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Debian kFreeBSD 9.0 vs. Linux vs. FreeBSD 9

Benchmarking Debian GNU/kFreeBSD daily as of 21 February 2012 with the FreeBSD 9.0-1-amd64 kernel on Wheezy/sid compared to Debian GNU/Linux with the Linux 3.2 kernel and same-userland. This result also has files from a stock PC-BSD/FreeBSD 9.0 installation. Testing for a future article on Phoronix.com by Michael Larabel.

Automated Executive Summary

Debian Linux 3.2.0-1 had the most wins, coming in first place for 75% of the tests.

Based on the geometric mean of all complete results, the fastest (Debian Linux 3.2.0-1) was 1.481x the speed of the slowest (PC-BSD 9.0). Debian GNU kFreeBSD 9.0-1 was 0.703x the speed of Debian Linux 3.2.0-1 and PC-BSD 9.0 was 0.96x the speed of Debian GNU kFreeBSD 9.0-1.

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

Gcrypt Library (CAMELLIA256-ECB Cipher) at 18829.917x
Timed MAFFT Alignment (Multiple Sequence Alignment) at 4.598x
OpenSSL (RSA 4096-bit Performance) at 3.458x
Timed MrBayes Analysis (Primate Phylogeny Analysis) at 2.393x
NAS Parallel Benchmarks (Test / Class: UA.A) at 2.145x
NAS Parallel Benchmarks (Test / Class: MG.B) at 1.786x
7-Zip Compression (Compress Speed Test) at 1.366x

NAS Parallel Benchmarks (Test / Class: SP.A) at 1.364x
SciMark (Computational Test: Dense LU Matrix Factorization) at 1.29x
NAS Parallel Benchmarks (Test / Class: IS.C) at 1.174x.

Test Systems:

Debian GNU kFreeBSD 9.0-1

Processor: AMD Opteron 2384 @ 2.70GHz (8 Cores), Motherboard: 101508 XSDT1420, Memory: 4096MB, Disk: 143GB, Graphics: ATI Device 9456 256MB, Audio: ATI RV770 HD Audio, Monitor: DELL S2409W

OS: Debian GNU/kFreeBSD Wheezy/sid, Kernel: 9.0-1-amd64 (x86_64), Desktop: Xfce 4.8, Display Server: X Server 1.11.3.901 (1.11.4 RC 1), Display Driver: ati 6.14.3, OpenGL: 2.1 Mesa 7.11.2, Compiler: GCC 4.6, File-System: ufs, Screen Resolution: 1920x1080

Debian Linux 3.2.0-1

Processor: 2 x AMD Opteron 2384 @ 2.70GHz (8 Cores), Motherboard: TYAN S2932/S2932-E, Chipset: NVIDIA MCP55, Memory: 4 x 1024 MB DDR2-667MHz, Disk: 165GB Western Digital WD1600YS-01S, Graphics: ATI Device 9456 1024MB, Audio: ATI R6xx HDMI, Monitor: DELL S2409W

OS: Debian testing, Kernel: 3.2.0-1-amd64 (x86_64), Desktop: GNOME 3.2.1, Display Server: X Server 1.11.3.901 (1.11.4 RC 1), Display Driver: radeon 6.14.3, OpenGL: 2.1 Mesa 7.11.2, Compiler: GCC 4.6, File-System: ext4, Screen Resolution: 1920x1080

System Notes: Disk Scheduler: CFQ.

PC-BSD 9.0

Processor: AMD Opteron 2384 @ 2.70GHz (8 Cores), Motherboard: 101508 XSDT1420, Memory: 4074MB, Disk: Western Digital WD1600YS-01SHB1 20.06C06 + LITE-ON DVDRW LH-16A1S CL04, Graphics: ATI FirePro V8700 (FireGL) 256MB, Audio: ATI RV770 HD Audio, Monitor: DELL S2409W

OS: FreeBSD, Kernel: 9.0-RELEASE (x86_64), Desktop: KDE 4.7.3, Display Server: X Server 1.7.7, Display Driver: ati, OpenGL: 1.2 Mesa 7.6.1, Compiler: GCC 4.2.1 + Clang 3.0 (SVN 142614), File-System: ufs, Screen Resolution: 1920x1080

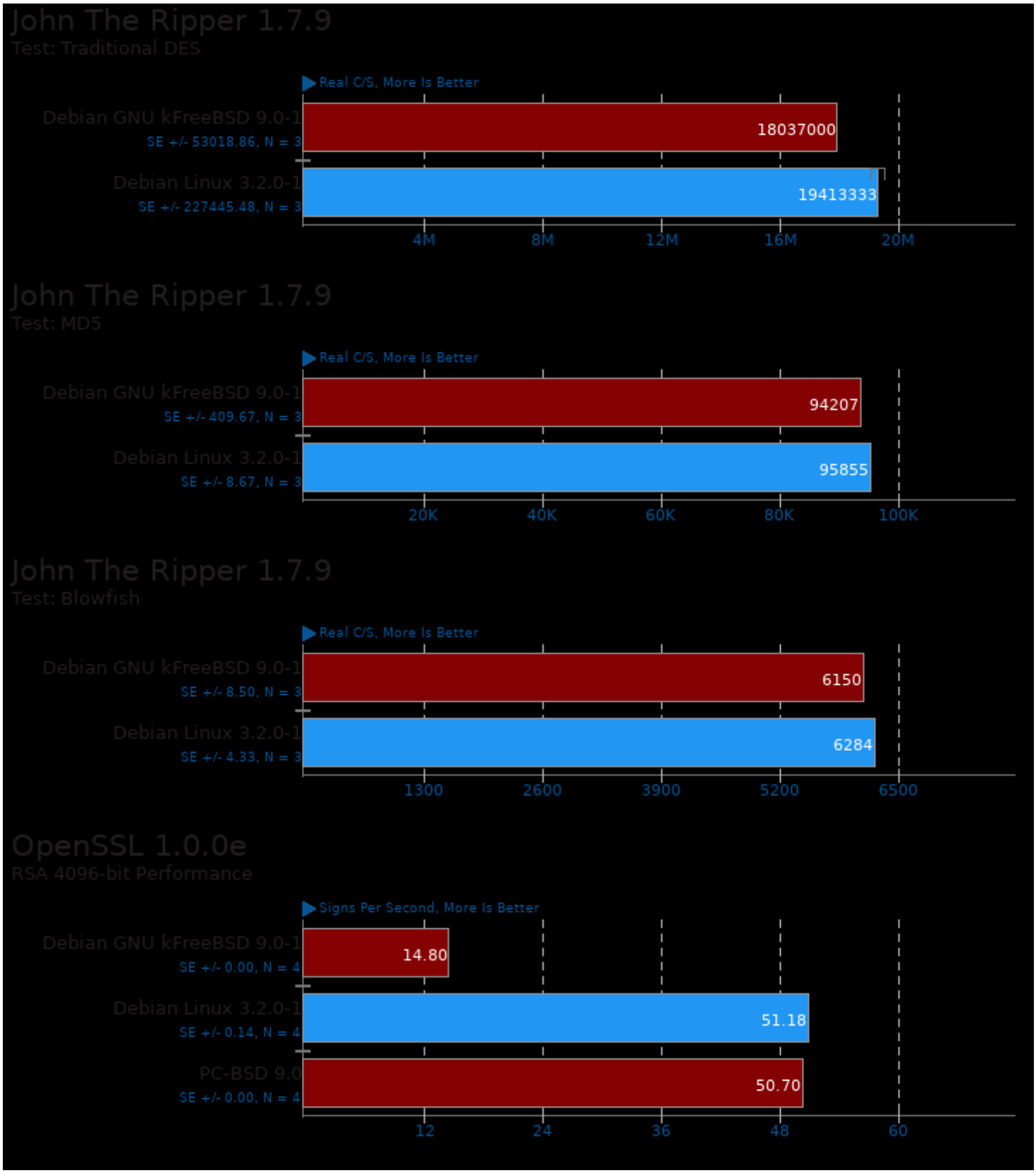
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	Debian GNU kFreeBSD 9.0-1	Debian Linux 3.2.0-1	PC-BSD 9.0
John The Ripper - Traditional DES (Real C/S)	**18037000**	**19413333**	
Normalized	92.91%	100%	
Standard Deviation	0.5%	2%	
John The Ripper - MD5 (Real C/S)	**94207**	**95855**	
Normalized	98.28%	100%	
Standard Deviation	0.8%	0%	
John The Ripper - Blowfish (Real C/S)	**6150**	**6284**	
Normalized	97.87%	100%	
Standard Deviation	0.2%	0.1%	
OpenSSL - R.4.b.P (Signs/sec)	**14.80**	**51.18**	50.70
Normalized	28.92%	100%	99.06%
Standard Deviation	0%	0.6%	0%
Gcrypt Library - C.E.C (us)	**1903**		**35833333**
Normalized	100%		0.01%
Standard Deviation	0.3%		0.3%
C-Ray - Total Time (sec)	52.51	**52.03**	**54.98**
Normalized	99.09%	100%	94.63%
Standard Deviation	0.6%	0.2%	0.5%
TSCP - A.C.P (Nodes/s)	227838		
Standard Deviation	0%		
Crafty - Elapsed Time (sec)	**124.25**	**124.45**	
Normalized	100%	99.84%	
Standard Deviation	0.1%	0.2%	
7-Zip Compression - C.S.T (MIPS)	13439	**16064**	**11760**
Normalized	83.66%	100%	73.21%
Standard Deviation	2.6%	0.8%	3.4%
Parallel BZIP2 Compression - 2.F.C (sec)	**9.58**	**9.38**	
Normalized	97.91%	100%	
Standard Deviation	3.9%	1.9%	
PostMark - D.T.P (TPS)	153	**2017**	**102**
Normalized	7.59%	100%	5.06%
Standard Deviation	1%	9.7%	10.6%
Timed MAFFT Alignment - M.S.A (sec)	**36.19**	**7.87**	
Normalized	21.75%	100%	
Standard Deviation	0.6%	1.9%	
Timed MrBayes Analysis - P.P.A (sec)	**36.51**	**87.37**	
Normalized	100%	41.79%	
Standard Deviation	1.4%	0.3%	
Himeno Benchmark - P.P.S (MFLOPS)	**494.93**	411.80	**211.20**
Normalized	100%	83.2%	42.67%
Standard Deviation	1.1%	3.4%	6.3%
SciMark - Composite (Mflops)	484.67	**500.89**	**447.10**
Normalized	96.76%	100%	89.26%
Standard Deviation	1.4%	0.3%	4.7%
SciMark - F.F.T (Mflops)	56.47	**61.86**	**51.49**
Normalized	91.29%	100%	83.24%
Standard Deviation	4.6%	2.9%	8.9%
SciMark - J.S.O.R (Mflops)	**577.74**	**595.32**	593.71
Normalized	97.05%	100%	99.73%
Standard Deviation	2.3%	0.2%	0.5%
SciMark - Monte Carlo (Mflops)	307.73	**303.81**	**336.86**
Normalized	91.35%	90.19%	100%
Standard Deviation	0%	1.6%	0%

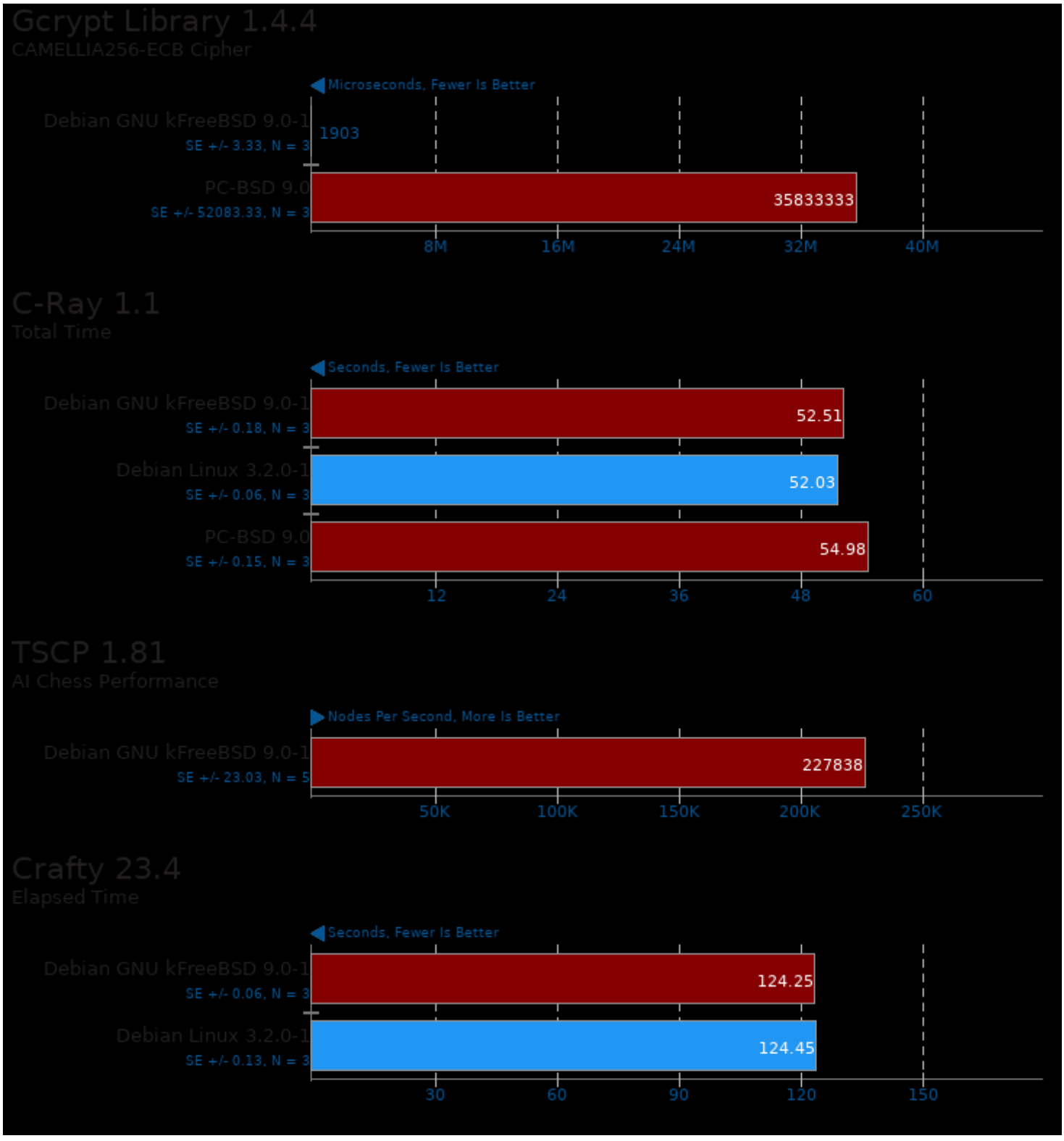
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SciMark - S.M.M (Mflops)	522.93	**563.03**	**493.89**
Normalized	92.88%	100%	87.72%
Standard Deviation	7.8%	0.3%	13.7%
SciMark - D.L.M.F (Mflops)	958.50	**980.43**	**759.77**
Normalized	97.76%	100%	77.49%
Standard Deviation	2.2%	0.7%	5%
NAS Parallel Benchmarks - BT.A (Mop/s)	**9782**	**11262**	
Normalized	86.86%	100%	
Standard Deviation	1%	1.7%	
NAS Parallel Benchmarks - CG.B (Mop/s)	**1069**	**2167**	
Normalized	49.33%	100%	
Standard Deviation	2.6%	11.1%	
NAS Parallel Benchmarks - IS.C (Mop/s)	**61.06**	**71.69**	64.66
Normalized	85.17%	100%	90.19%
Standard Deviation	1.2%	0.1%	1.5%
NAS Parallel Benchmarks - LU.A (Mop/s)	**5602**	**9051**	
Normalized	61.9%	100%	
Standard Deviation	26.8%	0.4%	
NAS Parallel Benchmarks - MG.B (Mop/s)	**2573**	**4594**	
Normalized	56%	100%	
Standard Deviation	3%	1.7%	
NAS Parallel Benchmarks - SP.A (Mop/s)	**3569**	**4867**	
Normalized	73.33%	100%	
Standard Deviation	1.4%	5.1%	
NAS Parallel Benchmarks - UA.A (Mop/s)	**18.42**	**39.51**	
Normalized	46.62%	100%	
Standard Deviation	1.2%	1%	
VP8 libvpx Encoding - vpxenc (FPS)	**17.45**	**16.45**	
Normalized	100%	94.27%	
Standard Deviation	1.4%	4.2%	
x264 - H.2.V.E (FPS)	**65.22**	**106.14**	
Normalized	61.45%	100%	
Standard Deviation	12.1%	7.3%	
FFmpeg - AVI To NTSC VCD (sec)	**18.59**	**18.66**	
Normalized	100%	99.62%	
Standard Deviation	1.4%	0.9%	

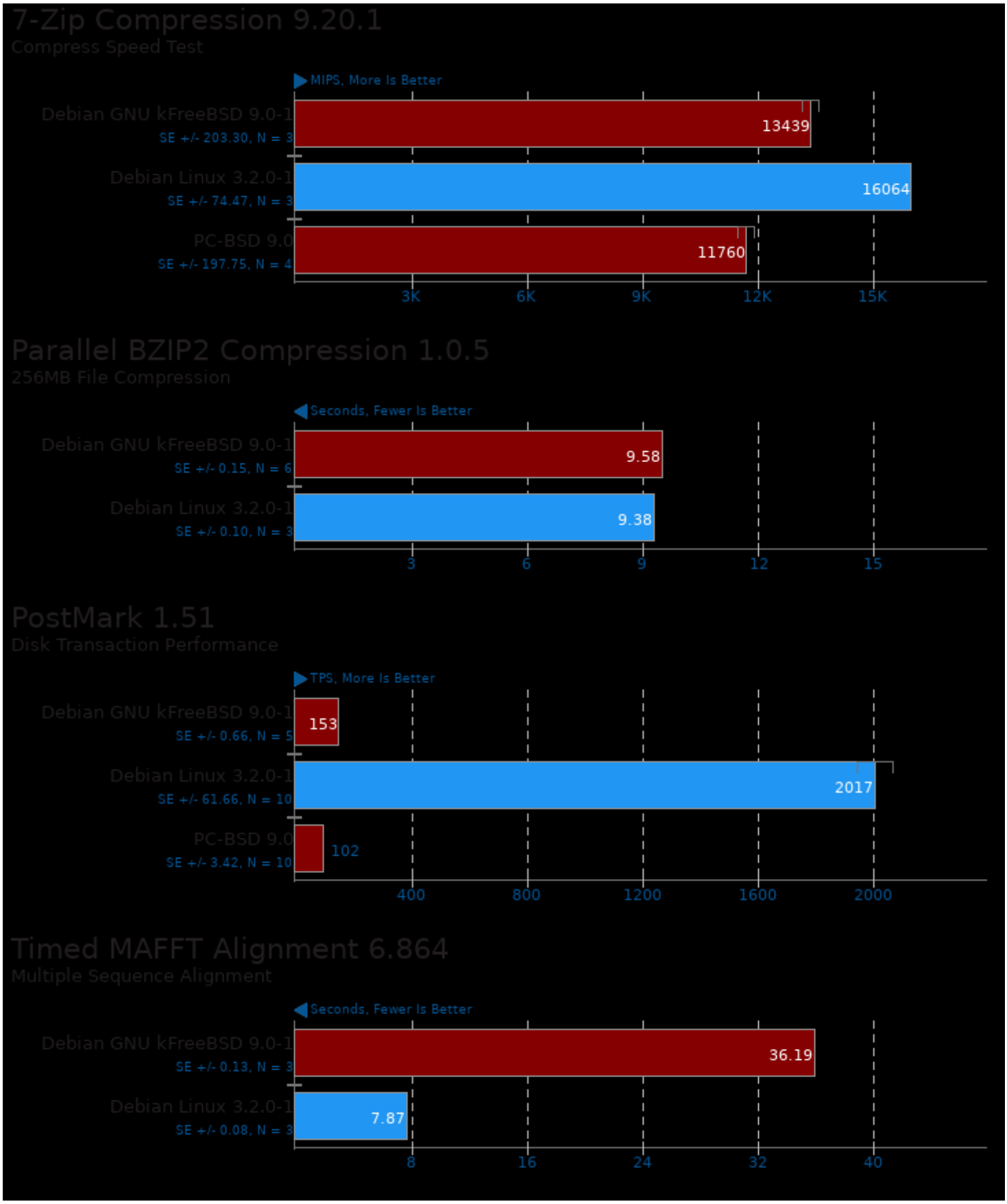
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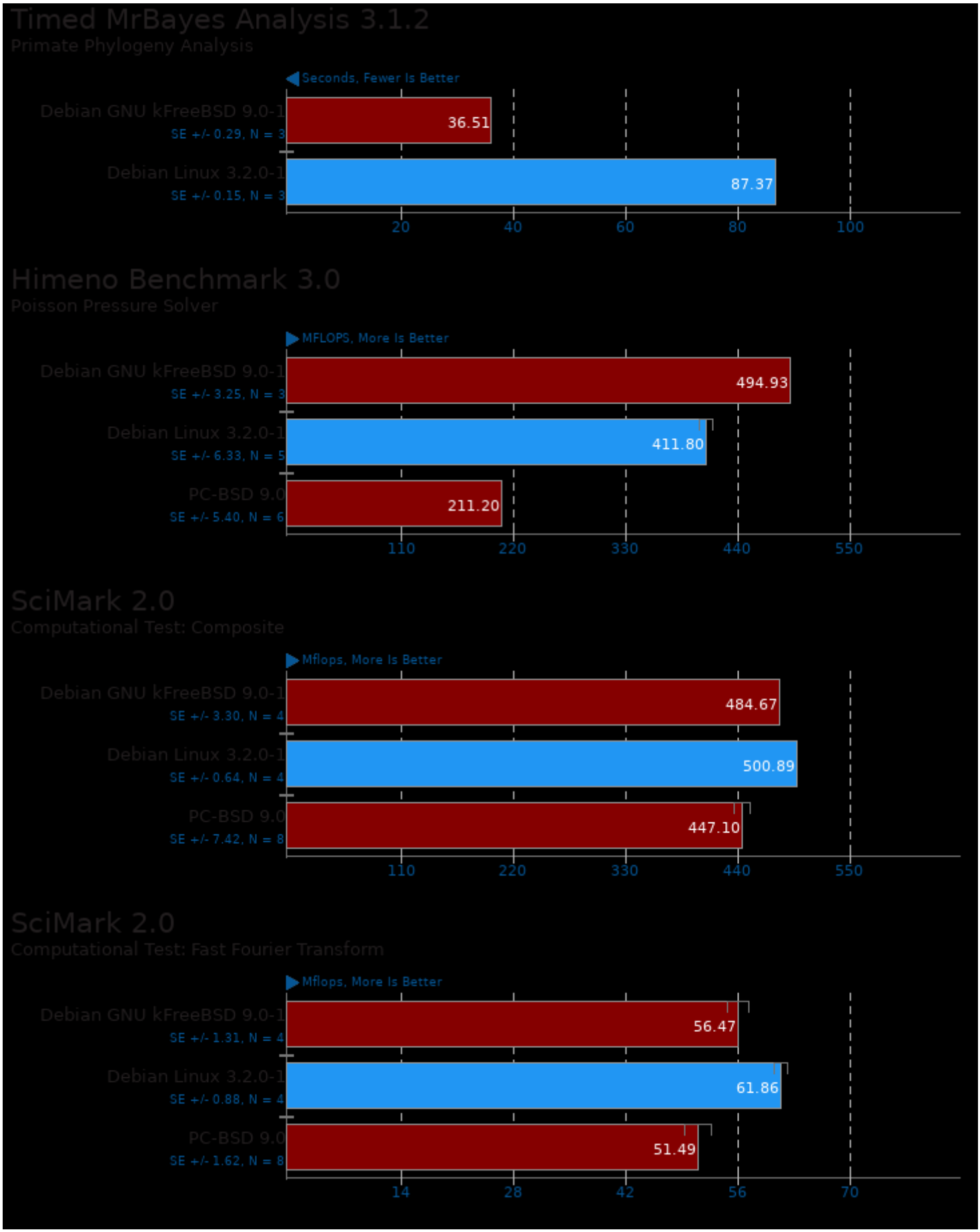
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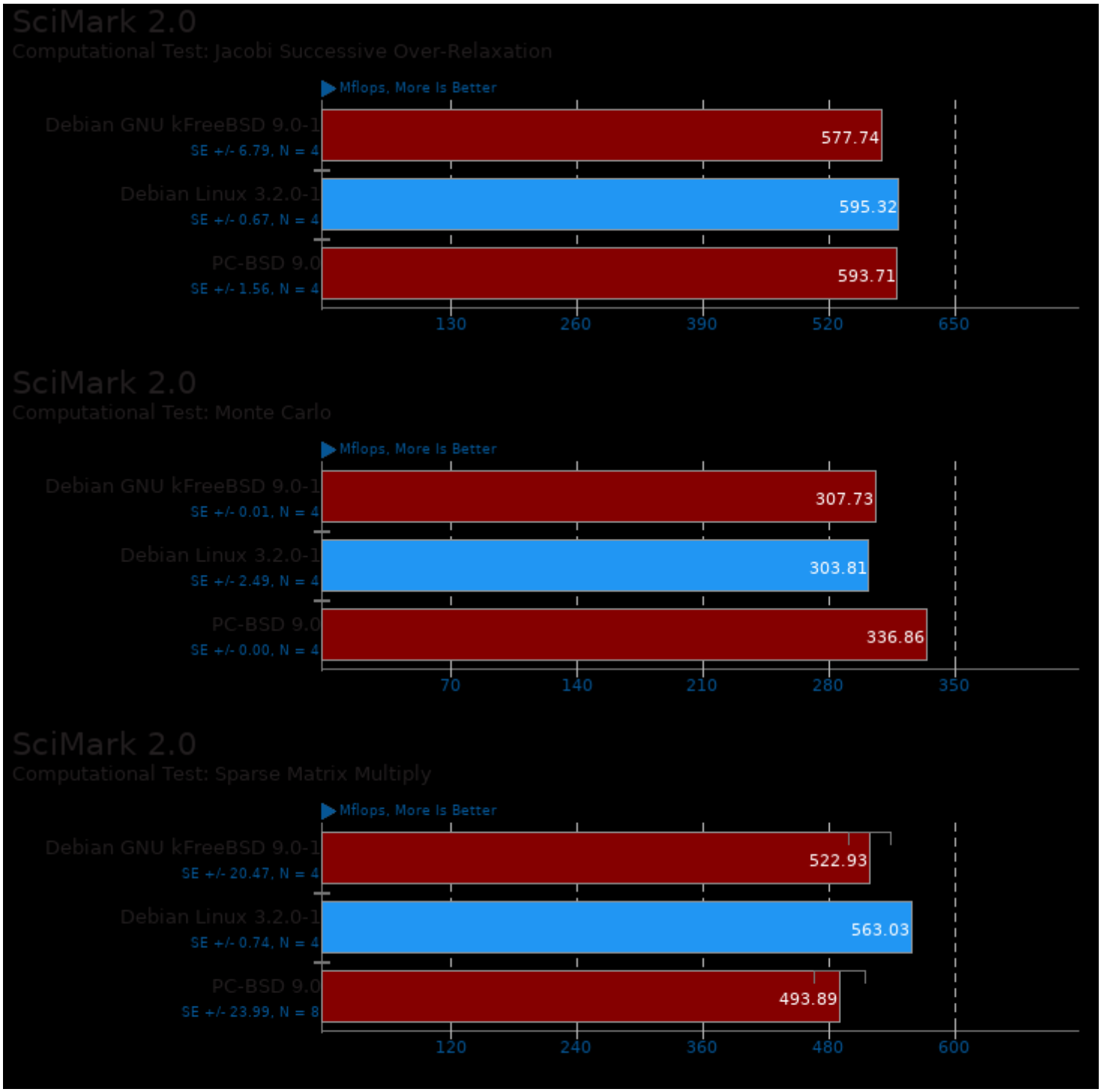
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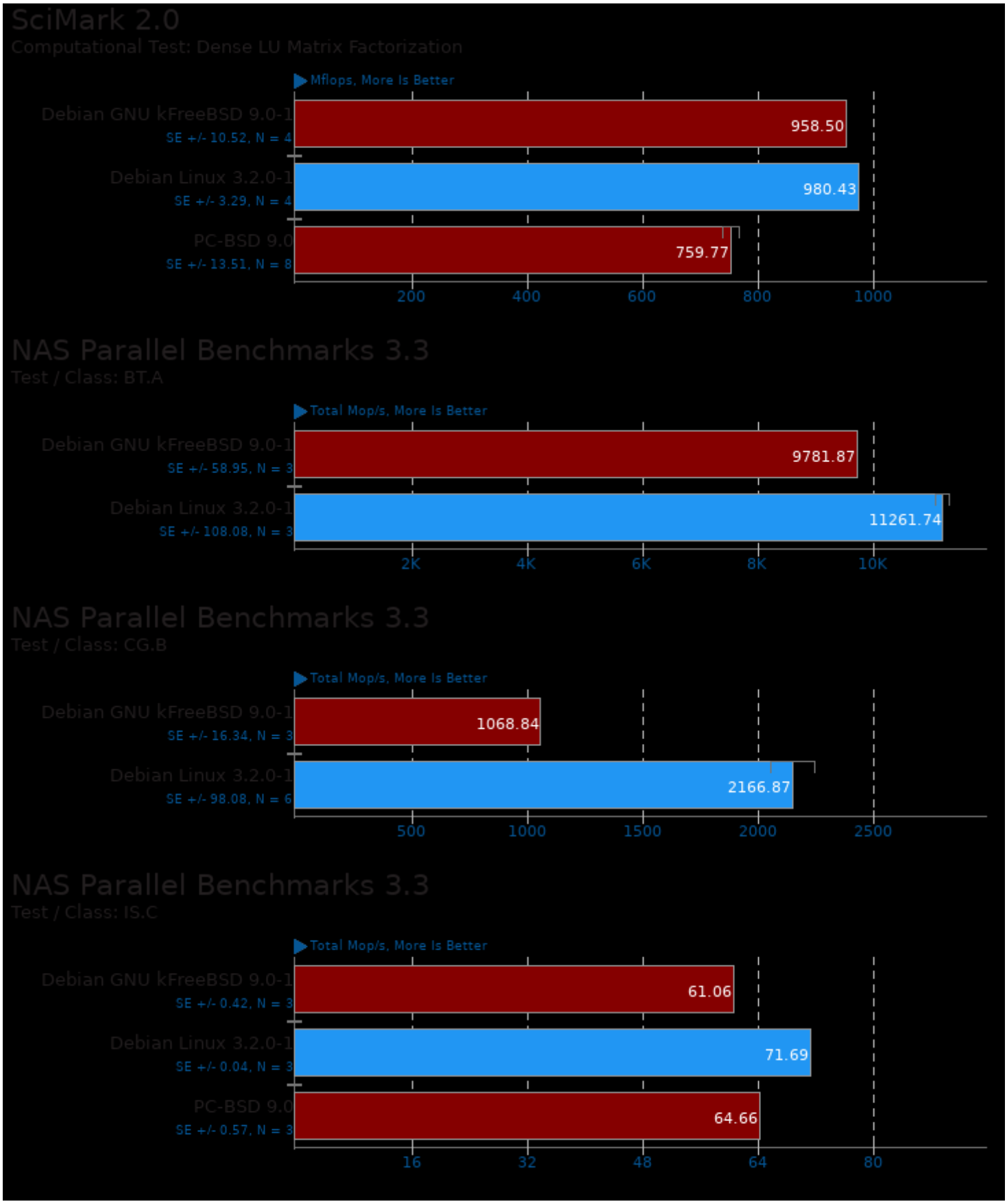
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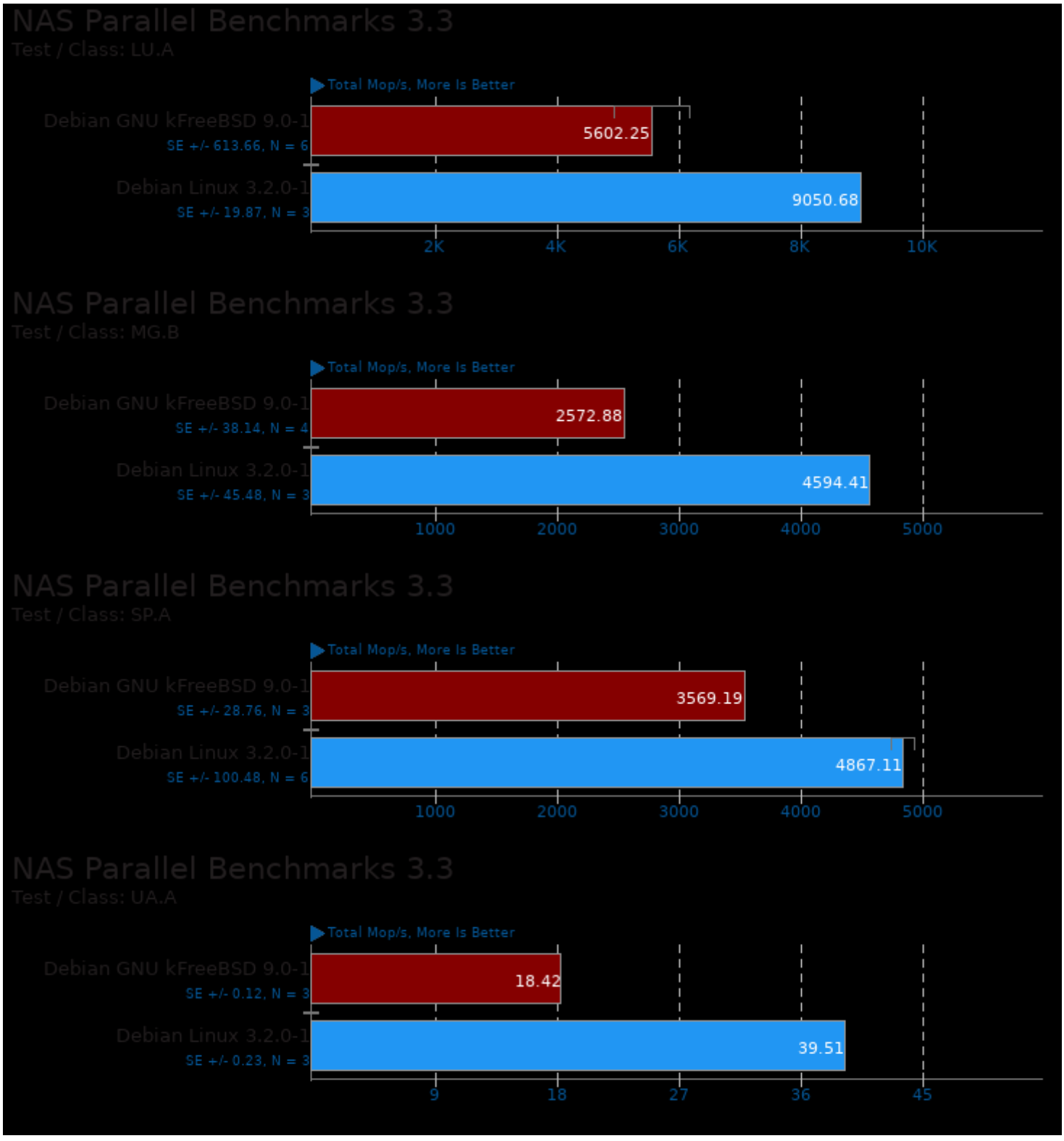
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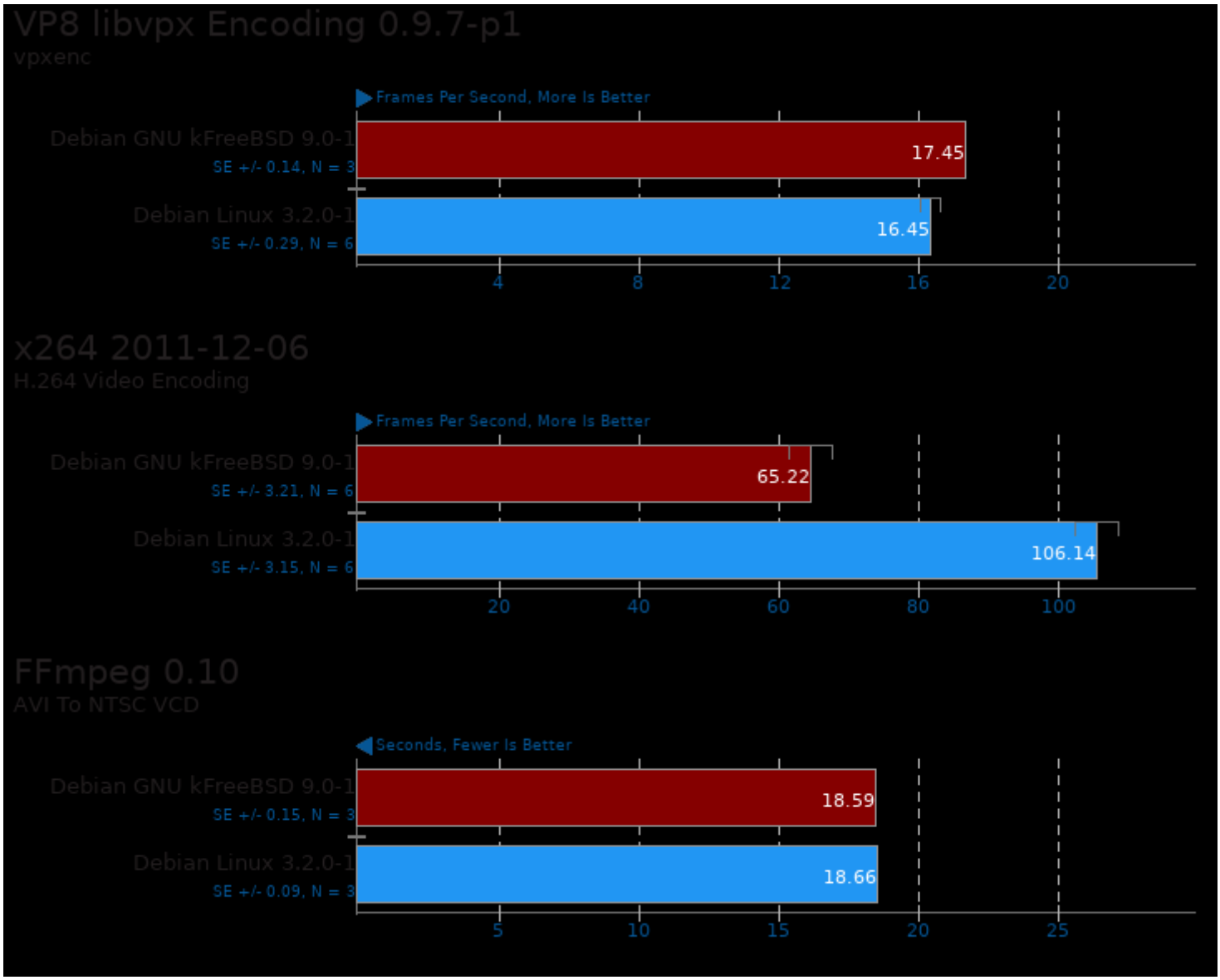
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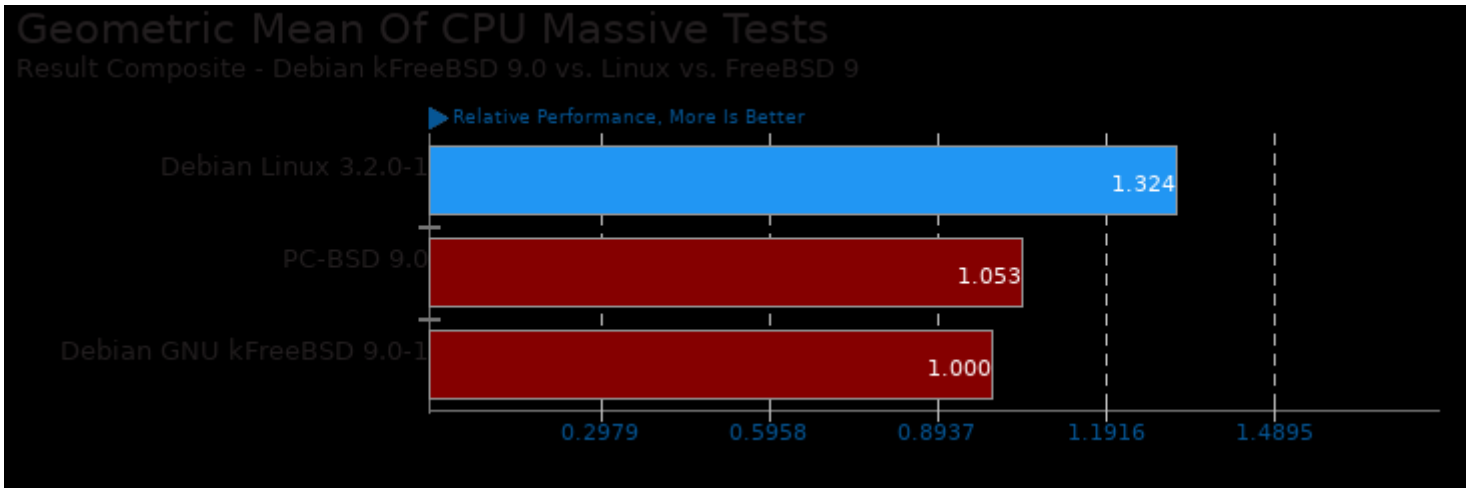
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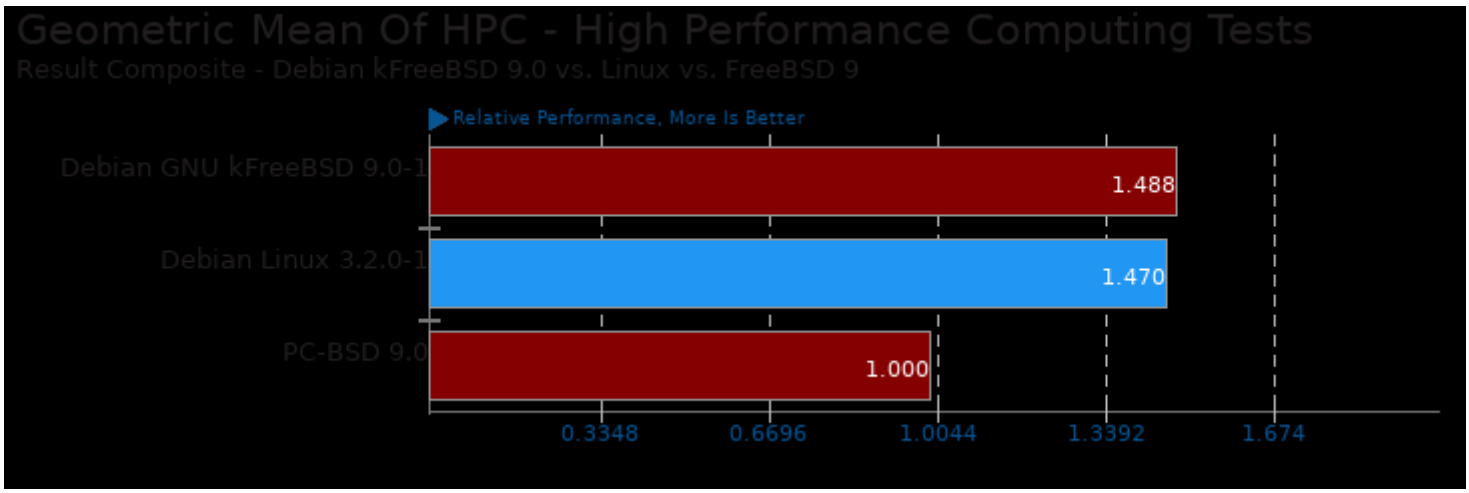
These geometric means are based upon test groupings / test suites for this result file.



Geometric mean based upon tests: pts/mafft, pts/scimark2, pts/tscp, pts/vpxenc, pts/himeno, pts/c-ray, pts/compress-7zip, pts/mrbayes, pts/john-the-ripper, pts/x264 and pts/openssl

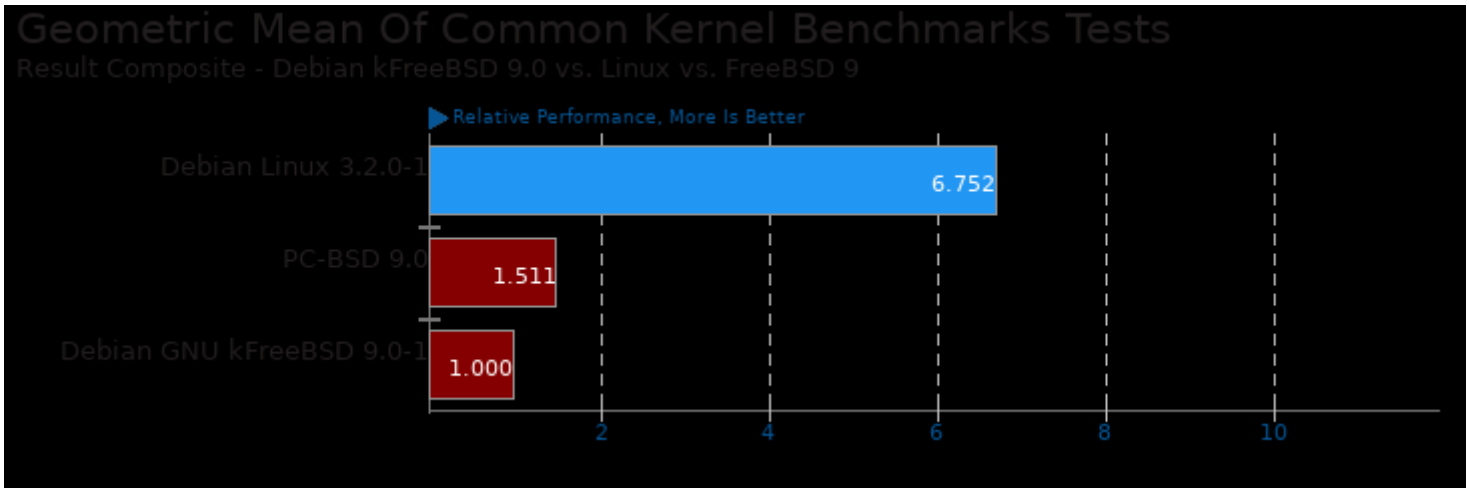


Geometric mean based upon tests: pts/c-ray, pts/compress-7zip, pts/compress-pbzip2, pts/crafty, pts/vpxenc, pts/x264, pts/himeno, pts/john-the-ripper, pts/openssl, pts/mafft, pts/mrbayes and pts/npb

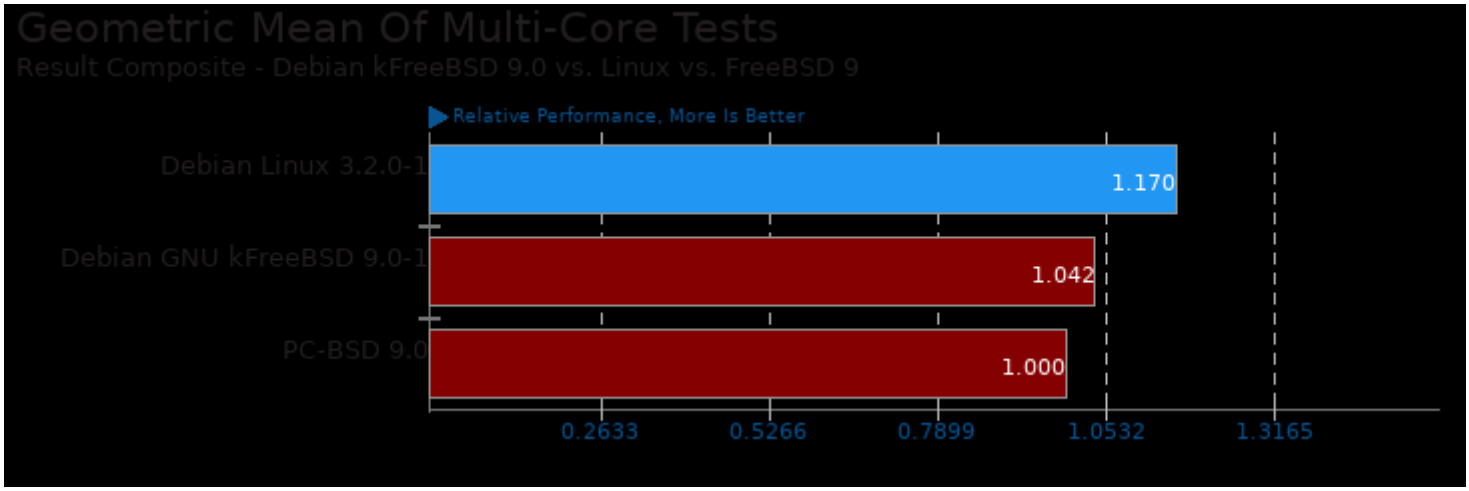


Geometric mean based upon tests: pts/npb, pts/himeno, pts/mrbayes and pts/mafft

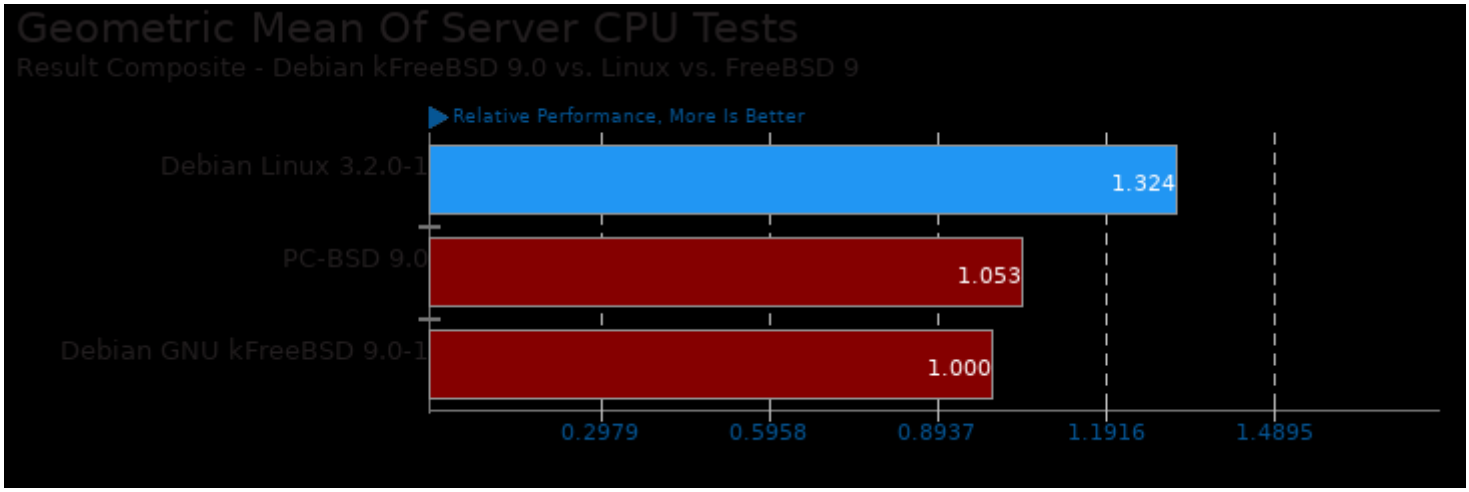
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Geometric mean based upon tests: pts/postmark and pts/openssl



Geometric mean based upon tests: pts/c-ray, pts/x264, pts/ffmpeg, pts/vpxenc, pts/npb, pts/john-the-ripper, pts/compress-7zip and pts/compress-pbzip2



Geometric mean based upon tests: pts/npb, pts/john-the-ripper, pts/x264, pts/himeno, pts/compress-7zip, pts/c-ray and pts/openssl

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