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Linux 5.0 Specmelt Test

Intel Core i9-7960X testing with a MSI X299 SLI PLUS (MS-7A93) v1.0 (1.A0 BIOS) and Gigabyte AMD Radeon RX 550/550X 2GB on Ubuntu 18.10 via the Phoronix Test Suite.

Automated Executive Summary

Ubuntu 18.10 + Linux 5.0: Disabled had the most wins, coming in first place for 62% of the tests.

Based on the geometric mean of all complete results, the fastest (Ubuntu 18.10 + Linux 5.0: Disabled) was 1.248x the speed of the slowest (Ubuntu 18.10: Stock). Ubuntu 18.10 + Linux 5.0: Disabled was 1.218x the speed of Ubuntu 18.10 + Linux 5.0: Stock, Ubuntu 18.10: Stock was 0.802x the speed of Ubuntu 18.10 + Linux 5.0: Disabled, Ubuntu 18.10: Disabled was 1.203x the speed of Ubuntu 18.10: Stock.

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

ctx_clock (Context Switch Time) at 3.581x
Netperf (Server: localhost - Test: TCP Request Response - Duration: 60 Seconds) at 3.095x
Netperf (Server: localhost - Test: UDP Request Response - Duration: 60 Seconds) at 2.448x
Stress-NG (Test: Context Switching) at 1.695x
Sockperf (Test: Throughput) at 1.684x
Apache Siege (Concurrent Users: 100) at 1.671x
Apache Benchmark (Static Web Page Serving) at 1.325x

BlogBench (Test: Read) at 1.307x
OSBench (Test: Create Threads) at 1.302x
NGINX Benchmark (Static Web Page Serving) at 1.3x.

Test Systems:

Ubuntu 18.10 + Linux 5.0: Stock

Ubuntu 18.10 + Linux 5.0: Disabled

Processor: Intel Core i9-7960X @ 4.40GHz (16 Cores / 32 Threads), Motherboard: MSI X299 SLI PLUS (MS-7A93) v1.0 (1.A0 BIOS), Chipset: Intel Sky Lake-E DMI3 Registers, Memory: 16384MB, Disk: 256GB INTEL SSDPEKKW256G8, Graphics: Gigabyte AMD Radeon RX 550/550X 2GB (1206/1750MHz), Audio: Realtek ALC1220, Monitor: ASUS VP28U, Network: Intel I219-V + Intel I211

OS: Ubuntu 18.10, Kernel: 5.0.0-999-generic (x86_64) 20190225, Desktop: GNOME Shell 3.30.1, Display Server: X Server 1.20.1, Display Driver: modesetting 1.20.1, OpenGL: 4.5 Mesa 18.2.2 (LLVM 7.0.0), Compiler: GCC 8.2.0, File-System: ext4, Screen Resolution: 3840x2160

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++ --enable-libmpx --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none --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 --with-tune=generic --without-cuda-driver -v
Disk Notes: NONE / errors=remount-ro,relatime,rw
Processor Notes: Scaling Governor: intel_pstate powersave
Graphics Notes: GLAMOR
Python Notes: Python 2.7.15+ + Python 3.6.7
Security Notes: __user pointer sanitization + disabled STIBP: disabled + PTE Inversion; VMX: vulnerable

Ubuntu 18.10: Stock

Ubuntu 18.10: Disabled

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Linux 5.0 Specmelt Test

	Ubuntu 18.10 + Linux 5.0: Stock	Ubuntu 18.10 + Linux 5.0:	Ubuntu 18.10: Stock	Ubuntu 18.10: Disabled
Flexible IO Tester - Rand Read - Linux AIO - Yes - No - 4KB (MB/s)	685	**934**	**632**	785
Normalized	73.34%	100%	67.67%	84.05%
Standard Deviation	3%	0.5%	3.2%	6.9%
Flexible IO Tester - Rand Read - Linux AIO - Yes - No - 4KB (IOPS)	175500	**238667**	**162000**	201000
Normalized	73.53%	100%	67.88%	84.22%
Standard Deviation	3%	0.5%	3.3%	7%
Flexible IO Tester - Rand Write - Linux AIO - Yes - No - 4KB (MB/s)	2228	2762	**2191**	**2791**
Normalized	79.83%	98.96%	78.5%	100%
Standard Deviation	2.2%	1.8%	1.6%	1.6%
Flexible IO Tester - Rand Write - Linux AIO - Yes - No - 4KB (IOPS)	570333	707333	**560667**	**714667**
Normalized	79.8%	98.97%	78.45%	100%
Standard Deviation	2.1%	1.7%	1.6%	1.6%
BlogBench - Read (Final Score)	**885147**	991584	1115238	**1156504**
Normalized	76.54%	85.74%	96.43%	100%
Standard Deviation	3%	2.5%	2.5%	3.2%
Compile Bench - Compile (MB/s)	924	**1026**	**913**	955
Normalized	90.06%	100%	88.99%	93.08%
Standard Deviation	2.2%	2%	3.3%	3.5%
Compile Bench - Initial Create (MB/s)	647	**774**	**612**	706
Normalized	83.59%	100%	79.07%	91.21%
Standard Deviation	3%	4%	6.8%	4.1%
Compile Bench - Read Compiled Tree (MB/s)	**2879**	**3342**	2909	3310
Normalized	86.15%	100%	87.04%	99.04%
Standard Deviation	1.2%	0.6%	0.7%	0%
PostMark - D.T.P (TPS)	**6697**	**7896**	6819	7812
Normalized	84.82%	100%	86.36%	98.94%
Standard Deviation	1.5%	1.8%	1.6%	
t-test1 - 1 (sec)	17.43	**16.40**	**17.56**	16.55
Normalized	94.09%	100%	93.39%	99.09%
Standard Deviation	0.9%	0.2%	2.4%	0.7%
t-test1 - 2 (sec)	**6.56**	**5.99**	6.47	**5.99**
Normalized	91.31%	100%	92.58%	100%
Standard Deviation	0.2%	0.5%	0.3%	0.2%
Sockperf - Throughput	**464574**	554274	602908	**782468**
Normalized	59.37%	70.84%	77.05%	100%
Standard Deviation	1.3%	1%	4%	3.4%
Sockperf - Latency Ping Pong (usec)	3.99	**3.35**	**4.13**	3.68
Normalized	83.96%	100%	81.11%	91.03%
Standard Deviation	1.4%	0.9%	1.2%	1.1%
Ethr - TCP - Latency - 8 (us)	**12.70**	**10.61**	12.48	10.89
Normalized	83.54%	100%	85.02%	97.43%
Standard Deviation	0.2%	0.5%	0.6%	0.4%
Ethr - TCP - Latency - 16 (us)	**12.64**	**10.55**	12.46	10.90
Normalized	83.47%	100%	84.67%	96.79%
Standard Deviation	0.4%	0.4%	0.3%	0.6%
Ethr - TCP - Bandwidth - 8 (Mbits/s)	217928	238549	**216290**	**242083**
Normalized	90.02%	98.54%	89.35%	100%

Linux 5.0 Specmelt Test

Standard Deviation	0.4%	0.7%	0.7%	0.2%
Ethr - TCP - Bandwidth - 16 (Mbits/s)	211144	230641	236149	235436
Normalized	89.41%	97.67%	100%	99.7%
Standard Deviation	7.7%	0.3%	0.4%	0.4%
Ethr - HTTP - Bandwidth - 16 (Mbits/s)	4154	4346	4226	4398
Normalized	94.45%	98.82%	96.09%	100%
Standard Deviation	0.2%	0.1%	0.4%	0.6%
Netperf - T.R.R - 60 Seconds (Transaction Rate/sec)	9615	29763	10199	24048
Normalized	32.31%	100%	34.27%	80.8%
Standard Deviation	1.9%	3.4%	5.8%	5.5%
Netperf - U.R.R - 60 Seconds (Transaction Rate/sec)	28765	52983	21641	38845
Normalized	54.29%	100%	40.85%	73.32%
Standard Deviation	0.5%	0.8%	1.1%	1.7%
Netperf - TCP Stream - Client To Server - 60 Seconds (Megabits/sec	12719	19643	8685	21221
Normalized	59.94%	92.56%	40.93%	100%
Standard Deviation	104.7%	125.8%	36.5%	116.5%
Node.js Express HTTP Load Test (Reqs/sec)	10296	10705	10437	11019
Normalized	93.44%	97.15%	94.72%	100%
Standard Deviation	0.5%	2%	0.9%	1%
Node.js Octane Benchmark (Score)	45374	46133	45658	45843
Normalized	98.35%	100%	98.97%	99.37%
Standard Deviation	0.7%	0.8%	0.3%	0.3%
Hackbench - 32 - Process (sec)	48.04	38.75	48.47	37.71
Normalized	78.5%	97.32%	77.8%	100%
Standard Deviation	0.1%	3.3%	1.9%	3.3%
Perl Benchmarks - Interpreter (sec)	0.00089968	0.00080861	0.00091026	0.00083410
Normalized	89.88%	100%	88.83%	96.94%
Standard Deviation	0.5%	0.6%	1.2%	0.8%
MariaDB - 64 (Queries/sec)	1180	1196	1166	1186
Normalized	98.66%	100%	97.49%	99.16%
Standard Deviation	0.8%	1%	2.5%	3.4%
PostgreSQL pgbench - Buffer Test - Normal Load - Read Only (TPS)	469649	488662	482099	501825
Normalized	93.59%	97.38%	96.07%	100%
Standard Deviation	0.8%	0.8%	0.6%	0.8%
Redis - SADD (Reqs/sec)	2329609	2587428	2402854	2541666
Normalized	90.04%	100%	92.87%	98.23%
Standard Deviation	1.6%	2.7%	2.4%	6.8%
Redis - GET (Reqs/sec)	2643324	2821812	2678653	2876968
Normalized	91.88%	98.08%	93.11%	100%
Standard Deviation	0.9%	3.4%	0.7%	1.8%
Redis - SET (Reqs/sec)	2057887	2240900	2126244	2147494
Normalized	91.83%	100%	94.88%	95.83%
Standard Deviation	3.5%	1.7%	0.8%	3.1%
Stress-NG - Socket Activity (Bogo	15281	16519	10904	13155
Normalized	92.51%	100%	66.01%	79.64%
Standard Deviation	7.2%	5.3%	2%	1.9%
Stress-NG - Context Switching (Bogo Ops/s)	19607029	25494353	15036991	18688130
Normalized	76.91%	100%	58.98%	73.3%

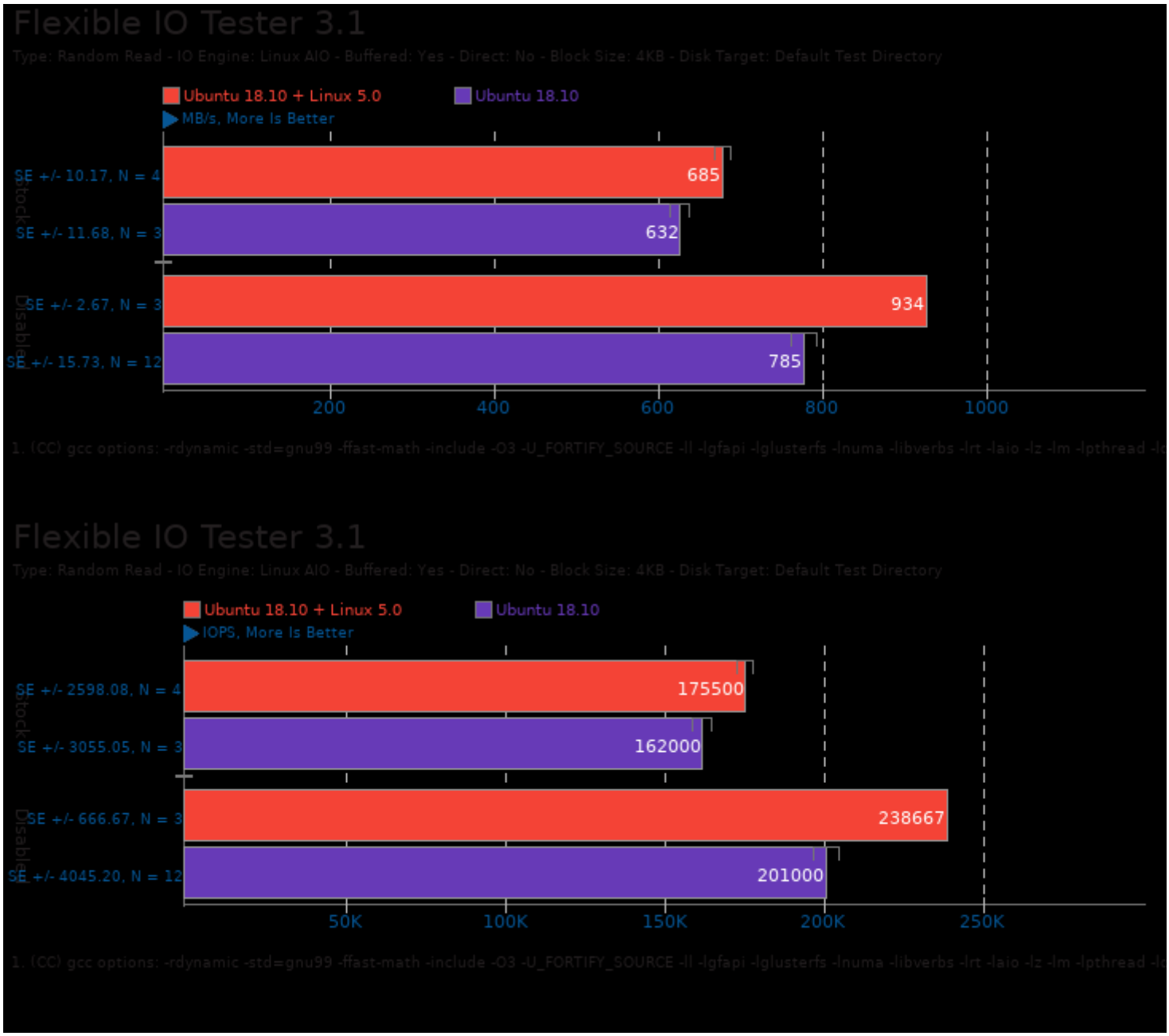
Linux 5.0 Specmelt Test

Standard Deviation	0.3%	1.2%	0.2%	3.3%
ctx_clock - C.S.T (Clocks)	402	118	419	117
Normalized	29.1%	99.15%	27.92%	100%
Standard Deviation	0.3%	1%	0.8%	
Memcached mcperf - Add (Operations/sec)	66517	79208	71181	78989
Normalized	83.98%	100%	89.87%	99.72%
Standard Deviation	0.3%	0.2%	0.5%	0.7%
Memcached mcperf - Get (Operations/sec)	111241	129016	109797	125592
Normalized	86.22%	100%	85.1%	97.35%
Standard Deviation	1.1%	1%	0.8%	0.7%
Memcached mcperf - Set (Operations/sec)	67314	78901	71157	79233
Normalized	84.96%	99.58%	89.81%	100%
Standard Deviation	0.1%	0.5%	0.6%	0.3%
Memcached mcperf - Append (Operations/sec)	71385	84855	74863	85173
Normalized	83.81%	99.63%	87.9%	100%
Standard Deviation	0.3%	0.2%	1.1%	1.1%
Memcached mcperf - Delete (Operations/sec)	110193	130264	109181	125933
Normalized	84.59%	100%	83.82%	96.68%
Standard Deviation	0.9%	0.4%	1.3%	1%
Memcached mcperf - Prepend (Operations/sec)	71791	85607	75998	84977
Normalized	83.86%	100%	88.78%	99.26%
Standard Deviation	0.5%	0.3%	0.2%	0.6%
Memcached mcperf - Replace (Operations/sec)	71889	85655	74616	85428
Normalized	83.93%	100%	87.11%	99.73%
Standard Deviation	0.4%	0.2%	0.2%	0.4%
PyBench - T.F.A.T.T (Milliseconds)	948	952	944	949
Normalized	99.58%	99.16%	100%	99.47%
Standard Deviation		0.5%	0.3%	0.3%
NGINX Benchmark - S.W.P.S (Reqs/sec)	41647	53153	42488	54125
Normalized	76.95%	98.2%	78.5%	100%
Standard Deviation	0.9%	0.2%	1%	0.8%
Apache Benchmark - S.W.P.S (Reqs/sec)	33819	41652	36426	44820
Normalized	75.46%	92.93%	81.27%	100%
Standard Deviation	0.2%	0.4%	0.5%	1.1%
Apache Siege - 10 (Transactions/sec)	33633	49572	28796	40823
Normalized	67.85%	100%	58.09%	82.35%
Standard Deviation	0.5%	5%	14.9%	12.4%
Apache Siege - 100 (Transactions/sec)	34806	35397	21179	21605
Normalized	98.33%	100%	59.83%	61.04%
Standard Deviation	1.8%	1.8%	2.9%	3.3%
PHPBench - P.B.S (Score)	697773	703428	701331	699206
Normalized	99.2%	100%	99.7%	99.4%
Standard Deviation	0.6%	0.5%	0.6%	0.3%
OSBench - Create Files (us/Event)	12.57	10.58	12.49	10.60
Normalized	84.17%	100%	84.71%	99.81%

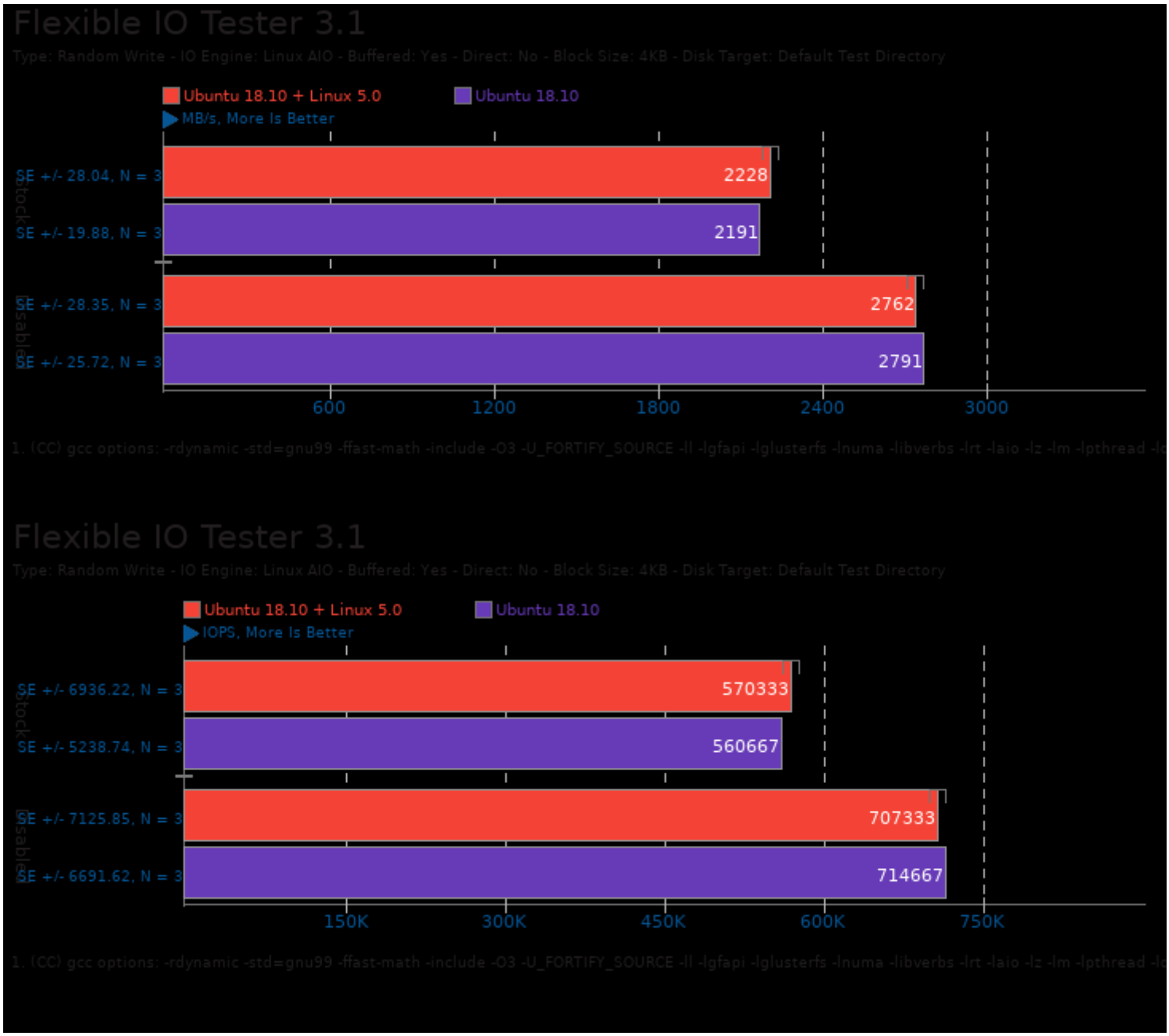
Linux 5.0 Specmelt Test

Standard Deviation	0.8%	0.7%	0.4%	0.8%
OSBench - Create Threads (us/Event)	13.67	**12.38**	**16.12**	13.24
Normalized	90.56%	100%	76.8%	93.5%
Standard Deviation	3.1%	1.2%	3%	0.5%
OSBench - Launch Programs	**35.51**	32.86	33.46	**30.79**
Normalized	86.71%	93.7%	92.02%	100%
Standard Deviation	0.1%	0.3%	2.5%	0.9%
OSBench - Create Processes	**29.27**	**26.65**	27.67	
Normalized	91.05%	100%	96.31%	
Standard Deviation	1.5%	0.8%		

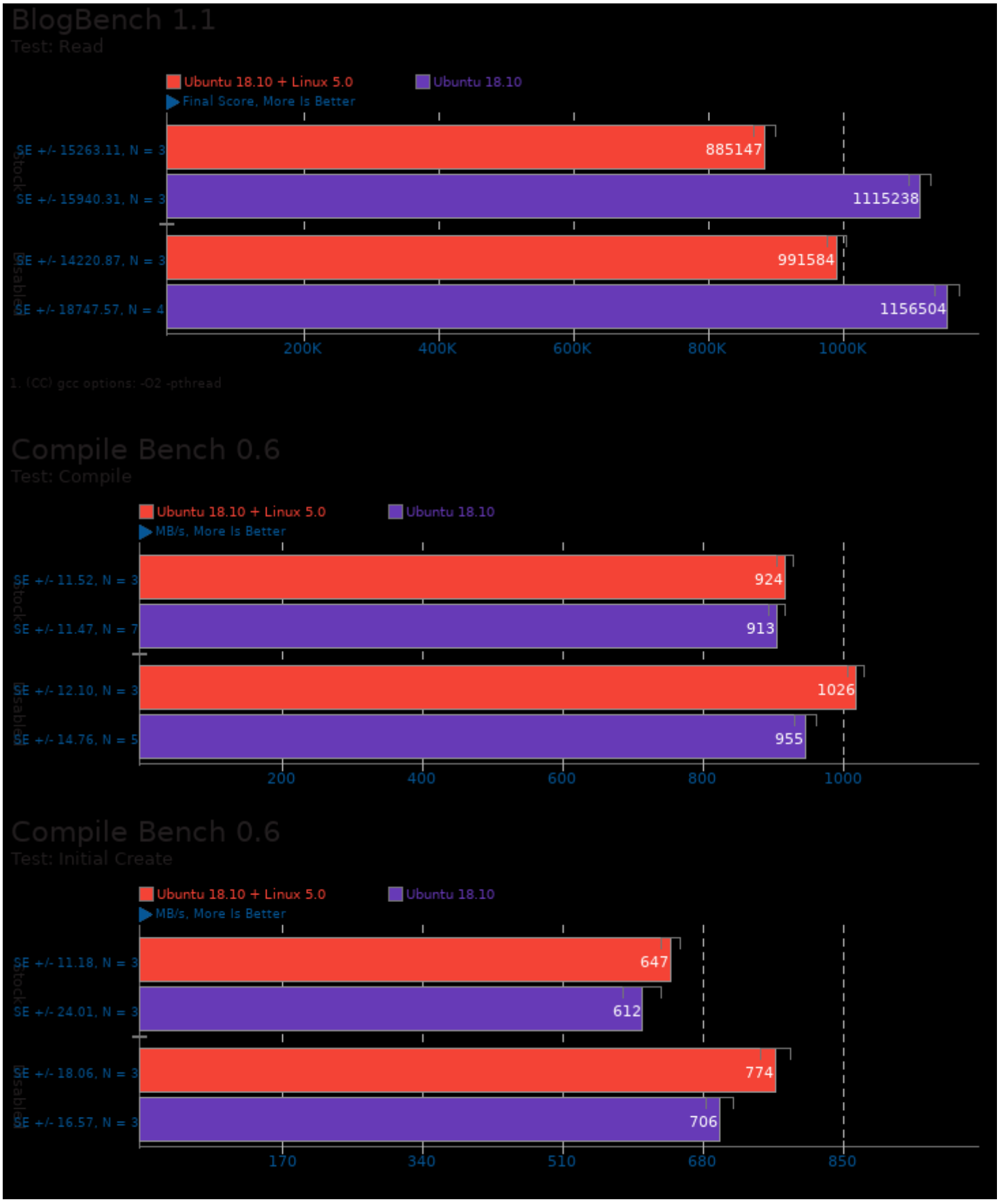
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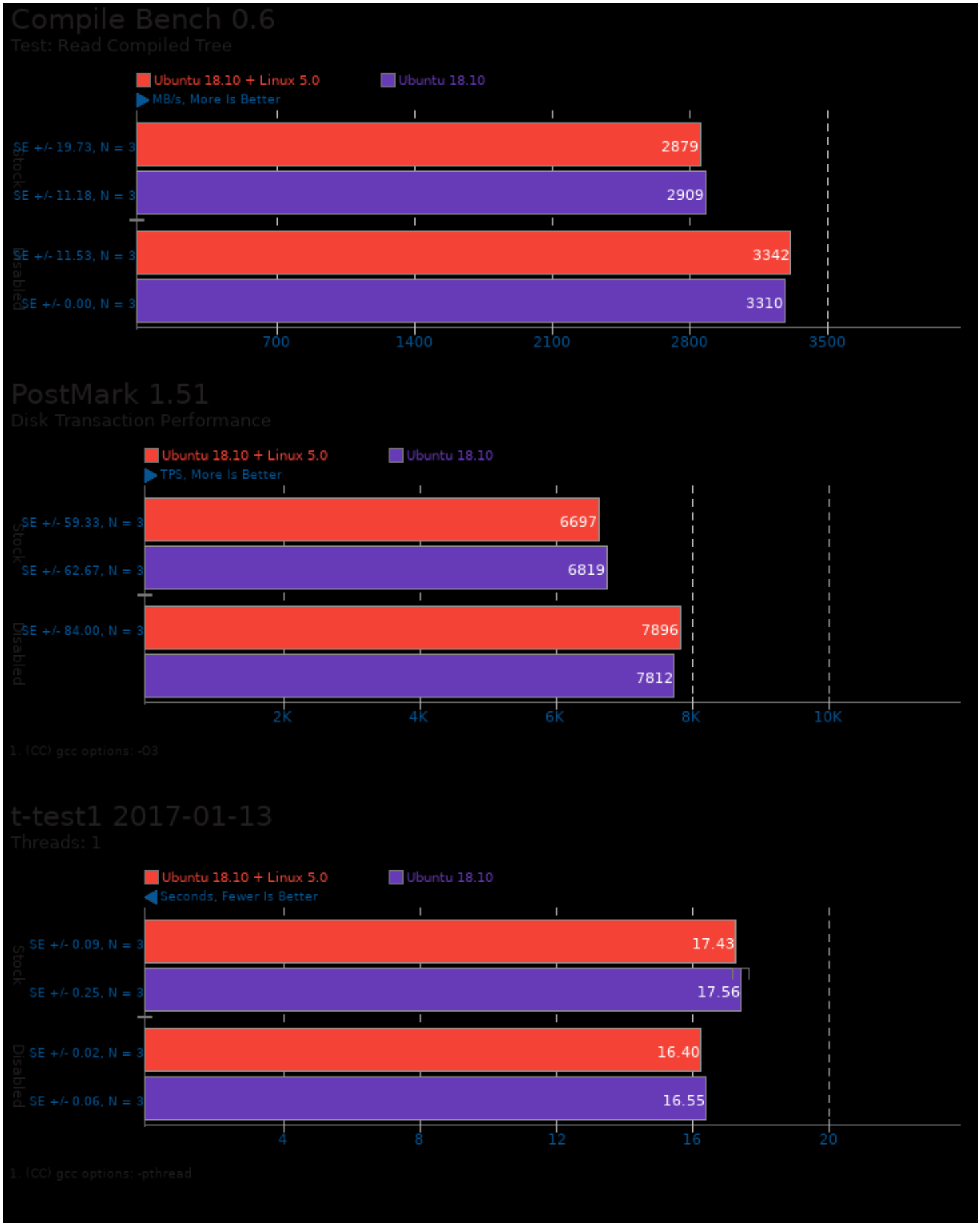
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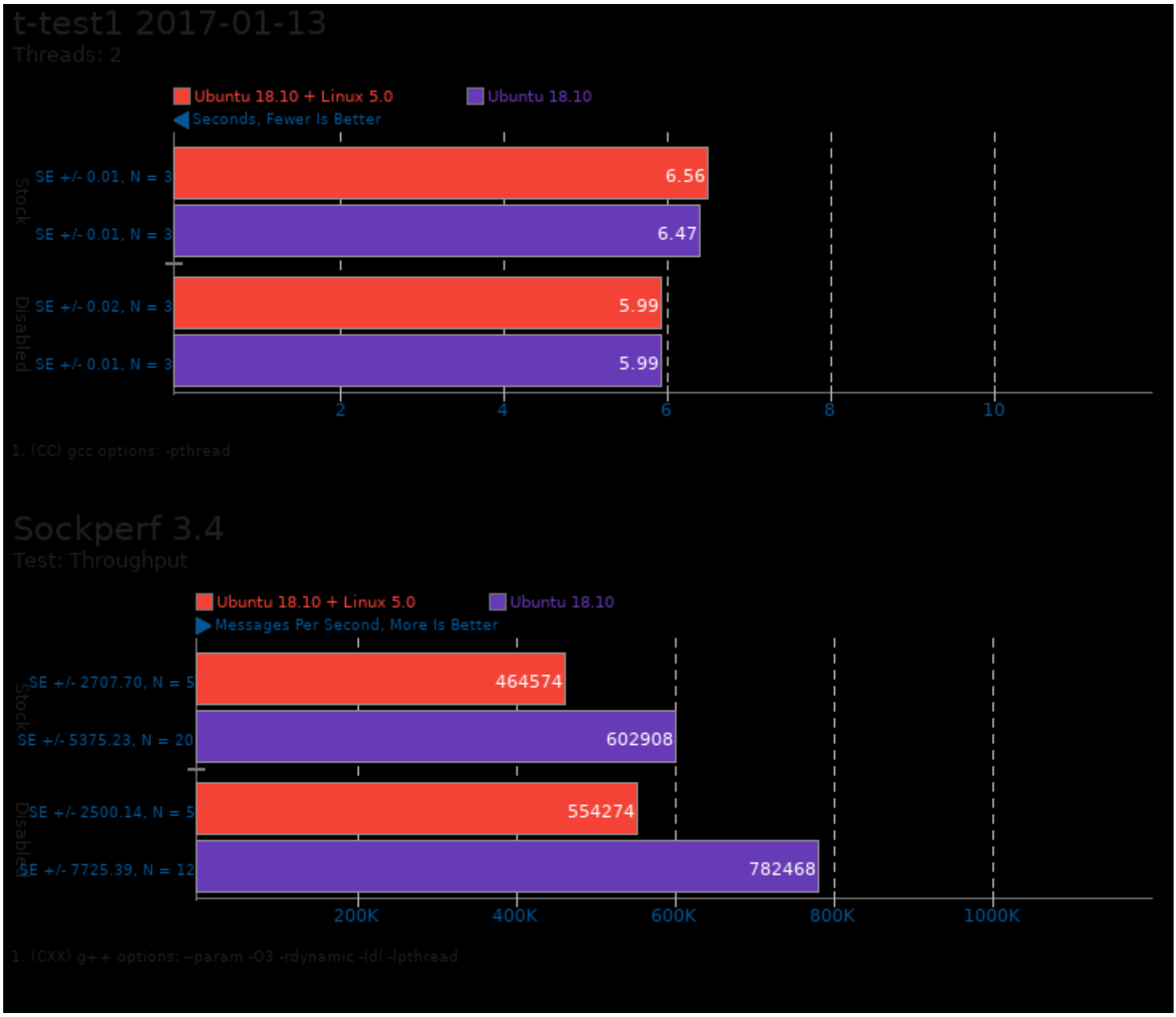
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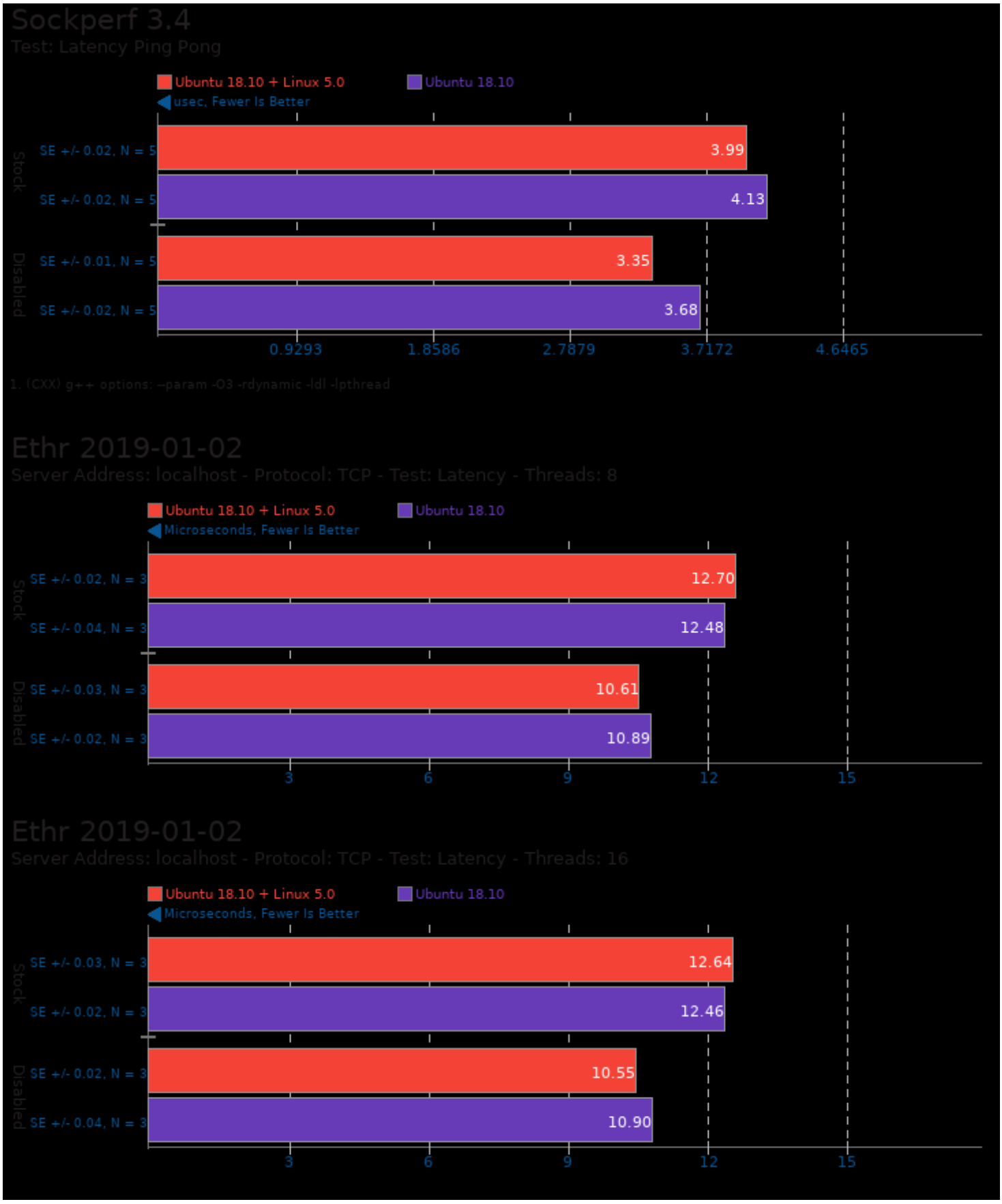
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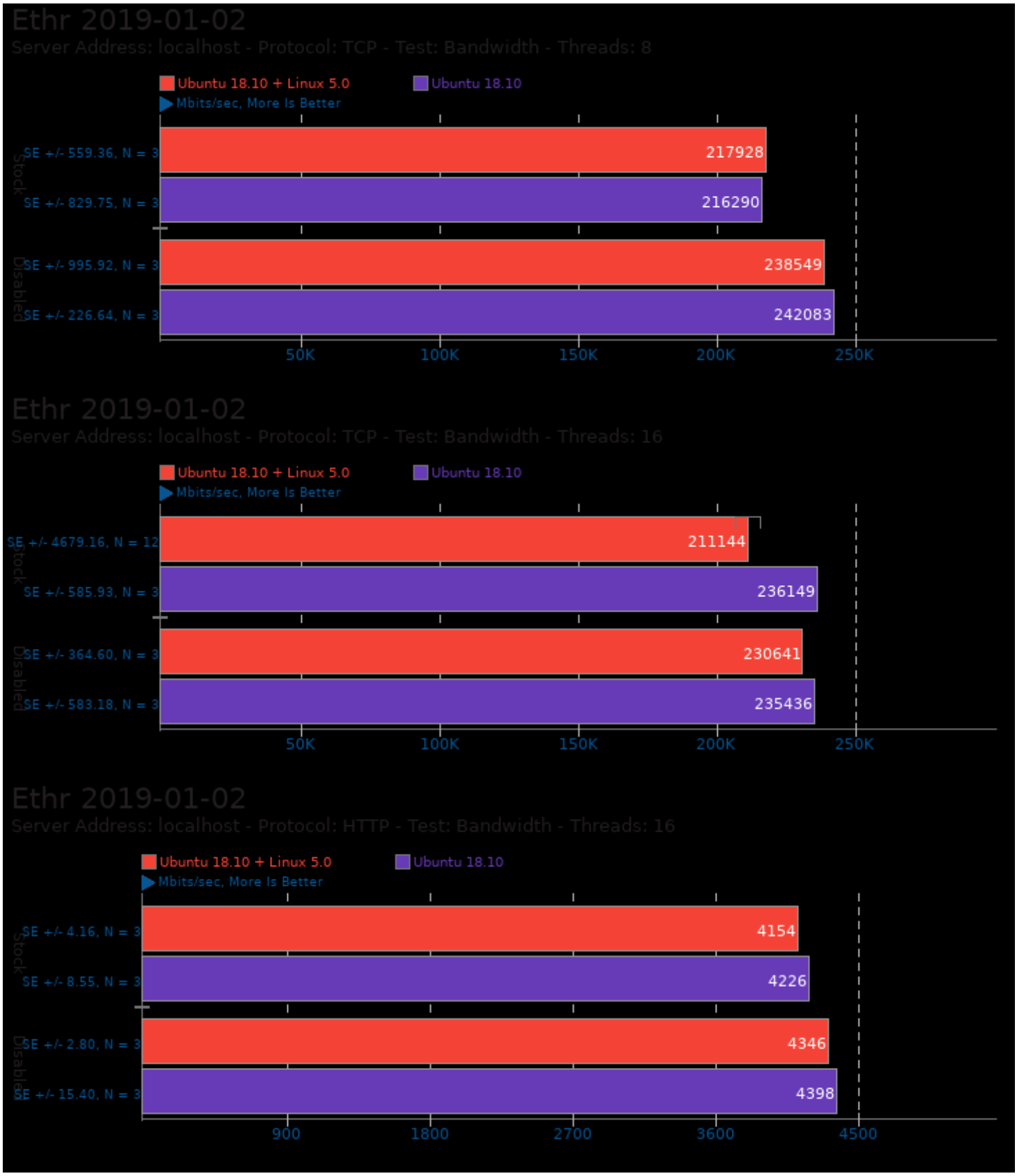
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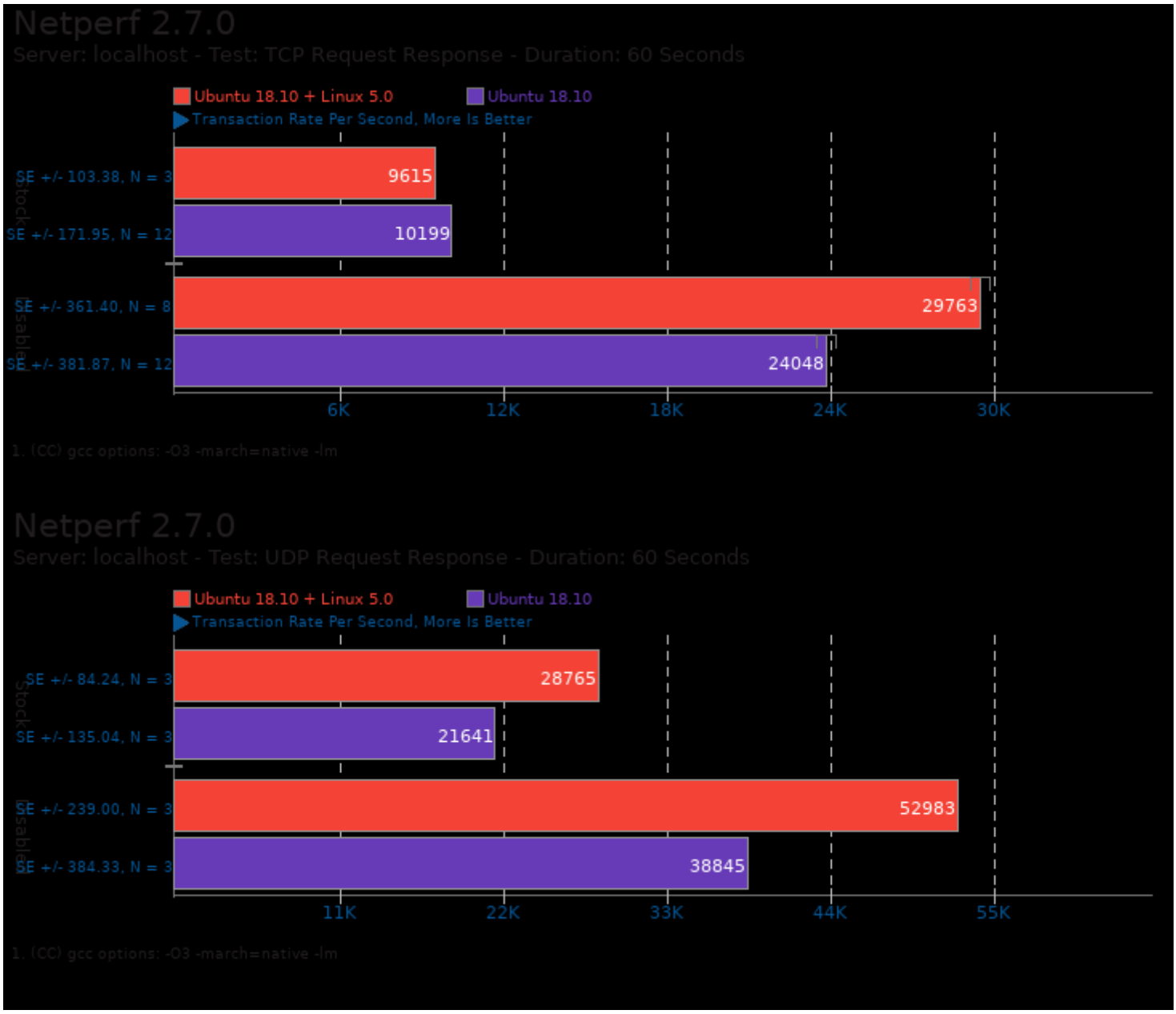
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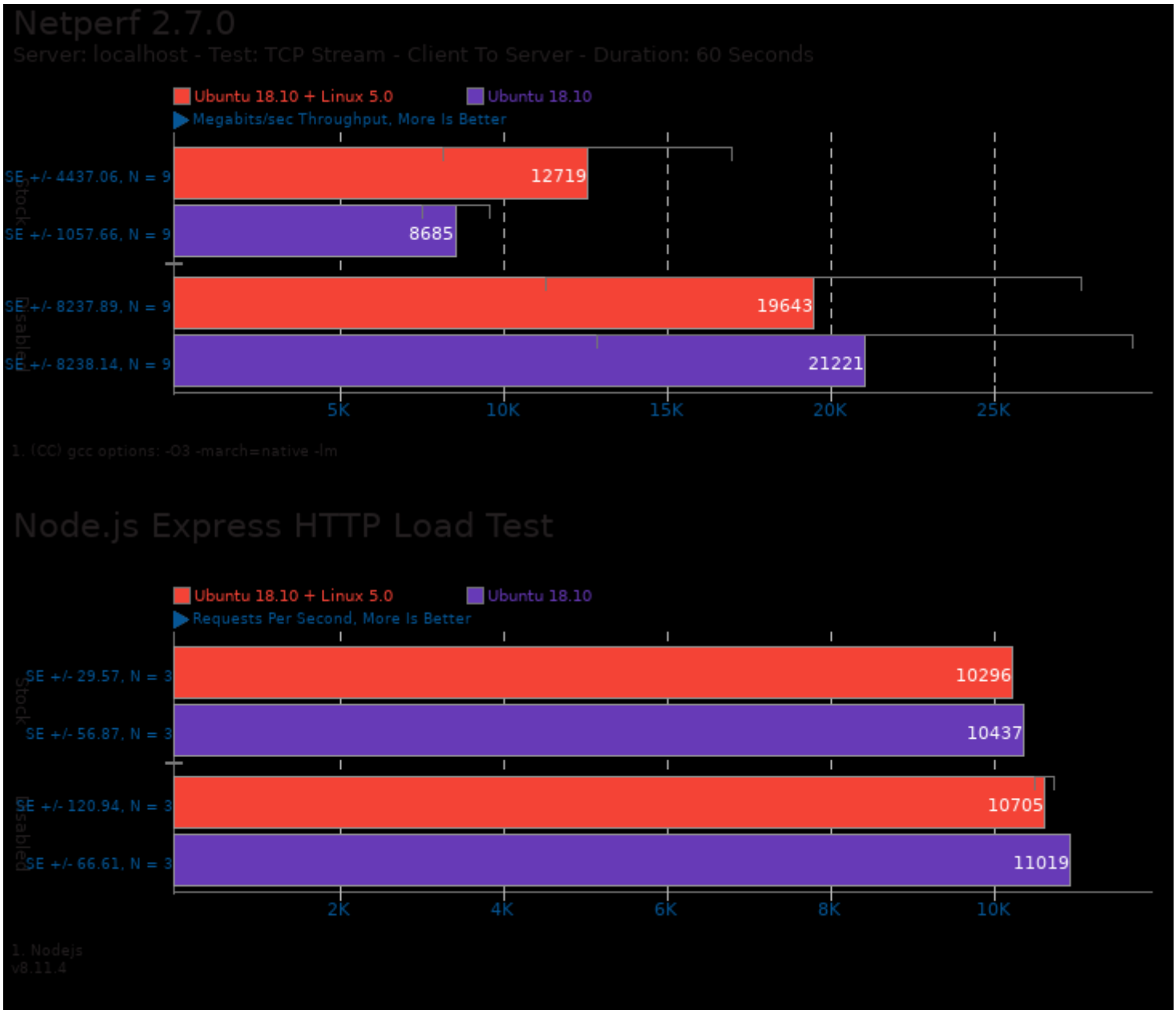
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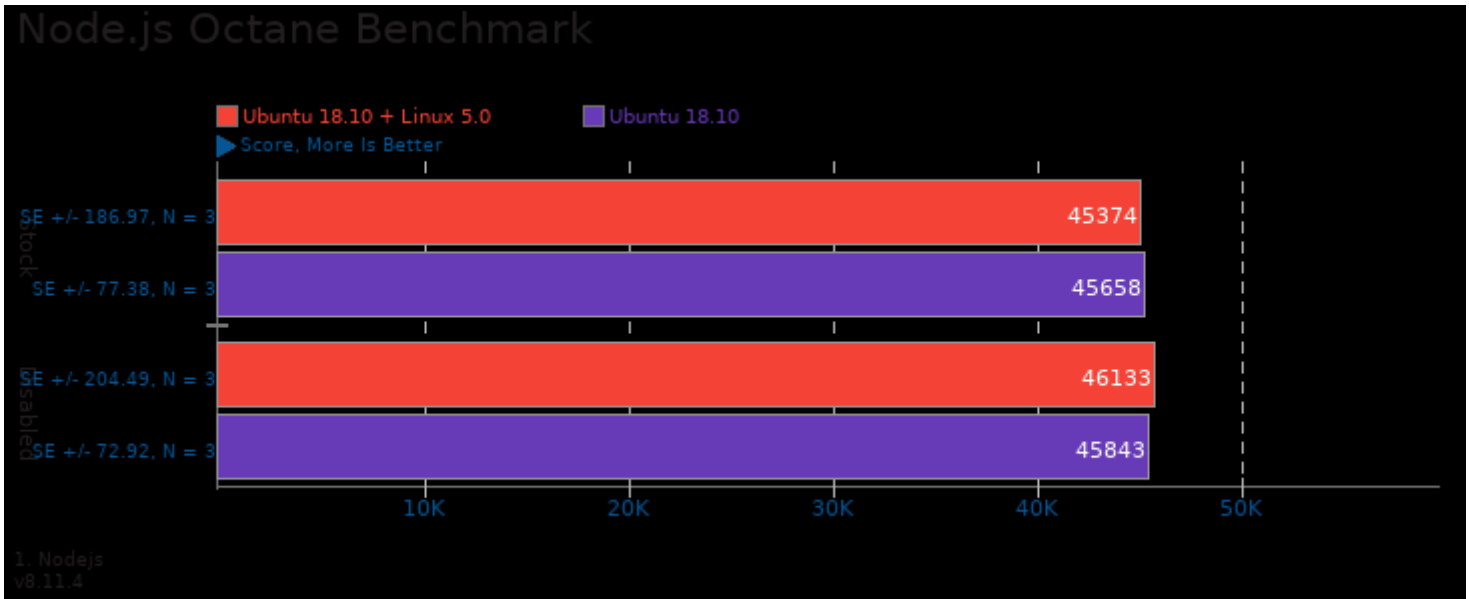


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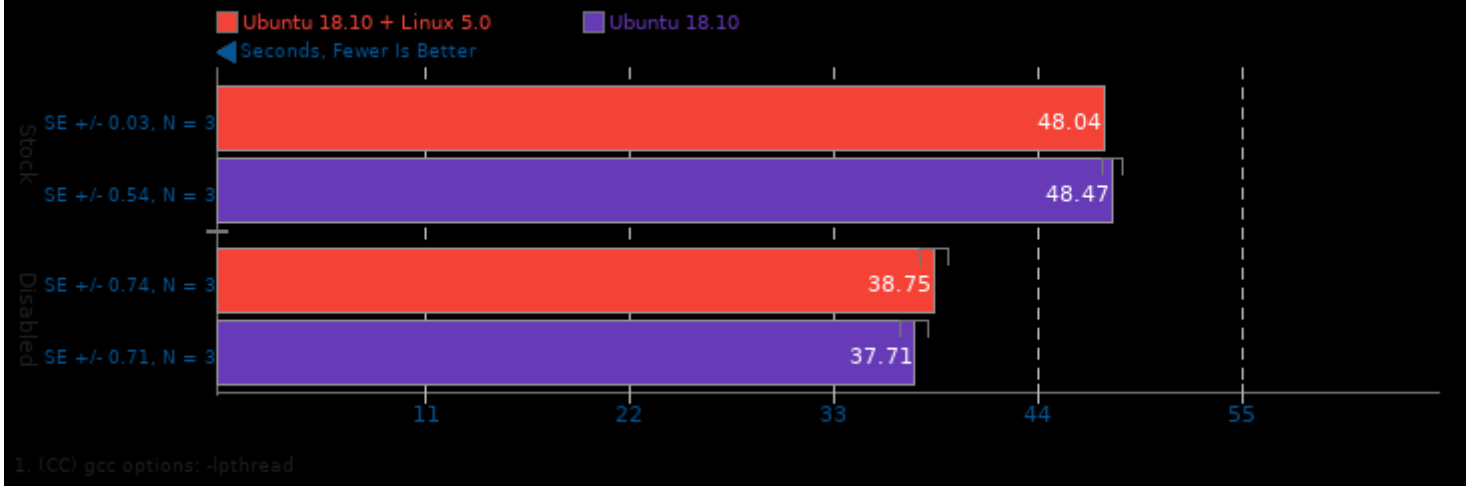
Linux 5.0 Specmelt Test

Node.js Octane Benchmark



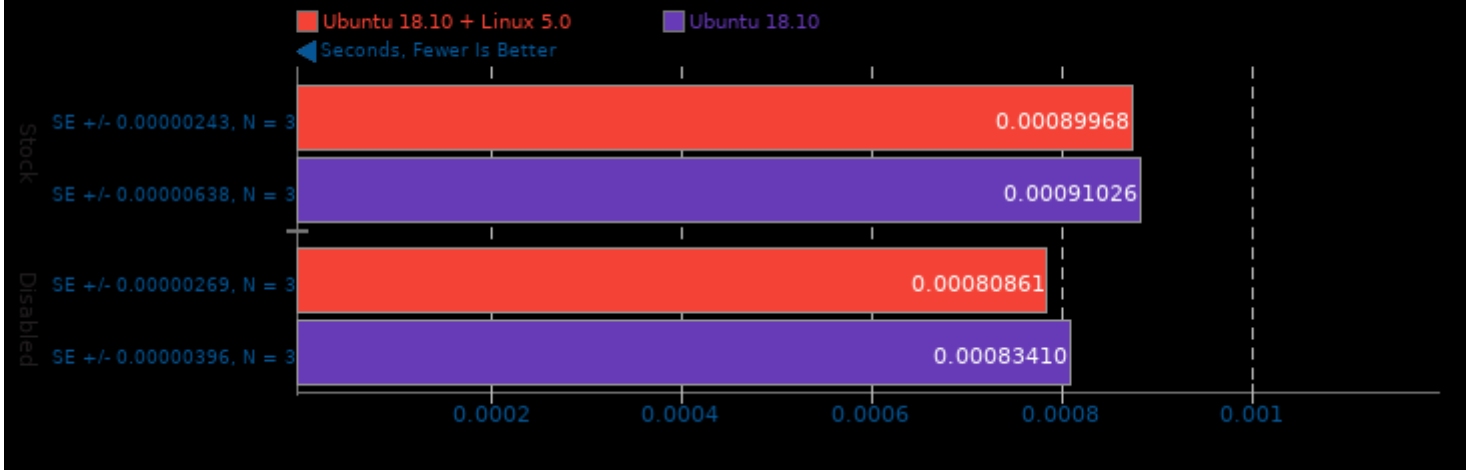
Hackbench

Count: 32 - Type: Process

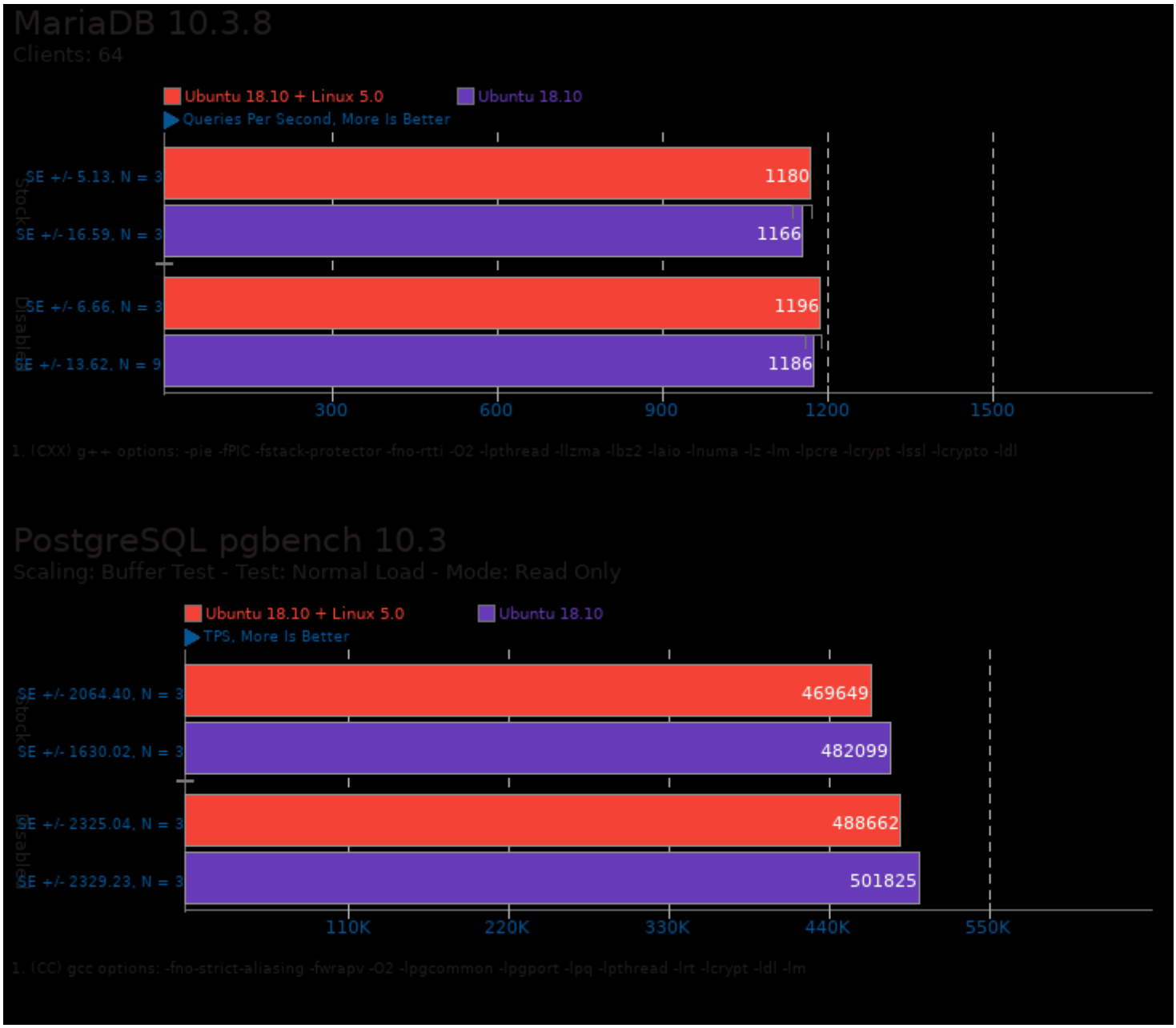


Perl Benchmarks

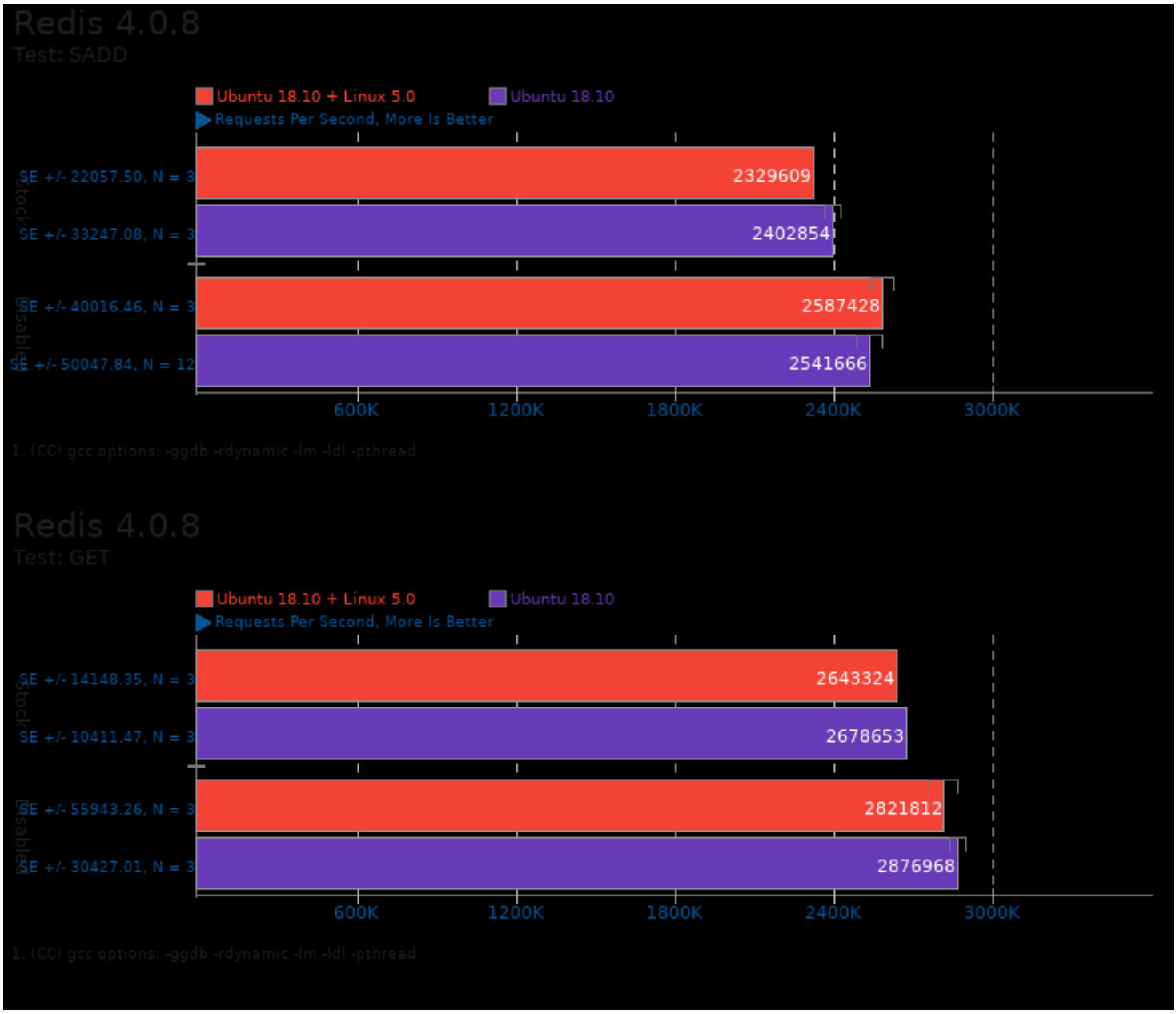
Test: Interpreter



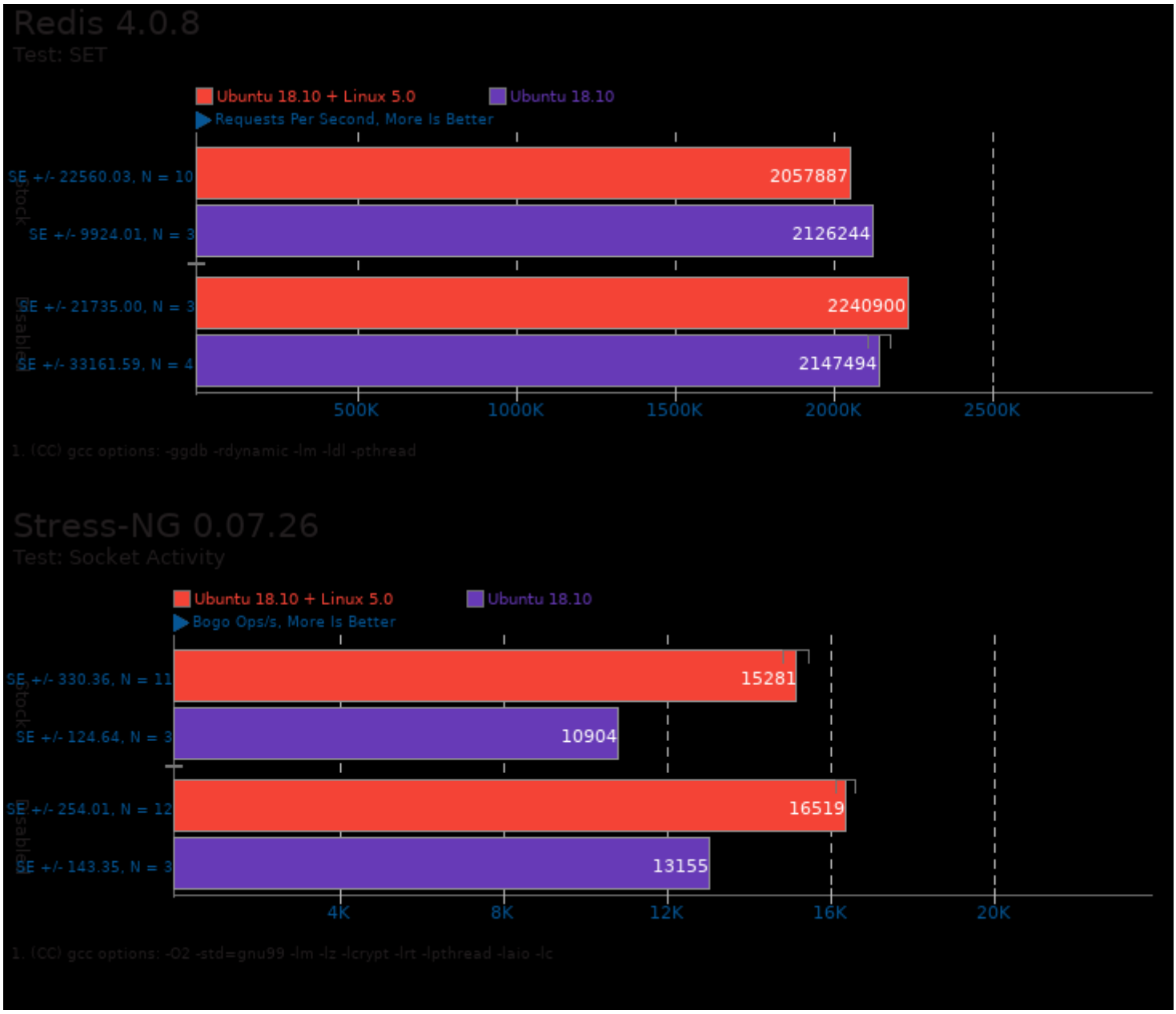
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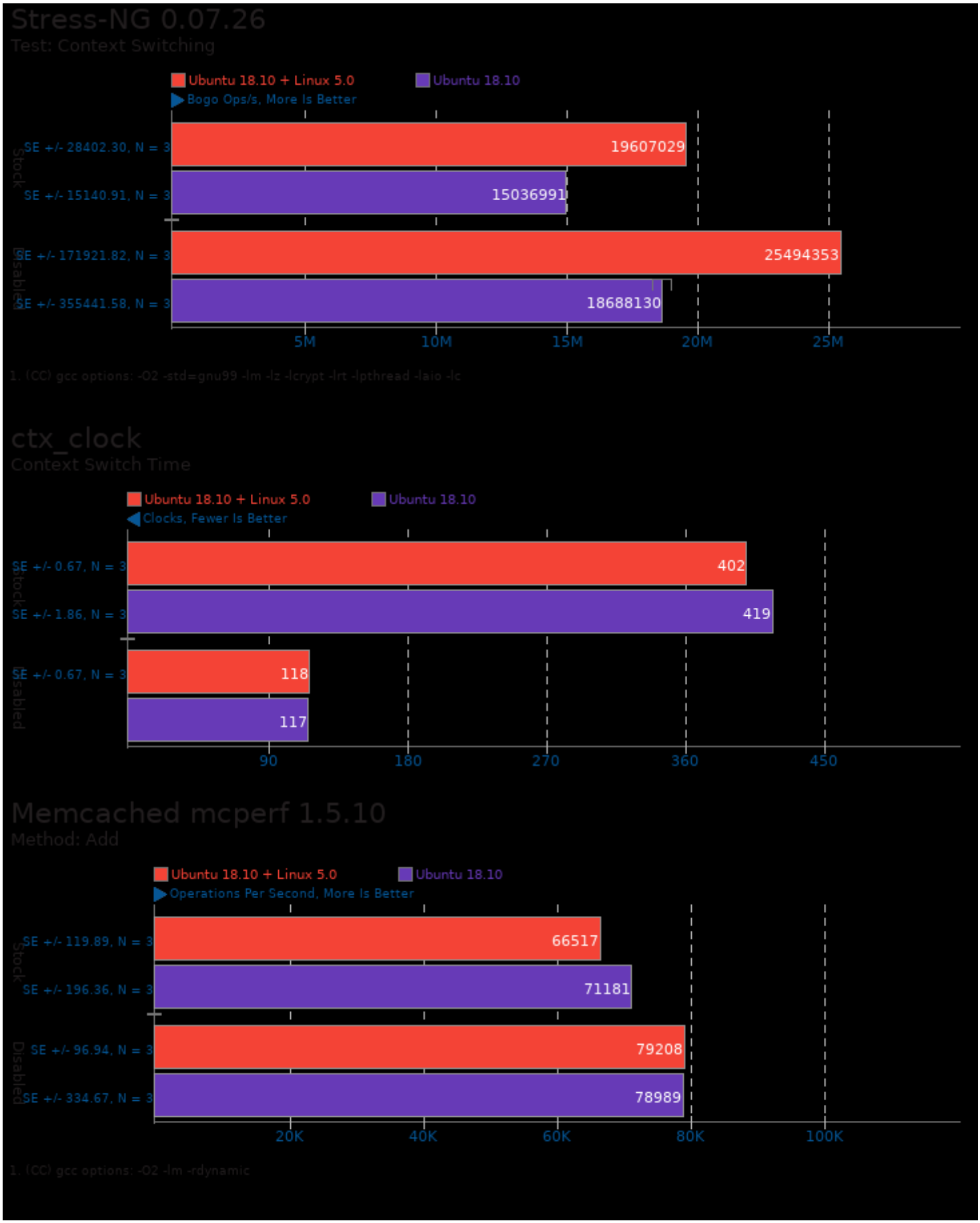


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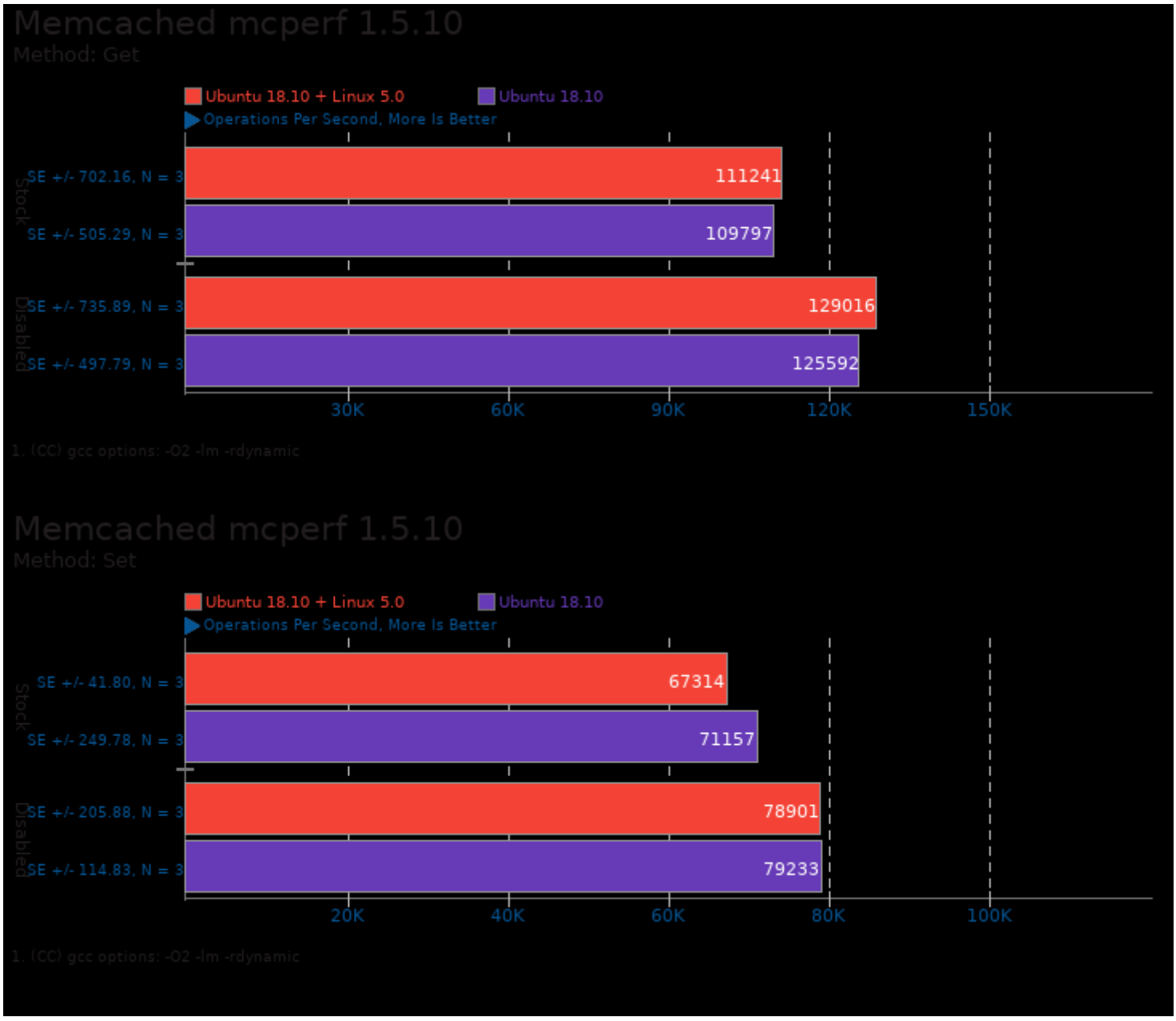


Linux 5.0 Specmelt Test

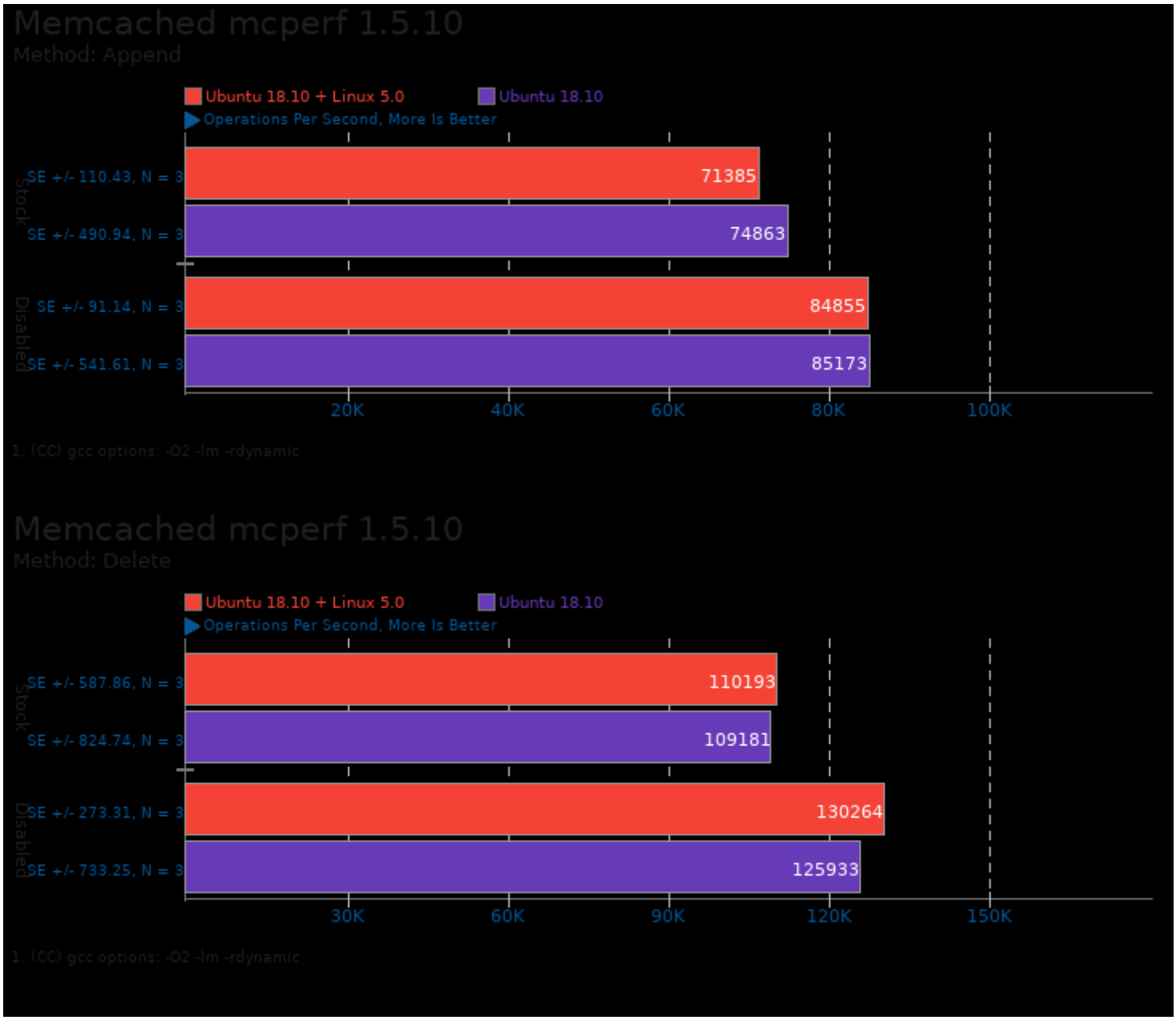



Stress-NG 0.07.26
Test: Context Switching
Ubuntu 18.10 + Linux 5.0
Ubuntu 18.10
Bogo Ops/s, More Is Better
SE +/- 28402.30, N = 3
19607029
SE +/- 15140.91, N = 3
15036991
SE +/- 171921.82, N = 3
25494353
SE +/- 355441.58, N = 3
18688130
Stock
Disabled
5M
10M
15M
20M
25M
1. (CC) gcc options: -O2 -std=gnu99 -lm -lz -lcrypt -lrt -lpthread -laio -lc
ctx_clock
Context Switch Time
Ubuntu 18.10 + Linux 5.0
Ubuntu 18.10
Clocks, Fewer Is Better
SE +/- 0.67, N = 3
402
SE +/- 1.86, N = 3
419
SE +/- 0.67, N = 3
118
SE +/- 0.67, N = 3
117
Stock
Disabled
90
180
270
360
450
Memcached mcperf 1.5.10
Method: Add
Ubuntu 18.10 + Linux 5.0
Ubuntu 18.10
Operations Per Second, More Is Better
SE +/- 119.89, N = 3
66517
SE +/- 196.36, N = 3
71181
SE +/- 96.94, N = 3
79208
SE +/- 334.67, N = 3
78989
Stock
Disabled
20K
40K
60K
80K
100K
1. (CC) gcc options: -O2 -lm -rdynamic

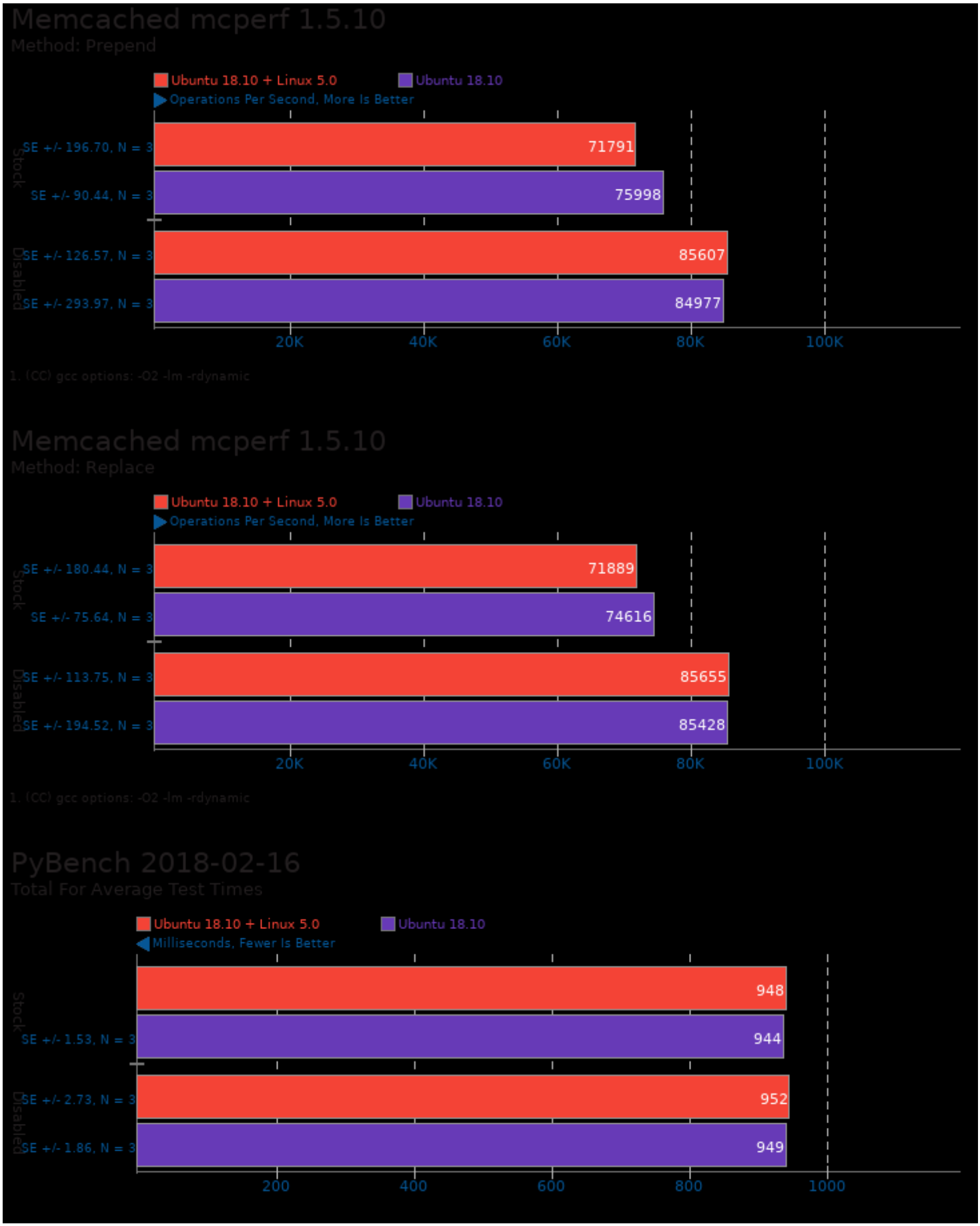
Linux 5.0 Specmelt Test



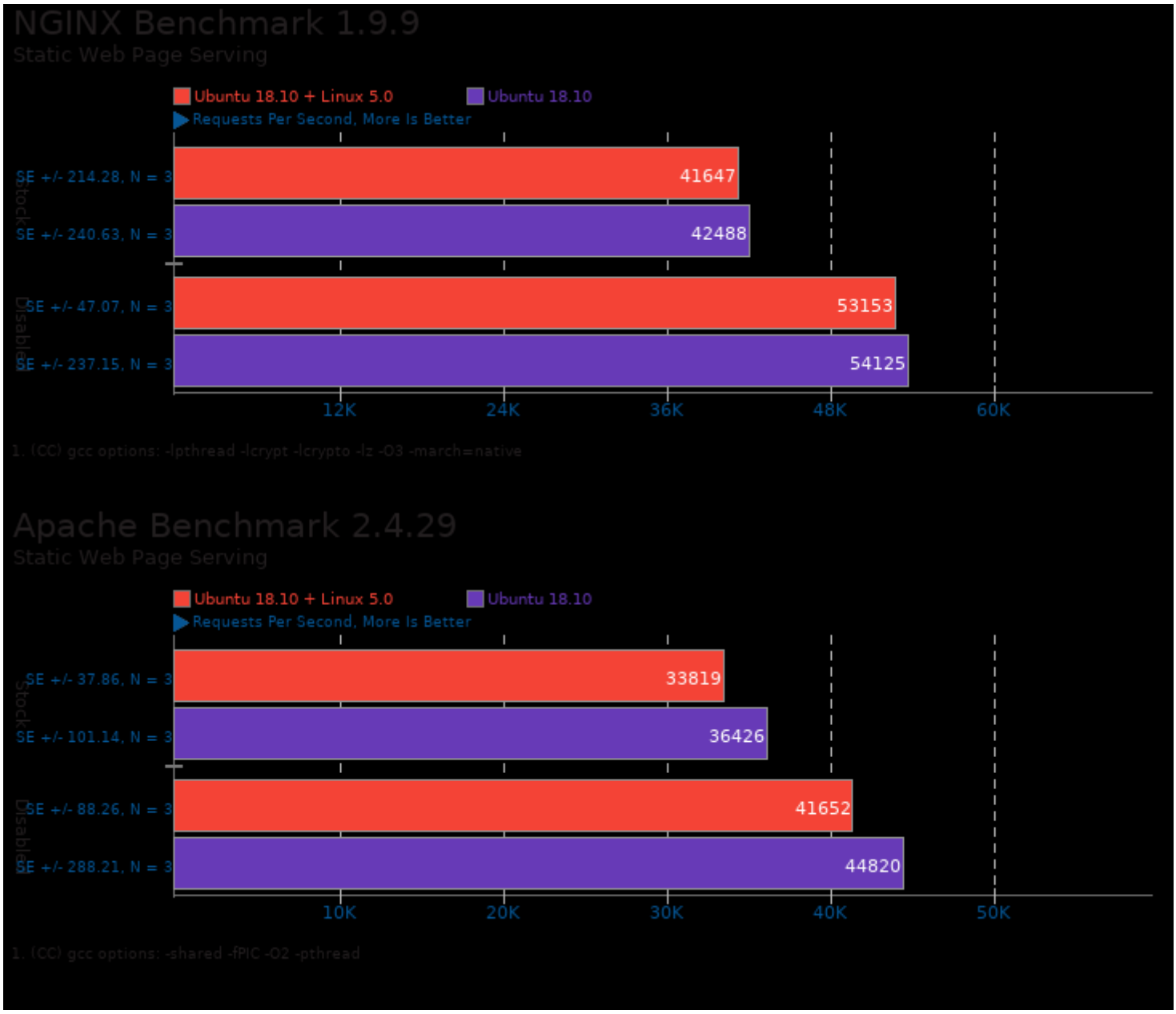
Linux 5.0 Specmelt Test



Linux 5.0 Specmelt Test



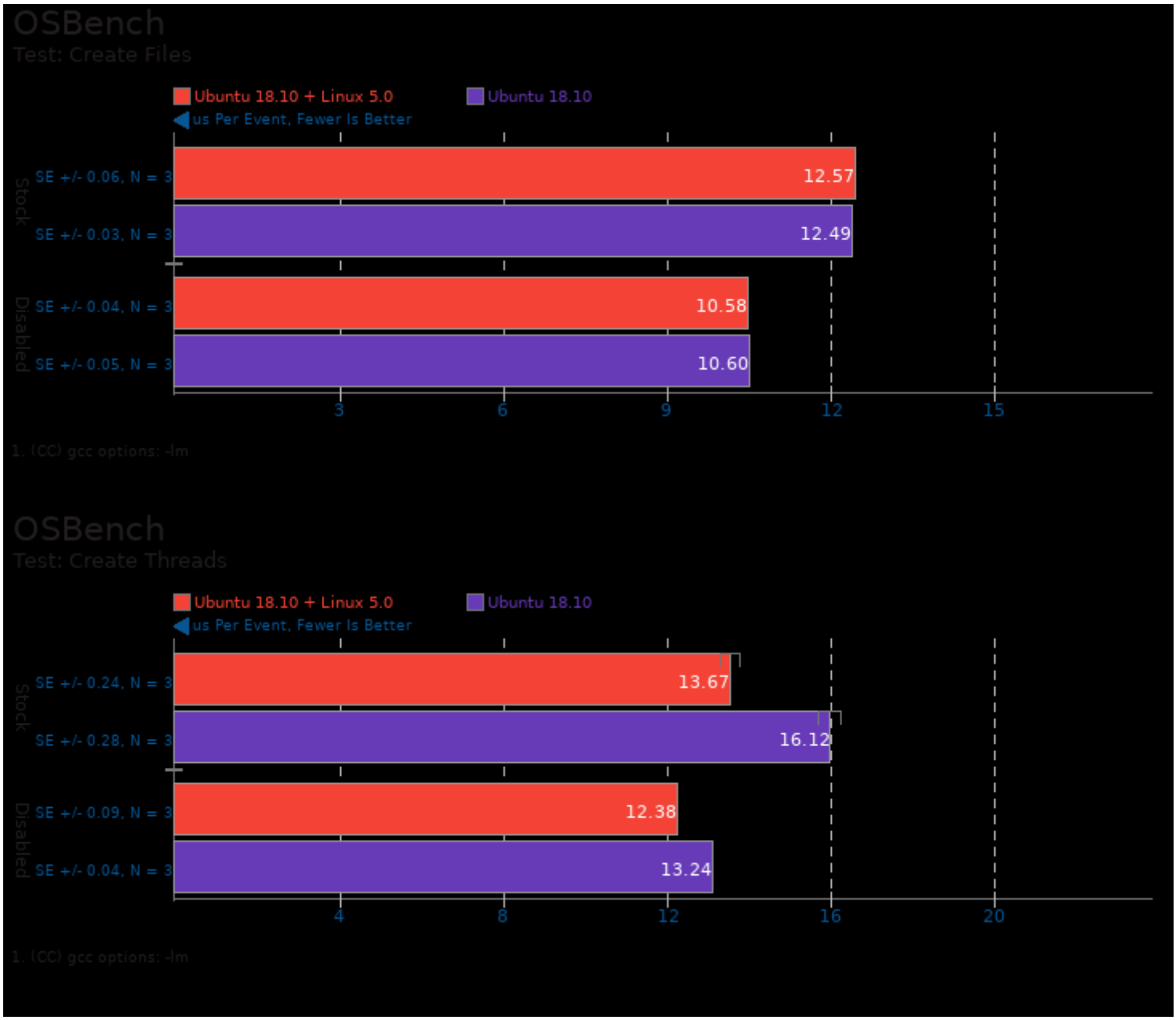
Linux 5.0 Specmelt Test



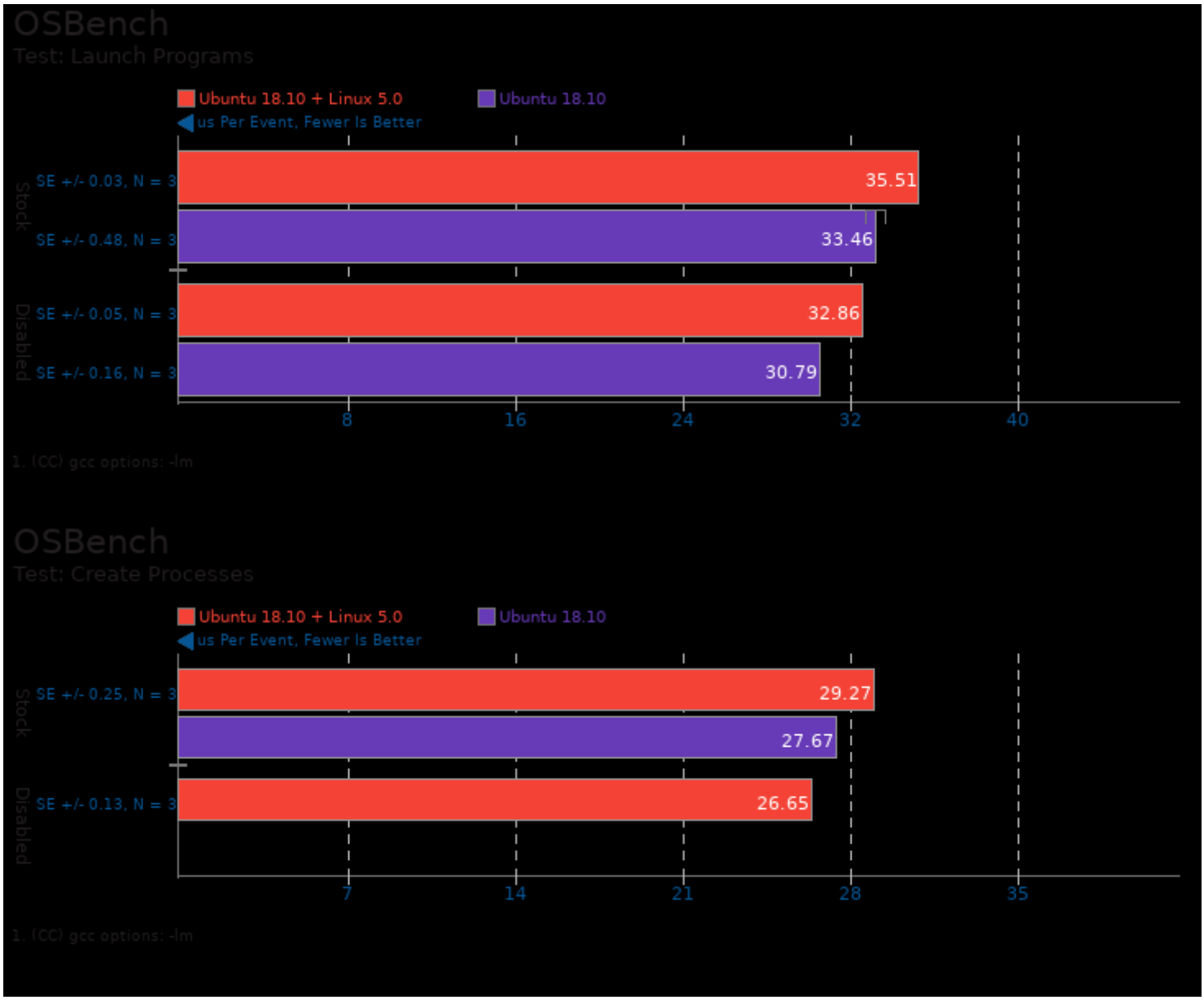
Linux 5.0 Specmelt Test



Linux 5.0 Specmelt Test

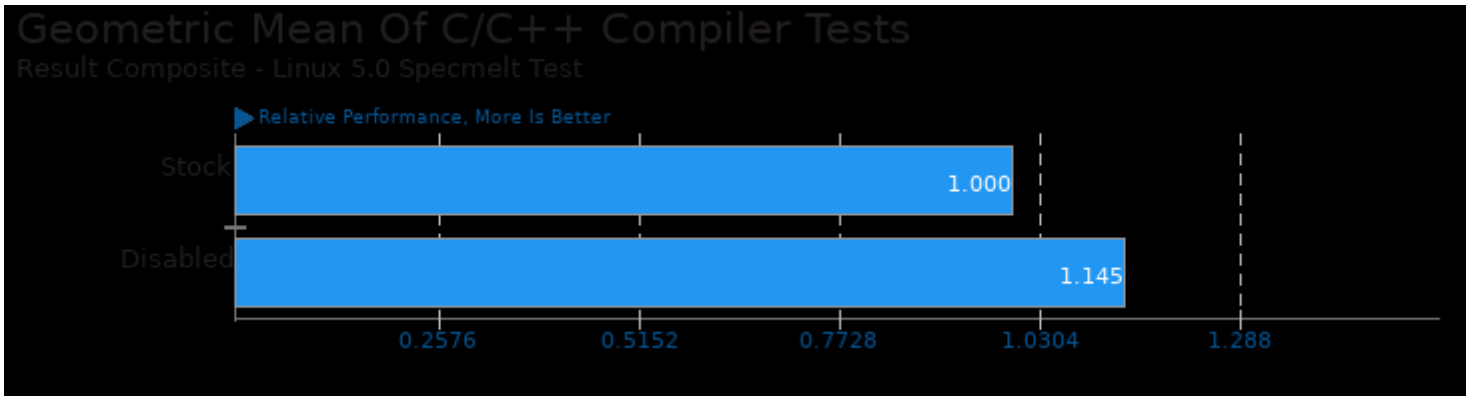


Linux 5.0 Specmelt Test



Linux 5.0 Specmelt Test

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



Geometric mean based upon tests: pts/pgbench, pts/apache, pts/nginx and pts/mcperf



Geometric mean based upon tests: pts/apache, pts/apache-siege, pts/mysqlslap, pts/blogbench, pts/compilebench, pts/ctx-clock, pts/hackbench, pts/mcperf, pts/nginx, pts/node-express-loadtest, pts/pgbench, pts/phpbench, pts/redis, pts/sockperf, pts/stress-ng and pts/t-test1

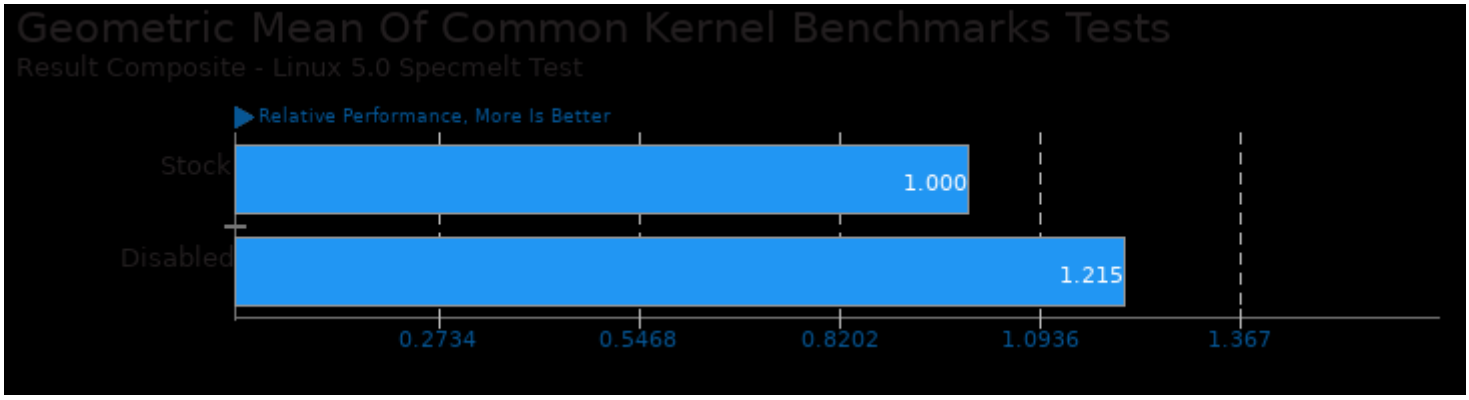


Geometric mean based upon tests: pts/redis, pts/pgbench and pts/mysqlslap

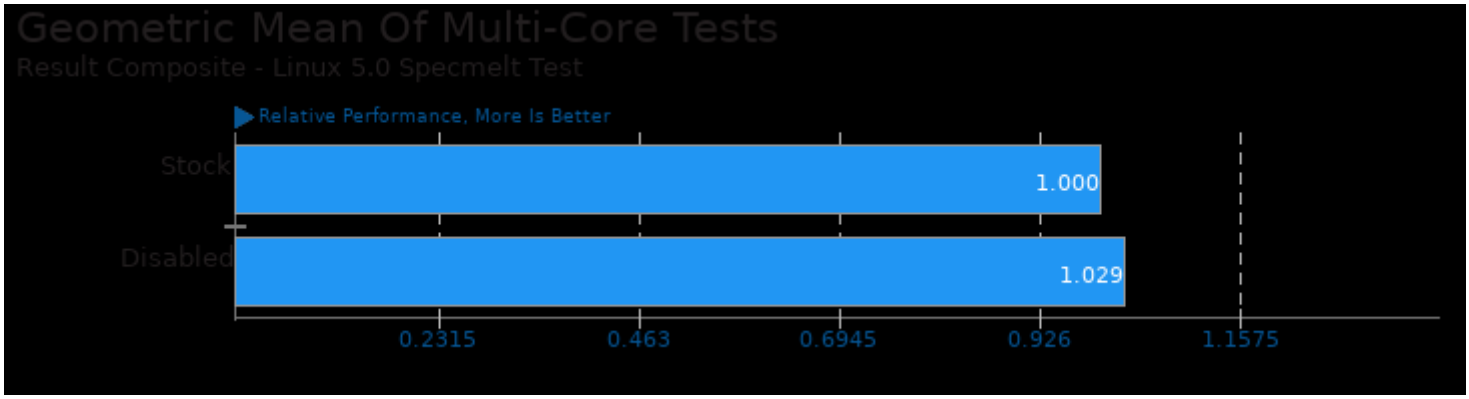
Linux 5.0 Specmelt Test



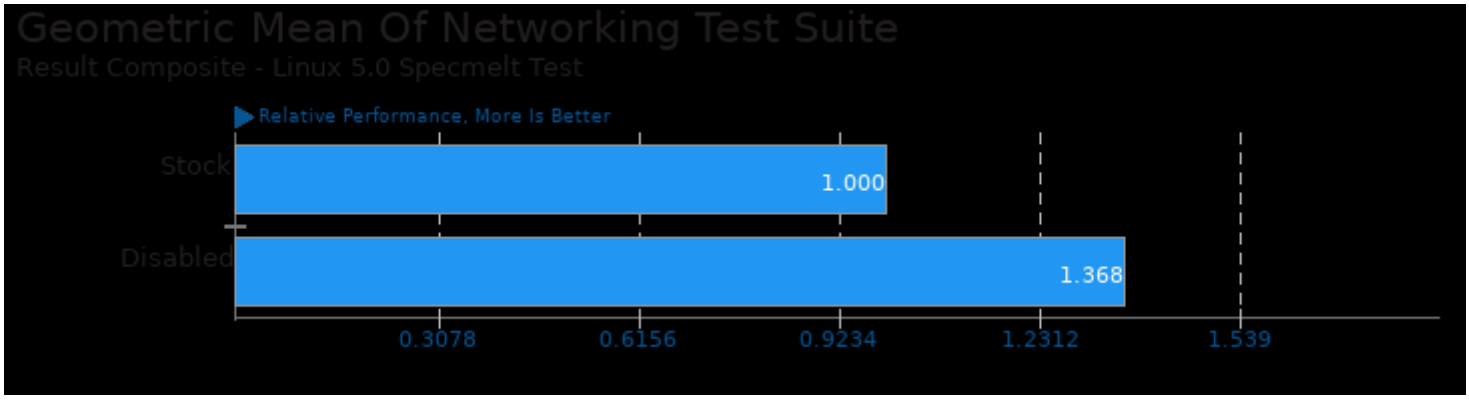
Geometric mean based upon tests: pts/compilebench, pts/postmark and pts/fio



Geometric mean based upon tests: pts/apache, pts/postmark, pts/pgbench, pts/t-test1, pts/ctx-clock, pts/hackbench, pts/stress-ng, pts/osbench and pts/ethr



Geometric mean based upon tests: pts/mysqlslap and pts/pgbench

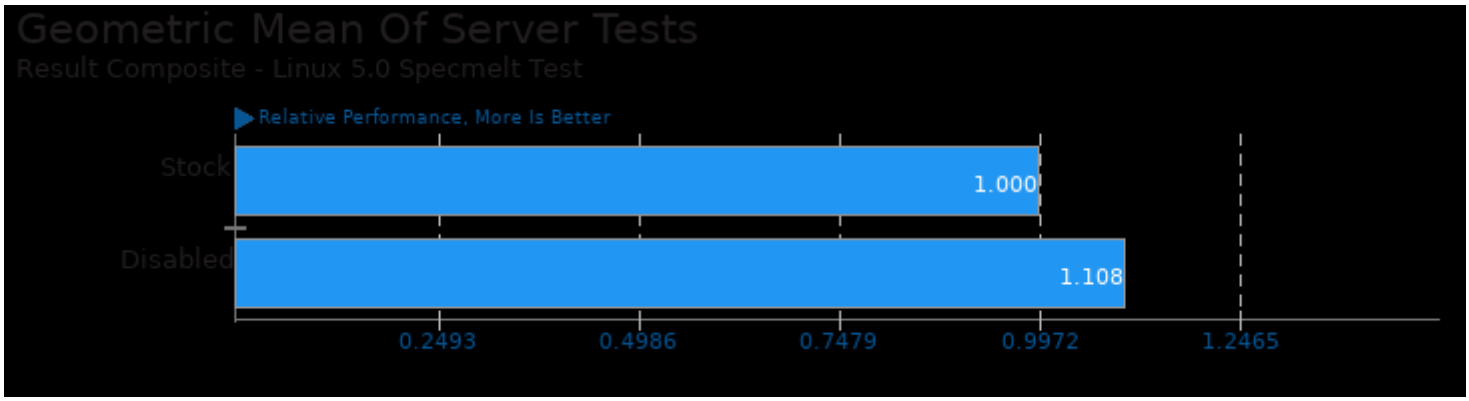


Linux 5.0 Specmelt Test

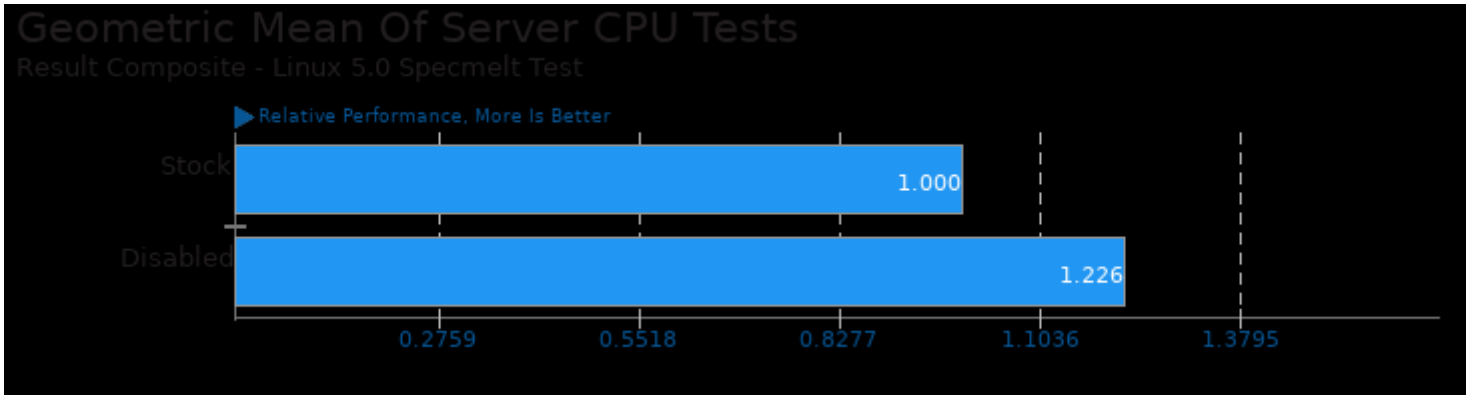
Geometric mean based upon tests: pts/sockperf, pts/ethr and pts/netperf



Geometric mean based upon tests: pts/compilebench and pts/pybench

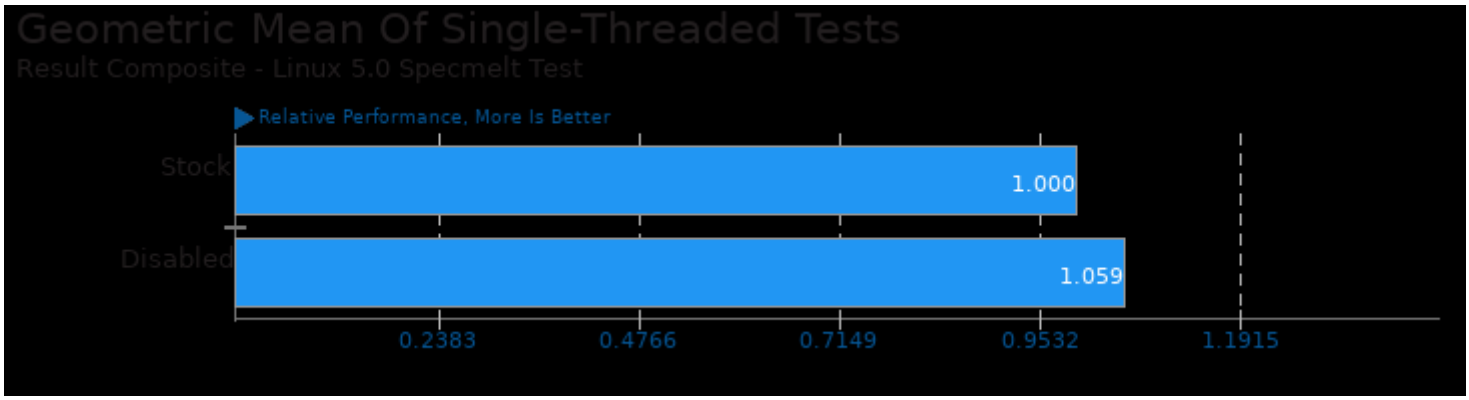


Geometric mean based upon tests: pts/apache, pts/nginx, pts/blogbench, pts/apache-siege, pts/mysqlslap, pts/pgbench, pts/mcperf, pts/redis, pts/phpbench, pts/node-express-loadtest and pts/perl-benchmark



Geometric mean based upon tests: pts/hackbench, pts/mysqlslap, pts/redis, pts/stress-ng, pts/ctx-clock, pts/pybench, pts/apache-siege and pts/phpbench

Linux 5.0 Specmelt Test



Geometric mean based upon tests: pts/node-express-loadtest, pts/node-octane, pts/perl-benchmark, pts/redis, pts/pybench, pts/phpbench and pts/nginx

This file was automatically generated via the Phoronix Test Suite benchmarking software on Thursday, 28 March 2024 14:22.