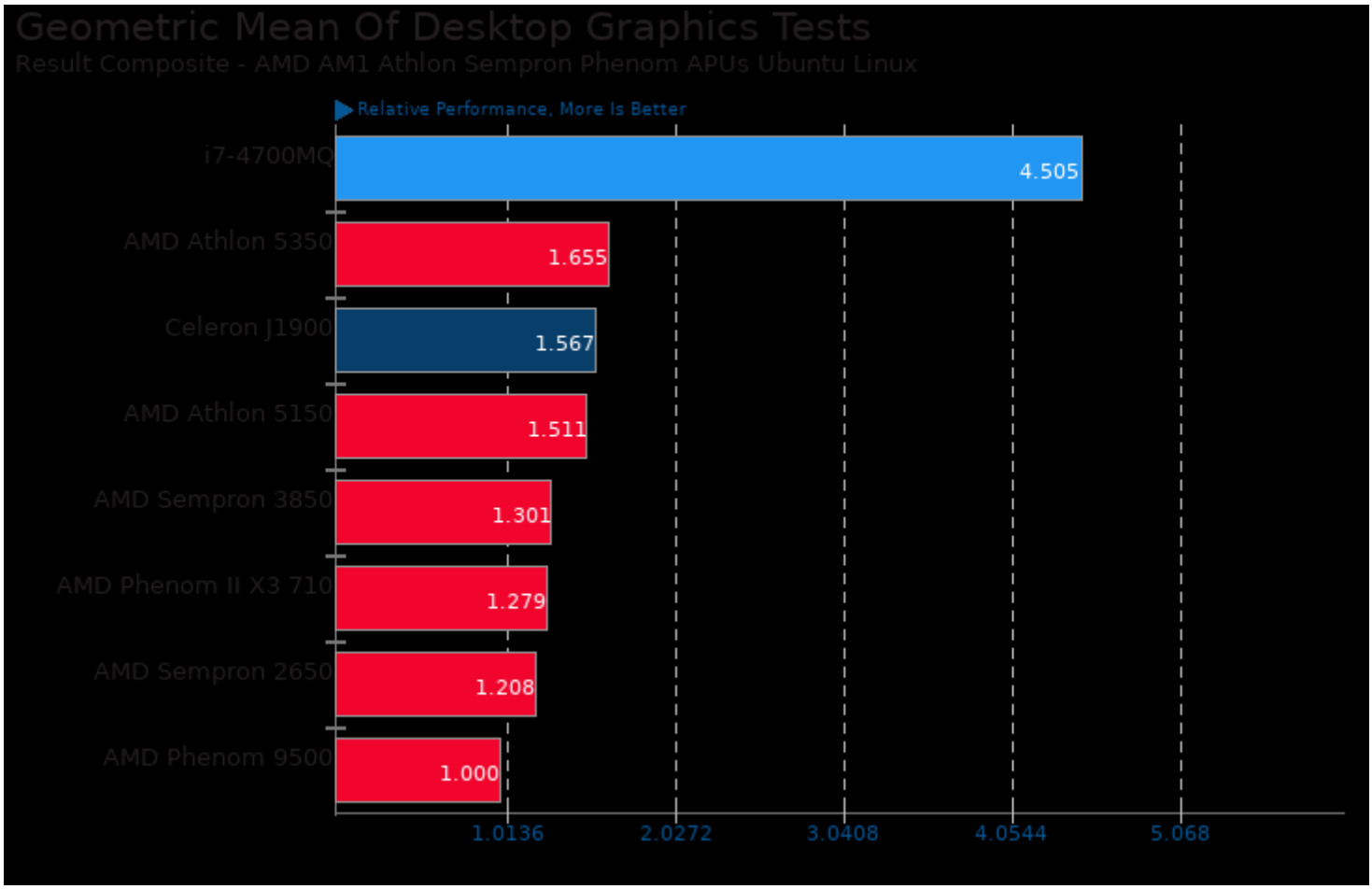
Geometric mean based upon tests: pts/build-apache, pts/c-ray, pts/vpxenc, pts/x264, pts/dolfyn, pts/encode-flac, pts/encode-mp3, pts/hint, pts/hmmer, pts/john-the-ripper, pts/openssl, pts/lammps, pts/mafft and pts/ttsiod-renderer



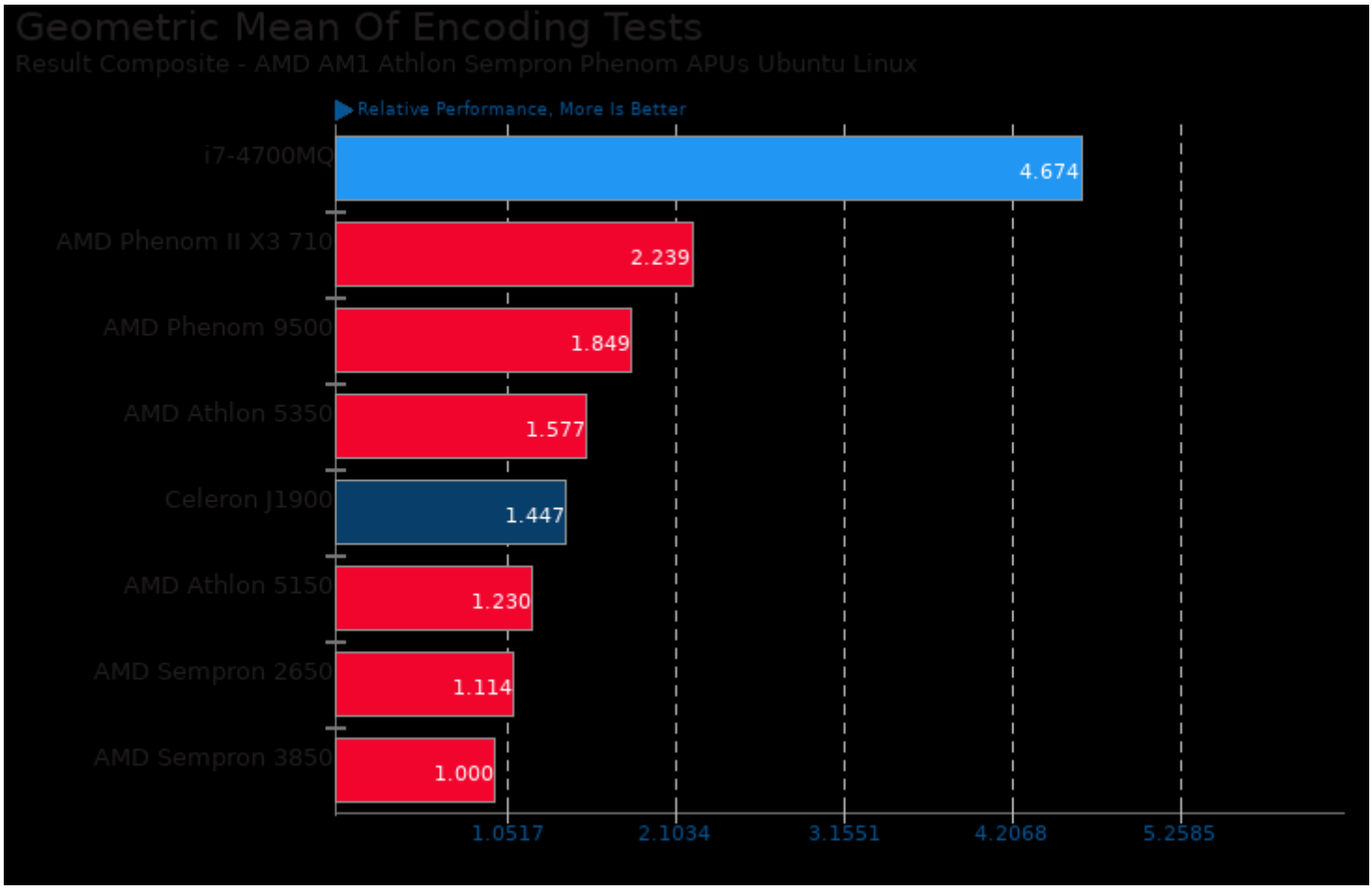
Geometric mean based upon tests: pts/c-ray, pts/smallpt, pts/ttsiod-renderer, pts/x264, pts/vpxenc, pts/encode-mp3 and pts/encode-flac



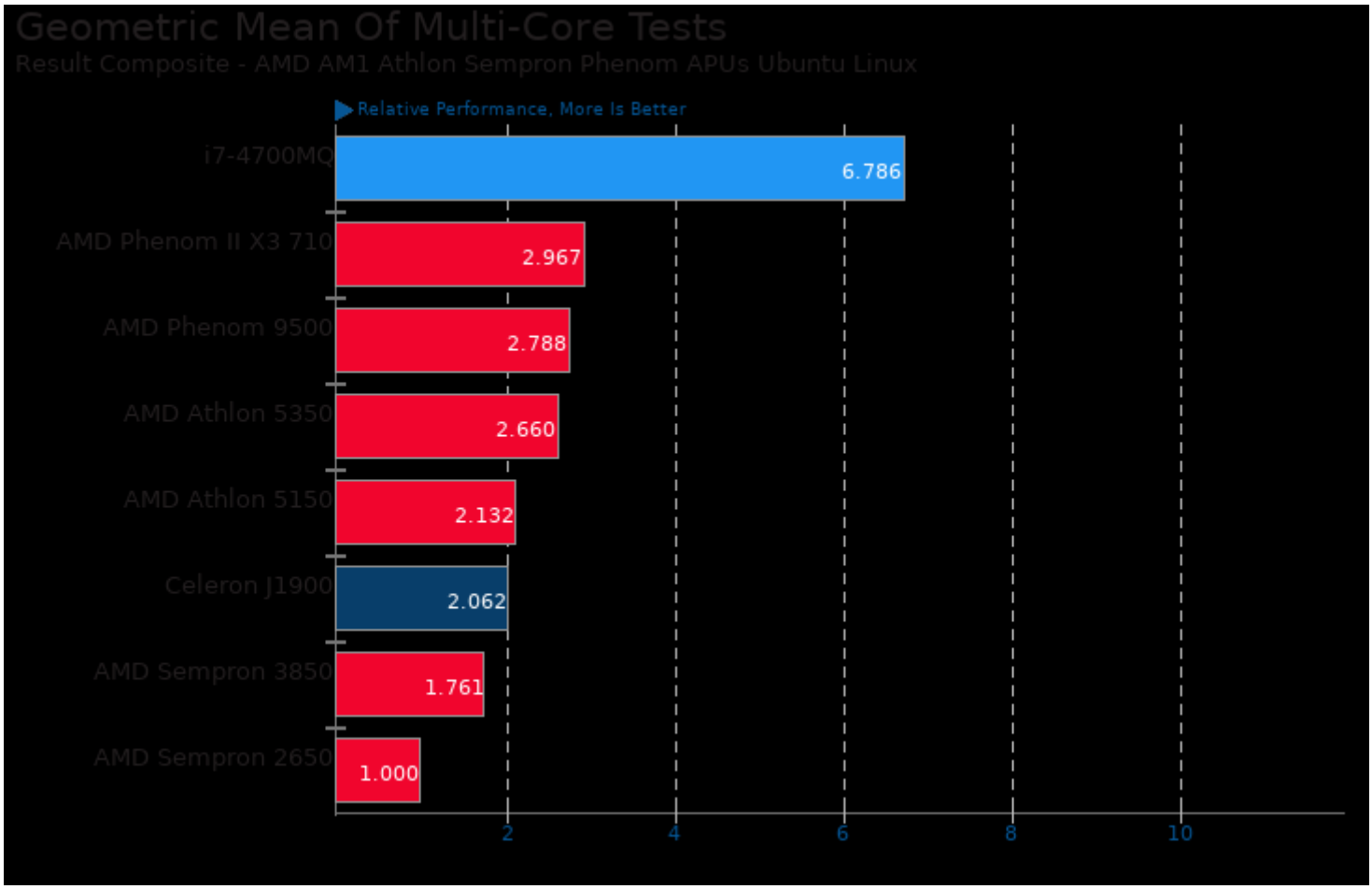
Geometric mean based upon tests: pts/openssl and pts/john-the-ripper



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

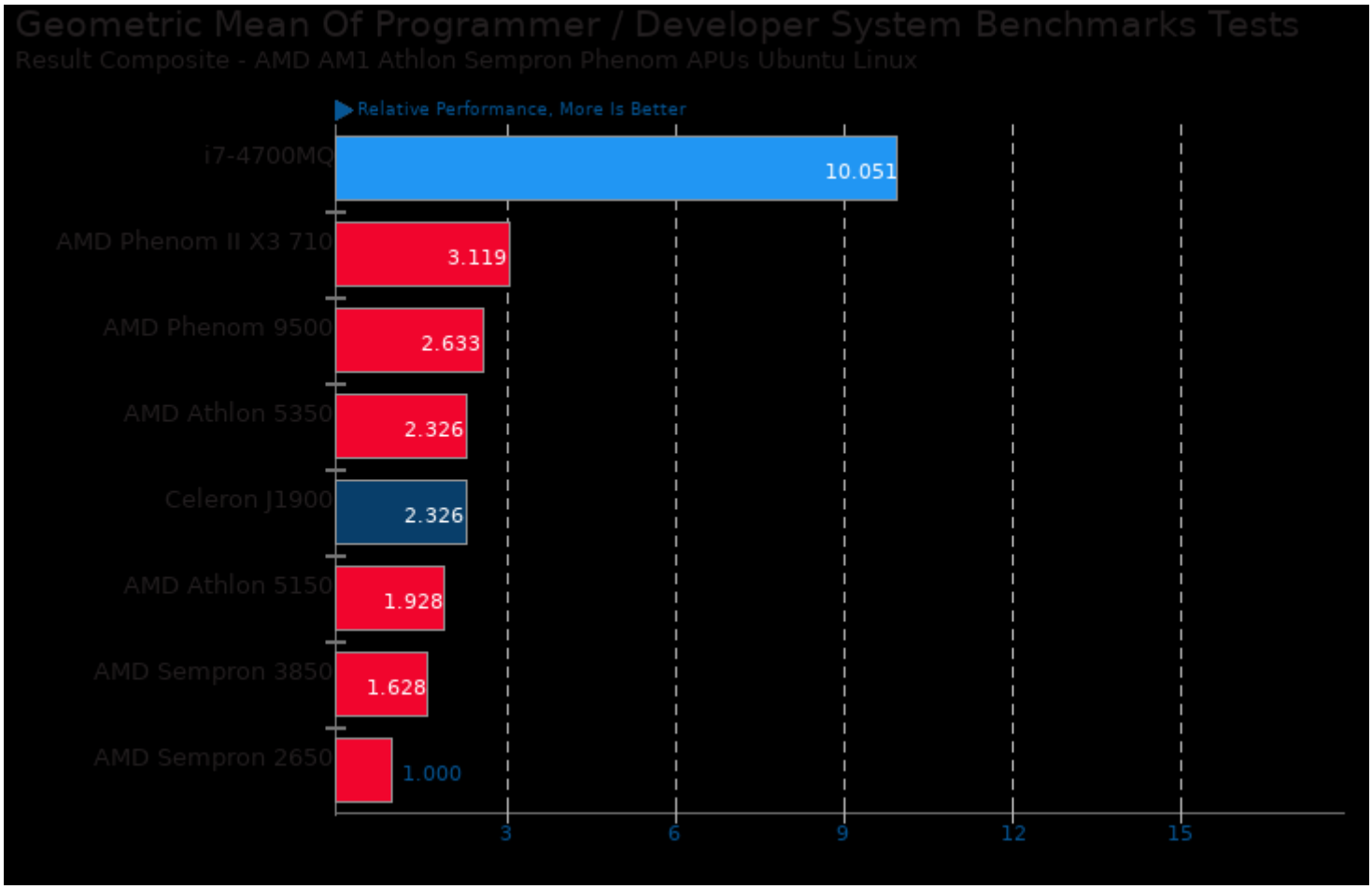


Geometric mean based upon tests: pts/encode-mp3, pts/encode-flac, pts/x264 and pts/vpxenc

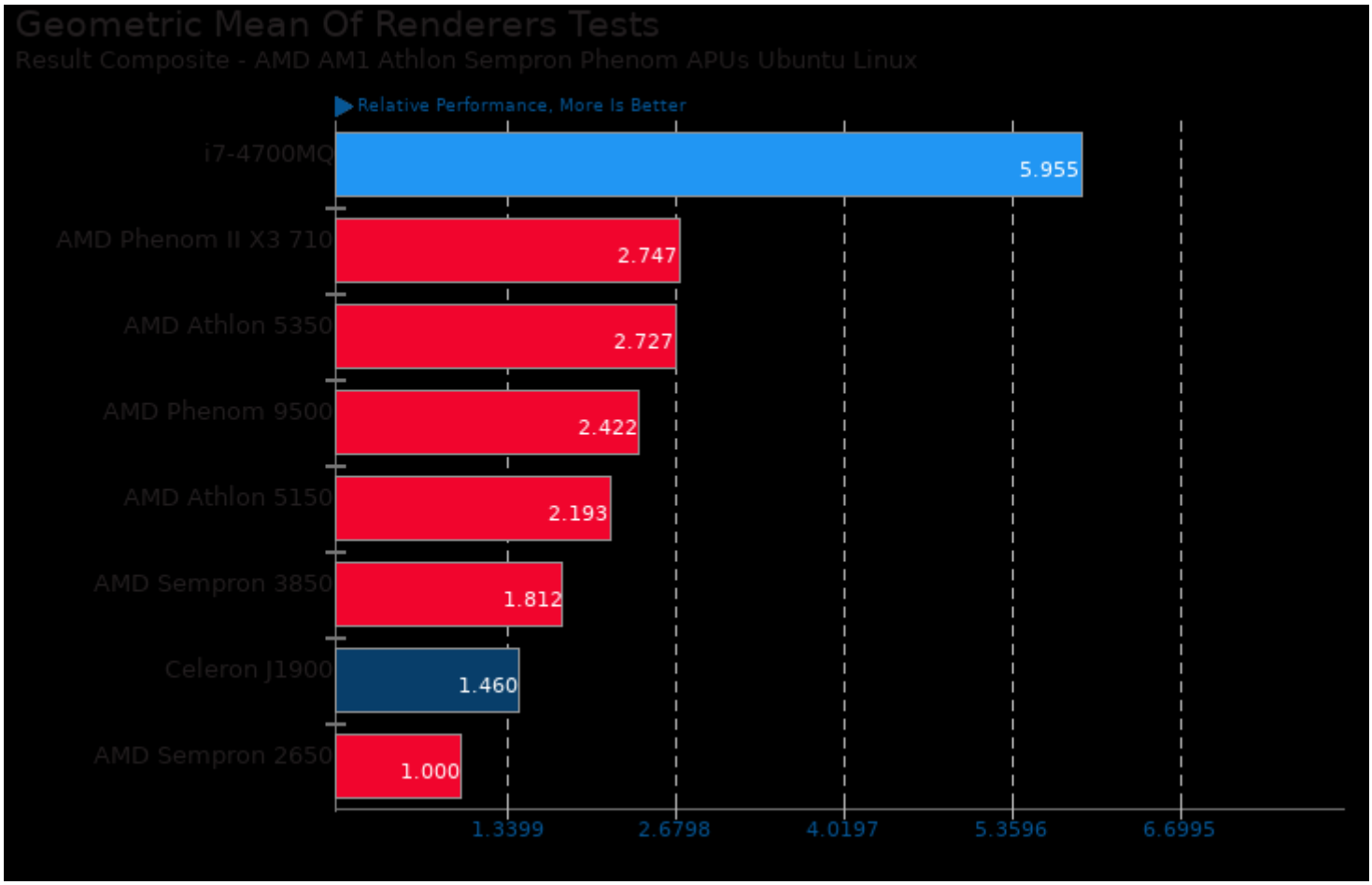


Geometric mean based upon tests: pts/c-ray, pts/x264, pts/vpxenc, pts/john-the-ripper, pts/smallpt, pts/lammps, pts/build-apache, pts/build-imagemagick and pts/ttsiod-renderer

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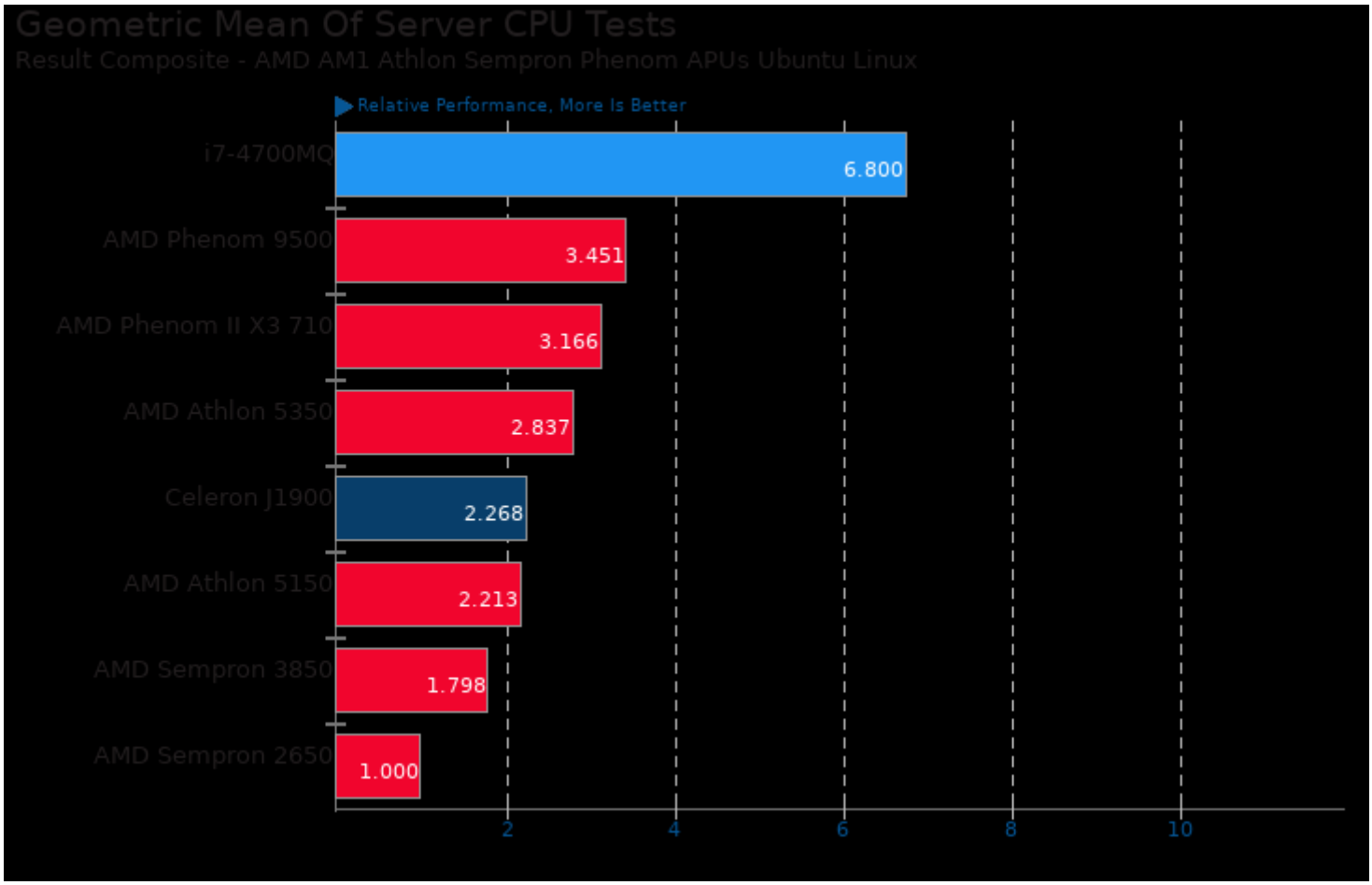


Geometric mean based upon tests: pts/build-apache and pts/build-imagemagick



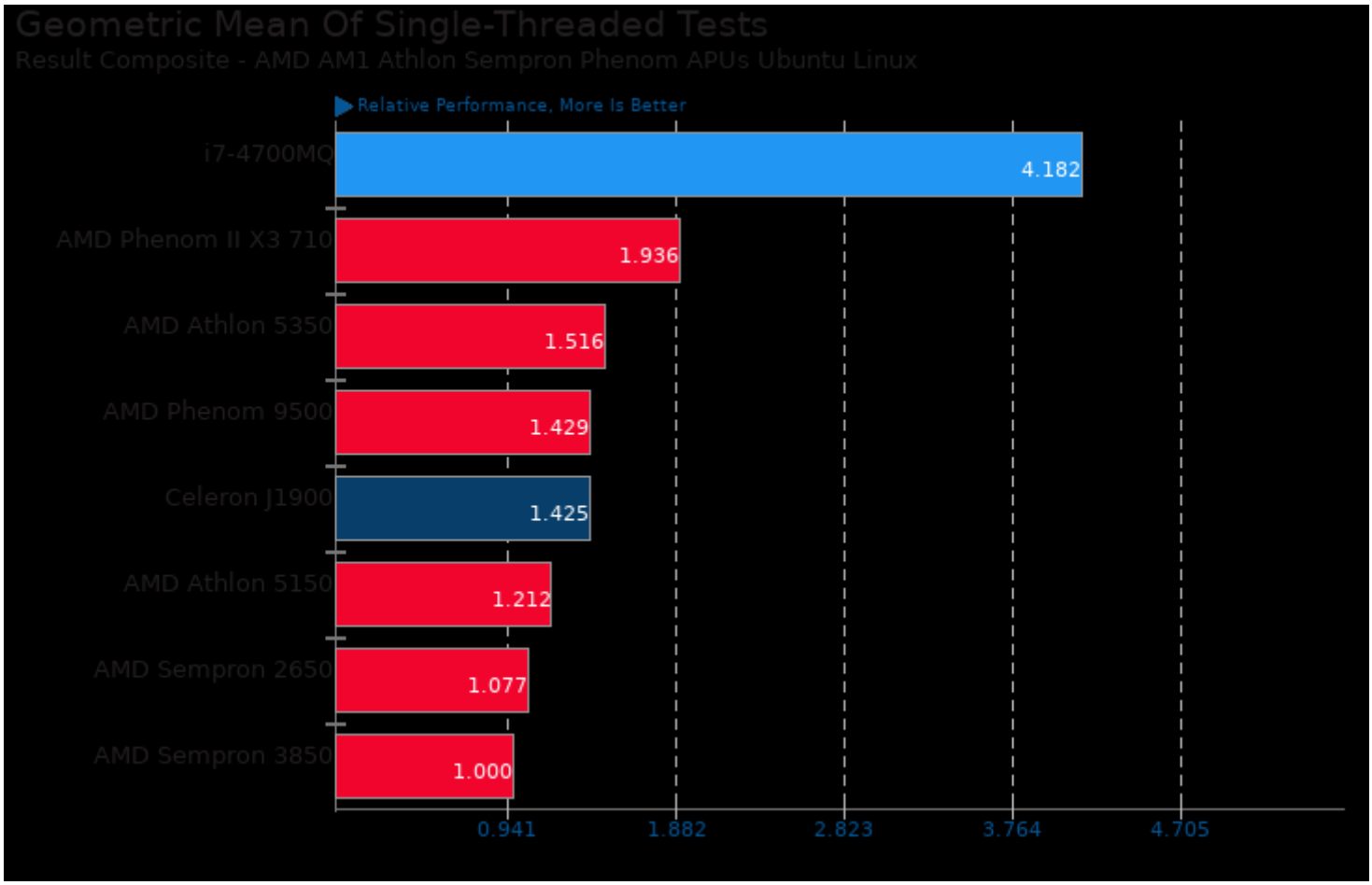
Geometric mean based upon tests: pts/c-ray, pts/smallpt and pts/ttsiod-renderer

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Geometric mean based upon tests: pts/john-the-ripper, pts/x264, pts/c-ray and pts/openssl

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Geometric mean based upon tests: pts/scimark2, pts/encode-flac, pts/encode-mp3 and pts/hint

This file was automatically generated via the Phoronix Test Suite benchmarking software on Thursday, 28 March 2024 14:00.