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satat

AMD Ryzen 7 4700U testing with a LENOVO LNVNB161216 (DTCN18WWV1.04 BIOS) and AMD Renoir 512MB on Ubuntu 22.04 via the Phoronix Test Suite.

Automated Executive Summary

a had the most wins, coming in first place for 57% of the tests.

Based on the geometric mean of all complete results, the fastest (a) was 1.142x the speed of the slowest (c). b was 0.913x the speed of a and c was 0.96x the speed of b.

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

RocksDB (Test: Random Read) at 1.232x
MariaDB (Clients: 512) at 1.232x
MariaDB (Clients: 2048) at 1.138x
MariaDB (Clients: 1024) at 1.128x
OpenCV (Test: Graph API) at 1.11x
OpenCV (Test: Image Processing) at 1.068x
RocksDB (Test: Read While Writing) at 1.066x
RocksDB (Test: Random Fill) at 1.065x
OpenCV (Test: DNN - Deep Neural Network) at 1.06x

RocksDB (Test: Read Random Write Random) at 1.054x.

Test Systems:

a

b

c

Processor: AMD Ryzen 7 4700U @ 2.00GHz (8 Cores), Motherboard: LENOVO LNVNB161216 (DTCN18WWV1.04 BIOS), Chipset: AMD Renoir/Cezanne, Memory: 16GB, Disk: 512GB SAMSUNG MZALQ512HALU-000L2, Graphics: AMD Renoir 512MB (1600/400MHz), Audio: AMD Renoir Radeon HD Audio, Network: Intel Wi-Fi 6 AX200

OS: Ubuntu 22.04, Kernel: 5.19.0-35-generic (x86_64), Desktop: GNOME Shell 42.2, Display Server: X Server + Wayland, OpenGL: 4.6 Mesa 22.0.5 (LLVM 13.0.1 DRM 3.47), Vulkan: 1.3.204, Compiler: GCC 11.3.0, File-System: ext4, Screen Resolution: 1920x1080

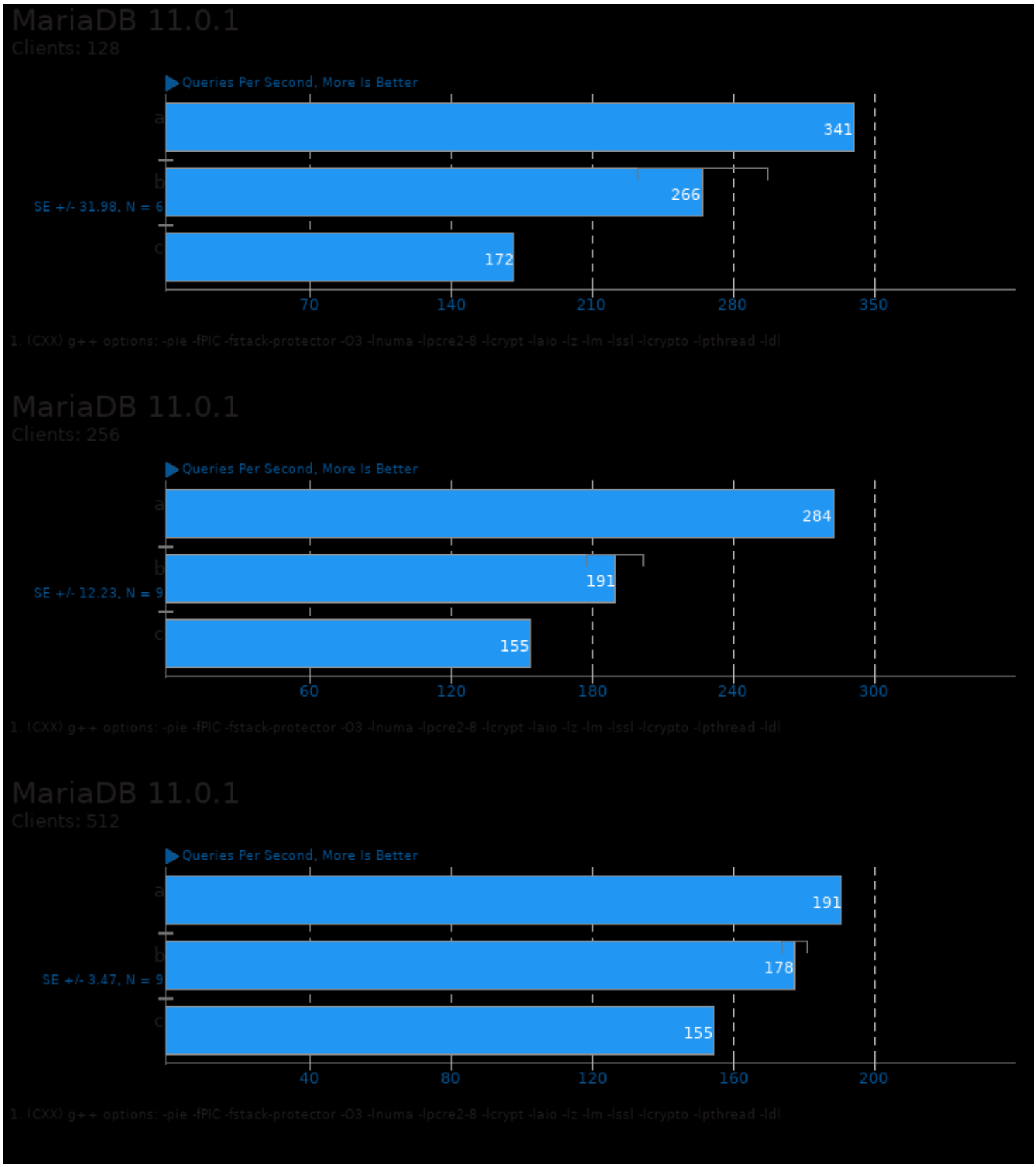
Kernel Notes: Transparent Huge Pages: madvise
Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --enable-bootstrap --enable-cet --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-gnu-unique-object --enable-languages=c,ada,c++,go,brig,d,fortran,objc,obj-c++,m2 --enable-libphobos-checking=release --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-link-serialization=2 --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none=/build/gcc-11-xKiWfi/gcc-11-11.3.0/debian/tmp-nvptx/usr,amdgcn-amdhsa=/build/gcc-11-xKiWfi/gcc-11-11.3.0/debian/tmp-gcn/usr --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-build-config=bootstrap-lto-lean --with-default-libstdcxx-abi=new --with-gcc-major-version-only --with-multilib-list=m32,m64,mx32 --with-target-system-zlib=auto --with-tune=generic --without-cuda-driver -v
Processor Notes: Scaling Governor: acpi-cpufreq schedutil (Boost: Enabled) - Platform Profile: balanced - CPU Microcode: 0x8600102 - ACPI Profile: balanced
Graphics Notes: BAR1 / Visible vRAM Size: 512 MB - vBIOS Version: 113-RENOIR-023
Security Notes: itlb_multihit: Not affected + l1tf: Not affected + mds: Not affected + meltdown: Not affected + mmio_stale_data: Not affected + retbleed: Mitigation of untrained return thunk; SMT disabled + spec_store_bypass: Mitigation of SSB disabled via prctl + spectre_v1: Mitigation of usercopy/swapgs barriers and __user pointer sanitization + spectre_v2: Mitigation of Retpolines IBPB: conditional STIBP: disabled RSB filling PBRSB-eIBRS: Not affected + srbds: Not affected + tsx_async_abort: Not affected

	a	b	c
MariaDB - 128 (Queries/sec)	**341**	266	**172**
Normalized	100%	78.01%	50.44%
Standard Deviation		29.5%	
MariaDB - 256 (Queries/sec)	**284**	191	**155**
Normalized	100%	67.25%	54.58%
Standard Deviation		19.2%	
MariaDB - 512 (Queries/sec)	**191**	178	**155**
Normalized	100%	93.19%	81.15%
Standard Deviation		5.9%	
MariaDB - 1024 (Queries/sec)	**149**	**168**	155
Normalized	88.69%	100%	92.26%
Standard Deviation		3%	
MariaDB - 2048 (Queries/sec)	**182**	164	**160**
Normalized	100%	90.11%	87.91%

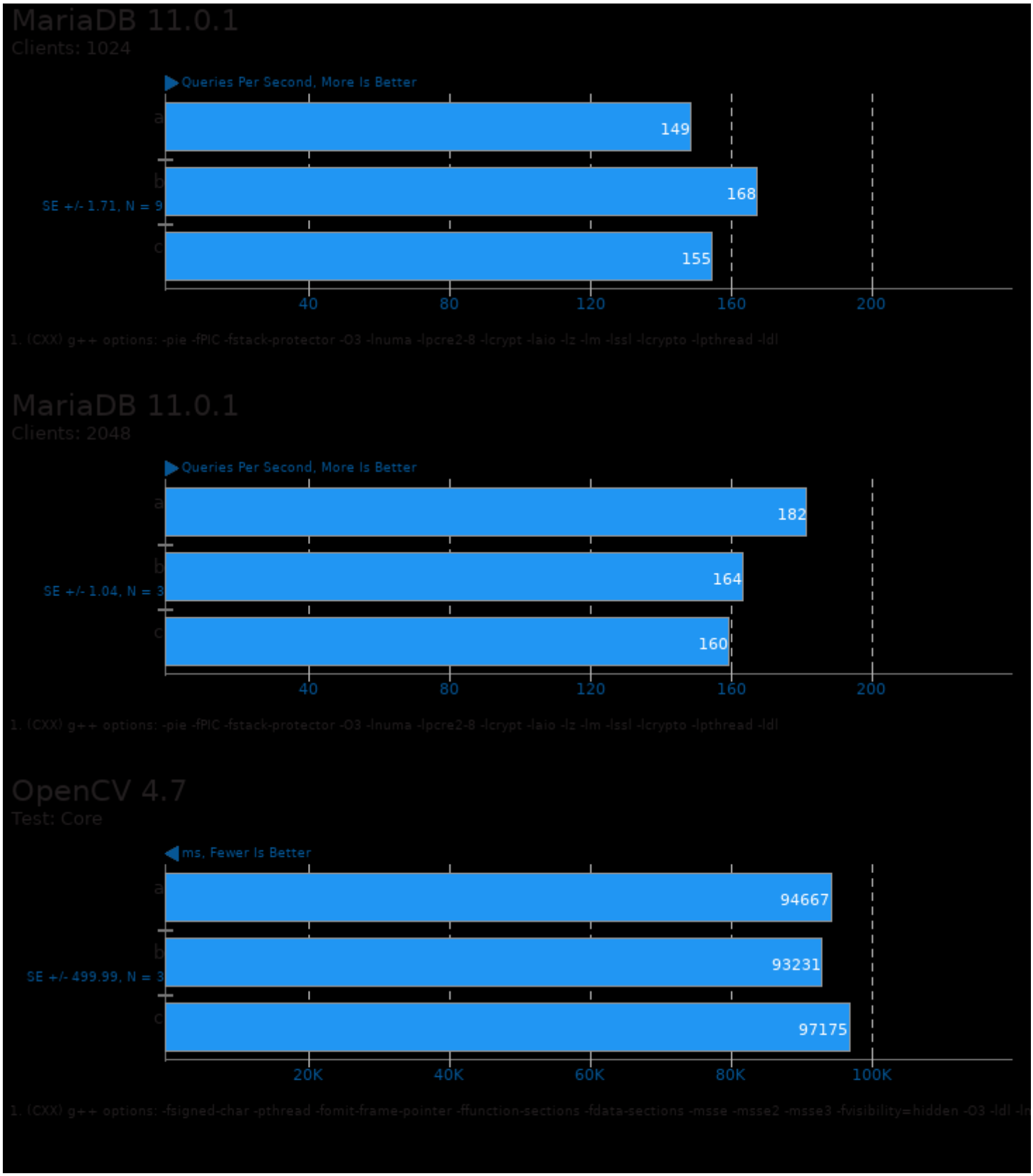
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Standard Deviation		1.1%	
OpenCV - Core (ms)	94667	**93231**	**97175**
Normalized	98.48%	100%	95.94%
Standard Deviation		0.9%	
OpenCV - Video (ms)	**77639**	91227	**120009**
Normalized	100%	85.11%	64.69%
Standard Deviation		19.9%	
OpenCV - Graph API (ms)	**371263**	352895	**334474**
Normalized	90.09%	94.78%	100%
Standard Deviation		1.5%	
OpenCV - Stitching (ms)	**210712**	210748	**211848**
Normalized	100%	99.98%	99.46%
Standard Deviation		0.3%	
OpenCV - Features 2D (ms)	84341	**87573**	**79477**
Normalized	94.23%	90.76%	100%
Standard Deviation		7.9%	
OpenCV - Image Processing (ms)	155796	**162581**	**152230**
Normalized	97.71%	93.63%	100%
Standard Deviation		1.8%	
OpenCV - Object Detection (ms)	70307	**69304**	**71929**
Normalized	98.57%	100%	96.35%
Standard Deviation		1.8%	
OpenCV - DNN - D.N.N (ms)	**26885**	**28497**	27956
Normalized	100%	94.34%	96.17%
Standard Deviation		4.1%	
RocksDB - Rand Fill (Op/s)	528850	**521039**	**555075**
Normalized	95.28%	93.87%	100%
Standard Deviation		0.7%	
RocksDB - Rand Read (Op/s)	23023687	**22661234**	**27926667**
Normalized	82.44%	81.15%	100%
Standard Deviation		1.4%	
RocksDB - Update Rand (Op/s)	**295077**	**291205**	292359
Normalized	100%	98.69%	99.08%
Standard Deviation		0.1%	
RocksDB - Seq Fill (Op/s)	**697620**	698758	**707295**
Normalized	98.63%	98.79%	100%
Standard Deviation		0.7%	
RocksDB - Rand Fill Sync (Op/s)	**2240**	963	**786**
Normalized	100%	42.99%	35.09%
Standard Deviation		48.2%	
RocksDB - Read While Writing (Op/s)	**764389**	**716893**	728298
Normalized	100%	93.79%	95.28%
Standard Deviation		2.5%	
RocksDB - R.R.W.R (Op/s)	**778921**	**739210**	778467
Normalized	100%	94.9%	99.94%
Standard Deviation		1.5%	
VKMark - 1920 x 1080 - Mailbox (VKMark Score)	**4143**	**4141**	**4141**
Normalized	100%	99.95%	99.95%
Standard Deviation		0.2%	

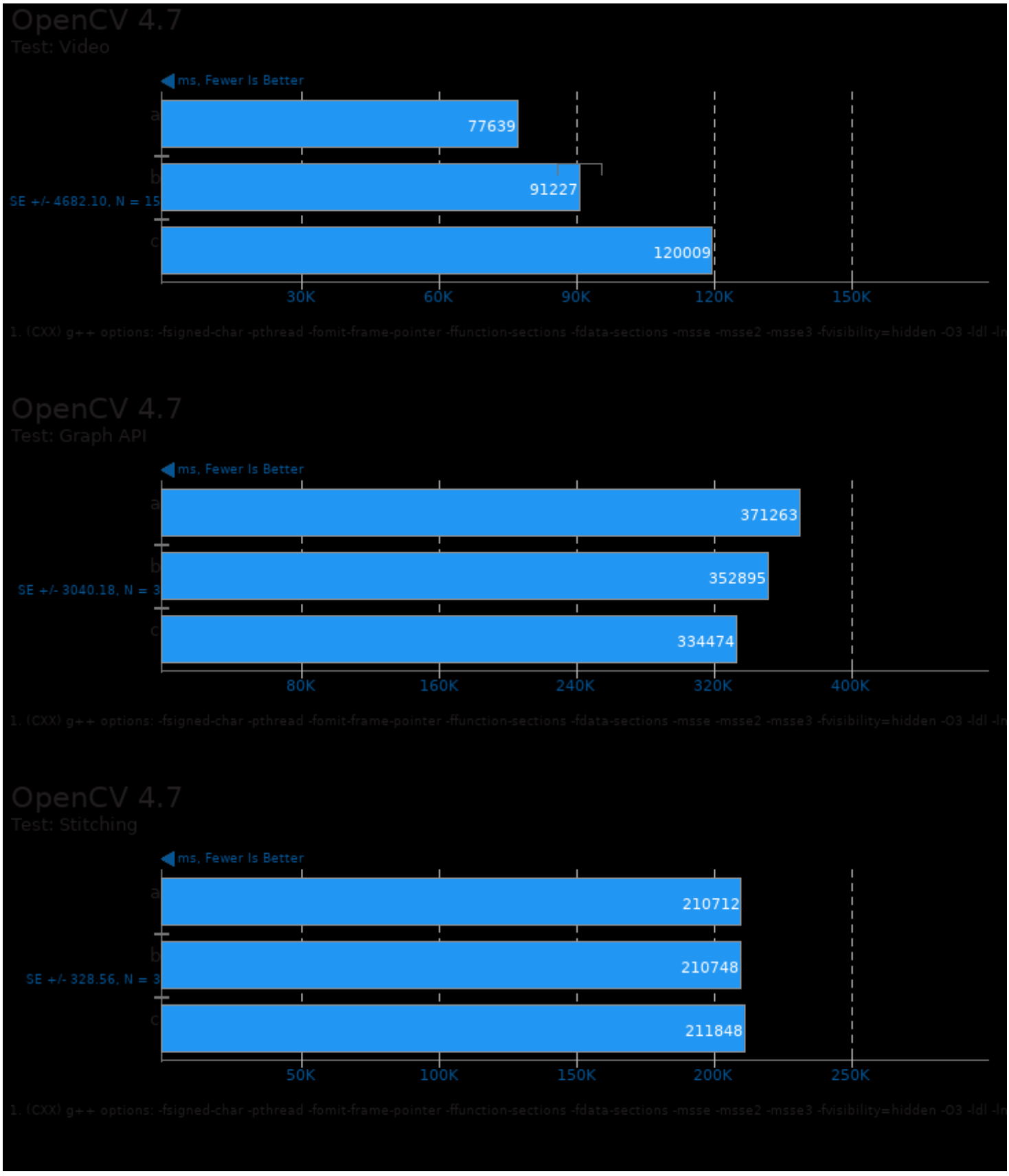
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MariaDB 11.0.1
Clients: 128
Queries Per Second, More Is Better
a
341
b
266
SE +/- 31.98, N = 6
c
172
70
140
210
280
350
1. (CXX) g++ options: -pie -fPIC -fstack-protector -O3 -lnuma -lpcre2-8 -lcrypt -laio -lz -lm -lssl -lcrypto -lpthread -ldl
MariaDB 11.0.1
Clients: 256
Queries Per Second, More Is Better
a
284
b
191
SE +/- 12.23, N = 9
c
155
60
120
180
240
300
1. (CXX) g++ options: -pie -fPIC -fstack-protector -O3 -lnuma -lpcre2-8 -lcrypt -laio -lz -lm -lssl -lcrypto -lpthread -ldl
MariaDB 11.0.1
Clients: 512
Queries Per Second, More Is Better
a
191
b
178
SE +/- 3.47, N = 9
c
155
40
80
120
160
200
1. (CXX) g++ options: -pie -fPIC -fstack-protector -O3 -lnuma -lpcre2-8 -lcrypt -laio -lz -lm -lssl -lcrypto -lpthread -ldl

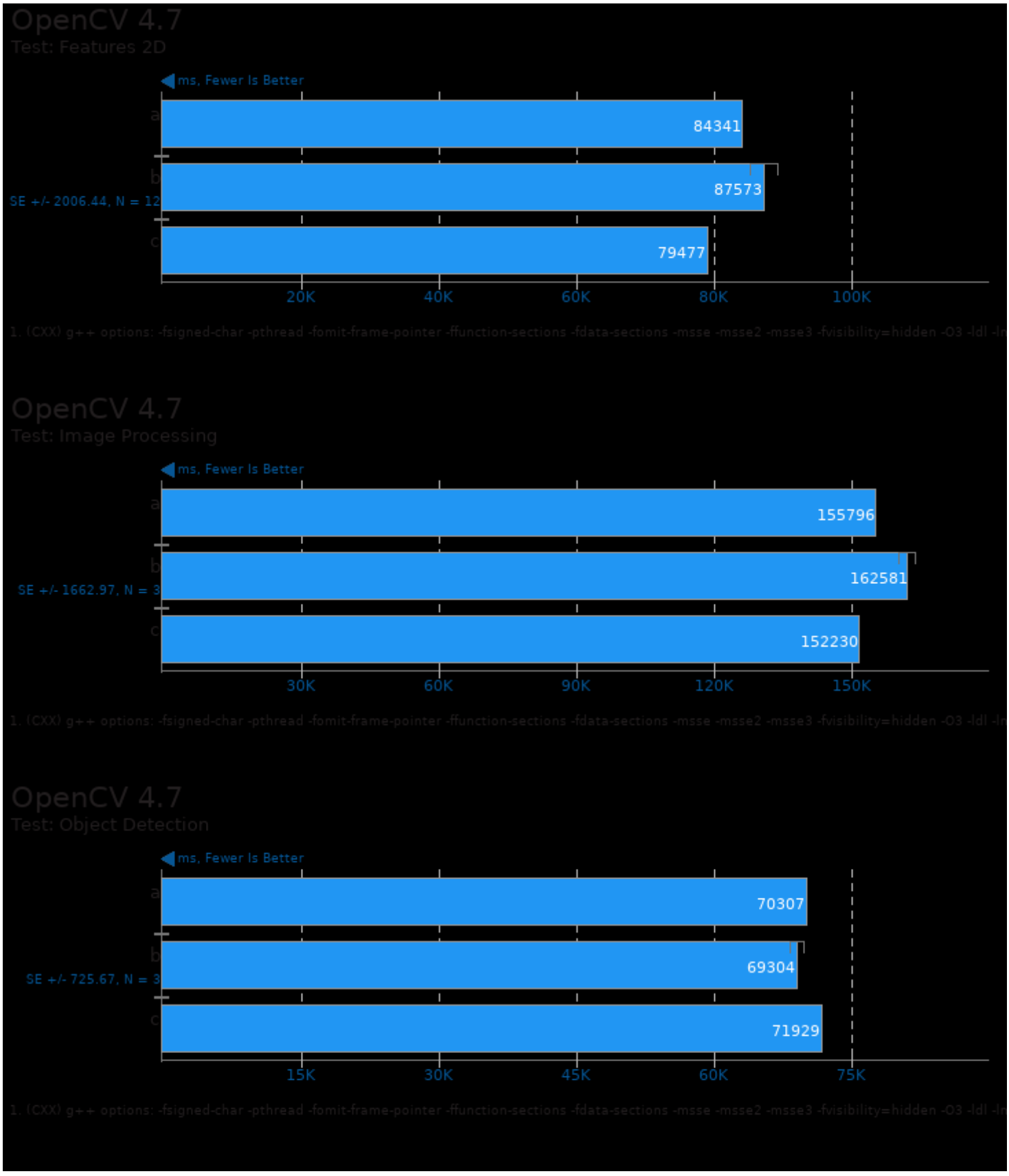
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MariaDB 11.0.1
Clients: 1024
Queries Per Second, More Is Better
a
149
b
168
SE +/- 1.71, N = 9
c
155
40
80
120
160
200
1. (CXX) g++ options: -pie -fPIC -fstack-protector -O3 -lnuma -lpcre2-8 -lcrypt -laio -lz -lm -lssl -lcrypto -lpthread -ldl
MariaDB 11.0.1
Clients: 2048
Queries Per Second, More Is Better
a
182
b
164
SE +/- 1.04, N = 3
c
160
40
80
120
160
200
1. (CXX) g++ options: -pie -fPIC -fstack-protector -O3 -lnuma -lpcre2-8 -lcrypt -laio -lz -lm -lssl -lcrypto -lpthread -ldl
OpenCV 4.7
Test: Core
ms, Fewer Is Better
a
94667
b
93231
SE +/- 499.99, N = 3
c
97175
20K
40K
60K
80K
100K
1. (CXX) g++ options: -fsigned-char -pthread -fomit-frame-pointer -ffunction-sections -fdata-sections -msse -msse2 -msse3 -fvisibility=hidden -O3 -ldl

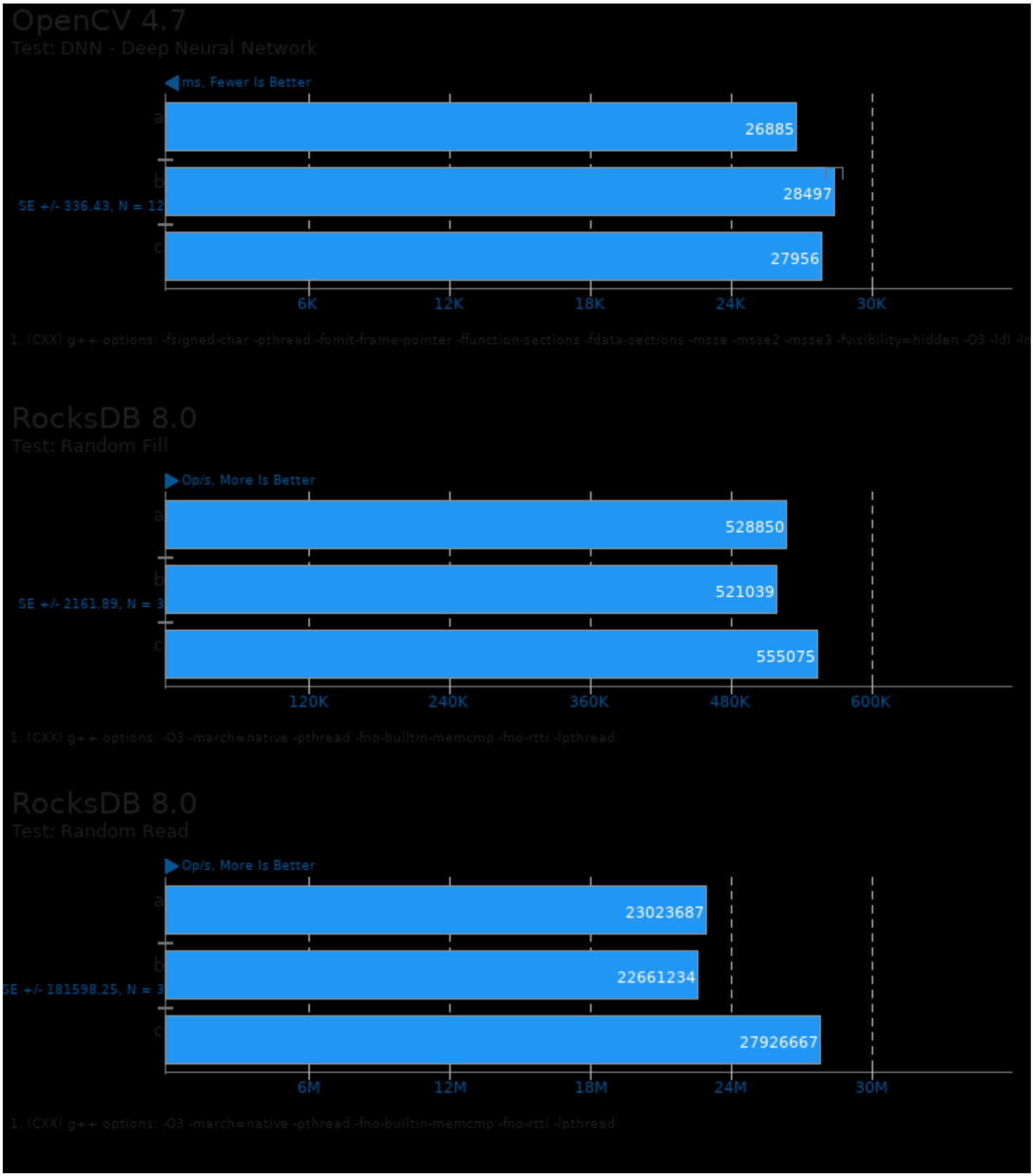
satat

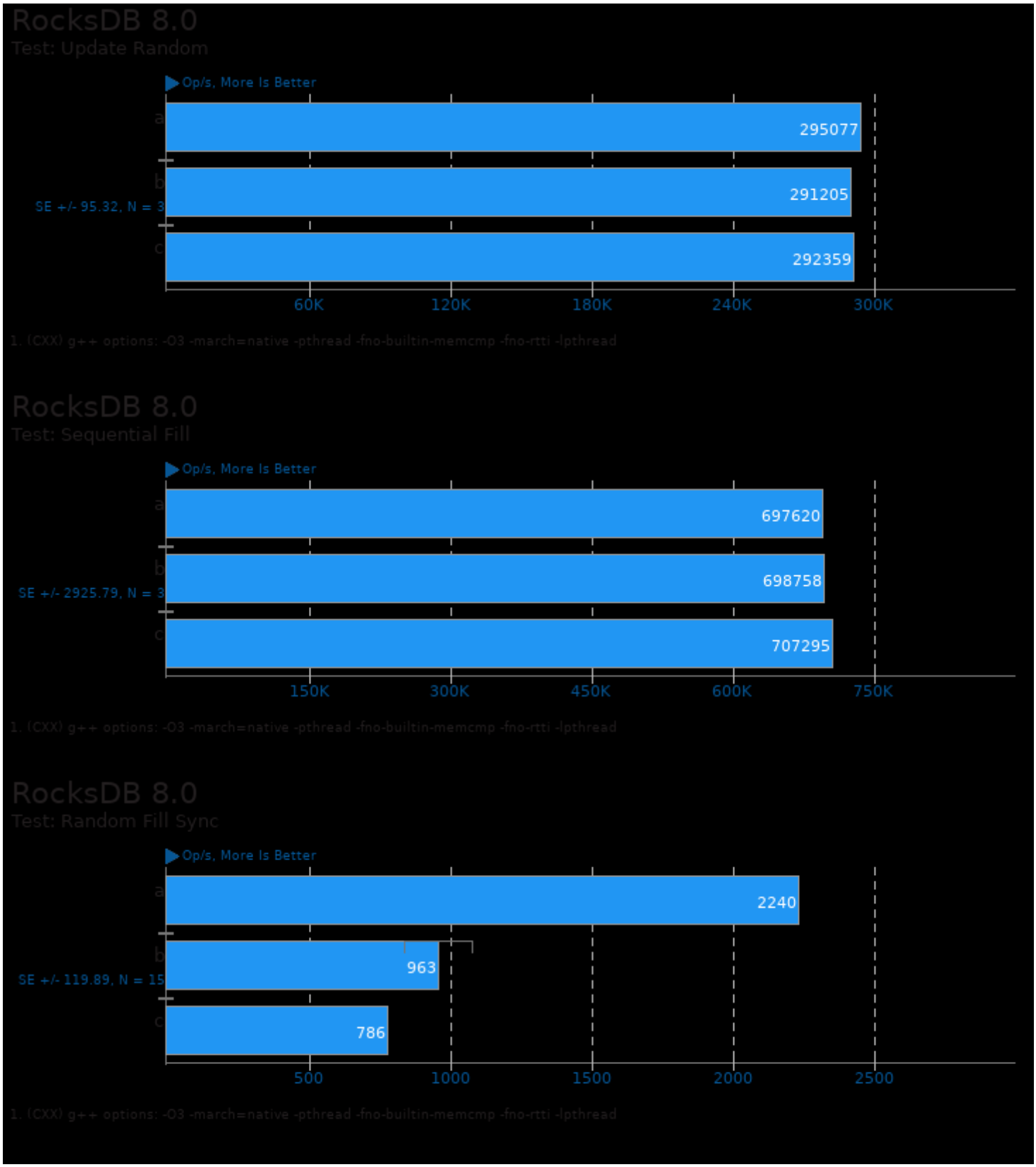

OpenCV 4.7
Test: Video
ms, Fewer Is Better
a
77639
b
91227
SE +/- 4682.10, N = 15
c
120009
30K
60K
90K
120K
150K
1. (CXX) g++ options: -fsigned-char -pthread -fomit-frame-pointer -ffunction-sections -fdata-sections -msse -msse2 -msse3 -fvisibility=hidden -O3 -ldl
OpenCV 4.7
Test: Graph API
ms, Fewer Is Better
a
371263
b
352895
SE +/- 3040.18, N = 3
c
334474
80K
160K
240K
320K
400K
1. (CXX) g++ options: -fsigned-char -pthread -fomit-frame-pointer -ffunction-sections -fdata-sections -msse -msse2 -msse3 -fvisibility=hidden -O3 -ldl
OpenCV 4.7
Test: Stitching
ms, Fewer Is Better
a
210712
b
210748
SE +/- 328.56, N = 3
c
211848
50K
100K
150K
200K
250K
1. (CXX) g++ options: -fsigned-char -pthread -fomit-frame-pointer -ffunction-sections -fdata-sections -msse -msse2 -msse3 -fvisibility=hidden -O3 -ldl

satat

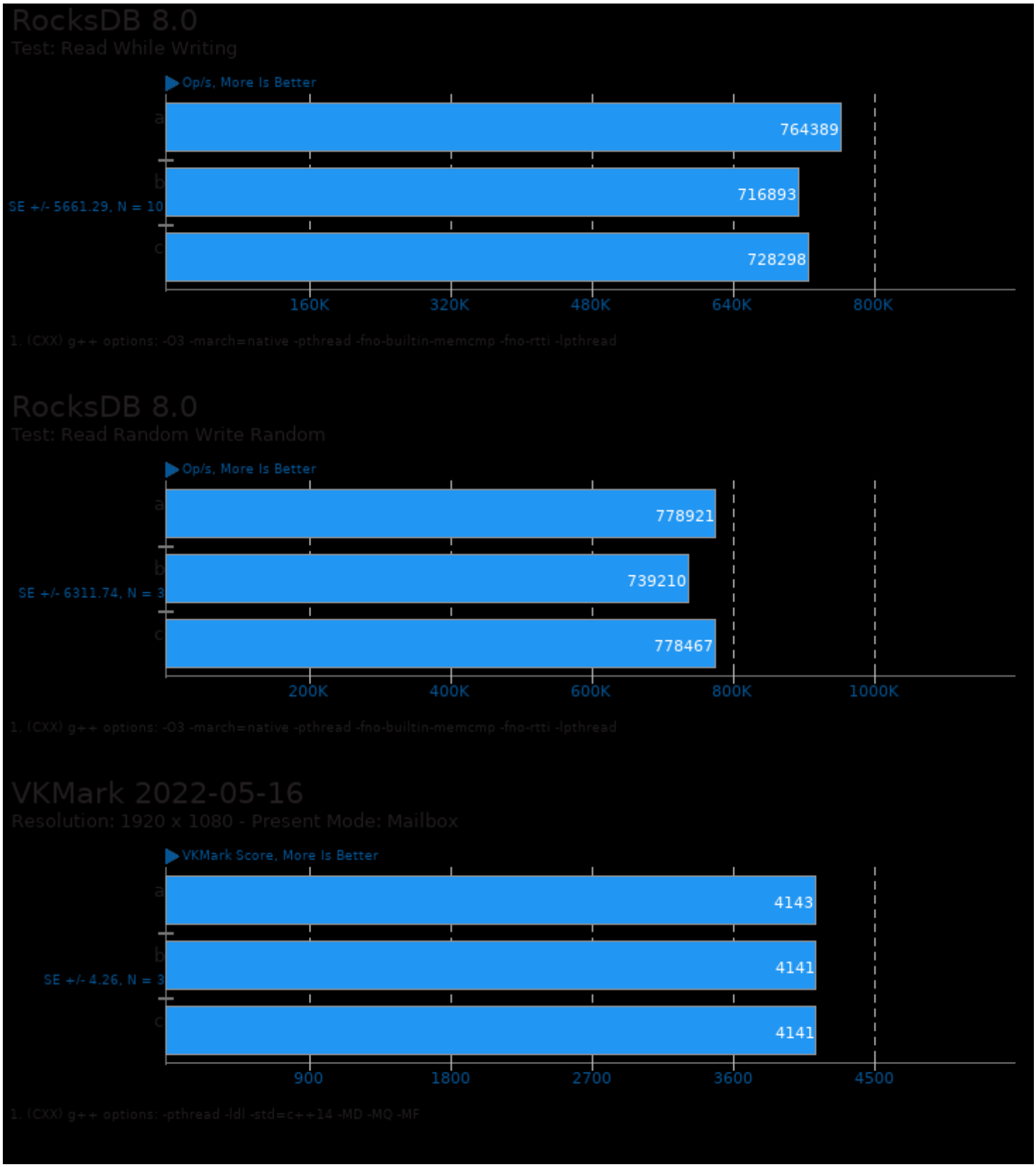

OpenCV 4.7
Test: Features 2D
ms, Fewer Is Better
a
84341
b
87573
SE +/- 2006.44, N = 12
c
79477
20K
40K
60K
80K
100K
1. (CXX) g++ options: -fsigned-char -pthread -fomit-frame-pointer -ffunction-sections -fdata-sections -msse -msse2 -msse3 -fvisibility=hidden -O3 -ldl
OpenCV 4.7
Test: Image Processing
ms, Fewer Is Better
a
155796
b
162581
SE +/- 1662.97, N = 3
c
152230
30K
60K
90K
120K
150K
1. (CXX) g++ options: -fsigned-char -pthread -fomit-frame-pointer -ffunction-sections -fdata-sections -msse -msse2 -msse3 -fvisibility=hidden -O3 -ldl
OpenCV 4.7
Test: Object Detection
ms, Fewer Is Better
a
70307
b
69304
SE +/- 725.67, N = 3
c
71929
15K
30K
45K
60K
75K
1. (CXX) g++ options: -fsigned-char -pthread -fomit-frame-pointer -ffunction-sections -fdata-sections -msse -msse2 -msse3 -fvisibility=hidden -O3 -ldl

satat


OpenCV 4.7
Test: DNN - Deep Neural Network
ms, Fewer Is Better
a
b
c
26885
28497
27956
SE +/- 336.43, N = 12
6K
12K
18K
24K
30K
1. (CXX) g++ options: -fsigned-char -pthread -fomit-frame-pointer -ffunction-sections -fdata-sections -msse -msse2 -msse3 -fvisibility=hidden -O3 -ldl
RocksDB 8.0
Test: Random Fill
Op/s, More Is Better
a
b
c
528850
521039
555075
SE +/- 2161.89, N = 3
120K
240K
360K
480K
600K
1. (CXX) g++ options: -O3 -march=native -pthread -fno-builtin-memcmp -fno-rtti -lpthread
RocksDB 8.0
Test: Random Read
Op/s, More Is Better
a
b
c
23023687
22661234
27926667
SE +/- 181598.25, N = 3
6M
12M
18M
24M
30M
1. (CXX) g++ options: -O3 -march=native -pthread -fno-builtin-memcmp -fno-rtti -lpthread


RocksDB 8.0
Test: Update Random
Op/s, More Is Better
a
b
c
295077
291205
292359
SE +/- 95.32, N = 3
60K
120K
180K
240K
300K
1. (CXX) g++ options: -O3 -march=native -pthread -fno-builtin-memcmp -fno-rtti -lpthread
RocksDB 8.0
Test: Sequential Fill
Op/s, More Is Better
a
b
c
697620
698758
707295
SE +/- 2925.79, N = 3
150K
300K
450K
600K
750K
1. (CXX) g++ options: -O3 -march=native -pthread -fno-builtin-memcmp -fno-rtti -lpthread
RocksDB 8.0
Test: Random Fill Sync
Op/s, More Is Better
a
b
c
2240
963
786
SE +/- 119.89, N = 15
500
1000
1500
2000
2500
1. (CXX) g++ options: -O3 -march=native -pthread -fno-builtin-memcmp -fno-rtti -lpthread

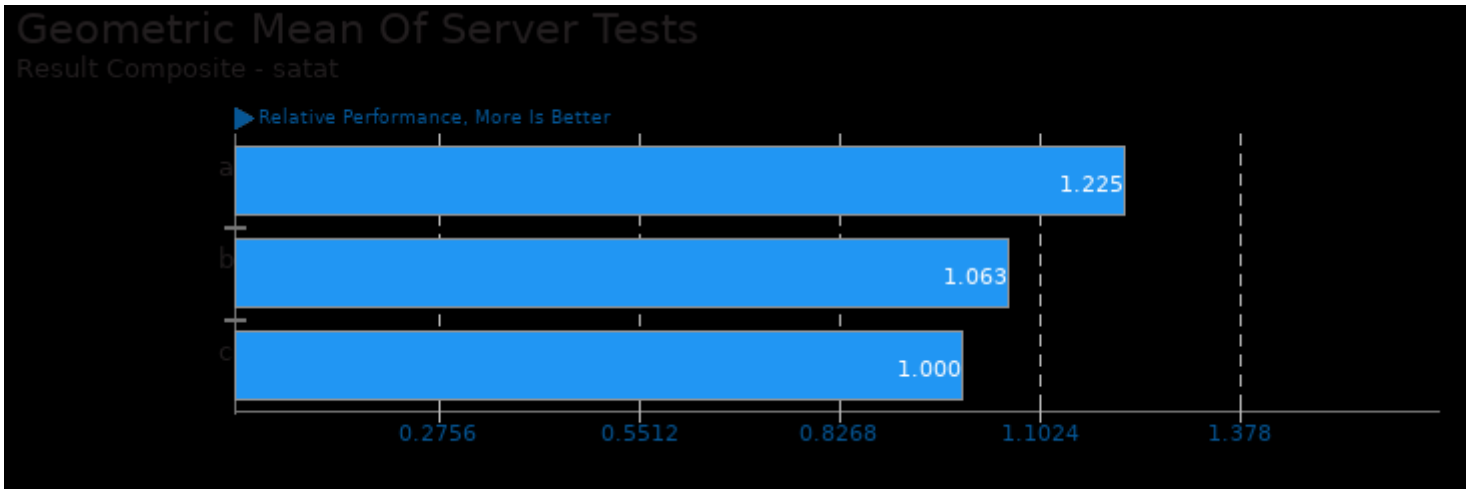
satat


RocksDB 8.0
Test: Read While Writing
Op/s, More Is Better
a
b
c
764389
716893
728298
SE +/- 5661.29, N = 10
160K
320K
480K
640K
800K
1. (CXX) g++ options: -O3 -march=native -pthread -fno-builtin-memcmp -fno-rtti -lpthread
RocksDB 8.0
Test: Read Random Write Random
Op/s, More Is Better
a
b
c
778921
739210
778467
SE +/- 6311.74, N = 3
200K
400K
600K
800K
1000K
1. (CXX) g++ options: -O3 -march=native -pthread -fno-builtin-memcmp -fno-rtti -lpthread
VKMark 2022-05-16
Resolution: 1920 x 1080 - Present Mode: Mailbox
VKMark Score, More Is Better
a
b
c
4143
4141
4141
SE +/- 4.26, N = 3
900
1800
2700
3600
4500
1. (CXX) g++ options: -pthread -ldl -std=c++14 -MD -MQ -MF

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



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



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

This file was automatically generated via the Phoronix Test Suite benchmarking software on Friday, 29 March 2024 01:17.