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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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	Ubuntu 18.10 + Linux 5.0: Stock	Ubuntu 18.10 + Linux 5.0:	Ubuntu 18.10: Stock	Ubuntu 18.10: Disabled
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%
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%
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%	
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%
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%
Standard Deviation	0.3%	1.2%	0.2%	3.3%
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%
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%
OSBench - Create Files (us/Event)	**12.57**	**10.58**	12.49	10.60

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Normalized	84.17%	100%	84.71%	99.81%
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%		
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%	
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%
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%
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%
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%

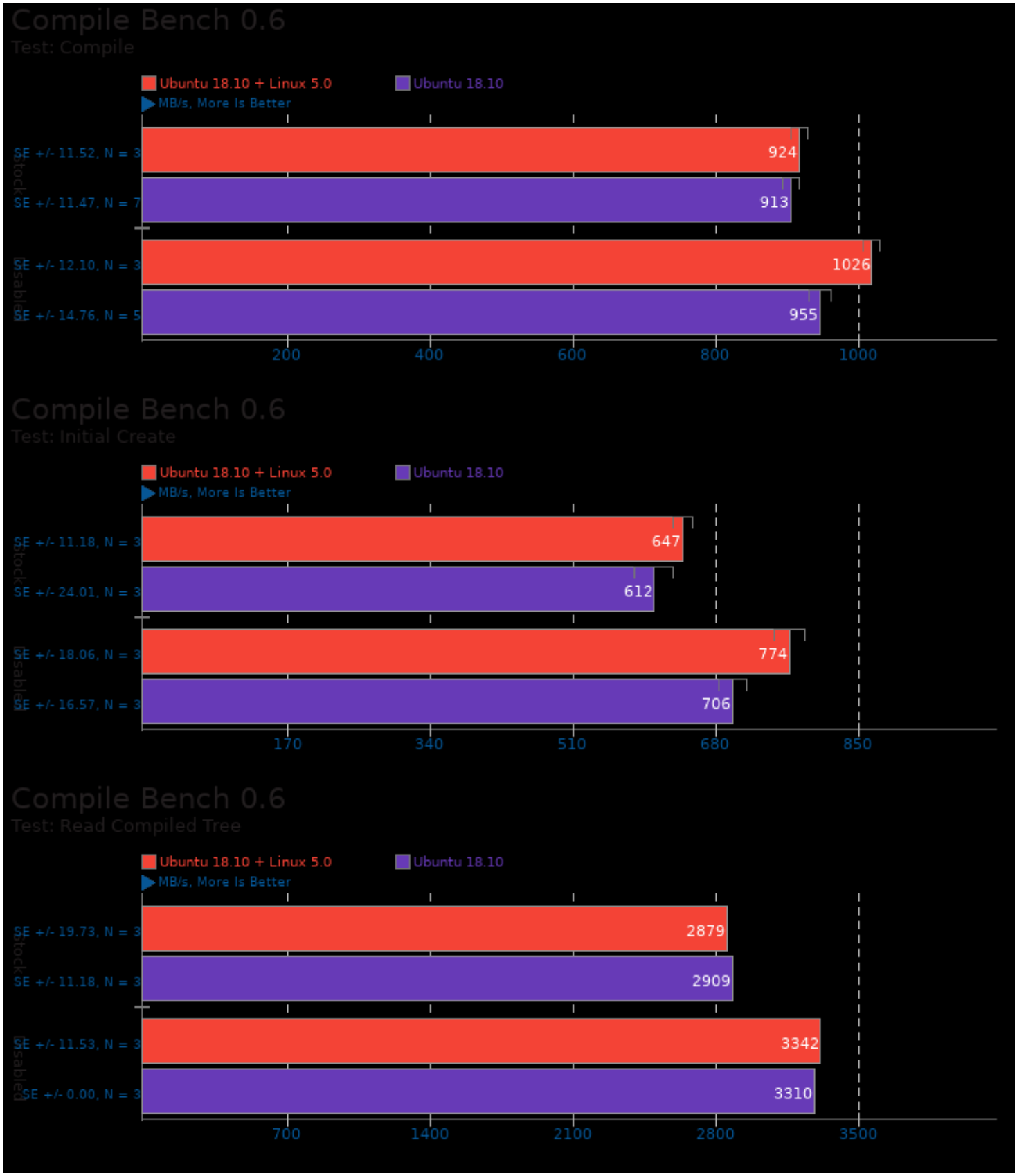
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Memcached mcperf - Set (Operations/sec)	67314	78901	71157	79233
Normalized	84.96%	99.58%	89.81%	100%
Standard Deviation	0.1%	0.5%	0.6%	0.3%
Memcached mcperf - Append (Operations/sec)	71385	84855	74863	85173
Normalized	83.81%	99.63%	87.9%	100%
Standard 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%
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%
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%
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%
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%
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%

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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%
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%
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%
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%

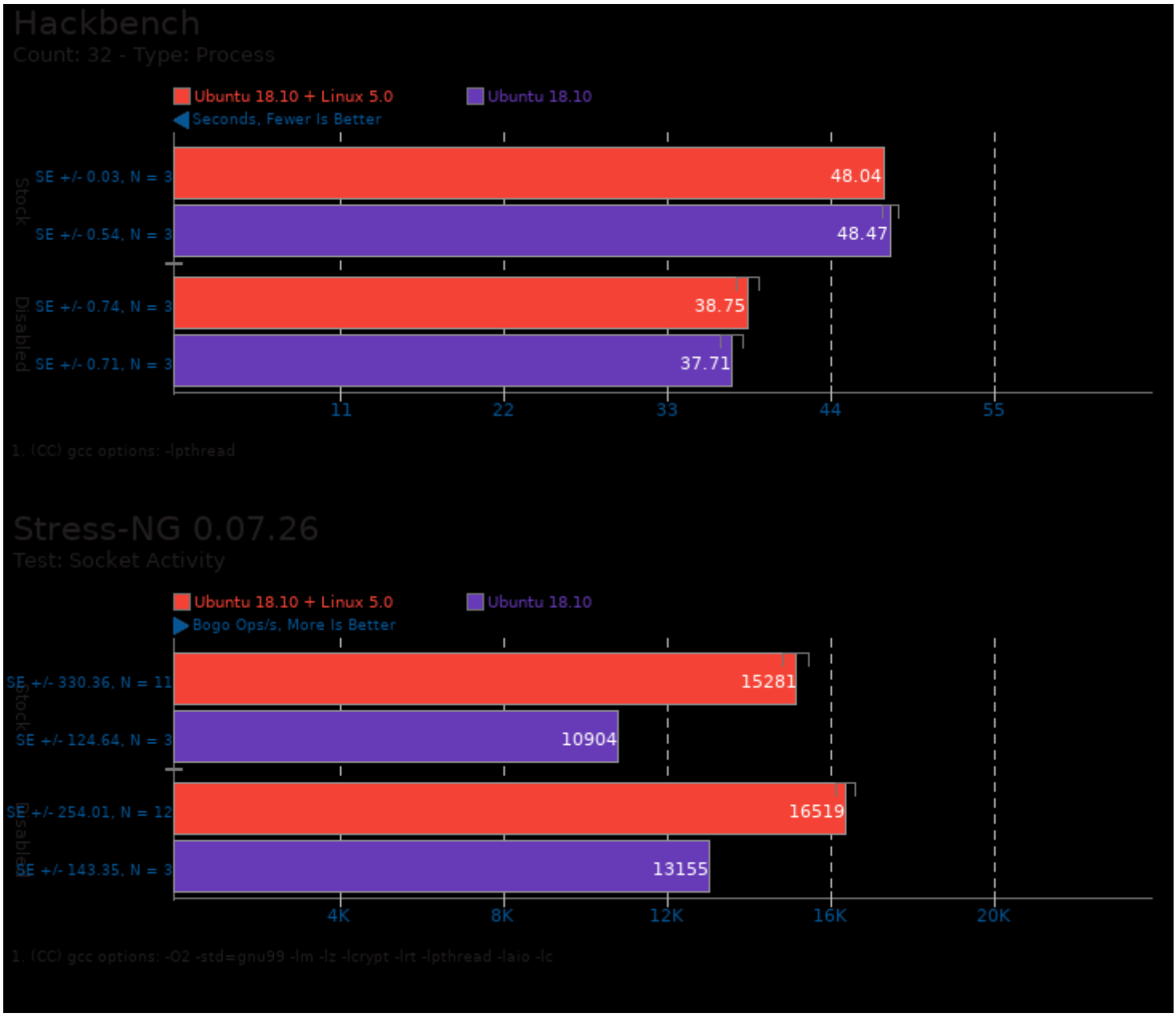
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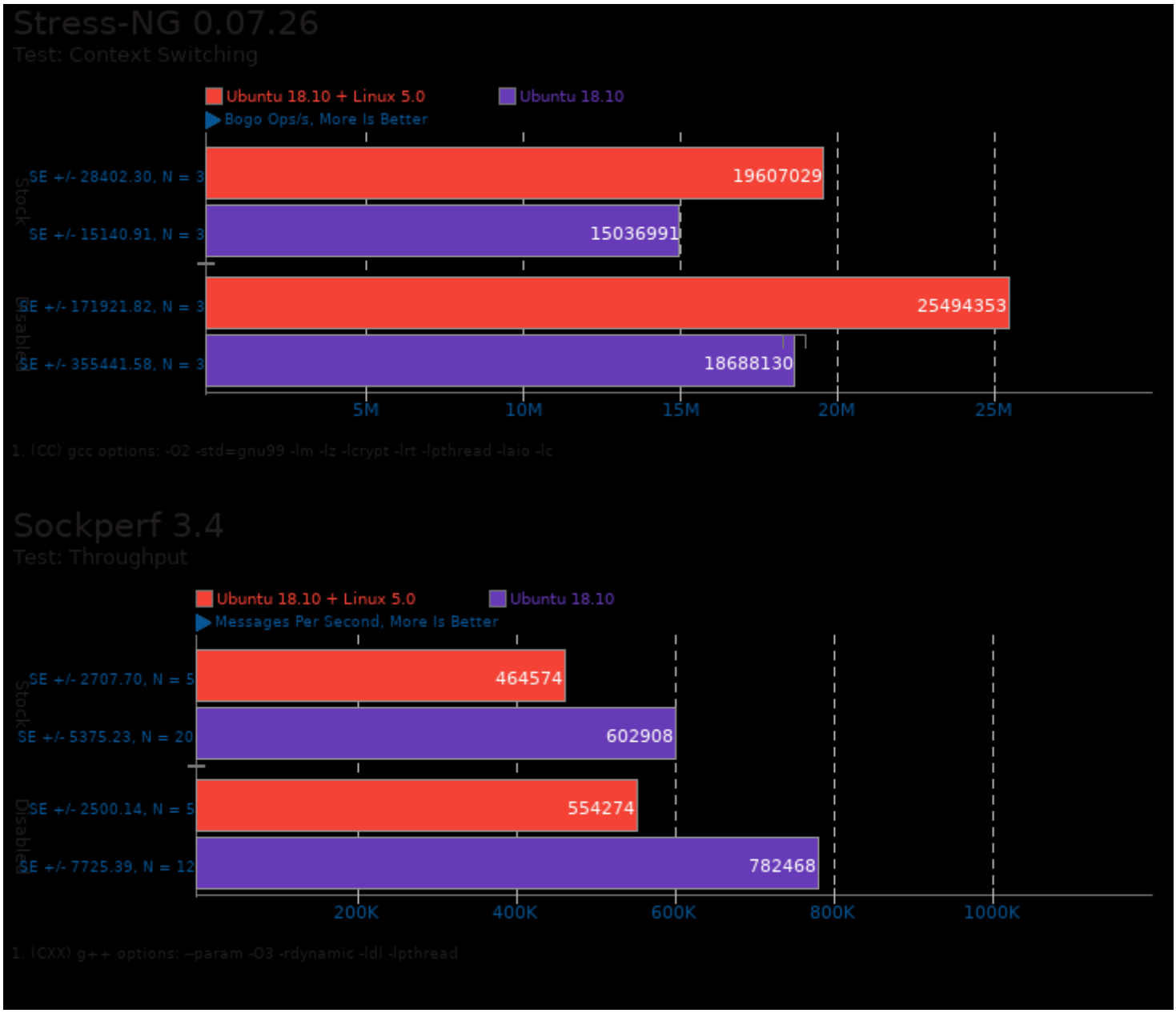
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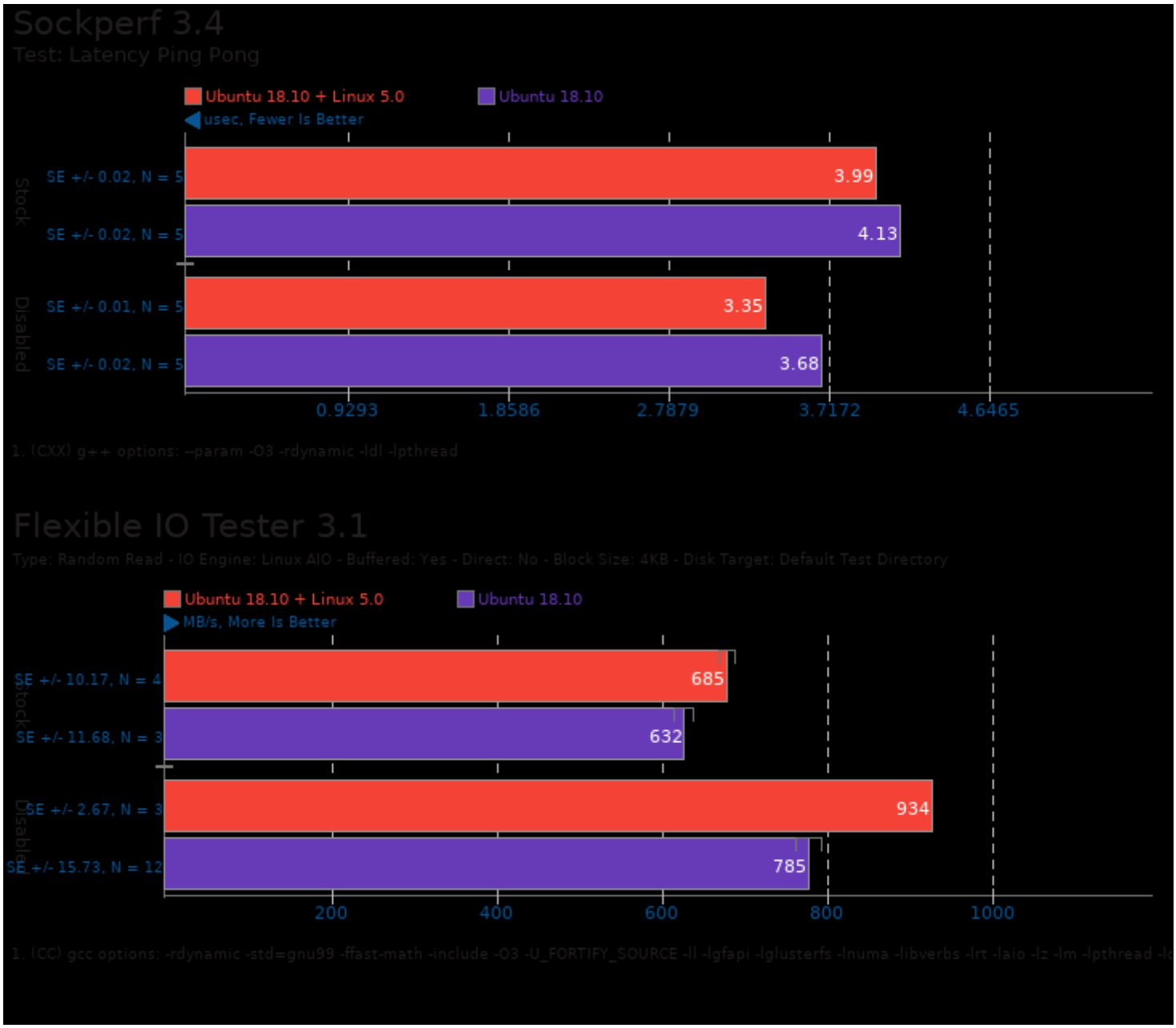
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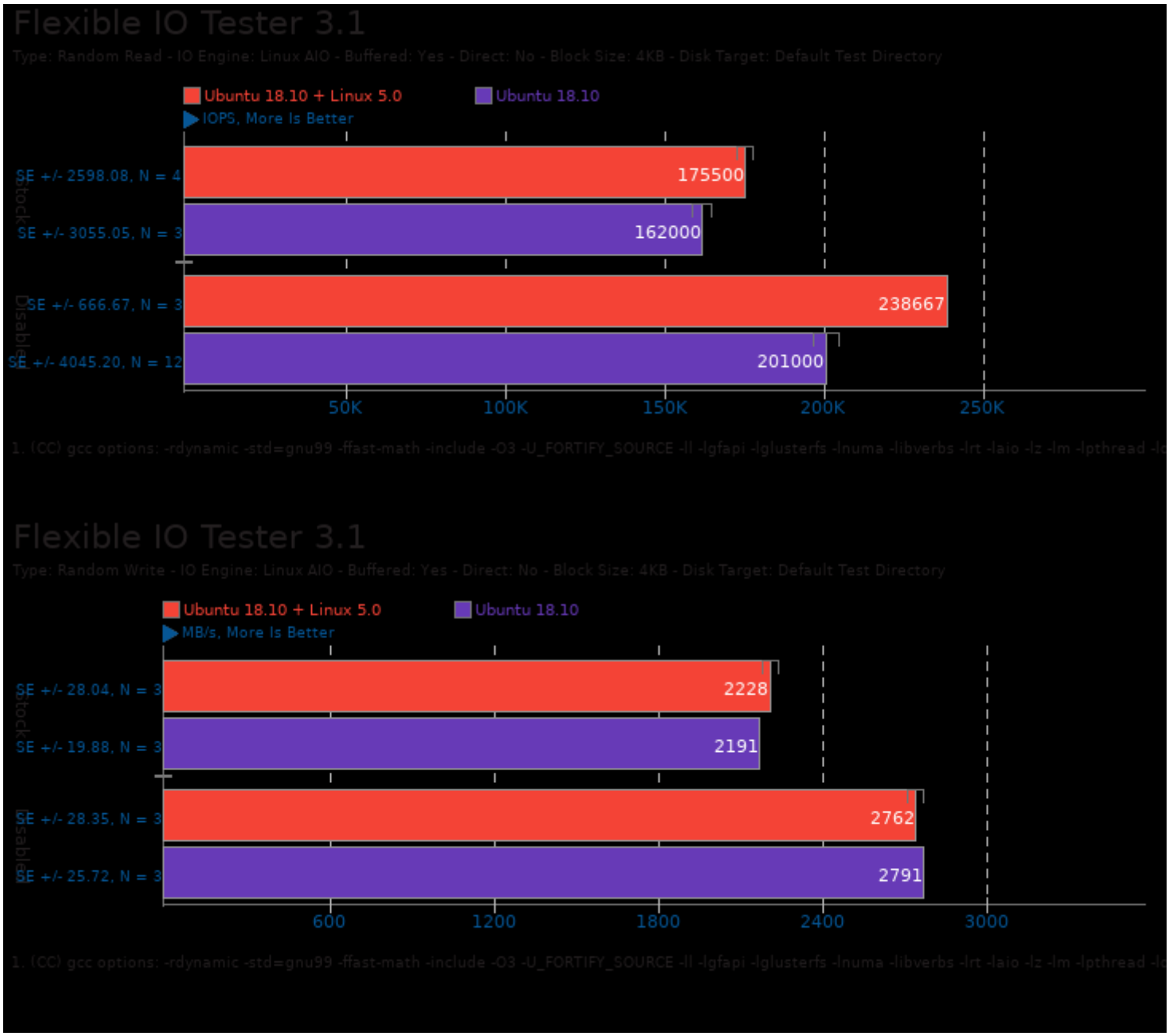
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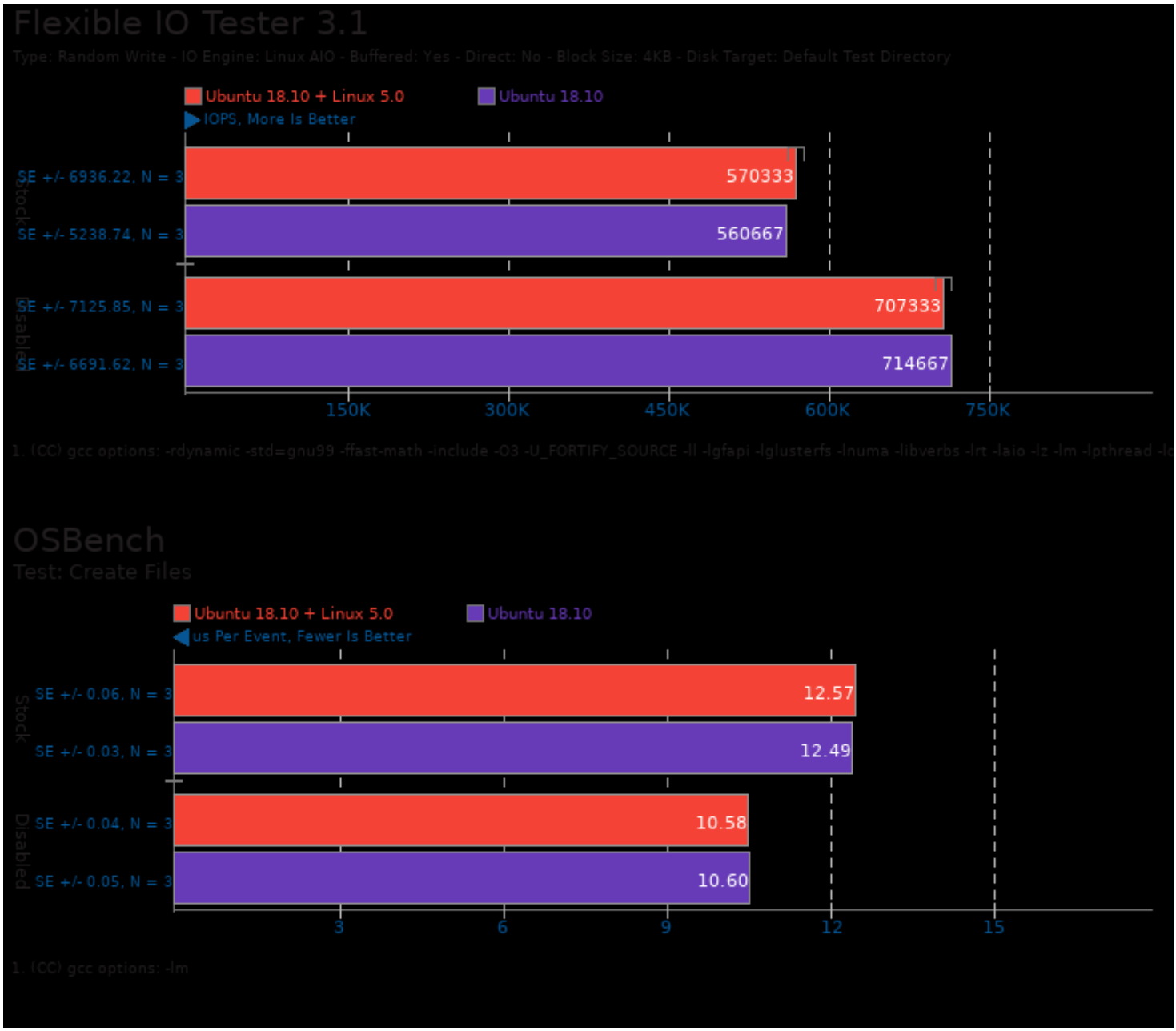
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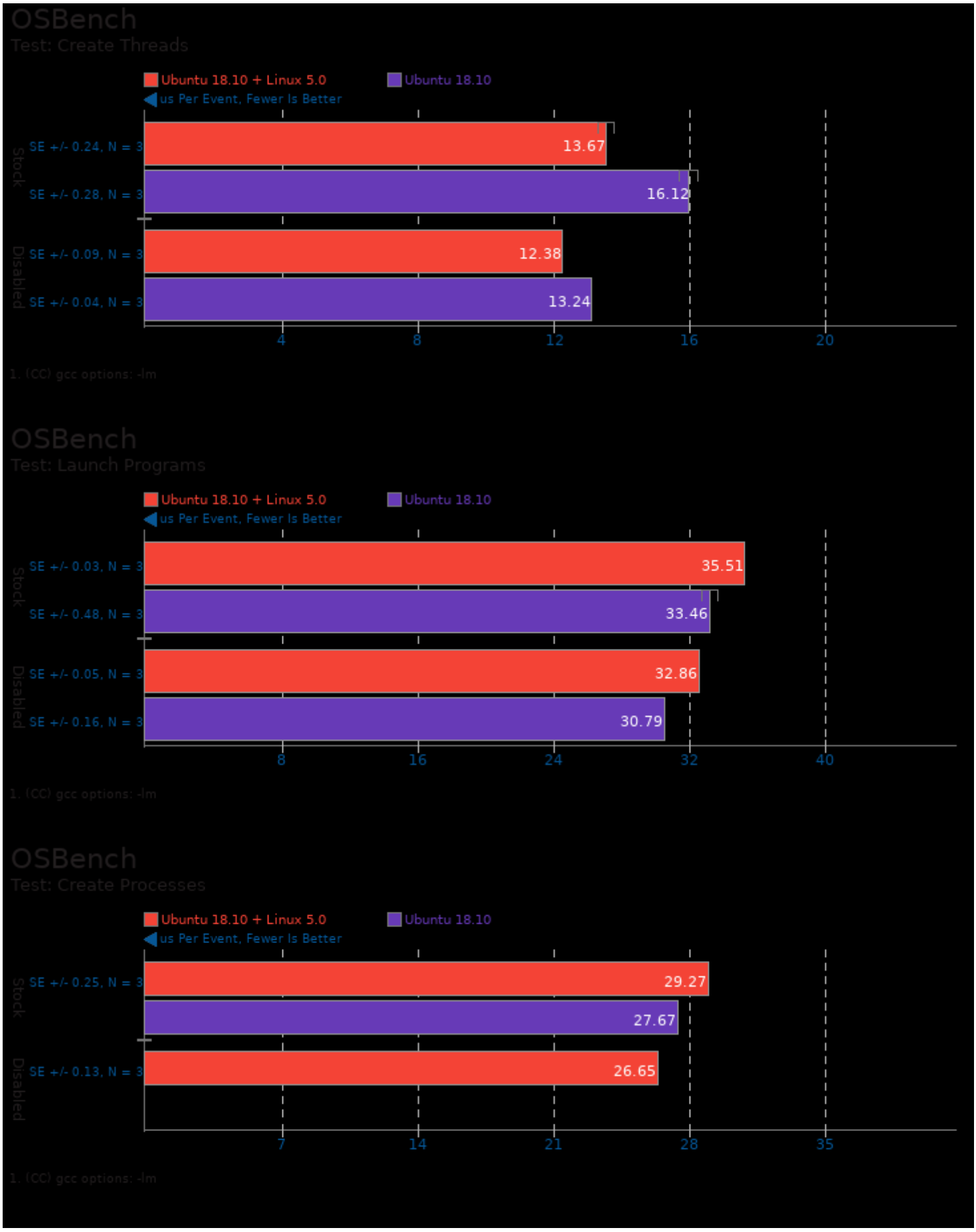
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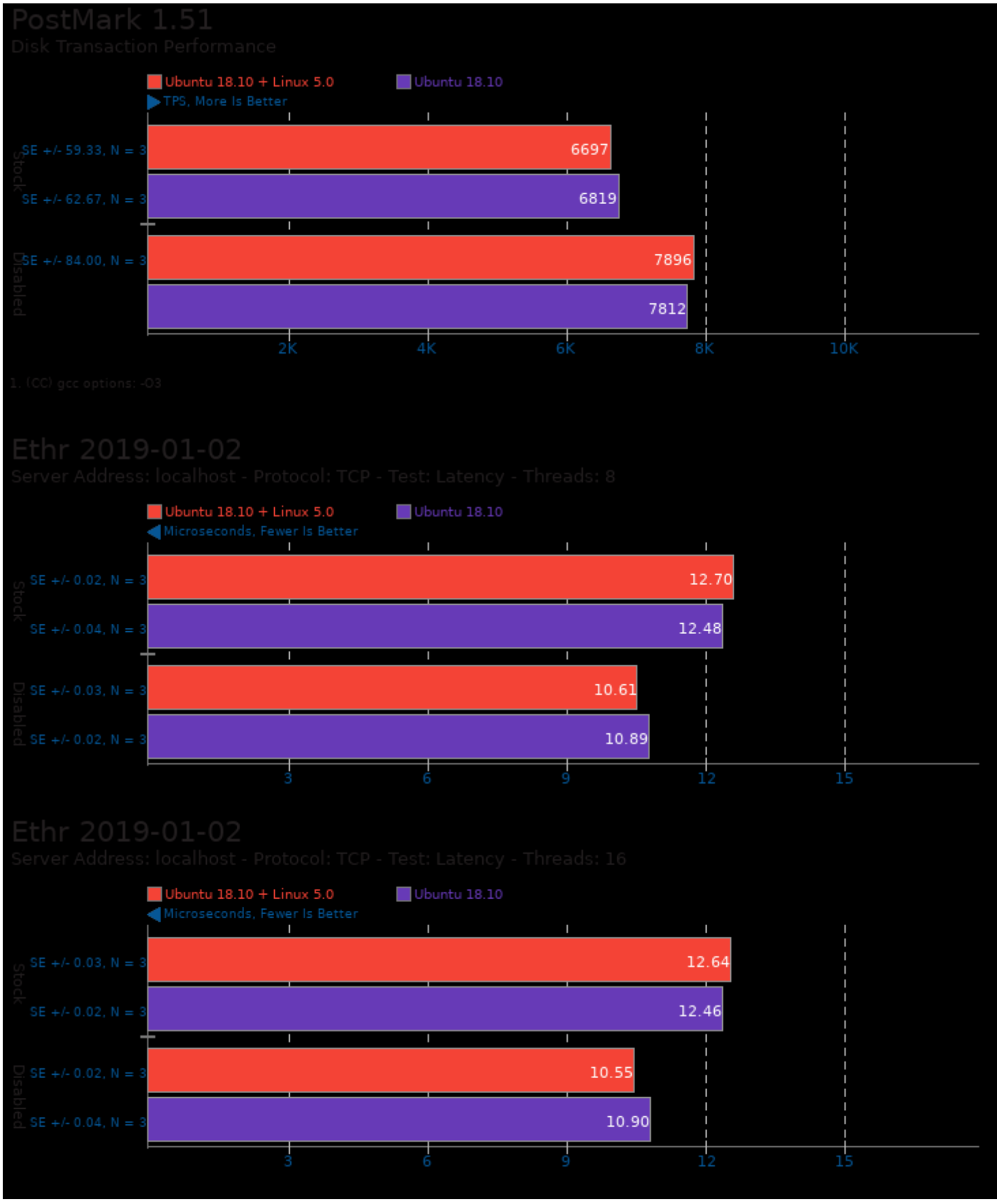
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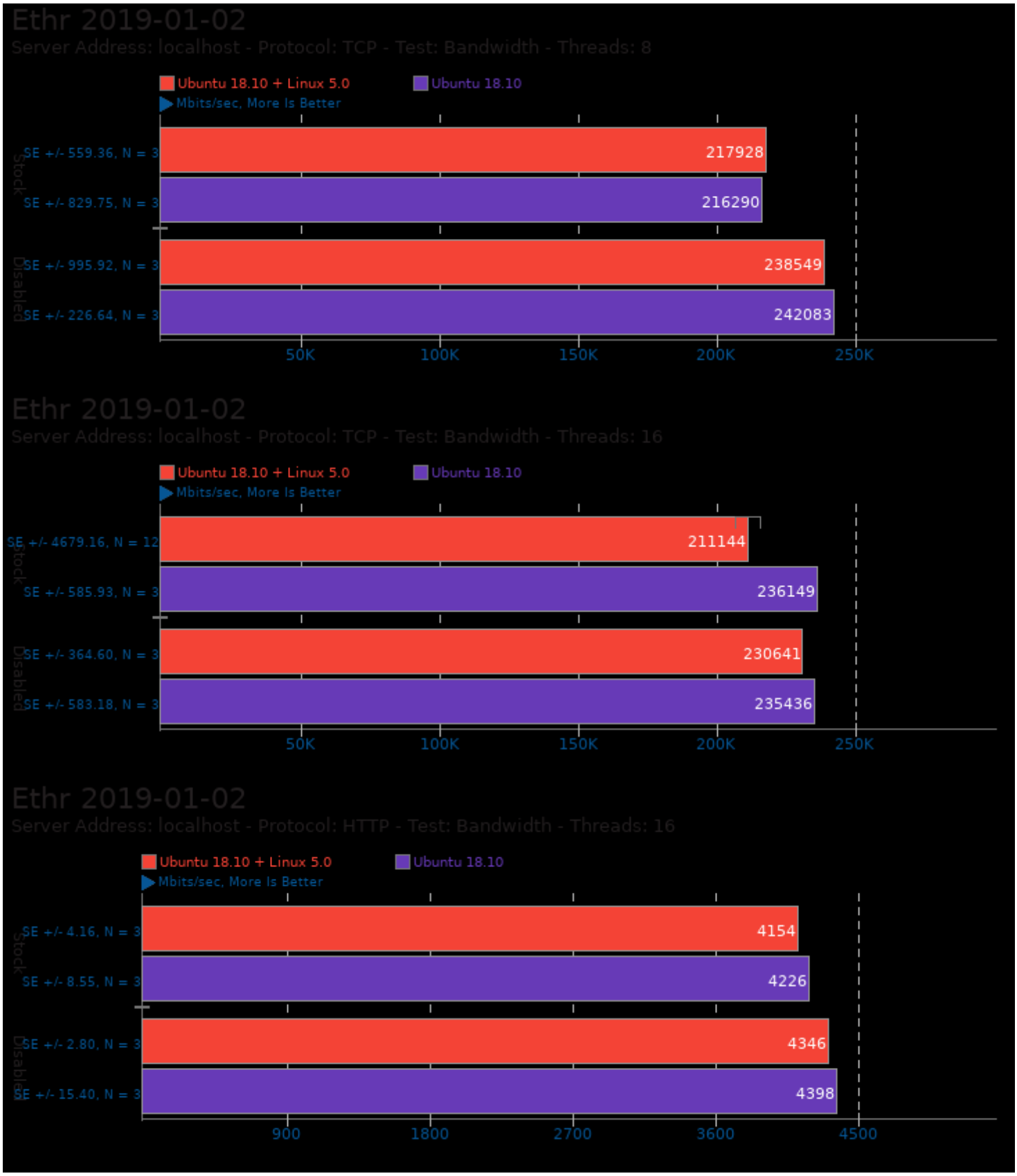
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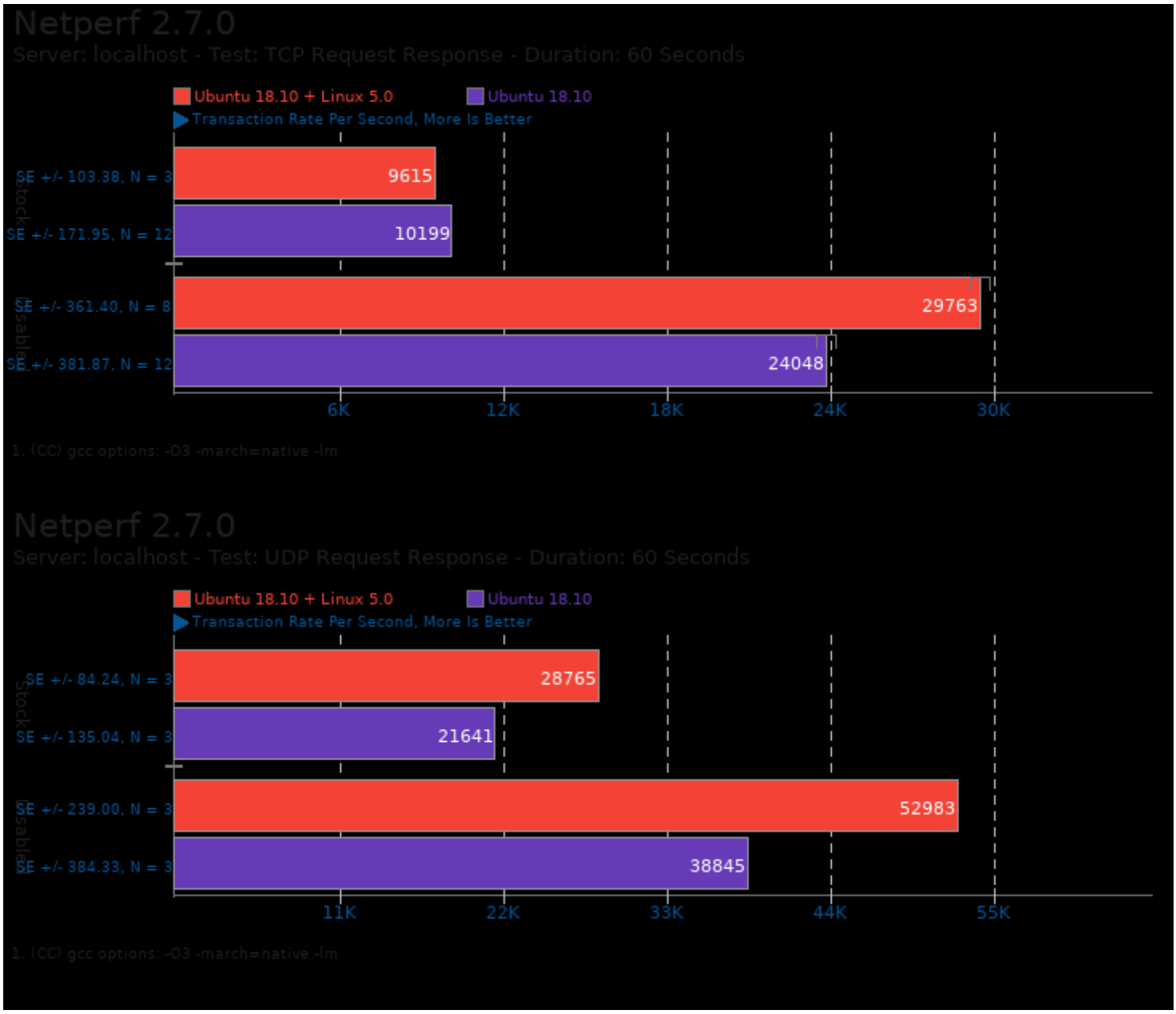
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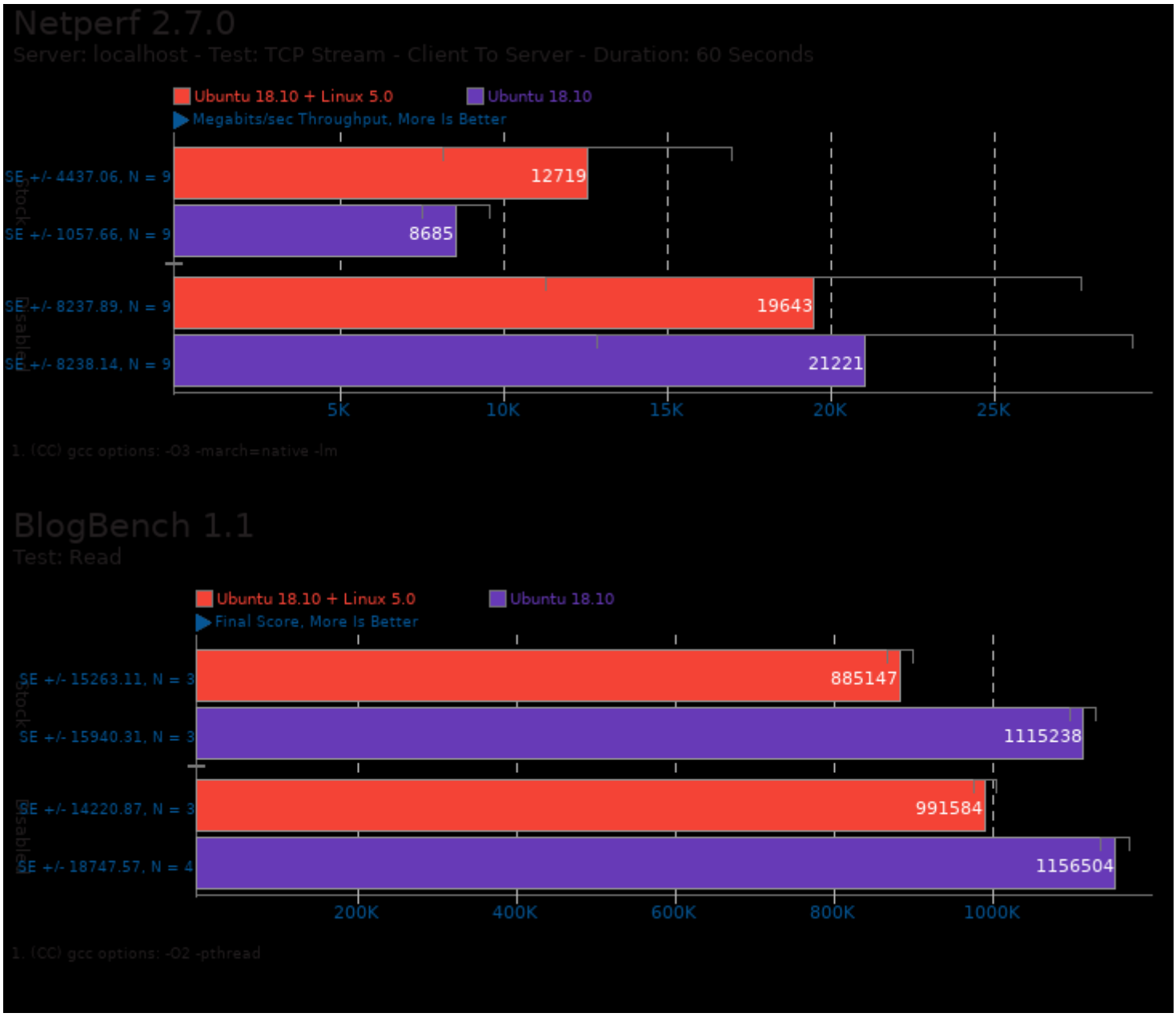
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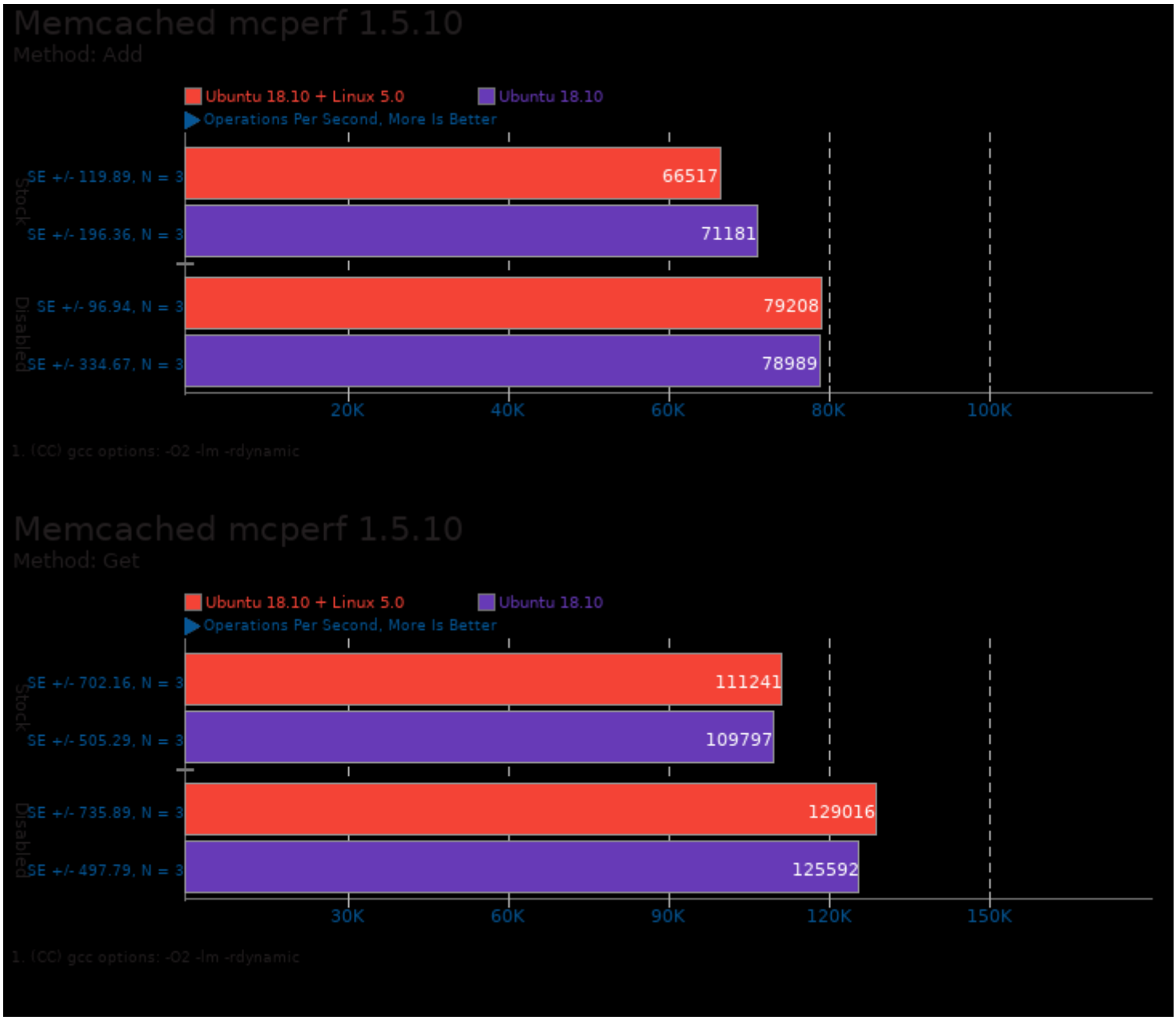
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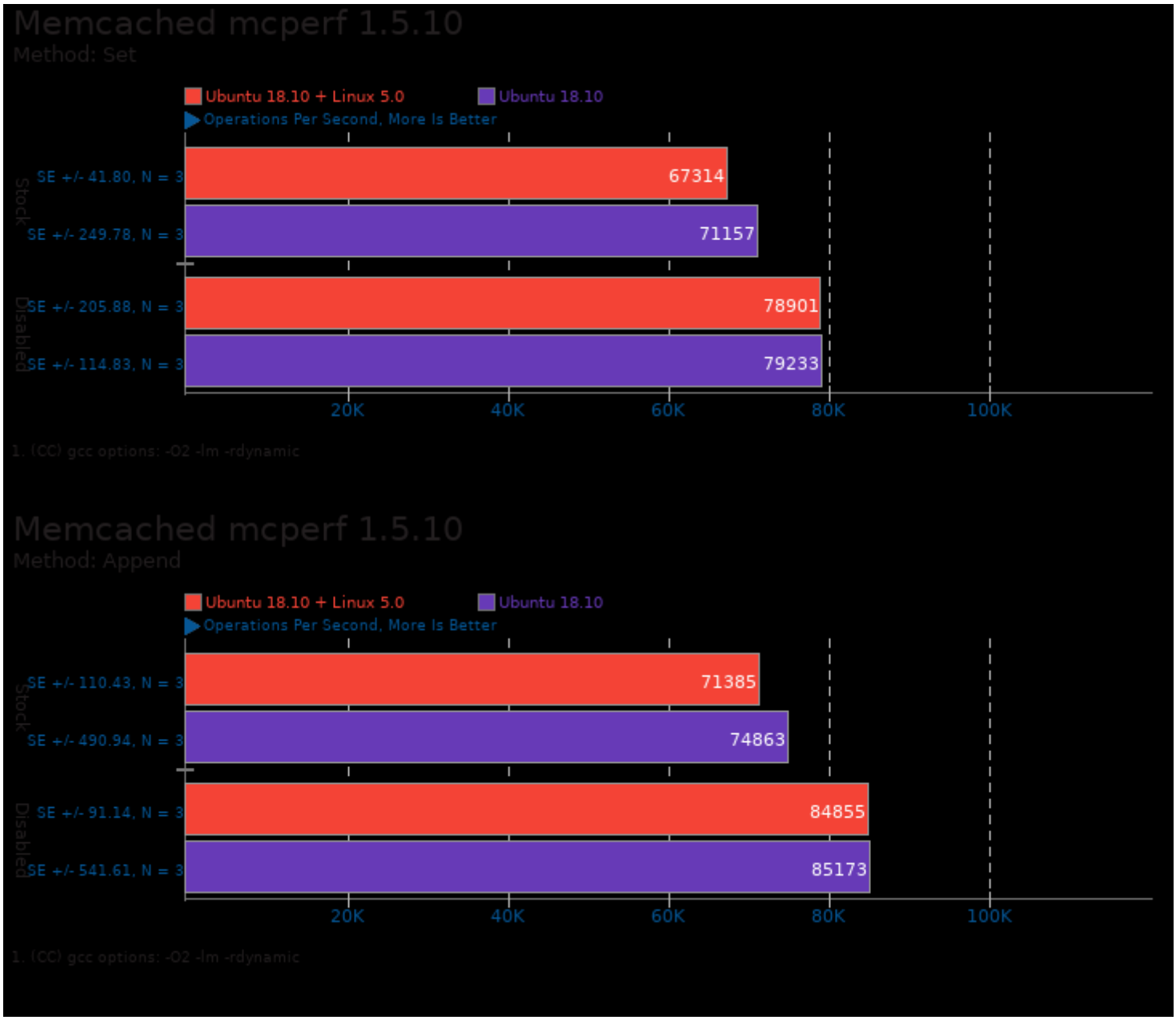
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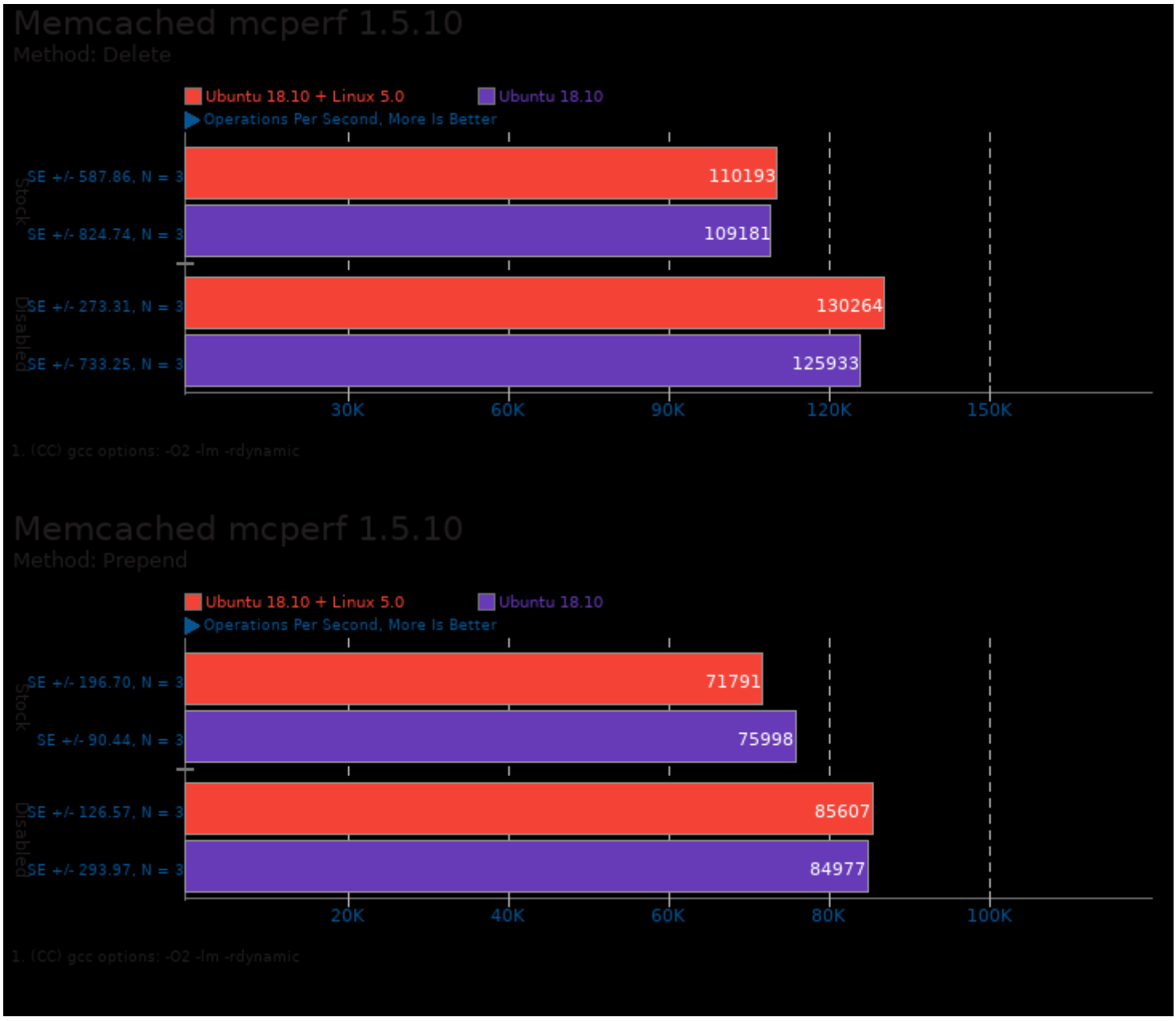
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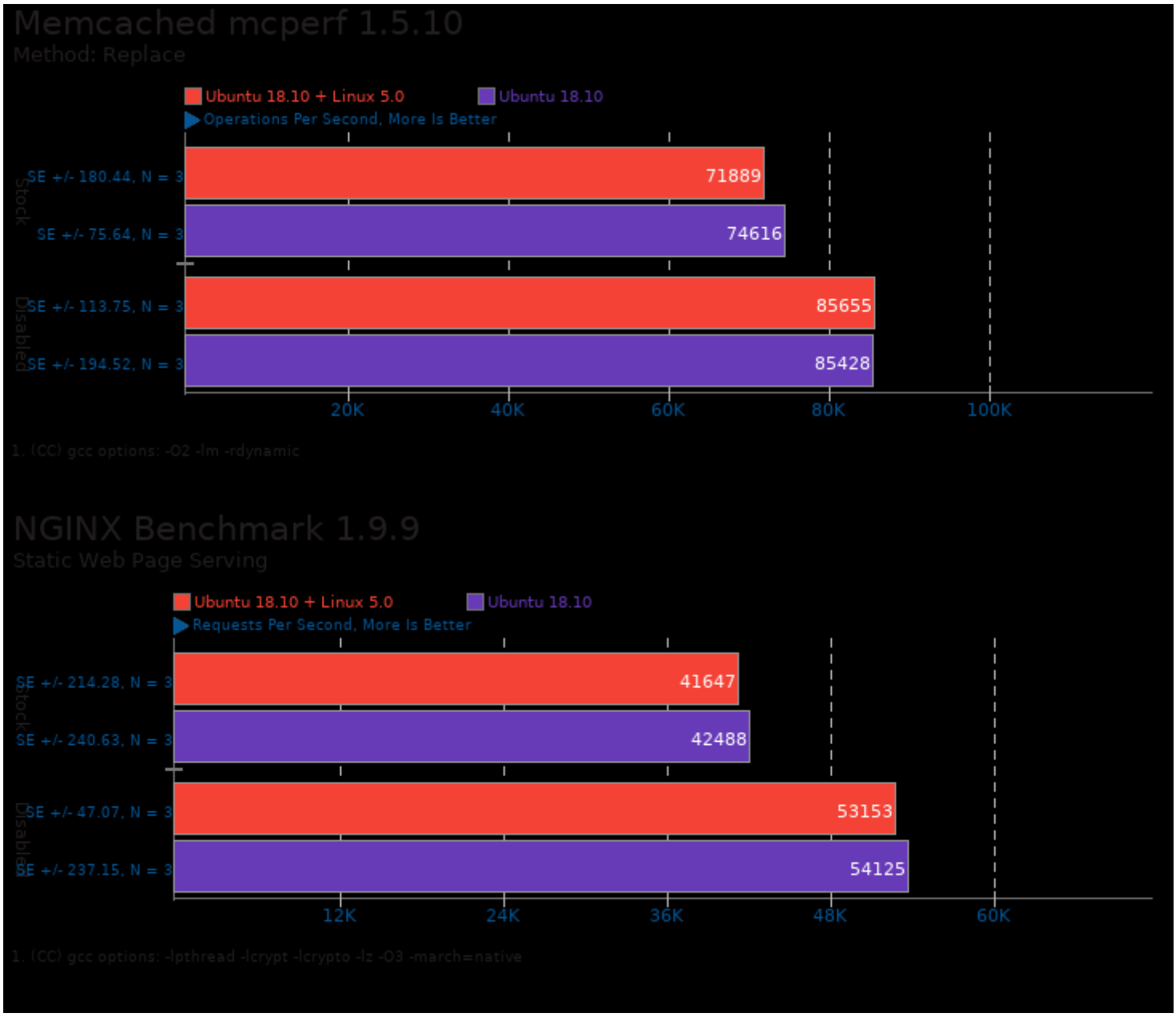


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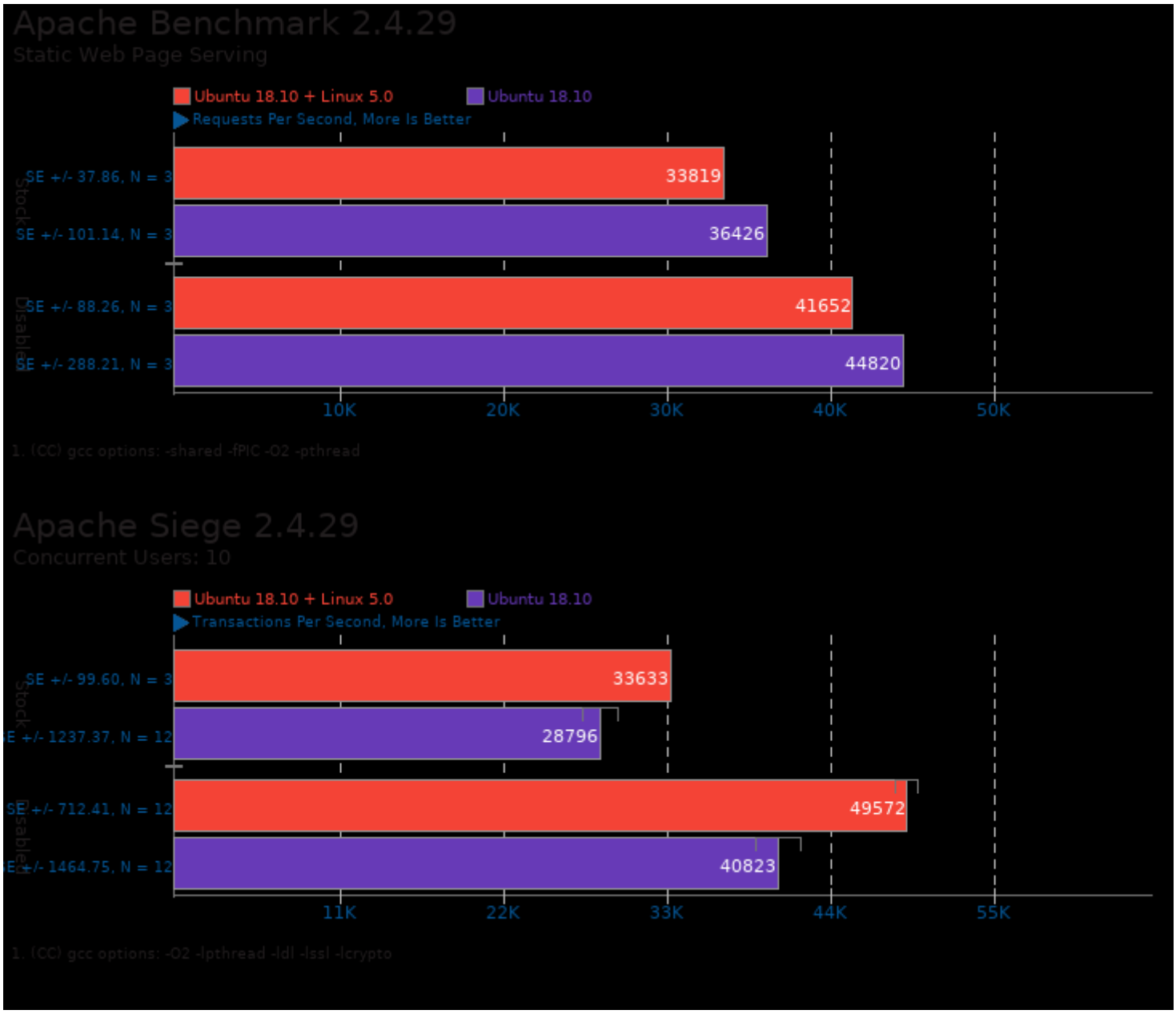


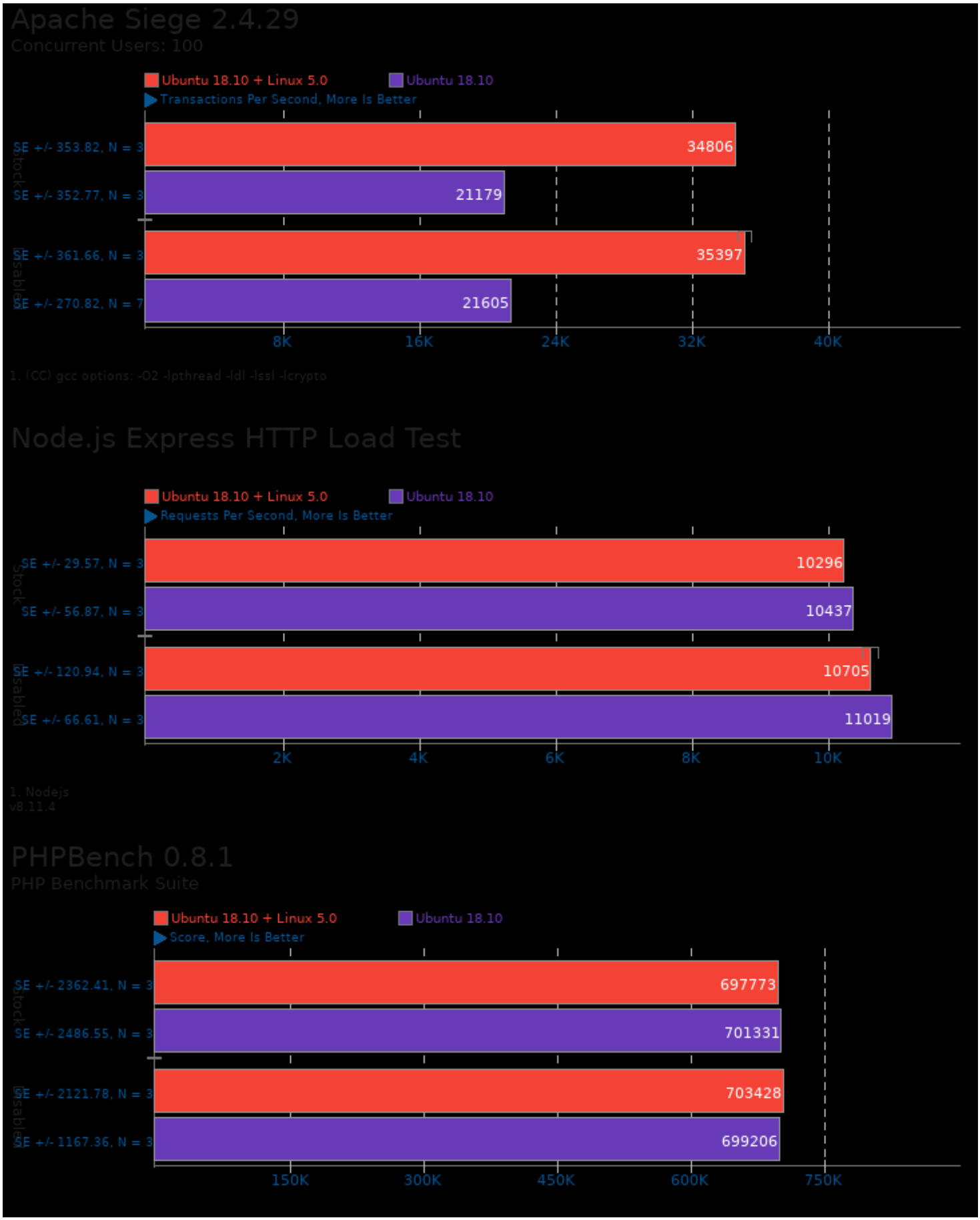
Linux 5.0 Specmelt Test



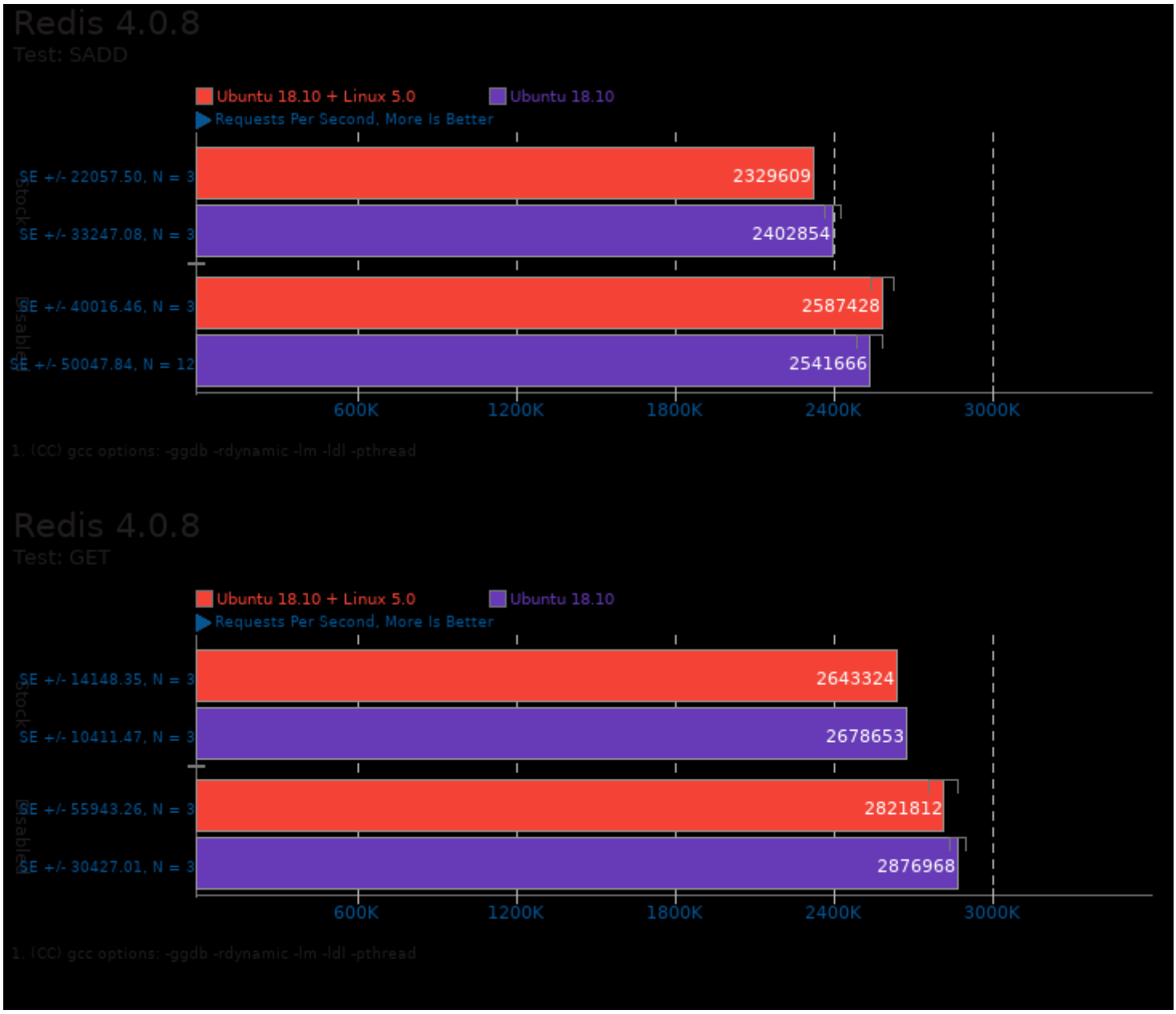

Memcached mcperf 1.5.10
Method: Replace
Ubuntu 18.10 + Linux 5.0
Ubuntu 18.10
Operations Per Second, More Is Better
Stock
Disabled
SE +/- 180.44, N = 3
71889
SE +/- 75.64, N = 3
74616
SE +/- 113.75, N = 3
85655
SE +/- 194.52, N = 3
85428
20K
40K
60K
80K
100K
1. (CC) gcc options: -O2 -lm -rdynamic
NGINX Benchmark 1.9.9
Static Web Page Serving
Ubuntu 18.10 + Linux 5.0
Ubuntu 18.10
Requests Per Second, More Is Better
Stock
Disabled
SE +/- 214.28, N = 3
41647
SE +/- 240.63, N = 3
42488
SE +/- 47.07, N = 3
53153
SE +/- 237.15, N = 3
54125
12K
24K
36K
48K
60K
1. (CC) gcc options: -lpthread -lcrypt -lcrypto -lz -O3 -march=native

Linux 5.0 Specmelt Test

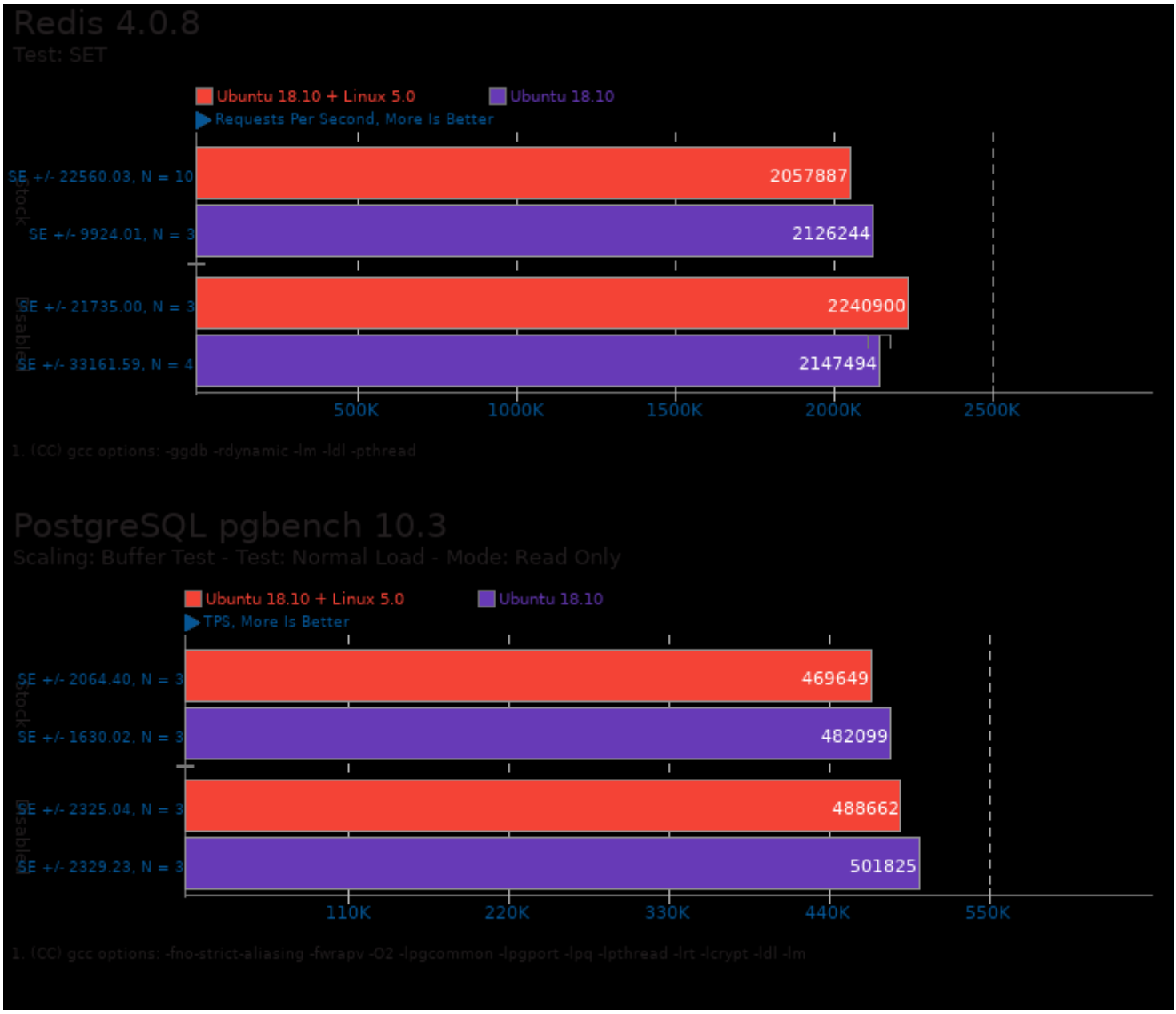



Apache Siege 2.4.29
Concurrent Users: 100
Ubuntu 18.10 + Linux 5.0
Ubuntu 18.10
Transactions Per Second, More Is Better
Stock
Disabled
SE +/- 353.82, N = 3
34806
SE +/- 352.77, N = 3
21179
SE +/- 361.66, N = 3
35397
SE +/- 270.82, N = 7
21605
8K
16K
24K
32K
40K
1. (CC) gcc options: -O2 -lpthread -ldl -lssl -lcrypto
Node.js Express HTTP Load Test
Ubuntu 18.10 + Linux 5.0
Ubuntu 18.10
Requests Per Second, More Is Better
Stock
Disabled
SE +/- 29.57, N = 3
10296
SE +/- 56.87, N = 3
10437
SE +/- 120.94, N = 3
10705
SE +/- 66.61, N = 3
11019
2K
4K
6K
8K
10K
1. Nodejs v8.11.4
PHPBench 0.8.1
PHP Benchmark Suite
Ubuntu 18.10 + Linux 5.0
Ubuntu 18.10
Score, More Is Better
Stock
Disabled
SE +/- 2362.41, N = 3
697773
SE +/- 2486.55, N = 3
701331
SE +/- 2121.78, N = 3
703428
SE +/- 1167.36, N = 3
699206
150K
300K
450K
600K
750K

Linux 5.0 Specmelt Test



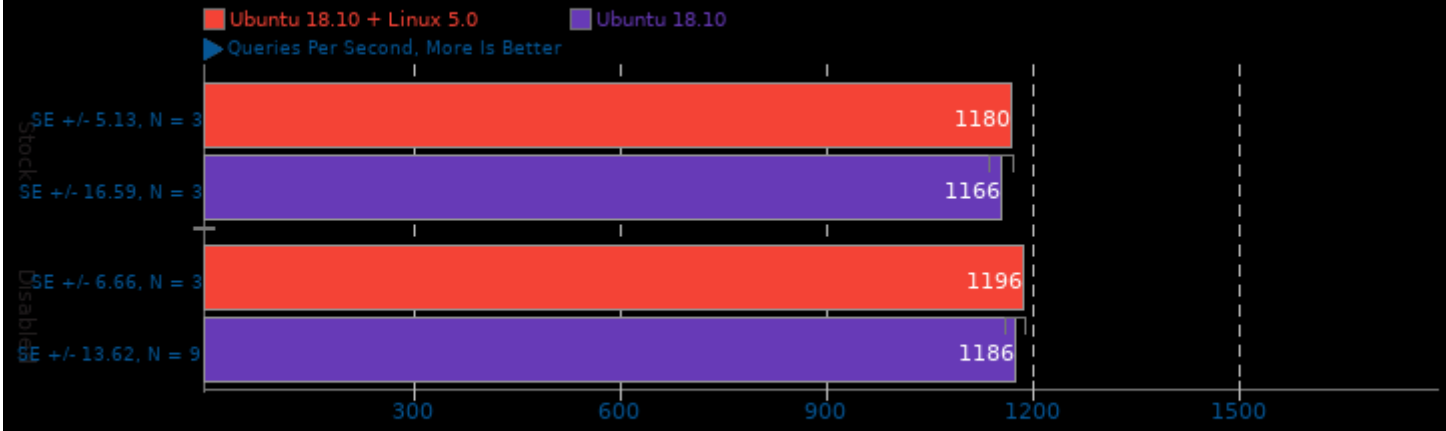
Linux 5.0 Specmelt Test



Linux 5.0 Specmelt Test

MariaDB 10.3.8

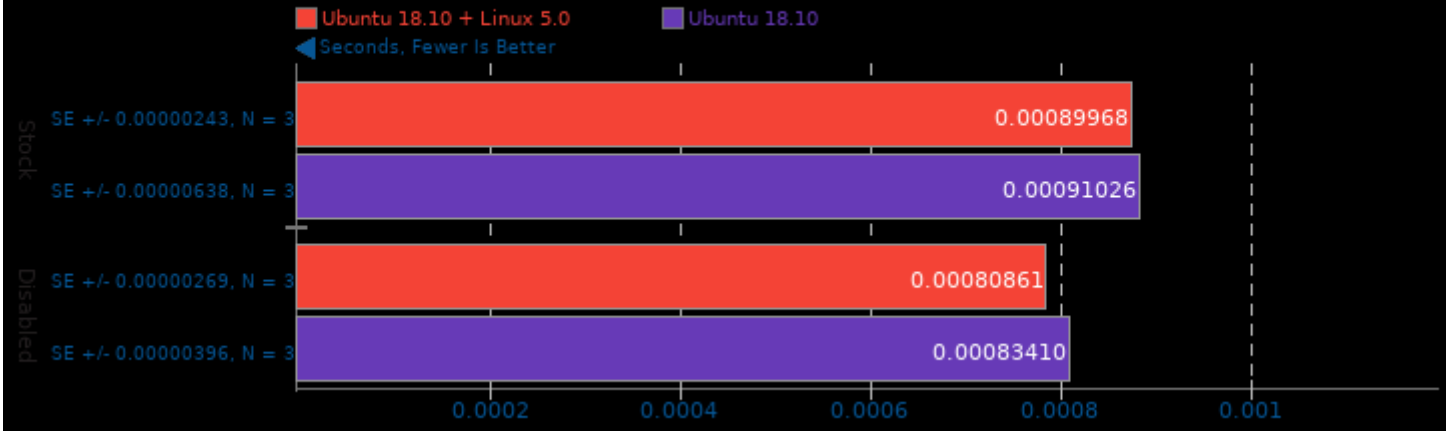
Clients: 64



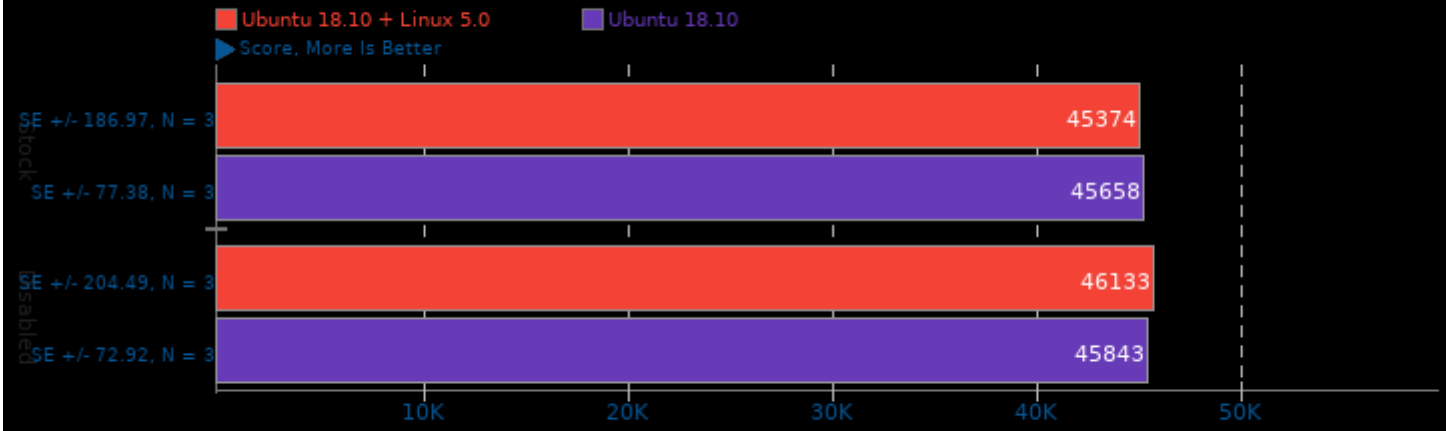
1. (CXX) g++ options: -pie -fPIC -fstack-protector -fno-rtti -O2 -lpthread -llzma -lbz2 -laio -lnuma -lz -lm -lpcre -lcrypt -lssl -lcrypto -ldl

Perl Benchmarks

Test: Interpreter

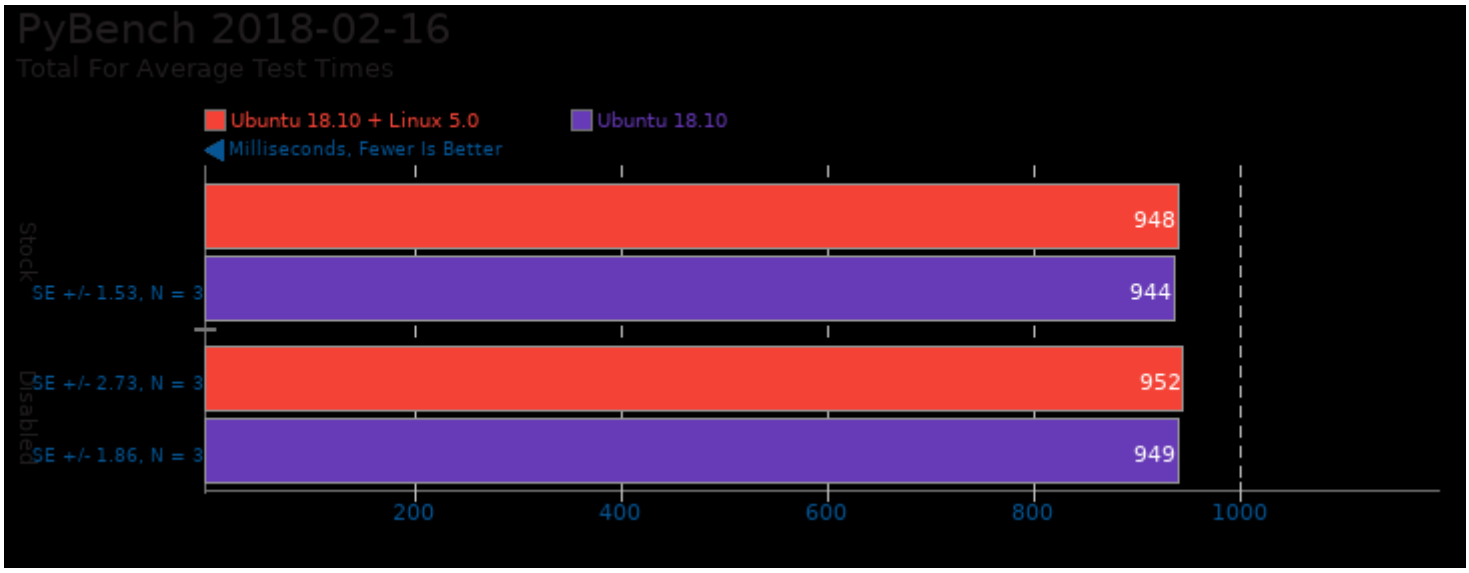


Node.js Octane Benchmark



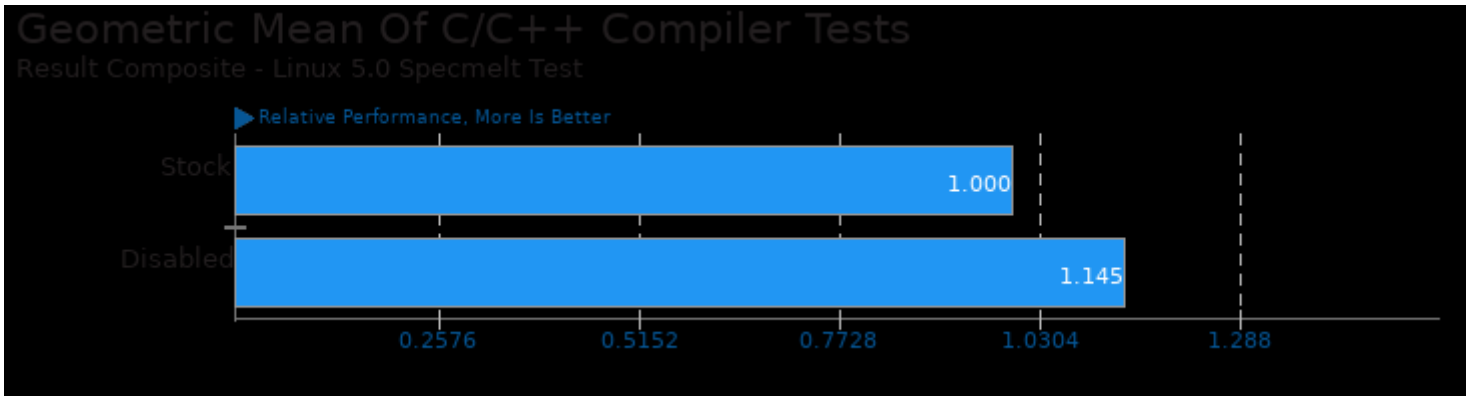
1. Nodejs v8.11.4

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

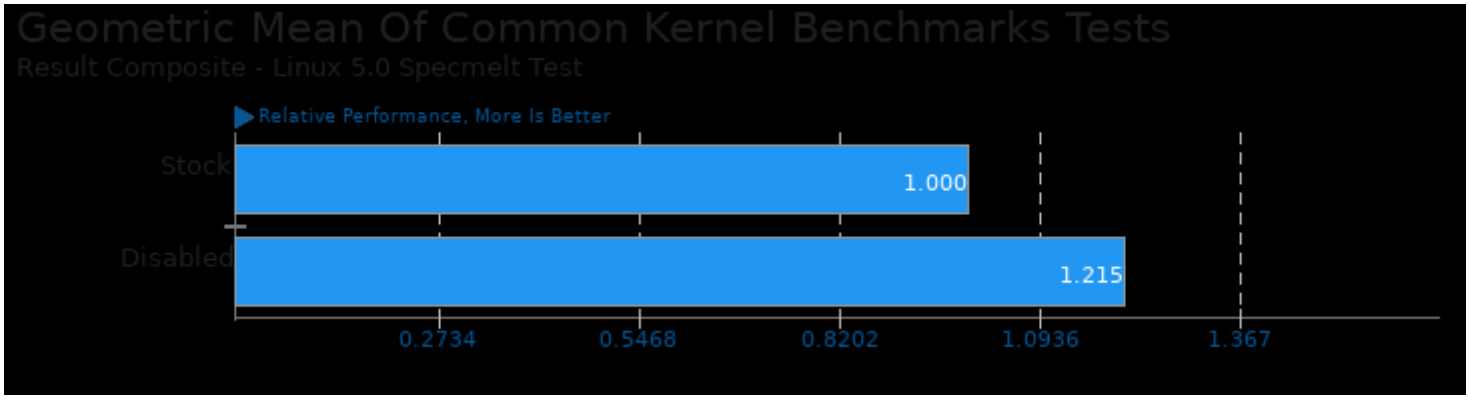


Geometric mean based upon tests: pts/redis, pts/pgbench and pts/mysqlslap

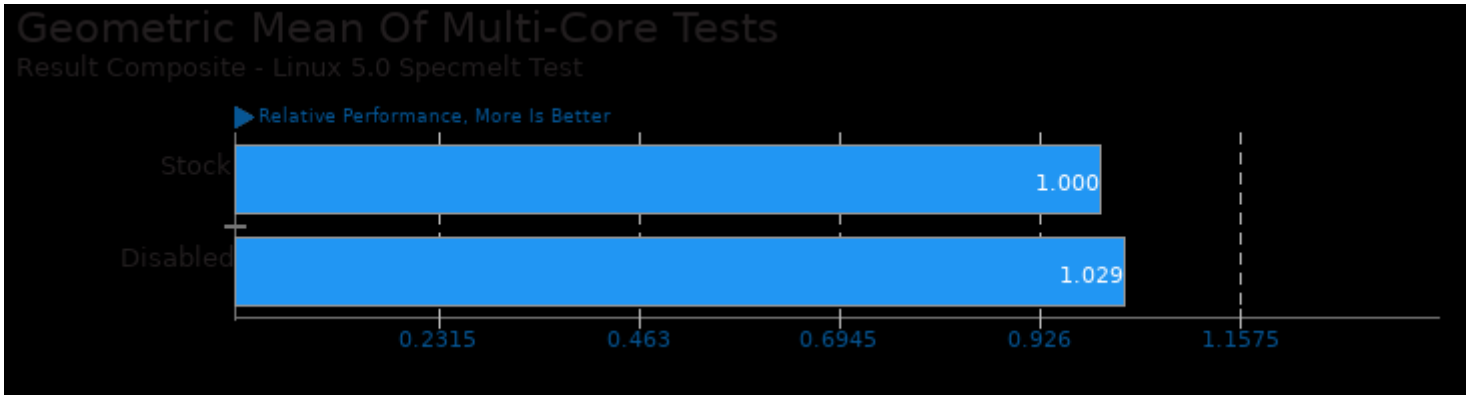
Linux 5.0 Specmelt Test



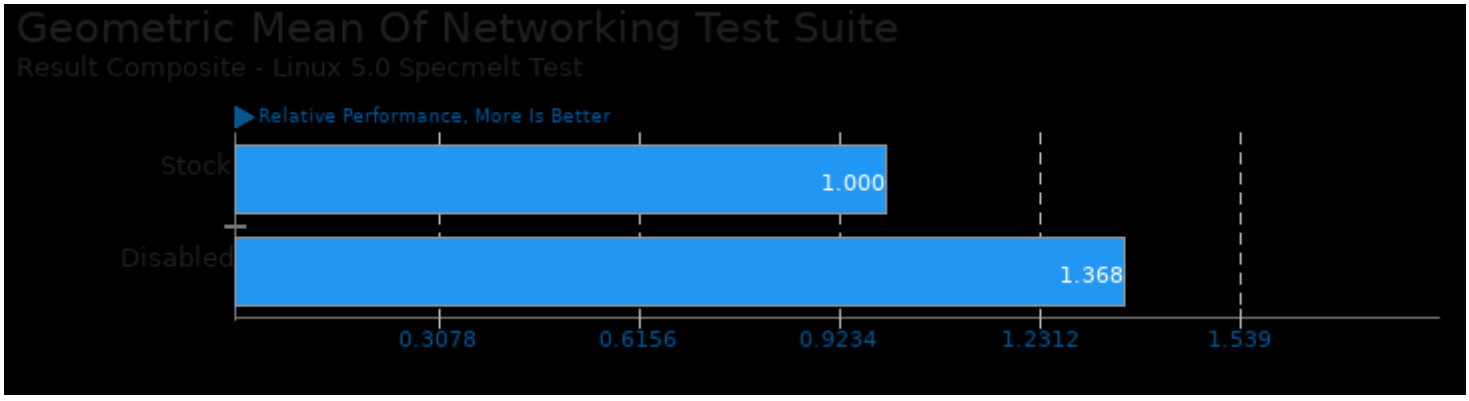
Geometric mean based upon tests: pts/compilebench, pts/postmark and pts/fio



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

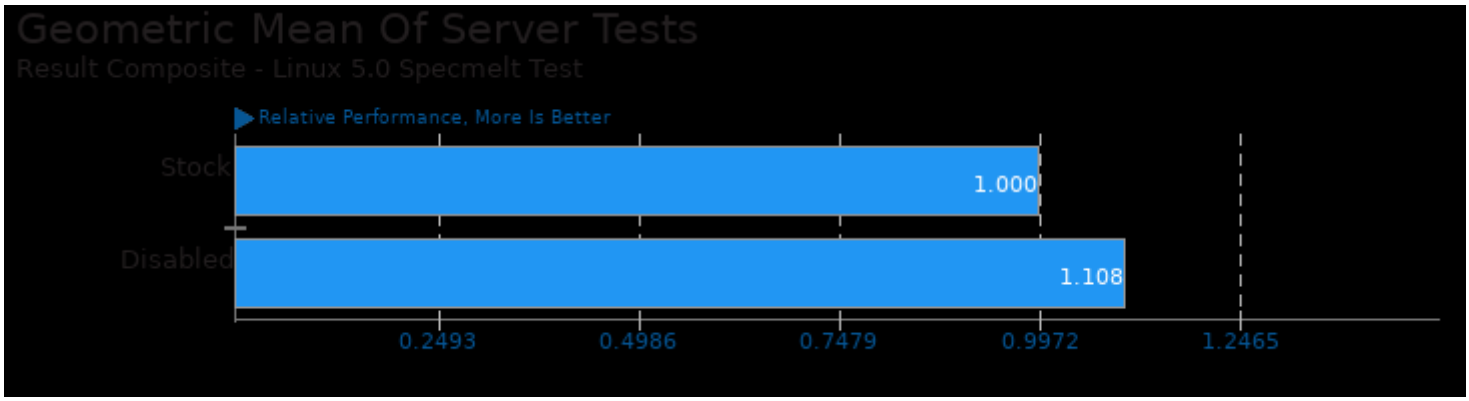


Linux 5.0 Specmelt Test

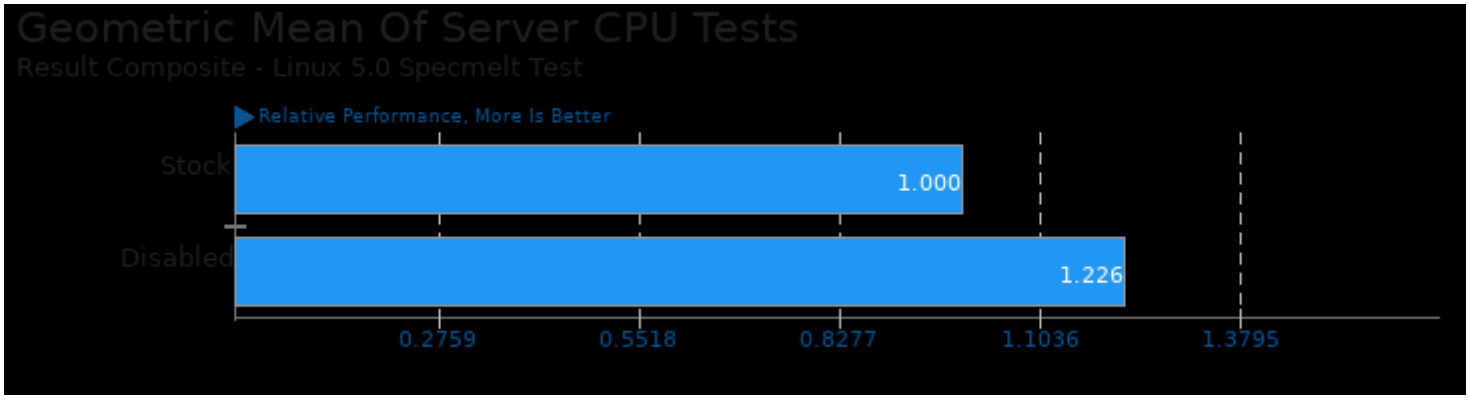
Geometric mean based upon tests: pts/sockperf, pts/ethr and pts/netperf



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

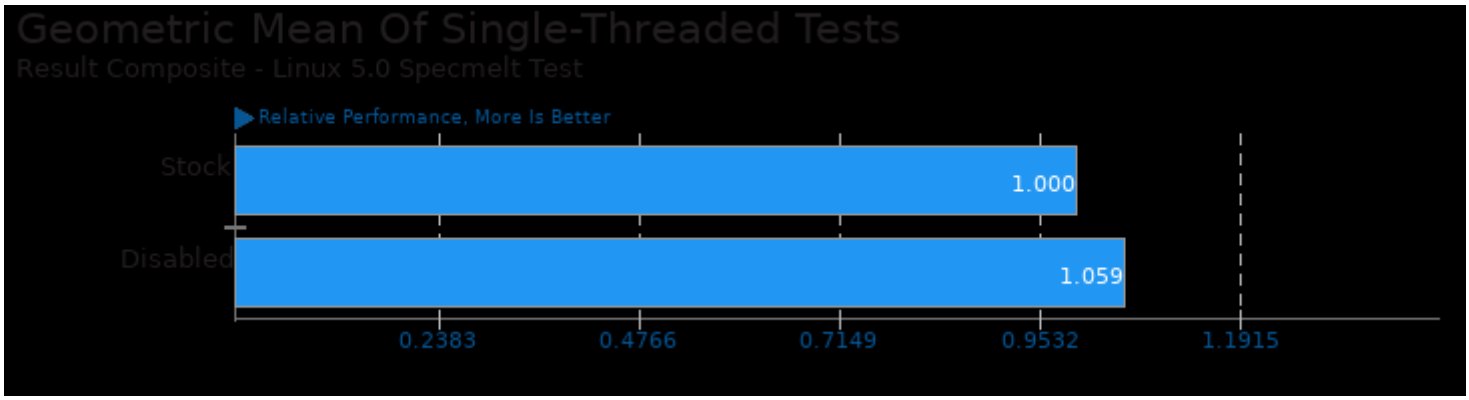


Geometric mean based upon tests: pts/apache, pts/nginx, pts/blogbench, pts/apache-siege, pts/mysqlslap, pts/pgbench, pts/mcperf, pts/redis, pts/phpbench, pts/node-express-loadtest and pts/perl-benchmark



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 Friday, 29 March 2024 10:09.